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## **The Food Processing Industry, Globalization and Developing Countries**

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### **Abstract**

*Transformations in the food processing sectors of developing countries are increasingly seen as strategic from the point of view of export earnings, domestic industry restructuring and dietary issues. This article reviews a selection of the literature on these themes. It begins with a discussion of the main trends identifiable in the food processing industries of the three regional blocs of the developed world, since it is their combined impact that determines the complex patterns of globalization. There follows a discussion of the importance of non-traditional food processing exports by developing countries and the different interpretations to which it has given rise. The internal transformations of the food processing sector of developing countries under the combined impact of imports and FDI are then considered. We conclude with a discussion of the heterogeneous dynamic of food processing in developing countries and the different possibilities for strengthening the participation of small and medium enterprises.*

**Keywords:** *Food processing industry, restructuring, exports, dietary issues, SME*

### **1. Introduction**

The widespread adoption by developing countries of export-led growth strategies has drawn attention to the economic potential of their food processing sectors, particularly in the light of the crisis facing many traditional primary commodity export markets. Food processing can be understood as post-harvest activities that add value to the agricultural product prior to marketing. In addition to the primary processing of food ingredients, it includes, therefore, final food production on the one hand and the preparation and packaging of fresh products, especially horticulture and fish. Non-traditional

exports, particularly of these latter two categories of products, have become the focus of considerable debate. For some, they represent a strategic opportunity for developing countries not only for new sources of revenue but also for employment generation and the internalization of new knowledge and technology. Others argue that they are the reflection of the outsourcing tendencies of global value chains dominated by transnationals taking advantage of low wages and less stringent environmental regulation, with little potential for internal upgrading.

At the same time, processed food exports from the developed countries were accompanied in the 1990s by waves of foreign direct investment (FDI) into the food processing sectors of developed and developing countries alike. Here again, evaluation in the literature varies widely with regard to the impact of these investments. On the one hand, they are seen as a driving force behind the surge of non-traditional food exports from developing countries. Other analysts would focus on the impact of FDI on the recipient's domestic markets for productivity, innovation and industry concentration issues. These discussions have been complemented by recent attention to the dietary implications for developing countries, with FDI being seen as accelerating the adoption of a food regime based on animal protein and highly processed foods, leading to new forms of malnutrition: poverty is now often combined with obesity in developing countries.

Transformations in the food processing sectors of developing countries, therefore, are increasingly seen as strategic, whether analysed from the point of view of export earnings, domestic industry restructuring or dietary issues. In this article, we review a selection of the literature and secondary data sources on these themes. Our analysis begins with a discussion of the main trends identifiable in the food processing industries of the three regional blocs of the developed world (the North American Free Trade Area, NAFTA, the European Union and Japan), since it is their combined impact that determines the complex patterns of globalization. This is followed by a discussion of the importance of non-traditional food processing exports by developing countries and the different interpretations to which it has given rise. The internal transformations of the food processing sector of developing countries under the combined impact of imports and FDI are then considered. We conclude with a discussion of the heterogeneous dynamic of food processing in developing countries and the different possibilities for strengthening the participation of small and medium enterprises.

## **2. Major Trends in the Food Processing Sector of Developed Countries**

### *The United States food processing sector*

The United States processing industry has traditionally had a strong international presence, but the globalization of its leading firms and products has been accelerated by the maturity of its domestic market, changing regulatory regimes and the potential for exploiting global brands. United States firms now account for 40 percent of the world's top fifty food processors and the United States is the world's largest exporter and importer of processed foods and drink. Exports at US\$30 billion in 2000 stagnated and fell off in the second half of the 1990s, whereas imports at US\$37 billion in 2000 increased considerably in the same period. The principal exports are meat products, miscellaneous foods, grain mill, fats/oils, fruit and vegetables. The strength of the dollar has had a negative impact on price-sensitive commodity exports but has not affected exports of branded products. It has also been an important stimulus to imports where the major increases have also come from branded, highly-processed final products. By order of importance the five principal importers of United States processed foods and drink are Japan, Canada, Mexico, Thailand, South Korea and Hong Kong. Imports, in their turn, come primarily from Canada, Mexico, Thailand, France and Italy. Three tendencies of trade in processed foods can be noted here: the importance of regional blocs, the westernization of diets in the developed Asian economies, and the competitiveness of high-quality European products.

Since the middle 1990s, foreign direct investment (FDI) by United States food processing firms has become more important than exports, reaching US\$33.9 billion in 1998, with sales by foreign affiliates totalling US\$133.1 billion. The number of affiliate firms rose from 764 to 823 between 1995 and 1998,

formed primarily through joint ventures rather than green field investment. Seventy-five percent of FDI in 1995 was located in three major trading zones – the European Union (EU), NAFTA and the regional bloc formed by the southern cone countries of Latin America, the Mercosul. The relation between exports and FDI has been the object of many studies, as has the impact of FDI on the host country in terms of rates of growth of GDP, possible crowding effects vis-à-vis domestic investment, re-exports and the repatriation of capital (Gopinath 2000). The importance of the Mercosul for United States FDI attests to the latter's relevance for the analysis of food processing in developing countries, although here it is clear we are dealing with a regional dynamic which in strategic terms includes the FTAA. In addition, 60 percent of this FDI is concentrated in the region's leading country, Brazil, although recent studies have shown that new investments in any of the Mercosul countries are increasingly based on regional considerations (Wilkinson 1999). On the other hand, countries outside of these three regions received no less than US\$7.5 billion in United States food processing FDI in 1995. The evaluation of these investments is clearly of key importance, as processed food exports account for an ever-greater share of developing countries total agrofood exports.

#### *The food industry in the European Union*

In contrast with the United States, the EU has a trade surplus in the food and drinks processing sector, exporting 45 billion euros (€) as against imports of €36.4 billion in 2001. The United States is by far the leading destination country (€9 billion), followed by Japan (€3.7 billion), Switzerland (€2.6 billion) and Russia (€2.6 billion). In percentage terms, the ASEAN countries (Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand) received 3.7 percent of EU exports, the Mercosul, 1.6 percent and the Andean Group (Bolivia, Colombia, Ecuador, Peru, Venezuela) 1.5 percent. Brazil, the United States and Argentina account for 30 percent of European Union imports. Regionally, imports are led by the Mercosul (18.7 percent), with the ASEAN responsible for 8.8 percent and the Andean Group 2.7 percent. The Mediterranean countries are a significant trading region, responsible for 10.7 percent of EU exports and 6.8 percent of its imports.

If trade is examined by product category, beverages (€13.3 billion), "other food products" (€11.5 billion) and dairy products (€5.2 billion) lead exports and show large surpluses. Animal oils and fats and prepared animal feeds reveal a strong deficit corresponding to imports from NAFTA, the Mercosul and Thailand. The two other categories where the EU has a heavy trade deficit are in processed and preserved fish and fish products, with imports at €11.077 billion and exports of only €1.874 billion, and processed and preserved fruit and vegetables, where imports stand at €4.926 billion and exports at €2.554 billion. These two categories, as we shall see below, have been identified as key export opportunities for developing countries.

