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Legislative Implementation of the Food Chain Approach

Jessica Vapnek

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Legislative Implementation of the Food Chain Approach

*Jessica Vapnek**

ABSTRACT

Food safety is an essential element of food security, since "adequate" food means food that is not only available, but also safe. Food safety systems have traditionally focused on end-product testing, which is an unsatisfactory means of ensuring safe food. An increasing focus on prevention has spurred interest in a food chain approach, which aims to control all steps in the food chain from production to consumption. Although the approach has drawn international attention in recent years, national lawmakers have lacked guidance on its implementation. This Article serves that need. Part II of the Article describes the international backdrop to the food chain approach, discusses the main characteristics of the approach, and considers how the food chain approach is, in some respects, already being implemented in some specific areas. As these implementations are only partial solutions, Part III outlines four areas for legislative action to implement the food chain approach more fully. Part IV concludes by raising some outstanding questions linked to the food chain approach while noting some of the advantages its implementation is likely to offer.

* Legal Officer, Food and Agriculture Organization of the United Nations; J.D., University of California, Berkeley; B.A., Yale University. The views expressed in this paper are personal and do not necessarily represent those of the Organization. The author would like to thank, in particular, Alan Randell for his many ideas and generosity with his time, as well as Coralie Bonnin, Ezzeddine Boutrif, Annamaria Bruno, Jeffrey Collins, Ariella D'Andrea, Louise Fresco, Larry Helfer, Daniele Manzella, Kerstin Mechlem, Victor Mosoti, Isabella Pagotto, and Melvin Spreij for inputs and comments on earlier versions of this paper. The author is also grateful to organizers, participants, and presenters at the symposium for their questions as well as their enthusiasm for the topic introduced here.

TABLE OF CONTENTS

| | | |
|------|---|------|
| I. | INTRODUCTION | 988 |
| II. | THE FOOD CHAIN APPROACH | 990 |
| | A. <i>Background</i> | 990 |
| | B. <i>International Context</i> | 993 |
| | C. <i>Characteristics of the Approach</i> | 995 |
| III. | IMPLEMENTATION IN NATIONAL LEGAL SYSTEMS | 997 |
| | A. <i>Overview</i> | 997 |
| | B. <i>Existing Legislation</i> | 998 |
| | C. <i>Areas for Legislative Action</i> | 999 |
| | 1. Establish a Coordinating Mechanism or Institution | 999 |
| | 2. Cover All Sectors and All Steps | 1001 |
| | 3. Incorporate Prevention and a Risk- Based Approach | 1003 |
| | 4. Review the Legislative Framework for Consistency | 1006 |
| IV. | OUTSTANDING QUESTIONS | 1007 |
| | A. <i>The Transnational Problem</i> | 1007 |
| | B. <i>Shared Responsibility</i> | 1009 |
| | C. <i>Developing Country Concerns</i> | 1011 |
| V. | CONCLUSION | 1013 |

I. INTRODUCTION

Food security has traditionally been understood to mean the availability of adequate food stocks in times of need.¹ More recently, at least in the United States, the term has also come to refer to security of the food supply in light of potential bioterrorist attacks.² In fact, neither definition is sufficient. According to the World Food Summit Plan of Action of 1996, "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for

1. FOOD & AGRIC. ORG. OF THE U.N., TRADE REFORMS AND FOOD SECURITY: CONCEPTUALIZING THE LINKAGES 26-27 (2003) (quoting World Food Conference, Rome, Italy, Nov. 5-16, 1974), available at <ftp://ftp.fao.org/docrep/fao/005/y4671e/y4671e00.pdf>.

2. See, e.g., U.S. FOOD & DRUG ADMIN., GUIDANCE FOR INDUSTRY, FOOD PRODUCERS, PROCESSORS, AND TRANSPORTERS: FOOD SECURITY PREVENTIVE MEASURES GUIDANCE (2003), available at <http://www.cfsan.fda.gov/~dms/secguid6.html>.

an active and healthy life.”³ Ongoing policy work has provided further content to this definition,⁴ confirming that issues of nutrition, safety, and cultural appropriateness of food are not separable but rather are integral parts of the “adequacy” standard. In other words, if the available food is not safe, nutritious, or culturally appropriate, it is not adequate, and food security does not exist.

Nutrition, safety, and cultural appropriateness of food are also necessary elements for the realization of the human right to food, a socioeconomic right recognized in numerous binding and non-binding legal instruments, including the International Covenant on Economic, Social and Cultural Rights.⁵ The *Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security* set out government responsibilities with regard to nutrition and food safety in order to realize the right to food, and confirmed that food safety is an essential component of food security.⁶

Food safety has traditionally focused on the food processing sector and on inspections of finished products to assess compliance with established requirements.⁷ Increasingly, this traditional approach to food safety is being recognized as an inadequate means of ensuring food safety because it involves action only after the harmful food has already been produced,⁸ leading to the search for other strategies to ensure safe food. A “food chain approach”—which looks holistically at the myriad steps and the different actors that contribute to the production of food—is designed to answer the

3. World Food Summit, Rome, Italy, Nov. 13–17, 1996, *Rome Declaration on World Food Security*, U.N. Doc. WFS 96/3, available at <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>.

4. See, e.g., FOOD & AGRIC. ORG. OF THE U.N., VOLUNTARY GUIDELINES TO SUPPORT THE PROGRESSIVE REALIZATION OF THE RIGHT TO ADEQUATE FOOD IN THE CONTEXT OF NATIONAL FOOD SECURITY (2004), available at <http://www.fao.org/docrep/meeting/009/y9825e/y9825e00.htm> [hereinafter FAO VOLUNTARY GUIDELINES].

5. International Covenant on Econ., Soc. and Cultural Rights, G.A. Res. 2200A (XXI), art. 11, U.N. Doc. A/6316 (Jan. 3, 1976), available at http://www.unhcr.ch/html/menu3/b/a_ceschr.htm.

6. See, e.g., FAO VOLUNTARY GUIDELINES, *supra* note 4, guidelines 9-10. According to the guidelines, food security is an outcome that is achieved through the realization of the right to food and other existing human rights. See *id.* guidelines 15–19. For an excellent discussion of the relationship between the right to food and food security, see Kerstin Mechlem, *Food Security and the Right to Food in the Discourse of the United Nations*, 10 EUR. L.J. 631, 631–48 (2004).

7. Food & Agric. Org. of the U.N., Comm. on Agric., Rome, Italy, Mar. 31–Apr. 4, 2003, *FAO's Strategy for a Food Chain Approach to Food Safety and Quality: A Framework Document for the Development of Future Strategic Direction*, available at <http://www.fao.org/DOCREP/MEETING/006/Y8350e.htm> [hereinafter 2003 FAO Strategy].

8. See, e.g., Food & Agric. Org. of the U.N., Comm. on Agric., Rome, Italy, Apr. 13–16, 2005, *FAO's Strategy for a Safe and Nutritious Food Supply*, available at <http://www.fao.org/docrep/meeting/009/j4195e.htm> [hereinafter 2005 FAO Strategy].

weaknesses of traditional food safety systems. The food chain approach consists of regulatory and non-regulatory measures implemented at appropriate points in the food chain (from pre-production up to the point of sale) in order to ensure that food meets prevailing norms.⁹ An important feature of the food chain approach is that it incorporates the view that all participants in the food chain, from primary producers to processors to traders, share the responsibility for the supply of safe and nutritious food.¹⁰

Because it is intended to improve food safety, the food chain approach will be an important tool for achieving food security—a sufficient supply of safe and nutritious food.¹¹ Although international interest in the food chain approach has increased in recent years, there has been no guidance available to governments wishing to know what legislative steps are required to implement the approach. The purpose of this Article is to fill that gap by attempting to show how governments could implement the food chain approach at the national level.

Part II of the Article introduces the food chain approach, describing the circumstances that have led to its growing currency and setting out its main characteristics. It also discusses the ways in which a food chain approach is, in some respects, already being implemented in some specific subject areas of law. After examining two of these areas—pesticides and animal health—the Article concludes that these are only partial solutions. With the aim of proposing a comprehensive plan for implementation, Part III sets out four areas for legislative action to fully implement the food chain approach. Part IV contains some observations on issues that are likely to be problematic in the implementation of the food chain approach, as well as some of the advantages implementation can be expected to offer.

