Food Security, Nutrition and Health: Implications of Trade Liberalisation and the WTO Agreements

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Food Security, Nutrition and Health

Adequate nutrition, in terms of calorie and micronutrient intakes, is critical to health. Much of the discussion of this issue considers only the most basic level of average calorie intakes. Undernutrition (inadequate calorie intake relative to needs) increases the risk of communicable and non-communicable diseases, and worsens the prognosis when such diseases are contracted. In pregnant women, it increases the risk of obstetric complications, maternal mortality and underweight babies and infant morbidity and mortality. Childhood undernutrition, leading to stunting, increases health risks in later life, including obstetric complications and low birth-weight in the case of girls.

However, three other dimensions also need to be taken into account.

- Calorie requirements vary between individuals and over time, eg according to age and physical activity, and are increased during pregnancy and lactation. If greater than average needs are not matched by greater than average intakes, undernutrition (and the associated health risks) will result.

- Particularly for young children, calorie density is also important. Young children are unlikely to consume enough of low calorie density staple foods such as cassava, making the availability of higher calorie density foods such as vegetable oils important to their nutritional status.

- Micronutrient deficiencies are linked to increased risks of specific health problems, such as anaemia (iron), adverse outcomes from measles (vitamin A), bone weakness (calcium and vitamin D), etc.

Undernutrition and iron deficiency also contribute to reduced performance in school and lower productivity at work, reducing income and thereby perpetuating poverty and the associated health risks.

Food security - reliable physical access to adequate food at all times - is therefore essential. According to the World Food Summit Plan of Action (1996, paragraph 1),

> "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

Food security refers to reliable access at all times to a sufficient supply of food. This is generally considered at two levels.

- **National food security** is the ability of a country to secure an adequate supply of food to meet the total nutritional needs of its population at all times. This need not be through domestic production (self-sufficiency), but may also include imports, or the temporary use of national food stocks.

- Similarly, **household food security** is the ability of a household to secure reliable access to enough food for its members at all times, whether through its own production (subsistence), market purchases or use of its own stocks. Households may be subject to *chronic food insecurity*, because of inadequate production, low incomes, lack of reliable access to markets, etc; or they may be prone to temporary periods of *acute food insecurity*, due to crop failure, temporary loss of income, etc.

Thus national and household food insecurity are conceptually quite different. The former relates to aggregate food supply, while the latter relates in large measure to poverty and economic insecurity. Nonetheless, they are in some respects closely connected. The results of national food insecurity typically include food shortages (either temporary or chronic), resulting in high food prices and often market disruption, often leading to a failure of household food security for poorer households and those in remote areas. It is through this link with household food security that national food security affects nutritional status and thus public health.

However, national food security is a necessary but not a sufficient condition for household food security: while food insecurity at the national level may contribute to household food insecurity, national food *security* may be accompanied by serious problems of household food insecurity, depending on income distribution, the existence and effectiveness of social safety nets, etc.

Failures of *national food security* typically come about through a combination of two factors: inadequate local supply, and shortage of foreign exchange. This may be a result of a failure of domestic food production (eg due to drought or conflict) in a country with a chronic shortage of foreign exchange (eg due to debt problems), or which simultaneously experiences a deterioration in its balance of payments (eg due to export crop failure, a fall in export prices, a loss of capital inflows, etc); or it may be due to temporary or progressively increasing shortage of foreign exchange in countries which are net importers of basic foods. However, national food security may also be threatened by a disruption of international trade for food-importing countries, eg due to economic sanctions, or conflict or serious food shortages along supply routes in the case of land-locked countries.

FAO identifies 83 low-income food deficit countries (LIFDCs) as being at particular risk of *national food insecurity*. The majority of these countries also face acute debt

problems, so that they face serious constraints on the availability of foreign exchange to buy food imports. 43 of the 83 countries are classified by the World Bank as severely indebted and/or as heavily-indebted poor countries (HIPCs). A further 16 are classified as moderately indebted, and many others are critically dependent on aid. In addition to the 83 LIFDCs, ten middle-income countries are classified by the WTO as net food-importing developing countries, and thus face potentially negative food security effects of higher world prices for basic foods. Of these countries, one is severely indebted and four are moderately indebted.

Population groups particularly prone to *household food insecurity* include, in particular, the urban poor (typically working in the informal sector), and poor households in rural areas with insufficient land to meet their own food needs and inadequate income opportunities. Some food surplus households are also prone to food insecurity due to forced sales after harvest (when prices are generally lowest), eg to repay debts or buy inputs for the next year's production, as they have to by food later in the year, when their food stocks are exhausted and prices are higher.

