Non-tariff barriers facing South Asian farm exports

INTRODUCTION
The share of agriculture and allied activities ranges from 40 percent of gross domestic product (GDP) in Nepal to 20 percent in Sri Lanka. The sector remains the biggest provider of employment in South Asian economies and is an important source of livelihood to a majority of the population. In 2000, India accounted for 77.2 percent of South Asian agricultural sector’s GDP while the shares of Pakistan, Bangladesh, Sri Lanka and Nepal were only 11, 7.9, 2.2 and 1.5 percent respectively (RIS, 2004). The economic profile of South Asian countries also depicts low levels of per capita income and high levels of poverty (especially in rural areas).

Most South Asian countries began economic liberalisation during the early 1980s, which gathered momentum during the 1990s. Agriculture was left untouched by these economic reforms. All South Asian countries, (barring Bhutan) are WTO Members.

Agriculture remains the ‘central issue’ in the ongoing Doha Round trade negotiations, which started in 2001. Global agricultural trade is highly distorted because of high levels of tariffs and domestic support in OECD countries. Tariff rates on products of export interests to developing countries are quite high. The widespread use of environmental, health and safety standards also restrict developing countries’ access to OECD markets. NTBs also characterise trade regimes.

This briefing paper examines NTBs in international trade, which undermines developing country exports. The paper identifies some of the NTBs in two major markets of South Asian countries, viz., the EU and the US. The paper also highlights some of the case studies of selected sectors and products.

NON-TARIFF BARRIERS ON FARM EXPORTS

Besides tariffs, NTBs obstruct trade in goods between WTO Members. South Asian countries have comparative advantage in agriculture but face various NTBs in developed countries’ markets. Developed countries have introduced new barriers with respect to environment and health. It may be noted that some NTBs are permitted under Article VI of General Agreement on Tariffs and Trade (GATT), the agreement on Sanitary and Phyto-Sanitary (SPS) measures and the Agreement on Technical Barriers to Trade (TBT).

For South Asian countries – especially India, Pakistan, Sri Lanka and Bangladesh – the EU and the US are the main export markets, absorbing about half of their total exports. In both these markets, trade protection does not rely solely on tariffs. Some of the NTBs prevailing in the EU and the US are discussed in subsequent sections.

Farm products facing NTBs in the US

Milk products, especially cheese, are subject to standards set by the Food and Drug Administration (FDA) and the Department of Agriculture (DOA). Most importation of cheese requires an import license and is subject to quotas administered by the DOA and Foreign Agricultural Service.

The importation of milk and cream must meet requirements of the Food, Drug and Cos-
metic Act and the Import Milk Act. These products may be imported only by permit holders from the Department of Health and Human Services, FDA, Centre for Food Safety and Applied Nutrition, Office of Food Labelling and the Department of Agriculture.

Requirements of United States Food Safety and Inspection Service (USFSIS)

Certain agricultural commodities (including tomatoes, avocados, mangoes, limes, oranges, grapefruit, green peppers, Irish potatoes, cucumbers, eggplants, dry onions, walnuts and filberts, processed dates, prunes, raisins, and olives in tins) must meet US import requirements relating to grade, size, quality, and maturity. These commodities are inspected and an inspection certificate must be issued by the Food Safety and Inspection Service of the DOA to indicate import compliance. Additional restrictions may be imposed by the Animal and Plant Health Inspection Service of that department, under the Plant Quarantine Act, and by the FDA, Division of Import Operations and Policy, under the Federal Food, Drug and Cosmetic Act.

Food Safety and Inspection Service (FSIS) import procedures for meat, poultry and egg products

Foreign inspection certificates are required to accompany all imported meat, poultry, and egg products. These certificates must indicate the product name, establishment number, country of origin, name and address of the manufacturer or distributor, quantity and weight of contents, list of ingredients, species of animals it was derived from, and identification marks. The certificate must also bear the official seal of the foreign government agency responsible for the inspection, along with the signature of an agency official. This certificate must be in both English and the language of the foreign country.

Re-inspection at port-of-entry

Upon arrival at a US port-of-entry, all meat and poultry shipments must be re-inspected by an FSIS import inspector before they are allowed into the country. Each product is inspected for appearance and condition, and checked for certification and label compliance. In addition, the Automated Import Information System assigns various other types of inspection, including product examinations and microbial and chemical laboratory analysis. Egg products are re-inspected at the facility where they are taken for further processing.