Only four European firms are among the world's top 15 agri-food companies by value of sales: Nestlé (2), Unilever (4), Diageo (8) and Danone (11), as against 10 United States firms and only one from Japan. Nevertheless, Nestlé had 138 000 employees and €34.9 billion sales outside Europe; Unilever 204 000 employees and €11.9 billion sales; Diageo €14.9 billion sales, and Danone 63 000 employees and €5.3 billion sales outside Europe. Numerous other firms in the "other food products" (Cadbury Schweppes, Associated British Foods, Tate and Lyle), drinks (Heineken, Interbrew, Allied Domecq, Carlsberg, Pernod Ricard), and dairy (Parmalat, Bongrain) sectors have a strong international presence. FDI became very important in the 1980s when the weak dollar attracted a large volume of European food industry investment to the United States market. With the formation of the single market in the early 1990s, intra-EU FDI became substantially more important. In the most recent period, it is the new candidate members and the countries of the former Soviet Union that have become a privileged focus of FDI strategies.

According to the Confederation of Agrofood Industries (CIAA),<sup>1</sup> the food and drinks industry in Europe is the leading manufacturing sector in terms of both production (13.4 percent) and employment

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<sup>1</sup> See <http://www.ciaa.be/uk/library/statistics>

(11.8 percent). In Ireland, Denmark and Spain, a quarter of the manufacturing work force are employed in the food and drinks sector, and in Holland and Spain this sector is responsible for 26 percent and 20 percent respectively of total manufacturing production. While 70 percent of total turnover comes from firms with more than 100 employees, some 90 percent of the total number of firms is either small or medium. These may account for a minority of total employment in the sector, but their participation is significant, reaching 40 percent in Italy and over 30 percent in Portugal and Belgium. The food and drinks processing sector therefore remains a key component of production and employment even in the most developed economies, with important employment and business opportunities in the SME sector.

#### *Japan's food processing sector*

Although Japan has only one company in the world's top 15, it is, as we have seen above, a major trading partner of both the United States and the European Union.<sup>2</sup> Processed foods now account for two-thirds of Japan's food consumption, which is heavily dependent on imported final products from Japanese subsidiaries in neighbouring countries, in addition to a rapidly increasing percentage of western products.

Imports of final food products make up 28 percent of processed food consumption and, in calorie equivalence, 64 percent of the ingredients for processed foods are imported. Exports, on the other hand, are limited to a few specialities and are insignificant as a proportion of total exports (<1 percent). In 2000, total food imports were US\$50.5 billion whereas exports were only US\$2.3 billion. Japanese subsidiaries overseas have only 22 percent of their total sales in the host market, as against 45 percent in the case of European subsidiaries and 33 percent for United States firms overseas. The dominant strategy of Japanese food multinationals, therefore, is that of developmental imports: off-shore production for the Japanese market.

The five leading exporter countries of processed food to Japan are: the United States, Australia, China, Thailand and Taiwan. In 1970, Australia was the principal exporter with 17.6 percent, although the figure had declined to 7.4 percent by 1996. The United States, which was in second place in 1970 with 16.8 percent, became the clear leader in 1996 with 31 percent. China, which was in fourth place with 2.9 percent, came next with 9.3 percent, followed by Taiwan, increasing its participation from 3.4 percent to 7.8 percent, and in fifth place Thailand, which also improved its share from 1.9 percent to 5.7 percent over the period. Other relevant developing country exporters include Indonesia, Korea, Malaysia, the Philippines and Singapore. More recent data shows China's share to have increased to over 12 percent.

Japanese FDI has fluctuated substantially since the 1970s with Australia and East Asia declining relative to the United States and the EU. In 2000, East Asia's share was 12.4 percent, the United States accounted for 28 percent and the EU, 45.2 percent. In part, this is to be explained by the severe restrictions on equity participation in East Asia. By contrast, this latter region has by far the largest number of Japanese affiliates, 212, followed by North America with 86 and the European Union with 65. In the East Asian region China has 85 affiliates, Hong Kong 31, Thailand 23 and Singapore 21. Although there is still very little incoming FDI, both exports and imports are positively correlated with FDI flows, although in recent years, the proportion of sales inside the host countries has increased significantly. The studies consulted suggest that resource advantages tend to be offset by stringent non-tariff measures in the case of imports of processed food, particularly relating to sanitary conditions – thereby weakening the competitive advantage of developing country exports. Japanese trade in processed food, as in other sectors, has a strong intra-firm profile, and independent access to the Japanese market is notoriously difficult.

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<sup>2</sup> This section draws on the Rural Industries Research and Development Corporation report *Japan Food Market Study*, Chapters 2, 3 and 4 (January, 2003).

The Japanese food processing industry represented 10.9 percent of all manufacturing firms in 1999, and is the third largest industrial sector after the electronics and vehicles sectors. In 1994, 12.2 percent of the country's manufacturing workforce was employed in food processing. Forty-one percent of Japanese firms have up to 50 employees, responsible for 26.4 percent of total output. If we were to include firms up to 100 employees, their share in the total number of firms would increase to 57.6 percent and 45.1 percent of total output.

### 3. Processed Food Exports and Developing Countries

The food processing sector has recently received attention within the framework of export-led industrialization in developing countries. According to Athukorala and Sen (1998), the share of manufacturing exports in total world trade increased from 66 percent to 81 percent between 1970 and 1994, and developing country share in manufacturing exports leapt from 6 percent to 24 percent. At the same time, the value of processed food in comparison with primary product exports (agriculture plus mining) increased from 26 percent to 37 percent. With notable exceptions (Bangladesh), middle and high-income developing countries have performed better than low-income countries in this respect.

Four developing countries – Argentina, Brazil, Malaysia, Thailand – along with Taiwan were responsible for 40 percent of total processed food exports by developing countries, but the evidence points to a continuous increase in the number of developing countries participating in such exports. Countries with a superior overall export record – Chile, Indonesia, Turkey, Tunisia, Guatemala, El Salvador and Sri Lanka – have also been most notable in the increase of processed food in their share of total non-manufactured exports. It should be noted, however, that particularly in the case of middle- and high-income developing countries, the growth rate of manufacturing exports has far exceeded that of processed foods. Nevertheless, for more than half of the 37 developing countries selected for analysis, processed food exports represented at least 20 percent of total manufacturing exports in 1994.

