

A cost-benefit framework for allocating SPS-related technical assistance

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1 Introduction¹

Agriculture plays a significant role in providing employment opportunities in developing countries. It provides income opportunities for the poor and produces food for consumption and exports. Liberalisation initiatives from the World Trade Organisation (WTO) have reduced tariff and non-tariff barriers in agriculture, increasing the opportunities for developing countries to develop their comparative advantages in agriculture and penetrate new markets (Murphy and Shleifer, 1997, Henson and Loader, 2000). On average, tariffs on agricultural products have been reduced by 37% during the Uruguay Round. For tropical products, which are of great importance for developing countries, tariff reductions have been even higher (43%).

Developed country imports of agricultural products from developing countries constitute around 45% of their total imports of agricultural products (UNCTAD/Commonwealth Secretariat, 1996). The European Union is the most significant importer of agricultural products, including imports from the least developed countries (LDCs). Agricultural and food products typically account for over one fourth of total merchandise exports from sub-Saharan countries.

More recent initiatives have been taken by importing countries to provide duty-free market access to products from the LDCs. For instance, both Norway and the European Union (EU) have granted LDCs duty-free market access for *all* products (apart from arms). In Norway, this was implemented from 1 July 2002, while the EU has a longer transition period for some sensitive products.

At the same time, developing countries are concerned that they are not fully able to utilize these new opportunities because trade barriers are fungible; a new set of non-tariff barriers replaces old tariff barriers and quotas. Non-tariff barriers are of particular importance in the agricultural sector. For instance, importing countries have replaced tariffs and quotas with detailed sanitary and phytosanitary (related to plants) protection measures in order to secure human, animal and plant health. This is of course a legitimate concern, but the measures have some undesirable side effects. Notably, developing countries are concerned that these measures are too difficult or costly to comply with and therefore impede trade opportunities.

To reduce the risk of unfair trade restrictions, a special Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) has been signed under the umbrella of the WTO. This agreement imposes restrictions on the SPS measures that can be applied. In addition, the

¹ The authors gratefully acknowledge financial support from NORAD, and technical and logistical facilitation by the Norwegian Ministry of Foreign Affairs. A special thanks to Toralv Follestad and Didrik Tønseth for valuable comments. Thanks also to the Norwegian delegations in Brussels and Geneva for organizing our field studies in May 2002.

agreement commits the members to providing technical assistance to help developing countries meet the sanitary standards of developed country markets.

Norway has limited experience with such assistance. In most cases technical assistance has been initiated for political reasons (for instance, recent initiatives regarding honey exports from Nepal) or because of well-intended but *ad hoc* initiatives from the Ministry of Agriculture or other institutions involved.

The following table sums up technical assistance provided by Norway since the introduction of the SPS Agreement, as reported to the WTO.

Table 1: Technical assistance provided by Norway

Technical assistance provided since 1 January 1995:				
Sector	Description of particular programme: (for example related to: risk assessment, enquiry point, national notification authority, processing technology, research, infrastructure, establishment of national regulatory bodies, developing national law and regulations, etc.)	Form of assistance: (for example: advice, technical expertise, training, equipment, credits, donations, grants)	Provided to: (Member)	Contacts (for example: e-mail or Internet address)
Food Safety	Development, national regulatory body/infrastructure. Development of national regulations.	Technical expertise, training	Zimbabwe, Palestine, Latvia	the Norwegian Enquiry Point: christine.holman@ld.dep.no
	Development, national regulatory body/infrastructure. Development of national regulations.	Technical expertise, training through the FAO	Moldova, Swaziland, Albania, Vietnam, Nicaragua	
	HACCP-training in fish inspection	Technical expertise		
	Food laboratories, quality assurance	Technical expertise and training the ISO	Jamaica, Trinidad, Equador, Peru, Bolivia, Mozambique, Botswana, Mauritius	
	Fish management	Technical expertise/training	South Africa, Vietnam	
	Aquaculture	Technical expertise/training	China	
Animal Health				
Plant Health	Integrated Pest Management (IPM)	Technical expertise and training	Vietnam, Nicaragua	

Source: WTO (2001a)

For technical assistance funds to be efficiently and effectively spent, there is a need for a more objective approach to the allocation of these funds. The main objectives of this report are (refer to the Terms of Reference in Appendix 1):

- to find and assess methods of *identifying needs* in developing countries in terms of compliance with the SPS standards of their export markets.
- to suggest *criteria* for allocating SPS-related technical assistance to developing countries.

The methodological point of departure of this report is that there is a limited amount of funds available for SPS-related technical assistance, and that funds ought therefore to be allocated to projects where they have the greatest impact

per dollar spent or invested. Our suggested criteria for allocating technical assistance is therefore based on cost benefit analysis.² This approach subsumes the two main objectives of this report referred to above. The identification of needs sorts out the relevant project alternatives to be considered, whereas the choice of technical assistance allocation is made by selecting the project or projects with the highest ratio of benefits to costs.

The objective of the report is not to identify specific technical assistance projects that merit support (refer to Appendix 1). Rather, the objective is to suggest methods of identifying technical assistance needs, and a set of general, objective criteria by which to evaluate whether to implement projects addressing the needs uncovered. Statistics provided on countries, products, sanitary problems and missing capacity are used as illustrations of how the suggested methods and criteria can be implemented in practice, rather than as indications of specific technical assistance projects that should be pursued.

This report takes the regulatory standards in developed countries as given, and asks how SPS-related technical assistance should be allocated between countries, industries, types of sanitary problems and types of capacity building. The main concern is how technical assistance can be used to help developing countries comply with the relevant standards in a particular market – whereas the question of the trade impact of a given standard, and whether the standard itself is reasonable, is not addressed.³

Since the European Union (EU) is the main importer of agricultural products from developing countries, particular attention is devoted to access to this market, though references are also made to the United States' (US) agricultural standards. The facts that Norway, through its membership in the European Economic Area (EEA) and its ratification of the Veterinary Agreement, in practice has the same rules for imports as the EU (plants excepted), underscores the importance of focusing on the European market.

The report is structured as follows. Section 2 elaborates on the methodological framework, providing an outline of the essential elements and facts needed to conduct a cost-benefit analysis of technical assistance projects. These elements are then discussed in detail in subsequent sections. Section 3 provides information about rules in the EU and the US regarding food imports, including how the SPS Agreement restrains the legislation affecting such imports. Section 4 discusses how alternatives for a cost-benefit analysis can be generated, by suggesting alternative indicators for assessing the needs of developing countries for SPS-related technical assistance. Chapter 5 reviews the methods of needs identification and priority assessment used by other donors, in particular the WTO, the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the EU, and the US. Chapter 6 discusses what is to be included in the benefits of a project of technical

² This is in line with the Logical Framework Analysis Concept applied by NORAD for undertaking project evaluation.

³ For an overview of the literature on the trade impacts of sanitary standards see Maskus, Otsuki and Wilson (2001).

assistance, while chapter 7 focuses on the calculation of compliance costs. Chapter 8 concludes with recommendations.

2 A framework for allocating SPS-related technical assistance

Developed countries have legitimate reasons for imposing SPS regulations on markets for agricultural products. In an unregulated market, there are certain market imperfections which lead to an excess of harmful products. The legitimacy of SPS regulations is thus due to their efficiency enhancing nature. However, SPS regulations also have distributional consequences. In particular, the export industries of developing countries suffer a shortfall of revenue from such measures, which in turn affects the growth potential of these countries. Since developing countries often do not have the resources needed to upgrade their sanitary capacity to meet export market requirements, there is a case for development assistance in the form of SPS-related technical assistance. Given the fact that the funds available for technical assistance are scarce, the funds should be allocated where they do the most good. This section starts by elaborating on the rationale behind SPS regulations and technical assistance. It then goes on to describe how cost-benefit analysis can be used to allocate technical assistance efficiently and effectively. An outline of subsequent sections providing more indepth information on the essential elements of a cost-benefit analysis is also provided.

2.1 The case for SPS regulations and technical assistance

The basic rationale for regulating the market for food is one of externalities, merit goods and of asymmetric information. *Externalities* are costs or benefits that the actions of an agent impose on others, but which the agent does not take into account when choosing how to act. For instance, a producer of food would gain from using pesticides to promote productivity, but would not bear the costs in terms of consumer health from pesticide residues. In an unregulated market, the use of pesticides would therefore be excessive.

A government might have more information about health risks than producers and consumers, and thus might consider food safety a *merit good*, a good that has value beyond that attributed to it by those producing and consuming food products. A government might therefore want to be paternalistic in restricting health risks beyond what is demanded by market participants.

Asymmetric information basically means that there is a difference in how much relevant information the buyer and seller of a product possess about the product. For instance, producers of food presumably know more about the harmful substances used in its production than consumers. If consumers are unsure about quality, they might not be willing to pay the extra cost of purchasing what is presented as a safe product. In the absence of credible signals of quality, this leads to a relative excess of low-quality, unsafe products.

Though the justification of SPS measures is to enhance efficiency, this does not imply that any type and any degree of regulation is justified. Regulation must address the inefficiencies of the market, and some comparison must be made of corrected inefficiencies and other costs of regulation. There is evidence of excessive SPS regulation in some developed markets. For instance, a study by Otsuki, Wilson and Sewadeh (2000) suggests that the aflatoxin standards in the EU are excessive compared to the health benefits they provide.

Food safety regulation favours producers in countries with a well-developed infrastructure for meeting food safety requirements. This implies that producers in developing countries are usually the most vulnerable to food safety regulation in their export markets. In a sense, producers in the third world bear the costs of keeping food safe for consumers in the developed world. In order to shift the burden from the less wealthy to the wealthier, there is thus a case for redistribution through development assistance. Since developing countries often lack the financial and human resources needed to build the capacity demanded by the standards in their export markets, one way to target the distributional consequences of SPS regulations is to provide SPS-related technical assistance.

A commitment to this idea is expressed in the SPS Agreement, article 9 (see Box 1), where industrialized countries agree to facilitate the provision of SPS-related technical assistance to developing countries.

Box 1. Article 9 of the SPS Agreement.

Members agree to facilitate the provision of technical assistance to other Members, especially developing country Members, either bilaterally or through the appropriate international organizations. Such assistance may be, *inter alia*, in the areas of processing technologies, research and infrastructure, including in the establishment of national regulatory bodies, and may take the form of advice, credits, donations and grants, including for the purpose of seeking technical expertise, training and equipment to allow such countries to adjust to, and comply with, sanitary or phytosanitary measures necessary to achieve the appropriate level of sanitary or phytosanitary protection in their export markets.

Where substantial investments are required in order for an exporting developing country Member to fulfil the sanitary or phytosanitary requirements of an importing Member, the latter shall consider providing such technical assistance as will permit the developing country Member to maintain and expand its market access opportunities for the product involved.

Source: http://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

During the Ministerial Conference in Doha, the commitment to providing technical assistance and support investment in infrastructure was underscored by a joint statement from the FAO, the World Bank, the WHO and the three international standard-setting organisations (CODEX, IPPC and OIE, cf. section 3.1) with the objectives of:

- establishing science-based SPS measures
- facilitating compliance with the SPS requirements of importing countries
- facilitating participation in the standard setting institutions

The statement underlined a commitment to co-operation between the different institutions.

It is important to note that given the variety of forms development assistance can take, it might not be most effective in the form of SPS-related technical assistance. Alleviating poverty and promoting economic development might be more effectively addressed by other means. For instance, the costs of micromanaging project-specific support to developing countries have been used as an argument for providing general budgetary support. Furthermore, even the narrower goal of promoting exports from developing countries, might be more effectively addressed by other forms of assistance. As it is beyond the mandate of this study to compare the effectiveness of different types of assistance, however, we focus on technical assistance to improve a country's SPS capacity.

2.2 How to make technical assistance effective

Upon giving technical assistance, we have a choice between channelling the funds through the public sector or directly into the private sector. Though focusing on the private sector, or on projects that include strong participation from the private sector, is in many cases appropriate, this report mainly reviews *public sector projects*, for several reasons. One is that a national capacity for food inspection is something of a public good, whose expertise all exporting firms can make use of. Individual firms would assess only their own benefits from contributing to such a system, which would leave the system inadequate if left to private initiative. In a sense, there are positive externalities to the contributions from each firm; setting up a lab could benefit not only the firm that constructs it, but also other firms needing the same kind of analytical capability. There is thus a case to be made for the national coordination of capacity building. In addition, Henson (2002) argues that some key public institutions must be in place for private capacity to be useful. For instance, in some important export markets there is a requirement that a national competent authority oversee the inspection system of each exporting country.

There are a number of worthy recipients of technical assistance. Donors providing this kind of assistance are inundated with needs presented by developing country delegations. Since the amount of funds available for technical assistance is limited, it is important to formulate a set of principles to guide the allocation of technical assistance between different needs. Given the scarcity of funds, they should be allocated to the projects where they are the most effective. This to avoid scarce resources being wasted on projects where there is little significant impact, when they could do more good elsewhere. In short, getting the most bang for your buck ought to be the guiding principle of technical assistance allocation.

To make effective allocation decisions, one can use cost-benefit analysis. Through a cost-benefit analysis, the effects of a project per dollar spent is computed, and the projects that provide the greatest return on the funds invested can be identified. You thus get an objective allocation mechanism which is impact-oriented, and which makes the most of scarce resources. Though a cost-benefit analysis can be hard to implement when the effects, or benefits, of a project are difficult to quantify, or are measured along multiple dimensions that are difficult to aggregate, this does not seem too great a problem in the context of SPS-related assistance, where the immediate objectives are clear and quantifiable.

