THE IMPACTS AND IMPLICATIONS OF POST-1995 LINKAGES BETWEEN THE CODEX ALIMENTARIUS COMMISSION AND THE WORLD TRADE ORGANIZATION: POLITICIZATION, DEADLOCK, AND DISPUTE

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ABSTRACT

This thesis examines the impacts and implications of post-1995 linkages between the Codex Alimentarius Commission and the World Trade Organization. Chapters 1 and 2 provide data on the structures, functions, and procedures of the Codex Commission and the WTO and analyze their institutional approaches to risk, danger, risk management and the precautionary principle. Chapter 3 evaluates three impacts of post-1995 linkages between these institutions (the politicization of the Codex Commission, deadlock in the Codex standard elaboration process, and dispute in the WTO) as well as three implications of that linkage (risk v. danger assessment and management, changed interpretations of "science," and changed interpretations of "consensus"). Finally, Chapter 4 applies these impacts and implications to food safety cases. This chapter establishes a framework for understanding issues of food safety, Codex standard elaboration, and WTO dispute settlements in terms of scientific and political consensus and debate. This thesis argues, first, that the post-1995 linkage between the Codex Commission and the WTO changed Codex member state expectations and behaviors relative to standard elaboration procedures and that these changed expectations impacted both member state governments and the WTO. It further demonstrates that the extent of the Codex Commission's ability to elaborate universal standards and the WTO's responsibility for dispute settlement can be explained in terms of scientific and political dispute and consensus. Finally, it illustrates that risk and danger are different concepts, require different food safety approaches, and generate different institutional and national reactions. This analysis addresses existing critiques of the Codex Commission, the WTO, and their post-1995 linkages, examines the potential of both institutions to simultaneously pursue consumer safety and open trade objectives, and points to avenues for future research.

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FOR GRANNY AUDREY AND GRANDPA LEE
WITH LOVE, GRATITUDE, AND ADMIRATION

AND FOR POP
WITH TREASURED MEMORIES

TABLE OF CONTENTS

I. Title Page……...i

II. Abstract..……..ii

III. Acknowledgements……**……..iii**

IV. Dedication...…….iv

V. Table of Contents……..……...v

VI. List of Figures and Tables……..vi

VII. Introduction……..1

VIII. Chapter 1……..7

The History, Structures, and Functions of the Codex Alimentarius Commission

IX. Chapter 2……22

The History, Structures, and Functions of the World Trade Organization

X. Chapter 3……35

The Impacts and Implications of Post-1995 Affiliations Between the Codex Alimentarius Commission and the World Trade Organization

XI. Chapter 4……51

Case Studies in Food Safety and International Trade

XII. Conclusion…..……65

XIII. References……...72

XIV. Appendixes

a. Definitions…….77

b. Definitions for the Purposes of the Codex Alimentarius Commission……78

c. The Structure of the Joint FAO/WHO Food Standards Programme…….83

d. The Four Steps of Risk Assessment……84

e. Statutes of the Codex Alimentarius Commission……..85

f. The Codex Alimentarius……..88

g. Statements of Principle Relating to the Role of Food Safety Risk Assessment.....89

h. Acceptance of Codex Maximum Limits for Pesticide Residues as of 9 April 1976……90

i. Residues of Veterinary Drugs……92

LIST OF FIGURES AND TABLES

- **Figure 1……...17**
  The Eight Step Procedure of Codex Standard Formation
- **Figure 2……...36**
  The Impacts and Implications of Post 1995 Linkages Between the Codex Commission and the WTO
- **Table 1……41**
  Participation in Codex Commission Meetings
- **Table 2……42**
  Participation in the Codex Committee on General Principles
- **Table 3……..……..….52**
  Food Safety Issues
- **Table 4..……...52**
  Codex Standard Elaboration
- **Table 5..……...52**
  WTO Dispute Settlements

INTRODUCTION

The Codex Alimentarius Commission was created in 1963 by the Food and Agriculture Organization (FAO) of the United Nations (UN) and the World Health Organization (WHO). Established to universalize food standards and guidelines, to elaborate the best possible science-based advice to member countries, to balance national and international commitments to free trade with consumer protection and health, and to increase global awareness of food safety issues, the Codex Commission serves as a single reference point for developments associated with food safety (FAO and WHO 2005). Prior to 1995 the Codex Commission operated as a "gentlemen's club," developing non-binding standards that were first approved by the Commission and then accepted by national governments on a voluntary basis. Once accepted by a sufficient number of states, standards became part of the *Codex Alimentarius*, or global food code.

In 1995 the newly established World Trade Organization incorporated two General Agreement on Tariff and Trade Agreements, the Technical Barrier to Trade Agreement (TBT) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), into its multilateral framework, thus transforming voluntary Codex standards into the basis of binding dispute settlements. This linkage between the WTO and the Codex Commission generated a series of impacts and implications, for the institutions and their member states as well as for issues of food safety and international trade.

Research Justifications:

Research on the Codex Alimentarius Commission has both intrinsic and instrumental value. Its intrinsic value stems from the fact that scholarly research on food safety and trade is important contemporary political economics. Created by the FAO and the WHO, the Codex represents a shared vision to provide unbiased scientific and technical food safety standards. The post-1995 Codex Commission's linkages with the WTO impacted the dynamics and decision making processes of both institutions, with implications for Codex standards, WTO dispute

settlements, and national food safety policies. In addition, this research has instrumental value two forms. First, the theoretical framework regarding scientific and political consensus and dispute elaborated in Chapter 4 and the discussion of risk v. danger can be applied to research beyond the topic of food safety. Second, this research establishes an analytical perspective from which one may address critiques of the Codex Commission, the WTO, and their post-1995 linkages.

Opponents of everything from globalization to risk management to the pharmaceutical industry have criticized either the WTO or the Codex Commission and its post-1995 linkage. These critiques span professional discourses from political economy to nutrition to agricultural economics and fall into three general groups: those opposed to the WTO, those opposed to the Codex Commission, and those opposed to their post-1995 institutional linkage. This thesis establishes that these criticisms are largely misguided. First, critics opposed to the WTO, including Lori Wallach, frequently categorize it as representative of developed countries at the expense of exploited developing countries. Chapters 2, 3, and 4 will demonstrate that, to the contrary, dispute settlements can compel any WTO member state, regardless of economic position or power, to abide by trade agreements and commitments. Moreover, critics argue that the WTO privileges open trade over consumer protection. Chapters 2, 3, and 4 suggest that this is a misrepresentation of the WTO's multilateral framework. In fact, while many WTO agreements open national borders to international trade, the SPS and TBT Agreements provide a foundation for national food safety standards and regulations, which, when necessary, may exceed the minimum limits imposed by Codex standards. Second, other critics opposed to the Codex Commission, including Rima E. Laibow, characterize it as an agent of multinational corporations and pharmaceutical companies. Chapters 1, 3, and 4 demonstrate that this is untrue. Instead, the Codex Commission represents the interests of its member states. Although its dynamics have changed since its linkage with the WTO, the Codex Commission remains dedicated to developing universal food safety standards grounded in scientific data. Finally, scholars, including Frode Veggeland and Sven Ole Borgen, are critical of the post-1995 linkage between these multilateral institutions. These individuals emphasize that this institutional linkage limited Codex Commission activity to issues grounded in scientific consensus and,

furthermore, increased the need for dispute settlement in the WTO. Neither of these observations is incorrect; however, Chapters 3 and 4 and the Conclusion will suggest that both of these effects have the potential to strengthen the legitimacy and influence of the Codex Commission and to increase global food safety standards. Therefore, this thesis, particularly in its conclusions, engages critiques in the available literature while assessing the long term consequences of this institutional linkage.

Finally, the thesis addresses several omissions from the current literature regarding food safety and international trade. First, it includes comprehensive descriptive material on the functions and operations of the Codex Commission, thus filling a gap in the existing multilateral regime literature. Second, it analyzes the TBT and SPS agreements, which are frequently referenced but rarely systematically examined. Third, it analyzes the impacts of political and scientific consensus on the Codex Commission, the WTO, and issues of food safety and international trade. Lastly, it frames the discussion of the post-1995 linkages between the Codex Commission and the WTO within the context of risk management, the precautionary principle, and danger.

Methods Overview:

This thesis is essentially set of nested case studies. Chapters 1 and 2 use revelatory and descriptive inference to analyze the structures and functions of the Codex Alimentarius Commission and the WTO. Furthermore, these chapters examine the Codex and the WTO as organizations, using an exploratory/heuristic case design to analyze the structures, functions, and dispute resolution procedures of the WTO. Chapter 2 analyzes the SPS and TBT Agreements as they relate to the Codex Commission and the WTO Dispute Resolution Board and investigates the decision to incorporate these GATT Agreements into the framework of the WTO. Chapter 3 examines the 1995 linkage between the Codex Commission and the WTO in terms of its impacts and implications. Finally, Chapter 4 illustrates the effects of those impacts and implications through a series of four food safety case studies.

The data sources relied on institutional archival work based on the qualitative proposition that "to understand an institution one must read its documentary evidence" (Weisband 4-4-06). This documentary analysis of Codex Commission and WTO documents emphasizes the central distinctions between risk and danger as well as risk management and the precautionary principle as interpreted or applied by the institutions as evidenced in their documentary records. The thesis therefore establishes a framework for understanding the Codex Commission, the WTO, the SPS and TBT Agreements, and issues of food safety and international trade as well as the linkages and relationships between and among them by grounding my analysis in, first and foremost, primary source materials from the Codex Commission and the WTO.

Codex Commission reports include both executive summaries of session events and conclusions as well as thorough accounts of session activities. These documents, therefore, provide transcript-like data and allowed me, as a researcher, to understand the Commission's standard elaboration procedures. Although the information in many institutional documents is limited to final votes and session conclusions, Commission documents reflect member state perspectives, arguments, and concerns throughout negotiations and demonstrate the dynamics of their decision making processes. For example, Commission documents frequently explain lack of progress in the Commission's standard elaboration steps in terms of a lack of consensus. At its 25th Session the Commission's report stated that "the main obstacle to rapid progress was lack of consensus on controversial issues and not Codex structures or procedures as such" (Codex Commission, 25th Session). These data support my discussions regarding the impacts and implications of post-1995 linkages between the Codex Commission and the WTO and their application to issues of food safety and international trade. Chapters 3 and 4 draw on the nature of Commission documents to examine the Commission's decision to institutionally link with WTO dispute settlement procedures as well as standard formation procedures for issues of pesticide maximum residue limits, animal growth hormones, and genetically modified foods.

Chapter Outline:

Chapter 1 introduces the history of food safety harmonization from Ancient Egypt to the establishment of the Codex Alimentarius Commission. This chapter describes the functions, jurisdiction, structure, and procedures of the Codex Commission and analyzes the role of science in Codex decision making processes. Finally, Chapter 1 examines the Codex Commission's approaches to risk management, assessment, and communication.

Chapter 2 describes the institutional history of the General Agreement on Tariffs and Trade and the establishment of the World Trade Organization. It then analyzes the functions and normative principles of the WTO, focusing on the Dispute Settlement Process and the Dispute Settlement Board. This chapter examines the history of the WTO regarding issues of food safety, emphasizing the Technical Barriers to Trade Agreement and the Agreement on the Application of Sanitary and Phytosanitary Measures. Finally, Chapter 2 evaluates the WTO's approach to risk and danger relative to risk management and the precautionary principle.

Chapter 3 analyzes the impacts and implications of the post-1995 linkage between the Codex Commission and the WTO. Using Codex Commission annual reports, this chapter begins with a historical overview of the institutional relationship among the Codex Commission, the GATT, and the WTO. It continues with an examination of three impacts of this post-1995 linkage: the politicization[1] of the Codex Commission, which subsequently transformed Codex member state expectations and food diplomacy tactics; the policy deadlock in the Codex Commission; and food safety disputes in the WTO. Finally, Chapter 3 analyzes three implications for the Codex Commission of this institutional linkage relative to health risks and dangers, interpretations of "science," and interpretations of "consensus."

[1] David Easton defines politics as a distributional process to determine, in laymen's terms, who gets what, when, where, why, and how. In that sense, politics is interest-based disagreement over the allocation of resources or influence. When I argue that its post-1995 linkage with the WTO *politicized* the Codex Commission, I am, in effect, indicating that Codex decision-making processes have become subject to distributional dynamics. Prior to 1995 Codex standards were non-binding in nature, allowing national governments to accept or reject Codex recommendations in national policy-making processes. At that time, standard elaboration processes were not political because of the "Gentlemen's Club" dynamics detailed in Chapter 3. Because of 1995 linkage between the Codex Commission and the WTO, however, Codex member-states employ politicized food diplomacy tactics in Commission and Committee meetings to elaborate binding standards that represent the interests and commitments of their national governments in a process that is political.

Chapter 4 presents four food safety case studies that illustrate the impacts and implications of post-1995 linkages between the Codex Commission and the WTO. This chapter demonstrates that politicization, deadlock, and dispute have led to redefinitions of risk, science, and consensus within the Codex Commission and, consequently, affect the WTO, national governments, and issues of food safety and open trade. Specifically, Chapter 4 uses four cases that represent differing levels of political and scientific consensus and thus different Codex Commission and WTO responses to examine the post-1995 dynamics of Codex standard elaboration, member state legislation, and, when necessary, WTO dispute settlement.

CHAPTER 1

THE HISTORY, STRUCTURES, AND FUNCTIONS OF THE CODEX ALIMENTARIUS COMMISSION

Introduction

The Codex Alimentarius Commission[2] (CAC) exists to minimize the health risks associated with food production, consumption, and trade. Its operations are grounded in scientific data and institutionally focused on risk assessment, management, and communication. The Codex Commission's emphasis on science[3] and approach to risk contribute to an analytical understanding of both the Commission itself and the impacts and implications of its post-1995 affiliations with the World Trade Organization.

The Codex Commission was created from a vision shared by the administrations of the Food and Agriculture Organization (FAO) of the United Nations (UN) and the World Health Organization (WHO) to develop food safety standards and guidelines designed to protect consumer health and ensure fair trade practices. By 1963 the Codex Commission's predecessor, the *Codex Alimentarius Europaeus,* acknowledged that the expanding international food trade prevented it from guaranteeing the safety of the European food supply. It approached the FAO for advice and the FAO, seeing an opportunity to universalize food safety standards and practices, sought a partnership with the WHO. The WHO recognized that an alliance with the FAO would allow it to globally expand their protections of human health relative to food safety. The two institutions came together to create the Codex Alimentarius Commission (FAO and WHO 2005, 9).

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[2] Codex Alimentarius translates from Latin as "food law" or "food code." The Codex Alimentarius is comprised of the standards, guidelines, codes of practice, and related texts produced by the Commission.

[3] The "Statemetns of Principle Concerning the Role of Science in the Codex Decision-Making Process and the Extent to Which Other Factors are Taken into Account," a decision of the 21st Session of the Codex Commission, states that "the food standards, guidelines and other recommendations of Codex Alimentarius shall be based on the principle of sound scientific analysis and evidence, involving a thorough review of all relevant information, in order that the standards assure the quality and safety of the food supply." The Codex Commission has not, however, precisely defined what constitutes "science." The Codex Commission's Committee on General Principles is enganged in an ongoing process to develop this definition and its progress, or lack thereof, represents an impact of the 1995 politicization of the Codex Commission following its affiliation with the World Trade Organization. Chapter 3 will examine differing and changing perceptions of "science" across Codex members and across the Codex Commission's history.

The Codex Commission promotes international harmonization of food safety standards by coordinating the food safety work undertaken by national governments and non-governmental organizations (NGOs). Because of its status as a single international "reference point for consumers, food producers and processors, national food control agencies, and the international food trade," the Codex Commission has encouraged scientific and technical research and debate on topics of food safety and has increased international awareness of those issues (FAO and WHO 2005, 1).

This chapter includes information regarding the history, creation, functions and jurisdiction, processes, structure, and membership of the Codex. Its description of the Codex Commission serves as the foundation for the analysis of the impacts and implications of the post-1995 linkage between the Codex Commission and the World Trade Organization found in Chapters 3 and 4.

The History of Food Safety

Historical records suggest that governing bodies have always been concerned about issues of food safety due to the risks, both to human health and to national security, of either accidental or deliberate food contamination. Ancient Egypt codified labeling requirements for specific foods. Athens required that wine and beer be inspected to guarantee purity. Rome, preoccupied with the possibility of food terrorism, monitored its food supply both to protect consumers and to defend the Empire. Medieval European kingdoms established laws regarding the safety and quality of eggs, sausages, cheeses, beers, wines, and breads (FAO and WHO 2005, 5-6).[4] The modern Codex Alimentarius Commission, however, is a product of the technologies developed throughout the 19th and 20th centuries and a legacy of the Austro-Hungarian Empire.

The second half of the 19th century saw changes in agricultural techniques, food distribution systems, and food science throughout Europe. Development of the seed drill and

[4] Throughout the 20th century Germany used the German Beer Purity Act, dating from the Middle Ages and requiring that beer be at least 25% alcohol by volume, to ban the importation of French beer, specifically *Cassis de Dijon.* Arguing that beverages with a higher alcohol content were less likely to induce alcohol tolerance and lead to addiction, Germany used consumer safety concerns to justify this non-tariff barrier (NTB) to trade. This trade dispute culminated in a 1979 case in the European Court of Justice (ECJ). The ECJ ruled against Germany and required that food safety standards be harmonized across Europe.

other agricultural innovations in conjunction with crop rotation[5] increased Europe's food supply while canals, roads, and railroads provided reliable distribution networks across the continent. Moreover, 19th century European chemists studied and charted the chemical properties of foods, forming the foundation of nutritional science. Initial research raised concerns about the risks associated with the use of hazardous chemicals in food production and storage.

Between 1897 and 1911 the Austo-Hungarian Empire collected food standards and product descriptions in the *Codex Alimentarius Austriacus.*[6] This project, designed to provide a reference point for courts to determine standards for specific foods in the pursuit of consumer protection, was expanded throughout Europe as the *Codex Alimentarius Europaeus.* Concurrent efforts across Europe culminated in the First Meeting of the Joint FAO/WHO Expert Committee on Nutrition in 1950. This committee reported that "food regulations in different countries are often conflicting and contradictory. Legislation governing preservation, nomenclature, and acceptable food standards often varies widely from country to country. New legislation not based on scientific knowledge is often introduced and little account may be taken of nutritional principles in formulating regulations" (FAO/WHO 2005, 6). In 1955 the same committee reported that "the increasing and sometimes insufficiently controlled use of food additives has become a matter of public and administrative concern" (FAO/WHO 2005, 8). These anxieties, coupled with those regarding international trade in foods and food products, led to an international movement towards transnational harmonization, governance, leadership, and cooperation in the areas of food safety, consumer protection, and international trade.

The Need for Harmonization: The Creation of the Codex Alimentarius Commission

The FAO and WHO activities established their joint agenda for issues of food safety at a 1943 conference in Hot Springs, Virginia (Lupien 2000, 192). Designed to improve the quality and safety of domestic food supplies and the international food trade, this conference addressed the risks associated with "the increased use of food additives to preserve foods, new pesticide

[5] Popularized in 18th century Great Britain

[6] It is appropriate that the contemporary Codex Alimentarius traces its roots to the Austro-Hungarian Empire. Comprised of more than 12 distinct ethnic groups, the Austro-Hungarian Empire was frequently challenged to harmonize laws and standards as it sought to mitigate food risk. It is thus representative of Europe in the 19th century and the world in the 21st.

compounds which were being used in agriculture and food storage, differing food standards in various countries affecting basic food composition and nutritional value, and basic problems such as accurate labeling, promoting good faith hygiene to reduce or eliminate contamination of foods with insects, rodents, and bird filth, and pathogenic microorganisms" (Lupien 2000, 192).