The authors also note what they see as a remarkable shift in the commodity composition of processed food exports since the 1970s, with current export growth coming from products that were less important in the initial period. Processed fish, whose share in total processed food exports from developing countries in 1970 was 8.8 percent, occupied 30.7 percent of total exports in 1994. Less spectacularly preserved fruit has also continued to increase its share over time. For most developing countries these two products account for some 40 percent of total processed food exports. For as many as 17 countries, processed fish alone has accounted for 40 percent of total exports. On the other hand, traditional products – meat, sugar, animal feeds and vegetable oils – have either fluctuated wildly or declined in importance.

Having established the strategic role of processed food exports, Athukorala and Sen then consider their implications for employment, terms of trade, knowledge and technology spill-overs. They note that there is no clear relation between income levels and export growth and that, furthermore, the final stages of food processing tend to be labour intensive, particularly canning and fish-processing. The authors conclude that trade implications are positive since processed food exports have greater income and price elasticity demand trends than do primary food products. Spill-over effects would seem to be superior to traditional manufacturing since food processing is less dependent on imports, involves a greater degree of learning through interaction with exporters, and has to respond to more demanding quality specifications.

A similarly optimistic assessment can be found in the UNCTAD report *Opportunities for vertical diversification in the food processing sector in developing countries* (1997), which analyses the prospects for four groups of food products: horticulture, fish, meat and tropical beverages. Trade opportunities are identified in three major country blocs: higher income developing countries such as South-East Asia, as a result of market expansion; the economies of Eastern Europe and the Russian Federation, as a consequence of the transition effect; and developed and high income developing countries, through the impact of changing life-styles. The principal problems of market access are

associated with sanitary and quality demands, the control of marketing channels by the established transnationals and the problem of reliability of supplies, which places great demands on logistics. Factors favourable to the development of a food processing export sector include geographical and cultural proximity on the one hand, and the existence of a large domestic market that allows for economies of scale and scope. The authors identified three areas for further analysis for developing countries seeking to promote processed-food exports in the four sectors: the new conditions for market access as a result of the WTO regulatory framework; the types of corporate strategies appropriate for seizing market opportunities; the ways to use the domestic market as a platform together with the promotion of adequate supporting structures.

These studies converge with the literature discussed earlier on the key role of new non-traditional products in the export dynamic of processed food products from developing countries. In line with the positive interpretation of the significance and opportunities for developing countries of processed food exports adopted by Athukorala and Sen (1998), much research has focussed on the obstacles to access posed by considerably higher tariffs for processed products when compared to raw material exports (Rae and Josling 2003), and more importantly by technical barriers owing to greater rigour with regard to quality and food safety. Following on the decisions of the Uruguay Round, protectionist measures will tend in the future to be based increasingly on those barriers, which can be justified within the terms of the Sanitary and Phytosanitary (SPS) and the Technical Barriers to Trade (TBT) agreements (Valdimarsson 2003). An important workshop on Food Safety Management in Developing Countries, organized by the FAO and CIRAD in 2000, explored these issues in detail with examples from country experiences in Asia, Africa and Latin America (Hanak, Boutrif, Fabre and Pineiro 2000). The ability to negotiate the dispute settlement mechanisms of the WTO, therefore, becomes a key component of competitiveness in these non-traditional export markets (Athukorala et al. 2002). In their conclusions to a recent contribution on this theme, Athukorala and Jayasuriya (2003) argue: "Unlike conventional trade policy reforms, SPS regulations cannot be implemented simply through legislative declaration. Their effective implementation in developing countries requires that binding commitments are made to provide adequate financial and technical assistance. In particular, there is a need for a global framework to support national capacity building and improve the design of international standards."

A less sanguine interpretation of the increasing importance of processed food exports from developing countries has been developed by environmentally oriented research which would see this tendency as part of a broader movement either to export "dirty" industries to, or deplete the resources of, countries with less rigorous legislative and regulatory controls. The fishing industry has particularly come under attack in this sense. The United Nations Environment Agency (UNEP) warned in its 2001 Annual Report of the dangers of selling rights to fishing stocks under the pressure for short-term export cash, particularly when the developed countries are subsidizing the fishing vessels (UNEP 2001).

Another critical line of research has been developed by the global commodity or value chain approaches which would see this surge in processed exports as part of a broader out-sourcing strategy of production chains dominated by transnational firms, which are taking advantage of trade liberalization and regulatory flexibility, to harness the cheaper labour and abundant resources of developing countries. The strategy is no longer now limited to raw materials but includes basic processing activities, to the extent that value added is increasingly concentrated closer to the activities directly related to final demand in the consuming countries (Gereffi, Korzeniewicz and Korzeniewicz 1994; Fitter and Kaplinsky 2002).

The UNCTAD Trade and Development Report (UNCTAD 2002) lends strong support to such an interpretation when it notes that, with the exception of a small number of newly industrializing East Asian economies, "high technology" manufactured exports from developing countries often represent "the low-skill assembly stages of international production chains organized by transnational corporations (TNC)", with the technology and skills embodied in imported parts and components. It further adds that, while developed countries now "have a lower share in world manufacturing exports, they have actually increased their share in world manufacturing value added over this period". In line

also with the global value chain analysis, the report argues that “perhaps a more decisive influence on product dynamism has been the strategy of TNCs”, and that “trade based on specialization within such networks is estimated to account for up to 30 per cent of world exports”.

Particularly interesting examples of this line of analysis are the studies being carried out by the Institute of Development Studies (IDS) of the horticulture commodity chain, which, after fish products, is the most dynamic food processing export sector for developing countries (Dolan, Humphrey and Harris-Pascal 2001). Building on Gereffi’s distinction between supply and demand driven commodity or value chains, these studies analyse the out-sourcing strategies of British retail, particularly in relation to African supply bases (Kenya and Zimbabwe) and note the tendency to locate the preparation and packaging stages more frequently in the supplier countries. The quality and logistical demands of this pattern of outsourcing provoke greater scales of concentration within the agricultural sector of the producer countries, marginalizing small farmers and consolidating large farms based on casual, predominantly female labour (Barrientos 2000). In addition, the competitive advantage of producer countries is constantly undermined as production bases can be quickly mobilized in other countries with similar material and human resources (Dolan, Humphrey and Harris-Pascal 2001). The impact of the global change in agrifood grades and standards on developing country and particularly small producer access to domestic and export markets has also been extensively studied by Reardon and colleagues, who focus on the differential strategies of transnationals, medium to large domestic farms and small firms and farms in relation to grades and standards (Reardon et al. 2001).

#### **4. FDI, Imports and Food Processing in Developing Countries**

Studies on the transnationalization of the British food industry are notable for their focus on the way retail is constructing new global value chains (Dolan, Humphrey and Harris-Pascal, 2001; Marsden, Flynn and Harrison 2000). Studies on European food FDI initially focussed on United States-EU flows (Green 1989) and more recently on intra-European investments related to the consolidation of the single market. Studies of Japanese FDI, as we have seen, are focussed on their role in creating first regional, and now global, supply bases for their domestic market. Research on United States FDI, on the other hand – probably reflecting its leading role in global food industry FDI – has tended to focus on the impact on the host countries of the transnationalization of food processing firms in terms of their effect on a series of variables including domestic capital formation, growth rates, efficiency, repatriation of profits, exports and imports, employment, changes in diet and consumption patterns (Gopinath 2000). At the same time, important research has been carried out on the impact of food processing FDI on the innovation dynamic of developing countries (Cristensen, Rama and von Tunzelman 1996).