Residue and microbial testing

In order to export to the US, a country must have a residue control programme with standards equivalent to US standards. FSIS randomly samples meat, poultry, and egg products for violative chemical residues under the National Residue Programme. The compounds included in the import residue plan reflect the testing done in the US domestic residue programme. FSIS can initiate a special sampling plan when there is a need to monitor a country for residues of a specific compound, based on detection of violative residues at US port-of-entry or other information concerning risk to human health. Decisions about product acceptability are based on US tolerances or action levels.

Meat and poultry are subject to testing for *Listeria monocytogenes* and *Salmonella* at a random rate. Random samples from each production lot of imported, pasteurised egg products are tested for *Salmonella*. In addition, pasteurised, liquid egg products in small, intact containers (up to 5 pounds) that bear a shelf life claim may also be tested for *Listeria monocytogenes*. Unpasteurised egg products are subject to random testing for the presence of residues only. Additional testing could be initiated if a public health problem is identified. If a residue or microbial violation occurs in meat, poultry or egg products, the frequency of inspection is increased for all shipments of similar product from the violative foreign establishment until a record of compliance is re-established.

Farm products facing NTBs in the EU

European Commission's (EC) regulation of aflatoxins

In 1997, the EC proposed uniform standards for total aflatoxins (see Box 1), setting the acceptable level of the contaminant in certain foodstuffs. For example, it set a standard at 10 ppb (parts per billion) in groundnuts subject to further processing and at 4 ppb in groundnuts intended for direct human consumption (this category includes cereals, edible nuts, dried and preserved fruits). It also established a level for aflatoxin M1, which is usually present in milk at 0.05 ppb. This Commission's regulation on aflatoxins triggered serious concerns among food exporters subject to the proposed directive. Exporters such as Argentina, Australia, Bolivia, Brazil, Canada, India, Mexico, Pakistan, Peru and Uruguay requested that the EU provide the risk assessments on which it had based its proposed standard.

Poultry regulations

The EU prohibits the use of anti-microbial treatments in poultry production. In October 1998, the EU published a finding on anti-microbial treatments, which recommends that antimicrobial treatment should only be used as part of an over-

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<th>BOX 1: AFLATOXINS</th>
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<td>AFLATOXINS are a group of structurally related toxic compounds, which contaminate certain foods and result in the production of acute liver carcinogens in the human body. The major aflatoxins of concern are designated B1, B2, G1, and G2, and these toxins are usually found together in foods. Aflatoxin B1 is usually predominant and the most toxic of the four categories and has been identified in corn and corn products, groundnuts and groundnuts products, cottonseed, milk, and tree nuts such as Brazil nuts, pecans, pistachio nuts, and walnuts.</td>
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all strategy for pathogen control throughout the whole production chain. Although some forms of treatment such as trisodium phosphate and lactic acid were deemed acceptable, eggs and poultry meats require an initial approval from EU, especially with regard to the New Castle Disease. Exports of egg products (which are heat-treated products) have also been facing rough weather. The EU has been delaying notification of a harmonised list of Indian companies due to which consignments of egg products were rejected at different ports of the EU in the absence of specific bilateral agreements.

**Measures concerning use of hormones**

In December 1985, the EU – referring to consumer concerns – decided that beginning in January 1988, all imports of meat from animals raised using hormones would be banned (a decision not to use hormones within the region was made in March 1988). In January 1989, the EU began enforcing a total ban on imports of meat raised with growth hormones. In June 1995, the US charged that these measures lacked a scientific basis and were in violation of both the GATT and the SPS Agreement. In response, the EU convened a Scientific Conference on the Use of Growth Promoters in Meat Production for scientists and consumer groups. The conference’s report, published in January 1996, concluded that the data on the use of natural and artificial hormones and related compounds had shown no evidence of human health risk. Nonetheless, the EU agriculture ministers decided to continue the import ban. However, in one of its rulings, the WTO found EU measures in violation of the SPS Agreement (Box 2).

**Differential regulations on pesticide use**

The EU has introduced regulations governing pesticide residue levels in grapes, egg products, gherkins, honey, meat products, milk products, tea and spices. Certain pesticides have been banned for use and in case of others; maximum residue levels have been prescribed. It is observed that different EU countries follow different regulations on use of pesticides. Certain countries (for e.g., the United Kingdom) have banned the use of pesticides but these continue to be allowed in other EU Members. As a result, residues for pesticides in all European countries have to be tested before any product can be exported, increasing costs substantially. The EU has not been able to harmonise its list of pesticides.