To apply a cost-benefit perspective to the allocation of SPS-related technical assistance, the relevant elements of a cost-benefit analysis must be spelled out. The essential elements of such an analysis are a set of alternative projects, a specification of how to measure the benefits of a project, and a specification of the relevant costs of a project. Each of these elements is presented here and explored in more detail in subsequent sections.

In using cost-benefit analysis, it is important to start out with a *fairly comprehensive list of alternative projects* from which to choose. A comparison of alternatives is an integral part of a cost-benefit analysis, which establishes the alternative costs of any given project, in terms of net benefits forgone by not spending the funds on other projects. Several typologies can be used to generate an idea of which needs developing countries have in meeting food safety requirements. Standard classifications would be according to country, industry and type of problem (microbiological, pesticide residues, labelling and so on). But even more relevant in the present context is perhaps a classification according to the type of capacity needed to meet food safety requirements in export markets. The WTO (2000a) provides one typology of this kind, which consists of four main categories of capacity building:

- *Information*: Enhanced awareness and understanding of the SPS Agreement
- *Training*: More detailed and technical knowledge about SPS measures
- *Soft infrastructure development*: Training of technical and scientific personnel and experts, development of national regulatory frameworks
- *Hard infrastructure development*: Development of physical infrastructure and equipment, such as laboratories.

As an alternative to this typology, the WTO suggests a partition according to the “stable to table” chain, where the needs at the *production* level, at the *processing* level and at the *marketing* level are considered in turn. A final alternative suggested is the trichotomy of the *regulatory* framework, the *institutional* framework and the *technical* framework.

The next two chapters of this report study different ways in which to identify the needs of developing countries for SPS-related technical assistance. Chapter 3 discusses legislation and requirements in important import markets. Chapter 4 moves on to discuss possible indicators of how these requirements

restrict exports from developing countries to major import markets. These include requests from developing countries for technical assistance, the WTO mapping of developing country needs, veterinary reports, lists of countries from which imports of certain products are permitted, detention of products at the border and more. Each of these indicators has advantages and disadvantages, and where they complement each other, this report suggests that they be used in conjunction to determine technical assistance needs. From indicators of this kind, a list of alternative needs and projects addressing these needs can be generated.

Given a range of alternatives, our perspective is that a comparison of benefits and costs should be used to *assign priority* to them. In this context, we compare this approach to that used by large donor agencies and countries, such as the WTO, the FAO, the World Bank, the EU and the US. Chapter 5 reviews the methods of needs identification and priority assessment of these donors, and notes that the approach taken by most of them diverges from the one suggested in this report. An overview of the main activities of these donors is also provided, to illuminate the areas of technical assistance that are already covered by their activities, and that need not be duplicated by future technical assistance efforts.

Chapter 6 considers what is to be included in the *benefits* of a project of technical assistance. This can be a difficult question, since technical assistance is ultimately a means to several fundamental and sometimes conflicting ends, such as alleviating poverty, promoting economic growth and so on. However, since the immediate objective of SPS-related technical assistance is to promote the export capabilities of developing countries, it is appropriate to measure the benefits of a project by its expected impact on exports, taking donor preferences across countries into account. The measure of benefits proposed is thus simple, focused and consistent with the underlying objective of SPS-related assistance. In the final part of chapter 6, some simple proxies for measuring export potential are suggested.

The relevant *costs* to consider for technical assistance projects are costs of compliance, i.e. the necessary additional costs incurred to bring the sanitary capacity from its present level to the level required for exporting to developed countries. Since the purpose of the cost-benefit analysis is to allocate donor funds effectively, the compliance costs to consider are those carried by the donor in question. An elaborate way of calculating costs of compliance for public institutions, developed by Henson (2002), is presented in chapter 7. This approach focuses on the required changes in various types of capacity needed, and calculates total costs as the costs of the inputs needed to build the required capacity. We also refer to specific cost calculations made by other donors, which can be used as a comparative basis for calculating costs for similar projects.

As specified in this report, the cost benefit approach to allocating technical assistance thus proceeds in four steps. First, generate alternative projects by looking at indicators for developing country needs in terms of SPS-related impediments to exports. Second, calculate the benefits in terms of export

potential for each alternative technical assistance project. Third, calculate the minimum costs for each project. Fourth, select the project or projects with the highest ratio of benefits to costs. Chapter 8 sums up the recommendations of this report, and provides an example of how the cost benefit approach can be used in practice.

3 Rules and regulations

This section gives a brief overview of relevant rules that apply to imports of food products to two of the world's most important import markets, the EU and the US. All potential exporting countries and firms are required to comply with the standards set in particular markets. It is therefore salient to know these rules. Our main point of departure is that rules that apply to imports of food into a particular country should be made transparent, in the sense that exporters and importers have a clear perception of what is needed to comply with the standards, and thereby be able to export agricultural products to a particular country. As regards food regulations in the EU and in Norway, we find these regulations to be transparent but extremely difficult to understand with their blend of national and community legislation and numerous horizontal and vertical directives, amendments and exceptions. This complexity raises compliance costs, with a danger of impeding trade.

We will, however, start by providing a macro perspective, reviewing the international regulations of standards for agricultural products.

3.1 International framework – The SPS Agreement

According to the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS measures), members have the right to restrict trade by taking sanitary and phytosanitary measures for the protection of human, animal or plant health. It is the objective of a measure which determines whether or not it is considered an SPS measure. If a measure does not protect health, if it for instance merely protects consumer interests, the SPS Agreement does not apply.⁴ As regards the protection of human life, SPS measures can be applied in order to reduce risk related to toxic contaminants (e.g. pesticides and drug residues), food additives, disease-causing organisms in food and beverages and diseases carried by animals, plants or products. For animal and plant life, SPS measures can, in addition to the risk reducing factors mentioned above, be applied to prevent the entry, establishment or spread of pests.

There are essential provisions in the Agreement which places restrictions on the measures that can be applied and thereby reduce the probability that measures are unjustifiably used.

- Measures must have a *scientific justification*. This can be achieved by *harmonising* sanitary or phytosanitary measures with internationally agreed standards, guidelines or recommendations from the Codex Alimentarius Commission (CODEX), the International Office of Epizootics (OIE), and the International Plant Protection Convention (IPPC). The standards applied by these institutions must be deemed necessary to

⁴ An overview of the SPS Agreement with a number of references is given in Wilson and Henson (2002).

protect human, animal or plant life or health. Member countries can, however, impose regulations different from standard setting institutions as long as these regulations are based on scientific evidence (risk assessments), and are not inconsistent with any other provision of the SPS Agreement.

- **Non-discrimination.** An importing country cannot impose different requirements on imports than on domestically produced goods (national treatment), nor can it favour imports from certain countries (most favoured nation).
- **Equivalence.** Members must accept other ways of ensuring equal safety insofar as the exporting member objectively demonstrates that its measures achieve the importing member's required level of sanitary or phytosanitary protection.
- **Transparency.** Members are to publish all SPS regulations and notify proposed changes in their sanitary or phytosanitary measures if they have a significant effect on trade. All members should also establish an Enquiry Point to respond to all reasonable questions.

Members should also seek to harmonise their standards through active participation in the standard setting institutions, and provide technical assistance to developing countries.⁵ Section 5 provides an overview of the types of assistance provided.

From an aid perspective, an important feature of the SPS Agreement is that it allows a country to set its own standards as long as it bases its measures on a scientific assessment of the risks to health. Increased information about the SPS Agreement is therefore only a starting point for developing countries that want to increase their exports of agricultural products. *More important is the need for information about the regulations in the most relevant importing countries in question, including risk assessments.*

3.2 Rules in the importing countries

We will first discuss the relevant SPS rules in the European Community, and thereafter proceed with a discussion of the rules in the US. In both markets, all imported products are required to meet the same standards as domestic goods. Imported foods must be pure, wholesome, safe to eat, and produced under sanitary conditions; drugs and devices must be safe and effective; cosmetics must be safe and made from approved ingredients; and all products must contain informative and truthful labelling.

⁵ Developing countries have been disappointed with the technical assistance provided so far and claim their right to assistance has not really been honoured.

The EU and Norway

There is a mixture of horizontal directives (for instance regarding hygiene and residues) across product categories and vertical directives (related to specific products) which form the basis of the European regulatory regime. In this jungle of directives, an exporter needs to manoeuvre in order to comply with the rules imposed on a product or production process. The main regulations affecting food imports can, however, be mapped as follows:

As regards food of animal origin, there are specific vertical directives according to product groups such as meat and meat products, milk and milk products and fish and fish products (see section 4.2). For products of animal origin (including fish), countries must apply to be included on an approved list prior to exporting to the Union. Lists of approved countries are published in the Official Journal under the respective directives covering a particular product group (the most recent one is OJ L 116 25.4 2002 p 51, see also the DG's homepage referred to in section 4.2). According to Council Directive 96/23/EC (regulating live animals and animal products), each year third countries (outside the EU and the EEA) must forward to the Commission the monitoring plans for the current year and the results of the previous year.

All imports from third countries must arrive through designated border inspection posts. Inspections are performed and control samples collected, under the auspices of the Food and Veterinary Office (FVO) at the border inspection posts of EU members, and the EFTA Surveillance Authority (ESA) at the posts of EFTA members. For products of animal origin, there also exist directives for the regulation of pesticide residues. For food of plant origin (fruit and vegetables), there are, as yet, no positive lists of countries allowed to export to the EU.

Veterinary medicines (mainly antibiotics), growth promoters and pesticides are being used in the rearing of animals and in crop production. The accumulation of these substances has caused problems for human health and there are a number of directives regulating this. Serious concerns have, however, been voiced by developing countries regarding the strict EU legislation governing pesticides. These regulations are of particular importance for products of animal origin (see appendix II to directive 86/363/EEC, which specifies the regulation), cereals (see 86/362/EEC) and tea, fruit and vegetables (see 90/642/EEC) and selected fruit and vegetables (see 76/895/EEC). The main rule is that if an adequate Union maximum residue limit (MRL) is already in place, foodstuffs that comply with EU phytosanitary legislation can be imported and marketed in the Union. If there is no EU legislation or national MRL in force, then the exporter needs to obtain an 'import tolerance', which until now has been set nationally. Developing countries, for instance the African-Caribbean-Pacific (ACP) countries, have claimed that until risk assessments have been implemented, this tolerance has been set equal to zero, making it extremely difficult to penetrate the market.

In January 2002, the European Union approved a new Food Law seeking to harmonise national food law legislation and maintain a high level of protection of human health, safety and of consumer protection. As part of this law, the European Food Safety Authority was established with the main objective of monitoring and providing scientific control of food safety issues in the Union.

In the law, food is defined as substances, ingredients, raw materials, additives and nutrients, including drinks but not medicines, cosmetics or tobacco. It includes residues deriving from the production and processing of foods, such as veterinary medicine residues and pesticide residues. The definition of food includes all elements in the supply chain ('from farm to table') as long as the substance is intended or is 'reasonably expected' to be ingested by humans. Also animal feed provided to food-producing animals is covered as long as there may be a direct link to food safety (European Commission, 2000a:8). Recent experience has shown that animal feed can represent a serious health problem and it has therefore been included in the definition.

Where a serious risk for the health and safety of consumers is identified, the competent authority shall inform the European Food Authority via a Rapid Alert System (confer section 4.3). The food law contains a *precautionary principle*, so that policy-makers can restrict imports to protect health in circumstances where they do not have scientific data, but have reasonable grounds for concern that a product represents a health danger. We also see an increasing trend in the European legislation to take a broad perspective on the supply chain, based on the 'farm to table' approach. The hygiene provision is one example of this. From an exporter perspective, both principles make it more difficult to penetrate new markets since additional control of the whole production process ('farm to table') is required, including the feeding of animals. Exporters also need to provide scientific data that products do not represent any health risk.

Through its Veterinary Agreement with the EU, Norway shares a common set of rules with the Union for imports of food of animal origin (including rules regarding imports from third countries), but has not harmonised rules relating to plant health.⁶ In Norway, control of food imports is done by the Directorate of Fisheries, the Animal Health Authority and the Norwegian Food Control Authority (SNT). All food imports of non-animal origin from third countries are to be reported in advance, so the local SNT offices can check consignments for health risks.

Though Norway from 1 July 2002 grants duty- and quota free market access to all products from LDCs, including animal feed, there is a potential danger that the Food Law's extended perspective on the supply chain may exacerbate the difficulties LDCs already experience in utilizing this new opportunity (see Hagen, Mæstad and Wiig, 1991 and Wiig et al. 2002).

⁶ Norway has kept some national control directives by controlling all imports of meat for salmonella and Norway can use the safeguard mechanism in the EEA agreement to set an import ban on food (Utenriksdepartementet 1998).

The US

The Food and Drug Administration (FDA) enforces the Federal Food, Drug, and Cosmetics Act (FD&C Act) and other laws which are designed to protect consumers' health and safety.⁷

With the exception of most meat and poultry, all food, drugs, biologics, cosmetics and medical devices are subject to examination by the FDA when they are imported or offered for import into the United States. Most meat and poultry products are regulated by the U.S. Department of Agriculture in a similar vein as in the EU (i.e. by positive lists).