Bolling, Elizalde and Handy (1999) in their overview of United States FDI note that in earlier decades investments were primarily directed at primary processing facilities both for export and for the domestic market, particularly in the grains and oils sectors. In the 1990s, on the other hand, these have declined relative to investments directed to final food demand in the domestic markets of the host countries, most notably in beverages (where FDI more than tripled) and “other processed foods” (which saw investments more than double).

Given the importance of NAFTA, which has accelerated the creation of a regional North American food industry, United States investments in the Mexican food industry are of particular note, increasing from US\$210 million in 1987 to US\$5 billion in 1997, generating US\$6.5 billion in sales in 1998. Investments were stimulated by changes in FDI law, which permitted a majority foreign capital share for firms in Mexico. (Similar laws have been enacted in many other countries to attract FDI, Brazil being a notable case in Latin America’s Southern Cone). According to Bolling, Elizalde and Handy (1999) these investments are fundamentally directed to the Mexican domestic market and are heavily concentrated on convenience and highly processed foods, especially snacks, beverages, instant coffee,

mayonnaise and breakfast cereals. In many cases the ingredients for these products (vegetable oils, dried milk, flavourings) are imported from the United States on the basis of intra-firm transactions. These investments therefore accelerate trends to the adoption of highly industrialized global diets, which have come under considerable attack in recent years for their negative impact on health (indices of obesity, precocious diabetes), and may be leading to a substitution of domestic raw materials and ingredients through imports. Sustained economic growth, higher incomes and population trends are seen to be the principal stimulus for these FDI flows. It should also be noted that Mexican firms are beginning to establish affiliates in the United States market also, with investment increasing from zero in 1990 to US\$664 million in 1996, largely stimulated by the demand for Hispanic foods.

Similar tendencies are identified for Brazil and Argentina by Bolling, Neff and Handy in their 1998 report *U.S. foreign direct investment in the western hemisphere processed food industry*. In the cases of these Mercosul countries, however, investments to control key exporting sectors (oils, grains, coffee and fruit juice) are considerably more important. Canada, Mexico, Argentina and Brazil are responsible for 90 percent of all United States FDI in the Americas. The authors see FDI as complementary to United States exports and argue that "FDI seems to have beneficial effects on the economy of the host country", pointing to improvements in food production infrastructure, lower costs of domestic production *vis-à-vis* imports, job creation, gains in efficiency by local firms faced with competition from the multinationals, products and process innovations, contribution to gross domestic product and foreign currency earnings. Studies conducted within the Mercosul countries have lent greater importance to the increase in industry concentration, which has occurred in the wake of the acceleration of FDI (Belik and dos Santos 2002; Guezan 1999; Gutman 1999), together with the regional character of recent investments, which have led also to a greater number of green-field initiatives (Wilkinson 1999). Other authors have emphasized the importance of the new institutional environment (deregulation, liberalization), which tends to make greater transnationalization compatible with increased competition, price stability and an acceleration of new product, process and logistical innovations (Farina and Viegas 2003).

In his review of the FDI literature, Gopinath (2000) identifies three schools of thought. The first, based on Bhagwati's "immiserizing growth" thesis, stresses the lock-in consequences of tariff-induced FDI in small countries where cheap labour becomes combined with the increasing import of capital intensive components and equipment. In these cases, Athukorala and Sen (1998) have argued that food processing would be one of the lesser affected sectors to the extent that it has a lower dependence on imports. This, however, may be the case for processed food exports only. We have seen above the combination of exports and FDI in the case of Mexico, and this tendency is well documented in the literature (Friedman 1993) and in line with the complementarity thesis identified by much econometric analysis of trade and FDI flows (Marchant, Saghaian and Vickner 1999). The second approach, associated with Markusen, identifies a trade-off between increased technical efficiency and increased monopoly power, where the existence of competition between transnationals would be sufficient for the establishment of welfare benefits in terms of prices. Here the size of the domestic market and/or the nature of the institutional framework would seem to be crucial. And finally, the third approach, that of new growth theory, would give pride of place to the institutional framework, seeing positive benefits to the extent that export promotion policies, deregulation and liberalization characterize the domestic policy regime. As Farina and Viegas (2003) point out, however, it is impossible to know whether, in a changed institutional climate, domestic firms would not have developed the same competitive strategies. In this case, the entry of FDI, especially in the form of acquisitions, may have had the effect of "crowding-out" potential domestic investment.

Be that as it may, there has been a virtual universal adjustment of domestic regimes in developing countries to create an attractive environment for FDI. As we noticed earlier, United States food-processing FDI alone was responsible for US\$133.1 billion in sales, four times more than its food processing exports. This is heavily concentrated in the EU, NAFTA and the Mercosul regions, but some US\$7.5 billion was invested in other developing countries in 1995. In all, the United States food processing sector had 8223 foreign affiliates in 1998. Therefore, especially in the case of small

countries, FDI may have a decisive impact even with low levels of investment, and, to the extent that it is accompanied by imports, will also involve a displacement of domestic raw material supplies.

Most discussions of FDI and trade flows focus on generic variables (growth rates, technical efficiency, concentration, etc.), but our earlier discussion of the major developed blocs made clear that that the bulk of investments were related to highly processed food and drinks, especially snacks, convenience foods and soft drinks. This second generation of FDI, therefore, is now not focussed so much on primary processing, which involved a shift from local grains and oils to wheat, corn and soy based products, but on final foods for the domestic market, deepening the pressures for substantial changes in diet. In developing countries where these investments are more solidly implanted, in addition to the emergence of new dietary-associated diseases where malnutrition predominates, the perverse combination of des-nutrition and obesity is now in evidence. Whether this should be associated with the “westernization” of dietary practices or the structural consequences of urbanization and changes in family and work practices – especially the opportunity cost of female domestic labour – is an area of debate, particularly as this process begins to affect Asian countries where convenience foods seem to be adapting to local tastes.

European and U.S. exports to developing countries, however, are not restricted to the “highly processed products” category. They also involve the heavily subsidized commodities of the post-war urban industrial diet, involving a shift from a vegetable to an animal protein-based diet that is, at the same time, subject to more rapid and more individualized methods of food preparation and consumption. Milk powder and white meats, particularly poultry, are the two anchor products of this diet, both exports heavily subsidized by the two major trading blocs. World trade in the case of poultry has been largely based on developing country demand and is a sector that can be put into place rapidly in developing country economies. Nevertheless, 75 percent of this trade remains controlled by the EU and the United States, with only Brazil, Thailand and China able to compete with their subsidies. With a more level playing field, a number of developing countries would have greater opportunities for the development of a domestic poultry industry. Similar considerations could be made in the case of world trade in dried milk.