**CASE STUDIES**

**Dairy Products: Case of India**

With a large livestock sector, India accounts for 16 percent of world cattle population (including 56.1 percent of buffaloes, 5.26 percent of sheep and 17.1 percent of goats). The country is also the world’s largest milk producer. Milk production grew at an annual rate of just 1 percent during 1947 and 1970. After 1970, milk production experienced a vigorous growth of over 4.5 percent per annum due to several measures initiated by the government to increase livestock productivity. The export value of milk products increased from Rs. 2.49 crores in 1990-91 to Rs. 13.59 crores in 1998-99. Skimmed milk powder, whole milk powder, ghee, butter and cheese constitute the major share of Indian milk exports. However, the sector is plagued with some problems.

**Prevalence of livestock diseases**

Countries import milk products from countries free from livestock diseases, particularly Rinderpest and foot and mouth disease (FMD). With the efforts of Ministry of Agriculture, India has been declared free from Rinderpest. However, FMD is still prevalent.

**Insistence on mechanised milk production**

The average animal holding of Indian farmers vary from one to three. Unlike industrialised countries, there are no big animal farms for milk production. Due to small size holdings, it is not possible to mechanise the milk production process. Moreover, adequate facilities are also unavailable to maintain a cool supply chain from the farm level to the processing plant. Sanitary and hygiene conditions followed do not meet international standards. Moreover, higher pesticide residues have been reported by countries importing Indian milk products.

**Horticulture: Cases of India and Pakistan**

Pakistan possesses a climate ideally suited to fruit farming throughout the year. Pakistani farmers develop new varieties of fruits by grafting one variety with another. It is one of the few countries where fruits are grown in cool temperate climate (such as apples, pears, plums and cherries); in warm temperate climate (such as apricots, grapes, pomegranates and melon); and in tropical and subtropical climate (such as bananas, mangoes, dates, guava and citrus).

Within the horticultural sub-sector, mango and citrus fruits have great potential. Mango varieties such as Sindhy, Chaunsa, Fajri, Golden and Began Phaly are in high demand, especially in the Middle East and Far East Asian countries. Pakistan exported 268,741 tonnes of fruits worth US$ 79.83 million during 2000-01 while the value of vegetable exports stood at US$ 22.5

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**BOX 2: EU-US DISPUTE ON HORMONES**

In January 1996, the US requested consultations under Article XXII of GATT, alleging that the EU measures were inconsistent with Articles III and XI of GATT, and Articles 2, 3, and 5 of the SPS Agreement. In May 1996, a panel was established. In July 1996, Canada also requested consultations under Article XXII of GATT and in October 1996, a different panel was set up. In August 1997, the panel report was issued. It found that the EU measures were based on neither international standards nor any risk assessment, and that arbitrary or unjustifiable distinctions in the level of protection result in discrimination or a disguised restriction on international trade. The panel found the EU measures in violation of SPS Agreement Articles 3.1, 5.1 and 5.5.
million. Out of the total exports of fruits and vegetables, the share of mangoes was 53,443 tonnes worth US$ 16.54 million, an increase of 43 percent during 1999-2000.

Both India and Pakistan face various problems in realising their potential in this area, some of which are summarised below.

**Presence of fruit flies**

Australia, China and Japan have banned imports of mangoes and grapes from India due to the presence of fruit flies. Japan insists that only the vapour heat treatment (VHT) procedure should be followed for export of mangoes and other fruits. Work has been continuing for almost eight years and enquiries from the Japanese side have been raised frequently. According to their procedure, their inspectors must come to India for checking the dis-infestation procedures and VHT protocols developed by India. Pakistan’s mangoes continue to face an embargo by the US. Lately, Australia, Germany and Japan have also banned imports of mangoes from Pakistan on grounds that they contain fruit flies.

**Contamination with insects and rodents**

Estimates by the US suggest that food hygiene problems, contamination with insects and rodent filth, are severe problems. Microbiological contamination, failing to comply with food registration and labelling requirements of importing country diseases and quarantine laws are other problems. There are various diseases affecting mangoes such as powdery mildew, anthracnose, sooty mold, root rot, rot of mangoes and malformation of inflorescence etc. Some 86 species of insect pests alone have been recorded on mangoes, of which fruit fly, scale insects, mealy bug and hoppers are prominent.