II. THE FOOD CHAIN APPROACH

A. *Background*

Globalization and dramatic increases in the volume of trade over the last decade, including trade in food, have made food safety an

9. *Id.* Prevailing international norms are defined as the standards, guidelines, and recommendations of the Codex Alimentarius Commission (Codex), as well as other officially adopted texts such as the International Code of Conduct on the Distribution and Use of Pesticides and the FAO Code of Conduct for Responsible Fisheries. National norms are measures based on those international texts or on “scientific principles, risk assessment or the assessment of nutrient requirements.” *Id.* at n.4.

10. See *infra* Part IV.

11. See 2005 FAO Strategy, *supra* note 8.

issue of global concern. New technologies allow food products to travel farther and stay fresh longer, paradoxically posing an increased risk of the spread of biological, chemical, and physical food hazards.¹² Governments have continually improved their means of detection, investigation, and control of these potential threats.¹³ Increasing populations, however, are placing greater demands on world food systems, especially in urban areas, where higher population densities increase the risks of food-borne disease.

In many countries, food contamination problems have weakened consumer confidence. While some outbreaks were accidental and unforeseen, others could have been predicted and avoided through proper monitoring and early warning mechanisms and controls. Furthermore, although some sectors of the food chain are routinely subject to more preventive action and oversight (such as slaughterhouses and dairies),¹⁴ others are less so. Greater sophistication and improved access to information are also leading to increased consumer demands for safer food.

In light of these developments, there has been a growing recognition that the traditional pattern of food safety enforcement—ex post facto controls on the finished product (which can still be seen in many sectors)—is not satisfactory for a variety of reasons.¹⁵ First, if the product has already reached the marketplace, ex post controls mean taking remedial action after the harm from unsafe food has already taken place. Not only is this course of action unacceptable conceptually (since food safety enforcement should seek to *prevent* harm), but it can also lead to greater costs—in health care, lost worker time, and product recalls.

Second, end-product testing entails an enormous waste of resources. By the time an unsatisfactory product is discovered, most of the resources needed to produce and prepare it have already been expended on its harvest, processing, preparation, packaging, and labeling. Clearly, removing the product earlier would cost less, and problems could have been avoided altogether through a greater focus on prevention of contamination throughout the food chain.

12. Food & Agric. Org. of the U.N., *Perspectives and Guidelines on Food Legislation, With a New Model Food Law*, at 7 (2005) (prepared by Jessica Vapnek & Melvin Spreij), available at <http://www.fao.org/Legal/legstud/ls87/ls87e.pdf> [hereinafter FAO Food Legislation].

13. Robert V. Tauxe & Emilio J. Esteban, *Advances in Food Safety to Prevent Foodborne Diseases in the United States*, in *SILENT VICTORIES: THE HISTORY AND PRACTICE OF PUBLIC HEALTH IN TWENTIETH-CENTURY AMERICA* 18 (John W. Ward & Christian Warren eds., 2006).

14. See Second FAO/WHO Global Forum of Food Safety Regulators, Bangkok, Thailand, Oct. 12–14, 2004, *Training Personnel of Official Food Safety Control Services*, Ch. II, ¶ 8, available at <http://www.fao.org/docrep/meeting/008/j2535e.htm>; Tauxe & Esteban, *supra* note 13, at 25–26.

15. FAO Food Legislation, *supra* note 12, at 42.

Third, *ex post facto* controls create an unfair burden by placing responsibility on government authorities rather than on the actors who actually produce and distribute the unsafe product. Although states have an obligation to protect the health of consumers (in order to realize the rights to health and food, for instance), private actors also have a role to play. There is growing acknowledgement that private actors should bear more responsibility for providing safe food.

Recognition of the weaknesses of the current system has led to a number of changes in the food safety area. More countries have shifted the focus of enforcement from a system of purely government-run inspections to a system of government oversight that monitors controls established and implemented by food businesses themselves.¹⁶ In many jurisdictions, legislation now requires companies to implement their own food safety systems,¹⁷ which government authorities then audit and certify.¹⁸ Inspectors function less like enforcers and more like extension agents (ministry staff members who travel to farms to work with farmers and livestock owners), in this case educating business owners and helping companies implement their own food safety controls and comply with established standards.¹⁹ Of course, some kind of legally implemented enforcement and penalty system is still required, but the conceptual shift has been dramatic. In many cases, food policies, and even food legislation, state unequivocally that the primary responsibility for placing safe food on the market lies with the food producers themselves.²⁰

16. *Id.* at 119.

17. FOOD & AGRIC. ORG. OF THE U.N. & WORLD HEALTH ORG., ASSURING FOOD SAFETY AND QUALITY: GUIDELINES FOR STRENGTHENING NATIONAL FOOD CONTROL SYSTEMS 65 (2006), available at http://www.who.int/foodsafety/publications/fs_management/guidelines_foodcontrol/en/.

18. *Id.*

19. *Id.* at 10.

20. *See, e.g.*, Draft Belize Food Safety Law, art. 4 (Nov. 20, 2006) (on file with author) (“The principal functions of the [Belize Agricultural Health] Authority under this Bill shall be to . . . (n) ensure that food producers and food processors understand that the primary responsibility for food safety and quality rests with them.”); *see also* Council Regulation 852/2004, On the Hygiene of Foodstuffs, art. 1(1)(a), 2004 O.J. (L 139) 3, 5 (EC) [hereinafter EU Food Hygiene Law] (“[P]rimary responsibility for food safety rests with the food business operator.”); Commission Regulation 178/2002, Laying Down the General Principles and Requirements of Food Law, Establishing the European Food Safety Authority and Laying Down Procedures in Matters of Food Safety, art. 17, 2002 O.J. (L 31) 1, 11 (EC) [hereinafter EU General Food Law] (“Food and feed business operators . . . shall ensure that foods or feeds satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.”); U.K. FOOD STANDARDS AGENCY, EC GENERAL FOOD LAW REGULATION 178/2002: GUIDANCE NOTES ON THE FOOD SAFETY ACT 1990 (AMENDMENT) REGULATIONS 2004 AND THE GENERAL FOOD REGULATIONS 2004, art. I, § 1 (2004), available at <http://www.food.gov.uk/multimedia/pdfs/generalfoodsafetyguide2.pdf> (“Given that a food business operator is best placed to devise a safe system for supplying food/feed and ensuring that the food/feed it supplies is safe, it holds primary

Even the changes just reviewed have not been sufficient to guarantee safe food. If pesticides have contaminated the product beforehand or if adulterants or contaminants can still affect the product in the supermarket, restaurant, or home, effective controls at the level of processing or preparing the food are worth little. Safe food requires a comprehensive food chain approach, covering all inputs and steps in the life of a food, from its primary production to its processing, packaging, labeling, transport, storage, preparation, handling, and sale.²¹

B. *International Context*

As part of ongoing efforts to improve food safety systems, the food chain approach has been gaining greater currency at the international level in the last several years. In 2002, the Committee on World Food Security of the Food and Agriculture Organization of the United Nations (FAO) requested a background document on the approach.²² The following year, the FAO Committee on Agriculture²³ issued its “Strategy for a Food Chain Approach to Food Safety and Quality: A Framework Document for the Development of Future Strategic Direction.”²⁴ This Strategy included an FAO definition of the food chain approach, general background information, and a framework for the development of a food chain approach to food safety.²⁵ FAO reformulated the Strategy in 2005, in part to extend the food chain approach to cover the question of nutrition.²⁶ The 128th session of the FAO Council, FAO’s intersessional governing body, endorsed the new Strategy.²⁷

In addition to the two FAO Strategies, other recent international documents reflect the importance of coordination with the animal- and plant-health areas to improve control throughout the food chain. The FAO Council, at the same 128th session, specifically called attention to the standard-setting work of the Codex Alimentarius

legal responsibility for ensuring compliance with food law and in particular food safety.”) (emphasis omitted).

21. The food chain approach is also known as the farm-to-fork or plough-to-plate approach, and implicates all actors in the food chain. *2005 FAO Strategy*, *supra* note 8, ¶ 10.

22. Comm. on World Food Sec., Rome, Italy, June 6–8, 2002, *Assessment of the World Food Security Situation*, ¶ 49, available at <http://www.fao.org/DOCREP/MEETING/004/Y6441e/Y6441e00.htm>. This is one of FAO’s many committees made up of representatives of member states.

23. The Committee on Agriculture is another FAO committee.

24. *2003 FAO Strategy*, *supra* note 7, ¶¶ 1–9.

25. *Id.*

26. *2005 FAO Strategy*, *supra* note 8, ¶ 2.