## **5. The Food Processing Sector and the Domestic Markets of Developing Countries**

The macro economic and regulatory climate has suffered dramatic changes since the UNCTAD study of 1980, *The food processing sector in developing countries: Some recent trends in the transfer and development of technology* (UNCTAD 1980). Import substitution has given way everywhere to export oriented growth strategies and most developing countries have now adjusted to the post-Uruguay Round WTO framework. An increased participation of developing countries in the share of global manufactured exports is seen to vindicate and point the way for future development (UNIDO 1995). The dominant orthodox view focuses primarily on the need for macro economic and regulatory adjustment, which is seen to be the basic strategy for integrating developing countries into global economic growth, under the coordination of transnationals in the form of FDI or external sub-contracting. According to this scenario, sectoral measures would be focussed on policies to promote SMEs, combined with initiatives directed at poverty alleviation. Other analysts have pointed to the selective character of FDI, particularly in the case of the least-developed countries where de-industrialization (Africa) or a de-intensification of industrialization (Latin America) have been identified in this period; these analysts stress the need for more pro-active industrial strategies at domestic level. The case of South Korea and other Asian countries, where FDI was less important, as well as the inspiration of the “Third Italy” for the development of cluster strategies, provide the main support for this approach.

A further fundamental change has been the shift to the formation of regional blocs, which accompanied globalization and has now also become a feature of the developing world. In Latin

America, Mexico became integrated into NAFTA, while the Southern Cone developed the Mercosul, complementing earlier blocs such as the Andean Pact, with similar initiatives in Central America and the Caribbean. In Asia, Japan had long been the focus of regional integration, but more recently the ASEAN countries have established a free trade area with China, principally as a strategy for benefiting from FDI flows. After many setbacks in Africa, a new regional dynamic is emerging through SADC, with South Africa as its hub. These tendencies to regionalization are now reinforced by the global strategies of the TNCs, which, as we have seen in the case of the Mercosul, increasingly adopt regional considerations when defining their investment options.

At the same time, the heterogeneity of the developing world has increased markedly in this period. Alongside newly industrialising Asian countries, this category also includes the 49 least developed countries (LDCs), which have 10 percent of the world's population but contribute only 0.4 percent to global manufacturing value added. On the other hand, the impact of liberalization and deregulation on the giant, but low-income, economies of China and India has radically transformed trade and investment flows in the developing world.

In increasingly open economies, where an export orientation is combined with rapid rates of transnationalization, it is more difficult to distinguish specifically domestic tendencies. On the one hand, exports have less of an enclave character and on the other the domestic dynamic is being radically transformed by the presence of transnational firms. Nevertheless, for the food processing industry of developing countries, trends in population growth, rural-urban migration, income levels and their distribution – particularly the size of the middle class – are seen to be crucial differentiating variables.

As much as 97 percent of the increase in world population from 2000 to 2050 will occur in today's developing countries. The developed countries' share of total population is expected to fall from 20 percent in 2000 to only 13 percent in 2050.<sup>3</sup> Africa will undergo the most rapid growth, increasing from 784 million in 2000 to nearly 1.8 billion in 2050. India will overtake China as the most populous country, rising from just over 1 billion to more than 1.5 billion between 2000 and 2050. Although rural to rural migration continues in certain countries of Latin America and Africa, rural to urban migration is the most significant and relevant trend from the point of view of the food processing industry. On a world scale, half of urban growth is still based on rural-urban migration. Globally, urban areas are currently growing at a rate of 2.2 percent as against 0.4 percent for rural areas, and rates of urbanization in developing countries are much higher than in developed countries. Generational differences between developed and developing countries also have an important bearing on food consumption, both in terms of niche markets (baby foods) and broader changes in the composition of food demand. A study in Japan showed that the younger generation consumes more beef and beer whereas older people eat more rice, vegetables and fruits. The enormous differences in the generational distribution of the population between developed and developing countries have consequences for food consumption.

The example of China provides an indication of the impact of urbanization on food consumption and the processing industry in the context of rapid and sustained economic growth.<sup>4</sup> With some 50 percent of its 1.3 billion people still in the countryside, China plans to shift 40 million people to the cities in the five years between 2002 and 2007. A Chinese household survey showed that per capita consumption of meat was 40 percent higher in urban than in rural areas, fish consumption three times higher, and egg and poultry production 2.5 times higher. On the other hand, urban grain consumption was three times lower than that in rural areas. Higher-income urban residents in the same survey were seen to consume more of most foods on a per capita basis than low-income urban residents, particularly milk, fruits, beer, poultry, meat, fish, eggs and vegetables. Food processing output value in China, based increasingly on final food products, is said to have grown 14 percent a year during the

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<sup>3</sup> The data in this section are taken from ILO (2002).

<sup>4</sup> This paragraph draws on *China's food and agriculture: Issues for the 21<sup>st</sup> century* by F. Gale (ed), ERS/USDA, 2002.

1980s and 1990s, while 15 percent of urban food spending is now devoted to “away-from-home” spending.

If we contrast this scenario with that of the least developed countries (LDCs) we find that the food processing sector is if anything more strategic for economic development. However, here we are dealing fundamentally with primary processing, combined in certain countries with processed food exports (fisheries in Bangladesh; fruit and vegetables and also fisheries in some African countries), while the final foods sector is still heavily dominated by artisan cooking and street sales.<sup>5</sup> These countries recall the PL480 “aid-to-trade” analyses (Friedman 1982), showing a heavy reliance on imports of rice and grains; these undercut local production and break down dynamic relations between urban consumption and agricultural production. The LDCs receive only 2.2 percent of FDI flows to developing countries (concentrated in mining and energy) and rely more on aid, international loans and the actions of NGOs. The LDCs’ manufacturing sectors represent less than 10 percent of GDP, but the food and drink industries make up some 35 percent of total manufacturing value added (MVA), rising to 50 percent in many countries, and over 80 percent in 17 of the 37 African LDCs. In Asian LDCs, on the other hand, while the share of food manufacturing in MVA was lower, the import content of food manufacturing industries was near to zero.

Even in the highly polarized cases briefly presented above, it is clear that behind the growing heterogeneity of the developing world a number of similar patterns, challenges and opportunities emerge. Rather than present an exhaustive account of the food processing sector in developing countries, which would involve discriminating countries by human and natural resources, income levels, market sizes, geographical position, consumer and cultural practices, degrees of regional integration, types of access to developed country markets, trade flows and FDI, together with each country’s regulatory system, we will instead present some stylized facts that may subsequently guide policy considerations.