In 1961 the Council of the *Codex Alimentarius Europaues* asked that its work on food safety standards be assumed by the FAO. The FAO sought a partnership with the WHO, and both organizations met later that year to establish the Codex Alimentarius and an international food standards program. In 1963 the WHO and the FAO approved the establishment of the Joint FAO/WHO Programme on Food Standards and created the Codex Alimentarius Commission, "not an autonomous international legal entity but rather a subsidiary body, more precisely…the implementing arm of the Joint FAO/WHO Food Standards Programme" (Thomas 2004, 6). The Commission was charged with "formulating and harmonizing food standards and ensuring their global implementation," and with developing "codes governing hygienic processing practices and recommendations relating to compliance with those standards" (FAO/WHO 2005, Preface).

Article 1 of the *Statutes of the Codex Alimentarius Commission* states that the Codex Commission is responsible for making proposals to the FAO and WHO "on all matters pertaining to the implementation of the Joint FAO/WHO Food Standards Programme." Its purposes are to: protect consumer health by mitigating the risks associated with food production and consumption, ensure fair practices in food trade, promote coordination of all food standards work undertaken by international governmental and non-governmental organizations, facilitate international trade, and publish and amend food safety standards in a *Codex Alimentarius*.

The Functions and Jurisdiction of the Codex Alimentarius Commission

The *Statutes of the Codex Commission* and the *15th Procedural Manual of the Codex Alimentarius Commission* state that the Commission's primary function is to compile and revise the standards, guidelines, and codes of practice that comprise the *Codex Alimentarius* in accordance with scientific data. In addition, the *2003-2007 Strategic Framework for the Codex Alimentarius Commission* details that the Codex Commission must promote: a sound regulatory framework, the widest and most consistent application of scientific principles and risk analysis,

the linkages among the Codex Commission and other multilateral regulatory institutions, the capacity to respond effectively and quickly to new developments in the area of food safety, and maximum membership and participation in the Commission alongside maximum application of Codex standards. The Codex Commission has jurisdiction over food and food products (processed, semi-processed, and raw), food hygiene, food additives, pesticide residues, veterinary drug residues, food contaminants, food labeling, food presentation, and methods of analysis and sampling.[7]

The Role of Science in the Codex Alimentarius Commission

The Codex Commission was established to develop "international scientific evaluation mechanisms that could provide the best possible science-based advice to member countries with periodic update[s] to assure that new scientific information was always taken into account in FAO/WHO recommendations" (Lupien 2000, 193). Therefore, the Codex Commission's Statutes and Procedures are designed to ensure that it "pursues its clearly defined objectives in a disciplined, dispassionate, and scientific way," in order to minimize food-related health risks (FAO and WHO 2005, 13). In 1995 the 21st Session of the Codex Commission established the *Statements of Principle Concerning the Role of Science in the Codex Decision-Making Process and the Extent to Which Other Factors are Taken into Account.*[8] This resolution states that: "the food standards, guidelines and other recommendations of Codex Alimentarius shall be based on the principle of sound scientific analysis and evidence, involving a thorough review of all relevant information, in order that the standards assure the quality and safety of the food supply." Moreover, "when elaborating and deciding upon food standards, Codex Alimentarius [Commission] will have regard, where appropriate, to other legitimate factors relevant for the health protection of consumers and for the promotion of fair practices in food trade." The 24th Session of the Codex Commission adopted the *Criteria for the Consideration of the Other Factors Referred to in the Second Statement of Principle,*[9] which dictated that:

[7] See Appendix B for a list of Definitions for Purposes of the Codex Alimentarius form the *15th Procedural Manual.*
[8] Published in the 11th Procedural Manual of the Codex Alimentarius Commission. Available Online: http://www.foodlaw.rdg.ac.uk/codex-4.htm
[9] Published in the 11th Procedural Manual of the Codex Alimentarius Commission. Available Online: http://www.foodlaw.rdg.ac.uk/codex-4.htm

- other legitimate factors relevant for health protection and fair trade practices may be identified in the risk management process, and risk managers should indicate how these factors affect the selection of risk management options and the development of standards, guidelines and related texts;
- consideration of other factors should not affect the scientific basis of risk analysis; in this process, the separation between risk assessment and risk management should be respected, in order to ensure the scientific integrity of the risk assessment;
- it should be recognized that some legitimate concerns of governments when establishing their national legislation are not generally applicable or relevant world-wide;
- only those other factors which can be accepted on a world-wide basis, or on a regional basis in the case of regional standards and related texts, should be taken into account in the framework of Codex;
- the consideration of specific other factors in the development of risk management recommendations of the Codex Alimentarius Commission and its subsidiary bodies should be clearly documented, including the rationale for their integration, on a case-by-case basis;
- the feasibility of risk management options due to the nature and particular constraints of the production or processing methods, transport and storage, especially in developing countries, may be considered; concerns related to economic interests and trade issues in general should be substantiated by quantifiable data[10];
- the integration of other legitimate factors in risk management should not create unjustified barriers to trade; particular attention should be given to the impact on developing countries of the inclusion of such other factors.[11]

[10] Although the Codex Commission does not equate "science" and "quantifiable data," there is a relationship between these concepts. The Codex Commission's risk assessment process, which incorporates "scientific data" from multiple sources and regions, requires that qualitative data be expressed quantitatively, thus privileging quantitative data and processes of risk management over the precautionary principle. Chapter 3 will address this issue in more detail.

[11] Chapters 3 and 4 will refer back to these stipulations when examining the impacts and implications of post-1995 linkages between the Codex Commission and the WTO.

These criteria thus require that the risk management process maintain scientific integrity in the absence of scientific consensus. The practical applications of the *Statements of Principle Concerning the Role of Science in the Codex-Decision Making Process and the Extent to Which Other Factors are Taken Into Account* and the *Criteria for the Consideration of the Other Factors Referred to in the Second Statement of Principle* explored in Chapters 3 and 4 illustrate the problems associated with this attempt at institutional compromise between risk management and precautionary principles.

Although it serves as a forum for the exchange of scientific information, the Codex Commission does not conduct scientific research; nor does it employ scientific experts. Instead, the Commission and its subsidiary bodies receive expert advice from individual scientists, laboratories, institutes, universities, national governments, NGOs, the Joint FAO/WHO Expert Committee on Food Additives (JECFA), the Joint FAO/WHO Meetings on Pesticide Residues (JMPR), the Joint FAO/WHO Meetings on Microbiological Risk Assessment (JEMRA), the FAO/WHO Food Safety Assessments of Foods Derived from Modern Biotechnology, and the FAO/WHO *ad hoc* Expert Consultations.[12]

Risk Assessment, Risk Management, and Risk Communication

Despite its dedication to ensuring fair trade practices, the Codex Commission's first responsibility is to protect consumer health. This responsibility is tantamount to minimizing the risks associated with the production, trade, and consumption of foods and food products. Therefore, Codex procedures and recommendations are grounded in risk assessment, management, and communication. Diahanna Post defines risk assessment as "the technical evaluation of the risk of a certain substance" for individuals or populations (2005, 3). The *Statements of Principle Relating to the Role of Food Safety Risk Assessment,* implemented by the 22nd Session of the Codex Commission, declares that:

[12] JECFA was established in 1995 to advise the Codex Commission on chemical, toxicological, and other aspects of veterinary drug residue in foods and food products. JMPR was established in 1963 to provide the Codex Commission with information regarding maximum residue limits (MLRs) as well as methods of sampling and analysis for pesticide and environmental contaminants in specific food products. Both bodies are independent of the Commission and comprised of independent scientists who are experts in their fields and who are appointed as scholars rather than as representatives of national governments.

- Health and safety aspects of Codex decisions and recommendations should be based on a risk assessment, as appropriate to the circumstances.
- Food safety risk assessment should be soundly based on science, should incorporate the four steps of the risk assessment process,[13] and should be documented in a transparent manner.
- There should be a functional separation of risk assessment and risk management, while recognizing that some interactions are essential for a pragmatic approach.
- Risk assessments should use available quantitative information to the greatest extent possible and risk characterizations should be presented in a readily understandable and useful form.[14]

In completing the risk assessment, the Codex gathers all available scientific data, both qualitative[15] and quantitative, from multiple sources and geographic regions.[16] Should the available scientific data be incomplete, the Commission publishes a "code of practice" rather than a "standard" and continues to compile information. Risk assessments must reflect realistic exposure scenarios and should specifically address any relevant needs or situations of developing countries. In addition, they are required to detail the constraints, uncertainties, limitations, and assumptions of the data and record minority opinions. The *13th Procedural Manual* mandates that experts responsible for risk assessment "should be selected in a transparent manner on the basis of their expertise, experience, and their independence with regard to the interests involved." The selection process must identify any potential conflicts of interest and should ensure effective participation of experts from different geographic regions.

Risk assessment provides the benchmark for risk management, the process of "weighing alternatives in light of the results of risk assessment and, if required, selecting and implementing appropriate control options" (Hathaway 1999, 248). Risk management decisions are incorporated into Codex standards, guidelines, recommendations, and codes of practice. A vital part of risk management is risk communication. The *13th Procedural Manual of the Codex*

[13] 1. Hazard identification; 2. Hazard characterization; 3. Exposure assessment; 4. Risk characterization For an explanation of each step, see Appendix D.
[14] Published in the 13th Procedural Manual. Available online at http://www.foodlaw.rdg.ac.uk/codex-4.htm.
[15] Qualitative data must be expressed quantitatively.
[16] The Commission is particularly charged with incorporating data from developing countries.

Commission states that risk communication should promote the understanding of the scientific data considered during risk assessment processes, encourage consistency and transparency in risk management, strengthen the participation of Codex Commission members in risk analysis and management, and foster trust and confidence in the safety of the global food supply. Risk communication thus ensures, or at least strives to ensure, that all relevant information is considered in Codex decision making processes and disseminates that information to consumers.

Risk assessment, management, and communication represent one approach to consumer protection. A second, precautionary approach "may require action to control inputs of [dangerous] substances even before a causal link has been established by absolutely clear scientific evidence" (Post 2005, 5). This *precautionary principle* emphasizes the uncertainties associated with scientific research and, in this case, food-related risks. Whereas risk assessment and management quantify risk on the basis of available scientific data and develop policies grounded in *demonstrated* causes and effects, the precautionary principle provides for provisional safety measures in the absence of scientific certainty or consensus.[17]

While the United States, like the Codex Commission, operates on the basis of risk assessment and management, the European Union (EU) ascribes to the precautionary principle. These Codex members debated these approaches to consumer safety throughout the late 1990's. This dispute culminated in the 2001 linkage between risk management and the precautionary principle by the Codex Secretariat. The Codex Commission determined that it would not publish a standard to the *Codex Alimentarius* absent scientific certainty. In addition, the Commission agreed to explicitly consider the uncertainty and variability of scientific data in the risk assessment procedure. While this agreement did introduce precaution into the Codex framework, it fell short of the language endorsed by the EU at the 2000 meeting of the Committee of General Principles: "when relevant scientific evidence is insufficient to objectively

[17] Ulrich Beck's Risk Society: Towards a New Modernity argues for the application of the precautionary principle rather than risk management. Beck emphasizes that governments and other institutions attempt to minimize risk by calculating acceptable levels of exposure to individual chemicals, pollutants, toxins, or substances. The problem is that although the effects of acceptable levels of one substance may be benign, when combined with acceptable levels of multiple pollutants, they may become fatal. As Beck asserts, "only when the substance is put into circulation can one find out what its [actual] effects are. [Therefore], the experiment on people does take place, but invisibly, without scientific checking, without surveys, without statistics, without correlation analysis, under the condition that the victims are not informed---and with an inverted burden of proof if they should happen to detect something" (69).

and fully assess risk from a hazard in food, and when there is reasonable evidence to suggest that adverse effects on human health may occur, but it is difficult to evaluate their nature and extent, it may be appropriate for risk managers to apply precaution through interim measures to protect the health of consumers without awaiting additional scientific data and a full risk assessment."

This conflict continues to plague the Codex Commission, particularly with respect to issues of Genetically Modified Foods, pesticide and veterinary drug residues, and livestock feeding practices. As Chapter 3 will demonstrate, however, the dispute regarding the application of risk management or precautionary principles originated in the 1995 linkage between the Codex Commission and the WTO. Moreover, conflicting applications of risk management by the United States, precautionary principles by the EU, and Codex standards form the foundation of the WTO disputes regarding food safety and international trade examined in Chapter 4.

The Structure and Content of the Codex Alimentarius

According to Article 1 of the *Statutes of the Codex Alimentarius Commission,* the Commission's primary function is to compile food standards, guidelines, and codes of practice in the *Codex Alimentarius*. The *Codex Alimentarius,* contained in 13 Volumes, includes general and commodity standards.[18]

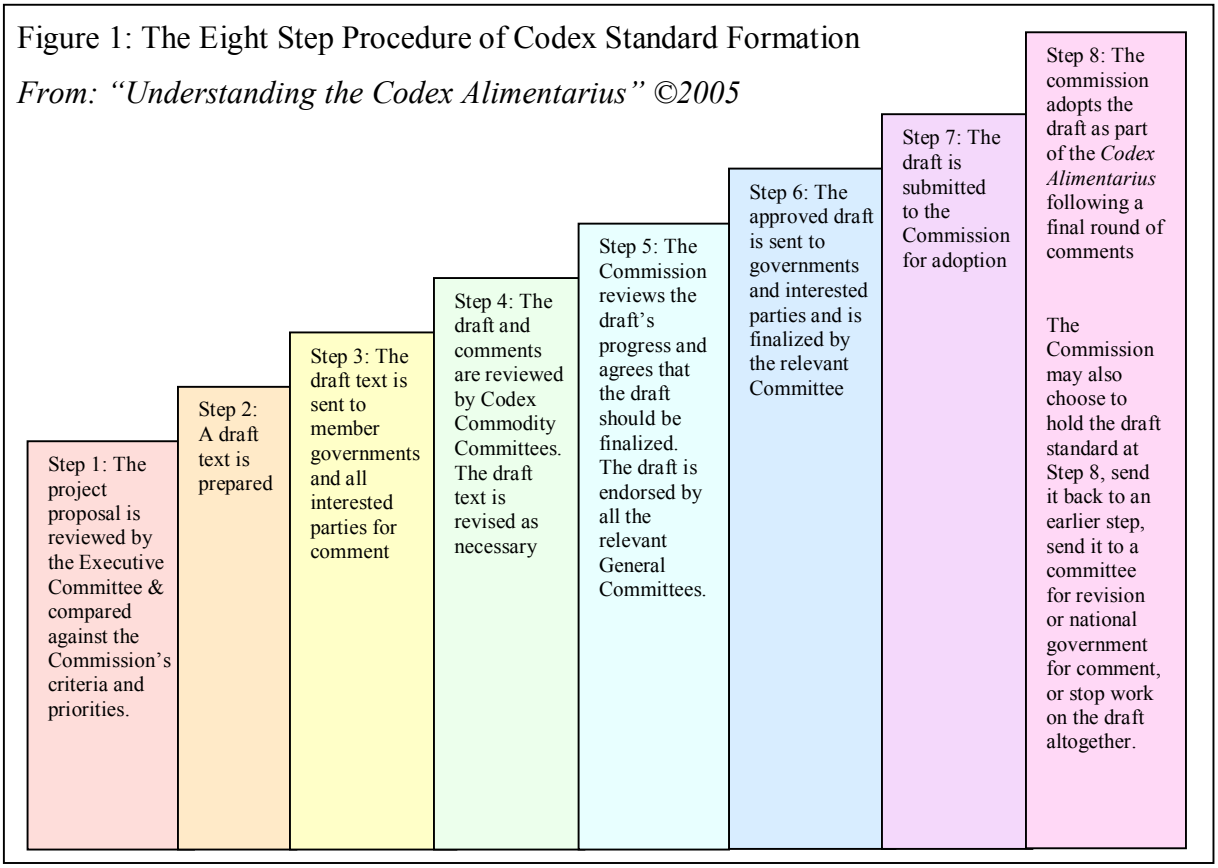
The open and transparent procedures for establishing and revising standards are defined by the Commission's *Procedural Manual* and summarized in *Understanding the Codex Alimentarius Commission.* First, a proposal for a standard is developed either by a national government or a subsidiary committee of the Codex Commission. The Executive Committee approves the proposal and, using the "Formal Criteria for the Establishment of Work Priorities and for the Establishment of Subsidiary Bodies," either selects or creates a committee to be responsible for the standard's development. The committee prepares a draft standard that is then circulated to member-state governments for review and comments. Comments are considered by the committee before the draft standard is sent to the full Commission. If the Commission adopts the draft standard, it is sent to the governments a number of times in an eight step procedure which, if completed satisfactorily, results in the draft becoming a Codex standard (see Figure 1).

[18] See Appendix F for a list of the 13 Volumes in the *Codex Alimentarius.*

In an accelerated procedure, the number of steps required for the development of a standard varies from a maximum of eight to a minimum of five. In some circumstances, steps may be repeated.[19] Most standards take a number of years to develop. Once adopted by the Commission, a Codex standard is added to the *Codex Alimentarius.*

Figure 1: The Eight Step Procedure of Codex Standard Formation

From: "Understanding the Codex Alimentarius" ©2005



The *General Principles of the Codex Alimentarius* includes the "Format for Codex Commodity Standards and their Content." Each commodity standard must include commodity's description, quality factors, essential composition, food additives, likely contaminants, hygiene practices, weights and measures, labeling requirements, and methods of analysis and sampling. In addition to commodity standards, the *Codex Alimentarius* contains general standards for food labeling, food additives, contaminants, methods of analysis and sampling, food hygiene, nutrition

[19] In many circumstances, as seen in Chapter 3, standards may be held at a step for an undetermined amount of time.

and food for special dietary uses, food import and export certification systems, residues of veterinary drugs in foods, and pesticide residues in foods.

Membership and Participation in the Codex Alimentarius Commission

Article 2 of the *Statutes of the Codex Alimentarius Commission* defines eligibility for membership in the Codex as open to all Member Nations and Associate Members of the FAO and WHO. The Codex Commission had 45 member states when it was created in 1962. Membership now includes 171 countries.[20,21]

The Codex Commission meets every two years at either the FAO headquarters in Rome or the WHO headquarters in Geneva to discuss international issues and set international standards and guidelines. National delegations, led by governmentally appointed officials and often including food industry, consumer, and academic advisors, represent member states in Commission and committee meetings. Non-member states and international NGOs may attend Codex meetings as observers in order to secure "expert information, advice and assistance…and to enable organizations which represent important sections of public opinion and are authorities in their fields of professional and technical competence to express the views of their members and to play an appropriate role in [policy formation]" (*Principles Concerning the Participation of International Non-Governmental Organizations in the Work of the Codex Alimentarius Commission* 2005). To be eligible for observer status, NGOs must have an official relationship with either the FAO or the WHO, be international in scope, be concerned with matters relative to the Commission, have a permanent directing body that is democratically responsive to its membership, and have been established for more than three years.

[20] Many sources declare that the Codex represents more than 97% of the world's population. This is a misleading statistic. It is true that the cumulative populations of Codex member states total more than 97% of the world's population. However, because the Codex Commission is comprised of representatives from member states, it ultimately represents states rather than individuals. J. R. Lupien, former Secretary to the FAO/WHO Codex Alimentarius Commission, emphasizes this, saying that "members of the Codex are governments and participate in Codex activities representing their national interests" (Lupien 2000). Moreover, the research and discussion facilitated by the Codex Commission and the development of the *Codex Alimentarius* benefit citizens of non-member states.

[21] The European Community is considered a member of the Codex Commission. The EC and its member states attempt to present joint comments to the Codex Commission.