Most households have coping mechanisms to deal with food insecurity. These may include any combination of drawing on savings, borrowing (often using productive assets as collateral), receiving financial or in-kind help from other households (eg extended family members) or government or non-government agencies, increasing working time, selling livestock or other assets, etc. These mechanisms are often sufficient to stave off temporary food insecurity for individual households.

However, they have serious limitations.

- Most coping strategies are progressively exhausted over time. Savings and borrowing capacity are used up, livestock and other assets run out, and the goodwill of extended families is exhausted over time. As a result, they can resolve chronic food security problems only temporarily.

- Where households depend on coping strategies for their food security, the capacity to use them in the future needs to be restored: savings need to be replenished, loans repaid (to maintain creditworthiness and restore borrowing capacity), productive assets bought back, etc. This imposes financial costs on the household, and limits its capacity to deal with a further threat to its food security until the process is completed, which may take a considerable time.

- Most coping strategies also impose other financial or non-financial costs on the household over the short or long term (interest on loans, loss of income from livestock and other assets, reciprocal obligations to extended families, reduced time for household activities due to increased working time, health effects of longer working hours, etc). This increases vulnerability and extends the period until the capacity to use coping strategies is restored.

- Many coping mechanisms come under serious strain or become entirely unworkable when household food insecurity is widespread, eg due to general food shortages: overall demand for credit becomes excessive, limiting its supply or increasing its cost; increased labour supply depresses wages; excess

supply of livestock or other capital goods due to forced sales depresses their prices, etc.

Thus coping strategies are effective only in resolving temporary acute food security problems for individual households, and even in this context their use may undermine the household's subsequent food insecurity for an extended period.

Household food insecurity as such is not readily measurable from existing data. However, some indication of its scale can be gauged from data on nutritional indicators. Globally, some 36% of children are chronically malnourished (height for age more than two standard deviations below the mean), while 30% have weight for age more than two standard deviations below the mean, a combined indicator of chronic and acute malnutrition. The situation is most acute in South Asia (50% and 51% respectively) and Sub-Saharan Africa (40% and 33%). Overall, 17% of new-borns are classified as low birth-weight (less than 2.5 Kg), the figure again being highest in South Asia, at 33%. (Data for Sub-Saharan Africa are not available.) The extent of micronutrient deficiencies is indicated by the prevalence of anaemia among pregnant women, which is 55% globally and 79% in South Asia. On this indicator, East Asia and the Pacific (52%) is next worst affected, followed by Sub-Saharan Africa (45%).

Trade Liberalisation and National Food Security

Since many countries (developed as well as developing) have used trade and agricultural policies in part to increase their self-sufficiency in food for strategic reasons, trade liberalisation typically leads to a reduction in food self-sufficiency in net food importing and marginally net exporting countries, making them more reliant on imports. However, this does not, in itself, reduce their food security substantially, provided they can generate sufficient foreign exchange to pay for imports. The only risks to food security which are increased as a result are those which result from loss of market access (eg due to economic sanctions or breakdown of transport routes eg in land-locked countries).

However, liberalisation in such cases does increase the dependency of national food security on the availability of foreign exchange. The conventional economic view is that trade liberalisation in a particular country will induce a switch of resources from the relatively inefficient production of food crops, which is financially viable only because of import barriers, to export crops which are more profitable. This switch is achieved partly through the exchange rate devaluation which typically accompanies liberalisation, the effect of which is to increase the prices which producers receive for exports in local currency terms (and to limit the reduction in prices of food crops for which import barriers are lowered). Because of the greater efficiency of the production of export crops, switching production to these crops should increase foreign exchange earnings by more than the cost of importing additional food. As a result, national food security is seen as being improved.

Nonetheless, there is some evidence that increased dependence on food imports increases the vulnerability of food security to changes in international market

conditions. A study of 49 food deficit countries in 1966-76 found that the main determinant of national food security was domestic production; that increased reliance on imports was associated with greater instability of consumption levels; and that foreign exchange availability was the most important factor influencing food imports, affecting nearly two-thirds of countries (Diakosavvas, 1989).

Foreign exchange availability is a key constraint for most developing countries at least part of the time. Most low-income countries face chronic foreign exchange shortages, for reasons discussed below. Moreover, changes in international markets frequently create acute shortages of foreign exchange for large numbers of developing countries – middle-income as well as low-income - raising the risk of periods of potential food insecurity for net importing countries. Over the last 30 years, examples have included the oil price shocks of 1973 and 1979; the major increase in international interest rates in the early 1980s; the Latin American debt crisis from 1982, and the continuing debt crisis in Sub-Saharan Africa; the collapse of commodity prices during the 1980s; the oil price collapse of 1986, affecting exporting countries; and the succession of financial crises in Mexico, East Asia, Russia and Brazil, together with their contagion effects in 1994-9. Particularly in the 1980s, the impacts of these various shocks overlapped in many countries, compounding the effects.

