First Draft: Comments Welcome

Globalization of the Food Industry and its Impact on Agricultural Trade Policy

Tim Josling*

It has for long been an oddity that the food industry has been so quiet when it comes to influencing agricultural policy. Of course some industry groups have made their position known on certain aspects of agricultural legislation, but all analytical treatments of the politics of agricultural policy and agricultural trade have focussed on the influence of the farm lobby and their supporters in legislatures. By contrast, consumer interests are considered weak and diffused and hence rarely get much political attention. Farm policy anomalies, such as the massive transfers made to a relatively few small businesses from consumers or taxpayers, are explained in terms of the over-representation of the rural vote, the identification of political interest with production rather than consumption activities, political support of the rural population or sympathy for what is perceived as a poorer and more backward sector. The food industry fits awkwardly in these explanations. They are both the processors and distributors of the output from farms and also the consumers of most farm goods as raw materials into some form of processing activity. Are the food companies extensions of the farm sector, and hence “on the side” of the producer, or are they the surrogate consumer, acting on behalf of families who do not buy direct from the farm? Or are they merely “neutral” intermediaries with no particular views on policy other than to see the food chain function.

---

* Professor and Senior Fellow, Institute for International Studies, Stanford University. Paper prepared for the Conference on Agricultural Globalization, Trade and the Environment, University of California at Berkeley, March 7-9, 1999.

One can make a case that the food processing industry, along with the suppliers of inputs have generally been supportive of producer groups in the past, though not terribly vocal. Some of the parts of the food industry nearer the consumer end of the chain have staked out somewhat different positions. But the identification of the industry with producer interests has been the dominant characteristic. The driving notion behind this paper is that the set of changes which are often grouped together as “globalization” is shifting the food sector from a relatively passive friend of the producer to a potential vital ally for the consumer.

Before attempting to explain why such a change might be taking place, consider the possible ramifications of such a move for farm policies and for agricultural trade policies. The producer-bias which has been universally noted for the industrial countries seems itself to rest on the quiescence of the food sector. A more aggressive food processing industry could conceivably reshape the politics of agriculture. Of course the farm lobby would remain, but a food processing industry that used its political clout to counter that of the farm groups could potentially prevail. This could have a dramatic impact on the evolution of farm policy, particularly in Japan and the European Union. And it could change markedly the arguments and indeed the agenda in the next WTO round of agricultural talks.

For the sake of laying out the argument in as transparent a way as possible, the case for the growing significance of the food industry is expressed in this paper as ten propositions. Each is empirical in content, though no organized quantitative evidence is given. Any evidence assembled is anecdotal or eclectic. If the underlying thesis is plausible, the topic deserves much more careful research.

Proposition 1: The Food Industry has become Big Business

The food chain, from the supplier of inputs to the retailing of food through restaurants of stores, accounts for roughly 25 percent of the private economy of modern industrial countries and somewhat more for developing economies. This sector contains a number of sub-sectors, usually identified as the input supply industries, the farm or production sector, the post-farm marketing activities, the first stage processing sector, the second level processing of more complex goods, and the distribution system including the retail and restaurant sectors.

The structure of this food chain has been changing rapidly, and the relationships among the parts has been shifting.[1] These changes have primarily involved concentration, leading to the emergence of some relatively large firms. This has been particularly true in some of the input industries, such as the seed sector, which is dominated by a few firms operating internationally. This trend is reinforced by the adoption in several countries of seed from transgenic plants, notably in the US and Argentina, which are produced by chemical companies such as Novartis and Monsanto. Concentration may not be bad in itself: the companies at the moment still have to compete with retained seed, landrace crosses and seed produced locally, but the potential exists for the exercise of market power, extracting considerable rents for genetic material in plants.

At the other end of the chain, supermarkets have come to dominate the retail distribution of food, at least in several European countries.[2] This domination has been of serious concern to farmers and their organizations, though there is no evidence that the returns to farmers have suffered. The main effect seems to have been a renewed emphasis on quality, which may have proved rather beneficial in preparing producers for the rigors of global competition. But the potential presumably exists for oligopsonistic exploitation of the farming sector by the powerful retailers.