Developing countries have the potential to be the "weak link" in the global food trade. Because they tend to be major agricultural producers and exporters, developing countries must be able to guarantee safe producing, handling, packaging, and shipping practices in developing countries. The Codex Commission is dedicated to helping "developing countries and those with economies in transition to enhance their level of effective participation in the development of global food safety and quality standards by the Codex Alimentarius Commission" (*Codex Trust Fund* 2005). To facilitate this goal Codex member states launched the Codex Trust Fund on February 14, 2003. With a $40 million budget amortized over 12 years, the Trust Fund finances training sessions in developing countries, participant attendance at Codex meetings, the establishment and strengthening of national food control systems, the fortification of food inspection facilities and manuals, and the synthesis of information for Codex consideration.

States are eligible for Trust Fund assistance on the basis of three official classification systems: the UN list of Least Developed Countries, the World Bank classification of economies, and the Human Development Index. Since its institution, the Trust Fund has funded the initiation of two training courses and has made it possible for over 300 participants from more than 90 countries to attend Codex meetings.

Subsidiary Bodies of the Codex Alimentarius Commission

As is generally true of governing bodies, most of the Codex Commission's work is done in committee. According to its *Rules of Procedure* the Codex Commission has the power to establish five kinds of subsidiary bodies: the Executive Committee, General Subject Committees, Commodity Committees, Regional Coordinating Committees, and *ad hoc* Intergovernmental Task Forces.[22]

The Executive Committee of the Codex Commission acts as the executive body of the Commission. Its membership consists of the Chair and Vice-Chair of the Commission and seven members from the following geographical regions: Europe, Asia, Africa, Latin America and the Caribbean, the Near East, North America, and the Southwest Pacific. Although it reviews the annual budget and acts as the intermediary among the Commission, the FAO, and the WHO, the

[22] See Appendix C for a diagram of the Codex Commission's structure and subsidiary bodies.

Executive Committee's primary function is to review proposals for standard formation or revision. For this purpose, the Executive Committee may create sub-committees among its members.

The Commission's nine General Committees[23] address topics applicable to all commodity standards. General committees participate actively in risk management and risk assessment and advise Commodity Committees at specific steps throughout the standard formation and revision processes. Their work is included in Volumes 1-4 and 13 of the *Codex Alimentarius.*

The Commission's sixteen Commodity Committees[24] develop and revise standards for specific categories of foods. They are established, convened, and abolished at the discretion of the Commission. Their work comprises Volumes 5-12 of the *Codex Alimentarius.* National delegations may request to serve on a Commodity Committee or may be appointed to do so by the Codex Commission. Commodity Committees operate on the principles of risk assessment, management, and communication.

Delegations from member states in Africa, Asia, Europe, Latin America and the Caribbean, the Near East, and North America and the Southwest Pacific form Regional Coordinating Committees and send representatives to the Executive Committee of the Codex Commission. These Regional Coordinating Committees ensure that the work of the Codex Commission is responsive to regional interests, discuss regional food safety issues, draft regional standards, establish regional procedural frameworks, and work to ensure harmonization among national governments and Codex standards. Regional Coordinating Committees, funded by the Codex Trust Fund, additionally provide training and technical assistance designed to expand Codex activities in developing countries.

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[23] Committee on General Principles, Committee on Food Labeling, Committee on Methods of Analysis and Sampling, Committee on Food Hygiene, Committee on Pesticide Residues, Committee on Food Additives and Contaminants, Committee on Import/Export Inspection and Certification Systems, Committee on Nutrition and Foods for Special Dietary Uses, and Committee on Residues of Veterinary Drugs in Foods.

[24] Committee on Fats and Oils, Committee on Fish and Fishery Products, Committee on Milk and Milk Products, Committee on Fresh Fruits and Vegetables, Committee on Cocoa Products and Chocolate, Committee on Sugars, Committee on Processes Fruits and Vegetables, Committee on Vegetable Proteins, Committee on Cereals, Pulses and Legumes, Committee on Processes Meat and Poultry Products, Committee on Soups and Broths, Committee on Meat Hygiene, and Committee on Natural Mineral Waters.

Ad hoc Intergovernmental Task Forces are established to accomplish specific tasks outside of the purview of existing committees. They generally address emerging risks are abolished once the Committee determines that those tasks have been accomplished. Adjourned Task Forces can be reconvened as necessary. Task Forces can become Codex committees to address long-term risks associated with long-term issues.

Increasing Importance of the Codex Alimentarius Commission

Considered a technical organization, the work of the Codex went relatively unnoticed in the international community until the establishment of the World Trade Organization (WTO) in 1995. "The WTO specifically refers to Codex standards in its Sanitary and Phytosanitary Agreement (SPS), relying on Codex standards as benchmarks in resolving disputes among countries. The WTO also specifically encourages countries to adopt Codex standards" (Post 2005, 9). This affiliation has prompted increased attention to and participation in the Codex Commission and, moreover, has altered the processes by which Codex standards are formulated and implemented. It has also increased instances of dispute in the WTO's dispute settlement board. To understand the impacts and implications of post-1995 linkages between the Codex Commission and the WTO one must first understand the structures, functions, and procedures of the WTO as well as its approach to risk in its dispute settlement procedures.

CHAPTER 2:

THE HISTORY, STRUCTURES, AND FUNCTIONS OF THE WORLD TRADE ORGANIZATION

Introduction

The Codex Commission develops and establishes standards grounded in risk assessment, management, and communication. As Chapter 3 will demonstrate, this approach to the risks associated with international food production, consumption, and trade across the Commission's subsidiary bodies affects the Codex standard formation process, making it dependent upon scientific consensus and limiting the scope of the Commission's activities. The problem is that a number of food safety issues are the subject of both political and scientific debate. These debates frequently require multilateral adjudication and invoke the World Trade Organization's dispute settlement procedures. To adequately respond to member-state demands for dispute settlement, the WTO must also assess the risks associated with the international food trade but lacks a single, cohesive approach. Maneuvering between applications of risk management and the precautionary principle, the WTO approaches risk in different ways depending on its multilateral agreements, issues, and settlements. Therefore, the WTO serves as a forum for national governments that want to use the precautionary principle to establish food safety standards that are higher than those recommended by the Codex Commission. Its food safety dispute settlement activities, grounded in the Technical Barriers to Trade Agreement and the Agreement on the Application of Sanitary and Phytosanitary Measures, impact national food safety policies as much as Codex standards.

The objective of this chapter is to explore the structures and functions of the WTO relative to issues of food safety and international trade. It establishes a framework for the exploration of the impacts and implications of post-1995 linkages between the Codex Commission and the WTO found in Chapter 3 and the food trade case studies found in Chapter 4. By emphasizing the relevant history of the WTO, the dispute resolution processes and the SPS and TBT trade agreements that incorporated Codex standards, regulations, and codes of practice into the WTO's multilateral framework, this chapter begins to explore the ramifications of the post-1995 affiliation between the Codex and the WTO.

Both Codex Commission standards and WTO dispute settlements harmonize national food safety policies. An analysis that focused solely on the SPS and TBT agreements would demonstrate that the Codex and the WTO worked congruently to establish a single set of food safety policies. However, expanding the analysis to include the dynamics of Codex standard elaboration and the results of WTO dispute settlement reveals institutional tensions, particularly over scientifically or politically controversial issues. Chapters 3 and 4 will demonstrate that the post-1995 Codex, facing an absence of political and scientific consensus, cannot necessarily provide the guidance necessary for WTO dispute settlements. At the same time, WTO dispute settlement panels are compelled to address food safety issues by applying normative principles that do not necessarily favor risk assessment over precautionary principles. These tensions become apparent, however, only against the informational background of the structures and procedures of the WTO.

The History of the General Agreement on Tariffs and Trade (GATT)

Throughout the early 1900's Europe expanded the *Codex Alimentarius Austriacus* to create the *Codex Alimentarius Europaeus*. Although these steps toward food standard harmonization began as a response to *increasing* and expanding international trade, they coincided with economic disasters that can be attributed to a global increase in tariffs and a subsequent *decrease* in international trade.[25] Interwar protectionism launched a tariff war at a time when free and open markets were essential to economic recovery. This fostered distrust among states, impeded international cooperation, and, eventually, precipitated the outbreak of World War II.

In 1944, the United States initiated the development of the Bretton Woods System. Dedicated to creating an open world economy with unhindered access to functioning competitive international markets, the Bretton Woods Agreement "established a multilateral system of rules, procedures, and institutions to regulate the dynamics of trade, finance, and development" (Weisband 2005). The Bretton Woods System consisted of three institutions: the International

[25] Global trade declined by 66% from 1929-1934 (Weisband Lecture 16 2005).

Monetary Fund (IMF), the International Bank for Reconstruction and Development (IBRD),[26] and the General Agreement on Tariffs and Trade (GATT).

The GATT went into effect in 1947 as "a United Nations affiliated international agency to work with its member countries to develop and have governments enter into reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade and to the elimination of discriminatory treatment in international commerce" (Lupien 2002, 407).[27] By the late 1970s GATT negotiations had reduced global tariff barriers to trade; however, many tariffs were replaced with non-tariff barriers (NTBs) to trade. With respect to the international food trade, these non-tariff barriers included import substitution policies, domestic agricultural price supports, and bans on food imports justified by consumer safety concerns. Although the Tokyo Round of the GATT began to multilaterally reduce NTBs, the voluntary and non-binding nature of the GATT impeded progress. By the end of the Uruguay Round of the GATT in 1994, its members acknowledged that governance in international open trade required a new approach with a broader mandate. The Uruguay Round ended with the establishment of the WTO, an institution that requires its members to negotiate binding tariff and NTB reductions in agriculture, mining, manufacturing, services, technology, and research sectors.

The Functions and Normative Principles of the WTO

The WTO's primary function is to "ensure that trade flows as smoothly, predictably, and freely as possible" (WTO 2005). To do so, it functions as a barter market in which decisions are institutionally negotiated based on the consensus of member states.[28] Most importantly, the WTO operates on the basis of normative principles that serve to establish expectations of future behavior and promote trust, thereby minimizing the risk inherent in economic exchange. Three of those principles are directly related to food safety trade policies and dispute settlements: nondiscrimination, binding and enforceable commitments, and safety valves.

[26] Now the World Bank (WB).
[27] As its name suggests, the GATT focused on reducing tariffs. NTB reductions were initiated in the Tokyo Round of the GATT and expanded with the establishment of the WTO in 1995.
[28] Like the Codex Commission, the WTO represents states rather than individuals. Member states negotiate agreements and balance trade and economic priorities in ways that are nationally advantageous.

WTO nondiscrimination has two components: the most-favored nations (MFN) rule and the national treatment principle. The MFN rule requires "that a product made in one member country be treated no less favorably than a 'like' (very similar) good that originates in any other country," thus universalizing bilateral tariff and NTB reductions (Hoekman, et. al. 2002, 42). This rule guarantees that food exports are treated similarly by all WTO member states regardless of their nation of origin. Similarly, national treatment requires "that foreign goods, once they have satisfied whatever border measures are applied, be treated no less favorably, in terms of internal (indirect) taxation than like or directly competitive domestically produced goods" (Hoekman, et. al. 2002, 42). National treatment, in particular, has played a key role in WTO dispute resolutions regarding the international food trade. Foods of foreign origin that are similar in composition, production, or packaging to those of national origin cannot be subject to discriminatory trade practices. The Dispute Settlement Board has applied this principle to cases regarding the use of animal growth hormones and is expected to apply it to cases regarding bans on Genetically Modified Foods.[29]

The WTO differs from the GATT in that its agreements are binding and enforceable. If a state perceives that actions taken by another state have violated WTO trade agreements, it may invoke WTO dispute settlement procedures.[30] States found to be acting against WTO mandates can face retaliatory measures by all WTO members. This raises the costs and risks of breaking WTO commitments. The dispute resolution process is important for two reasons beyond the obvious benefit of binding multilateral enforcement. First, it "preclude[s] the use of unilateral retaliation" (Hoekman, et. al. 2002, 43). Second, it enhances the power of small WTO member states by reducing the likelihood of being "confronted with bilateral pressure from large trading powers to change policies that are not to their liking" (Hoekman, et. al. 2002, 43). The SPS and TBT agreements, examined later in this chapter, require that WTO dispute resolutions involving issues of food safety use Codex standards, guidelines, and codes of practice to determine whether or not national food safety policies constitute non-tariff barriers to trade or legitimate consumer protection policies. High profile food safety cases have dominated the DSB's agenda since its establishment and have focused on the risk associated with the use of animal growth hormones,

[29] Chapter 4 examines these cases and the DSB's application of national treatment.
[30] Detailed later in this chapter.

Genetically Modified Foods (GMFs), pesticides, and veterinary drugs.[31] These cases provide practical examples of the post-1995 dynamics of and between the Codex Commission and the WTO relative to issues of food safety and trade.

Finally, the WTO acknowledges that national governments should be able to restrict trade in specific economic circumstances. It has therefore established what it calls "safety valves" so that governments can:

a) use trade measures to reach non-economic goals,

b) ensure fair competition,[32] and

c) permit intervention in trade for economic reasons[33] (Hoekman, et. al. 2002, 44).

Category (a) is most relevant to trade disputes over food safety. According to this principle governments can protect public health and national security as well as domestic industries that are seriously injured by international competition without violating WTO commitments. WTO member states have used this provision to justify trade barriers against Genetically Modified Organisms, American beef, and other food products. WTO dispute settlement panels must determine whether national regulations are, in fact, necessary to protect consumer health or if they constitute illegal non-tariff barriers to trade. Historically, dispute settlement panels have taken the latter position over the former. Most recently, a WTO dispute settlement panel ruled that the European Union could not block the importation of Genetically Modified Foods in the name of consumer protection.

These normative principles establish a legitimate multilateral framework for trade negotiations and dispute settlement. The national treatment principle and WTO safety valves enable dispute settlement panels to evaluate national food safety policies that exceed Codex recommended standards, guidelines, or codes of practice. The SPS and TBT agreements place the burden of scientific proof upon governments that choose to exceed Codex standards. Dispute settlement panels must coordinate scientific research, Codex standards, and national policy justifications against the backdrop of these normative principles to determine if higher than recommended food safety standard constitute illegal non-tariff barriers to trade.

[31] Several such cases are analyzed in Chapter 4.
[32] Under category, (b) governments can counteract the effects of dumping and subsidies.
[33] Under category, (c) governments can react to severe economic crises as well as support new industries, particularly those up the scale of value addedness.

Membership in the WTO

There are currently 150 members of the WTO.[34,35] There are also 31 non-member states that have WTO observer status and that are currently negotiating member status. Finally, there are 15 states and 2 territories that have no official relationship with the WTO.

The international food trade has expanded exponentially since the advent of refrigerated transportation technologies in the early 1900's. States gain from international trade but face the risks associated with interdependence. Food production, trade, and consumption create risks both for consumers and for states. Aside from access to open international markets, one of the primary benefits of WTO membership is access to binding dispute resolution procedures.

Institutionalized dispute settlement procedures establish the patterns of predictable behavior and norms necessary to mitigate the risks associated with the international food trade. As Chapter 3 will demonstrate, the post-1995 Codex Commission develops standards that represent risk assessments grounded in scientific consensus. In the absence of scientific consensus, the Commission becomes deadlocked and enables its member state governments to establish what they consider to be appropriate levels of consumer protection. Those levels often vary, and strict food safety standards have often been characterized as non-tariff barriers to trade. The WTO has settled numerous disputes among member states with regard to the appropriate level of consumer protection in the international food trade. In doing so, the WTO, like the Codex Commission, analyzes available scientific research, evaluates national food safety standards relative to international trade, and harmonizes food safety policies across its member states.

The WTO Dispute Settlement Process and Dispute Settlement Board

Because WTO dispute resolutions evaluate international food safety policies based on Codex standards, a complete analysis of international food safety and the post-1995 linkages between the Codex Commission and the WTO requires an understanding of the WTO's dispute settlement process. The Dispute Settlement Understanding, which was established the Uruguay

[34] The 25 members of the European Union are represented individually and collectively as the European Communities.
[35] The latest member of the WTO is the Kingdom of Tonga, which joined on December 15, 2005 at the Hong Kong Ministerial Conference.

Round of the GATT, is the WTO's enforcement mechanism. Disputes occur when one or more WTO member states perceive that another member state is violating WTO commitments. The multilateral system of dispute resolution prevents unilateral action by trading partners and depends upon the willingness of member states to submit to the judgments of the WTO Dispute Settlement Board (DSB) and its Appellate Body. Disputes may take up to one year and three months to complete.[36]

Disputes are first heard by the DSB, which includes all WTO member states. "A member must first request bilateral consultations if it considers that a benefit accruing to it directly or indirectly under the WTO is being nullified or impaired [because of the actions of another member state]. Most WTO disputes are settled through consultations. If consultations fail, the complaining party may request the establishment of a panel, which must be created unless the DSB decides by consensus not to do so" (Hoekman et. al. 2002, 71). Each panel includes three to five experts, who cannot be affiliated with either party in the dispute, who will hear and settle the dispute. Over the course of several months both sides present arguments and evidence to the panel. If necessary, the panel can consult scientific experts. Before compiling its findings and conclusions, the panel provides a written draft of the factual arguments to both sides for comment. The panel then submits its findings and conclusions to both sides for review. Both sides then receive the panel's final report which determines whether the disputed trade measure violates WTO agreements. If so, the report includes recommendations for harmonizing the trade policy in question with the WTO's rules and agreements. This final report becomes a DSB ruling unless it is rejected by a consensus of all WTO members within 60 days. Both sides can appeal the ruling but only on points of legal interpretation; the parties cannot introduce new evidence or examine new issues.[37] Appeals are heard by three members of the seven-member Appellate Body. The appeal can uphold, modify, or reverse the panel's original findings. The DSB must then either accept or reject the appeal; rejection requires the consensus of all WTO members.

[36] Each step in the dispute resolution process is limited to a specific time frame. A panel ruling may take up to one year to complete and an appeal may last up to three months. This time system was instituted to ensure that disputes were handled quickly and could not be postponed or drawn out for political reasons.

[37] The DSB appeals process is similar to that of the US federal court system. Appeals cannot introduce new evidence and must instead focus on points of legal interpretation within the decision itself.

Members found to be in violation of WTO rules are given 30 days from the report's adoption to provide the DSB with a plan to align its policies with the panel's recommendations. If the necessary changes are not made within the timeframe established by the DSB, the WTO may levy trade retaliations against the offending state. Retaliatory measures are designed to do one of two things: either to force the offending state to align its policies with the requirements of the dispute settlement through sanctions or to compensate disadvantaged industries for the negative effects of protectionist policies. In most cases, retaliatory measures are not necessary; states found to be violating WTO agreements willingly align their national policies with the terms of the dispute settlement. In some cases, including the dispute settlement between the United States and the European Union regarding the EU's ban on US beef, the offending state voluntarily compensates its trade partners in order to maintain illegal trade barriers. However, some dispute settlements do require that trade partners levy sanctions on governments that refuse to honor WTO commitments. Sanctions typically affect the disputed economic sector. If those retaliatory measures do not force offending governments to revise their trade policies, sanctions can be extended to economic sectors under the same WTO agreement (the Agreement on Agriculture, the GATS, the TRIPS, etc.). If the member state continues to violate the rules of the WTO, sanctions can be extended to unrelated economic sectors.[38]

The History of the WTO Relative to Food Safety

Food safety issues were addressed at the Third Ministerial Conference in Seattle, Washington in 1999. Overall, the Seattle Conference's negotiations were unsuccessful and

[38] There are few examples of dispute settlements that have required multiple levels of retaliatory sanctions. A recent US-EU trade conflict escalated through the levels of trade sanctions. A 2003 decision by a WTO dispute settlement panel "authorized the EU to take 'appropriate countermeasures' by imposing $4 billion in US import duties" in response to export subsidies created by the Foreign Sales Corporation Law and the Extra Territorial Income Act (Lyne 2004). The EU postponed levying sanctions after the DSB ruling to give the United States time to comply with the panel's ruling. When the US Congress failed to enact reforms, the European Union passed countermeasures, first in economic sectors enhanced by the Foreign Sales Corporation Law and the Extra Territorial Income Act and later in unrelated sectors. These retaliatory measures put economic pressure on multiple sectors of the US economy and "Washington…repealed the FSC law [claiming that] it has fallen into line with previous WTO rulings" (AP 2006). However, in February 2006 the WTO appeal "upheld that transitional provisions under the 2004 American Jobs Creation Act were still against the commerce body's rules because they allow tax exemptions to continue for a transition period through the end of this year and potentially longer" (AP February 13, 2006). The EU has announced its intention to reinstate trade sanctions in two months unless the United States brings its policies into complete compliance with WTO commitments.

overshadowed by massive anti-globalization protests. One of the only accomplishments of the Seattle Conference was the organization of a seminar on *Science and Precaution in the Trading System* (Ward 1999, 1). This seminar explored the meaning of precautionary principles and risk assessment in international trade. Seminar attendees characterized the United States's risk management approach as an institutionalized tool of "political" and "scientific" governance but identified the European Union's precautionary approach as more of an academic exercise, thus indicating their preference for risk management procedures over the application of precautionary principles in WTO dispute settlements (Ward 1999, 3). Moreover, the seminar concluded with a key question: "to what extent [should] the WTO rules and dispute settlement take the precautionary principle into account on the basis that it has become a general principle of international law?" (Ward 1999, 5). Although it did not determine the extent to which the precautionary principle would be applied to dispute settlements, the Seattle Conference nonetheless represents the WTO's first attempt to incorporate precaution into its approach to minimize trade related risks relative to food safety in general and the use of pesticides and animal growth hormones specifically.