More fundamentally, however, the conventional pro-free trade view outlined above is of questionable validity in the context of a global process of trade liberalisation, as it is implicitly based on a single country liberalising its trade, while the rest of the world remains unchanged. If a large number of countries, accounting for a significant proportion of world production of particular products, go through this process simultaneously, then the effect will be significantly different. In these circumstances, the world supply of the export crops concerned will be increased, and the price the exporting countries receive will fall. There is then no assurance that the combined effect of higher production and lower prices will be sufficient to pay for the additional food required to substitute for reduced local production.

For some food crops, a general liberalisation of all markets should in principle have a balanced effect, as less efficient producers will move out of their production, off-setting the effect of increased exports from more efficient producers. Sugar is a case in point: general liberalisation would result in high-cost beet sugar producers (mostly in Europe) moving out of the market, making way for increased production by generally lower-cost cane producers (mostly in developing countries). The price effect in this case would be ambiguous, making a favourable net effect on food security in developing countries more likely (though not inevitable). However, this depends critically on a symmetric process of liberalisation in developed and developing countries; and it takes no account of the effects on existing preferential arrangements which would be seriously negative for some producers, particularly a number of small island economies (Page and Davenport, 1994).

However, sugar is a relatively rare case of a non-food crop which is grown on a large scale by developed countries which can be produced at lower cost by developing countries. The more typical pattern is of food crops which are grown on a large scale and at low cost in developed countries and a relatively small number of mostly

middle-income developing countries, and at substantially higher cost by small farmers in low-income countries. The crops grown most competitively by these low-income countries (ie those whose production would be increased by liberalisation) are typically tropical products such as coffee, cocoa, tea, tobacco, etc, which are not grown on a significant scale by developed countries.

The net effect of general liberalisation in these circumstances is likely to be at best a relatively neutral effect on world prices for basic food crops such as maize and rice; and a substantial negative effects on prices for tropical products. The effect is accentuated to the extent that large trading companies which dominate world markets in most major agricultural products do not pass on price falls to consumers (Morrisset, 1998), so that there is no off-setting increase in demand. This suggests a strong possibility, at least, of a negative net impact of national food security in developing countries.

In many cases - notably coffee, cocoa and tea – world demand is price inelastic, so that prices fall by more than the increase in total production. This means that an overall increase in production will reduce total export revenues for producing countries rather than increasing them. In these circumstances, a general process of trade liberalisation and increased exports will unambiguously weaken the national food security of the exporting countries.

More generally, the world prices of primary commodities are subject to a process of chronic decline. Between 1960 and 2000, real prices for non-energy commodities exported by developing countries fell by 54% (1.9% pa), and those of their agricultural commodity exports by an average of 58% (2.2% pa). With the exceptions of timber, nickel and zinc, the real price of every commodity covered by World Bank data fell by between 34% (1.0% pa) and 82% (4.2% pa) over this period; and more than two-thirds fell by at least half (based on World Bank, 2001, Table 6.4).

The classic explanation of this is the Prebisch-Singer thesis: as global incomes increase, the demand for manufactured goods increases faster than supply, increasing their prices, while the demand for primary commodities increases more slowly, depressing their prices. As a result, specialisation in tropical agricultural produce and/or minerals, in line with their comparative advantage - the predicted outcome of trade liberalisation - locks low-income countries into a situation where their export revenues will be subject to chronic decline. This creates a strong incentive for each country to increase its exports; but where the demand for their exports is price inelastic the effect of all producers doing so will be to reduce their foreign exchange earnings still faster.

The WTO and National Food Security

In principle, agricultural trade liberalisation by developing countries under the **Agreement on Agriculture** (AoA) might be expected to have the negative effects outlined above. In practice, however, most developing countries had already reduced their protective barriers to agricultural imports to a level below those required under the AoA before the Uruguay Round, so that few were required to make further

changes (FAO, 1999). The main effect is thus to limit the extent to which these tariff reductions can be reversed. Equally, the subsidy reductions required of developing countries under the AoA are of limited relevance in most cases, as non-exempt subsidies had already been greatly reduced under adjustment programmes (FAO, 2000, p124 and Table 2, p140).

In principle, import liberalisation and the reduction of subsidies to agricultural production and exports in developed countries might be expected to reduce over-production in the North, reducing world supply and thus increasing prices for importing countries. However, a reduction of export subsidies could also help to reduce the instability of international prices for basic foods and developing country agricultural exports. The greatest resort to export subsidies tends to occur when international prices are low, reducing prices further; and they are generally reduced substantially as prices rise, raising price to a higher peak (FAO, 2000, p121). Reducing them should help to limit this problem, easing one element of national food insecurity.

