Aid for Trade: an opportunity to increase fruit and vegetable supply
Anne Marie Thow a & Shishir Priyadarshi b

Abstract Low fruit and vegetable consumption is an important contributor to the global burden of disease. In the wake of the United Nations High-level Meeting on Non-Communicable Diseases (NCDs), held in September 2011, a rise in the consumption of fruits and vegetables is foreseeable and this increased demand will have to be met through improved supply. The World Health Organization, the Food and Agriculture Organization and the World Bank have highlighted the potential for developing countries to benefit nutritionally and economically from the increased production and export of fruit and vegetables.

Aid for Trade, launched in 2005 as an initiative designed to link development aid and trade holistically, offers an opportunity for the health and trade sectors to work jointly to enhance health and development. The Aid for Trade work programme stresses the importance of policy coherence across sectors, yet the commonality of purpose driving the Aid for Trade initiative and NCD prevention efforts has not been explored.

In this paper food supply chain analysis was used to show health policy-makers that Aid for Trade can provide a mechanism for increasing the supply of fruits and vegetables in developing countries. Aid for Trade is an existing funding channel with clear accountability and reporting mechanisms, but its priorities are determined with little or no input from the health sector. The paper seeks to enable public health policy-makers, practitioners and advocates to improve coherence between trade and public health policies by highlighting Aid for Trade’s potential role in this endeavour.

Introduction
The United Nations General Assembly and the World Health Organization have encouraged intersectoral collaboration in the fight against non-communicable diseases (NCDs). However, few constructive opportunities for practical intersectoral collaboration in the areas of food and trade have been documented; most research conducted so far has focused instead on the barriers to collaboration and on the health risks associated with changes in trade policy. This article describes how an initiative known as Aid for Trade, which is an established mechanism for development funding, can become an avenue for collaboration between the trade and health sectors.

Fruits and vegetables are important components of healthy diets. Their consumption in plentiful amounts reduces the risk of chronic, non-communicable diseases, particularly cardiovascular disease and cancer. At present, the health sector is primarily involved in efforts to increase the demand for fruits and vegetables through settings-based and promotion initiatives that have proved effective. Investment in these demand-side interventions is likely to increase in the wake of the 2011 United Nations General Assembly High-level Meeting on Non-communicable Diseases. Consumption of fruits and vegetables is still far below the recommended level for effective health promotion and disease prevention in developed and developing countries. Research has shown the need to increase the supply of fruits and vegetables to support demand-generating interventions aimed at improving people’s eating habits and reducing the risk of chronic disease. A recent report on chronic disease prevention calls on health policy-makers to “better leverage agriculture to produce desirable health and nutrition outcomes”.

Fruit and vegetable production, trade and consumption have risen markedly in developing countries over the past 30 years, particularly in Asia. However, much untapped production potential still exists in these countries, where improving the quality, quantity and distribution of fresh produce is fraught with difficulties. Post-harvest losses keep many farmers from entering local and international markets, largely on account of a lack of infrastructure for product transport and processing. In India, for example, an estimated 30–40% of the fruits and vegetables grown are lost after the harvest. Tariff and non-tariff barriers imposed by high-income countries, including sanitary and phytosanitary restrictions, also reduce the capacity for export.

Increasing the availability of fruits and vegetables will require upstream policy investment by the agriculture, development and trade sectors. The health sector plays a smaller role, yet it can strategically guide investment and decision-making in these sectors to improve policy coherence among them and support health goals.

Fruits and vegetables are a high-value food group; they are rich in nutrients and can be a valuable source of income for farmers. Increasing their supply will thus have “flow-on” population health benefits as well as economic advantages for producers and distributors. Investment in this area presents an opportunity to improve policy coherence and collaboration between the health and economic sectors. Foreseeable benefits include the expanded production and availability of healthy foods, a more reliable supply of products for local and export markets and economic growth for the rural sector. In this context, Aid for Trade represents an opportunity for intersectoral collaboration to increase the availability of fruits and vegetables locally and globally. Aid for Trade is one of the few sources of aid for development that have continued to increase despite the global financial crisis. However, the health sector has little or no involvement in the direction of its funds, which are substantial, at the global or national level.
This paper describes an opportunity for health sector involvement in Aid for Trade decision-making processes, to promote public health and economic benefits. Such collaboration is supported by the recent report Aid for Trade at a glance 2011: showing results\(^{24}\) and the current Aid for Trade action plan, which identify the need for collaboration with the health sector in Aid for Trade initiatives.\(^{26}\) Despite growing investment in Aid for Trade activities related to agriculture, such activities have rarely been directed towards food crop production (Fig. 1).