27. Food & Agric. Org. of the U.N., Rome, Italy, June 20–24, 2005, *Report of the Council of FAO*, ¶ 33, available at <http://www.fao.org/docrep/meeting/009/J5200E/j5200e00.htm> [hereinafter *2005 FAO Council Report*].

Commission (Codex, for food safety issues);²⁸ the Office international des épizooties (OIE, or World Organisation for Animal Health, for animal health issues); and the International Plant Protection Convention (IPPC, for plant health issues).²⁹ In so doing, the FAO Council recognized that food safety and animal and plant health are inextricable. Safe food cannot be guaranteed unless one begins on the farm, where crops are grown and animals or fish are raised for food. In other words, one must start where the food chain begins. Codex itself recently referred to the standards of the OIE and the IPPC in its “Principles for Traceability/Product Tracing as a Tool Within a Food Inspection and Certification System,”³⁰ adopted at its July 2006 session. This again reflects the importance of coordination among the food safety, animal health, and plant health areas.

Other international organizations have recognized the importance of an interface between food safety and subject areas formerly regulated in discrete sectors. For instance, the OIE Working Group on Animal Production Food Safety (which includes FAO, the World Health Organization, and Codex representatives) has drawn up a detailed work program for the development of standards on animal-production food safety, focusing on food safety measures applicable at the farm level.³¹ Since OIE veterinary experts and Codex food safety experts tend to work mainly separately, a high priority of the joint working group is to review OIE and Codex standards in order to identify gaps and duplications and to develop procedures for the establishment and mutual recognition of common standards.³²

Finally, in 2005, a new standard of the International Organization for Standardization (ISO) specified the new

28. Codex is a joint body of FAO and the World Health Organization.

29. 2005 FAO Council Report, *supra* note 27, ¶ 33. Codex, OIE, and the IPPC are recognized under the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures as reference bodies for international standard-setting. Agreement on the Application of Sanitary and Phytosanitary Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex A, art. 3, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1125, 1867 U.N.T.S. 493 (1994) [hereinafter SPS Agreement]. Governments that base their national sanitary and phytosanitary measures on these international standards are presumed to have complied with the SPS Agreement. Gretchen Heimpel Stanton, *The Multilateral Trading System and the SPS Agreement*, at 3, <http://www.standardsfacility.org/files/MultilateralTradingSystem.pdf> (last visited Sept. 5, 2007).

30. Codex Alimentarius Comm’n, *Principles for Traceability/Product Tracing as a Tool Within a Food Inspection and Certification System*, ¶ 1, CAC/GL 60-2006 (2006), www.codexalimentarius.net/download/standards/10603/CXG_060e.pdf (last visited Sept. 5, 2007) [hereinafter *Codex Traceability*] (“This document should be read in conjunction with all relevant Codex texts as well as those adopted by IPPC and OIE where appropriate.”).

31. See World Org. of Animal Health, *Animal Production Food Safety*, http://www.oie.int/eng/secur_sanitaire/en_introduction.htm (last visited Sept. 6, 2007).

32. *Id.*

requirements for food safety management systems throughout the food chain.³³ The ISO 22000 series of standards for food safety management systems are designed to be applied by food businesses and other commercial entities in the food chain³⁴ and are consistent with the principles of food safety developed by Codex.

Despite being divided into organizations mirroring in many respects the sectoral agencies existing at the national level (e.g., a food safety department in the ministry of health and a separate veterinary services department in the ministry of agriculture), the international community is making efforts to integrate tasks and mandates in order to improve food safety across the food chain. There is increasing recognition that the best outcomes are guaranteed not by having animal health officers focus only on animal production, environmental experts only on environmental contamination, and public health officers only on food hygiene. Rather, organizations and governments are recognizing that integration and collaboration are key to an effective food chain approach. The next section examines the main features of this approach.

C. Characteristics of the Approach

The concept of the food chain approach has a natural appeal and a natural logic. Foods progress through a series of steps from the farm or the sea to the plate, as should the control of their safety.

According to the two FAO Strategies (which are the main international expressions of the approach), the food chain approach can be described as having four principal characteristics.³⁵ First, it is *holistic*, addressing food safety in the entire food chain. Since food safety hazards may be introduced at any stage of the food chain, adequate control at every point in the chain is essential.³⁶

Second, the food chain approach is *preventive*, answering the weakness noted earlier—that in many sectors food safety systems have tended to be reactive, taking action to remove a food product

33. INT'L ORG. FOR STANDARDIZATION, FOOD SAFETY MANAGEMENT SYSTEMS – REQUIREMENTS FOR ANY ORGANIZATION IN THE FOOD CHAIN 4 (2005) [hereinafter FOOD SAFETY MANAGEMENT SYSTEMS]. This report is part of the ISO 22000 series. Subsidiary standards in the ISO 22000 series include ISO 22005 (INTERNATIONAL ORG. FOR STANDARDIZATION, TRACEABILITY IN THE FEED AND FOOD CHAIN—GENERAL PRINCIPLES AND GUIDANCE FOR SYSTEM DESIGN AND DEVELOPMENT (forthcoming)), which is still in the draft international standard or DIS stage; ISO/TS 22004 (FOOD SAFETY MANAGEMENT SYSTEMS—GUIDANCE ON THE APPLICATION OF ISO 22000:2005); ISO/TF 22003 (FOOD SAFETY MANAGEMENT SYSTEMS—REQUIREMENTS FOR BODIES PROVIDING AUDIT AND CERTIFICATION OF FOOD SAFETY MANAGEMENT SYSTEMS (forthcoming)); and ISO/CD 22006 (GUIDELINES ON THE APPLICATION OF ISO 9001:2000 FOR CROP PRODUCTION (forthcoming)). The last two are in preliminary draft form.

34. FOOD SAFETY MANAGEMENT SYSTEMS, *supra* note 33, at 1.

35. 2003 FAO Strategy, *supra* note 7, ¶¶ 24–31.

36. *Id.* ¶ 26.

only after it has been produced or even after it has caused harm to human health.³⁷ By contrast, with the food chain approach, controls are directed more at preventing food hazards than enforcing standards after the fact.³⁸ Thus, the approach embraces existing preventive codes of practice such as Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP), Good Hygiene Practices (GHP), and the Hazard Analysis and Critical Control Point (HACCP) system.³⁹ All of these are designed to prevent food-borne hazards from entering the food chain in the first place.⁴⁰

Third, the food chain approach is *risk-based*, meaning that resources are allocated to combat the hazards that pose the greatest threat to public health, and where the potential gains from preventive action are greatest.⁴¹ Integrating risk analysis into the food chain approach not only places the system on a sound scientific basis,⁴² but also helps to eliminate unnecessary controls, which are characteristic of *ex post facto* inspection systems. For greater efficiency, controls take place at the points in the chain where they are most effective at assuring the desired outcome—a sufficient supply of safe and nutritious food that matches the cultural requirements of the intended market.⁴³

The fourth and final characteristic of the food chain approach is that it posits food safety as a *shared responsibility*, assured through the combined efforts of all the private and governmental actors participating in the food chain.⁴⁴ Whether shared responsibility means joint responsibility or the allocation of partial responsibility at distinct points in the chain is an open question, discussed in further detail below.⁴⁵

37. *Id.* ¶ 25.

38. *Id.* ¶ 26.

39. *Id.* ¶ 30.

40. *Id.* ¶ 33. The three “good practices” listed here are designed to maximize safety and minimize hazards at their respective points in the food chain through standardized methods and procedures, while HACCP is a methodology for food safety requiring the identification of critical control points (CCPs) in food production and preparation processes. CCPs are points at which controls can be applied and a food safety hazard can either be eliminated or reduced to an acceptable level. Since January 1, 2006, EC Regulation 852/2004 requires food business operators in Europe to establish a permanent procedure based on HACCP principles. EU Food Hygiene Law, *supra* note 20, art. 5.

41. 2005 FAO Strategy, *supra* note 8, ¶ 29; see also Commission White Paper on Food Safety ¶ 65, COM (1999) 719 final (Jan. 12, 2000), available at http://ec.europa.eu/dgs/health_consumer/library/pub/pub06_en.pdf [hereinafter *EU White Paper*].

42. This can avoid potential trade problems, since the SPS Agreement requires governments to provide scientific justification for any sanitary measure that could otherwise function as a trade barrier. SPS Agreement, *supra* note 29, art. 3(3) & n.2.

43. Michael R. Taylor, *Lead or React? A Game Plan for Modernizing the Food Safety System in the United States*, 59 FOOD & DRUG L.J. 399, 402 (2004).

44. 2003 FAO Strategy, *supra* note 7, ¶ 26.