Again, however, the effects are limited in practice, in this case by the details of the AoA, and the way in which it has been implemented by the developed countries, which mean that the actual extent of liberalisation is relatively limited (see Box below).

Nonetheless, estimates suggest that the Uruguay Round agreements will increase food import bills for the developing countries as a whole by around 6% ($3.6bn) in 2000, $1.4bn of this occurring in the net food-importing developing countries, and $500m in Africa (Greenfield et al, 1996). The overall price levels implied by this estimate for the second half of the 1990s appear to have been broadly borne out, though with a peak in 1996 rather than a progressive increase: prices for wheat, coarse grains, rice and oils and fats have all been significantly higher since the AoA than during the previous ten years. Price instability has also increased for wheat, maize, one variety of rice and some vegetable oils. Moreover, FAO analysis suggests that these changes are partly attributable to the AoA (FAO 1999b, pp2, 3, 9).

These price effects have a potentially important impact. With undernutrition averaging 40% in least developed countries and 20% in NFIDCs, “even small variations in year to year supply can have considerable implications for the nutritional status in these countries”; and heavy dependence on cereals coupled with declining and very variable domestic production means that “many of these countries are vulnerable to changes in world food markets, especially cereal markets” (FAO, 2000, p82). For those least developed countries where data are available, food imports are typically equivalent to between 25% and 50% of total export earnings (estimated from World Bank, 2001b, Tables 4.5 and 4.6); and cereals account for some 40% of food imports in least developed countries and net food-importing developing countries as a whole, and oils and fats for a further 20% (FAO, 2000, p82).

Box: The AoA and Agricultural Liberalisation by Developed Countries

At first sight, the AoA appears to require developed countries, within 6 years,

(a) to convert non-tariff import barriers into tariffs, and to reduce them by 36%;

(b) to reduce the volume of subsidised agricultural exports by 21%, and the cost of agricultural export subsidies by 36%; and

(c) to reduce agricultural production subsidies by 20%.

In practice, however, the detailed terms and the way in which the agreement has been implemented mean that actual liberalisation will be much more limited.

- The baseline for tariffication and tariff reduction was set when protection was at its highest (1986-8), well above the level when the AoA was signed (Goldin and van der Mensbrugghe, 1995).

- The EU and US systematically over-estimated the baseline level of protection ("dirty tariffication"), and calculated reductions from this artificially inflated level (Ingco, 1995).

- Since the overall tariff reduction requirement is based on an unweighted average, countries can limit reductions for the most important products by making larger reductions for the least important, subject only to a minimum reduction of 15%.

- The safeguard clause allows additional import duties if import volumes are above, or prices below, specified levels.

- Countries could choose between 1986-90 and 1991-2 as the starting point for export subsidy reduction, again allowing them to select a period well above those at the time of the AoA.

- Production subsidies are defined to exclude subsidies ostensibly "decoupled" from production; and the US and the EU "agreed to exempt [their own] major support policies...even though neither met the strict criteria for belonging in the...non-distorting category" (Ingco and Hathaway, 1995, p21).

- Since only *total* production subsidies are restricted, there is no assurance of reductions for particular products. In the EU, the 1992 switch to ostensibly "decoupled" subsidies for cereals was sufficient to meet the AoA requirements on its own, so no reductions were required in other sub-sectors (Gardner, 1993).

As a result of these factors, "Apart from Japan the highly protected [agricultural] markets in OECD countries were liberalized little if at all" (Ingco and Hathaway, 1995, p8). A recent study (OECD, 1999) found that agricultural protection was actually higher in 1996 than it had been before the AoA in eight out of ten developed countries (counting the EU as one).

These increases in the cost of basic food imports, and surges in the volume of other foods such as milk powder and poultry associated with liberalisation, have not generally been off-set by increases in export volumes as a result of the AoA, due in part to limited opening of developed country markets, limitations arising from the SPS agreement (as discussed later), and weak agricultural supply response (FAO, 1999, p4).

For a number of countries, reduced agricultural protection in the developed country markets actually reduces export revenues by eroding the benefits available from preferential trade agreements such as the European Union's Lomé Convention. In the longer term, the process of trade liberalisation threatens the future of such agreements (FAO, 2000, p121). Some developing countries are critically dependent on such agreements – notably sugar-producing countries in the Commonwealth Caribbean and Mauritius. The effects even of the modest changes anticipated under the AoA are potentially devastating for some of these countries, potentially jeopardising the future of their sugar production (Woodward, 1995).