**Biosecurity Act 1993 of New Zealand**

This Act provides explicit import health standards for fresh mangoes. Unless and until these import health standards are satisfied, entry into New Zealand of all plants and plant products are prohibited. Each mango consignment has to carry a phyto-sanitary certificate from mango exporting country, statuering specifically, inter alia, that the mangoes have been inspected in accordance with appropriate official procedures and found to be free of visually detectable regulated pests, as specified by the New Zealand Ministry of Agriculture and Forestry.

**Spices: Cases of Sri Lanka and India**

Developing countries are the dominant players in the US$ 2 billion global trade in bulk spices and value added spice ingredients and products. India is the one of the prime producers in spices, with a production base of more than 35 million tonnes per annum. The country contributes 8 percent of world spice exports and its production accounts for 50 percent of the world trade in spices. In the case of Sri Lanka, spices – including spice-based essential oils – contribute about 0.6 percent to the total GDP and about 2 percent of total foreign exchange earnings. The share of spices and allied products is second to tea in Sri Lanka’s export basket.

Box 3 illustrates some of the episodes regarding the rejection of Indian spices. The sector faces challenges, some of which are discussed below.

**Microbial contamination**

There is improved understanding of microbiological and chemical hazards in foods. With growing consumer concerns about these hazards, the exclusive concern on hygiene is regarded as inadequate by regulators and consumer advocates. As with most foods, spices are susceptible to microbial contamination. Bacteria such as *Salmonella* have been found in black pepper, paprika, and other spices. Aflatoxins have been found in chillies, paprika, ginger, nutmeg and other spices.

**Pesticide use and maximum residue limits (MRLs)**

Many spices are grown under tropical conditions and are susceptible to insect infestation. Chemical pesticides are frequently used and may result in the presence of pesticide residues in the harvested spices. However, with regard to pesticide residues, there are very few Codex standards for MRLs related to agrochemical use on spices. The exceptions are Cartap in ginger, inorganic bromide and hydrogen phosphide in all spices. Countries have set their own MRLs, generally for particular spices that are grown in small quantities in their own countries. For example, there are some 35 official MRLs

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<th>BOX 3: REJECTION OF CONSIGNMENT OF INDIAN SPICES: SOME EMPIRICAL EVIDENCE</th>
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<td>• On 4 April 2005, the EC informed that it would not accept any food consignments having Sudan dyes, particularly in chilli powder. Sudan dyes are used for colouring solvents, oils, waxes, petrol, and shoe and floor polishes. They are not allowed to be added to food in the UK and the rest of the EU. Sudan dyes have been classified as carcinogenic by the International Agency for Research on Cancer and are banned for use in food in the EU. After this notification, there have been a number of cases of rejection of Indian chilli powder.</td>
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<td>• In June 2005, Italy rejected an Indian consignment of crushed hot chilli containing unauthorised colour Sudan I and Sudan 4. Ginger powder exported to Italy was found to contain clostridium perfringens. In June, the EU rejected 12 Indian food consignments while the US rejected 216 Indian food consignments.</td>
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<td>• The UK rejected Indian chilli powder as it contained aflatoxins and Germany found presence of <em>Salmonella</em> in the peeled sesame seeds exported from India through Poland. <em>Salmonella</em> was also detected in coriander powder exported to the UK.</td>
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<td>• In September 2002, a consignment of black pepper was rejected by the USFDA on the grounds of adulteration and <em>Salmonella</em>.</td>
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for spices in the US, the vast majority of which relate to chemical use on capiscums/chilies. Australia, Germany, and Spain have similar numbers (30–40) of official MRLs for spices, again centered on a few individual crops. So far, no MRLs have been set for spices at the EU, although the EC is authorised to do so. The existing MRLs for spices vary among countries. As an example, for ethion (an insecticide used on chilies), it is 0.05 ppm (parts per million) in Australia, 0.1 ppm in Spain and 1.0 ppm in the US.

**Different sampling and testing procedures**

Despite efforts to harmonise international standards in these and related areas under the Codex Alimentarius, there remain significant differences in the specific rules and tolerance levels related to these hazards among the major spice-importing countries. There are also differences among countries in relation to the procedures used by inspection agencies for sampling and testing of imported products. Both Japan and the US apply the ASTA (American Spice Trade Association) analytical approaches. EU Members apply different sampling and testing procedures. In addition, there are also differences among countries with regard to the acceptable technologies that can be used to address particular food safety or plant health risks (see Box 4).