45. See *infra* Part IV.

III. IMPLEMENTATION IN NATIONAL LEGAL SYSTEMS

A. Overview

It is easy to see why the food chain approach is appealing. But although it is easy to place a label on something indicating that it “assists in implementing the food chain approach” (which is not an uncommon practice in recent years),⁴⁶ it is not at all clear what that phrase actually means. One perspective might be that anything that integrates more than one activity heretofore carried out separately assists in implementing a food chain approach. Under this point of view, implementation of a food chain approach is simply the series of incremental steps taken toward more collaboration, harmonization, and pooling of resources. Another perspective might be that only improvements addressing *all* activities on the way from the farm to the table capture a food chain approach. This is clearly the preferable approach, as it aims to address the food chain in its entirety.

As a practical matter, these two perspectives need not be mutually exclusive. The first one could simply be a temporary step on the way to a comprehensive food chain approach. For instance, a country could start by integrating two activities (e.g., meat inspection in slaughterhouses by veterinarians and inspection of slaughtering facilities by food inspectors) and then gradually move towards a more complete food chain approach by similar incremental steps. Ultimately, the goal should be the integration of as many activities as possible into one legislative and institutional framework covering the entire food chain, while accepting that some subject matters may be better regulated by particular institutions and personnel, or that some sectors might be more resistant to change.⁴⁷

It is worth bearing in mind that this Article focuses only on legislative implementation. Other non-regulatory tools will also be essential to implementation of a food chain approach.⁴⁸ Adoption of new technologies, for example, will be critical to preventing food-borne disease outbreaks.⁴⁹ Widespread use of GAP, GMP, GHP, and HACCP will assist in preventing breakdowns at various stages of the

46. See, e.g., SELECT COMMITTEE ON AGRIC., THE FOOD SAFETY PROBLEM, THE FOOD CHAIN, 1997–98, H.C. 331-I, ¶ 53, available at <http://www.parliament.the-stationery-office.co.uk/pa/cm199798/cmselect/cmagric/331iv/ag0402.htm> [hereinafter THE FOOD SAFETY PROBLEM] (noting that the “metaphor of the food chain has become a commonplace (together with the associated clichés ‘farm to fork’ and ‘plough to plate’)”).

47. FAO Food Legislation, *supra* note 12, at 166.

48. 2005 FAO Strategy, *supra* note 8, ¶¶ 16, 19–21; Taylor, *supra* note 43, at 402.

49. U.S. FOOD & DRUG ADMIN. ET AL., FOOD SAFETY FROM FARM TO TABLE: A NATIONAL FOOD-SAFETY INITIATIVE, A REPORT TO THE PRESIDENT (1997), available at <http://vm.cfsan.fda.gov/~dms/fsreport.html>.

food chain.⁵⁰ Education of consumers and regulators—sensitizing them to the fact that they are involved in one big project (protection of the whole food chain and not just their own sector)—will also be important. For example, some countries include lectures on plant and animal health issues during the training of new customs officers, since customs is the first line of defense for food products entering a jurisdiction.⁵¹ Other countries mount extensive education and awareness campaigns targeted at farm workers (who play a key role in on-farm hygiene) and at consumers.⁵² Pooling of resources and equipment, which might entail physically housing officers in the same building and having seminars and meetings to discuss common issues like risk analysis, is also desirable.

The remainder of this Article will attempt to imagine how the food chain approach could be implemented through legislation at the national level. Before turning to future implementation, however, it is worth looking at existing legislative frameworks to see where the food chain approach fits in.

B. Existing Legislation

In some respects, legislative implementation of the food chain approach is already taking place with regard to a few subject matters that span most or all of the food chain. For example, in the regulation of pesticides, legislation reflecting a life cycle approach addresses all steps in the life of a pesticide, from its registration, labeling, application, storage, and disposal, to its residues in common foodstuffs (although residues in processed foods are mainly at de minimis levels).⁵³ Because control starts at the crop stage (or even before) and ends with foods ready for human consumption, it is reasonable to state that the regulation of pesticides reflects a food chain approach.

In the animal health area as well, the legal framework can be said to capture a food chain approach. Legislative provisions cover the registration of veterinary drugs; the identification and movement of animals; the treatment of animals with drugs and vaccines (to control residues); animal welfare; and the transport, slaughter, processing, storage, and sale of food of animal origin.⁵⁴ Rules start at the farm and end up governing activities in retail shops and restaurants. Even clearer is the case of milk⁵⁵: developed countries have long-established systems of control running from the cow to the

50. See, e.g., THE FOOD SAFETY PROBLEM, *supra* note 46, ¶¶ 59, 61.

51. *Id.* ¶ 68.

52. *Id.*

53. FAO Food Legislation, *supra* note 12, at 93.

54. *Id.* at 13.

55. I am grateful to Robert Tauxe for this point.

carton.⁵⁶ In the United States, for example, it has been recognized for eighty years that safe milk can only be guaranteed through a combination of on-farm controls on the one hand, and pasteurization of only Grade-A milk on the other.⁵⁷

The question is whether these kinds of legislation are sufficient to implement a food chain approach. The problem is that a comprehensive legislative framework for animal health, although it covers all temporal steps, all activities, and all foods of animal origin, is still a sectoral approach. The same is true for pesticides (although the issue is complicated by the fact that pesticide legislation addresses other important objectives, including protection of the environment and worker health).⁵⁸ In short, the weakness of these examples is that they do not ensure continuity of legal oversight from farm to fork. Combining these and similar areas would be a step in the right direction, but would not be sufficient, as there would still be nothing to guarantee a whole-chain perspective. Answering the question posed earlier, it is not enough simply to integrate two activities and call that the implementation of a food chain approach. If lawmakers do not try their best to cover as many sectors and as many steps in the food chain as is possible and practical, then the food chain approach is devoid of meaning. Accordingly, the next section introduces four areas for legislative action to implement a food chain approach.

C. Areas for Legislative Action

1. Establish a Coordinating Mechanism or Institution

The first key area for legislative action is to create a new (or strengthen a pre-existing) coordination mechanism or institution to ensure a whole-chain approach. Developing countries in particular suffer from overlaps and gaps in coverage arising from weak collaboration and weak communication among existing ministries,⁵⁹ although these problems exist in developed countries as well. For example, although EC Regulation No. 178 of 2002 on the general principles of food law intends to incorporate a food chain approach,⁶⁰ there continue to be numerous fragmented operations taking place in European countries.⁶¹ The situation is similar in the United States,

56. See Tauxe & Esteban, *supra* note 13, at 25–26.

57. *Id.*

58. FAO Food Legislation, *supra* note 12, at 98.

59. *Id.* at 153.

60. EU General Food Law, *supra* note 20, pmb1., ¶ 12.

61. See Trygve Ugland & Frode Veggeland, *Experiments in Food Safety Policy Integration in the European Union*, 44 J. COMMON MKT. STUD. 607, 613–15, 620 (2006).

where there are several agencies and statutes, and many inconsistencies.⁶²

The solution could be either an inter-institutional mechanism to coordinate the activities of existing institutions, or a new institution altogether. The former might be a board or council with representation from the various units in the main ministry involved in food safety, or from all institutions and agencies involved in the food chain. This body would have responsibility for risk assessment and risk communication, and would coordinate food control activities within the jurisdiction. Different units or actors might be empowered to take action at different parts of the food chain, but always under the umbrella of the coordinating body.

The latter (establishment of a new institution) would require legislative creation of an independent food authority with responsibility for the provision of scientific advice on all aspects relating to food safety, operation of rapid alert systems, and communication of risks. The object in both cases would be an improved institutional framework covering all aspects of food production from farm to table.⁶³ An important secondary goal would be the identification of accountable parties at each step in the food chain.⁶⁴

Because the creation of a new integrated institution to oversee the food chain may engender resistance on the part of existing ministries and agencies, it may be best to proceed incrementally. Thus, the establishment of a coordinating mechanism could be just the first step toward a bona fide centralized institution.

Creation of a new institution does not necessarily mean throwing out all specialized expertise. Veterinarians, in particular, have traditionally been leery of integration into a single food agency or control mechanism because they believe that only they should inspect farm animals, oversee slaughter, and inspect meat. This concern is unfounded because certain experts can still be assigned to specific activities in the food chain. However, there has to be continuity of oversight throughout, which is what is generally lacking. In

62. Taylor, *supra* note 43, at 402-03; cf. INST. OF MED., NAT'L RESEARCH COUNCIL, ENSURING SAFE FOOD FROM PRODUCTION TO CONSUMPTION 48 (1998) [hereinafter ENSURING SAFE FOOD] (citing a recent General Accounting Office (now the Government Accountability Office) report indicating that the Food and Drug Administration and the United States Department of Agriculture follow different approaches to controlling the safety of imported food).