One thing that has emerged from our review is that, in varying degrees, internal deregulation and external liberalization of markets, together with legislative reform favourable to foreign investments, is now a general feature of all developing countries, including the LDCs. This has led to an intensification of foreign trade and investment with priority being given to the development of processed-food exporting capacity, based on intensive use of human and labour resources, combined with efforts to attract FDI as a substitute for domestic capital and “know how”. This has led to an intensification of the trans-nationalization of the food processing sector, either directly in the domestic market or as part of a “global value chain”. Even in LDCs, where transnationalization is much less in evidence, this latter remains a key strategic objective of local governments and regional blocs. This overall strategy has brought important results in food-manufacturing growth rates. However, to the extent that more and more countries become involved, there is a greater risk of producing the “fallacy of composition”, to which the UNIDO Trade and Development Report (2002) draws attention.

This combination of liberalization and transnationalization has a range of implications, which vary from country to country but apply to the developing world as a whole. There tends to be a weakening or elimination of the dualism between the domestic market for urban consumption and export/import sectors, which accelerates with the consolidation of an urban middle class. Brazil is a world leader in poultry exports, but 70 percent of total production is consumed domestically and per capita consumption has increased from 2 kg per capita in 1970 to 26 kg per capita in 2000. Similarly 30 percent of soy meal and 70 percent of soy oil are consumed domestically. The same tendencies are now at work in other products, including fruit juices and coffee consumption. However, while the dualism of domestic market versus exports is becoming attenuated, a dualism based on income differentiation persists in the prevalence of the informal sector. Even in a country like Brazil the informal sector registers levels of 30 to 50 percent in meats, milk and soft drinks, and it is coming under heavy attack in the efforts to implement new minimum standards of quality.

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<sup>5</sup> This paragraph draws on *Building productive capacity for poverty alleviation in least developed countries (LDCs)*, UNIDO, 2001.

Liberalization and trans-nationalization has increased the competitive structure of the food industry, leading to more rapid product and process innovations, and has accelerated the homogenization of food consumption patterns. At the same time, it has been accompanied by a significant de-nationalization of leading domestic food firms, increasing concentration and eliminating many medium-sized firms as market segments become dominated by at most three leading brands. While there is a clear trend towards a protein diet based on fish, meat and dairy products, together with a sharp increase in prepared fruits and vegetables, the integration of local products seems to depend on their adaptability to the demand for convenience foods.

As in manufacturing more generally, there is a tendency for the food processing industry to externalize many activities: design, market studies, transport, distribution and even manufacturing, as the leading firms concentrate on brand promotion and competitive strategy. This opens opportunities for the emergence of SMEs, often in a long-term relation with the leading firm, although there are also pressures for concentration within these activities.

As we mentioned at the beginning of this review, the food and drinks industry is no longer the hegemonic player in the overall food system, a role that has now been assumed by large-scale retail (Wilkinson 2002). In addition, large-scale retail is as heavily involved in FDI as the food processing sector itself, and depending on the level of development of the food system in each country, it tends to reproduce the strategies it has developed in the industrialized countries. The rise in supermarket own-brands is particularly notable in some Latin American countries. At the same time, we have seen that the leading food processing firms involved in FDI tend to concentrate their activities on highly processed products and convenience foods. This may point to opportunities for SMEs and local firms in less sophisticated food processing activities or in earlier phases of the production chain, either for the leading food firms or for retail.

A common characteristic of the global food system is the adoption of ever more stringent quality criteria, to which developing countries are increasingly being forced to adhere. To the extent that developing country governments do not impose international-level standards, private standards are being implemented by the leading players in retail and food processing (Reardon and Farina 2000). HACCP, ISOs, traceability systems and private quality labels are becoming entry tickets to international markets and, increasingly, the reference for quality in the domestic markets of developing countries. This has led to an acceleration of obligational contract relations with raw material suppliers, involving detailed specification of production and delivery conditions. There is much evidence to suggest that this is leading to a considerable degree of exclusion of small farms and firms, an issue to which we will now turn in our final section.

## **6. Opportunities for the Participation of Small Firms**

There is a sharp contrast between the literature that focuses on the combined exclusionary effects of scale and quality for SMEs, and that which sees SMEs as the main opportunity for employment creation as strategies of “downsizing” in large firms have produced the phenomenon of growth without employment. In addition to studies demonstrating the numerical importance of SMEs in the economies of the industrialized world (OECD 2002), the role of SMEs in innovation (Lundvall and Borrás 1997; Cooke and Willis 1999), in local development and the promotion of industrial districts on the cluster model (UNIDO 2001b), and as components of global value chains (UNIDO 2001c) have been the focus of much research. At its most emphatic, and inspired by the work of Piore and Sabel (1984), SMEs are even seen as the basis for a new model of economic development.

SMEs continue to be an important component of the food processing sectors in developed countries, particularly in the case of Europe and Japan, both numerically and in terms of manufacturing value-added. At the same time, the trends to concentration are evident as, increasingly, different products segments on the retail shelves are reduced to three or four leading brands. The reduction in farm numbers and the successive increase in minimum viable cultivation sizes are also

evident in the industrialized countries, and in this case we are faced with an absolute reduction of the agricultural economically active population to levels of 5 percent and under. This phenomenon poses an enormous challenge to developing countries, where the economically active population in agriculture can range from 20 percent to as much as 50 percent of the total EAP.

A detailed consideration of the dynamic of SMEs in the food processing sector of developing countries would have to take into account the sharp differences between the different agrofood products involved, as regards both processing and raw material supplies. In this sense, the rice-based activities of many Asian countries have a totally different dynamic than the readily mechanizable agriculture of much of Latin America, parts of Africa and indeed other parts of Asia. Many traditional processing activities, especially in grains, oil and sugar have reached levels of scale and automation that offer virtually no space for SMEs. Recent developments in the dairy sector, so critical to the small-scale farming sector of many developing countries, would seem to be advancing in this same direction (Dirven 1999). On the other hand, the surge in demand for prepared fruits and vegetables, affecting developing countries in all continents, is based on labour-intensive on- and off-farm activities, where the possibilities for participation by SMEs appear to be significantly higher.

The opportunities and challenges facing SMEs in food processing and related activities derive, therefore, from the impact of the new competitive environment on scale, minimum quality and the perspectives for non-traditional products. At the same time a distinction should be made between traditional SME activities/actors and what we might call “new entrants”, which may be SMEs in new activities or new actors in traditional activities. This relates to a point made earlier when discussing the LDCs, that size as such is not necessarily the barrier to competitiveness, which is increasingly located in the greater learning intensity of all activities in a demand-driven market environment. From a strategic point of view, where possible policies should be directed at increasing the capacity of traditional actors through retraining and the provision of services, rather than focussing on new, often “urban” entrants with professional experience.

Six areas can be identified as potential spaces for strengthening the presence of SMEs. Each of these should be the subject of appropriate policy initiatives.