There are two elements of the Uruguay Round agreements which are intended to limit or off-set the potentially adverse effects of the AoA on the national food security of developing countries. Firstly, **food aid** is excluded from the AoA provisions on export subsidies, in part to avoid the risk of emergency food aid – essential as a last resort in cases of extreme national food insecurity – from being constrained by the Agreement. In practice, the World Food Programme's International Food Aid Information System indicates that emergency food aid fell by more than one-third between 1992-4 and 1996-8, from an average of 4.6m tonnes pa to 3.0m tonnes pa. However, provisional figures indicate a recovery to 4.7m tonnes in 1999, and it is unclear whether the reduction reflects a reduction in supply or in need.

A second mechanism, intended to moderate the possible adverse effects of increased world prices for basic foods associated with the AoA, was the **Marrakech Decision** - a legally binding commitment undertaken by the developed country governments to provide food aid and financial assistance to net food-importing and least developed countries to off-set the higher cost of their food imports. However, only 54 of the 83 low-income food deficit countries (as defined by FAO) are covered by these provisions. Moreover, the process of applying for assistance is complex; and the vague wording of the Decision and the lack of effective enforcement mechanisms make it difficult to ensure its implementation. As a result, the Decision has not been activated, despite a recommendation from FAO based on increased world cereal prices. (FAO, 1999, p4; FAO, 2000 p135).

The **Sanitary and Phytosanitary (SPS) Agreement** also has potential implications for national food security. Health-related restrictions on a country's exports can result in a major loss of foreign exchange earnings, compromising the exporting country's ability to import basic foods. A case in point is the European Community's ban on groundnut imports from West Africa in the 1970s. The SPS Agreement is intended to codify such restrictions on the basis of scientific evidence. In principle, this should help to ensure that import restrictions of this nature are not used as a protectionist

measure, provided Codex Alimentarius (which makes the decisions) operates impartially on the basis of objective scientific advice.

However, experience to date has been less favourable. While there has been at least one success story - the acceptance of Fijian processing standards by New Zealand, which resulted in a major increase in exports of pawpaws, mangoes and aubergines - many countries have found the SPS agreement a barrier to exports rather than a guarantee of fair treatment. In particular, they have found

> "lack of mutual recognition of inspections and standards, with several large importing countries often asking for 'sameness' in the process rather than equivalence. As a result, 'trade harassment' was considered a common problem."
>
> (FAO, 1999, p3)

This is a reflection on the implementation and enforcement (or non-enforcement) of the Uruguay Round agreements rather than of their content, in that the requirement of sameness of process rather than equivalence of outcome is contrary to the SPS provisions. Nonetheless, this is a serious problem for many developing countries which face serious financial and human resource constraints on inspection and quality control systems. It is noteworthy that Fiji has a particularly strong and well-resourced public inspection system for agricultural produce, as well as being relatively free from major pests and diseases and receiving substantial technical support from New Zealand.

Moreover, even the Fiji-New Zealand success relates only to bilateral trade.

> "Acceptance of the HTFA [high temperature forced air] method by other importers has been slow and transshipments of HTFA-treated products through certain ports have been prohibited, constraining Fiji's exports and raising concerns that SPS rules may constitute unfair trade barriers."
>
> (FAO, 1999, p9)

A further potential threat to export markets, and thus to national food security, arises from the "biopiracy" promoted and protected by the TRIPs agreement. Transnational biotechnology companies have taken out patents on the naturally-occurring genes conferring the characteristic qualities of major developing country products such as cocoa, rubber, palm oil and coconut oil, as well as other specialist oils such as jojoba and camphor (Action Aid, 1999). This may enable them to produce artificial substitutes for cocoa and rubber, and to implant the genes for the specialist oils into temperate oliferous crops such as rape, allowing them to be produced in the developed countries. This could have devastating effects on developing countries which are heavily dependent on exports of these crops.

An additional concern is that biotechnology developments protected by TRIPs could make even domestic production critically dependent on imported inputs. If local food production were switched to genetically modified crops resistant to a particular herbicide, for example, production would be heavily dependent on continued access

both to seeds and to the herbicide concerned. This would make domestic production subject to the same risks as imports – acute foreign exchange shortage, disruption of supply routes, economic sanctions, etc – making the impact of these risks much more severe (FAO, 2000, p127).

Trade Liberalisation, Household Food Security and Nutrition

The effects of trade liberalisation on household food security can be considered under three broad headings: effects on food prices; effects on income levels; and effects on the variability of income.

Whereas national food security is affected by world food prices, for household food security it is prices in local currency terms which matter. In the case of internationally traded foods, world prices are clearly important; but consumer prices are modified both by changes in the level and nature of restrictions on food imports, and by exchange rates, which may be affected by the overall process of trade liberalisation. This makes the specific trade liberalisation measures which are taken, and the goods to which they apply, much more significant.