In 1995, the FDA issued seafood regulations based on the principles of the Hazard Analysis and Critical Control Point approach (HACCP). The FDA issued these regulations to ensure safe processing and imports of fish and fishery products.

For all regulated products imported into the United States, the importer must report to the U.S. Customs Service (Customs), which in turn notifies the FDA of the entry and makes a decision as to the article's admissibility. If the FDA does not wish to examine a consignment, the product is allowed to be imported into the United States.

If the FDA decides to examine a consignment, an FDA representative will collect a sample for laboratory evaluation. If the analysis indicates that the product is in compliance, the shipment may be released into United States commerce. If there is a violation, the product will be refused admission according to Section 801 of the FD&C Act. Detentions are computerised according to country of origin, product type, importer and type of problem (confer section 4).

3.3 Summary

The SPS Agreement places restrictions on the SPS regulations an importing country can impose, and serves to increase the transparency of SPS regulations. Nevertheless, each country has considerable discretion in imposing SPS regulations, and the rules imposed in the world's largest import markets for food products are extremely complex and difficult to penetrate. Due to these complexities, it is to be expected that SPS regulations in the EU and the US constitute significant barriers to exports from developing countries.

⁷ This sub-section is adapted from http://www.fda.gov/ora/import/ora_import_system.html

4 Needs assessment

One of the objectives of this study is to suggest appropriate methods for identifying SPS-related technical needs in developing countries. Suitable methods of identification are essential for mapping out the relevant project alternatives. These alternatives should form the basis for allocating technical assistance to developing countries with a view to meeting SPS requirements in importing countries.

We have categorised needs according to four different dimensions:

- by country
- by product
- by source of problem
- by institutional capacity.

We are aware of three main sets of indicators for identifying needs and will discuss these successively in the following:

- Reported problems or needs
- Veterinary or other inspection reports and third country lists
- Detentions and alerts.

A common weakness of these indicators is that they are in principle reactive, not proactive, measures in the sense that problems are identified after they have occurred. In many cases, this is unsatisfactory. In order to implement appropriate measures to promote the export capabilities of developing countries, one needs proactive measures, to help exporters keep pace with changing SPS regulations. We are unfortunately not yet aware of any such proactive measures apart from strict concurrent monitoring of the measures presented in the following.

4.1 Reported problems and needs

Survey among delegations in the WTO

In a seminal article, Henson and Loader (2000) published the results of their survey among WTO delegations from developing countries regarding problems countries have with exports of agricultural products. The factor considered the most significant impediment to trade with the EU was SPS requirements, followed by other technical requirements. Tariffs were seen as a minor problem, and the EU was viewed as the most restrictive importing 'country' in terms of SPS measures. The products for which SPS requirements had been a major problem, as measured by the percentage of countries *prevented from exporting* in the last three years, were fish (60%), meat (52%), and fruit and vegetables (47%).

Respondents were asked to indicate the significance of different SPS problems. The factors perceived as the most significant were lack of scientific/technical expertise and incompatibility of domestic production processes with SPS requirements in the importing country. The authors conclude:

"These results suggest that developing countries are broadly aware of the SPS requirements they face in exporting to the European Union, but may lack the resources required to comply. This situation is exacerbated where SPS requirements conflict with domestic production/marketing methods and/or the period of time permitted for compliance is relatively short" (Henson and Loader, 2000:93).

In other words, they claim that *developing countries have enough information about SPS measures undertaken in importing countries, but lack human and financial capacity to implement a proper SPS system*. However, although trade bureaucrats may possess this information, we are not convinced that exporters do (see section 4.3).

Requested technical assistance

From time to time developing countries contact the WTO, the FAO, the standard-setting institutions, and bilateral donors, including Norway, or other institutions, in order to get assistance to improve their sanitary capacity. Such initiatives serve as a basis, and in many cases the only basis, for providing foreign aid. For instance, technical assistance provided by the WTO is demand driven (see section 5.) There is, however, no comprehensive overview of these initiatives.

The only documented systematic indicator of perceived needs we are aware of is based on developing countries' replies to a questionnaire prepared by the WTO. The Secretariat of the WTO prepared this questionnaire with the objective of identifying any assistance that had been provided, requested or received in respect of the implementation of the SPS Agreement. Since the focus of this section is on unfulfilled needs, it recounts support requested.

So far, 16 developing countries have replied to the questionnaire (see WTO 2001b, WTO 2002a,b and WTO 2000b). In 1999, only two had replied, so the number of replies is increasing steadily. To the extent that this process continues, this information could serve as one indicator of developing countries' needs regarding SPS measures.

Developing countries were requested to report technical assistance required for the four main types of capacity building introduced in section 2. A distinction was made between needs regarding:

- Rights, obligations and practical operation of the SPS Agreement
- Food safety
- Animal health
- Plant health.

Developing member countries were also requested to specify specific concerns regarding these categories.

Tables 2 and 3 below illustrate the variation and diversity in the perceived needs of two Norwegian partner countries, Uganda and Indonesia.

One would expect that a country's perceived needs reflect a number of different factors such as the level of integration into the world trading system, the structure of a country's exports and the level of development. Countries already integrated into the trading system would generally not demand information about how the WTO works but would for instance need training in assessing risk.

The expectations above are in accordance with the results presented in the two tables below. Indonesia does not require support on rights and obligations under the SPS Agreement, while Uganda, a less integrated country, does. Uganda reports no needs regarding food safety and animal health. Most needs are identified in the area of plant health, reflecting a high level of exports of products of plant origin. Indonesia, on the other hand, with its diverse export base of agricultural products, identifies a number of different needs.

Table 2: Need for technical assistance: Uganda

Technical assistance requirements:					
	Information	Training	Infrastructure: (Hard and/or Soft)	Specific concern	Other
Rights, obligations and practical operation of the SPS Agreement	<p>Conferences, seminars and workshops:</p> <ul style="list-style-type: none"> - Introduction to the WTO and the inter-national trading systems - Presentation of the SPS Agreement and related issues 	<p>Specific understanding of the SPS Agreement by the technical people:</p> <ul style="list-style-type: none"> - Implementation of transparency - Provisions, applications of risk analysis - Determination of appropriate level of protection - Recognition of equivalence - Regionalization - WTO dispute settlement procedure and analysis of SPS related trade disputes 		<ul style="list-style-type: none"> - Limited awareness of SPS Agreement nationally at technical, policy public and private sector levels - Limited ability to organize awareness seminars - Limited capacity to attend international conferences - Limited technical persons - Facilitation of a trained person to train others 	
Food safety					
Animal health					
Plant health	<ul style="list-style-type: none"> - Up dating of national regulatory framework - Absence of regulations despite the presence of laws - Pest lists and distribution maps - Creation of national data for other countries import's requirement 	<p>Training of inspectors on risk assessment, inspection, quarantine diagnostics and certification procedures</p>	<ul style="list-style-type: none"> - Capacity building including building of a central and regional referral plant quarantine diagnostic laboratories - Equipment, computers, CD-ROMs and databases 	<ul style="list-style-type: none"> - Limited pest identifiers - Training in risk analysis and diagnosis techniques - Upgrading of the Central Post Entry Phytosanitary Laboratory - Establishing satellite laboratories at main entry points 	<ul style="list-style-type: none"> - Designing cost recovery mechanisms for sustainability - Processing and storage facilities for laboratory specimens
Contact details	<p>Mr. Okaasai S. Opolot Head Phytosanitary Inspection Services, Ministry of Agriculture, Animal Industry and Fisheries, P. O. Box 7065, Kampala Uganda</p>				

SOURCE: WTO 2002A

Table 3: Need for technical assistance: Indonesia

Technical assistance requirements:					
	Information	Training	Infrastructure: (Hard and/or Soft)	Specific concern	Other
Rights, obligations and practical operation of the SPS Agreement					
Food Safety	<ul style="list-style-type: none"> • Workshop on technical regulation (Good Regulatory Practice) • Workshop on implementation of SPS in developed countries • Developing data base system for SPS notification body • Improving capacity building on SPS implementation in Indonesia 	Overseas/in house training	Laboratory equipments (testing, monitoring etc.)	Determination of pesticide residue values on horticulture produces for the establishment of national maximum residue limits of pesticides (risk analysis)	
		Advice, technical expertise, training and donation	Food safety programmes and consumer education	Developing national legislation on food safety control system including national law and regulation, in particular of food of animal origin in order to achieve international equivalence in quality assurance system	
Animal Health	<ul style="list-style-type: none"> • Workshop on technical regulation(Good Regulatory Practice) • Workshop on implementation of SPS in developed countries • Developing data base system for SPS notification body • Improving capacity building on SPS implementation in Indonesia 	Advice and Technical expert		<ul style="list-style-type: none"> - Processing technology - Fumigation and hyrosterilization 	
		Training on Pest Risk Analysis for Animal		<ul style="list-style-type: none"> - Establishment of risk assessment for animal 	

Plant Health	<ul style="list-style-type: none"> • Workshop on technical regulation(Good Regulatory Practice) • Workshop on implementation of SPS in developed countries • Developing data base system for SPS notification body • Improving capacity building on SPS implementation in Indonesia 	Training on tropical fruit flies identification	<ul style="list-style-type: none"> - Training in seed health testing for fungi, bacteria, virus, nematodha - Training in Vapor Heat Treatment (VHT) and VHT equipment 	<ul style="list-style-type: none"> - Establishments of an electronic data base on plant health in Indonesia - Reference of insect collection for specific exotic groups for Indonesia - Establishment of seed health testing laboratory - Research on Plant Treatment 	
			<ul style="list-style-type: none"> - Equipment (monitoring and identification kits, camera, microscopes, computer) - Technical expertise - Equipment (PCR ; polymerase chain reaction) 	Monitoring, surveillance, identification and control: <ul style="list-style-type: none"> - pest in general - fruit flies, CVPD and Fusarium wilt 	
		Technical expertise on pest insect taxonomy	Equipment for the research on fruit fly Biosystematic	<ul style="list-style-type: none"> - Reseach on fruit fly biosystematic and skill on pest insect taxonomy - Capacity building/infrastructure for plant pest and diseases (pest and diseases clinics) 	
Contact details	<p>Center for Standardization and Accreditation, General Secretariat of the Ministry of Agriculture, the Republic of Indonesia Jl. Harsono RM. No. 3 Ragunan Jakarta 12550 Indonesia Tel/Fax: 62 21 788 42043 E-mail: sps_ind@deptan.go.id</p> <p>National Agency for Agriculture Quarantine, the Ministry of Agriculture, the Republic of Indonesia Jl. Harsono RM. No. 3 Ragunan, Jakarta 12550 Indonesia Tel/Fax: E-mail: caqsps@indo.net.id</p>				

SOURCE: WTO 2002B

The main strength of using responses to the questionnaire as an indicator of needs, is that it provides a systematic review of perceived needs among developing countries. Apart from the variations in the format of tables 2 and 3 and the fact that not all countries have undertaken such surveys, there are however, four main weaknesses with this measure of assessing needs in developing countries.

Firstly, the recipient country does not set any *priorities* between the different needs, but rather seeks to pinpoint the most relevant alternatives. Secondly, this pinpointing is not necessarily *representative* of the actual problem the country is facing, but reflects the perception and competence/background of the person in charge of writing the report. A person with a background from food safety issues will probably primarily identify needs regarding food safety issues and neglect the needs regarding plant health issues. Identification of needs also vary across fields; for example, a veterinarian and a lawyer will identify different needs. A representative needs assessment therefore demands involvement from a number of different institutions and persons. This is typically not the case for developing countries where few persons and institutions are involved in the process. For instance, in the Ugandan case, only one contact person is referred to, while in the Indonesian case (table 2) different contact persons are noted for each field.

Thirdly, not all co-operating partners are members of the WTO and they therefore do not report such an assessment. Nepal is one such case, and a relevant one since Norway has initiated projects aimed at increasing exports of honey from Nepal. Finally, as the indicator in the previous section, questions are addressed to government officials - not exporters, thus it might not adequately reflect problems that are important in terms of exports. In section 4.3, we will discuss measures with a direct link to exporters.

In order to facilitate a process where members report their needs to the WTO, Norway may provide financial or technical support for undertaking such an assessment. Apart from Uganda, only Malawi of Norway's (main) co-operating partners has undertaken such an assessment. Of other co-operating partners, Sri Lanka has made an assessment. The decision of whether Norway ought to support such assessments in other partner countries, should be based on general principles for allocating foreign aid. It is important to reduce the bias of the response by involving different persons with different backgrounds both in the recipient country and in Norway.

Participation in the SPS Committee - specific trade concerns

Developing countries to some extent voice their concerns about SPS measures limiting their exports to the relevant importing countries, either individually or through regional organisations such as ACP or SADC. We are not aware of any systematic overview of these concerns apart from the work undertaken in the SPS Committee.

The SPS Committee includes all WTO governments and meets three times per year. It is a forum that discusses specific trade concerns, and monitors the use of international standards. The Committee also discusses needs for technical assistance.

The Secretariat of the WTO has each year since 2000 prepared a paper summarising the specific trade concerns that have been brought to the attention of the SPS Committee. The last published paper is from 2001 (WTO 2001c), although a revised version (rev.2) is under publication. The issues are divided into food safety, animal health and plant health issues and listed in alphabetical order according to the country maintaining the measure in question.