**1. Traditional activities that still escape the effects of scale and new demands on quality.** Lack of adequate physical infrastructure (“weather-proof” roads, transport, cold storage, household fridges) can favour local supplies, especially in the case of highly perishable products, where short distance and time between production and consumption can make traditional supplies compatible with basic criteria of hygiene and sanitation. Low-density communities (villages and small towns) are less attractive for modern distribution systems. Extreme income inequalities and the prevalence of high levels of absolute poverty ensure the persistence of informal food processing activities: these demand appropriate quality control support measures that are neither punitive nor unrealistic in their requirements.

**2. Innovative firms supplying niche markets, services and technologies.** These may be urban, often emerging from university or local government “incubator” policies that specifically promote SMEs. Artisan bakeries and confectionaries are also emerging to compensate in part the marginalization of traditional SMEs in this sector (Scarlatto 1999). They may also emerge in rural areas through the introduction of new crops and livestock. Very often these are individual initiatives and have become the object of generic policies to promote “entrepreneurialism”.

**3. SMEs as suppliers for large firms.** We have already mentioned how out-sourcing by food processing firms and large-scale retail are opening opportunities for small firms. It remains to be seen to what extent this sector is also suffering from the effects of scale economies.

**4. Obligational subcontracting between SMEs and large firms.** New quality demands, preoccupations with health hazards, supply management and efficient consumer response techniques are all leading to a marked increase in formal contracts with raw material suppliers, based on clear specification of production and delivery conditions. In many cases, this has been associated with a shift from small farms to medium or large farms run along business lines. However, adequate resource

support (IT, credit, technical assistance, market information services), combined with organizational initiatives for the promotion of associativism and cooperatives, have been effective in integrating small farmers into these more demanding coordination networks.

**5. SMEs organized in autonomous networks.** These have traditionally been associated with the industrial districts of Italy, using the notion of clusters. Most examples in developing countries seem to be associated with light industries based on local raw materials but destined for non-food markets such as footwear, clothing and woodwork. In Latin America, the notion is being associated with the development of territorial strategies for local and regional development based on SMEs. In Brazil, the notion of clusters of small rural agroindustries is currently being promoted as a solution to the SMEs' problems of scale, which are located primarily in the areas of management practices, market access and technical support.

**6. The promotion of traditional SMEs associated with special quality artisan products.** In many cases the most realistic short term strategy for small farms has been to engage in organizational innovations (new forms of associativism) and technological modernization to accompany the more stringent conditions of agroindustry. Medium and long term prospects, however, seem to be more promising to the extent that they are based on strategies for establishing the market value of process and product characteristics typical of family farming and its traditions. The model here would be the European strategy of denominated-origin products, which has now received some support in the framework of the WTO. In the case of developing countries origin denomination would clearly include many specific features such as indigenous products, products associated with sustainability (particularly non-wood forest products), products based on social criteria (fair trade, products from agrarian reform areas), and/or products that represent the preservation of biodiversity and traditional cultures. There are indications that the modern retail sector may prove to be an important catalyst for these markets.

## 7. Conclusions

This critical review of literature on current transformations in the food processing industry has highlighted the latter's strategic role for developing countries in the context of globalization. The increasing importance of processed food exports when compared with primary commodities confirms this sector as a key component of export growth strategies for developing countries. At the same time, it was noted that these opportunities are currently heavily concentrated on a limited number of product categories, notably fish and seafoods, fruit and vegetables. Researchers are divided on the "upgrading" potential of these export sectors, with some authors emphasising the positive effects on employment and knowledge creation, and others identifying this tendency with the "spurious" advantages of cheap labour and lax environmental legislation.

The phenomenon of FDI in the food processing sectors of developing countries, while partially identified with the promotion of these non-traditional exports, is seen as transforming the competitive environment of the food industry in developing countries. The focus here has been on the trade-off between increased productivity and innovation on the one hand and a sharp rise in concentration ratios on the other. In addition to the impact of FDI on industry structure, attention has been increasingly drawn to the role of the food processing sector in the transition to animal protein and highly processed food diets in developing countries. Of particular concern here has been the growing combination in developing countries of poverty, malnutrition and obesity. On the other hand, the food processing industry has become a key source of employment opportunities and the evidence from Europe and Japan suggests that this will continue to be the case throughout the course of development. Ten years ago, discussions on food processing in developing countries were largely restricted to the employment benefits agroindustry could provide in the rural areas. This continues to be a key concern. Today, however, the food processing sector is seen in addition to be playing a strategic role in the overall growth strategies of developing countries.

## References

- Athukorala, P-c, Gulati, A., Jayasuriya, S., Mehta, R. & Nidhiprabha, B. 2002. *International Food Safety Regulation and Processed Food Exports from Developing Countries: The Policy Context and the Purpose and Scope of the Research Project*. Version of a paper presented at the conference International Food Safety Regulation and Processed Food Exports from Developing Countries. Bangkok, Thailand, October 2002 (available at <http://rspas.anu.edu.au/economics/publish/papers/aciar>).
- Athukorala, P-c & Jayasurita, S. 2003. Food Safety Issues. Trade and WTO rules: A Developing Country Perspective. *The World Econ.*, 26(9): 1395–1418.
- Athukorala, P-c. & Sen, K. 1998. *Processed Food Exports From Developing Countries: Patterns and Determinants*. (mimeo)
- Barrientos, S., Dolan, C. & Tallontire, A. n/d. *A Gendered Value Chain Approach to Codes of Conduct in African Horticulture*. Sussex, Institute of Development Studies (IDS).
- Belik, W. & Rocha dos Santos, R. 2002. Regional Market Strategies of Supermarkets and Food Processors in the Extended Mercosur. *Dev. Policy Review*, 20(4): 515–528.
- Bolling, C., Elizalde, J. C. & Handy, S. 1999. U.S. Firms Invest in Mexico's Processed Food Industry. *Food Review*, 22(2): 134–143.
- Bolling, C., Neff, S. & Handy, C. 1998. *U.S. Foreign Direct Investment in the Western Hemisphere Processed Food Industry*. Washington, DC, ERS/USDA.
- Christensen, J.L., Rama, R. & von Tunzelman, N. 1996. *Study on Innovation in the European Food Products and Beverages Industry*. Brussels, European Commission Report.
- Cooke, P. & Willis, D. 1999. Small Firms, Social Capital and the Enhancement of Business Performance Through Innovation Programmes. *Small Business Economics*, 13: 219–234.
- Dirven, M. 1999. *Local Industry Survival Difficulties in a Globalising World – Illustrated Examples from the Chilean Milk Industry*. Santiago de Chile, ECLA.
- Dolan, C., Humphrey, J. & Harris-Pascal, C. 2001. *Horticulture Commodity Chains: The Impact of the UK Market on the African Fresh Vegetable Industry*. IDS Working Paper Number 96. Sussex, IDS.
- Farina, E. & dos Santos Viegas, C. 2003. *Multinational Firms in the Brazilian Food Industry*. São Paulo, PENSA.
- Fitter R. & Kaplinsky, R. 2002. *Can Agricultural Commodity be De-commodified, And If So, Who Is To Gain?* Sussex, IDS.
- Friedman, H. 1982. The Political Economy of Food: Rise and Fall of the Postwar Order. *Amer. Journal of Soc.* (supp): 248–286.
- Friedman, H. 1993. The Political Economy of Food: A Global Crisis. *New Left Review* 197: 29–57.