Typically, trade liberalisation occurs in three phases.

- First, non-tariff barriers (eg quotas and licensing requirements) are converted into tariffs, usually with an equivalent level of protection (tariffication).

- Second, the range of tariffs is narrowed, and a single uniform tariff may be introduced (tariff equalisation).

- Third, the overall level of tariffs is reduced (tariff reduction).

In practice, however, successive phases often overlap, so that tariffication may entail some reduction in protection for the most protected goods, and higher tariffs are reduced more than the lowest ones are increased during the process of tariff equalisation. In addition, tariff reduction is generally accompanied by exchange rate devaluation, to off-set the effects of liberalisation on the balance of payments.

Tariffication as such does not affect prices; but tariff equalisation and tariff reduction may have a substantial effect. The implications for the prices of basic foods depend crucially on whether they are imported, whether they are initially subject to protective measures, and whether their markets are more or less protected than other goods.

- Where basic foods are imported and more protected than other goods, import barriers will begin to be reduced during the process of tariff equalisation. While the effect on prices will be partly off-set by devaluation, food prices are likely to be reduced significantly overall.

- Where basic foods are imported but have relatively low or zero tariffs, prices are likely to be increased by tariff equalisation; but they should be reduced by tariff reduction. The overall effect may be positive or negative.

- Where basic foods are exported, they will be unaffected by trade liberalisation itself, but increased by devaluation.

- Where basic foods are neither imported nor exported, their prices will not be affected directly by trade liberalisation or devaluation, but may be affected indirectly through changes in the cost of inputs.

In addition, the loss of tax revenues from import tariffs during the tariff reduction stage (and other globalisation-linked effects on government spending, eg reductions in corporate taxation to attract foreign investment and tighter budget deficit constraints) will reduce the public resources available for food security-related programmes such as social safety nets, food subsidies and supplementary feeding programmes. However, tariffication may have the reverse effect, as revenues should be increased.

Trade reform may increase the variability of domestic food prices, by removing a buffer against changes in international prices. Some governments have historically raised tariffs on basic foods when world prices are low, to protect the position of producers, to protect the incomes of producers, and reduced them when world prices are high, to limit the impact on consumers. If tariff levels are reduced, fixed and/or subject to ceilings, the scope for using this mechanism is reduced, so that fluctuations in international prices are passed on directly to producers and consumers.

The clearest positive effect of trade liberalisation on nutrition is to increase the range of foods available, allowing a greater variety of diet, and thus potentially improving micronutrient intakes. Thus, Poland's trade liberalisation (coupled with the other economic changes associated with the early stages of economic transition) allowed a substantial increase in imports of exotic fruits, and thus an increase in vitamin C intakes. This may have contributed to a marked reduction in coronary heart disease at the same time. However, the relatively high prices of these fruits suggest that this effect was heavily concentrated in better-off households (Zatonski et al, 1998).

More generally, imported foods are an important source of iodine where the natural level of iodine in the soil is low, at least for households which do not consume iodised salt. In these circumstances, increased consumption of imported food may bring significant health benefits.

The effects of trade liberalisation on the incomes of low-income households are clearly crucial to its effects on household food security. However, despite 20 years during which trade liberalisation has been actively promoted as a central part of the development paradigm by institutions such as the World Bank, such evidence is very limited. A recent paper, given much prominence by the World Bank, finds (on the basis of cross-country analysis) that the incomes of the poorest 20% of households rise proportionally with economic growth, and that this applies equally where growth is associated with economic opening (Dollar and Kraay, 2000); but there are various methodological issues which raise serious doubts about this finding (Weisbrot et al, 2001, Annex B).

Winters (2000) anticipates positive effects of trade liberalisation on poverty, through positive effects on economic growth (although he recognises that this effect is unproven). Nonetheless, he suggests a number of circumstances in which trade liberalisation may fail to reduce poverty or have adverse effects, at least in the short-term:

- where potentially favourable price effects do not feed through to producers or consumers, eg because of government policies or inefficient domestic markets;

- where liberalisation destroys markets for goods or services of importance to the poor, either as producers or consumers (as in the case of some agricultural products, including basic foods, in remote areas);

- where there are adverse effects on the intra-household distribution of resources, eg due to a shift from food crops to cash crops;

- where adverse spillovers are concentrated in sectors of importance to the poor (eg where there is large-scale displacement of workers into the urban informal sector, increasing supply and depressing wage levels);

- where there is widespread unemployment, so that there is a large surplus of labour available at a subsistence wage;

- where liberalisation reduces government revenues, eg through the reduction of import tariffs;

- where poor households are constrained from changing into occupations which are more profitable by trade liberalisation by their inability to bear risks;

- where the negative impacts of reform are heavily concentrated in particular areas; and

- where transitional unemployment is concentrated on poor or near-poor households.