Up until November 2000, around 80 cases had been reported and the largest number of cases (28) were related to animal health and zoonoses. Although developed countries are the main group of countries accused of maintaining undue SPS measures, an increasing number of developing countries such as Brazil, India, Argentina, Korea, Mexico and Venezuela have been accused of implementing unfair SPS measures. 12 cases were raised against the European Union compared to 6 against the United States, indicating that the SPS measures applied in these two import markets are of vital importance to exporting countries (see sections 3.2 and 3.3).

Table 4 gives an overview of trade concerns raised or supported by developing countries against the European Union.

Table 4: Trade concerns raised by developing countries against the EU

<p><i>Food safety</i></p> <ul style="list-style-type: none"> • Information on dioxin (Malaysia) • Emergency measure on citrus pulp (Brazil) • Measure on establishments operating in the animal feed sector (Argentina) • Maximum levels for certain contaminants (aflotoxins) in foodstuffs (see Appendix 2) • Trade restrictions in response to cholera (Tanzania, Kenya, Uganda and Mozambique) <p><i>Animal health</i></p> <ul style="list-style-type: none"> • Measures (banning of cosmetics containing bovine material, banning the use of certain specified risk material and restrictions on gelatin imports) related to BSE (Brazil, Chile, Argentina, Colombia, Mexico and Thailand). <p><i>Plant health</i></p> <ul style="list-style-type: none"> • Citrus canker (Argentina, Brazil, Chile, South Africa and Uruguay) • Elimination of protected zones within the Community (Uruguay, Chile, Mexico, South Africa). <p>Source: WTO 2001c,</p>

Appendix 2 presents one of these cases (aflatoxins) in detail, and illustrates the information available from this source. For cases brought before the Committee, the appendix shows that this source of information regarding developing countries' needs *contains information about the countries involved, the relevant documents and the current status of the problem, including an eventual solution to the problem*. As such, this paper about specific trade concerns represents a valuable source of information regarding different needs.

There are similar problems with this indicator as in the previous section (priorities, bias between professions and between exporters and bureaucrats). In addition, not all developing countries participate in the SPS Committee and are therefore not able to protest if a SPS measure is to their disadvantage.⁸ Since all activities in the Committee are demand driven, the identification of trade concerns is biased toward the countries that are able to voice their interests.

⁸ In a number of interviews we conducted with delegations from both developing and developed countries in Geneva, it was revealed that very few developing countries participate in the SPS Committee. Another fact which supports this observation is that developing countries, particularly low income countries, notify relatively fewer SPS measures than other members (see Henson and Loader, 2000: Table 9).

Norway and other donors may therefore identify ways of providing support for increased participation of developing countries in the SPS Committee. In order to be proactive, Norway may also participate actively in the SPS Committee and report successively to the Norwegian Ministry of Foreign Affairs about specific trade concerns raised by developing countries. Minutes from these meetings represent a valuable source of information.

4.2 Veterinary reports and third country lists

A number of importing countries conduct veterinary inspections in exporting countries. We limit the presentation by focusing on veterinary inspections undertaken by the EU.

As regards the European Union such inspections are undertaken by the Food and Veterinary Office (FVO), whose mission is to monitor, report on and assist in the enforcement of EU legislation on food safety, animal health, plant health and animal welfare systems in member countries and third countries exporting food, plants or animals to the Union.

The last published annual report from the FVO in 2000, states that the Office yearly undertakes around 250 inspections, of which 80% are related to food safety issues. A major part of the inspections are undertaken in member countries (around 55-60%), while around 20% are undertaken in third countries (other than members, applicant countries and EFTA countries). Not all requests for inspections are granted (European Commission 1999, 2000b).

Four main *criteria* have determined the missions to third countries during 2001 and 2002 (European Commission 2000c, 2001a).

- the volume of trade in relatively high risk products (i.e. live animals and products of animal origin, including fish).
- the nature and frequency of rapid alerts (see section 4.3) for food safety, animal health or plant health.
- the results of previous inspections, particularly cases where weaknesses have been revealed.
- requests from third countries for approval to export to the EU.

For the first semester of 2002, nearly half (10 missions) of the inspections in third countries were related to fish products. They include inspections in Angola, India, Kenya and the Philippines.

For all inspections carried out by the FVO, a report is published, which after consultation with the competent authority in the inspected country is published on the internet.⁹

A number of different inspections are carried out and the FVO distinguishes between (see http://europa.eu.int/comm/food/fs/inspections/index_en.html):

⁹ See http://europa.eu.int/comm/food/fs/inspections/index_en.html.

- Veterinary Inspections (products of animal origin)
- Plant Health Inspections
- Contamination of Food and Feed Materials Inspections
- Food Hygiene Inspections
- Food Irradiation Inspections
- Genetically Modified Food Inspections
- Pesticides Inspections
- Organic Farming Inspections

In terms of the number of countries inspected, most inspections address veterinary issues. Veterinary inspection reports from 112 countries are at present published on the internet, including reports from some of Norway's developing partners. Reports, particularly for fish products, are available from Angola, China, India, Mozambique, Nicaragua, Nigeria, Pakistan, South Africa, Sri Lanka, Tanzania, Vietnam, Uganda and Zimbabwe.

The main strength of veterinary reports is that they provide a lot of information. The mission report generally presents the legal basis for its study (the relevant Council Directives) and provides background information (production, trade information and previous experience with trade). Main findings and conclusions are structured along central dimensions such as competent authority, legislation, laboratory services, inspections and monitoring of establishments, issuing of export health certificates and the existence of pesticide residue monitoring plans. Finally, the report provides a summary and recommendations, including whether the country should be able to export to the European Community and thereby be put on the third country list.

Although veterinary reports form a good basis for evaluating a country's needs, this indicator also has one main drawback: The lack of inspection reports for a number of potentially exporting developing countries. The criteria for sending a mission presented above may leave out some countries because they are unimportant as measured through trade flows, or they lack a competent authority or do not have a proper programme for residues. This is particularly the case for non-veterinary reports. Apart from veterinary inspection reports, hardly any inspection reports are (publicly) available for Norwegian co-operating partners regarding other products, including plant health issues, contamination, food hygiene or pesticides.

We have also considered whether it is possible to track the removal of countries from third country lists and thereby identify certain needs for development assistance.

Two sets of lists are available:

- i) the list of food products, which is linked to the list of the third countries, from which particular firms are permitted to dispatch food products to the European Union.¹⁰

¹⁰ Confer http://forum.europa.eu.int/irc/sanco/vets/info/data/listes/list_prod.html.

ii) the list of third countries and for each country the food products for which a list is available

(see http://forum.europa.eu.int/irc/sanco/vets/info/data/listes/list_all.html).

The lists only provide information about countries that are currently allowed to export, but do not present information about countries which have been removed from the list. If one wanted to search for countries which have been removed, one would have to search through a long history of amendments to particular directives. This seems to be a cumbersome procedure which is not pursued further in this report.

The positive lists provide a direct indication of the countries which are not eligible for exporting to the EU. In this sense, the lists are important indicators of needs of developing countries. As tracking the changes to the lists in the preceding manner does not seem a suitable approach, an alternative is for Norwegian delegates in the Standing Committee on the food chain and animal health to report to the Ministry of Foreign Affairs on specific changes that affect developing countries. WTO's minutes from these meetings could serve as an interesting starting point for such reports.

4.3 Detentions and alerts

Detentions and alerts have one main advantage in comparison to the previously applied measures. They are directly related to the problems faced by exporters. Detentions and alerts in most cases lead to a direct cost to the exporter although we are unaware of any empirical studies of these costs.

One drawback of such measures is that they only cover products that have faced problems at the border of the importing country – not potential products which were not exported in the first place because the exporter knew they would not comply with the regulations in the import market.

The EU

The scope of the rapid alert system is limited to consumer products (food and industrial products). The Rapid Alert System for Food and Feed (RASFF) deals with two types of notification:

- Alert notifications. Notifications relating to products which are on the market and which represent a serious risk to the consumer.
- Information notifications. Notifications relating to products presenting a risk to the consumer but where the products are presumed not to be on the market (stopped at the border, 'best before date' or for which the risk is limited).

Each year a report presents data of the number of notifications, the sources of contaminations, the products involved, the origin of the notifications and the countries involved. The data applied in this sub-section is taken from the annual report from the RASFF for the years 2000 and 2001 (European Commission, 2000d and 2001b). Data derived from the RASFF (both alerts and information notification) will in the following be used to illustrate

problems developing countries face when exporting to the European Union. We distinguish between countries, product categories and types of problem.

Region and source of contamination

Most notifications are for Asia and Europe, while there are few notifications for Latin America and Africa. In 2000 there were 473 notifications: 72% (341) of these were for Europe/Asia, compared to 708 notifications in 2001, of which 82% (580) were for Europe/Asia.

The following table groups countries in a similar pattern as a corresponding analysis of detentions in the US (see the following sub-section). We distinguish between chemical and microbiological notifications.

Table 5: Notifications (alerts and non-alerts) subdivided into regions and category of contamination

Reason for Contravention		Africa	America ¹¹	Europe	Asia	Total
Chemical	2000	44 %	64 %	35 %	64 %	55 %
	2001	61 %	73 %	60 %	68 %	65 %
Microbiological	2000	52 %	35 %	51 %	35 %	41 %
	2001	29 %	20 %	30 %	30 %	29 %
Others/not determined	2000	4 %	1 %	14 %	1 %	5 %
	2001	10 %	7 %	11 %	3 %	6 %
TOTAL	N 2000	48	84	122	219	473
TOTAL	N 2001	51	74	238	342	708 ¹²

The table reveals the following pattern:

- Africa has faced an increase in chemical notifications from 44% (of its total notifications) in 2000 to 61% in 2001. During the same period, there has been a decrease in microbiological notifications from 52% to 29%.
- For America, the relative number of chemical notifications increased from 64% in 2000 to 73% in 2001; countries in South America have faced an increasing number of chemical notifications. America has a higher share of chemical notification than other regions.
- Europe has, however, the highest increase in chemical notifications, from 35% in 2000 to 60% in 2001.

¹¹ America includes North America, Central America, South America, the Caribbean and Oceania

¹² The total for 2001 includes 3 notifications where the region is unknown.

Asia has had a rather stable distribution of notifications for these years, but is relatively biased towards chemical notifications.

Data on notifications by country is also available and table 6 below presents this data. China, Iran, Turkey and Thailand faced a serious number of alerts both in 2001 and in the previous year. In addition to China, a number of Norwegian development partners in Asia, including Vietnam, India and Bangladesh, have been notified.

As measured by the number of notifications, most problems seem to stem from Asian countries, including our partner countries in the region.

Table 6: Notifications per notified country¹³

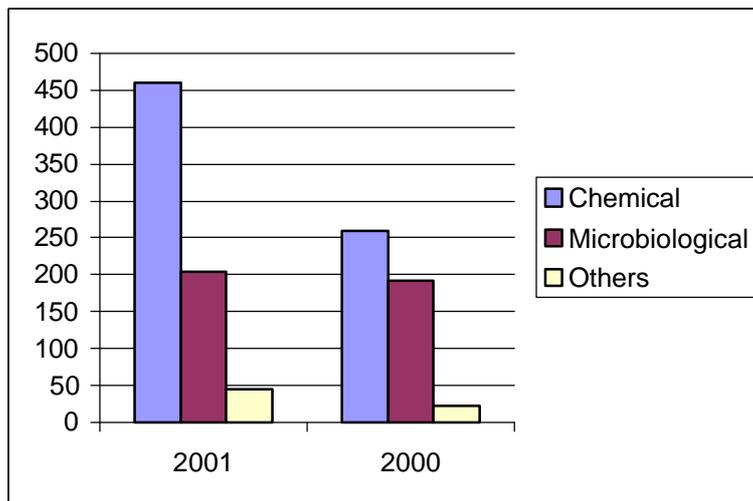
Country	2001	2000	Abs. change
<i>China</i>	71	32	39
Iran	69	39	30
Italy	57	13	44
Turkey	44	29	15
Thailand	33	24	9
Germany	31	17	14
<i>Vietnam</i>	31	6	25
Brazil	28	24	4
Spain	26	8	18
France	24	19	5
Greece	24	5	19
UK	21	14	7
<i>India</i>	20	18	2
<i>Indonesia</i>	17	9	8
Netherlands	16	11	5
Malaysia	13	9	4
Denmark	13	6	7
Argentina	12	10	2
Morocco	11	7	4
<i>Bangladesh</i>	9	5	4
Tunisia	8	4	4
Egypt	7	7	0
Ivory Coast	6	7	-1
Senegal	6	7	-1
Ecuador	6	4	2
Chile	4	1	3
Ghana	4	1	3
Botswana	4	0	4
<i>South Africa</i>	3	3	0
Colombia	3	2	1
Philippines	3	2	1
South East Asian	3	1	2
<i>Zimbabwe</i>	3	1	2
Hong Kong	3	0	3
<i>Pakistan</i>	2	5	-3
Taiwan	2	5	-3
Korea - South	2	4	-2
<i>Tanzania</i>	2	4	-2
<i>Nicaragua</i>	2	0	2

¹³ Presented figures for all countries which had 10 or more notifications in 2001, and for countries having 2-10 notifications, we have only presented figures for developing countries. Norwegian development partners are placed in italics

Region and source of contamination

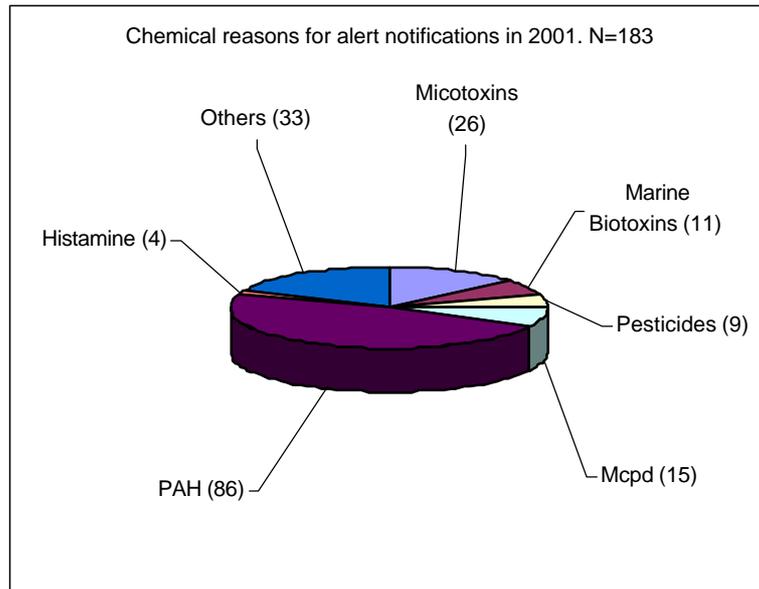
The following figures categorize notifications according to the type of contamination. It is notable that chemical notifications increased from 55% of all notifications in 2000 to 65% in 2001, while there was a decrease in microbiological notifications from 41% to 29% in the same period.