The trend toward concentration in the US is apparent in the major role that the fast-food outlets in setting standards for poultry, beef and potatoes. But the cereal and oilseed markets are also characterized by a relatively small number of players in the markets into

---

[1] Comments on recent developments relate broadly to the past fifteen years and to Western Europe, the US and Canada, and increasingly to Latin America. Asian developments will be discussed below as being slightly out of step.

[2] This is most noticeable in the United Kingdom, where three chains sell most of the food products, as well as in the Netherlands, Belgium and even France. However, the US, which pioneered the supermarket, is now showing a different trend, with the proliferation of food sales from other types of retail outlet.

which farmers sell. The recent purchase of Continental Grain's handling facilities by Cargill has further reduced choice to farmers. Once more, the issue is not so much that these developments have hurt farmers but that they will begin to have an impact on the politics of agricultural and trade policy.

The size of some of the food firms is quite revealing. The top ten food firms in Europe (ranked by capitalized value) employed 1.13 million workers and had a turnover of $248 billion.[3] In the United States, the top ten food firms had a turnover of $140 billion and employed 700 thousand employees. If one takes into account campaign contributions as well as economic importance, the food industry should be able to get the attention of politicians.[4] In the EU the largest companies are retailers, while in the US the food processors are the biggest companies.

Proposition 2: The Food Industry has become Global

As well as growing large through accretion of other companies, the food firms have been expanding into foreign markets. The agriculture and food industries have now joined the list of "global" sectors, supplying a world-wide market place from a mutually supportive network of institutions that transcend national boundaries.

In many respects agriculture has always been a global sector. Trading in foodstuffs is as old as civilization. The great expansion of commerce in the sixteenth and seventeenth centuries was based on the discovery of geographically-specific commodities, minerals and tropical plant products. By the eighteenth and nineteenth centuries, manufactured goods began to accompany the raw materials in global trade, but agricultural and mineral exports were still dominant. Even into the first half of the twentieth century, as the

[3] Financial Times, February 28, 1999, "FT 500".

[4] One example of a food company using it's political clout is the influence of Archer-Daniels Midland, "supermarket to the world" and the largest corn wet-miller, in preserving the sugar price supports. The profitability of the high-fructose corn syrup, a by-product of the wet-milling process, depends on keeping sugar prices high. A more recent example is that of the banana marketing company Chiquita Brand International, whose CEO reportedly persuaded the US government to support the Central American banana producers in their complaint against the EU regime.

industrial countries began to emerge as major trading powers, many countries in the world still made a living from selling agricultural and food commodities to overseas markets. To them globalization of agriculture was always a fact of economic life.

Not all countries participated fully in the global food system. Some preferred to develop their own food processing industries based on locally produced raw materials. Nor was the trade system truly global. Much agricultural trade followed colonial paths, from the remote producer to the processor in the metropolis. The European empires fought over trading rights and sought to secure their own sources of supply. Agriculture was part of the imperial strategy of countries, extensive yet essentially preferential. Early this century global warfare broke up the empires, disrupted trade routes and destroyed confidence in relying on remote supplies. By the time of the Great Depression of the 1930s, food and agricultural trade was anything but global in scope. As in many other areas of international economic life, the last half of the century has been a slow march toward the restoration of the international agricultural and food systems that existed at the turn of the century. The story of globalization is of the unshackling of the chain from the confines of national markets.

One measure of the international scope of the food industry is the extent of foreign direct investment. Work by Handy and his colleagues at ERS in recent years has shown the significant growth of such investment over the past two decades. (***numbers here***). To the FDI total must be added the value of sales of foreign subsidiaries. This has risen in total to (***numbers***) over the past decade. Once again there is a marked difference between the experience of the US, where fast food outlets and soft drink firms dominate, and the EU, where retail firms and alcoholic beverages tend to be more significant.