The Fourth Ministerial Conference met in Doha, Qatar in 2001. In addition to its work on the Doha Development Agenda, the Doha Conference reaffirmed the rights of member governments to set levels of food safety necessary to protect consumer health, thus providing for the consideration of the precautionary principle in the WTO dispute settlement process. Rather than develop a single mandate for the use of the precautionary principle, however, WTO members chose to leave that decision to the discretion of the dispute settlement panels on a case-by-case basis.

The WTO and the Codex Commission: The SPS and TBT Agreements

Before the establishment of the WTO, national governments, concerned that imported food could jeopardize the health of their consumers, introduced "mandatory laws and regulations to eliminate or minimize [food] threats" (FAO/WHO 2005, 30). These measures constituted, by practice or design, discriminatory non-tariff barriers to trade. To eliminate these NTBs two GATT agreements, the Agreement on the Application Sanitary and Phytosanitary Measures

(SPS) and the Agreement on Technical Barriers to Trade (TBT), incorporated the work of the Codex Alimentarius Commission into the framework of the GATT and, later, the WTO.

The SPS agreement acknowledges that governments have the right to take sanitary and phytosanitary measures necessary:

- To protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment, or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;
- To protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins, or disease-carrying organisms in food, beverages, or feedstuffs;
- To protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plant or products thereof, or from the entry, establishment, or spread of pests; or
- To prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests (SPS Agreement, Annex A).

The SPS provides that "to harmonize sanitary and phytosanitary measures on as wide a basis as possible, [states] shall base [or benchmark] their sanitary and phytosanitary measures on international standards, guidelines or recommendations," specifically those provided within the *Codex Alimentarius* (Dawson 1995, 263). In addition, members may "introduce or maintain sanitary or phytosanitary measures which result in a higher level of sanitary or phytosanitary protection than would be achieved by measures based on the relevant international standards, guidelines, or recommendations, if there is a *scientific justification*" (SPS Agreement, Article 3, emphasis mine). This provision enables member state governments to set higher than recommended standards in accordance with the precautionary principle in cases where there is insufficient or contradictory scientific evidence, although it does require that those governments defend their policies against accusations that they constitute non-tariff barriers to trade. Moreover, should the available scientific evidence be insufficient, WTO members may "provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information" and "seek to obtain the additional information necessary for a more objective

assessment of risk and review the sanitary and phytosanitary measure accordingly within a reasonable period of time" (SPS Agreement, Article 5). This provision allows member state governments to implement temporary precautionary measures while conducting risk assessments provided that those measures eventually be aligned with the conclusions of the risk analysis. Finally, WTO members are required to "play a full part, within the limits of their resources, in…the Codex Alimentarius Commission…to promote within these organizations the development and periodic review of standards, guidelines and recommendations with respect to all aspects of sanitary and phytosanitary measures" (SPS Agreement, Article 3). This condition was designed to promote participation in the Codex standard elaboration processes in order to establish universal food safety standards and avoid the need for WTO dispute settlement.

The TBT agreement "seeks to ensure that technical regulations and standards, including packaging, marking and labeling requirements, and analytical procedures for assessing conformity with technical regulations and standards do not create unnecessary obstacles to trade" (FAO/WHO 2005, 31). The TBT agreement includes provisions for technical barriers to trade to protect against poor food handling practices, microbiological contamination, environmental contamination, and deceptive nutritional or compositional labeling provided that the barriers use Codex standards, guidelines, and recommendations as their benchmark. Relevant Codex standards include those in the areas of food hygiene, microbiological contamination, food additives, environmental contaminants, pesticide and veterinary drug residues, food labeling and nutritional claims, inspections and certification systems, methods of analysis and sampling, and commodity standards. The TBT agreement has been important historically in dispute resolution cases over government use of higher than Codex recommended standards for genetically modified foods, bovine growth hormones, pesticides, and veterinary drugs, all of which can be characterized as non-tariff technical barriers to trade.

The World Trade Organization's Approach to Risk

The WTO lacks a cohesive, consistent, and continuous approach to risk in that it has addressed economic risk in different ways relative to different issues across its institutional

history.[39] Traditionally, WTO Dispute Settlement Panels and Appellate Panels have ruled against NTB barriers grounded in precautionary principles. The best known example of this adherence to risk management is the WTO's ruling against the European Commission's ban on US and Canadian beef from hormone-treated cattle. In this case the Dispute Resolution Panel ruled that "the precautionary principle is not an established rule or principle of law and that it is not an acceptable basis for actions that are supposed to be based on scientific risk assessment" (Goldstein and Carruth 2004, 493). This ruling, however, was not as fatal a blow to the concept of a precautionary approach as it has been made to appear. In fact, the panel's ruling was that "the carcinogenic risk from banned hormone-treated beef was no greater than carcinogenic risk from the EC's homegrown antibiotic-treated pork, which was not banned" (Goldstein and Carruth 2004, 493). It was this inconsistency, and not the concept of precaution itself, that invalidated the EC's claim to precautionary protection under provisions of the SPS Agreement, because it indicated that the EC's ban was not an attempt to protect consumer health but rather to protect domestic agricultural interests. Because the EC banned imported meat products that contained animal growth hormones even though allowed for the production and distribution of similarly domestic meats, it violated the WTO's nondiscrimination principle. Therefore, the precautionary principle could be invoked in food safety disputes as a justification for consumer protection standards but not as a disguise for protectionist policies.

Although the WTO has not ruled in favor of a precautionary approach in a case related to food safety, it has done so with respect to other issues. For example, in 2001 a WTO Appellate Panel considering an EC ban on Canadian-made asbestos ruled that health risks could be considered when determining if products were "like" under the Article III:4 of the GATT. The panel went further, ruling that risk must be examined, not only in terms of a product's physical properties, but also in terms of consumer perception and behavior. This decision by the Appellate Panel, which went beyond the scope of the decision in question, signals that the WTO is willing to consider the precautionary principle as part of an appropriate approach to risk assessment to justify non-tariff barriers to trade on the basis of consumer health. Moreover, it suggests that consumer perceptions may serve as justification for trade barriers even when those

[39] The consequences of these differing approaches serve as the analytical foundation for Chapters 3 and 4 and will be more fully explored and applied in those chapters.

perceptions are not grounded in scientific research. If applied to disputes regarding food safety issues, this decision would bring the WTO's approach to risk into a direct confrontation against the Codex Commission's dedication to risk management techniques.

Conclusion

Post-1995 associations between the WTO and the Codex Commission altered the dynamics of the Codex Commission. Chapters 3 and 4 analyze the impacts and implications of this relationship for the risks of international food production, distribution, consumption and trade. This analysis then serves as a foundation for a series of conclusions regarding the consequences of post-1995 linkages between the Codex Commission and the WTO for those institutions, national governments, and consumers on issues of food safety and international trade.

CHAPTER 3

THE IMPACTS AND IMPLICATIONS OF POST-1995 LINKAGES BETWEEN THE CODEX ALIMENTARIUS COMMISSION AND THE WORLD TRADE ORGANIZATION

Introduction:

The Technical Barriers to Trade Agreement and the Agreement on the Application of Sanitary and Phytosanitary Measures initially incorporated the work of the Codex Alimentarius Commission into the framework of the GATT. Because member states adhered to both Codex Commission standards and GATT trade agreements on a voluntary and non-binding basis,[40] this affiliation did little to alter the dynamics of international food diplomacy within the Codex Commission.

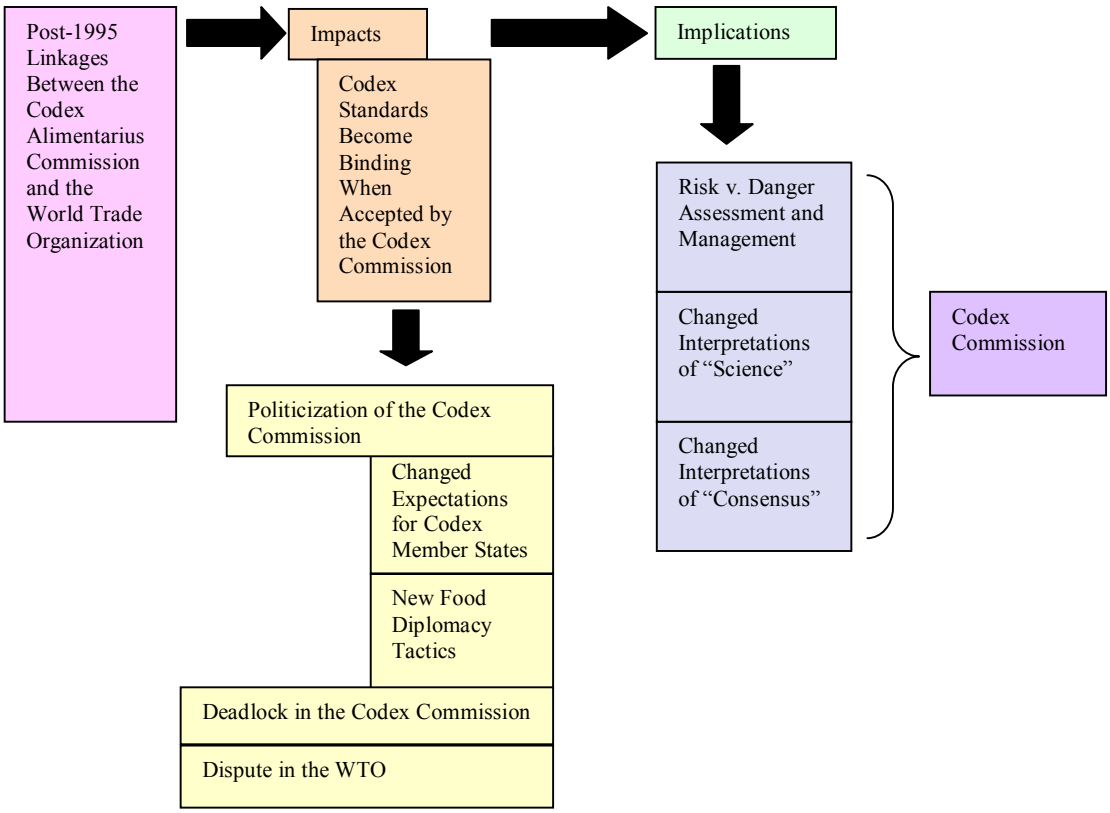
The Uruguay Round of the GATT ended with the establishment of the World Trade Organization as a multilateral institution dedicated to the reduction of tariff and non-tariff barriers to trade among member states and diversified economic sectors on a binding and enforceable basis. The WTO internalized the TBT and SPS Agreements, thus also incorporating Codex Commission standards, guidelines, and codes of practice into a binding multilateral framework as the "central reference point for the elaboration of international food standards" (Veggeland and Ole Borgen 2005, 675). This linkage between the Codex Commission and the WTO had broad impacts on and implications for the establishment of food safety standards and the practices of food diplomacy both within the Codex Commission and the WTO dispute settlement process.

This chapter examines three impacts of the post-1995 linkages between the Codex Commission and the WTO: first, linkages with the WTO have politicized the Codex Commission; second, the post-1995 Codex Commission has become characterized by deadlock; third, the WTO has faced high intensity food safety conflicts in its dispute settlement panels. These impacts have broad reaching implications, both for the institutions and for issues of food

[40] GATT agreements were non-binding because the GATT lacked an effective dispute settlement framework. Any GATT member could block the adoption of a dispute settlement panel report and invalidate its results (Victor 2000, 896).

safety, affecting changing approaches to risk, science, and consensus in the Codex Commission. Figure 2 graphically represents the information and connections analyzed in this chapter.

Figure 2: *The Impacts and Implications of Post 1995 Linkages Between the Codex Commission and the WTO*



Establishing the 1995 Linkage Between the Codex Commission and the WTO

The linkage between the Codex Commission and the WTO was more incidental than deliberate, and Codex documents from the early 1990's suggest that the Commission did not take into account the likely impacts and implications of the relationship. The TBT and SPS Agreements originally were part of the GATT. As detailed in Chapter 2, the TBT Agreement states that GATT member states should take into account relevant standards developed by international institutions when developing national food safety policies. The SPS Agreement is more explicit, citing the *Codex Alimentarius* as *the* reference point that GATT member states

should reference when formulating and executing national food safety statutes and standards. When both agreements were incorporated into the framework of the newly established World Trade Organization, they linked the Codex Commission to "a powerful legal instrument for regulating [the] global food trade" (Veggeland and Ole Borgen 2005, 676).

The relationship between the Codex Commission and the GATT began in the late 1980's. At its 18th Session in 1989, the Codex first debated relations with the GATT and its Committee on Technical Barriers to Trade. At that time the Commission "expressed its support concerning cooperative efforts with the GATT and noted that the mechanisms of this relationship were subject to further development" (Codex Alimentarius Commission 18th Session). However, the Codex Commission emphasized that the "flexibility of Codex standards should be maintained, unless changed by the Commission through the revision of acceptance procedures" (Codex Alimentarius Commission Session 18). In other words, the Commission wanted to guarantee that the relationship between the Codex Commission and the GATT would not prevent member states of either institution from deviating from Codex standards due to emergency situations, consumer preferences, or national consumer protection objectives (Committee on General Principles Session 9). Although it was possible to maintain this flexibility under the voluntary framework of the GATT, it is not possible under the framework of the WTO which makes Codex standards and guidelines legally binding and enforceable[41] (Victor 2000, 929).

In 1991 the 19th session of the Codex Commission revisited its relationship with the GATT and the development of the SPS Agreement under the auspices of the Uruguay Round. Although the SPS agreement recognized the right of countries to use higher standards when

[41] Codex procedures were designed initially to make standards non-binding in order to give national governments maximum control over adoption and implementation and to minimize conflict between member states. Therefore, standards were first approved by the Commission and then accepted by national governments on a voluntary basis. The General Principles of the Codex Alimentarius Commission dictated that standards would be included in the *Codex Alimentarius* after they had been accepted by "a sufficient number of states" (Codex Alimentarius Commission Session, 3rd Session). What number or proportion of Commission member states was necessary to constitute "a sufficient number" was not defined, and reports of subsequent session of the Commission document that different numbers were considered sufficient for different issues. In addition, national governments were permitted to accept Codex standards with [often unspecified] "deviations," which became, as noted by several Codex Members at the 4th Session of the Codex Committee on General Principles (1974), tantamount to non-acceptance. The WTO changed this process by conflating these two steps. *Codex Alimentarius* standards and guidelines now go into effect, for purposes of the SPS Agreement and the Dispute Settlement Panels, when they are adopted by the Codex Commission, thus eliminating the discretion of national governments in standard adoption and implementation.

scientifically justified, several members of the Codex Commission disagreed with its failure to allow for higher standards in light of consumer concerns. This disagreement remains to be resolved and currently stands at the forefront of several food safety disputes, particularly those regarding Genetically Modified Foods. Nonetheless, the Codex Commission continued to note "the importance of the GATT discussions [and] agreed to express its continued support for the objectives of the GATT negotiations in relation to sanitary and phytosanitary measures and on technical barriers to trade" throughout 1993 and 1994 (Codex Alimentarius Commission 20th Session).

The WTO was established in 1995. Until then, the Codex Commission approached the TBT and SPS agreements within the institutional context of the GATT. In doing so the Codex Commission acknowledged that it could have an institutional relationship with the GATT without altering its institutional practices, procedures, or structures. The establishment of the WTO altered the Codex Commission's approach to the TBT and SPS agreements. At its 21st session that year, the Codex Commission "noted that the new role for Codex standards and related texts…[may require that the Commission] accord more importance on the objective in the Statutes of ensuring fair practices in the food trade so that words, including quality and trade descriptions, if used in international trade, would have internationally consistent and clearly understood meanings" (Codex Alimentarius Commission 21st Session). Here the Commission recognized, for the first time on record, that it would have to alter its operations, specifically its use of language, to preserve its institutional integrity in light of its association with the WTO. David G. Victor best addresses both impacts of that institutional linkage by stating"

> …in the case of the GATT it was the GATT members themselves that made the shift from the weaker 1947 GATT framework to the integrated WTO system. They changed not only the organizational framework but also the stringency of the legal commitments and the power of the enforcement mechanism. In the case of the Codex, however, the change in the de facto legal status has arrived on its doorstep from the outside; internal Codex procedures are changing in response (Victor 2000, 931).

The Impacts of Post-1995 Linkages Between the Codex Commission and the WTO

The existing literature cites three primary impacts of the post-1995 linkage between the Codex Commission and the WTO. First, and most inclusively, the linkage has politicized the Codex Commission (Victor 2000). This politicization has constrained the activity of the Codex Commission, shaped the expectations of Codex members, and changed the behavior of governments participating in Codex activities due to " increased uncertainty with respect to how decisions in [the] Codex [Commission] may be binding for them under the WTO Agreements" (Veggeland and Ole Borgen 2005, 675). Second, post-1995 linkages have led to institutional deadlock in the Codex Commission, particularly with regard to politically charged and scientifically disputed issues of food safety and trade. Finally, these institutional linkages have led to disputes in the WTO regarding the extent to which national food safety standards constitute non-tariff barriers to trade.

The 1995 politicization of the Codex Commission altered the internal dynamics of the institution. Until 1995 the Codex Commission was described by the relevant literature as a "gentlemen's club," a classification that referred to three characteristics: the isolation of the Codex within the broader international legal community; the non-binding nature of Codex standards, guidelines, and codes of practice; and the lack of sanctions against member states that failed to implement Codex decisions. Because member states adhered to Codex standards on a voluntary basis, the dynamics of food diplomacy within the Commission were relatively restrained. For example, prior to 1995, "a Codex member might disagree with the profile and content of a standard and have no intention of adhering to it, but nevertheless would abstain from halting the process" of standard formation and incorporation into the *Codex Alimentarius* (Veggeland and Ole Borgen 2005, 683). This norm worked in favor of states that wanted to implement less stringent national food safety standards, including the United States, as well as those that desired more rigorous policies, particularly the European Union, but did not mean that Codex activities had no influence on national food safety policies. On the contrary, the Codex Commission served as a forum for technical and scientific discourse, worked closely with national and international expert bodies, and published standards that frequently served as national food safety policies. Similarly, this institutional culture did not preclude debates among

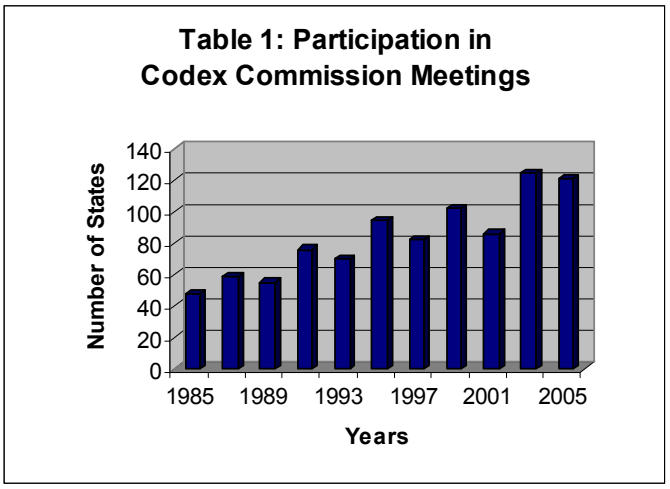
self-interested member states, particularly regarding the scientific data considered in the development of the *Codex Alimentarius*. It did, however, prevent the political and diplomatic deadlock now associated with the post-1995 Codex Commission.