Figure 1 Notifications (alerts and information) according to source of contamination.



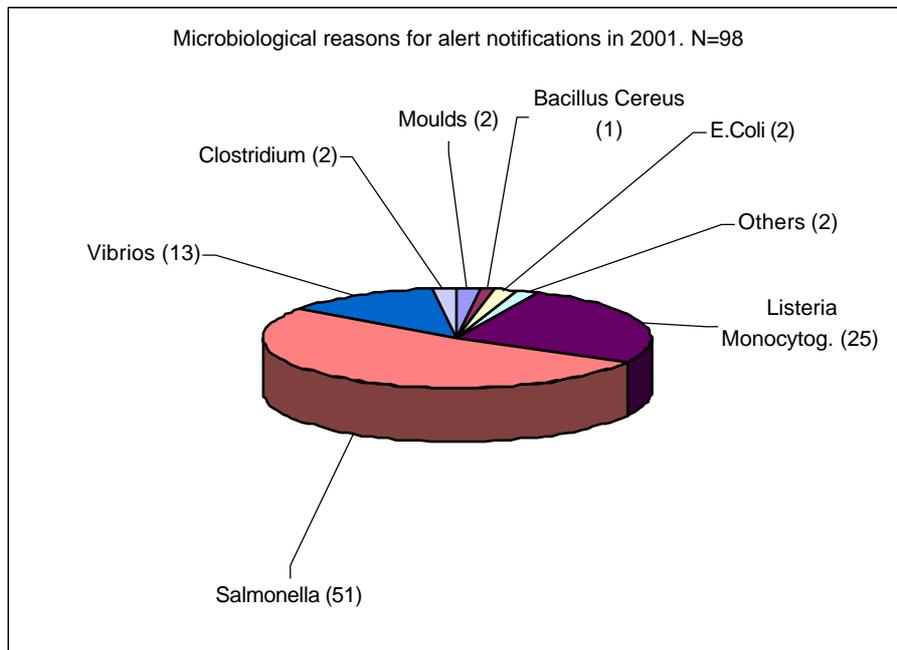
If we only look at *alerts*, most chemical reasons for alerts in 2001 were related to polycyclic aromatic hydrocarbons (PAH; 86), micotoxins (26), MCPD (15), biotoxins (11) and pesticides (9). As measured by the number of *information* notifications, micotoxins constitute more than 50% of the cases.

Figure 2: Chemical reasons for alert notifications, 2001



The most important microbiological reasons for alert notifications in 2001 were salmonella (51), listeria (25) and vibrios (13). These are all bacteria, which arise when appropriate hygienic measures are not taken.

Figure 3: Microbiological reasons for alert notifications, 2001



Product category and source of contamination

The previous subsection does not shed light on the fact that different products face different types of problem.

Figure 4: Notifications according to product categories, 2001

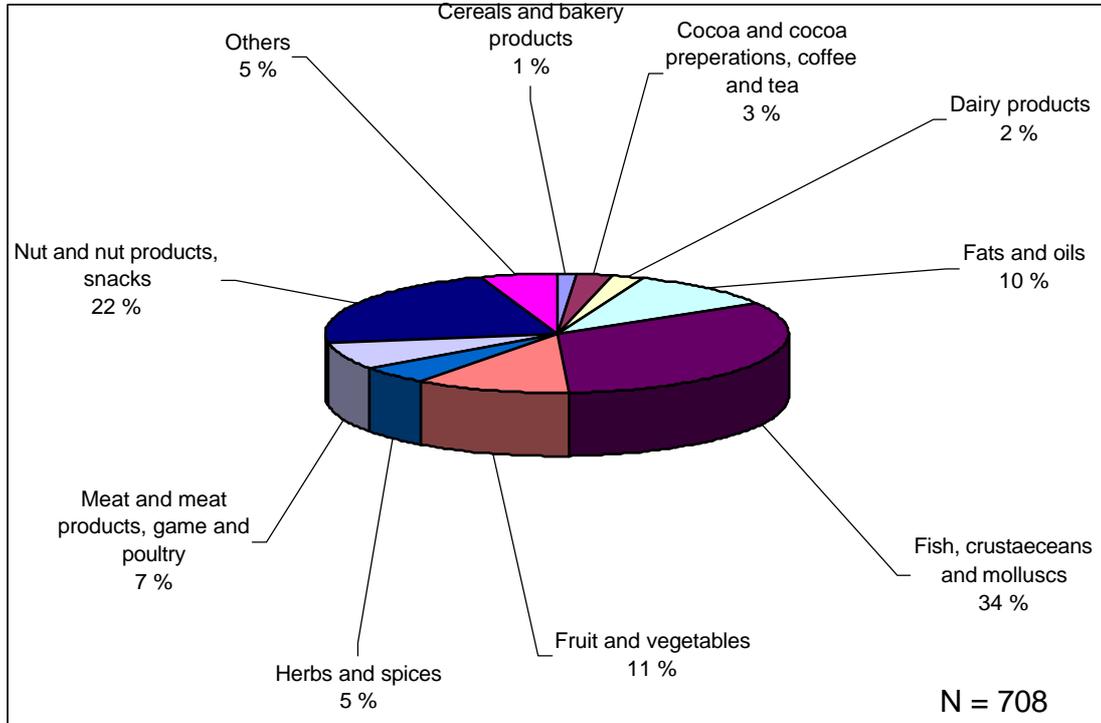


Figure 4 above includes both alerts and information notification. From figure 4, it is revealing that most problems in 2001 are related to fish products (34%), nuts (22%), fruit and vegetables (11%), and fats and oils (10%). If we compare this with the corresponding data from 2000, the same pattern emerges, but fats and oils are only 1% (see table 7). If we look at alerts only, figure 4 underestimates problems regarding fats and oils (24% of alerts) and meat products (12%), while it overestimates the problems for nuts (6%).

Table 7 provides even more information, by cross-classifying notifications across product categories and categories of contamination. This table also controls for scale effects, whereby increasing import volume normally leads to an increasing numbers of alerts.

Table 7: Notifications subdivided by descending import categories and category of contamination. %.¹⁴

	2000				2001				Import EU Excl. E15 in USD mil
	Chemical	Microbio- logical	Others	Total	Chemical	Microbio- logical	Others	Total	
Fruit and vegetables	92	2	6	100 (65)	83	9	8	100 (76)	10 584
Cocoa and cocoa preparations, coffee and tea	100	0	0	100 (19)	79	5	16	100 (19)	9 585
Fish, crustaceans and molluscs	31	68	1	100 (165)	40	54	6	100 (232)	9 410
Meat and meat products, game and poultry	2	94	4	100 (52)	4	79	17	100 (53)	3 397
Fats and oils	67	0	33	100 (3)	100	0	0	100 (74)	3 019
Cereals and bakery products	100	0	0	100 (5)	56	11	33	100 (9)	2 445
Nut and nut products, snacks	98	1	1	100 (92)	96	4	0	100 (157)	1 760
Dairy products	4	76	20	100 (25)	33	60	7	100 (15)	1 114
Herbs and spices	86	14	0	100 (21)	83	9	9	100 (35)	579
Soups and sauces	75	0	25	100 (4)	100	0	0	100 (15)	267
Others	41	32	27	100 (22)	39	30	30	100 (23)	28 840
TOTAL	55	41	5	100 (473)	65	29	6	100 (708)	71 002

Fish is the third most important import category in the European Union but has a significantly higher number of notifications than the other product categories. In addition, nuts and oil faced significantly more notifications than what one should expect from the level of exports to the EU.

The problem with fish seems to be mostly microbiological (salmonella) although a rising tendency of chemical problems is noticeable.

Chemical problems seem mostly to apply to fruit and vegetables (83% in 2001), coffee and tea (79%), fats and oils (100%), and nuts (96%). Microbiological problems are mostly related to meat, fish and dairy products.

The US

We end this section by presenting similar; but older, data from the US.

The system of detentions and alerts in the US follows from the SPS regulations described in section 3.2: If the FDA requests a sample of a shipment, the importer is not allowed to distribute it until the results of the examination are

¹⁴ Import figures are taken from OECD, 2001. Data of notifications is derived from European Commission 2000d and 2001b.

available.¹⁵ If it appears that the product is in violation, FDA issues a Notice of Detention. The importer is given an opportunity to submit a petition to bring the product into compliance. If the product is refused, the importer is required to either re-export or destroy it.

In some instances a product may be *detained without physical examination* and is based on past history and/or other information indicating that the product may be in violation (for instance through alerts). In this case the importer needs to prove that the product meets FDA guidelines or standards.

In addition to data on detentions, data on import alerts is available. The purpose of these alerts is to identify and disseminate import information (problems commodity-wise, country-wise, violation trends, etc.). Based on these alerts, importers are identified which will face detention without examination.

The FDA has automated its import operations and created a database, U.S. Food and Drug Administration Import Refusal Reports (IRR), for OASIS, which is available at http://www.fda.gov/ora/oasis/ora_oasis_ref.html. This report replaces the previous Import Detention Report and only recounts the cases which have been refused entry into the US (after treatment to bring products into compliance with US requirements). Each month, the IRR is available sorted by country and by product. Import alerts are available at http://www.fda.gov/ora/fiars/ora_import_alerts.html.

By searching for specific products or countries in either the alert or detention report, the problems facing certain producers are revealed. For those cases where a product or country falls under the heading of detention without physical examination, it indicates that imports face serious difficulties. Summary reports are, however, not easily available and it is a cumbersome procedure to systematise this data. The following table represents the last published summary of the main types of problem faced by different groups of countries. It does not take into account the level of trade and whether producers have brought products into compliance after contravention.

¹⁵ This sub-section is based on http://www.fda.gov/ora/import/ora_import_system.html

Table 8: Contraventions cited for FDA import detention, June 1996-1997. %

	Africa	Asia	Latin America, Caribbean	Europe	Total
Food additives	0.7	7.4	1.5	5.8	5.0
Pesticide residues	0.0	0.4	21.1	1.7	7.7
Heavy metals	0.3	1.5	10.9	2.2	4.8
Mould	6.3	0.8	12.2	2.3	5.1
Microbiological contamination's	41.3	15.5	6.3	13.4	12.8
Decomposition	3.0	11.5	5.3	0.6	8.0
Filth	17.8	35.2	32.2	14.8	31.5
Low acid canned foods	1.3	14.3	3.6	35.9	12.5
Labelling	12.5	10.8	5.2	20.0	9.8
Other	16.8	2.6	1.7	3.3	2.8
Total	100.0	100.0	100.0	100.0	100.0
N	303	5784	3895	1184	11166

Source: FAO 1999

During the period analysed there were serious rejections of imports from Asia, Africa and Latin America due to microbiological contamination, filth and decomposition or basic hygiene requirements (see FAO, 1999 and Henson and Loader 2000). Limits on residues of pesticides and the use of heavy metals also represent serious problems for developing countries.

The data from US, confirms the overall picture from the EU although the problem with hygiene seems a more severe one . This probably reflects the fact that the US data is older than the data from the EU.

4.4 Summary of indicators of needs

As this section has revealed, there exist several indicators of developing countries' needs for SPS-related technical assistance, each of which has certain strengths and weaknesses. However, the indicators are not mutually exclusive, and where they complement each other, it makes sense to apply a set of indicators to map developing country needs. For instance, indicators of detentions complement indicators of requested assistance, by highlighting the impact of SPS requirements on exporters.

As measured by the number of notifications, we find that in the European market, most notification (alerts and information) for developing countries are for Asian countries, including Norwegian partners. Chemical notifications constitute 65% of all notifications, and a significant increase of chemical notifications can be revealed for African countries (and Europe). The most

important reasons for alerts are PAH, micotoxins and salmonella. Data from imports to the US reveals a similar pattern, but the problem with hygiene seems more severe.