63. See THE FOOD SAFETY PROBLEM, *supra* note 46, ¶ 53 ("One of the major benefits of the establishment of a Food Standards Agency should be its ability to survey the entire length of the chain and identify the critical points where intervention will have the most effect.").

64. Cf. Taylor, *supra* note 43, at 402 (noting that the current organizational system "divides food safety leadership and defeats accountability for the system's successes and failures").

situations where the borderlines of action are unclear, memoranda of understanding between actors would assist in clearly defining areas of responsibility and ensuring that gaps are eliminated. Additionally, regular meetings of the governing board of the institution to share information among the players in the food chain will be essential.

The importance of sharing knowledge and information cannot be overstated. There is a strong tendency, at national and international levels, to consider agricultural health issues in a narrow, sectoral way. That is, officials understand phytosanitary issues as only pertaining to plant health and zoonosanitary issues as only encompassing animal health (and concerning only veterinarians).⁶⁵ In many cases, however, there is a clear nexus between these areas and food safety. Collaboration will be important to identify those situations in which plant or animal disease might affect human health.

One advantage of creating a centralized institution is that resources, staff, and equipment can be pooled. Rather than several small or ill-equipped laboratories distributed across the various sectors (e.g., animal health, plant health, and food safety), one institution can combine all of these under one roof. For example, each ministry responsible for a certain sector of the food chain (i.e., the Ministry of Health for food hygiene, the Ministry of Trade for food businesses, the Ministry of Agriculture for on-farm food safety, and the Customs Department for imports and exports) may have only five ill-equipped laboratories and twenty staff, some trained and some not, while a new agency responsible for food safety from farm to fork might have twenty laboratories and one hundred trained staff. Such pooling of resources can already be seen in some regions, where one laboratory serves several countries whose governments have recognized that some analyses can be done more efficiently at the regional level.⁶⁶

2. Cover All Sectors and All Steps

The second area for legislative action is to ensure that all sectors, all temporal steps, all activities, and all foods are covered. That is, the legislation should not omit any part of the chain—beginning when an animal or a crop starts on the farm, in the aquaculture facility, or in the field, and continuing until the product becomes a food for

65. See *id.* at 403 (criticizing the U.S. government for “*ad hoc* coordination among a fragmented patchwork of agencies with conflicting missions concerning food safety”).

66. Cf. Agreement Establishing the Caribbean Regional Drug Testing Laboratory, Dec. 16, 1974, available at http://www.caricom.org/jsp/secretariat/legal_instruments/agreement_crctl.jsp?menu=secretariat.

human consumption. Sectoral regulation will still exist, but each sector must be addressed comprehensively.

For example, in the area of animal feed, legislation should begin with the manufacture or import of raw materials or animal feeds; address the accreditation of feed production plants; cover the use of specific feed materials and products; and regulate the evaluation, authorization, labeling, sale, and use of feed. Similarly, for food of animal origin, comprehensive legislation would include registration of farms; rules for care and feeding of animals; an animal identification system; and, as noted above, rules for slaughter, transport, food preparation, and handling. For food hygiene, legislation should cover, among other things, construction of buildings; training of food personnel; additives, flavorings, packaging, and irradiation; and limits on contaminants and residues of pesticides and veterinary medicines in food. The key is that control takes place under the aegis of the coordination mechanism or centralized institution, while legal provisions or other interagency agreements cover the borderlines of the various sectors.

Whether all of these provisions are contained in one law, in just a few laws, or in a series of sectoral laws is not important. There does not necessarily have to be one enormous "Food Safety Law" covering the gamut of activities from farm to fork. Non-lawyers often complain that legislative frameworks are not "integrated," or that they are "fragmented." The layman's dream is of a single law covering the entire subject area, the way there can be a comprehensive national food policy. But in the legislative area, this is often neither practical nor desirable. A massive and comprehensive law covering the entire food chain would still have to be broken down into individual chapters covering the discrete topics of animal feeds, veterinary drugs, pesticides, and so forth. Such a law would be unwieldy and probably unwise: because an area such as food safety is subject to scientific advancements,⁶⁷ any developments in one sector might require a reexamination of the entire law. It is time-consuming and impractical to ask the legislature to revisit the law every couple of years to keep pace with developing scientific knowledge. With smaller sectoral laws, changes can be made in one area without opening up the entire law to review and scrutiny.⁶⁸

67. For a good discussion of evolving technologies and how existing regulatory frameworks struggle to account for them, see FOOD & NUTRITION BD., INST. OF MED., NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., SCIENTIFIC CRITERIA TO ENSURE SAFE FOOD 126 (2003).

68. Although in some jurisdictions it may be possible to restrict changes to just one chapter of an omnibus law, there is always the risk that interested parties may take advantage of pending changes in one area to force lawmakers to revisit other parts of the same statute.

3. Incorporate Prevention and a Risk-Based Approach

The third area for legislative action will be to enact provisions that incorporate prevention and a risk-based orientation into the legal framework. There are a number of ways this might be achieved. First, lawmakers might expand requirements of food traceability.⁶⁹ Food traceability legislation requires the identification and tracking of animals as well as the labeling and identification of foods and their ingredients. Legal provisions generally compel food businesses to establish a system to trace all animals, foods, or elements of foods back one step and forward one step in the food chain.⁷⁰ The legislation also contains information requirements, stating that businesses must keep certain kinds of records and convey them to the food authorities, either on a regular basis or upon demand.

Traceability can serve a number of objectives: facilitating tracking for food safety reasons,⁷¹ differentiating products for marketing purposes,⁷² reducing information costs for consumers desiring to know more about a food product,⁷³ regaining consumer confidence and product reputation after an outbreak,⁷⁴ decreasing costs to companies faced with product recalls,⁷⁵ and generally improving the management of food supplies.⁷⁶ The present discussion concerns only the first objective, i.e., the use of traceability to enable food producers and regulators to quickly identify the point in the food chain where a food safety problem has occurred. This enables quick corrective action as well as rapid recall if a food presents a risk to human health. Although traceability does not in itself make food safe,⁷⁷ by facilitating product recalls it can prevent

69. Codex defines the traceability of food as “the ability to follow the movement of a food through specified stage(s) of production, processing and distribution.” *Codex Traceability*, *supra* note 30, ¶ 2.

70. Jill E. Hobbs, *Liability and Traceability in Agri-Food Supply Chains*, in *QUANTIFYING THE AGRI-FOOD SUPPLY CHAIN* 86–87 (C.J.M. Ondersteijn et al., eds., 2006) (discussing the traceability requirements in Article 18 of the EU General Food Law).

71. U.S. DEPT OF AGRIC., *FOOD TRACEABILITY: ONE INGREDIENT IN A SAFE AND EFFICIENT FOOD SUPPLY* (prepared by Elise Golan et al.), <http://www.ers.usda.gov/AmberWaves/April04/Features/FoodTraceability.htm> (last visited Sept. 9, 2007) [hereinafter *FOOD TRACEABILITY*].

72. *Id.*

73. Hobbs, *supra* note 70, at 88.

74. Sébastien Pouliot & Daniel A. Sumner, *Traceability, Liability and Incentives for Food Safety and Quality*, Nov. 2006, at 3, available at www.agmrc.org/NR/ronlyres/5177225F-3EF6-4BB4-9310-FDF240CEE4F2/0/traceabilityandliability1106pdf.pdf.

75. See Hobbs, *supra* note 70, at 85–86.

76. *FOOD TRACEABILITY*, *supra* note 71.

77. *FOOD CHAIN STRATEGY DIV., FOOD STANDARDS AGENCY, TRACEABILITY IN THE FOOD CHAIN: A PRELIMINARY STUDY* ¶ 45 (2002) [hereinafter *TRACEABILITY IN THE FOOD CHAIN*].

further illness in unaffected populations.⁷⁸ It can also function as a deterrent, since companies may fear liability costs if they can be easily identified.⁷⁹ At present, food traceability applies only to certain kinds of foods.⁸⁰ In order to enhance prevention, the scope of food traceability regulations may need to be expanded (although there will be associated cost implications).⁸¹

Expanding traceability seems a clear way to incorporate prevention. Oddly, however, while the 2003 FAO Strategy embraces food traceability⁸² (as did the EU White Paper),⁸³ the 2005 FAO Strategy is non-committal on the role of traceability in a food chain approach.⁸⁴ This may have been due to the divergence of views among national delegations on the merits of traceability and the likely costs of implementation.