Many of the items on this list reflect either the circumstances of most low-income countries or the expected effects of liberalisation in such countries. This suggests that any positive effect of liberalisation in the long term, and even the avoidance of negative effects in the short term, is critically dependent on trade liberalisation generating economic growth. While this linkage is generally assumed by economists (as by Winters), the empirical evidence for it is very weak (Rodriguez and Rodrik, 1999).

Trade liberalisation – and globalisation more generally - are often seen as increasing the instability of incomes, through increased exposure to volatile financial and commodity markets, reduced resources for social safety net programmes due to tariff and corporate tax reductions, etc. In addition to the questions listed above, Winters (2000) includes in his list of contraindications:

- where people switch into riskier occupations in response to liberalisation; and

- where reform increases the vulnerability of poor households by limiting their ability to use traditional coping strategies.

However, proponents of trade liberalisation (including Winters, earlier in his paper) have argued that international markets are less prone to volatility than national markets, so that greater openness provides a buffer to domestic economic shocks; and/or that liberalisation allows households to spread risk between domestic and international markets. There is no empirical evidence to judge between these two conflicting views.

There have been widespread and serious economic declines in many developing countries during the last 20 years as a direct result of instability in international financial and commodity markets (or in general a combination of the two), including the 1980s debt crisis in Latin America, the continuing debt crisis in many low-income countries, and the series of financial crises since the mid-1990s; and these have undoubtedly had serious effects on poverty. However, while the most recent financial crises are directly linked to financial globalisation, it is far from clear that the opening of these countries' *trade* policies have contributed substantially.

The WTO Agreements and Household Food Security

A full assessment of the implications of the WTO agreements for household food security would require an assessment of the impacts of all of the agreements on incomes for low-income groups, and on the prices of the essential goods and services they consume. This is clearly beyond the scope of the present note. The discussion of income effects therefore focuses on the agricultural sector, which is of greatest importance for poverty in most developing countries.

As in the case of national food security, the effects of a country's trade liberalisation on its own level of poverty are of limited relevance to the WTO agreements as such, because most developing countries had already undertaken more import liberalisation previously, under structural adjustment programmes, than was required by the AoA. Since this also applies to most other sectors, the extent of associated exchange rate changes is also likely to be relatively limited.

However, there are two caveats to this. Firstly, the prohibition of variable tariffs under the AoA are potentially important, as they prevent countries from varying their tariff levels to counteract fluctuations in world prices (FAO, 1999, p2) – although Winters (2000) questions the extent to which this opportunity has been taken in practice. In principle, WTO members may nonetheless vary tariff levels in this way under the special safeguard (SSG) provisions. However, while some middle-income countries have used these provisions (eg Botswana),

> "the general WTO safeguards are not automatic. They require proof of 'injury test', are costly and involve delays. Hence, in general, available WTO safeguards are not a viable option for option for

> many developing countries and for them the SSG option would be highly desirable."
>
> (FAO, 2000, p132)

Many developing countries experienced import surges in the immediate post-Uruguay Round period, particularly of milk powder and poultry, causing serious problems for competing domestic producers, notably in small island states in the Caribbean and South Pacific. The significance of safeguard mechanisms is increased by the persistence of developed country export subsidies, which tend to destabilise world prices.

Secondly, subsidy reduction requirements may become significant in the future for the 12 developing countries where they are not already below the *de minimis* threshold of 10% of the value of production (Morocco, Tunisia, Brazil, Colombia, Costa Rica, Mexico, Venezuela, Korea, Thailand, Bulgaria, Cyprus and Papua New Guinea) (FAO, 2000, Table 2, p140). It is also possible that more countries could be added to this list if the definition of exempt subsidies were clarified (FAO, 2000, p125).

The main potential problem for countries above the *de minimis* level is that the limits on their subsidies are set in nominal terms, so that high inflation or substantial exchange rate depreciation could require major reductions relative to production costs. While "consideration" is supposed to be given to this consideration, it is as yet unclear what form this will take.

Policies may also be constrained in some countries below the *de minimis* level, as support for individual crops is near the *de minimis* level for individual crops in many cases. Since these countries cannot exceed the *de minimis* level in the future, the potential to increase subsidies may be limited. This is of particular significance because cereal production accounts for 70% of the subsidies reported by developing countries.

The potential benefits (and costs) of import liberalisation and subsidy reduction by developed countries are also relatively limited, due to the limited extent of the changes actually implemented. Nonetheless, as noted above, prices appear to have been increased somewhat by the AoA, and in some cases their instability has been increased. Given the limited changes in developing country protection (and associated exchange rate changes), these should in principle feed through into higher incomes for households which are net sellers of basic food crops, and for producers of oil crops; but a reduction in real income for net buyers, including urban households, food deficit rural households and cash-crop producers.