The main drawback of all indicators studied in this section is that they are reactive, rather than proactive, and additional information may be needed to correct for this unfortunate bias. In order to be proactive, Norway may also participate actively in the SPS committee and report successively to the Norwegian Ministry of Foreign Affairs about specific trade concerns raised by developing countries. Based on a variety of indicators, Norway should provide financial assistance or technical support for undertaking assessment of needs in a sample of developing countries.

SNT claims that it is easier (less costly) to reduce the extent of microbiological problems than chemical problems. Microbiological problems are mainly related to non-appropriate hygiene while chemical reasons are related to the use of particular technologies (for instance for pressing oil from nuts) which are costly to change. Although costs could be lower for microbiological problems, the benefits of reducing contaminants could be higher in terms of export income. It is therefore not a clear cut issue which needs merit support. A further examination of benefits and costs of SPS-related technical assistance is given in subsequent sections. As a background for this discussion, we will first give an overview of technical assistance provided by other donors.

5 Technical assistance provided by other donors

In allocating SPS-related technical assistance, it is important to review what other donor organizations are doing, for two main reasons. One is to avoid duplicating the efforts of other donors, and to coordinate fresh activities with what is already being done. The other is to learn from the experience other donors have gained through technical assistance programmes. To the extent that the programmes of other donors have a fundamentally sound focus, and have met with success, one might even consider piggybacking on these programmes. In other words, rather than construct an independent programme of technical assistance, one might channel the funds available into the programmes established by other donor organizations. This report argues, however, that given the principles of allocation currently used by the main providers of technical assistance, most of them are not suitable alternatives to an independent programme.

Below, we review the programmes and priorities of some main providers of SPS-related technical assistance. These include international organizations such as the World Trade Organization (WTO), the Food and Agriculture Organization of the United Nations (FAO) and the World Bank. In addition, we examine technical assistance provided by the European Union and the United States. The technical assistance programmes of these organizations and countries are diverse and sometimes fragmented, and often SPS-related assistance is part of some greater programme of technical assistance. For this reason, an exhaustive review of all technical assistance that is directly or indirectly SPS-related is difficult to do, so the following review focuses on some main activities and criteria used in their selection. Besides the EU and the US, quite a few other donor countries have bilateral programmes of technical assistance. Other international institutions such as the standard setting institutions also have technical assistance projects. Due to time and resource constraints, we refer to official sources of information about these programmes and projects.

5.1 The WTO

The WTO is primarily concerned with negotiating and administering rules for world trade. However, it also lists technical assistance and training for developing countries as one of its main functions.¹⁶ The resources for SPS-related technical assistance within the WTO system are limited, so assistance takes the form of courses and seminars on SPS rules and their implications. In the typology of capacity building (section 2), what the WTO offers therefore falls mainly into the categories of information and training. Technical assistance is made available on request from developing countries, so the basic principle of allocation is how vocal countries are in expressing their needs.

¹⁶ http://www.wto.org/english/thewto_e/whatis_e/whatis_e.htm

Providing information of donor activities

Though technical assistance is in practice a marginal part of the WTO's work, the organization is attempting to play the role of coordinator of technical assistance. To this end, it has conducted an extensive mapping of developing country needs and of technical assistance offered by developed countries. As mentioned in section 4.1, in 1999 the Secretariat of the WTO prepared a questionnaire, addressed to both developed and developing countries, with the objective of identifying any SPS-related assistance which has been provided, requested or received (WTO, 1999). Initially, only about 20 countries replied, mostly developed countries. Their replies suggested that most technical assistance given is in the form of training or soft infrastructure development (WTO, 2000b). The work on mapping technical assistance is ongoing, and further replies to the questionnaire are being included as they are received. Table 1 in section 1 shows the activities reported by Norway, and illustrates the type of information available from the questionnaire. As the table reveals, most Norwegian activities have been related to food safety issues, particularly in Southern Africa. Most projects are in the areas of training and soft infrastructure development.

5.2 The FAO

The FAO has a long history of providing technical assistance in the area of food control. Capacity building has been a major function of the FAO for the last three decades, i.e. long before the signing of the SPS Agreement. The focus of the FAO is, however, much wider than promoting exports of agricultural products. The emphasis is on improving food security, in terms of availability of food and nutritional value, and on improving the rural quality of life. The problems addressed by FAO technical assistance are therefore to a large extent domestic food safety problems, though a few projects are explicitly aimed at promoting exports. Out of 28 current technical assistance projects being implemented by the Food Quality and Standards Service, three are aimed directly at exports. And of 30 pipeline projects, only one has an explicit motive of export promotion. The following table of FAO technical assistance underscores its wide objectives.

Table 9: FAO areas of technical assistance related to relevant WTO Agreement

		WTO Agreements relating to food, agriculture, fisheries and forestry				
		Agreement on Agriculture	SPS Agreement		TBT Agreement	TRIPS Agreement
FAO areas of technical expertise	Food	Implementation issues relating to the Agreement and issues in the context of the multinational trade negotiations, including impact assessments on trade, food security and rural development	Risk analysis	Food safety (Codex)	Food quality and labelling (Codex)	Trademarks Geographical indications Patents Genetically modified organisms
	Agriculture – Crops			Plant health, environment	Eco-labelling Organic farming	Breeders' rights Farmers' rights Access to genetic resources Patent
	Agriculture – Animals			Animal health	Animal welfare, traceability	protection for agricultural chemical products
	Fisheries			Fish safety Codex	Fish labelling Eco-labelling Codex	
	Forestry			IPPC	Eco-labelling	
	National legislation and international instruments	Trade and environment law	Sanitary and phyto-sanitary law		Import and export legislation Customs law	Sui Generis Patents Geographical indications Breeders' rights Farmers' rights Access to genetic resources for food and agriculture Genetically modified organisms

Source: The FAO

Though early SPS-related technical assistance by the FAO focused on information and training, the focus of current assistance is on the development of soft infrastructure. Under its Umbrella Programme of technical assistance, a “Trade-related capacity building programme for agriculture, fisheries and forestry” is being implemented. Besides providing support for participation in multinational trade negotiations, this programme has three basic objectives: a) To train plant managers, quality assurance personnel, food inspectors, university professionals and auditors of quality assurance systems in basic food safety practices and systems, quality assurance systems and principles of risk analysis; b) To facilitate participation in the standard setting of the International Plant Protection Convention (IPPC), by training government experts; and c) to instruct legislation policy specialists, trade specialists and others in legislative instruments through which regulations and standards can be enforced. The basic focus is thus on human capacity building and regulatory reform.

Criteria for support

The FAO has a range of criteria by which to assess technical assistance projects. These include:

- The political will to improve food safety systems, and the readiness of institutions to translate technical assistance into concrete action
- The status of the food safety system and its ability to absorb technical assistance
- Recent problems in food exports due to non compliance with SPS requirements
- Potential to increase food exports
- Support already provided by the FAO or other organizations and the possibility of attracting further funds for the project

Though a set of formal criteria to assess projects exists, however, the practical application of these criteria to the selection of projects is weak. In practice, what governs the allocation of funds are political considerations.

5.3 The World Bank

The World Bank has funded a number of SPS-related projects since the introduction of the SPS Agreement. General trade-related assistance in fiscal year 1999 comprised about 25-30 per cent of total spending by the World Bank. Of these funds, about 5.1 per cent or \$412.15 million was spent on projects directly or indirectly related to SPS. SPS-related assistance has been given through four types of projects, see Wilson (2000):

1. Projects related to food processing and quarantine facilities
 - China 1993-2000: Animal and plant quarantine
 - Turkey 1992-1999: Modernize laboratories and residue control
 - Russia 1992-1995: Improve food processing facilities, disease control
 - Poland 1992-1995: Food processing facilities modernization
2. Animal related projects
 - Brazil 2000-2004: Animal and health protection
 - Hungary 1985-1991: Slaughterhouse modernization
 - Madagascar 1980-1988: Livestock vaccination
3. Projects related to crop production
 - Brazil 2000-2004: Animal and health protection
 - Vietnam 1994-1997: Pest management
 - Algeria 1988-1994: Locust control
4. General agricultural projects
 - Argentina 1991-1996: General agricultural export reform

The World Bank also cooperates with other multinational agencies on technical assistance. Notably, the World Bank is the implementing agent of the Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries, a joint programme of the WTO, the World Bank, UNCTAD, UNDP, IMF and ITC. The integrated framework has at its

objective to assist developing countries to include trade priorities in their development plans and Poverty Reduction Strategy Papers (PRSPs). The programme is currently at a stage where pilot studies in three developing countries have been conducted: Cambodia, Madagascar and Mauritania. The outcome of these pilot studies are diagnostic trade integration studies, assessing the competitiveness of the economies and the major impediments to participating in international trade. These diagnostic studies are meant to form the basis of an action plan for policy reform and priority technical assistance needs, which are in turn included in the PRSP, and presented to donors for financing. Based on the experiences from the pilot studies, similar studies in 11 other developing countries will be conducted.

Criteria for support

For the World Bank projects, the project appraisal documents reveal that a range of criteria is used to appraise potential projects. The various forms of assessments included are:

- Economic assessment: Cost-benefit analysis
- Financial assessment: Ability to co-finance project, fiscal impact
- Technical and institutional assessment: Ability to implement project
- Social and environmental assessment
- Participation
- Sustainability

In addition, how a project is related to assistance activities of other donors and past World Bank projects, and the commitment of the recipient to the project, are considered.

Cost-benefit analysis is thus one method by which the World Bank appraises potential projects. Among benefits, the World Bank counts increases in production and exports, and foregone costs e.g. in pest control. The impact on agricultural productivity is viewed as a salient benefit, and for this reason SPS-related technical assistance is often provided within some wider framework of agricultural assistance. Costs counted are investment and recurrent costs mainly associated with programme implementation, operation and maintenance. For each project, the net present value (NPV) in dollars is computed, and the Internal Economic Rate of Return (IERR). For instance, the Animal and Health Protection programme in Brazil is expected to have a NPV of \$259.6 million, a cost-benefit ratio of 2.9 (which means that benefits are 2.9 times costs), and an IERR of 35%. A sensitivity analysis for the IERR is also performed.

The alternatives considered in the appraisal documents, however, are usually different ways of handling the same problem in the same country. There is thus no explicit calculation of alternative costs, i.e. possible benefits foregone from not allocating the funds in question to a different problem or a different country. Since one cannot determine whether a cost-benefit ratio of, say, 2.9 is good or bad without comparing it to the ratio of an alternative project, an

isolated appraisal document does not inform allocation decisions very well. Nevertheless, if at the level at which allocation decisions are made, the ratios of benefits to costs of different projects are compared, this to some extent takes alternative costs into account. Critical voices from within the World Bank have, however, suggested that cost-benefit analyses are not given much weight in allocation decisions. A perception of project appraisals as clogging up the project pipeline appears to be prevalent in the organization.

As for the Integrated Framework, the choice of subject countries for the pilot studies is based on alternatives generated through consultation among the partners of the Integrated Framework and country departments of the World Bank and the IMF. The main criteria for selection are a demonstrated commitment by the developing country government to integrate trade into its national development strategy, and available resources in the World Bank and IMF country departments to conduct the studies. Cost-benefit analysis is not performed for projects in the Integrated Framework.

5.4 The EU

Though much of the development assistance of the European Union is in the domain of the member states, the European Commission also has substantial programmes of technical assistance. The system for technical assistance is a complex one featuring several Directorates-General (DGs), and it is currently being reviewed with a view to greater coordination. However, the system by and large functions as follows. DG Trade maps needs for technical assistance among developing countries, and these needs are then included in the more general programmes for development formulated by DG Development. DG AidCo is responsible for actually implementing the programmes. DG Sanco is consulted in pinpointing SPS-related requirements that are not being met, and in assessing whether specific improvements will be sufficient to meet requirements.

A general overview of the technical assistance activities of the EU is hard to find, but the extensive cooperation with the ACP countries provides a perspective on what kind of assistance is provided, and how assistance is allocated. An indicative list of projects is presented below.

Table 10: Indicative list of projects conducted by the EU in ACP countries

Country	Project title	Budget and duration
ACP except SADC	Pan African Programme for the Control of Epizootic diseases	EUR 72 million 1999-2004
Madagascar	“TA epidemiologist to the Directorate of veterinary services” “Epidemiological surveillance and construction of a laboratory for food hygiene” “Quality control on fishery products”	EUR 5.8 million
Eritrea	Fish quality and sanitary control project	EUR 140.000 2001-2003
Trad. suppliers of bananas	ACP of Special framework of assistance for traditional ACP suppliers of bananas	EUR 350 million 1999-2008
ACP	Strengthening of implementation capacity in ACP countries in relation to fishery products sanitary and quality controls	EUR 20 million 2002-2007
ACP	Pesticides Initiative Programme	EUR 29 million 5 year period
SADC	Southern Africa Animal Disease Control	EUR 20 million Implementation: 2002
Egypt	Potato Brown Rot Project	EUR 2.65 million 2000-2005
Yemen	Strengthening of Yemen’s fishery products quality control system	EUR 200.000 2001
Egypt, Israel, Jordan and West Bank Gaza	Regional animal health programme	EUR 1.4 million
Jamaica, Cameroon, Zambia and Ethiopia	Four seminars on SPS and trade-related issues by FAO and financed by DG Development	

Source: WTO (2001d)

Not all these projects are SPS-related; some focus on domestic issues, and some on improving export capabilities in general. In terms of the type of assistance offered, all four categories in the WTO typology seem to be covered, as the EU offers both information and training, as well as supporting the formation of human capital and technical equipment.