Another possible area for legislative action to implement a food chain approach will be harmonization of standards, since an effective system of prevention depends on setting uniform standards with which actors in the food chain can comply.⁸⁵ Without harmonization of standards, it would be necessary to apply different measures at different places in the same food chain to arrive at the correct outcome (namely, safe food). Eliminating multiple standards and

78. Hobbs, *supra* note 70, at 85.

79. See Pouliot & Sumner, *supra* note 74, *passim* (arguing that increases in traceability requirements, by increasing liability costs, create incentives for farmers to provide safer food). However, other commentators have a different perspective:

[T]he legal system provides weak direct incentives for food firms to improve food safety controls because of the low probability that they will be sued for causing a food borne illness, the low expected damages that they will have to pay, and the low probability that they will attract unfavourable media attention which might reduce their market share and profits.

Jean C. Buzby & Paul D. Frenzen, *Food Safety and Product Liability*, 24 FOOD POLICY 637, 645 (1999).

80. TRACEABILITY IN THE FOOD CHAIN, *supra* note 77, ¶ 89.

81. See *infra* Section IV.C.

82. 2003 FAO Strategy, *supra* note 7, ¶ 25 (listing traceability as one of five "broadly defined inter-related needs on which to base future strategic direction in support of a food chain approach to food safety").

83. EU White Paper, *supra* note 41, ¶ 10 ("A successful food policy demands the traceability of feed and food and their ingredients." (emphasis omitted)).

84. For instance, the 2005 FAO Strategy states:

The integration of traceability into a food chain approach to ensuring a safe and nutritious food supply will depend on the development and application of prevailing norms, especially the guidance under debate by the Codex Alimentarius Commission. Although the food chain approach described in this paper is not dependent on the application of traceability, the general statement contained in COAG/2003/5 [the 2003 FAO Strategy] that a food chain approach facilitates the application of traceability remains valid.

2005 FAO Strategy, *supra* note 8, ¶ 26.

85. Hobbs, *supra* note 70, at 90 ("Mandatory standards represent an ex ante set of precautions to limit risk.").

multiple controls streamlines enforcement and allows developing countries, small enterprises, and others to enter the market with at least a semblance of free competition.⁸⁶ As a general matter, clear and harmonized standards enable participants in the market to know what the applicable requirements are.⁸⁷

Another possible way of incorporating a preventive and risk-based approach is to enact legislation on *Biosecurity*, which draws together the policy and regulatory frameworks for risk management across the different sectors of food safety, animal life and health (including fisheries), and plant life and health.⁸⁸ Lately, there has been increasing work at the international level on *Biosecurity*, which aims to manage biological risks in the three sectors mentioned above while simultaneously protecting the environment and contributing to its sustainable use.⁸⁹ Embracing *Biosecurity* in order to effectively implement a food chain approach will at a minimum ensure the sharing of resources and approaches to risk management in the *Biosecurity* sectors.

Another appealing advantage to relying on *Biosecurity* legislation is that so much intellectual work has already been done on

86. I am grateful to Alan Randell for this point.

87. Note that the present discussion concerns standards set by the government, but private standards are increasingly important. For example, supermarkets set standards for their suppliers, with which the latter must comply if they wish to sell to the particular supermarket chain. In such circumstances, government standards become increasingly irrelevant, as the private standards become “de facto” mandatory. This is of concern in many developing countries, in particular to small-scale farmers who do not have the resources to implement private standards (which are often more demanding than official SPS standards and often address concerns other than food safety). There are also larger issues of fairness: whereas a Codex standard is the result of negotiation and consensus, private standards are unilaterally developed by the retailer. For a discussion of these issues, see FOOD & AGRIC. ORG. OF THE U.N., VOLUNTARY STANDARDS AND CERTIFICATION FOR ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE AGRICULTURAL PRODUCTION AND TRADE (2004) (prepared by Pascal Liu et al.), available at http://www.fao.org/es/esc/en/41470/110007/highlight_110014en.html; SPENCER HENSON, THE ROLE OF PUBLIC AND PRIVATE STANDARDS IN REGULATING INTERNATIONAL FOOD MARKETS (May 28, 2006), http://www.ilr1.uni-bonn.de/iatrc/iatrc_program/Session%204/Henson.pdf.

88. Food & Agric. Org. of the U.N., Comm. on Agric., *Biosecurity in Food and Agriculture*, ¶ 4, COAG/2003/9 (Apr. 4, 2003), available at <ftp://ftp.fao.org/unfao/bodies/coag/coag17/Y8453e.doc> [hereinafter *COAG Biosecurity*]; Food & Agric. Org. of the U.N., *Technical Consultation on Biological Risk Management in Food and Agriculture, Report of the Technical Consultation*, ¶ 34, U.N. Doc. TC/BRM/Rep (Jan. 13–17, 2003), available at ftp.fao.org/es/esn/food/tc_bangkok/tc_brm_report_en.pdf. Because translation of the word “biosecurity” into French and Spanish can lead to confusion, FAO capitalizes and italicizes it when referring to this regulatory approach in these official FAO languages.

89. COAG *Biosecurity*, *supra* note 88, ¶ 1; Clive Stannard et al., *Agricultural Biological Diversity for Food Security: Shaping International Initiatives to Help Agriculture and the Environment*, 48 HOW. L.J. 397, 416–29 (2004).

the subject,⁹⁰ although admittedly, the relationship between a food chain approach and a *Biosecurity* approach is not wholly clear.⁹¹ Since the food chain approach deals with food safety, and the *Biosecurity* approach seeks to integrate the control of all biological risks, the main link between the two will be through the interface between animal health and food safety, as well as between plant protection and food safety.

4. Review the Legislative Framework for Consistency

The last area for legislative action is more ephemeral. It consists of reviewing legislation to ensure that it reflects the four characteristics of the food chain enumerated earlier. That is, it should be holistic, incorporate a preventive approach, rely on risk analysis, and capture the concept of shared responsibility.⁹² Translating these concepts into legislation is not easy, but it can be done. It may be as simple as drafting the preamble of the law to state one or more of these as goals of the legislation (although, of course, the preamble is not binding).

In addition to the suggestions made in the preceding section, the legislative framework can incorporate a preventive approach by downplaying punitive measures. Offenses and penalties would still be included, but lawmakers can strengthen provisions on warnings, improvement notices, and the like. Other ways to incorporate prevention would be to impose record-keeping requirements on actors in the food chain, improve traceability, and facilitate early warning. To incorporate risk analysis, this may require that the same agency not be responsible for both risk assessment and risk management.

A legislature can capture the concept of shared responsibility by creating a centralized coordination mechanism or integrated institution to achieve a whole-chain approach (see Part C.1), and by ensuring that the legislation does not leave gaps as to some activities,

90. See, e.g., *COAG Biosecurity*, *supra* note 88; Food & Agric. Org. of the U.N., *Biosecurity for Food and Agriculture Production*, <http://www.fao.org/biosecurity> (last visited Sept. 10, 2007); Food & Agric. Org. of the U.N., *Biosecurity Toolkit*, http://km.fao.org/biosecwiki/index.php/FAO_Biosecurity_toolkit (last visited Sept. 10, 2007).

91. The FAO Committee on Agriculture's (COAG) *Biosecurity* document does not mention the food chain, while the 2003 FAO Strategy refers readers to the COAG *Biosecurity* document for "the broader implications of a food chain approach on production and post-production systems [and] biosecurity." *2003 FAO Strategy*, *supra* note 7, ¶ 24. The 2005 FAO Strategy is even more opaque, simply stating that "the food chain approach is consistent with FAO's *Biosecurity* approach to animal life and health, plant life and health and food safety regulation," and again citing back to the COAG *Biosecurity* document. See *2005 FAO Strategy*, *supra* note 8, ¶ 11. Once again there may have been political reasons why delegates were leery of embracing *Biosecurity* as an essential element of a food chain approach, but we need not be so restricted here.

92. See *supra* Part II.C.

some temporal steps, or some foods (see Part C.2). It may also mean careful drafting and the use of memoranda of agreement to define as clearly as possible the borderlines between the areas of responsibility of the various actors in the food chain.

Another important way to capture the issue of shared responsibility is through the use of certification systems, which rely on collaboration between stakeholders and government officials. As noted earlier, there has been a shift away from government control to government oversight of food safety systems,⁹³ mainly undertaken by officially recognized certification bodies. Such bodies monitor the application of GAP, GMP, GHP, HACCP, or traceability (any of which legislation might make mandatory), while government authorities audit the food companies' own control measures and verify the certification bodies' reports.