For the health sector to engage effectively in this decision-making process, health policy-makers, practitioners and advocates must understand the existing policy frameworks and priorities and frame collaboration in terms of the benefit to both health and trade. In this paper we systematically show how Aid for Trade could serve to address critical barriers to the supply of fruit and vegetables. We then consider how health sector involvement could promote equity in agricultural development, as well as improve the supply of healthy foods. Since health sector professionals already know the benefits of improving the fruit and vegetable supply, we focus on the case they need to make to potential collaborators from the trade and development sectors.

**Understanding Aid for Trade**

The aim of Aid for Trade is to help developing countries, especially the least developed countries, to build the supply-side capacity and trade-related infrastructure they need to benefit from opportunities to access markets and expand their trade. Although in recent years some developing countries have become internationally competitive producers, many others have failed to fully benefit from emerging trade and investment opportunities. The ability of developing countries to produce and compete in the modern agricultural economy is undermined by weak supply capacities, which can be as detrimental to export development as market access barriers.\(^{23,25}\) Many developing countries need resources to upgrade ports, telecommunications, customs facilities and institutions. Aid for Trade is designed to address these problems and to enable countries to build capacity through information, policies, institutions, infrastructure and a vibrant private sector.\(^{24}\) Although import restrictions, including quantitative ones, continue to undermine export development, these are beyond the remit of Aid for Trade and, as a result, beyond the scope of this paper. They are being addressed in other fora, such as the Doha Development Round.

Aid for Trade works in the following domains: productive capacity, economic infrastructure; trade policy and regulations; and trade-related adjustment (Fig. 2). Its annual expenditure expanded from an average of 25.1 thousand million United States dollars (US$) in 2002–2005 (baseline) to US$ 40.1 thousand million in 2009. If non-concessional financing activities are included, the figure for Aid for Trade financing grows much larger, to about US$ 90 thousand million in 2009. Economic infrastructure accounts for the largest expenditure in this total.

\(^{24}\) Policy & practice

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**Fig. 1.** Agriculture-related Aid for Trade flows

- **US$ (millions)**
  - 0
  - 5000
  - 10 000
  - 15 000
  - 20 000
  - 25 000
  - 30 000
  - 35 000
  - 40 000

- **Year**
  - 2005
  - 2006
  - 2007
  - 2008
  - 2009

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**Fig. 2.** The Aid for Trade agenda

- **Transport and storage**
- **Communications**
- **Energy**
- **Trade-related infrastructure**
- **Trade policy and regulations**
- **Trade development**
- **Building productive capacity**
- **Banking and financial services**
- **Business and other services**
- **Agriculture, forestry and fishing**
- **Industry and mining**
- **Tourism**
- **Other trade-related needs**

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**US$$, United States dollars.**

Data obtained from the Organisation for Economic Co-operation and Development.\(^{26}\)

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58 Bull World Health Organ 2013;91:57–63
Because Aid for Trade can help improve the quality of agricultural produce and facilitate market access, it shares with the health sector the objective of increasing the supply of fruits and vegetables. Aid for Trade can be directed towards helping developing countries to become a part of the global and regional production networks and supply chains. In the case of fruit and vegetable production, Aid for Trade can help by investing in infrastructure and training to ensure quality and productivity throughout the supply chain.

A Swiss-funded cashew nut value chain project in Mozambique offers an example of Aid for Trade support. The aim was to help producers enhance the value of the base crop by implementing eco- and socio-friendly ways to process high-quality and specialty products, adopting quality standards and label certification, and enhancing market access through compliance with international norms and standards, marketing support, matchmaking and export/import promotion. The project was implemented by TechnoServe, a nongovernmental organization, with 668,000 Swiss francs (approximately US$ 589,845 at the exchange rate applicable on 1 January 2008). The result was an enormous increase in the proportion of exported cashews that were processed, from zero in 2002 (out of 50,000 tons exported) to 36% in 2008 (of 66,000 tons exported). Between 2001 to 2008, the cashew nut processing industry in Mozambique enjoyed an aggregate positive impact of US$ 11.5 million. The direct beneficiaries were close to 5000 factory workers, 50% of whom were women, and 5500 farming households, the primary cashew nut producers.

Production and availability in low-income countries

Developing countries face policy-related and structural barriers to fruit and vegetable production and availability. In this section, we use consumption-oriented food supply chain analysis – a method developed to improve the nutritional and healthful aspects of the food supply – to assess barriers and opportunities to increase the supply of fruit and vegetables. The downstream aspects of retailing and promotion/labelling are not discussed because they are outside the scope of this paper.