The prices of some export crops may also have been increased somewhat. However, this applies primarily to horticultural products, which are generally produced mainly by non-poor households. The potential for poor households to increase their incomes by switching to production of horticultural produce for export is limited by the relatively high levels of capital and purchased inputs required.

Other more specific effects of the WTO agreements are less favourable. In particular, the actual and potential negative effects on export volumes and prices arising from the

mis-implementation of the SPS agreement, and the erosion of preferential access to developed country markets reduces incomes to export producers. While this will be partly off-set to the extent that the exchange rate is devalued as a result, this will intensify the impact on prices for food imports, benefiting food surplus households, but worsening household food security through its impact on food deficit households.

The long-term threat to certain export markets from "biopiracy" will also affect export producers. In this case, the exchange rate effect is potentially much greater; and at least some households are likely to be displaced from export production entirely, so that they would not benefit.

There are also concerns that other aspects of TRIPs-related biotechnology advances will adversely affect poorer agricultural producers. This applies particularly to the genetic modification of seeds, eg to increase resistance to pests and agrochemicals. The concern is that the monopoly power of the biotechnology transnationals, protected by the TRIPs agreement, will allow them to charge artificially high prices for the seeds (and in many cases to the agrochemicals concerned, which they also produce).

The counterargument is that producers are under no obligation to purchase these seeds, and have the option to continue producing as they do now. However, if biotechnology advances increase output – which is their main rationale – the resulting increase in supply will depress prices. This may render traditional production unviable, pushing households into alternative activities, and thus increasing the proportion of food deficit households. This could result in an increase in export production; but, while this would have a beneficial effect at the country level, if it were a global phenomenon, the increased supply would further depress prices, implying a negative impact in many cases.

The effective limitation of access to biotechnology to better-off producers, and the potential for economies of scale compounds a more general concern that the liberalisation and commercialisation of agriculture will lead to increased farm sizes and concentration of land ownership. The resulting displacement of smallholders from their land will worsen household food security, *unless* adequate stable and remunerative jobs can be generated; and this is unlikely in the agricultural sector, and seems improbable for the foreseeable future in other sectors in most low-income countries.

Finally, as in other contexts, the implications of the Uruguay Round agreements for public finances must be taken into account in any assessment of the implications for food security. While the implications of tariff and associated exchange rate changes are very small for most developing countries, the costs of implementing the agreements are very considerable. It has been estimated that the cost to the average developing country of implementing the WTO requirements on customs valuation and the SPS and TRIPs agreements is in the order of $150m. This represents a very considerable loss of resources to poverty alleviation, social safety nets, food subsidies and other measures to promote food security.

Conclusion

The AoA has not required most developing countries to liberalise their agricultural or trade policies beyond the changes they had previously carried out (or which were already underway) under World Bank structural adjustment policies; and the design and implementation of the Agreement means that the changes which will take place in developed country policies are relatively limited. Nonetheless, the effect may be to increase national and household food insecurity in many net food importing developing countries.

- World prices for basic foods have been increased significantly by the AoA, and in some cases have also become more unstable.

- The ability of developing countries to off-set this instability through trade policies has been impaired.

- While the SPS agreement has the potential to protect developing country from spurious restrictions on their food exports, so far it appears to have had a perverse effect in most cases.

- A number of countries (and export producers in those countries) have been adversely affected – in some cases very seriously - by the impact of the AoA on preferential trade arrangements, notably for sugar and banana exports to the EU.

- An additional threat comes from the TRIPs agreement, through the potential for "biopiracy" undermining export markets, eg for cocoa, rubber and major tropical oil crops.

- The cost of implementing the WTO provisions represents a very considerable diversion of public expenditure away from other uses, including those directed towards increasing food security.

- The mechanisms in the Uruguay Round agreements which were intended to limit potential adverse effects – the Marrakech Decision and the exemption of food aid from export subsidy provisions – have proven totally ineffective.

Further agricultural trade liberalisation is likely to worsen rather than improving most aspects of food security in most developing countries. This would be better left to the judgment of individual countries, in the development of their poverty reduction strategy papers or national development strategies, rather than being imposed irrespective of country circumstances through a new round of WTO negotiations.

There are potential net benefits to developing countries as a whole from further liberalisation of developed countries agricultural trade policies. However, there are potential negative effects from the further erosion (or disappearance) of preferential trade arrangements and more generally from increased prices for basic foods. It is essential that there should be clear and binding mechanisms – with effective

enforcement processes – to guarantee compensation and assistance in adjustment to these changes.

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