Proposition 3: The Food Industry is weakening its ties to the farm sector

One of the major consequences of the globalization of the food industry is that the link between the farm sector and the marketing and processing sector is changing. There appear to be two changes, connected but separable. One is the trend towards contract farming and other types of pre-selling of output. This would seem to strengthen the relationship between producer and processor, but in fact it just makes it more asymmetric. Farmers are often in effect managers of a farming process which is in part planned by input suppliers and/or by output purchasers. This has gone furthest, perhaps, in the poultry industry, where the process is closely controlled from hatching egg to slaughtered bird. Feed and antibiotics are either provided or their choice controlled. Pig production is moving in this direction, in part for quality control, and milk has in both Europe and North America been produced under a quota system that virtually eliminates any flexibility in marketing. Inputs and feedstuffs are becoming more regulated, not by government but by the dairy that purchases the milk. Crop production was always the archtype "independent" farm operation, planting seed purchased from a merchant and selling the harvest to another firm. Increasingly, with designer seeds, the input supplier and the crop purchaser are part of the same entity. Tracability of origin and separability of output are essential to the development and spread of this new technology (Kalaitzandonakes and Maltsbarger (1998)).

The contract system is a part of the management of the supply chain which in turn is necessitated by competing in a global market. Though some markets are large enough to warrant these marketing and management changes strictly for internal purposes, it is the stimulus of international competition that seems to be driving the move at present. So rather than contracting reinforcing the link between producer and processor, the processor treats local producers and distant producers as alternative sources of supply. The link between the economic interest of the processor and that of the local producer is weakened.

Proposition 4: The Food Industry is becoming less involved in the management of agricultural policy

The main reason why the food industry in many developed countries has been so close to the producer stems from the symbiotic relation to public policy. Since the 1930s, farm policies have largely operated through the regulation of commodity markets. This has necessitated the cooperation of the processors and distributors. In some cases the function of collection and distribution was taken over by parastatals, providing a direct link between policy and marketing. In other cases the link was less direct by equally effective. The *quid-pro-quo* was that governments tended to build in fixed margins into policy prices, and to regulate competition. The production process was often unfettered by direct controls, but the marketing system was a handmaiden of policy.

The situation in the EU demonstrates this symbiosis. The sugar policy is in essence a system of production quotas administered through the beet crushers, protected from imports by prohibitive tariffs. Selected foreign suppliers also receive quota access to the EU market. The prices are set for both raw sugar and white sugar, as well as for refined sugar. The crushing margin and the refining margin are thus administratively defined, and representatives from the industry spend considerable effort in ensuring that the Commission takes into account cost increases and other influences on margins. Moreover, sugar quotas are not usually traded among EU countries: they are in fact allocated initially as "national" quotas. The sugar processing industry has therefore very little incentive to push for a change of regime, whether it be the removal of quotas or the liberalization of trade. And it is not a coincidence that the sugar sector tends to be cohesive and effective in resisting change.[5]

The change in policy over the last decade has altered the landscape dramatically. First, the gradual decoupling of policies relieves the processing industry of the need to administer policy. The direct payment check does not need to go through a processor of wholesaler. Second, the restrictions on export subsidies mean that volumes are constrained whenever sector is in surplus. For those parts of the food chain that rely on volume for profits, this makes a more liberal market quite attractive. Wholesalers and processors can benefit from imports as well as domestic production. And perhaps most important of all, food tariffs have been reduced as a result of the trade negotiations. Thus where these are not (like cereal and sugar derivatives) adjusted for input costs then there will be a squeeze on profits.

---

[5] Other examples would include the dairy sector in Europe, where both quotas and margins are administratively fixed. Even the cereal policy is run in part through the grain wholesalers, and processed grain products are protected by derived tariffs based on the grain import levies.