The supply chain involves the following:

- inputs into agricultural production, i.e. natural resource inputs, such as land and water; human inputs, such as labour; and external inputs, such as seeds, fertilizers, pesticides and mechanized vehicles;
- agricultural production, i.e. the production of arable crops (grains, oilseeds), horticultural products (fruits, vegetables), fish (farmed, wild), meat and dairy products;
- primary food storage and processing, e.g. refrigeration and freezing (perishable foods), canning (e.g. vegetables), slaughtering (meat), milling (flour) and crushing (oilseeds);
- distribution, transport and trade, e.g. conveyance by truck from farm to a local market or from packing house to warehouse or by plane to another country.

The main barriers to fruit and vegetable supply are technical impediments to improving produce quality (which limits saleability); infrastructural deficits affecting production (e.g. poor irrigation); problems with postharvest storage and processing (e.g. inadequate refrigeration capacity); and transport difficulties (e.g. bad roads). All of these result in product volumes that are unreliable and unable to fulfill major buyers’ orders and market demand (Table 1).

Many of these barriers, which are caused by a lack of agricultural capacity and infrastructure resulting from years of underinvestment, affect production for both domestic and export markets. Most farmers in developing countries direct their produce to both traditional and modern supply chains, both of which would benefit from investment in infrastructure. Fruit and vegetable producers in developing countries are struggling to survive in a weak global economy and to develop their agricultural production and processing mechanisms in line with global trends in the demand for certain products, such as frozen foods.

<table>
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<tr>
<th>Table 1. A consumption-oriented food supply chain analysis of barriers to fruit and vegetable production and availability</th>
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<td><strong>Step in food supply chain</strong></td>
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<td>Inputs into agricultural production</td>
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<td>Agricultural production</td>
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<td>Primary food storage and processing</td>
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<td>Distribution, transport, and trade</td>
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Opportunities to expand availability

Current recommendations regarding agriculture for development favour the Aid for Trade model, which is based on increasing productivity by improving markets rather than subsidies. The World development report 2008: agriculture for development highlights good local consultation strategies as essential and supports collaborative governance models, such as the one used for Aid for Trade.

The main avenues for Aid for Trade investment to increase fruit and vegetable supply are: (i) facilitating producer access to technical assistance to improve the quality of produce, (ii) improving infrastructure to enable the efficient transfer of produce from producers to markets, and (iii) helping governments to develop effective supportive policies and improve processes for agricultural production and export.
Table 2 shows the scope for Aid for Trade investment in certain priority areas to overcome barriers to fruit and vegetable availability.

**Overcoming barriers**

Case stories prepared for the recent Aid for Trade review serve to illustrate strategies and opportunities for overcoming barriers to improving the fruit and vegetable supply. Several of these stories report on projects financed by donors to help producers in meeting product quality standards. In one project, experts developed a tool kit to help farmers in Latin America comply with sanitary and phytosanitary measures and improve agricultural health and food safety services. In China, a similar project funded by Canada developed a programme to train small farmers, agricultural extension workers and government officials in food safety and World Trade Organization marketing rules.

The Standards and Trade Development Facility (STDF), which supports developing countries in building their capacity to implement sanitary and phytosanitary standards to gain or maintain access to markets, offers another example of Aid for Trade support. The STDF has provided support and funding for the development and implementation of projects that promote compliance with international sanitary and phytosanitary requirements. A project in Rwanda on horticulture export standards addressed capacity-building needs in areas such as sensitization and awareness raising for targeted value chains, promotion of good practices and legal and regulatory reform.

Aid for Trade projects have also been used to facilitate trade and as avenues for reducing costs in the value chain. Because fruit and vegetables can perish during transport and storage, growers and distributors need access to the right technology to maintain product quality after the harvest. Border delays can increase costs significantly. Technical assistance to farmers and distributors, investment in transport infrastructure, improved access to technology and reduced border delays are all important for reducing costs and time involved in trade. For example, investment in technology to support cotton farmers in Benin, Burkina Faso, Chad and Mali reduced input costs and helped the farmers to diversify their crops, which increased their incomes.

In Mozambique, investment in trade facilitation reduced the border clearing time for goods from 30 days to about 2 to 5 days.

Finally, Aid for Trade can be directed towards developing supportive policies, specifically pro-active industry-specific government policies, which are essential for effectively developing agricultural productive capacity. They involve investment in infrastructure (e.g. roads or irrigation) as well as measures to support farmers in growing high-value crops and gaining access to markets. Aid for Trade has supported smallholder farmers in Pakistan, where over 1000 farming households were linked directly to dairy companies, which eliminated middlemen. Supportive policies could also include actions to remedy the lack of information among farmers regarding export markets.