Linkages with the WTO made Codex standards binding, not when accepted by national governments, but when incorporated into the *Codex Alimentarius* by the Codex Commission. This was institutionalized into the General Principles of the Codex Alimentarius in 2005 when language regarding the acceptance of Codex Commodity Standards by national governments was eliminated by the Commission (Codex Alimentarius Commission, 28th Session). The Codex Committee on General Principles reported in 2005 that this elimination was designed to prevent duplicate work by the Codex Commission and the World Trade Organization. Because transparency in the WTO requires that its member states publish their trade policies and justifications and because member states that defy the conditions of the SPS Agreement can face action under the dispute settlement procedures, the Codex Commission, beginning with its 21st session in 1995, saw its acceptance procedures as repetitive and unnecessary. This de facto acceptance of the WTO as the enforcement mechanism for national acceptance of Codex standards indicated that the Codex Commission has internalized the dynamics of the post-1995 world and demonstrates an additional impact of that linkage: the Codex Commission's relationship with the WTO has constrained the breadth and substance of its activity and its ability to address politically charged issues.

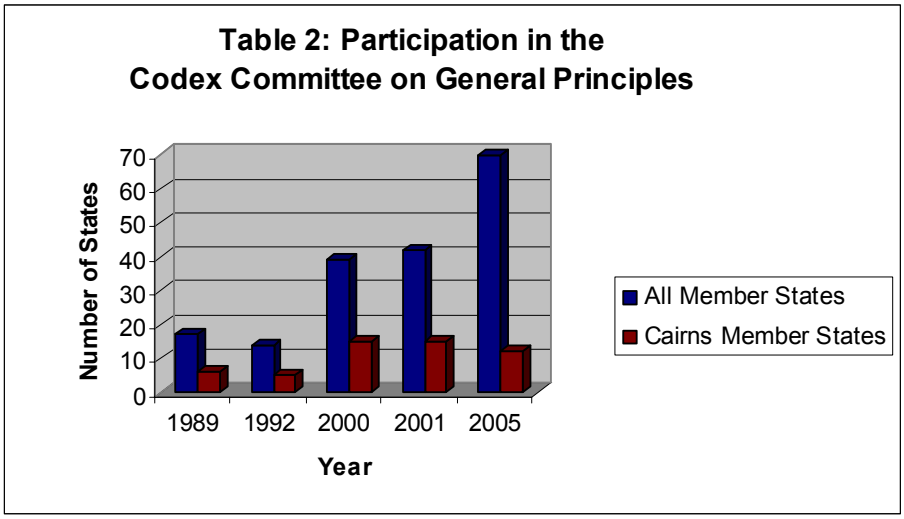
Prior to 1995 Codex member states expected that the *Codex Alimentarius* would guide national policy making processes on a voluntary basis. Linkages with the WTO altered the practices of enforcement for Codex standards and, in turn, the expectations of Codex members. Member states approach the post-1995 Codex Commission with the expectation that Codex standards, guidelines, and codes of practice will become national policies either through WTO agreements or dispute settlements. They have reacted by altering their food diplomacy tactics.

The most obvious and widespread reaction to the heightened importance of Codex standards has been expanded participation in the Codex deliberations in spite of the fact that member states must pay to attend Commission and Committee meetings. Table 1 shows

growing attendance at Codex Commission meetings from 1985 to 2005.[42][43] In addition, participation in the Codex Committee on General Principles, which defines the purpose and scope of the *Codex Alimentarius,* the nature of Codex standards, and the procedures of Codex standard acceptance by member governments, has increased dramatically since 1995. Table 2 shows that this trend both among Codex member states and among a subset of member states known as the Cairns Group.[44,45] The Cairns Group represents a coalition of primarily developing agricultural exporters. Its establishment during the Uruguay Round of the GATT for purposes of agricultural trade liberalization indicated an increased role for developing agricultural countries within the multilateral framework of the WTO. Its increased participation in the Codex Commission indicates that considerations stemming from the WTO are increasingly important in Codex deliberations, not only for developed countries, like the United States and the members of the European Union, but also for their counterparts in the developing world (Veggeland and Ole Borgen 2005, 687).



[42] Data are from official reports from the meetings of the Codex Commission from 1985-2003. These data were collected by Frode Veggeland and Sven Ole Borgen (2005) and by the author.
[43] Although the Codex Commission and the WTO became institutionally linked in 1995, negotiations between the Codex Commission and the General Agreement on Tariffs and Trade (GATT) began in the mid-1980s catalyzing increased participation in the Codex Commission. That participation increased more rapidly, however, after linkages with the WTO made Codex standard binding on WTO member states.
[44] There are fewer data represented in Table 2 due to limited documentation by the Codex Commission, particularly before 1999.
[45] Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Pakistan, Paraguay, Philippines, South Africa, Thailand, and Uruguay.



While increased participation in the Codex Commission and Committees represents one kind of member state reaction to the post-1995 linkages with the WTO, others fall more under the classification of food diplomacy. These tactics are used primarily to prevent Codex action on politically charged issues of food safety and international trade, which include, in order of increasing levels of political dispute, the establishment of acceptable levels of pesticide and veterinary drug residue in food products, nutritional guidelines, food labeling requirements, codes of practices for animal feeding, and the development, trade, and consumption of Genetically Modified Foods. These tactics contribute to deadlock in the Codex Commission and are often used by the United States to block proposals made by members of the European Union.[46]

National delegations frequently stall Codex proposals at key steps in the standard formation process to prevent their inclusion in the *Codex Alimentarius*. As outlined in Chapter 1, Codex proposals traverse a series of eight steps in order to become part of the *Codex Alimentarius*. Steps 3, 6, and 8 require comments from member governments and are the most

[46] Members of the European Union have been proactive members of the Codex Commission throughout its history and have historically fought for higher food safety and consumer protection standards. Prior to 1995 the United States did little to block these proposals since it could not be compelled to adopt them as national policy. With the establishment of the WTO and its system of binding dispute settlement, the United States began using various food diplomacy tactics to block the adoption of more rigorous food safety standards, especially those that are the subject of either political or scientific dispute. Chapter 4 will analyze these tactics and their implications for both the Codex standard formation process and the WTO dispute settlement process in four issues of food safety and international trade of differing levels of political and scientific dispute.

common holding points for politically charged and disputed standards. For example, the 26th and 27th sessions of the Codex Commission held a draft proposal for Minimum Residue Levels of Bovine Soimatropin at Step 8 because "no requests had been received [from member governments] to change the status of the standard." Similarly, the same session, "recognizing that there was no consensus on substantial issues, agreed to return the Draft Guidelines for Use of Nutritional and Health Claims to step 6 for further comments and consideration." These examples represent a trend in the Codex Commission: disputed proposals are simply stalemated in the formation process to prevent their inclusion in the *Codex Alimentarius* and their use by WTO dispute settlement panels.

Codex delegations also impede work on contentious issues by preventing the establishment of Codex Committees to deal with charged issues of food safety. Chapter 4 will demonstrate that this tactic has been used to forestall Codex work on the issue of Foods Derived from Modern Biotechnologies, more commonly known as Genetically Modified Foods. Moreover, Codex member states can work at the committee level to prevent action on food safety issues. For example, the United States delegation has employed this tactic to inhibit work on food labeling requirements, which US production, processing, and packaging industries oppose. These food diplomacy tactics constrain the activities of the Codex Commission to issues grounded in scientific and political consensus and have a very clear goal: to ensure that Codex standards represent the least necessary levels of consumer protection and food safety and thereby to shift the burden of proof in WTO dispute settlements to states choosing to invoke higher standards. Although this strategy maximizes the regulatory discretion of Codex member states, it has consequences for the World Trade Organization in terms of dispute resolution.

Since its establishment in 1995, the WTO has faced questions about the extent to which national consumer safety standards constitute non-tariff barriers to international trade and violate WTO open trade commitments. While forced to address this issue in multilateral negotiations, the WTO also has adjudicated numerous dispute settlements among member states in which one state accuses the other of illegally hindering international trade by means of consumer protection standards. Chapter 4 includes a series of case studies regarding these issues and dispute settlements, but this trend is important because it constitutes the final impact of post-1995

linkages between the WTO and the Codex Commission: increased conflict in WTO dispute settlement panels regarding the role of consumer protection standards for international trade.

The Implications of Post-1995 Linkages Between the Codex Commission and the WTO

Thus, there have been three primary impacts of post-1995 linkages between the Codex Commission and the WTO: politicization, deadlock, and dispute. These have implications both for institutions and for issues of international food trade over the interpretation of three concepts by the Codex Commission: risk, science, and consensus.

The SPS Agreement requires that food safety regulations be based upon relevant international standards, guidelines, and codes of practice, particularly those in the *Codex Alimentarius*, grounded in scientific risk assessment. This requirement had an immediate impact on the Codex Commission, because "before the conclusion of the SPS agreement the Codex Alimentarius Commission had adopted no principles or definitions related to the application of risk management and risk assessment"---scientific or otherwise (Victor 2000, 930). The Commission first recognized the need to develop universal procedures of risk assessment at its 19th session in 1991. At its 20th session the Commission heard from Hathaway, Consultant to the Secretariat, on the role of risk assessment, management, and communication in the standard formation process. Hathaway noted that JECFA and JMPR, the expert committees responsible for coordinating scientific research and providing scientific data to the Codex Commission, "were ideally suited to perform risk assessment" (Codex Commission, 20th Session) but communicated that Codex Committees needed universal risk assessment procedures. Hathaway recommended that "the Expert Committees…develop risk assessment frameworks for the scientific review process, and explicitly characterize uncertainty; risk management decisions currently made by the Expert Committees…be reassessed, and an interactive model for all risk assessment policy decisions be developed… [and that] the Codex Committees…adopt common risk analysis principles" (Codex Commission, 20th Session). Moreover, Hathaway emphasized "a strong need to promote the availability of formal quantitative exposure assessments as part of risk assessment" (Codex Commission, 20th Session). The 21st Session of the Codex Commission "directed Joint FAO/WHO Expert Consultation's report on *The Application of Risk Analysis to*

Food Standards Issues to the Committee on General Principles for incorporation into the Commission's procedural framework and sought comments from member governments on amendments proposed for the terms risk communication (to include explicit reference to consumers) and to risk analysis, risk assessment, (to include reference to severity of effects) and risk characterization (to include reference to probability)" (Codex Commission, 21st Session).

Codex delegations spent years debating appropriate methods of risk assessment. In 1999 the Commission decided that "relevant Codex Committees should continue to develop and to apply risk analysis principles and methodologies appropriate to their specific mandates within the framework of the Action Plan and report their progress to the Commission on a regular basis" and that national "governments [should] incorporate principles of risk analysis when establishing or updating national legislation on food safety matters" (Codex Commission, 23rd Session). Although this decision represented incremental progress toward a uniform approach to risk, it did not institutionalize standardized procedures of risk assessment and, to a large degree, transferred the responsibility for risk assessment to JECFA and JMPR and to national governments. The institutional deadlock that surrounded the issue of risk assessment is an implication of the 1995 politicization of the Codex Commission and demonstrates, as Hathaway communicated in an article that year, that "there is a considerable conflict between science-based and 'regulatory-political' risk management" (Hathaway 1999, 250).

This conflict can alternatively be considered in terms of the difference between "risk" and "danger" in international food safety and food diplomacy. Risk and danger are not equivalent concepts.[47] Risk indicates a level of uncertainty; the risks of an action, including the trade and consumption of foods, are not necessarily known in advance. Hathaway alluded to this in his presentation to the 20th session of the Codex Commission when he recommended that "countries develop a coherent risk communication strategy to inform and to educate consumers that food will always have some minimal level of risk." Danger, on the other hand, communicates a level of conviction that an action, such as the consumption of food contaminated by pesticide residues, will have specific detrimental consequences. Prior to 1995 and the transition of Codex standards from voluntary to binding, the Codex Commission could address

[47] I extend my thanks to Professor Edward Weisband (Virginia Tech) for his insight and development of this conceptual distinction during his PSCI 2064 lecture on Monday, February 6, 2006.

the risks of international food production and the international food trade. The Commission could respond to scientific concerns absent consensus or certainty in its standard formation process because final legislative authority remained in the hands of national governments. The dynamics of the Commission as a "gentlemen's club" allowed proactive member states, such as those in the European Union, to incorporate food safety standards into the *Codex Alimentarius* that acknowledged the inherent uncertainty in risk assessment. The relevant literature has identified that approach as the "precautionary principle": what is not known to be safe is assumed to be dangerous. As already demonstrated, the 1995 linkage between the Codex Commission and the World Trade Organization politicized the Codex Commission and altered both the expectations and the food diplomacy tactics of its member states. The Codex Commission has struggled to develop uniform practices of "risk assessment, management, and communication"[48] because it is no longer institutionally capable of addressing risk at all. Instead, this politicized body is limited to addressing the *dangers* of food production, consumption, and trade.

An assessment of the Codex Commission's ability to mitigate the dangers of food consumption and trade requires an analysis of the Codex Commission's approach to a second focal concept, "scientific" research processes and data outputs. Science "amounts to a *process*---institutionalized at leading universities, research facilities, and scientific [peer reviewed] journals worldwide---for systematically pursuing knowledge…[through] the testing and retesting of hypotheses to ensure that they withstand most withering scrutiny" (Mooney 2005, 14). Scientific methods of analysis and research yield data that may masquerade as objective truth but are, in fact, rarely undisputed. Very few findings, even those grounded in scientific research, enjoy international consensus.

Some findings enjoy more scientific consensus than others. That the consumption of pesticide and veterinary drug residues is dangerous to human health is relatively undisputed. Nevertheless, scientists continue to disagree about maximum safe exposure levels. Scientists tend to agree that bovine spongiform encephalopathy is a danger associated with animal feeding practices but disagree about the risks associated with the use of bovine growth hormones.

[48] The most recent of which are included in Appendix G.

Scientists, recognizing the risks of food allergies and intolerances, support food labeling requirements, though they disagree about the degree of specificity necessary to protect consumers with particular dietary and nutritional requirements. No issue of food safety invokes more scientific dispute than that of Genetically Modified Foods. Some scientists proclaim that GMFs will eliminate world hunger and malnutrition, while others characterize them as a risk to human health and environmental sustainability. Although opinions on these issues vary widely, they can be substantiated by applying carefully conducted and selected scientific data and research. Therefore, the SPS Agreement's provision that food safety standards be grounded in "science" compounds the politicization effects of the 1995 linkage between the Codex Commission and the WTO. Member state delegations, therefore, use "scientific data" in addition to food diplomacy tactics to achieve nationally self-interested goals through the Codex Commission's structures and procedures.

The Codex Commission does not conduct its own scientific research. Instead, the Commission and its subsidiary bodies synthesize available data into standards, guidelines, and codes of practice. The sources of those data have changed throughout the history of the institution, due in part to the changing nature of the Codex Commission following its linkages with the WTO.

The 3rd Session of the Codex Commission published the "Procedures for the Elaboration of World-Wide Codex Standards," which instructed subsidiary bodies to "take into account the work accomplished by the appropriate international Organizations when preparing proposed draft provisional standards" (Codex Alimentarius Commission 3rd Session). This indicates that the Codex Commission would consider scientific data solely from international organizations as the Commission did not mention the work accomplished by research universities, nationally sponsored research laboratories, or peer reviewed journals. Therefore, in its early years the Codex Commission used data from JECFA, JMPR, and JEMRA when elaborating Codex standards, guidelines, and codes of practice. At that time, the nature of those data was relatively unimportant; states that considered them excessive could implement less severe national policies whereas states that considered them insufficient could implement more stringent national

policies. As the Commission changed, so did its range of "acceptable" scientific data for purposes of standard elaboration.

In 1995, the same year as the establishment of the WTO, the Codex Commission considered proposals to base Codex standards and other recommendations on scientific principles and the extent to which other factors need to be taken into account. At that time the Commission confirmed that Codex standards should be grounded in sound scientific principles and expanded the range of acceptable sources beyond JECFA, JMPR, and other international expert panels (Codex Alimentarius Commission, 21st Session).[49] The commission extended the need for a sound scientific framework to the principles of risk assessment, management, and communication, which were adopted by the Commission at the sessions following its linkage with the WTO. Finally, the 21st session of the Commission adopted the *Statements Concerning the Role of Science in the Codex Decision-Making Process and the Extent to Which Other Factors are Taken into Account*.[50] This document included a significant change in Commission procedures relevant to the current line of inquiry: "the food standards, guidelines, and other recommendations of the Codex Alimentarius shall be based on the principle of sound scientific analysis and evidence, involving a thorough review of *all relevant information,* in order that the standards assure the quality and safety of the food supply" (Codex Alimentarius Commission, 21st Session, *emphasis mine*).

This addition to the General Principles of the Codex Commission corresponded with the transformation of Codex standards from voluntary to binding and the politicization of Codex activities. Member state delegations since have used scientific dispute to limit the scope and substance of Codex standards, recommendations, and codes of practice. Chapter 4 will examine this concept and practice with respect to four issues of food safety and international trade. The point, however, is clear: the SPS Agreement's foundation in scientific data and research was

[49] From the text of the 21st Session of the Codex Alimentarius Commission Report: The Commission "overwhelming confirmed that Codex standards and other texts should be based on the principle of sound science" and expanded the range of acceptable scientific sources by increasing the "transparency in the working procedures of expert panels, specifically JECFA and JMPR, including procedures for the selection of experts, declaration of interest, and assurance of adequate geographical representation of experts."
[50] Refer to Chapter 1.

intended to make Codex standards more legitimate and, therefore, more useful for purposes of national elaboration and multilateral dispute settlement. Instead, this reliance on scientific data widened the field of acceptable sources and incorporated scientific disputes into the Commission's work as a counterpart to and justification for political discord. As a result, Codex standards since have corresponded to the least common denominator in the available scientific data. Standards, recommendations, and codes of practice represent what scientists agree to be *dangerous* and what scientists agree to be dangerous is inevitably less restrictive than what they argue to be *risky*. The implications of this trend include increased deadlock within the commission, lower overall Codex standards for health and consumer protection, and increased reliance on WTO dispute settlement processes in light of the increasing number of national food safety standards that exceeded Codex recommendations.