Proposition 5: The Food Industry is orienting itself to the consumer

The phenomena of contract farming and of integrated supply chains are profoundly altering the structure of the industry. Both are strongly influenced by technology, and the trends are likely to continue as the biotech revolution develops. This is largely because the successful introduction of genetically improved varieties requires transparency and traceability in the supply chain. Both rely also on advances in information technology to allow the flow of information up and down the chain. Farmers are in fact heavy users of computers. Satellite communications allow for even the most remote part of the chain to be in instant touch. The combination of easily accessed information and strict quality control made possible by the technical advances and structural change provide the basis for a consumer-driven global industry.

The most notable indication of these systemic changes is that the growth in trade in high value added products has been much greater than that in homogeneous bulk products. In 1985 trade in high value added products was barely one half of total agricultural trade. By the year 2000 it is estimated that this share will be around three-quarters of agricultural trade. Part of this is due to the effects of rising incomes, as consumers shift away from unprocessed foods. But much of the growth in high value added goods is due to increasing product differentiation as producers and food retailers attempt to convince consumers of the merits of particular geographical locations, recipes and brand names. Goods that were once considered “non-tradable” have found a place in foreign markets for ethnic and exotic foods. Product differentiation, segmentation of the market and quality attribution along with the growth of “non-traditional” trade is the key behind the growth of agricultural exports from many countries. Europe itself is enjoying a minor export boom in the same types of commodities, breaking out of the trap which for years had made it focus on a few undifferentiated products such as wheat, sugar, skimmed milk powder and butter which could only be sold with heavy subsidies.

Proposition 6: The Food Industry is setting standards for food quality

Though the trade system is being driven largely by those that seek access to wider markets and less expensive sources of raw material, there is another set of trade policy issues that have emerged as the process of globalization has proceeded. As the traditional trade barriers fall so other trade impediments become visible, like rocks in an ebbing tide. Many of these are a result of different regulatory regimes that developed at the time of autarchic national markets. The global economy cannot thrive with significantly different regulations in different countries. On the other hand, legitimate differences may exist among the objectives of regulation and among the sensitivities of national markets. The resolution of this dilemma is still being worked out in the world of trade policy. The agri-food system happens to be at the center of the controversy and has a lot at stake in the outcome.

With the growing internationalization of the food industry, new products emerging from the mastery of biotechnology, and the firming up of trade rules for agricultural products, trade conflicts over food safety issues are becoming more common. Most of these conflicts arise from differences in regulations which are imposed on food trade for the ostensible reason of protecting plant, animal or human health from disease or other affliction as a result of trade. The fear is often expressed that such regulations do little more than protect the livelihood of local producers who would otherwise be unable to compete. As non-tariff barriers to trade, the spotlight has been turned on the elimination of such back-door protective measures. The Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement), adopted as part of the Uruguay Round package, attempted to make it easier to distinguish between legitimate (science based) regulations and those which appear to be protecting producer interests. It in effect also rules out those regulations which reflect irrational consumer fears not based on scientific evidence (Roberts, 1998).

There has for a long time been a troublesome difference of opinion between those who see the trade system as introducing problems for the consumer, through the possible importation of goods from countries with different (and presumably lower) safety standards, and those that view such consumer resistance as a disguised form of protectionism, preventing imports on dubious grounds in order to favor domestic producers. But the problem is made worse if the consumer reaction is not based on "objective" concerns about quality of the product itself but on "subjective" views about how the product was made or transported. The question of the moment seems to revolve around a simple but fundamental choice: should one take into account consumer sentiment (as opposed to hard scientific evidence) when setting import (and domestic) standards.[6]

Though public agencies must always take the lead in protecting health and safety, private standards also have an important place in the global system of commerce. Firms selling differentiated goods in overseas markets rely on repeat business. No longer can producers hide behind the anonymity of international trade. Once again, supply chains have pioneered the way by developing systems of accountability of producers and traceability of supply. Basically, in the modern food chain, many consumers like to know where foods come from. This means that they are willing to pay for some amount of information and will remember if they are dissatisfied. Supply chains can cater to those consumers as well as those less concerned about the origins of their food ingredients.