Criteria for support

For projects in the ACP countries, needs are identified through requests from the governments of these countries, and the requests are subjected to scrutiny by consultants to determine whether meeting the request is feasible. Essentially, a political process of consultation with the ACP countries determines which projects get ultimate approval.

5.5 The US

The support from the United States for trade-related capacity building has been an estimated \$1.3 billion for the 3-year period 1999-2001. Of these funds, a little less than \$12 million has been directly SPS-related.¹⁷ The major

¹⁷ <http://qesdb.cdie.org/tcb/overview.html>

recipients of these funds have been countries in North Africa, Latin America and the Caribbean, and Sub-Saharan Africa. Several agencies in the US are involved in technical assistance. For a list of projects implemented since January 1995, see WTO (2000c). The major implementing agencies are the Food and Drug Administration (FDA) and Department of Agriculture agencies such as the Food Safety and Technical Services Division (FSTSD), the International Cooperation and Development Program Area (ICD), the Animal and Plant Health Inspection Service (APHIS), the Food Safety and Inspection Service (FSIS), the Agricultural Research Service (ARS), and the Grain Inspection, Packers and Stockyard Administration (GIPSA). Most technical assistance is in the form of information, training and soft infrastructure development, through seminars and training for foreign officials or scientists.

Criteria for support

A wide range of factors is considered in choosing between technical assistance projects. Four main factors considered are whether a project (FAO/WHO, 2002):

1. will result in a demonstrable improvement in the regulatory, enforcement or technical infrastructure of the country or organization
2. is a response to an emerging or re-emerging international public health problem
3. is requested by UN organizations (e.g. WHO, FAO)
4. will improve US public health by increasing the ability to control public health risks associated with products exported to the United States.

Other considerations included are:

5. whether the project will conserve enforcement resources
6. if the project can be uniquely carried out by US government personnel instead of through other organizations
7. whether the project is necessary to support US foreign policy and/or trade objectives
8. whether the recipient has the fundamental legal authority and basic technical competence to address the issue and the ability to influence the public health in the target country or region

The United States also focuses on the degree to which a project leads to sustainable outcomes. In the evaluation of sustainability, the US finds it important that a project should:

- Be science-based
- Include partnerships with organizations that have proven expertise. This includes representatives of the public and private sector, and academia when appropriate.
- Include a regional component when appropriate
- Use “train-the-trainer” models when appropriate
- Address the issue of how the project/programme will continue if there is a change of personnel

- Include an evaluation component.

A lot of different considerations are thus made in allocating US technical assistance, some of which match the assessments performed by the World Bank, but in addition political considerations and the impact on US public health are taken into account. Though several of the above factors are components of a cost-benefit analysis, there is no explicit mention of such an analysis being part of the assessment of US projects. There is also no clear specification of how the various criteria for allocation are ranked or traded off against each other.

5.6 Summary of donor activities

What transpires from the above review of the technical assistance activities of some main donors, is that the area of basic information and training appears to be covered by quite a few agents (cf. the WTO typology presented in chapter 2). Though some work is being done on developing soft infrastructure, there are likely further needs in this area requiring assistance. Technical assistance for the formation of hard infrastructure seems sparse, however, and is thus open to further exploration. This conclusion is in line with the findings of the WTO (2000b).

For most of the major donors reviewed, how vocal developing countries are in expressing their needs, and political considerations, are decisive factors in the allocation of SPS-related technical assistance. There is thus no guarantee that the funds flow to the countries where they would have the greatest effect on sanitary capacity, export opportunities or economic development, nor do they necessarily flow to the countries where the need for assistance is the greatest. Without explicitly basing allocation on what one can achieve by providing technical assistance, there is not much reason to expect a significant impact of assistance on development. In simple terms, the major donors allocate assistance in too haphazard a way for it to work. Though the World Bank appears to be an exception to this rule, the impact of its cost-benefit analyses on allocation decisions seems dubious. Nevertheless, the World Bank assessment approach merits further examination, as it provides a specification of relevant benefits and costs of SPS-related technical assistance.

6 Benefits of technical assistance

How to assess benefits from technical assistance ultimately depends on the objectives one has for using this kind of assistance. At a fundamental level, the basic objective is the same as for other types of development assistance: to alleviate poverty, promote equality, promote economic growth, secure rights and so on. Ideally, then, to fully assess the impact of technical assistance measures, one would have to use some comprehensive objective function which weighs the different aims, and the interests of different groups.

Taking a great many objectives into account seems an arduous task in terms of practical aid allocation, however. Resources in aid agencies are arguably better conserved by using some simple, objective criteria of allocation. The basic view of this report is therefore that measuring benefits should be done in a way that is simple and manageable, focused and consistent with the basic objectives of SPS-related technical assistance. In line with this, the report essentially recommends that the benefits of technical assistance projects be measured in terms of the export revenue generated from their implementation, while taking into account donor preferences as regards countries at different levels of development. Below, we elaborate on the basic reasons for this restricted view of benefits, and suggest methods for assessing the export revenue potential realized by technical assistance.

6.1 What to measure?

The fundamental reason for providing SPS-related technical assistance, is that SPS requirements are a binding constraint on the exports of poor countries, and hence an impediment to their economic development. The basic objective of any SPS-related technical assistance project is thus to remove the constraint on exports and hence promote development. By implication, it is appropriate to gauge the benefits of a technical assistance project by how well it meets this basic objective. We therefore suggest measuring benefits by the export revenue generated by a project. In addition, to take into account the fact that increased exports have more of an impact on poorer countries, export revenue potential should be adjusted for levels of development. This could be done by deflating export revenue projections by GDP/capita levels, or using donor preferences, such as a partitioning into main partner countries and partner countries, as a point of reference.

Measuring benefits as export revenue, adjusted for levels of development, has the advantage that it is fairly simple, focused and consistent with the objectives of SPS-related technical assistance. Since the aim of this report is to suggest criteria for the allocation of assistance between SPS-related projects only, a narrow approach to benefits is fitting. If one were to compare SPS-related projects to other kinds of development assistance projects, however, one would have to use a more comprehensive notion of benefits. In the wider scheme of things, such a comparison should probably be made, but this is beyond the scope of this report.

Underlying the focus on export revenues, is an idea that exports are an important factor in economic development. Openness to trade is generally believed to be beneficial to countries, by allowing specialization in products in which countries have a comparative advantage. Though openness to trade is in the interest of a country as a whole, however, the distribution of the gains is uneven, and some groups might lose from greater openness. In the present case, access to export markets could drive up the domestic price of a product, which would be to the disadvantage of domestic consumers. Whether such a price increase occurs depends on a range of factors, such as the degree of competition in domestic markets, the extent to which products not meeting SPS requirements are still peddled on the domestic market, and more. More importantly, however, increased exports also have an impact on domestic factor prices. Specifically, for a labour intensive agricultural sector, increased exports could mean increased wages. To the extent that poor domestic consumers are also domestic workers, the impact on their welfare level is ambiguous. The immediate impact of increased exports on the welfare of the poor thus requires closer empirical scrutiny. It is, however, doubtful if trade policy is the most efficient instrument for correcting domestic distributional imbalances.

Our main reason for rejecting the cost-benefit frameworks suggested by others, is that their specification of benefits seems arbitrary in the present context. The cost-benefit approach of the World Bank is a pertinent example. For animal and plant health projects, the benefits considered in project appraisal documents are the value of increased production of animals and plants resulting from the project, reduced costs of disease control (vaccinations, pesticides etc) made redundant by the project, and incremental exports due to the project in question (World Bank, 1999). Though other aspects than exports are counted by the World Bank, the benefits considered are mainly those that accrue to producers. The impact on domestic consumers, for instance in terms of price changes on agricultural products, is not included in the net benefits. Though increased food safety is noted as a consequence in the social assessment of the project, it is not quantified and included in the cost benefit analysis and the calculation of the Internal Economic Rate of Return (IERR). In ranking projects, these factors might have an impact if included. More importantly, there is nothing in the underlying aims of SPS-related technical assistance that suggests that it is more relevant to include producers than consumers.

An attempt at providing a general view of the benefits of seafood safety, is recounted in Cato (1998). Included is the impact on input suppliers, fishers, fish processors, seafood distributors, consumers and the government, in both the regulated and other affected countries. Though the focus here is on valuing SPS regulation, not SPS-related technical assistance, the perspective could be honed to fit the latter issue. The problem is, however, that no attempt is made at weighing and aggregating the different components of benefits, and that only short-run benefits are included, which again seems arbitrary. An additional disadvantage given the present focus, is that there is no explicit mention of exports in this framework.

6.2 How to measure benefits?

Based on these considerations, focusing on export revenue and its impact on development, is the approach to benefits suggested by this report. How to assess the export revenue generated by a technical assistance project, and how to take into account the impact on development and donor preferences between countries, is specified further in what follows. This includes both a few important general points on the measurement of benefits, and a suggestion of proxies that can be applied to calculate export potential in practice.

General points on measurement

In calculating the exports a certain type of capacity building would generate, the question is how large a pent up export potential is constrained by SPS requirements. One type of capacity building can improve market access for one or more products, and the sum of the export value generated is thus the relevant measure of benefits. There might also be adverse effects on exports in other sectors, which ought to be subtracted. Technical assistance in a sense works as a subsidy for certain industries, thus drawing resources from other industries, which might reduce exports from industries not benefiting from assistance. The export potential of assistance equals the potential export revenue generated net of these distortionary effects.

Moreover, one should consider the potential for increased exports not just in the near term, but also the impact these exports might have on future exports, in the industry in question or in other industries, through improvements in a country's resource base. Ideally, the present value of exports should be calculated to see whether a technical assistance project justifies its costs. In this way, there is an implicit consideration of the *sustainability* of the effects of a project.

An assessment of benefits must be limited to the effects that are directly attributable to the project in question. In other words, one should compare the situation after a project has been implemented to what the situation would have been without the project, thus calculating the net benefits of the project. Projects that involve duplication of what other donors are doing, or that provide assistance to capacity building that the private or public sector would have undertaken anyway, thus do not provide much of a net benefit. Coordination is an important consideration: how does a particular kind of capacity building fit into the capacity already in existence, and how can it make use of capacity that is already in place?

Commitment by the government of recipient countries to implementing and contributing resources to a project, is important in calculating realizable benefits as opposed to potential benefits. Projects that do not fit the priorities of recipient countries can obviously be expected to be less effective in improving export capabilities, or the costs of doing so might become prohibitive. There is thus an argument for assessing recipient country preferences as an integral part of a cost-benefit analysis, as opposed to the isolated analysis of commitment performed by other donors.

As argued above, countries at different levels of development, benefit differently from a comparable increase in export opportunities. To take into account the fact that poor countries have more to gain from increased exports, one should thus adjust export potential by some factor measuring level of development. This can be done by dividing export potential by GDP per capita, the Human Development Index score, or some other measure. Alternatively, one can use a donor's ranking of priority countries as a simple point of departure when comparing export potentials. NORAD's ranking of priority partner countries and partner countries is one way of assigning priority to different developing countries, and a natural one to pursue in this report.

Proxies for benefits

Though the above points are important, they leave open the question of how to go about measuring export opportunities in practice. To do so, we have to rely on a set of simple proxies for export potential. One simple proxy for export potential is the export volume of different products in recent years. This proxy has the advantage that it identifies products developing countries have actually proved themselves capable of exporting, where there is a productive capacity and a network for distributing goods to developed markets. It also identifies markets where there is a potential for economies of scale in production, and where developing countries are the most vulnerable to new SPS restrictions.

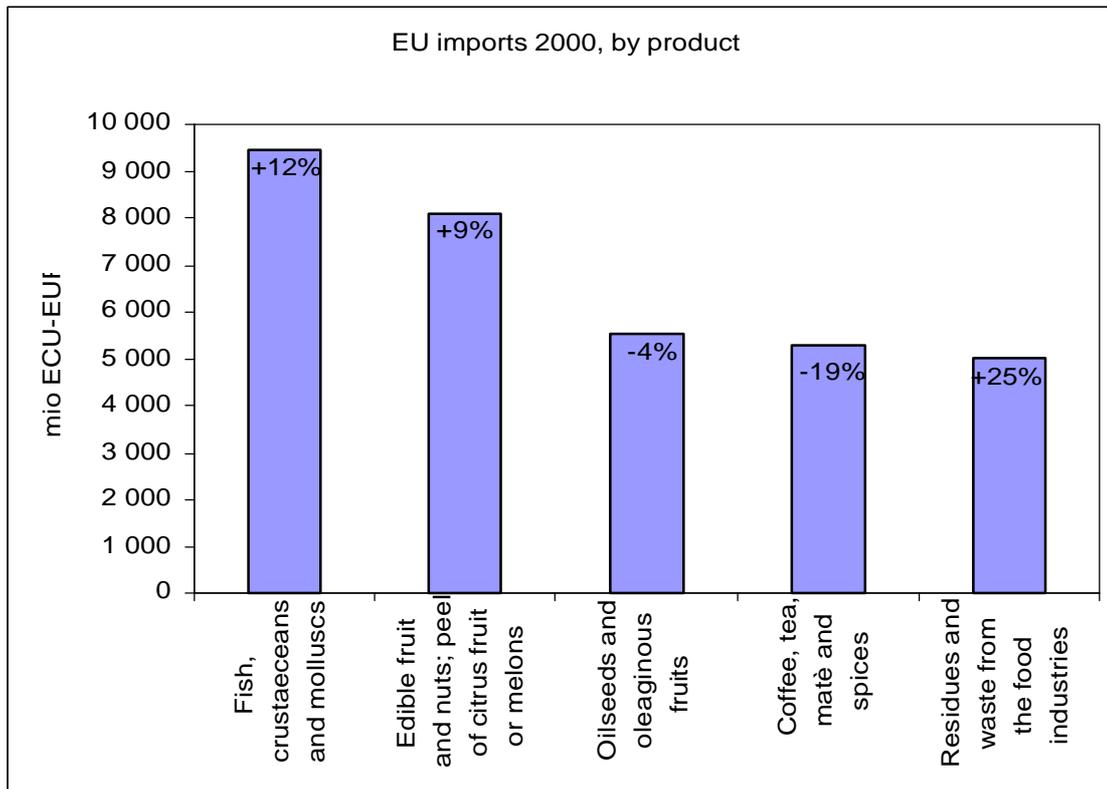
The demand side is, however, also important for export potential. Markets in which there is a large and growing demand are more attractive for exports than smaller and flailing markets. As a consequence, export data for developing countries should be complemented by import data for developed markets in assessing the amount by which export revenues could actually be increased if SPS requirements were met.