Third, the impacts of post-1995 linkages between the Codex Commission and the WTO have changed the Codex Commission's definitions of "consensus," particularly in terms of voting practices and standard acceptance. The requirements for consensus in the Codex Commission have become more rigorous since its affiliation with the WTO. The Commission's 2nd Session required that measures, including changes to the General Principles and progress through elaboration steps, be passed by a majority vote. In 1991 new voting rules were implemented that required a ⅔ majority vote for the elaboration of Codex Standards (Codex Alimentarius Commission, 19th Session). This procedural distinction reflects the more structural changes affecting the Codex Commission at this time. Higher standards of voting consensus reflected the higher stakes of Codex activity after its affiliation with the GATT and the WTO. It also, however, corresponded with an overall decrease in political and scientific consensus within the Codex Commission. More stringent voting requirements, therefore, contributed to the Commission's focus on *danger* rather than *risk* and its tendency to pass standards that were grounded in scientific and political consensus but that represented more constrained activity and a narrower range of issues. Therefore, while increasing consensus requirements did correspond to greater acceptance of Codex standards by member governments (though they had few options under the binding nature of the WTO) they also corresponded to greater political and scientific deadlock in the Commission and increased dispute in the WTO.

Conclusion:

Post-1995 linkages between the Codex Commission and the World Trade Organization resulted in a series of impacts with implications for the institutions themselves, especially for the former. Those impacts and implications are best understood, however, by an examination of the issues of food safety and international trade. Chapter 4, therefore, presents a series of case studies that examine issues that differ in their levels of political and scientific consensus and dispute. Each case examines the Codex standard elaboration, member state legislation,[51] and, when necessary, WTO dispute settlement over specific issues of food safety and international trade. This chapter illustrates the practical impacts and implications of linkages between the Codex Commission and the WTO and establishes the context for conclusions about their overall impacts for the Codex Commission, the WTO, consumer protection, and the international food trade.

[51] Specifically the governments of the United States and EU member states.

CHAPTER 4

CASE STUDIES IN FOOD SAFETY AND INTERNATIONAL TRADE

Introduction:

The previous chapter analyzed the impacts and implications of post-1995 linkages between the Codex Commission and the WTO compared to the context of those institutions established in Chapters 1 and 2. Politicization, deadlock, and dispute have led to redefinitions of risk, science, and consensus within the Codex Commission and, consequently, affect the World Trade Organization, national governments, and the fields of consumer safety and open trade. Tables 3, 4, and 5 apply these concepts by categorizing food safety issues according to their levels of political and scientific consensus[52] (Table 3) and evaluating the impacts of political and scientific consensus upon the activities on these issues of the Codex Commission (Table 4) and the World Trade Organization (Table 5). These tables establish the foundation of this chapter, which employs a series of case studies to examine the post-1995 dynamics of Codex standard elaboration, member state legislation, and, when necessary, WTO dispute settlement.

[52] The cases in this table represent the population of issues addressed by Codex General Committees that have also been, with the exception of Pesticide and Veterinary Drug Maximum Residue Limits (see Table 5 below), the subject of WTO dispute settlements. The remainder of this chapter analyzes the Codex standard formation and WTO dispute settlement procedures as applied to three of these issues. I chose the issues for in-depth study on the basis of two criteria. First, each case study examines an issue that is representative of others in the same cell of Table 3. Second, and somewhat paradoxically, each case is, in some way, unique. I selected the case of Pesticide Maximum Residue Limits because of the Codex Commission's history. The Codex Commission's first undertaking and, historically, first priority has been to set maximum residue limits for pesticides. I selected the case of Animal Growth Hormones because, although its standard formation process and dispute settlement results can be generalized to similar cases, its ultimate outcome is unique. Finally, I selected the case of Genetically Modified Foods because of its visibility as a contemporary scientific, political, and policy debate. Regardless of the specific dimensions that motivated the case selection for the purposes of this chapter, these issues chosen for the following in-depth case studies can be considered predictive for purposes of future research. That is to say, one may use the case of Pesticide Residues to predict future Codex Commission, national government, and WTO reactions to issues on which there is both scientific and political consensus.

Table 3: Food Safety Issues	Scientific Consensus (Danger)	Scientific Dispute (Risk)
Political Consensus	• Pesticide Maximum Residue Limits • Veterinary Drug Maximum Residue Limits	• No Issues
Political Dispute	• Bovine Spongiform Encephalopathy • Bovine Growth Hormones • Food Labeling Requirements	• Genetically Modified Foods (a.k.a. Foods Derived from Modern Biotechnologies)

Table 4: Codex Standard Elaboration	Scientific Consensus (Danger)	Scientific Dispute (Risk)
Political Consensus	• Minimal dispute • Able to develop universal Codex standards	• No Issues
Political Dispute	• Moderate dispute • Able to develop Codex standards following politically-motivated delays	• Intense dispute • Unable to develop universal Codex standards

Table 5: WTO Dispute Settlement	Scientific Consensus (Danger)	Scientific Dispute (Risk)
Political Consensus	• Few, if any, low-intensity disputes	• No Issues
Political Dispute	• Frequent disputes that vary in intensity	• Continuous, high-intensity disputes

This chapter examines the cases of pesticide maximum residue limits, bovine growth hormones, and genetically modified foods. Its application of the impacts and implications analyzed in Chapter 3 grounds a series of conclusions regarding the Codex Alimentarius Commission, the World Trade Organization, and issues of food safety and international trade. This subsequently provides the framework for future research.

Political and Scientific Consensus: Pesticide Maximum Residue Limits

Most agricultural production uses pesticides to protect crops, eliminate infestations, and increase production. Although scientists occasionally dispute the maximum safe residue limits, they agree that ingesting pesticide residues is *dangerous* to human health. This scientific consensus, documented across numerous independent and undisputable sources, has generated political consensus in the Codex Commission, both before and after its linkages with the WTO and Codex member state governments. When expressed through the Codex Commission, this political-scientific consensus has promoted the development of universally accepted Codex standards. Their acceptance by member state governments has eliminated the need for WTO dispute settlement. Never in its 10-year history has the WTO been asked to adjudicate a dispute regarding national regulations on pesticide residues in food products. Moreover, national governments that set higher maximum residue levels than recommended by Codex standards have not been called upon by WTO trade partners to justify this increased level of consumer protection even though they could be considered non-tariff barriers to trade. This policy history, across both institutions and national governments, represents the influence of political and scientific consensus in the standard development and enforcement processes and emphasizes that the politicized Codex Commission is better equipped to address *danger* than *risk*.

The Codex Commission began addressing the issue of pesticide residues in food products at its first session in 1963. This issue is considered particularly important given the variety of pesticides and pesticide concentrations used in international agricultural production; member governments acknowledged that they could not adequately protect against the dangers of pesticide use without multilateral data, coordination, and recommendations. Moreover, Codex

member states recognized that the effects of pesticide consumption depended largely on context, both environmental and chemical.[53] Therefore, the 1st Session of the Codex Commission "decided to set up a world-wide Expert Committee on this subject with the following terms of reference: to consider the pesticides for which acceptable daily intakes will have been established by the FAO Working Party on Pesticide Residues meeting jointly with the WHO Expert Committee on Pesticide Residues, in order to survey and propose where possible tolerances for pesticide residues in individual foods" (Codex Commission, 1st Session). The current Codex Committee on Pesticide Residues is charged with:

- Establishing maximum limits (MRLs) pesticide residues in specific food items or in groups of foods;
- Establishing MRLs for pesticide residues in certain animal feeding stuffs moving in international trade where this is justified for reasons of protection of human health;
- Preparing priority lists of pesticides for evaluation by the Joint FAO/WHO Meetings on Pesticide Residues (JMPR);
- Considering methods of sampling and analysis for the determination of pesticide residues in food and feed;
- Considering other matters in relation to the safety of food and feed containing pesticide residues;
- Establishing maximum limits for environmental and industrial contaminants showing chemical or other similarity to pesticides, in specific food items or groups of food.[54]

This committee has successfully realized the goals and objectives of the Codex Commission in its area of operation and expertise. It has successfully coordinated data from numerous scientific sources, both international and national, developed standards aimed at the protection of human health, and advised commodity committees in their pursuit of similar objectives. Although it has

[53] The dangers associated with pesticide consumption increase dramatically when compounded by the consumption of additional residues of pesticides, herbicides, fertilizers, and veterinary drugs. Therefore, pesticide maximum residue limits tend to be set higher to compensate for this variable, and frequently immeasurable, threat.
[54] From the Codex Alimentarius Commission's website. Available online at: http://www.codexalimentarius.net/web/committees.jsp.

experienced its share of procedural questions and disputes, its incremental outputs have garnered widespread member state support.

The 9th Session of the Codex Commission acknowledged that "the elaboration of pesticide residue tolerances represented a problem quite distinct from the elaboration of other Codex standards, since pesticide residue tolerances had to take into account the differing pest control needs of various countries and regions in the world and the attitude of countries to the use of certain pesticides…as a result, Codex recommended tolerances, which were often higher than tolerances in certain countries, might not always be acceptable" (Codex Commission, 9th Session). However, as a testament to the importance of pesticide residue limits to the overarching mission of the Codex Commission, member states worked with, rather than against, those higher standards. National governments approached pesticide tolerances pragmatically, altering their national residue policies to conform to Codex recommendations when necessary or, where possible, simply prohibiting the use of dangerous pesticides all together (Codex Commission, 7th and 9th Sessions). Even the United States, typically a proponent of minimal and flexible food safety regulations, promised that it would fully accept as many Codex MRLs as possible into the United States Pesticide Residues Regulations and would, where necessary, publish its reasons for any instances of non-compliance (Codex Commission, 10th Session). As subsequent case studies will demonstrate, this guarantee is unusual from the United States and indicates the importance of this issue for consumer protection, particularly considering the dangers of pesticide residues in international trade.

The United States has not been alone in that commitment. At its 11th Session, the Codex Commission began publishing annual Progress Reports on Acceptances of Recommended Codex Standards and Recommended Codex Maximum Limits for Pesticide Residues. In 1976, the Commission reported widespread initial acceptance of MRLs.[55] As more data became available and developing countries gained access to the necessary resources from the FAO, WHO, and Codex Trust Fund, acceptance of Codex-recommended MRLs spread. Although the Commission stopped publishing updates on acceptances of Codex recommendations after its

[55] See Appendix H for more information.

linkage with the WTO, another sign that Codex standards became binding under the new framework, the lack of WTO disputes regarding pesticide maximum residue limits indicates that this issue, and the scientific consensus that accompanies it, remains a source of political consensus. What is particularly significant is that states that choose to implement higher than Codex recommended MRLs are not accused of raising non-tariff barriers to open trade contrary to WTO commitments. Instead, the recognized dangers associated with pesticide consumption and the acknowledged uncertainty relative to environmental or chemical circumstances makes precaution a scientific and politically acceptable option in the international trade community. Unfortunately, the international environment of *danger* management makes the precautionary approach impossible absent the political and scientific consensus associated with issues of pesticide maximum residue limits.

Political Consensus and Scientific Dispute: A Dearth of Issues

Scientific consensus often promotes political consensus. There are no issues of consumer protection and the international food trade characterized by dispute among scientists but agreement among political representatives. This is significant because it demonstrates that, although there is no necessary causal relationship between scientific consensus and political consensus, they are linked. A politicized Codex Commission, geared to *danger* management, establishes standards that correspond to maximum levels of scientific consensus. The Codex Commission is able to develop strict standards for issues grounded in scientific consensus, such as pesticide residue limits. As the next case study will demonstrate, it takes more time to establish standards for issues for which there is scientific consensus but enough controversy to generate political debate among self-maximizing member states. As the absence of issues in this category and the case study on Genetically Modified Foods demonstrate, however, the Codex Commission is incapable of developing standards on issues of food safety that are the subject of intense scientific debate.

Political Dispute and Scientific Consensus: The Use of Bovine Growth Hormones

Bovine Growth Hormones are injected into lactating cows to generate higher milk yields and into beef cattle to encourage cattle growth.[56] The United States, Canada, Australia, New Zealand, and Argentina allow their farmers to use bovine growth hormones to increase milk and beef production. Conversely, bovine growth hormones can only be used in European Union states when administered by a veterinarian to synchronize estrus cycles in dairy cows or to correct endocrine dysfunctions (Kerr and Hobbs 2002, 285). The scientific consensus, derived from scientific study in numerous countries and across multiple international bodies, is that the use of bovine growth hormones is safe when in accordance with good veterinary practices (Kerr and Hobbs 2002, 285). The Joint Expert on Food Additives (JECFA), the Codex Committee on Residues of Veterinary Drugs in Food, the Codex Alimentarius Commission, the Lamming Committee Scientific Expert Group, and the 1995 Scientific Conference on Growth Promotion in Meat Production agree that there is "no evidence of health risk from the use of growth hormones" (Kerr and Hobbs 2002, 286). However, the European Commission refused to accept this overwhelming scientific consensus and, reacting to unsubstantiated consumer concerns about the risks associated with the use of bovine and other animal growth hormones, banned the importation of beef raised using growth hormones into EC member states.

The European Commission, knowing that its hormone-use policies stood in opposition to the international scientific consensus, initially attempted to delay the development of Codex standards regarding the use of bovine growth hormones. The Codex Executive Committee assigned the issue of bovine hormones to the Codex Committee on Residues of Veterinary Drugs in Food. At its 19th Session 27 members of the Codex Commission voted against maximum residue limits for Estradiol-17β, Progesterone, Testosterone, and Zeranol, citing consumer preferences and health risks. Twelve delegations voted in favor of the MRLs, citing JECFA research and international scientific consensus. The Commission's failure to institute standards for the use of bovine growth hormones transferred the policy making authority back to the member states, allowing the European Union to ban the importation of hormone treated beef.

[56] Although there have been heated national debates in North and South America and Europe regarding the risks of hormone-related milk production, international debates have focused upon hormone use in beef production. This chapter focuses upon disputes in beef trade although the discussion of the Codex Commission addresses hormones used in both dairy and beef production.

However, at its 20th Session the Commission agreed to advance a series of hormone standard proposals to Step 5, indicating a level of incremental progress toward inclusion in the *Codex Alimentarius*. This progress was realized at the Commission's 21st Session.[57] The Commission adopted Maximum Residue Limits for five growth hormones at Step 8, though it postponed debate on Maximum Residue Limits for Bovine Somatotropins. The activity at these meetings corresponds to the overall Codex Commission activity on this issue: incremental progress emerges in spite of institutional deadlock. Despite consistent attempts by European Union member states to block the development of MRLs for bovine growth hormones, standards have been developed and incorporated into the *Codex Alimentarius* and have become the benchmark for WTO dispute settlements on this issue.

The international trade dispute between the United States and the European Community[58] on the issue of bovine growth hormones first emerged under the framework of the GATT. The United States petitioned for a multilateral dispute settlement but the European Union blocked the request by failing to give its approval and preventing the level of consensus necessary under GATT rules. The United States resubmitted its petition for dispute settlement under the WTO in 1996, asserting that the EU's ban constituted an illegal non-tariff barrier to trade under WTO commitments. The US further contended that the EU's risk management standards were grounded in neither international standards nor scientific substantiation. The EU countered by arguing that the available scientific data were incomplete and did not adequately address the risks associated with the use of bovine growth hormones; the existing international standards, therefore, did not adequately protect consumers from potentially dangerous side effects of hormone use. This argument for precaution did not stand up to United States adherence to and promotion of international standards based upon scientifically established risk management procedures. The WTO dispute settlement panel ruled against the European Union's ban on US beef, thus reinforcing both the Codex standards on the use of bovine growth hormones and their scientific roots (Kerr and Hobbs 2002, 291). It emphasized that, although the SPS Agreement

[57] Please refer to Appendix I for more details.
[58] The WTO has been asked to settle other disputes on this issue but I focus on the US-EC case because it best illustrates the dynamics of adjudication in the presence of scientific consensus but political dispute.

allows WTO member states to exceed international standards where necessary to protect consumer health, the EU did not adequately justify its higher standards with scientific data or demonstrate that the existing scientific data were sufficiently incomplete to call its consensus into question. As noted in Chapter 2, states found to be in violation of WTO commitments by dispute settlement panels generally propose immediate changes to their national policies to tailor them to the panel's decision. This was not the result of this case.

Rather than drop its ban on US beef, the European Union requested four years in which to, first, implement the policy changes dictated by the dispute settlement panel and, second, to conduct a risk assessment of the use of beef hormones. The United States argued that, according to WTO rules, the proposed risk assessment was supposed to be done before higher standards were implemented and requested WTO arbitration. The WTO gave the EU 15 months to implement compliant policies, *not* to conduct a risk assessment (Kerr and Hobbs 2002, 293). The European Union refused to comply with the WTO ruling and accepted retaliatory trade measures.

This decision indicates two things. First, the European Union, unlike the Codex Commission, the WTO dispute settlement panel, and a number of national governments, was not convinced by the existing scientific consensus on the issue of bovine growth hormones. Second, the WTO dispute settlement process worked. The EU's ban on hormone treated beef stood in opposition to *all* of the existing scientific research, including the research sponsored by the EU itself. The Codex Commission acknowledged the EU's concerns and established standards that addressed both the known dangers and potential risks of hormone use. The WTO dispute settlement panel recognized this scientific consensus and ruled against the EU's non-tariff barrier to the international beef trade. This and the previous case study demonstrate that the processes of standard formation, acceptance, and adjudication work when grounded in scientific consensus, even when confronted by political dispute. The following case study reinforces this conclusion by illustrating what happens with issues of international food safety and trade when neither scientific nor political consensus exists. The dynamics of policy formation, implementation, and

adjudication differ substantially when scientific dispute is added to a politicized and therefore contested series of processes.

Political and Scientific Dispute: Genetically Modified Foods

Genetically Modified Foods (GMFs) have become one of the world's most politically and scientifically controversial issues. Proponents declare that GMFs will eliminate world hunger and malnutrition, while opponents characterize them as dangerous to human health and environmental sustainability. There is no scientific consensus on this issue. On the one hand, a 2004 report by the Institute of Medicine of the National Academy of Sciences, the United States government's leading independent science advisor, "refused to treat food created through genetic engineering as inherently more dangerous than food created through other forms of genetic modification such as conventional breeding," noting that "to date, no adverse health effects attributed to genetic engineering have been documented in the human population" (Mooney 2005, 8). On the other, many scientists emphasize that "genetic engineering is built on a long list of assumptions…the main [one being] that foreign genes will always operate the same way in the new host organism…but those assumptions carry risks that have not been adequately assessed" (Smith 2003, 67). Those risks include unintentional consequences of altering genetic pathways and microbiological processes, the effects of cross pollination between Genetically Modified and traditional plants that may have greater toxicity, alterations to a plant's nutritional content, and the transformation of otherwise harmless foods into deadly allergens. Scientists tend to be polarized on this issue; those in favor of GMFs are accused of marginalizing the dangers of GM production and consumption, while those opposed are accused of using GMFs as a surrogate for broader social, economic, and health concerns (Mooney 2005, 8). Even in the scientific community, this issue has become highly politicized, and, for that reason, it is difficult to identify unbiased data and research.

The political debate surrounding the production and consumption of GMFs both stems from and contributes to the scientific controversy and transcends national boundaries into international fora. The Codex Commission, *the* international reference point that WTO member

states reference when formulating and executing national food safety statutes and standards, has remained deadlocked on this issue since it was first brought before the commission in the late 1980's. This deadlock stems from the fact that the Commission grounds its standard formation process in scientific research and data. The case of GMFs, however, demonstrates that data and research are not sufficient. In order to implement universal food safety standards on an issue of international trade, the Codex Commission requires sufficient scientific consensus to mitigate political debate.

Genetically Modified Foods were first addressed by the Codex Commission in 1999 as "Foods Derived from Biotechnology." The 26th Session of the Codex Executive Committee "unanimously agreed to recommend to the Commission that an *ad hoc* Intergovernmental Task Force on Foods Derived from Biotechnology be established to deal with this subject" (Codex Executive Committee 26th Session). The task force was instructed to evaluate the safety and nutritional aspects of foods derived from biotechnology as well as issues of consumer information and labeling. The 23rd Session of the Commission approved the establishment of this subsidiary body for a four year term.