Proposition 7: The Food Industry wants liberal trade and investment regime

It was possible to maintain the traditional farming systems by a combination of basic research into yield-increasing technology, guaranteed markets for undifferentiated raw materials, fixed and profitable margins for processing activities which tended to locate near the production base, and various parastatal marketing agencies in case markets were oversupplied. Trade policy acted as handmaiden to these domestic policies. Tariffs and non-tariff barriers were used by governments as instruments to protect domestic markets from competition from abroad. Globalization brings new challenges and requires new policy approaches. Moreover the old policies often get in the way of those that are needed for the new food system. Nowhere is that more clearly seen than in the trade policies.

In addition to the increase in international trade in food products one must note the rise in the sales of foreign affiliates in the food business. When an international fast food outlet in a foreign country sells a piece of chicken or a hamburger, the transaction is reinforcing the global nature of the food sector. Capital, technology, managerial know-how and

[6] The SPS Agreement already allows countries to take account market impacts in the case of animal and plant health.

service skills are transmitted to the host country even if all the supplies are purchased locally. More often than not, the outlet will have purchased some of the ingredients abroad, increasing the amount of trade. Even when this does not happen, trade can increase as a result of the changes in taste brought about as a result of the spread of “international” cuisine.[7]

Recent developments in the Asia-Pacific Economic Cooperation (APEC) process are interesting in this regard. A few months ago the Asia Pacific Business Advisory Council (ABAG) endorsed the idea of an "open food system" in the region. The concept of an open food system is one that is bound to attract business interest, in particular those already operating on a multilateral basis. The APEC food system would have as a key component the liberalization of trade and investment in the region (as already stated in the Bogor Declaration) but go further to encompass food security and rural development.

The concept of a food system that goes beyond freer trade for raw materials is in itself interesting. It offers the possibility, however improbable, of seizing the agenda from the agricultural lobbies. Governments would be faced with a plan of action supported by the multinational food business which includes in effect the offer of setting up a modern, low-cost food sector in developing countries. To achieve this without having to go through the painful stages of high protection of basic foods followed by the difficult transition to competitiveness would be political bliss. Investment guarantees would go along with supply assurance: trade access would be matched with rural assistance for development. The Asian developing countries could by-pass the "farm problem" that has plagued Europe and the West.

---

[7] It appears that, in the case of food and agricultural products, investment is complementary to rather than a substitute for trade. Though some investment is obviously in place to “jump” a trade barrier, most seems to be part of the search for new markets, taking advantage of economies of scale by spreading managerial and financial assets over a wider market.

Proposition 8: The Food Industry wants more than just lower raw material prices

The main focus of international trade policy has traditionally been the conditions of access into markets. As globalization has progressed so the scope of trade rules has expanded. The new trade policy environment has a number of different elements. These include the health, safety and environmental rules that ensure quality and acceptability in discriminating markets; codes for the treatment of foreign direct investment; the regulation of conditions of competition; and the codification of the rights granted to the owners of intellectual property. These various facets of trade policy are illustrated in the Table, and their interface with the global food system is discussed below.

Table: Interface between Trade Policy and Elements of the Food Supply Chain

	Inputs	*Farming*	*Processing*	*Distribution*	*Consumer*
Trade Rules for Market Access		Trade Liberalization, Domestic Policy Reform	Search for low-cost supplies	Intra-firm trade in supply chains	Food Security
Health, Safety and Environmental Standards	Potential damage from transgenic processes	Environmental hazards of chemical farming		Hazard control and accountability in supply chain	Food Safety, Confidence in Standards Agencies, Role of Science
Investment Codes			Globalization of processing activities	Investment in supply chain	
Competition Regulations	Monopoly control of genetic material			Concentration of control over distribution (public and private)	
Intellectual Property Rights	Patents on biotechnology practices and materials			Geographical labels	

Proposition 9: The Food Industry may itself need regulating at a global level

A global trade system needs global competition laws. This apparently uncontroversial conclusion has had little effect so far on trade policy discussions. Whilst some are calling for full scale negotiations on international competition policy, others maintain that the most you can do is to make sure that each trading country has its own anti-trust policy in place. But the minimalist approach is unlikely to be satisfactory by itself. The best policy for curbing misuse of market power in any one country is an open trade system. But the very openness of the trade system allows large firms to develop market power in the world market. Global competition policy should be more about market power in world markets than about enforcing competition policy in each national market.