**Differential aflatoxin standards**

With regard to aflatoxin, the specific standards and level of regulatory attention to these standards vary among countries. Most countries have no specific standards for aflatoxin in spices. However, the prevailing standards for agricultural raw materials (such as in the cases of cereals and nuts for further processing) are being applied to spices as well. These standards range from 30 ppb (parts per billion) in India, 20 ppb in the US, 10 ppb (for B1 aflatoxin) in Japan, 10 ppb (5 ppb for B1) in the EU. The Indian standard is largely unenforced in the domestic market. There has been periodic (and recently, growing) attention to aflatoxin in spice imports among selected EU countries, although it has received less attention than has aflatoxin in other food products especially peanuts, pistachios, and other types of edible nuts. In 2001, the EC amended a 1997 regulation dealing with contaminants in certain foodstuffs to make specific reference to the hazard of aflatoxin in spices and to establish a tolerance level of 10 ppb (and 5 ppb specifically for B1 type of aflatoxin).

**Shrimp: Case of Bangladesh**

Shrimp is Bangladesh’s second largest export. During the 1980s, commercial culture of shrimp increased rapidly in the coastal belt of Bangladesh, undergoing several stages of transformation. There are 600,000 people employed in the shrimp sector in Bangladesh, generating US$ 301 million annually in terms of foreign exchange earnings. Yet, the industry suffers from significant production inefficiencies and is exposed to important social and environmental risks.

**Use of HACCP methods**

Under the provision of harmonisation of standards, the Codex Commission has suggested the use of Hazard Analysis Critical Control Points (HACCP) method to monitor and maintain food safety standards. HACCP is a method for maintaining quality standard and is applicable at all stages of production. In the case of shrimp production, exporters need to comply with the standards, starting from production at the farm level. It has not been applied at the farm level and only exporters are legally liable to bear the risks of export for any possibility of non-compliance of standards. It is estimated that a total cost of US$ 17.6 million would be necessary to upgrade facilities to comply with HACCP requirements (Cato and Limos dos Santos, 2000 and Rahman, 2001).

**Food and safety standards requirements**

Shrimps exported to Canada, the EU and the US from any country must pass the food and safety standards set by importing countries, failing which they can impose trade restric-

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**BOX 4: DIFFERENCES IN ACCEPTABILITY OF TECHNOLOGIES**

- Sterilisation measures can be taken to address microbiological risks in spices. Use of ethylene oxide sterilisation and irradiation are acceptable in the US but banned in Australia and the EU because of their adverse environmental impact and irradiation has not found consumer acceptance in either Japan or much of the EU.

- In Australia and the EU, there is a preference for steam sterilisation, although this may adversely affect spice quality and is an expensive approach for exporters.

- A similar situation exists with regard to methods of spice product fumigation to minimise plant health risks. When supplying to Australia, Indian exporters have to undertake intensive fumigation using methyl bromide. In contrast, this fumigant is already banned in the EU (as called for by 2010 under the Montreal Protocol) and is being phased out in the US. The alternative technology, using aluminum phosphate, is far more time consuming and expensive for exporters.

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**BOX 5: EU BAN ON BANGLADESHI SHRIMP**

In July 1997, the EC imposed a ban on imports of shrimp products from Bangladesh into the EU on the ground that exports of this commodity did not meet the stringent provisions of EC’s HACCP regulations. The ban originated from (a) concerns regarding standards in areas related to health safeguards, quality control, infrastructure and hygiene in the processing units, and (b) lack of trust in the efficiency of the controlling measures carried out by designated authorities in Bangladesh (in this particular case, the Department of Fisheries). Subsequently, the ban was withdrawn under an agreement whereby shrimp exporters need to upgrade their processing plants and the government issues a certificate of compliance.
These standards are intended to promote public goods in support of sustainable development. However, their unfair use restricts market access. As governments increasingly turn towards market-based tools to promote sustainable production and consumption, including eco-labels and certification systems, efforts must be made to ensure that these do not harm trading opportunities for developing country firms. Insisting on quality standards to ensure food safety is the prerogative of the buyer. However, it is increasingly becoming a form of NTB; creating trade distortions when used indiscriminately without a grasp of ground realities.

In view of the growing use of stringent standards, the WTO should take commitments from countries that they will follow Codex Guidelines on food safety and will not introduce stringent safety parameters without convincing scientific logic. For instance, EU regulations on food safety are based on the precautionary principle, which justifies restrictions or regulations on food imports even if the scientific risks to health are unproven. Furthermore, any new parameter by developed countries in agricultural trade must increase the commitment for funds from them for trade related capacity building in developing countries. In addition, an international forum should evaluate laws to classify them into legitimate concerns or as protectionist tools.