IV. OUTSTANDING QUESTIONS

Following the recommendations made here, the legislative implementation of a food chain approach would result in a coordination mechanism or institution covering as many activities as possible in the food chain and providing a whole-chain perspective. Legislative provisions would cover all temporal steps and all activities in each sector of the food chain. Memoranda of understanding among units or agencies would cover the gaps. There would probably be food traceability requirements, provisions on *Biosecurity*, and harmonized food standards. The legislation would then be reviewed to ensure that it captures a holistic, preventive approach based on risk analysis and based on the perspective that all actors in the food chain share responsibility for providing safe food.

These recommendations are of course deceptively simple, as there are numerous questions which one might raise about each step proposed here. Although the limited space allotted for this Article does not allow an in-depth examination of the many questions arising from these legislative proposals, the next section briefly raises three important issues linked to implementation of a food chain approach, each of which calls for further study.

A. *The Transnational Problem*

The first outstanding question is how to assign responsibility when there is a failure in a food chain that begins and ends in different jurisdictions. Modern food chains operate across national and sub-national boundaries, and require measures to be in place for

93. See *supra* Part II.A.

latter parts of the chain to accept (or reject) the oversight findings in the earlier part of the chain. In addition, modern food chains require measures for each part of the chain to communicate the outcome of inspections to the authority responsible for the next step in the chain. The more international the food chain, the more difficult it can be to monitor and control the activities of the chain, and to take action when there is a failure which leads to a food safety problem.

The fact that food chains are increasingly global argues for improved traceability at every stage of the food chain. The better the traceability systems at the national level, the less likely it is that one food-borne disease outbreak will negatively affect all exports from a particular country. Looked at another way, if an importing country (Country A) is able to identify the source of the problem as coming from Country B, then all exports from Country B are suspect until identification of the particular company or actor in Country B that is causing the problem. The U.S. outbreak of *cyclosporiasis* originating in raspberries from Guatemala is a good example.⁹⁴ The better the traceability system, the more quickly exports from Country B can resume, and the more quickly the heightened inspections on imports into Country A can be scaled back.

Biosecurity is also relevant to achieving prevention where animals, animal products, plants, and plant products are exported from one country to another. The SPS Agreement provides for the recognition of pest-free areas, disease-free areas, and areas of low pest or disease prevalence.⁹⁵ Procedures mainly involve taking steps to eradicate a pest or disease from an area, imposing certain measures to maintain that status, and instituting a monitoring and verification system. The Secretariat of the IPPC has produced International Standards for Phytosanitary Measures on pest-free areas and places of production,⁹⁶ whereas the OIE has developed a procedure for establishing a country's sanitary status with respect to specific animal diseases.⁹⁷ The advantage of pest- and disease-free areas is that products coming from those areas can be freely exported without being subject to individual inspection.

94. See Alice Y. Ho et al., *Outbreak of Cyclosporiasis Associated with Imported Raspberries, Philadelphia, Pennsylvania, 2000*, 8 EMERGING INFECTIOUS DISEASES 783, 783–88 (2002) (discussing the likelihood of a Guatemalan farm as the source of the cyclosporiasis outbreak).

95. SPS Agreement, *supra* note 29, art. 6.

96. Food & Agric. Org. of the U.N., *International Standards for Phytosanitary Measures (ISPM) No. 4, Requirements for the Establishment of Pest Free Areas* (1996); Food & Agric. Org. of the U.N., *International Standards for Phytosanitary Measures (ISPM) No. 10, Requirements for the Establishment of Pest Free Places of Production and Pest Free Production Sites* (1999) (outlining the requirements for these sites, similar to pest-free areas).

97. World Org. for Animal Health, *Member Countries Sanitary Status*, http://www.oie.int/eng/ressources/Statuts_EN_final.pdf (last visited Sept. 9, 2007).

Even with traceability and *Biosecurity*, however, there remains the question of how to ensure a whole-chain perspective for food chains that are increasingly international in scope. Regional institutions are an important first step (like the European Food Safety Authority⁹⁸ and the proposed Caribbean Agricultural Health and Food Safety Authority⁹⁹), but even they may not have the ability or the jurisdiction to take transnational action. One solution will be to increase the use of certification for equivalence, i.e., Country B requests Country A to officially certify that its domestic food safety system is “equivalent” to that of Country A.¹⁰⁰ Once Country A determines that Country B’s system is equivalent, imports may be accepted without individual inspections.¹⁰¹

Collaboration and bilateral or multilateral agreements will also be increasingly important¹⁰² since, fundamentally, there is no way to compel actors outside the jurisdiction to comply with applicable standards. These actors will comply voluntarily, however, if they wish to export to the relevant jurisdiction (or if they wish to supply to a particular supplier),¹⁰³ which may mean that continuity of legal oversight across transnational food chains is impossible. Participants in transnational food chains will have to collaborate voluntarily on issues of traceability, recalls, and allocation of responsibility for failures in the food chain.

B. Shared Responsibility

If there is a failure in the food chain, the first task will be to identify where the problem came from; the second, to demonstrate that the particular problem caused the harm; and the third, to hold someone legally responsible for the harm, if permitted. A good system of traceability through the food chain should facilitate

98. European Food Safety Authority, <http://www.efsa.europa.eu/en.html> (last visited Sept. 1, 2007).

99. Food & Agric. Org. of the U.N., *Law and Sustainable Development since Rio—Legal Trends in Agriculture and Natural Resource Management*, at 44 (2002), available at <ftp://ftp.fao.org/docrep/fao/005/y3872E/y3872e02.pdf>.

100. SPS Agreement, *supra* note 29, art. 4; see also ENSURING SAFE FOOD, *supra* note 62, at 48 (describing the United States Department of Agriculture’s equivalence certification requirements).

101. See ENSURING SAFE FOOD, *supra* note 62, at 48 (stating that imports are accepted without inspection when a country’s domestic control system is certified as equivalent by the United States Department of Agriculture).

102. See, e.g., U. S. FOOD & DRUG ADMIN., CTR. FOR FOOD SAFETY & APPLIED NUTRITION, AFFIRMATIVE AGENDA FOR INTERNATIONAL ACTIVITIES (1999), available at <http://www.cfsan.fda.gov/~comm/intlact.html> (proposing cooperative efforts with producing countries to enhance FDA enforcement methods).

103. See *supra* note 87 (describing the increasing importance of private standards).

identification of exactly where the problem arose.¹⁰⁴ Even with that information, however, it might be difficult to prove in a legal action for negligence that a particular problem caused the harm. For instance, a plaintiff might have a hard time proving causation, since the food traveled through so many hands, so many steps, and so many activities on its way from farm to plate.¹⁰⁵

The 2003 FAO Strategy describes the food chain approach as creating “shared responsibility” across the food chain.¹⁰⁶ It is not clear exactly what this means. “Shared” could mean joint, or it could mean divided. The former would mean that all actors in the food chain are jointly responsible (i.e., share responsibility) when something goes wrong. The latter would mean simply that each actor in the food chain is responsible for his or her point in the chain.

If “shared responsibility” means joint liability (possibly joint and several liability), then companies might be liable for any harm caused simply by their participation in the food chain. This seems onerous. If a defendant could prove that all systems were working well at its point in the chain and that no contamination could have occurred there, then it might wonder why it should pay for a harm it did not “cause.”¹⁰⁷

On the other hand, the lack of “shared” liability might lead to different kinds of unfairness. For instance, if it is always easier to prove harm at certain points along the food chain,¹⁰⁸ certain contributors to the production of a food will routinely have to pay for the harm caused, while others will not.¹⁰⁹ The other actors may be working at segments of the food chain that do not raise food safety issues: the food chain approach is risk-based, so some points in the chain will have lower risks. If the actors at those points are benefiting from their participation in the food chain without paying

104. See Pouliot & Sumner, *supra* note 74, at 2–3 (describing problems that arise when a food safety issue cannot be traced to its source).

105. Hobbs, *supra* note 70, at 90.

106. 2003 FAO Strategy, *supra* note 7, ¶ 7.

107. See, e.g., Buzby & Frenzen, *supra* note 79, at 641 (“Firms earlier in the food production chain (e.g. producers, processors) may not be found liable if there is a lack of direct contact between them and the ill consumer . . .”).