This decision was the result of food diplomacy techniques exercised by member-state delegations. The invention, production, and consumption of GMFs had become so widespread by 1999 that it would have made sense for the Executive Committee to establish a permanent general committee dedicated to establishing general standards on their production and use and to advising commodity committees. As Chapter 1 indicated, ad hoc task forces address emerging risks and are abolished once the Commission determines that those tasks have been completed. Given the political and scientific debate surrounding the issue of GMFs, most Codex member-states wanted to delay the elaboration of Codex standards and maintain their ability to set national policies. The establishment of a temporary ad hoc task force rather than a permanent Codex Committee was, therefore, in the national self-interest of these member-states.

The 1st Session of the Ad Hoc Intergovernmental Task Force on Foods Derived from Biotechnology quickly realized that its work depended upon concurrent activities of the

Committee on General Principles. For example, delegations from the European Union's member states requested that other factors be considered in addition to scientific risk assessment when elaborating standards for GMFs. The Committee on General Principles was simultaneously addressing the role of science in Codex standard elaboration and the extent to which other factors could be taken into account and the ad hoc task force deferred to its conclusions. Moreover, the EC member states requested that the precautionary principle be applied to the task force's work but that decision was similarly deferred while the Committee on General Principles determined what role, if any, existed for the precautionary principle in Codex elaboration procedures. The 1st Session, therefore, worked to establish a framework for future activities, including a risk assessment both of the consumption of GMFs themselves and of the unintended consequences of their use. Since then, the ad hoc task force has met four times.

The Codex Commission's decisions regarding the task force's recommendations demonstrate deadlock derived from Codex politicization. In 2001 the Commission adopted at Step 5 the Proposed Draft Principles for the Risk Analysis of Foods Derived from Modern Biotechnology and the Proposed Draft Guideline for the Conduct of Food Safety Assessment of Foods Derived from Recombinant-DNA Plants. Both drafts passed Step 8 at the 26th Session of the Codex Commission. The Principles for Risk Analysis outline the appropriate risk analysis, management, and communication procedures for Genetically Modified Foods, while the Guideline "describes approaches recommended for making safety assessments of foods produced using recombinant-DNA microorganisms using comparison to a conventional counterpart" and focusing "on the safety of the recombinant-DNA microorganisms used in food production" (Codex Commission 26th Session). Both detail safe *production* practices but do not address safety questions relative to the consumption of GMFs, leaving those considerations to national governments. These standards, therefore, have not applied to the questions raised in WTO dispute settlements as those trade issues were directly regarding consumption. The task force was abolished at the end of its four year term, though it was reconvened by the 54th Session of the Executive Committee to address new issues and develop more specific standards. Its final report is due to the Commission in 2009. Until that time, safe consumption guidelines continue

to be set by national governments, and their differences continue to require WTO dispute settlements.

The international dispute over the growth, consumption and trade of GMFs, the lack of international GMF consumption standards, and the vast differences among national policies have necessitated WTO dispute settlement. The European Commission's bans on genetically modified food imports have been challenged by Canada, Argentina, and the United States as illegal non-tariff barriers to trade. The US and Canada asserted that "the moratorium applied by the EC since October 1998 on the approval of biotech products has restricted imports of agricultural and food products from the US and Canada" and that "a number of EC member States maintain national marketing and import bans on biotech products even though those products have already been approved by the EC for import and marketing in the EC" (World Trade Organization DS291). The panel was composed on March 4, 2004. After a series of delays, primarily aimed at compiling the expert scientific advice required by the SPS Agreement, the DSP released its report. Although the full report has not yet been released to the public, the WTO has announced that the EU's ban on GMFs violates its trade commitments and the national treatment principle, because genetically modified foods and non-genetically modified foods constitute like-products in terms of composition and production and cannot be subject to discriminatory trade practices. The WTO also acknowledged the political and scientific controversy and uncertainty over this issue and mandated that GMFs be labeled as such. This transparency requirement will allow consumers to exercise their preferences through market exchanges and enable those who consider GMFs dangerous to human health to avoid them.[59] Nonetheless, the EU has indicated that it does not intend to change its trade policies and, given the limited scope of the WTO dispute settlement, sanctions may not be enough to change its mind. At this point there is only one certain effect of this dispute settlement: it will eliminate neither the political nor the scientific dispute surrounding this issue. The controversy that prevented Codex standard elaboration, established vastly different national policies, and

[59] The ability of this GMF labeling requirement to help consumers avoid GMF products will have to be evaluated in terms of its execution. As individuals with food intolerances and allergies can attest, food labels frequently are incomplete or unavailable. This is particularly true in countries like the United States that do not enforce labeling requirements.

necessitated WTO dispute settlement will continue until there are sufficient data and research available to generate enough scientific consensus to pacify the political debate.

Conclusion

The 1995 linkages between the Codex Commission and the World Trade Organization politicized the Codex Commission, constrained its policy-making ability to issues grounded in scientific consensus, and shaped the food diplomacy tactics of its member states. The cases in this chapter demonstrate these impacts on issues of food safety and international trade and ground an analytical understanding of the future consequences of that institutional linkage. Those consequences, which are the subject of the Conclusion, generate their own implications for the Codex Commission, the WTO, national governments, consumers, and issues of food safety and international trade.

CONCLUSIONS

Overview:

The institutional structures, functions, and processes of the Codex Commission and the WTO as well as the impacts and implications of their post-1995 linkages have consequences for the future of food safety, national policy, international trade, and multilateral dispute settlement. In addition, these consequences alongside the evidence, analysis, and examples found in this thesis demonstrate that many of the critiques of the Codex Commission, the WTO, and their post-1995 linkage are, to greater or lesser degrees, erroneous. Finally, the framework of risk, danger, precaution, and risk management developed in Chapter 4 through the analytical lens of political and scientific consensus and debate apply beyond the study of food safety and international trade. These conclusions serve as both the framework and the inspiration for questions and topics for future research.

The Conclusion to this thesis utilizes the descriptive material found in Chapters 1 and 2, the conceptual framework elaborated in Chapter 3, and the topical illustrations found in Chapter 4 to identify the consequences for the Codex Commission and the WTO, national governments, consumers, and issues of food safety and international trade derived from the impacts and implications of post-1995 linkages between those institutions. In addition, it identifies questions for future research and to responds to critiques regarding the Codex Commission, the WTO, and their post-1995 linkages. Finally, the Conclusion applies the logic of risk, danger, precaution, risk management, and consensus, both scientific and political, to issues beyond food safety, demonstrating that this framework is useful beyond not only the framework of this thesis, but also the limits of its topic.

Consequences and Criticism

Critics of the Codex Commission brand it as an agent of multinational corporations and "a serious threat to health freedom" (HealthFreedom 2006). Chapters 1, 3, and 4 demonstrate that this characterization is misguided. It is true that multinational corporations are affected by binding Codex standards as the standards are necessarily, either voluntarily or by means of WTO

dispute settlement, incorporated into national regulatory policies. The Codex Commission, however, does not represent multinational corporations. Instead, it represents the interests of its member states. It is true that national delegations may be influenced by particularistic interests, including corporate interests, within their borders or constituencies. This highlights a key conclusion about both the Codex Commission and the WTO: multilateral institutions that represent the interests of member states are beholden to those members, which often are similarly beholden to specific national interests. It is erroneous to critique the Codex Commission for the responsiveness of national delegations to sub-national entities and corporate interests.

Moreover, it is misguided to accuse the Codex Commission or Codex standards of endangering health freedom. Codex standards are grounded in the best available scientific data and are designed to protect consumers from health dangers and to inform them of likely health risks. Rather than threaten, this evidently enhances health freedom, giving consumers the information necessary to make personally appropriate food choices. While Codex standards provide minimal levels of health protection, the framework of the WTO allows member states to exceed those standards on the basis of legitimate risk analyses. Moreover, the Codex Commission's trust fund provides developing countries with resources to develop and implement food safety standards and to contribute to the body of scientific research upon which Codex standards are based. To say that the Commission's standards, guidelines, and codes of practice endanger health freedom is to demonstrate a fundamental misunderstanding of the Commission's structures, functions, and procedures.

One of the most frequently proclaimed criticisms of the WTO is that it represents the interests of richer countries to the detriment of its poorer member states. Chapters 2 and 4 suggest that, with respect to dispute settlement, this criticism is unsupported. The WTO's dispute settlement system, the normative standard that binds member states to WTO commitments, empowers relatively small or poor member states. Any WTO member thought to be in violation of WTO commitments may be engaged in dispute settlement by any other WTO member regardless of size or economic power and, if found guilty, may face widespread

sanctions. These procedures equalize the influence of WTO member states and help guarantee that WTO agreements are implemented fairly and universally.

Other critics accuse the WTO of privileging free trade commitments over consumer safety. Chapters 3 and 4 illustrate that this perspective is analytically flawed. The TBT and SPS Agreements, which set Codex standards as the benchmark for WTO dispute settlements, enable member state governments to set national regulations that exceed Codex recommendations but require that those standards be demonstrably grounded in scientific data lest they constitute non-tariff barriers to open trade. This arrangement does not mean that the WTO is more dedicated to the reduction of trade barriers than it is to the protection of consumer health. Instead, it demonstrates that the WTO exists to balance both commitments. Finally, WTO members are free to accept sanctions rather than align their food safety policies with WTO commitments. For example, Chapter 4 notes that when the European Union decided that it would not eliminate its ban on hormone fed beef imports, it accepted WTO sanctions. Many have proclaimed this as a failure of the WTO dispute settlement body. It is, in fact, just the opposite. Dispute settlements and sanctions exist to ensure that those industries economically harmed by non-tariff barriers to trade receive just compensation. In the beef hormone case, the European Union compensated the US beef industry in order to maintain its higher food safety standards. In the end, all parties benefited: European consumers were protected from the risks associated with bovine growth hormones and American cattle farmers were reimbursed for their lost profits and market share. From this perspective, the WTO dispute settlement process works, even when it ends in sanctions, to balance its commitments to open trade and consumer safety.[60]

There is no denying that the impacts and implications of the 1995 linkage between the Codex Commission and the WTO have consequences for both institutions as well as for the future of food safety, national policy, international trade, and dispute settlement. On the whole,

[60] This thesis uses Codex Commission and WTO rules, procedures, and agreements in order to evaluate the outcomes of Codex standard elaboration procedures and WTO dispute settlements. In this sense, the criteria for success are self-referential. The use of self-referential evaluation criteria, however, serves a methodological purpose. Critics of the Codex Commission and the WTO frequently evaluate institutional outcomes without considering the context of institutional structures, procedures, and purposes. The conclusions to this thesis are tied to its earlier discussions of the Codex Commission, the WTO, and their documentary history in order to demonstrate that critiques of these institutions and their post-1995 linkages are frequently misguided. Future research should apply a variety of theoretical perspectives to Commission and WTO outcomes in order to extend this evaluation.

however, this thesis demonstrates that those consequences have at least the potential to be positive. This contradicts much of the existing literature on the subject.

Critics proclaim that the transformation of Codex standards from voluntary to binding and the subsequent politicization of and deadlock in the Codex Commission have constrained the activity of the Commission and have led to the elaboration of standards that provide minimal consumer health protections given the available scientific data. Codex Commission documents provide considerable evidence in support of such observations. However, while the Commission's activity has been largely constrained to issues on which there is scientific consensus, this is not necessarily a negative consequence. Codex standards since the 1995 linkage with the WTO have become narrower in scope but more closely tied to available scientific data. Because scientific consensus tends to generate political consensus, Codex member states have adopted scientifically justified standards faster and with fewer objections than was common in the pre-1995 years. Admittedly, this is not true for every issue. For example, the Codex Commission continues to see bitter dispute regarding issues of scientific consensus but political dispute including the use of animal growth hormones, the necessary degree of food labeling standards, and safe animal feeding practices; however, these issues, despite their high profile, constitute a small proportion of the Commission's workload. The Commission dedicates most of its time and resources to the elaboration of commodity standards and to the establishment of maximum residue limits for pesticides and veterinary drugs. Politicization of the Codex Commission has initiated member state demand for greater scientific consensus and that demand has led to the development of more conclusive and less disputed standards, which have been adopted as national food safety policies. For most issues of food safety and for most member states, this development may be seen as a positive consequence of the post-1995 linkage between the Codex Commission and the WTO.

Applying the Scientific/Political Consensus/Dispute Framework Beyond Issues of Food Safety:

Chapter 4 develops a framework for understanding issues of food safety relative to scientific and political dispute and consensus. This framework, illustrated by Chapter 4's case studies, analyzes the Codex Commission's ability to elaborate standards and the likelihood of

WTO dispute based upon the degree of health risk versus health danger. For example, scientific consensus that conditions or practices are dangerous to consumer health evidently can generate political consensus and leads to the elaboration of universal Codex standards and few disputes in the WTO. Conversely, scientific disputes over the level of risk conditions or practices may present for human health generate political dispute and lead to stalemate in the Codex Commission and frequent, high intensity conflicts in the WTO. This framework, which connects the concepts of risk and danger to levels of scientific and political consensus or dispute, is applicable beyond the field of food safety. For example, it may be applied to the field of environmental protection.

Todd Sandler's Global Collective Action analyzes collective responses to transnational problems. His discussion includes an examination of different national policy responses to a variety of global environmental threats. Sandler demonstrates that national governments responded quickly and definitively to the danger presented by ozone shield depletion. This political consensus can be explained by applying the food safety framework found in Chapter 4. The scientific consensus over the danger of ozone shield depletion generated transnational political consensus regarding the need for global collective action. The issue is thus comparable to maximum residue limits for pesticides and veterinary drugs. Conversely, Sandler demonstrates that national governments have responded in different ways and in vastly differing degrees to the risk presented by global warming. This can be similarly explained in terms of scientific and political dispute. The scientific dispute surrounding the causes, impacts, and implications of global warming generated political dispute and differing degrees of response. The issue is thus comparable to Genetically Modified Foods.

These examples demonstrate that the framework established in Chapter 4 helps to explain Codex and WTO responses to varying degrees of scientific and political consensus and dispute on food safety issues can be applied to other fields of study including environmental politics and policy. Future research should explore other avenues of application to further develop this theoretical framework and to explain issues that engage questions of scientific and political consensus and dispute.

Applications of Risk, Danger, the Precautionary Principle, and Risk Management

From bird flu to hurricanes and from global warming to terrorism, today's world is dominated by discussions of risk and danger. The problem is that those concepts are frequently conflated making it difficult to evaluate the differences between the precautionary principle and risk management. This thesis has analytically defined risk and danger as distinct concepts; risk indicates a level of uncertainty in that the risks of an action, including the trade and consumption of foods, are not necessarily known in advance whereas danger indicates a level of conviction that an action, such as the consumption of food contaminated by pesticide residues, will have known detrimental consequences. This distinction demonstrates that the term "risk management," as it is used both by the Codex Commission and in the existing literature, is misleading. Risk management techniques address known dangers and their effectiveness is directly related to levels of scientific consensus or dispute on specific issues. This approach is consistent with that of many national governments, including the United States, but is incompatible with the precautionary principle employed by the European Union and other national governments to address health and environmental risks.

Because the existing literature conflates risk with danger it is unable to adequately evaluate risk management and the precautionary principle as approaches to questions of food safety. However, armed with the aforementioned distinction, it is apparent that neither the Codex Commission nor the WTO is institutionally equipped to apply the precautionary principle to issues of food safety; the post-1995 politicization of the Commission confines its activity to issues of scientific consensus and the SPS requires that member states justify food safety standards that exceed Codex recommendations in scientific evidence.[61] The only recourse for national governments dedicated to the application of the precautionary principle to national policies and the level of protection it affords consumers, demonstrated by the EU's reaction to the Bovine Growth Hormones dispute settlement, is to set food safety standards that exceed Codex recommendations and accept retaliatory sanctions by WTO member states. Therefore, although the existing literature indicates that the Codex Commission and WTO *could* apply the precautionary principle to issues of food safety and have simply *chosen* not to, this thesis

[61] To date, the WTO has not considered the presence of scientific uncertainty or dispute to be the "evidence" necessary to justify standards that exceed Codex recommendations.

demonstrates that both institutions are bound to risk management techniques as a consequence of their post-1995 linkage.

Questions for Future Research

Future research on the Codex Commission, the WTO, and issues of food safety and international trade should focus on the role of sub-national and transnational interests in the standard formation and dispute settlement processes. Most critics of the Codex Commission, the WTO, and the post-1995 linkages between them are actually concerned with the power and influence of special interests on the development of food safety and international trade policies. That concern is justified. This thesis has demonstrated that the impacts and implications of the post-1995 linkage between the Codex Commission and the WTO have potentially positive consequences. Nevertheless, future research should investigate the degree to which this potential has been realized by using a variety of theoretical perspectives to evaluate Codex and WTO outcomes.

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APPENDIX A: ACRONYMS

CAC: Codex Alimentarius Commission (a.k.a. Codex Commission)

DRB: Dispute Resolution Body (WTO)

DSP: Dispute Resolution Procedures (WTO)

DSU: Dispute Settlement Understanding (WTO)

EC: European Community

ECJ: European Court of Justice

EU: European Union

FAO: Food and Agriculture Organization (of the United Nations)

GATT: General Agreement on Tariffs and Trade

GMF(s): Genetically Modified Food(s)

GMO(s): Genetically Modified Organism(s)

JECFA: Joint FAO/WHO Expert Committee on Food Additives

JEMRA: Joint FAO/WHO Meetings on Microbiological Risk Assessment

JMPR: Joint FAO/WHO Meetings on Pesticide Residues

NGO: Non-Governmental Organization

NTB: Non-Tariff Barriers (to trade)

SPS: Agreement on Sanitary and Phytosanitary Measures

TBT: Technical Barriers to Trade Agreement

UN: United Nations

WHA: World Health Assembly

WHO: World Health Organization

WTO: World Trade Organization

APPENDIX B: DEFINITIONS FOR THE PURPOSES OF THE CODEX ALIMENTARIUS

From the 15th Procedural Manual of the Codex Alimentarius Commission
Available Online: ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_15e.pdf

For the purposes of the Codex Alimentarius:

Food means any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of "food" but does not include cosmetics or tobacco or substances used only as drugs.

Food hygiene comprises conditions and measures necessary for the production, processing, storage and distribution of food designed to ensure a safe, sound, wholesome product fit for human consumption.

Food additive means any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result, (directly or indirectly) in it or its by-products becoming a component of or otherwise affecting the characteristics of such foods. The term does not include "contaminants" or substances added to food for maintaining or improving nutritional qualities.

Contaminant means any substance not intentionally added to food, which is present in such food as a result of the production (including operations carried

out in crop husbandry, animal husbandry and veterinary medicine), manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food or as a result of environmental contamination. The term does not include insect fragments, rodent hairs and other extraneous matter.

Pesticide means any substance intended for preventing, destroying, attracting, repelling, or controlling any pest including unwanted species of plants or animals during the production, storage, transport, distribution and processing of food, agricultural commodities, or animal feeds or which may be administered to animals for the control of ectoparasites. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant, fruit thinning agent, or sprouting inhibitor and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport. The term normally excludes fertilizers, plant and animal nutrients, food additives, and animal drugs.

Pesticide Residue means any specified substance in food, agricultural commodities, or animal feed resulting from the use of a pesticide. The term includes any derivatives of a pesticide, such as conversion products, metabolites, reaction products, and impurities considered to be of toxicological significance.

Good Agricultural Practice in the Use of Pesticides (GAP) includes the nationally authorized safe uses of pesticides under actual conditions necessary for effective and reliable pest control. It encompasses a range of levels of pesticide applications up to the highest authorised use, applied in a manner which leaves a residue which is the smallest amount practicable.
Authorized safe uses are determined at the national level and include nationally registered or recommended uses, which take into account public and occupational health and environmental safety considerations.

Actual conditions include any stage in the production, storage, transport, distribution and processing of food commodities and animal feed.