An emerging competition issue is the concentration of market power in the agri-food distribution chain. This has two separate but related aspects. One is the use of market power by public agencies or by parastatals given the ability to act in a restrictive way. This issue of "state trading" is coming to the fore in trade talks. At one extreme it represents a concern among those countries which do not practice state trading that those that do can gain an "unfair" advantage through hidden export subsidies and import barriers. At the other extreme are fundamental systemic issues such the behavior of the state trading entities in China and indeed the extent to which the government controls, albeit indirectly, all trade decisions in that country. As a major player in agricultural trade markets, the terms under which China should be allowed into the World Trade Organization (WTO) will have a significant impact on the rules that can be set for other countries with parastatal agencies active in the market.

The issue of competition also is at the heart of another potential problem facing the agri-food system. Concentration of economic power is not confined to public agencies given monopoly rights in importing or exporting. Private firms can have significant market power to influence prices. Should there be any rules relating to the use of market power in international markets? What are the dangers that the rules are trying to prevent? Is the problem the withholding of supplies to raise the price of commodities? This seems relatively unlikely in the case of basic foods, but could happen with vital supply components. Or is the problem one of dumping and market disruption? The incorporation of anti-dumping rules in a set of more comprehensive competition regulations is the object of many trade economists. Whatever is agreed will have significant implications for global agriculture.

Proposition 10: The Food Industry will have a significant say in the next WTO Round

Agricultural trade policy used to be dominated by farm groups and those arguing for more protection. One major shift in the 1980s was the involvement in trade talks of multinational food firms in the negotiations. This trend is likely to continue. First, the processing sector has a strong incentive to look for low-cost supplies. There is therefore the incentive to lobby government for the ability to import those supplies from world markets so as to remain competitive with firms located in countries where prices are lower. In many cases the low cost food suppliers are in the Americas, as are the main competitors in the global market place. Hence one would expect continued pressure from the food industry to allow raw material prices to fall to roughly US levels over a period of years. Given the disinclination of governments to support these prices indefinitely, the inclination of the food industry will come to dominate in the end.

The tendency for the international food companies to search for low-cost supplies will be reinforced by the pressure from those firms that are already operating in several countries. For these firms, including those in the distribution and retailing business, international trade is often intra-firm trade. Any restriction on the movement of food items within the firm will tend to cause problems for the firm, and hence will be resisted.[8]

---

[8] When European food firms owned production facilities in overseas countries, as a part of the colonial food system, duties and other restrictions were rare. The spread of European food firms into retailing has sometimes been called “Supermercado colonialism”.

But just as intra-firm movement of goods can be thwarted by government regulations so too can the contractual obligations of firms that have come together in other forms of alliance. One would expect that those firms which have been pioneering supply chains, linking producers in one country to wholesale and retail outlets in another, would also find government restrictions on trade irksome. Thus one might expect these supply chains to add their voice to pressures for trade liberalization.

All these changes are in the direction of a more sophisticated agricultural industry aware that the future depends on satisfying a variety of consumer tastes and competing for the consumer dollar with other goods and services. More actors become involved in the political process, and the center of gravity will shift perceptibly away from the primary producer. Policy will become less “commodity” focussed as the emphasis switches to adding value to the raw material and marketing the final product. These changes are crucial to the future of agricultural trade policy. In a situation where the “market” is an administered price supported by public purchasing agencies, free trade poses a real threat. In a world where farmers produce for the market, improvement in access to overseas markets compensates in part for more competition on the domestic market. A freer agricultural market no longer means a collapse of prices and mass rural depression. Today it is more likely to spark rural entrepreneurship and healthy market development based on response to the changing food habits of middle-class consumers.