108. Cf. Jesse D. Lyon, *Coordinated Food Systems and Accountability Mechanisms for Food Safety: A Law and Economics Approach*, 53 FOOD & DRUG L.J. 729, 735 (1998) (“The size and concentration of players at each link in the chain then affects their ability to be identified and compensated (or punished) for harm resulting from faulty performance on their part.”).

109. On the other hand, traceability may also enable firms to shift liability to others. See Elise Golan et al., *Traceability for Food Safety and Quality Assurance: Mandatory Systems Miss the Mark*, 4 CURRENT AGRIC., FOOD & RESOURCE ISSUES 27, *passim* (2003) (stating that the development of traceability at the regulatory level may provide firms incentives to improve their own traceability); TRACEABILITY IN THE FOOD CHAIN, *supra* note 77, ¶ 49; cf. Pouliot & Sumner, *supra* note 74, at 7 (“[W]ithout traceability upstream [food firms in a food supply chain] are not able to transfer liability [upstream] to their suppliers if a problem occurs at earlier stages.”).

for any of the harm caused, this seems unfair. By contrast, if all participants in the food chain share responsibility, then all of them might have significant enough incentives to improve safety throughout the food chain.¹¹⁰

Interestingly, the French and Spanish versions of the 2003 FAO Strategy use terms that connote joint responsibility more than separable responsibility. The French text uses “*revient à l’ensemble*,” “*partager la responsabilité*,” and “*incombe à l’ensemble*,”¹¹¹ while the Spanish text uses “*compartir la responsabilidad*” and “*incumbe a todos sus participantes*.”¹¹² Nonetheless, translating joint responsibility into a legal requirement is likely to be extremely difficult, and in any case, the implications would vary by country and jurisdiction.¹¹³

C. Developing Country Concerns

For developing countries, the main disadvantage of the food chain approach will be the potential cost. Implementation of the approach may require restructuring companies, hiring more staff to carry out more inspections, and providing more training and education. It may also require implementing a more comprehensive system of food traceability.

It is true that some consumers in developed countries want more information, and in some situations, are willing to pay more for foods that have met certain standards.¹¹⁴ In addition to standards for food safety (the main focus of this paper), consumers may be willing to pay more for organic food, food that has been “traded fairly,” food that has been raised while protecting the environment, or food that has been cultivated “ethically.” All of these will require a verifiable food-

110. See Lyon, *supra* note 108, at 730 (“To be successful vehicles for food safety, coordinated food systems need a regulatory environment where farm to retail food safety assurance programs coincide with commercial interests.”). But see JEAN C. BUZBY ET AL., PRODUCT LIABILITY & MICROBIAL FOODBORNE ILLNESS 10–11 (2001) (arguing that the availability of health-care insurance and liability insurance distorts incentives to produce safe food).

111. Food & Agric. Org. of the U.N., *Stratégie de la FAO pour une approche de la sécurité sanitaire et de la qualité des aliments axée sur l’ensemble de la filière alimentaire: Document-cadre pour l’élaboration d’orientations stratégiques ¶¶ 2, 7, 24, 26* (2003), available at <http://www.fao.org/DOCREP/MEETING/006/Y8350f.htm>.

112. Food & Agric. Org. of the U.N., *Estrategia de la FAO relativa al enfoque de calidad e inocuidad de los alimentos basado en la cadena alimentaria: documento marco para la formulación de la futura orientación estratégica, ¶¶ 2, 7, 24, 26, 32* (2003), available at <http://www.fao.org/DOCREP/MEETING/006/Y8350s.htm>.

113. In fact, concerns about liability may be one reason that the issue of shared responsibility does not appear in the 2005 FAO Strategy.

114. See Hobbs, *supra* note 70, at 97–98 (describing a simulated auction which demonstrated that consumers are willing to pay more for products with improved traceability, where that traceability is linked to additional quality assurances).

traceability system. In many countries, however, especially in developing countries, the costs of implementing traceability systems may be prohibitive.¹¹⁵

Another problem is that if developing countries do not meet international food safety standards, they will have reduced trade access to global food markets.¹¹⁶ This calls for increased participation in the development of international standards elaborated under the auspices of the SPS Agreement and the main standard-setting bodies (Codex, the IPPC, and the OIE). Better standards do not necessarily lead to safer food, however, if countries cannot enforce them.¹¹⁷ Developing countries in particular have limited resources, and generally lack the technical and institutional capacity to cope with food-borne threats to public health.¹¹⁸

In some countries, a dual-track system of food safety regulation has emerged: food destined for export to countries which have set high standards (e.g., the United States and member states of the European Union) is often not affordable for the local population, while food destined for the local market and street food vendors is of lower standard. Many food businesses in developing countries already cannot afford to implement ISO 22000, so it is worth asking whether implementation of a food chain approach is even a real possibility—and whether it is desirable given the fact that the poor, who already spend most of their income on food, would be most affected by higher food costs.

On the other hand, adoption of a food chain approach can be expected to offer a number of advantages over existing food safety systems. As a holistic approach, it calls for a comprehensive review and overhaul of the existing structures in order to guarantee coverage from farm to fork. This will revitalize institutions and strengthen weak legislative frameworks currently characterized by overlaps and gaps. The advantages will be most marked in developing countries,

115. Cf. TRACEABILITY IN THE FOOD CHAIN, *supra* note 77, ¶ 158 (noting that the highest costs of implementing traceability will be borne by companies producing commodities, and the lowest costs by companies seeking to add value by differentiating their products).

116. Cf. Pouliot & Sumner, *supra* note 74, at 3 (suggesting that imposition of traceability requirements may be motivated by protectionism).

117. Caroline Smith DeWaal & Gonzalo R. Guerrero Brito, *Safe Food International: A Blueprint for Better Global Food Safety*, 60 FOOD & DRUG L.J. 393, 395 (2005).

118. See Linda R. Horton, *Food from Developing Countries: Steps to Improve Compliance*, 53 FOOD & DRUG L.J. 139, 159 (1998) (stating that less centralized developing nations often have problems with uniform enforcement whereas other developing countries must confront the problem of agencies with competing interests interfering with food safety mechanisms).

where there is often a lack of a clear institutional set-up,¹¹⁹ although these problems are not unknown in the developed world.

The food chain approach should also allow for resource optimization, correcting the irregular distribution of resources among sectors or regions, and reducing disparities in the means to respond to emergency situations. This will improve prevention as it will improve the ability to give early warning about potential risks.¹²⁰ As noted earlier, because the food chain approach is risk-based and relies on prevention, resources are allocated to those parts of the food chain with the highest risks.¹²¹ Again, this will be especially important in developing countries with limited public resources. Reliance on harmonized standards should also free up resources that would otherwise be used to design national standards in each trading country.

In general, a food chain approach should enable better planning and more comprehensive documentation. Because the approach consists of a systematic means of identifying food safety hazards and implementing the necessary control measures (including product recalls), it should lead to increased consumer confidence.¹²² Increased transparency and risk communication will mean that consumers are better informed and that their concerns more routinely taken into account with regard to food safety issues. Consumers should also benefit from a food chain approach if the concept of shared responsibility enables better identification of responsible parties when there is a food-borne disease outbreak.

V. CONCLUSION

The food chain approach makes a lot of sense, and there is evidence that because it is preventive, it actually reduces the incidence of food-borne disease outbreaks.¹²³ Greater focus on a farm-to-table approach in the United States, for example, has made real inroads into reducing the incidence of several debilitating infections.¹²⁴ Despite these demonstrable advantages, the food chain

119. See *id.* (asserting that international harmonization of food safety can only be achieved when developing countries have mechanisms in place to ensure that standards are met).

120. See *EU White Paper*, *supra* note 41, ¶ 65 (describing the weakest link in EU health protection as the lack of a clear commitment to give early warning about potential risks in food production).

121. Taylor, *supra* note 43, at 402.

122. *EU White Paper*, *supra* note 41, ¶37.

123. See TRACEABILITY IN THE FOOD CHAIN, *supra* note 77, ¶ 41 (discussing hidden benefits stemming from the food chain approach, such as effective recall and efficient communication).

124. Tauxe & Esteban, *supra* note 13, at 37.

approach has only recently been articulated, perhaps because it is unclear what it would mean to implement the approach in national legal systems. This Article presents a few suggestions for legislative implementation, recognizing that there are other alternatives. Furthermore, there are many open questions, in particular about how to guarantee continuity of oversight in transnational food chains, what shared responsibility might mean if interpreted as referring to liability, and whether the costs of implementation will be prohibitive, especially in developing countries. These are just a few issues warranting further study and reflection.