Codex maximum limit for pesticide residues (MRLP) is the maximum concentration of a pesticide residue (expressed as mg/kg), recommended by the Codex Alimentarius Commission to be legally permitted in or on food commodities and animal feeds. MRLs are based on GAP data and foods derived from commodities that comply with the respective MRLs are intended to be toxicologically acceptable.

Codex MRLs, which are primarily intended to apply in international trade, are derived from estimations made by the JMPR following:

(a) toxicological assessment of the pesticide and its residue; and

(b) review of residue data from supervised trials and supervised uses including those reflecting national good agricultural practices. Data from supervised trials conducted at the highest nationally recommended, authorized or registered uses are included in the review. In order to accommodate variations in national pest control requirements, Codex MRLs take into account the higher levels shown to arise in such supervised trials, which are considered to represent effective pest control practices.

Consideration of the various dietary residue intake estimates and determinations both at the national and international level in comparison with the ADI, should indicate that foods complying with Codex MRLs are safe for human consumption.

Veterinary drug means any substance applied or administered to any food

producing animal, such as meat or milk producing animals, poultry, fish or bees, whether used for therapeutic, prophylactic or diagnostic purposes or for modification of physiological functions or behaviour.

Residues of veterinary drugs include the parent compounds and/or their metabolites in any edible portion of the animal product, and include residues of associated impurities of the veterinary drug concerned.

Codex maximum limit for residues of veterinary drugs (MRLVD) is the maximum concentration of residue resulting from the use of a veterinary drug (expressed in mg/kg or μg/kg on a fresh weight basis) that is recommended by the Codex Alimentarius Commission to be legally permitted or recognized as acceptable in or on a food.

It is based on the type and amount of residue considered to be without any toxicological hazard for human health as expressed by the Acceptable Daily Intake (ADI), or on the basis of a temporary ADI that utilizes an additional safety factor. It also takes into account other relevant public health risks as well as food technological aspects.

When establishing an MRL, consideration is also given to residues that occur in food of plant origin and/or the environment. Furthermore, the MRL may be reduced to be consistent with good practices in the use of veterinary drugs and to the extent that practical analytical methods are available.

Good Practice in the Use of Veterinary Drugs (GPVD) is the official recommended or authorized usage including withdrawal periods, approved by national authorities, of veterinary drugs under practical conditions.

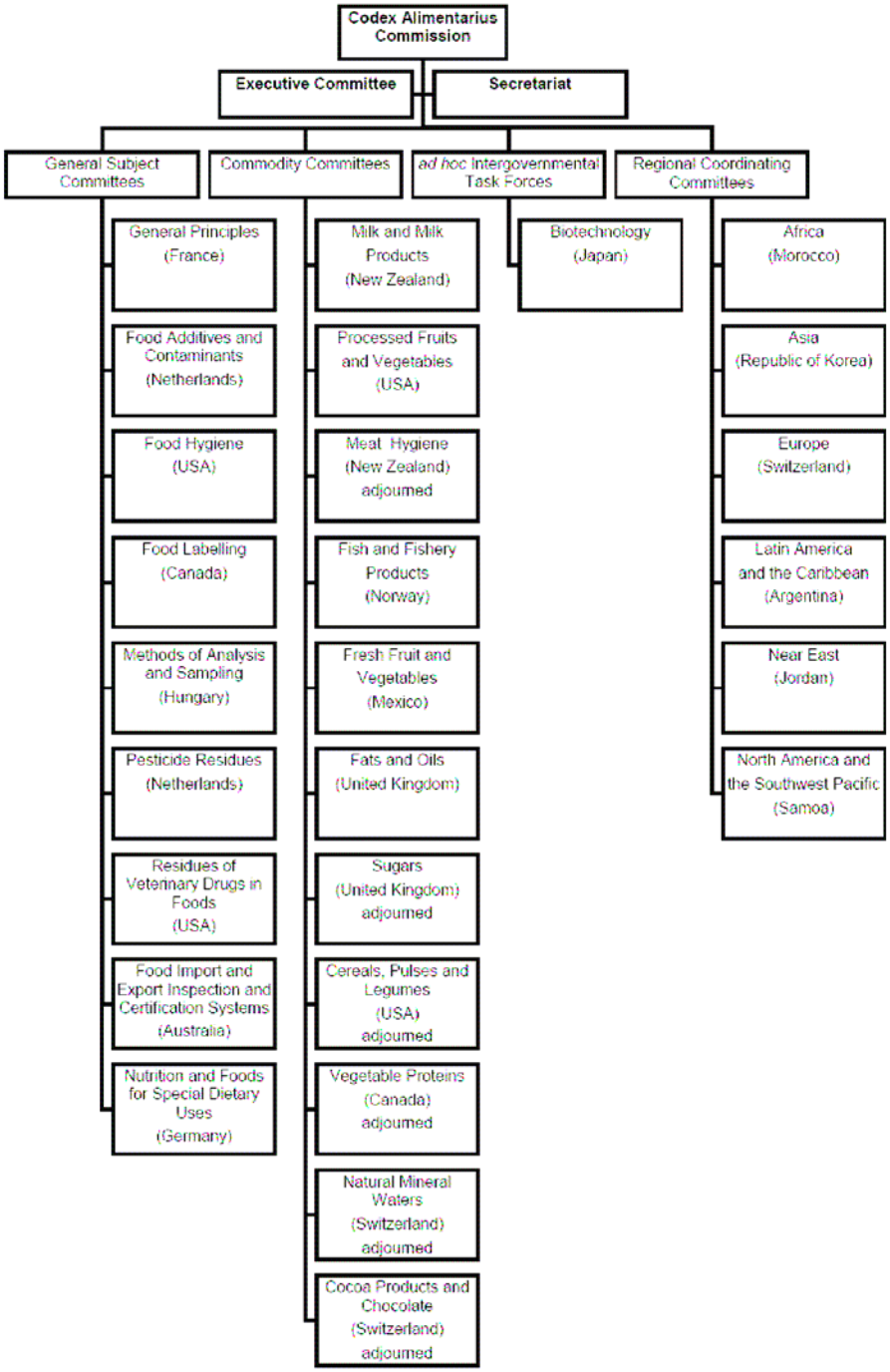
Processing aid means any substance or material, not including apparatus or utensils, and not consumed as a food ingredient by itself, intentionally used in the processing of raw materials, foods or its ingredients, to fulfil a certain technological purpose during treatment or processing and which may result in the non-intentional but unavoidable presence of residues or derivatives in the final product.

Traceability/Product Tracing: the ability to follow the movement of a food through specified stage(s) of production, processing and distribution.

APPENDIX C: JOINT FAO/WHO FOOD STANDARDS PROGRAME

From the 15th Procedural Manual of the Codex Alimentarius Commission

Available Online: ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_15e.pdf



APPENDIX D: THE FOUR STEPS OF RISK ASSESSMENT

From the 13th Procedural Manual of the Codex Alimentarius Commission
Available Online: ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_13e.pdf

Risk assessment is defined for the purposes of the Codex Alimentarius Commission as *"A scientifically based process consisting of the following steps: (i) hazard identification, (ii) hazard characterization, (iii) exposure assessment, and (iv) risk characterization."*

Hazard identification is *"The identification of biological, chemical, and physical agents capable of causing adverse health effects and which may be present in a particular food or group of foods."*

Hazard characterization is *"The qualitative and/or quantitative evaluation of the nature of the adverse health effects associated with biological, chemical and physical agents which may be present in food. For chemical agents, a dose-response assessment should be performed. For biological or physical agents, a dose-response assessment should be performed if the data are obtainable."*

Exposure assessment is *"The qualitative and/or quantitative evaluation of the likely intake of biological, chemical, and physical agents via food as well as exposures from other sources if relevant."*

Risk characterization is *"The qualitative and/or quantitative estimation, including attendant uncertainties, of the probability of occurrence and severity of known or potential adverse health effects in a given population based on hazard identification, hazard characterization and exposure assessment."*

APPENDIX E: STATUTES OF THE CODEX ALIMENTARIUS COMMISSION

From the 15th Procedural Manual of the Codex Alimentarius Commission
Available Online: ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_15e.pdf

Article 1

The Codex Alimentarius Commission shall, subject to Article 5 below, be responsible for making proposals to, and shall be consulted by, the Directors-General of the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) on all matters pertaining to the implementation of the Joint FAO/WHO Food Standards Programme, the purpose of which is:

(a) protecting the health of the consumers and ensuring fair practices in the food trade;

(b) promoting coordination of all food standards work undertaken by international governmental and non governmental organizations;

(c) determining priorities and initiating and guiding the preparation of draft standards through and with the aid of appropriate organizations;

(d) finalizing standards elaborated under (c) above and, after acceptance by governments, publishing them in a Codex Alimentarius either as regional or world wide standards, together with international standards already finalized by other bodies under (b) above, wherever this is practicable;

(e) amending published standards, after appropriate survey in the light of developments.

Article 2

Membership of the Commission is open to all Member Nations and Associate Members of FAO and WHO which are interested in international food standards. Membership shall comprise such

of these nations as have notified the Director-General of FAO or of WHO of their desire to be considered as Members.

Article 3

Any Member Nation or Associate Member of FAO or WHO which is not a Member of the Commission but has a special interest in the work of the Commission, may, upon request communicated to the Director-General of FAO or WHO, as appropriate, attend sessions of the Commission and of its subsidiary bodies and *ad hoc* meetings as observers.

Article 4

Nations which, while not Member Nations or Associate Members of FAO or WHO, are members of the United Nations, may be invited on their request to attend meetings of the Commission as observers in accordance with the provisions of FAO and WHO relating to the grant of observer status to nations.

Article 5

The Commission shall report and make recommendations to the Conference of FAO and the appropriate body of WHO through their respective Directors-General. Copies of reports, including any conclusions and recommendations, will be circulated to interested Member Nations and international organizations for their information as soon as they become available.

Article 6

The Commission shall establish an Executive Committee whose composition should ensure an adequate representation of the various geographical areas of the world to which the Members of the Commission belong. Between sessions, the Executive Committee shall act as the Executive organ of the Commission.

Article 7

The Commission may establish such other subsidiary bodies as it deems necessary for the accomplishment of its task, subject to the availability of the necessary funds.

Article 8

The Commission may adopt and amend its own Rules of Procedure which shall come into force upon approval by the Directors-General of FAO and WHO, subject to such confirmation as may be prescribed by the procedures of these Organizations.

Article 9

The operating expenses of the Commission and of its subsidiary bodies, other than those for which a Member has accepted the Chair, shall be borne by the budget of the Joint FAO/WHO Food Standards Programme which shall be administered by FAO on behalf of the two Organizations in accordance with the financial regulations of FAO. The Directors-General of FAO and WHO shall jointly determine the respective portion of the costs of the Programme to be borne by each Organization and prepare the corresponding annual expenditure estimates for inclusion in the Regular Budgets of the two Organizations for approval by the appropriate governing bodies.

Article 10

All expenses (including those relating to meetings, documents and interpretation) involved in preparatory work on draft standards undertaken by Members of the Commission, either independently or upon recommendation of the Commission, shall be defrayed by the government concerned. Within the approved budgetary estimates, the Commission may, however, recommend that a specified part of the costs of the preparatory work undertaken by the government on behalf of the Commission be recognized as operating expenses of the Commission.

APPENDIX F: *THE CODEX ALIMENTARIUS*

From the Food and Agriculture Organization of the United Nations

Available Online: http://www.fao.org/icatalog/search/result.asp?subcat_id=12

- Volume 1A: General Requirements
- Volume 1B: General Requirements (food hygiene)
- Volume 2A: Pesticide Residues in Foods (general texts)
- Volume 2B: Pesticide Residues in Foods (maximum residue limits [MLRs])
- Volume 3: Residues of Veterinary Drugs in Foods
- Volume 4: Foods for Special Dietary Uses (including foods for infants and children)
- Volume 5A: Processes and Quick-Frozen Fruits and Vegetables
- Volume 5B: Fresh Fruits and Vegetables
- Volume 6: Fruit Juices
- Volume 7: Cereals, Pulses (Legumes, and Derived Products and Vegetable Proteins
- Volume 8: Fats and Oils and Related Products
- Volume 9: Fish and Fishery Products
- Volume 10: Meat and Meat Products; Soups and Broths
- Volume 11: Sugars, Cocoa Products and Chocolate, and Miscellaneous Products
- Volume 12: Milk and Milk Products
- Volume 13: Methods of Analysis and Sampling

APPENDIX G:

STATEMENTS OF PRINCIPLE RELATING TO THE ROLE OF FOOD SAFETY RISK ASSESSMENT

From the Report of the Twenty-Second Session of the Joint FAO/WHO Codex Alimentarius Commission

Available Online: http://www.fao.org/docrep/W5979e/W5979e00.htm

1. Health and safety aspects of Codex decisions and recommendations should be based on a risk assessment, as appropriate to the circumstances.

2. Food safety risk assessment should be soundly based on science, should incorporate the four steps of the risk assessment process, and should be documented in a transparent manner.

3. There should be a functional separation of risk assessment and risk management, while recognizing that some interactions are essential for a pragmatic approach.

4. Risk assessments should use available quantitative information to the greatest extent possible and risk characterizations should be presented in a readily understandable and useful form

APPENDIX H:

ACCEPTANCE OF CODEX MAXIMUM LIMITS FOR PESTICIDE RESIDUES AS OF 9 APRIL 1976

From the Report of the Eleventh Session of the Joint FAO/WHO Codex Alimentarius Commission

Available Online: http://www.fao.org/docrep/meeting/005/ac313e/AC313E06.htm#app3

	Method of Acceptance		
Recommended Standard	Full Acceptance	Target Acceptance	Limited Acceptance
International Tolerances for Pesticide Residues (First Series) (Ref. No. CAC/RS 2-1969)	Argentina, Bahrain, Bolivia [1], Ghana, Iran, Liberia, Monaco, Philippines [1], Portugal [1], Rep. of Sudan, Thailand, United States of America [2] People's Dem. Rep. of the Yemen, Rep. of Zaire	Cyprus, Israel	
International Tolerances for Pesticide Residues (Second Series) (Ref. No. CAC/RS 35-1969)	Argentina, Bahrain, Fed. Rep. of Cameroon, Central African Rep., Ghana, Invory Coast, Rep. of Sudan, United States of America [2], People's Dem. Rep. of the Yemen, Rep. of Zaire	Cyprus, Morocco	
International Tolerances for Pesticide Residues (Third Series) (Ref. No. CAC/RS 43-1971)	Bahrain, Central African Republic, Greece, Iran, Kuwait, Liberia, Swaziland, United States of America [2]	Cyprus	
International Maximum	Canada [3] Singapore. [4]		

Limits for Pesticide Residues (Fourth Series) (Ref. No. CAC/RS 65-1974) [5]			

[1] Bolivia, the Philippines and Portugal have not stated specifically that they have given Full Acceptance, but it is assumed from the replies that this is the intention. Bolivia, in its reply which covered various Recommended Standards including the First Series of International Tolerances for Pesticide Residues, stated that it accepted the standards. The Philippines has likewise stated that it has accepted the recommended maximum limits in the First Series. Portugal indicated that the recommended maximum limits in the First Series merited acceptance.

[2] For precise details of the extent of the acceptances of the U.S.A., see ALINORM 74/6 - Part IV, Addendum 2 and ALINORM 76/6 - Part VI.

[3] For precise details of the extent of the acceptances of Canada, see ALINORM 76/6 -Part III.

[4] For precise details of the extent of the acceptances of Singapore, see ALINORM 76/6 - Part IV.

[5] The Fourth Series includes all maximum limits contained in the First, Second and Third Series and, therefore, supersedes the first three series.

APPENDIX I: DRAFT MAXIMUM RESIDUE LEVELS FOR VETERINARY DRUGS

From the Report of the Twenty-First Session of the Joint FAO/WHO Codex Alimentarius Commission

Available Online: http://www.fao.org/docrep/meeting/005/v7950e/v7950e00.htm

- Draft Maximum Residue Limits for 5 Growth Hormones at Step 8

43. The Commission was split into two opinions: (1) in favour of adopting these MRLs at Step 8 without delay; and (2) in favour of postponing the consideration to the next session of the Commission awaiting an international conference organized by the EC scheduled later this year to study this issue.

44. After a lengthy debate on the issue in relation to whether to base a decision on currently available scientific evidence or to take into account factors other than health concerns, the Delegation of Spain, on behalf of the member countries of EU, proposed a roll-call vote on the adjournment of debate on the adoption of certain growth-promoting hormones at Step 8. The result of the vote was:

In favour of adjournment:	Algeria; Austria; Belgium; Cyprus; Denmark; Finland; France; Germany; Greece; India; Iraq; Ireland; Italy; Kenya; Latvia; Malta; Netherlands; Norway; Poland; Portugal; Romania; Russian Federation; Slovak Republic; Spain; Sweden; Switzerland; Turkey; United Kingdom
Against adjournment:	Australia; Botswana; Brazil; Canada; Chile; China; Costa Rica; Egypt; Ghana; Hungary; Indonesia; Islamic Republic of Iran; Israel; Japan; Lebanon; Malaysia; Mexico; New Zealand; Nigeria; Paraguay; Peru; Philippines; Qatar; Republic of Korea; Saudi Arabia; Singapore; South Africa; Sudan; Tanzania; Thailand; United States of America

Abstaining:	Burkina Faso; Cuba; Uganda; Senegal; Zimbabwe
Tally:	28 votes in favour; 31 votes against; 5 abstentions
Result:	The motion for adjournment failed.

45. A majority of Member countries voted to proceed by the use of a secret ballot, as requested by the Delegation of the United States. As a result of the secret ballot, the Commission adopted the MRLs for growth-promoting hormones (33 votes in favour of adoption, 29 votes against adoption, and 7 abstentions).

46. The Observer of the European Community commented that it was regrettable that this important and far-reaching decision was made by a secret ballot which was contradictory to the Commission's decision to increase transparency. He further noted that it cast doubts on the validity and value of Codex work and standards and that consequences would be grave including the European Community's rethinking of participation in Codex work. The Delegations of The Netherlands, Sweden, and Finland stressed that the latter statement by the Observer was made on behalf of the European Commission but not on behalf of the European Union or its member countries and dissociated themselves from the latter statement. The Delegation of Spain, on behalf of the European Union, recalled the right of the Commission of the European Community to make as many comments as it felt necessary as an observer, but also dissociated itself from the latter statement. The Delegation of the United Kingdom dissociated itself from the entire statement.

- Draft Maximum Residue Limits for Bovine Somatotropins at Step 8

47. The Delegation of Spain, on behalf of the Member States of the European Union, proposed a roll-call vote on the adjournment of debate on the adoption of maximum residue limits for bovine somatotropins at Step 8. The result of the vote was as follows:

In favour of adjournment:	Algeria; Austria; Belgium; Burkina Faso; Cameroon; Cyprus; Denmark; Finland; France; Germany; Greece; Guinea; Hungary; India; Ireland; Islamic Republic of Iran; Italy; Latvia; Lebanon; Lithuania; Luxembourg; Malta; Netherlands; Norway; Poland; Portugal; Republic of Korea; Romania; Russia; Slovak Rep; Spain; Sweden; Switzerland
Against adjournment:	Argentina; Australia; Brazil; Canada; Cape; Verde; Chile; China; Cuba; Egypt; Ghana; Indonesia; Iraq; Israel; Japan; Kenya; Malaysia; Mexico; New Zealand; Nigeria; Pakistan; Peru; Saudi Arabia; Singapore; South Africa; Sudan; Tanzania; Thailand; Uganda; USA; UK; Zimbabwe
Abstaining:	Botswana; Ecuador; Lesotho; Philippines; Senegal; Tunisia
Tally:	33 votes in favour; 31 votes against; 6 abstentions
Result:	The motion for adjournment passed.

48. The Commission adjourned the debate until its next sitting. The Chairperson of the Codex Committee on Residues of Veterinary Drugs in Foods expressed his disappointment at the Commission's decision to postpone the debate.