There is no indication that this process of shifting up the value-added chain is likely to slow down in the near future. The emerging science and practice of biotechnology holds enough tantalizing promise to excite the most jaded imagination. Indeed for many the key to feeding the world at a reasonable cost is to make full use of the new knowledge and skills in this area. The biotechnology industry is itself undergoing structural change, as large corporations search for the profitable products that will pass the scrutiny of regulators and not be rejected by the public.

Bibliography

Beers, George, Adrie Beulens and Jan van Dalen (1998) Chain Science as an Emerging Discipline, paper presented to the Third International Conference on Chain Management, Wageningen, Netherlands, May 28-29

Bureau, Jean-Christophe, Stephan Marette and Alessandra Schiavina, Non-Tariff Trade Barriers and Consumers' Information: The Case of EU-US Trade Disputes on Food Products, Institut National de la Recherche Agronomique, Department d'Economie, Unité de Grignon, July, 1997.

Crutchfield, Steve, Jean Buzby, Tanya Roberts, Michael Ollinger and C.-T. Jordan Lin, An Economic Assessment of Food Safety Regulations: The New Approach to Meat and Poultry Inspection, United States Department of Agriculture, Economic Research Service Report, Number 755, July, 1997.

European Commission, Communication from the Commission: Consumer Health and Food Safety, April 30, 1997.

European Commission, The General Principles of Food Law in the European Union, Commission Green Paper, COM(97) 176.

European Commission, The Commission Proposes Rules for the Labeling of Food Made from Genetically Modified Soya Beans and Maize, Brussels, December 3, 1997.

Food and Drug Administration, *et al*, Food Safety from Farm to Table: a National Food Safety Initiative, Report to the President, May, 1997.

Henderson, Dennis R., Charles R. Handy and Steven A. Neff (eds.) (1996) Globalization of the Processed Foods Market, USDA/ERS, Agricultural Economic Report No. 742

Hughes, David (ed.) (1993) Breaking with Tradition: Building Partnerships and Alliances in the European Food Industry, Wye College Press

International Agricultural Trade Research Consortium (1994), "The Uruguay Round Agreement on Agriculture: An Evaluation", IATRC Commissioned Paper Number 9, July.

International Agricultural Trade Research Consortium (1997) “Implementation of the Uruguay Round Agreement on Agriculture and Issues for the Next Round of Agricultural Negotiations”. IATRC Commissioned Paper No. 12, November.

Josling, Tim, Stefan Tangermann and T.K.Warley, Agriculture in the GATT, Macmillan, Houndmills, 1996

Josling, Tim (1998), Agricultural Trade Policy: Completing the Reform, Institute for International Economics, Washington D.C., April.

Kalaitzandonakes, Nicholas and Richard Maltsbarger (1998) “Biotechnology and Identity-Preserved Supply Chains”, Choices, Fourth Quarter

Marsh, John (1998) “The Economics of New Technology” in Global Agribusiness, Premier Issue, December

Minister Of Agriculture, Fisheries and Food, The Food Standards Agency: A Force for Change, The Stationery Office, CM 3830. January, 1998.

Roberts, Donna, Tim Josling and David Orden, Technical Barriers to Trade: An Analytic Framework, United States Department of Agriculture, Agricultural Economic Report, November, 1997.

Runge, C. Ford (1998) “Global Trade and Sustainability”, Choices, Fourth Quarter

Schnittker, John A. (1998) “An Agricultural Revolution with Implications for Sustainability", Choices, Fourth Quarter

United States Department Of Agriculture, The Food Safety Enforcement Enhancement Act of 1997, Washington, 1997.

Urban, Thomas N., “Beyond Industrialization: The Prescription Food System”, Choices, Fourth Quarter

World Trade Organization, The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts, WTO, Geneva, 1995