- Gale, F., ed. 2002. *China's Food and Agriculture: Issues for the 21st Century*. Washington, DC, ERS/USDA.
- Gereffi, G., Korzeniewiez, M. & Korzeniewiez, R.P. 1994. Introduction: Global Commodity Chains. In G. Gereffi & M. Korzeniewiez, eds. *Commodity Chains and Global Capitalism*. Westport, Praeger.
- Gereffi, G. 1995. Global Production Systems and Third World Development. In B. Stallings, ed. *Global Change, Regional Response*. Cambridge, Cambridge University Press.
- Gopinath, M. 2000. *Foreign Direct Investment in Food and Agricultural Sectors* (available at <http://oregonstate.edu/dept/IIFET/2000/papers/gopinath.pdf>).
- Green, R. 1989. Les déterminants de la restructuration des grands groupes agro-alimentaires. *Economies et Sociétés*, 20: 43–58.
- Guezan, G. 1999. *Trajetorias y demandas tecnologicas de las cadenas agroindustriales en el Mercosur ampliado - Hortalizas: tomate fresco y procesado*. Proyecto Global. Montevideo, PROCISUR.
- Gutman, G. 1999. *Trayectorias y demandas tecnológicas de las cadenas agroindustriales en el Mercosur ampliado – Oleaginosas: soja y girasol*. Proyecto Global. Montevideo, PROCISUR.
- Hanak, E., Boutrif, E., Fabre, P. & Pineiro, M. 2002. *Food Safety Management in Developing Countries*. Rome, CIRAD-FAO.
- Humphrey, H. 1995. *Industrialization in Developing Countries: The Challenges of Employment and Social Integration*. Global Forum on Industry. Vienna, UNIDO.
- Humphrey, L. 2000. *Which Way to Market? Exploring Opportunities for Marginalised Producers in Developing Countries to Supply Mainstream Commercial Companies in the UK*. Traidcraft Policy Unit Report Series No. 1. London, Traidcraft Exchange.
- ILO. 2002. *An Inclusive Society for an Ageing Population: The Employment and Social Protection Challenge*. Second World Assembly on Ageing, Madrid (available at <http://www.ilo.org/public/english/employment/skills/older>).
- Jethra, B. D. 2003. *Export Orientation for Small and Medium Enterprises*. In S. B. Verma, *Poverty Alleviation Approaches and Women's Participation*. Jaipur, Aavishkar Publications.
- Lundvall, A-B & Borrás, S. 1997. *The Learning Economy – Implications for Innovation Policy*. Brussels, Targetted Socio-Economic Research (TSER) Programme, European Commission (available at <http://www.cordis.lu/tser/src/globec.htm>).
- Marchant, M., Saghalian, S. & Vickner, S. 1999. Trade and Foreign Direct Investment Management Strategies for US Processed Food Firms in China. *Inter. Food and Agribus. Man. Rev.*, 2(2): 131–143.
- Marsden, T., Flynn, A. & Harrison, M. 2000. *Consuming Interests: The Social Provision of Food*. London, UCL Press,

- OECD. 2002. *High Growth SMEs and Employment*. Paris, OECD Press.
- Piore, M. & Sabel, C. 1984. *The Second Divide*. New York, Basic Books.
- Rae, A. N. & Josling, T. 2003. Processed Food Trade and Developing Countries: Protection and Trade Liberalisation. *Food Policy*, 28: 147–166.
- Reardon, T., Codron, J-M., Busch, L., Bingen J. & Harris, C. 2001. Global Change in Agrifood Grades and Standards: Agribusiness Strategic Responses in Developing Countries. *Intl. Food and Agribus. Man. Rev*, 2(3).
- Reardon, T. & Farina, E. 2001. The Rise of Private Food Quality and Safety Standards: Illustrations from Brazil. *Intl. Food and Agribus. Man. Rev*, 4(4): 413–421.
- Rural Industries Research and Development Corporation. 2003. *Japan Food Market Study*. Canberra, Australia, RIRDC.
- Said, D. 1995. *Food Processing in Indonesia: The Development of Small-scale Industries*. Damardjati Bogor Research Institute for Food Crops, Indonesia.
- Scarlatto, G. 1999. *Trayectoria y demandas tecnologicas de las cadenas agroindustriales en el Mercosur ampliado – Cereales: trigo, maiz y arroz*. Proyecto Global. Montevideo, PROCISUR.
- Schejtman, A. 1998. *Agroindustria y pequeña agricultura: Vinculos, potencialidades y oportunidades comerciales*. Santiago, CEPAL.
- UNCTAD. 1980. *The Food Processing Sector in Developing Countries. Some Recent Trends in the Transfer and Development of Technology*. Geneva.
- UNCTAD. 1997. *Opportunities for Vertical Diversification in the Food Processing Sector in Developing Countries*. Geneva.
- UNCTAD. 2002. *Trade and Development Report*. Geneva.
- UNEP. 2001. *UNEP Annual Report*. New York.
- UNIDO. 1995. *Global Forum on Industry. Perspectives for 2000 and Beyond*. New Delhi, India.
- UNIDO. 2001a. *Building Productive Capacity for Poverty Alleviation in Least Developed Countries (LDCs)*. Vienna.
- UNIDO. 2001b. *Development of Clusters and Networks of SMEs*. Vienna.
- UNIDO. 2001c. *Integrating SMEs in Global Value Chains*. Vienna.
- UNIDO. 2002. *Trade and Development Report*. Vienna.
- Valdimarsson, G. 2003. *Networking in Fisheries Research*. Reykjavik, Iceland, TAFT (June 12).

- Wiggins, S., Otieno, O., Proctor S. & Upton, M. 2000. *Population, Migration and Rural Diversification: The Implications for the Post-Harvest Sector*. Crop Post-Harvest Programme Issues Paper 1 (available at [http://www.cphp.uk.com/downloads/issue\\_paper\\_1.pdf](http://www.cphp.uk.com/downloads/issue_paper_1.pdf)).
- Wilkinson, J. 2002. The Final Foods Industry and the Changing Face of the Global Agrofood System: Up Against a New Technology Paradigm and a New Demand Profile. *Sociologia Ruralis*, 42(4): 329–47.
- Wilkinson, J. 1999. *Demandas tecnológicas, competitividad e innovación en el sistema agroalimentario del Mercosur ampliado*. Proyecto Global. Montevideo, PROCISUR.