**Agricultural development, health and equity**

Vertical integration associated with improved efficiency and safety of the food-chain has raised the concern that expanding export-oriented industry may be favouring large enterprises to the exclusion of smallholder farmers, who tend to be the poorest, and may be leading to a loss of social welfare. Since this can undermine public health, strategies to increase fruit and vegetable supply must minimize any negative flow-on effects. Recent studies have indicated that when strategies are implemented in a consultative manner, smallholder farmers can actually benefit.

In the interests of improving equity and of ensuring that supply-side interventions have minimal negative flow-on effects, the health sector must champion engagement and consultation with smallholder farmers and others who could be affected by Aid for Trade policy decisions. Research indicates that, with support for market infrastructure, “there is no reason why smallholders should be excluded in a world where organized retail is expanding rapidly”. The health sector also needs to actively engage with and support agricultural research on the effect of globalization on farmers’ and labourers’ incomes, as well as on food security and nutritional status.

Another concern is that a greater supply of fruits and vegetables could step up exportation at the expense of local fruit and vegetable consumption and local food security. Research on agricultural food systems in developing countries shows that farmers who participate in modern food supply chains also participate in traditional food systems. As a result, trade-related investment in technologies and infrastructure that reduce post-harvest losses is also likely to improve food availability in local markets. In addition, agriculture-based economic growth has been shown to accrue to the poorest much more than growth in the non-agricultural economy. Hence, improvements to agricultural productivity and supply and reductions in post-harvest losses are likely to improve food security, even among poor farmers. However, it will be important for the health and agricultural sectors to implement additional policies when needed to promote and support food security.

From a health perspective it is also important to consider the environmental implications of increasing fruit and vegetable supply and trade. Although the food trade generates carbon emis-
sions through “food miles” (food transport), production by smallholders in developing countries using less sophisticated technologies is likely to generate a smaller carbon footprint than some locally produced foods. Transport has a smaller impact on the environment than production-related activities. The impact of these varies by type of food; the production of meat and processed foods has a much higher environmental impact than that of fresh produce.45,46

**What the health sector needs to know**

Aid for Trade is one of the few sources of aid for development that is stable and experiencing growth. At present the health sector has very little input into how Aid for Trade funds are allocated. This is an opportune moment to investigate opportunities for collaboration, since more than half of the reporting donors are planning to revise their Aid for Trade strategies in 2013.44 Health departments should make central planning and finance departments aware of the potential health and economic benefits, for both developed and developing countries, of directing Aid for Trade to fresh produce markets. From a practical and administrative perspective, it makes sense to use existing channels of expertise and funding. Aid for Trade provides a framework for strengthening food production capacity, infrastructure and accountability. To maximize intersectoral collaboration and policy coherence, health policy-makers and advocates need to be familiar with the language and priorities of the trade and development sectors.

Aid for Trade is not the only way to improve policy coherence between the trade and health sectors. However, it offers the potential to initiate a dialogue between these sectors to support future collaboration. Policy-makers and practitioners in these sectors pursue different aims and their priorities differ. These differences need to be taken into account when developing intersectoral collaboration. For example, the national policy space for public health intervention can be threatened by free trade agreements. However, health departments should make central planning and finance departments aware of the potential health and economic benefits of directing Aid for Trade to fresh produce markets. From a practical and administrative perspective, it makes sense to use existing channels of expertise and funding. Aid for Trade provides a framework for strengthening food production capacity, infrastructure and accountability. To maximize intersectoral collaboration and policy coherence, health policy-makers and advocates need to be familiar with the language and priorities of the trade and development sectors.

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**Competing interests:** None declared.

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La baja consumición de frutas y verduras constituye un aspecto crítico en la lucha contra la malnutrición y la obesidad. El Programa de Ayuda para el Comercio, puesto en marcha en 2005, tiene como objetivo contribuir a un mayor suministro de frutas y verduras, así como a la mejora de la salud y el desarrollo en los países en vías de desarrollo.

El consumo bajo de frutas y verduras contribuye de manera significativa a la carga mundial de enfermedades no transmisibles. Según el Programa de Ayuda para el Comercio, el aumento de la producción y exportación de frutas y verduras beneficiaría tanto a los países en desarrollo como a las Naciones Unidas, que a través de programas de salud y desarrollo podrían mejorar la salud de los ciudadanos.

Los expertos en salud pública, políticos y empresarios pueden trabajar juntos para promover la inclusión de frutas y verduras en la dieta diaria, y así contribuir a la reducción de enfermedades no transmisibles y a la mejora de la salud en general.
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