A disadvantage to using present export volume is that it is a conservative proxy, where new potentially exportable products are not identified. Data on productive capacity and domestic demand would be required to identify such new export products. However, products of this type typically face a whole range of constraints on their exports, from building up competitive production to constructing a system for distributing their goods to developed markets. In a sense, these other constraints are binding, and will have to be addressed before SPS requirements in export markets even becomes an issue. A much more comprehensive type of assistance would be needed to promote exports for products in this category, which falls outside the subject matter of this report.

An illustration

As an illustration of how import and export data can be used to suggest the export potential of products from developing countries, consider the food and agricultural products with the highest import levels in the European Union.

Figure 5: Main imported products to the EU, 2000.



Source: European Commission (2000) - table 3.7.2

As the figure reveals, fish and fruit/nuts are the products with the largest import value (internal imports from EU 15 excluded) in the European Union. The percentage in each column represents the growth in import value from 1998 to 2000, and from the figure we see that fish and fruit/nuts are growing in terms of EU imports. Other product categories growing in this period are beverages, spirits and vinegar (41%), meat and edible meat offal (20%), and edible vegetables, roots and tubers (17%). Though these figures are taken at one point in time, and might not be representative for the future structure of food and agricultural imports, there is a suggestion here of some important import categories.

In addition to this set of data, we can use export data from developing countries to the EU, broken down according to product categories, to determine the industries in which the various countries have a potential for exports. Choosing the group of countries that are priority partner countries or partner countries for NORAD, the following two tables sum up their exports to the EU and Norway, respectively. We have applied the same product

classification as in section 4.4. This makes it easier to link needs defined in section 4 with benefits and costs.

Table 11. Exports of agriculture products from partner countries to the EU. 1998. USD 1000.

	Cereals and bakery products	Cocoa and cocoa preparations, coffee and tea	Dairy products	Fats and oils	Fish, crustaceans and molluscs	Fruit and vegetables	Herbs and spices	Meat and meat products, game and poultry	Nut and nut products, snacks	Soups, broths and sauces	Others (agriculture)	TOTAL
China	41 865	89 530	70 011	22 311	304 880	230 245	20 382	26 064	36 312	10 363	936 143	1 788 106
Indonesia	8 579	286 672	134	723 736	143 208	3 540	125 125	19 845	25 300	790	291 134	1 628 063
South Africa	2 790	45 333	755	2 709	165 781	900 730	12 818	18 111	4 034	2 544	401 339	1 556 944
India	121 815	335 781	1 834	83 387	126 313	53 668	63 666	60	173 603	638	401 653	1 362 418
Vietnam	8 165	379 053	3 019	167	92 245	7 258	12 485	174	18 669	689	12 775	534 699
Zimbabwe	140	33 279	0	0	170	46 779	18 885	38 184	69	11	334 515	472 032
Guatemala	337	314 607	2 890	370	11 678	82 792	4 565	14	62	1	53 966	471 282
Nigeria	201	245 340	0	9 708	58 062	1 853	4 208	0	657	98	24 555	344 682
Uganda	0	223 604	0	19	42 206	3 158	325	242	0	0	16 346	285 900
Ethiopia	0	239 589	0	138	138	9 049	62	0	0	0	8 401	257 377
Pakistan	27 371	15	5	9	43 919	13 295	1 308	44	10 542	65	141 434	238 007
United Rep. of Tanzania	0	75 351	161	445	75 004	5 278	415	0	0	0	63 950	220 604
Malawi	0	29 656	0	0	321	478	2 467	0	82	0	154 597	187 601
Nicaragua	0	140 627	182	35	21 616	10 164	179	0	2	0	9 201	182 006
Sri Lanka	754	67 825	10	3 345	12 943	2 250	11 903	0	17 598	138	39 930	156 696
Banladesh	17	973	0	21	80 525	7 792	18	0	24	3	3 611	92 984
Mozambique	0	308	3 302	0	58 930	623	0	0	1 802	0	8 848	73 813
Zambia	7	9 439	159	91	135	9 061	801	72	2	0	32 596	52 363
Angola	0	6 071	9	40	30 416	2	0	0	0	0	121	36 659
Mali	14	0	0	0	4	3 914	0	0	0	2	2 548	6 482
Nepal	0	287	0	6	0	9	0	0	0	0	195	497
Total partner countries	212 055	2 523 340	82 471	846 537	1 268 494	1 391 938	279 612	102 810	288 758	15 342	2 937 858	9 949 215
WORLD	17 005 740	15 682 200	16 219 610	8 567 144	15 642 770	27 488 420	788 165	20 282 560	2 281 229	1 562 884	83 882 678	209 403 400
EUROPEAN UNION (15)	14 560 480	6 097 374	15 105 350	5 547 876	6 232 732	16 904 070	208 728	16 885 160	521 605	1 295 785	55 042 540	138 401 700

Source:OECD. 2001

The tables reveal that there are certain products that specific countries do not export to the EU or Norway; building export capability in these categories thus seems difficult, at least without other kinds of evidence to the contrary. By examining the export volumes for each of the countries, the pattern that emerges is that the largest export volumes are in the categories of cocoa and cocoa preparations, coffee and tea, fish, crustaceans and molluscs, and fruits and vegetables. Given the strong demand for these products in the EU market, there seems to be a case for expanding these exports further. However, one should also examine other product categories to see whether exports in these can be easily expanded beyond present levels.

Table 12. Exports of agricultural products from partner countries to Norway. 1998. USD 1000.

	Imports to Norway (1998) of agricultural products (incl. fish)										TOTAL	
	Cereals and bakery products	Cocoa and cocoa preparations, coffee and tea	Dairy products	Fats and oils	Fish, crustaceans and molluscs	Fruit and vegetables	Herbs and spices	Meat and meat products, game and poultry	Nut and nut products, snacks	Soups, broths and sauces		Others (agriculture)
South Africa	38	75	0	0	0	16 718	7	0	8	0	6 059	22 905
Guatemala	0	16 358	0	0	0	887	227	0	0	0	57	17 529
China	272	138	0	1 099	2 705	705	159	0	187	100	9 697	15 062
Indonesia	53	1 228	0	1 667	268	13	1 485	7	341	79	2 549	7 690
India	1 014	1 863	0	2	327	164	1 815	0	1 067	20	898	7 170
Vietnam	49	4 086	0	1	1 454	112	58	0	10	28	221	6 019
Pakistan	470	0	0	0	0	529	54	0	3	0	4 097	5 153
Uganda	0	1 490	0	0	0	1	1	0	0	0	3 285	4 777
Zimbabwe	1	725	0	0	0	259	10	0	0	0	3 223	4 218
United Rep. of Tanzania	0	72	0	0	0	0	0	0	0	0	4 093	4 165
Malawi	0	429	0	0	0	0	0	0	0	0	1 633	2 062
Nicaragua	0	1 549	0	0	0	5	0	0	0	0	1	1 555
Bangladesh	0	0	0	0	909	0	0	0	0	0	15	924
Ethiopia	0	748	0	0	0	1	0	0	0	0	0	749
Angola	0	0	0	628	0	0	0	0	0	0	0	628
Sri Lanka	56	201	0	5	30	134	61	0	18	1	118	624
Zambia	0	302	0	0	0	7	0	0	0	0	42	351
Nigeria	0	0	0	0	2	0	40	0	0	0	52	94
Nepal	0	3	57	0	0	0	0	0	0	0	0	60
Mali	0	0	0	0	0	5	0	0	0	0	0	5
Mozambique	0	0	0	0	0	0	0	0	0	0	0	0
WORLD	244 626	234 867	20 892	176 013	430 082	345 992	10 631	29 549	21 329	31 463	1 085 995	2 631 439
EUROPEAN UNION (15)	197 125	110 281	20 314	93 598	143 578	199 460	3 981	12 077	3 518	26 947	715 269	1 526 148

Source:OECD. 2001

As the aim of this report is not to provide specific advice about which industries to support by means of technical assistance, the above figures are more illustrations and suggestions about the use of data in making these decisions than arguments for allocating aid to specific purposes. In a more thorough analysis of export potential, more factors than those recounted above must be taken into account. Nevertheless, the above figures are interesting in suggesting where a focus on benefits as export potential, taking development levels into account, might take us.

6.3 Summary

In calculating the benefits of providing SPS-related technical assistance to developing countries, this report recommends that a measure of benefits is chosen that is simple, focused and consistent with the underlying objective of SPS-related technical assistance. Since the fundamental reason for providing this type of assistance is that exports from developing countries are constrained by SPS requirements in developed markets, it is appropriate to measure the benefits of a capacity building project by the expected export revenue it generates. In addition, since poorer countries have more to gain from increased exports, expected export revenues may be corrected for differences in levels of development. Though the export revenues generated from any capacity building project are determined by a range of factors, export data for developing countries and import data for developed markets provide rough and ready proxies that can be used to estimate export potential.

7 Costs of technical assistance

As noted in previous sections, different types of capacity building have very different costs. To use cost-benefit analysis in selecting among projects, the relevant costs of projects must be calculated. This section provides a general approach to calculating relevant costs, and references to specific cost calculations performed by other organisations, which may be used as a point of departure for calculating the costs of similar types of capacity building.

7.1 Calculating compliance costs

On the cost side, the relevant term to consider in this respect is costs of compliance. Henson (2002, p. 20) defines costs of compliance as:

“The additional costs necessarily incurred by businesses in meeting the requirements laid upon them in complying with a given regulation.”

This definition has to be slightly amended to fit the current context, which is one of national compliance rather than of individual businesses, but the general gist is clear. In terms of SPS requirements, costs of compliance are the minimum costs required to take sanitary capacity from its present level to the level required in the export markets. In other words, how much funding does it take to build the capacity needed for market access in export markets?

The idea that costs be minimal is important here. There are a variety of ways to build a certain type of capacity. For any given project, alternative ways of building the necessary capacity should be explored, costs calculated and the least costly one chosen. That projects be cost effective in this way is important for the final cost-benefit analysis of projects to be sound. The other important term in the definition is that costs be additional, i.e. costs that would not have been incurred in the absence of the project. Since the purpose of the cost-benefit analysis is to allocate donor funds effectively, the compliance costs to consider are those carried by the donor in question.

Henson (2002) provides a framework for estimating the costs to public institutions of capacity building, as outlined in the below table.

Table 13. Estimation of compliance costs for public institutions

		Costs of compliance	
		Non-recurring	Recurring
Current requirements			
“New” requirements			
Implied change in current controls	Institutional/administrative structures		
	Regulatory controls		
	Technical infrastructure		
	Human capital		
	Risk analysis		
	Information dissemination		
	Surveillance and monitoring		
	Other		
Costs of Compliance	Capital investment		
	Supplies		
	Staff time		
	General operating expenditures		
	External services		
	Opportunity cost		
	Other		
	Total cost of compliance		

The framework basically distinguishes between non-recurring costs and recurring costs. Non-recurring costs are initial one-off expenditures needed to comply with regulations in export markets, such as investment in soft or hard infrastructure. Recurring costs are the costs of using the capacity built, for instance costs of testing, upgrading equipment and training of staff and so on. Calculating costs is then done in a two-step process, where the first step is to identify the types of capacity needed to comply with the requirements in export markets, and the second is to compute the costs of building this capacity in terms of resources used.

Included in the categories for capacity building are (adapted from Wilson and Henson (2002)):

- Institutional/administrative structures: Regulations and rules reflecting current scientific understanding and international commitments, a system of enforcement with sanctions for non-compliance, clearly delineated administrative responsibilities between separate departments and agencies of government, effective communication and coordination of efforts between departments and agencies, transparency in the processes by which regulations and rules are developed, implemented and enforced.

- **Regulatory controls:** System for registration and control of the production, distribution and use of agricultural inputs that pose a risk to food safety or plant and animal health. Systems for verifying and certifying the status of food and agricultural products and the origin, nature and quality of biological materials. Capacity for tracing products through the supply chain, diagnosing pests and diseases and appropriate quarantine and eradication procedures.
- **Technical infrastructure:** Includes laboratory facilities for testing, surveillance and research activities, production and processing establishments for which hygienic controls can be implemented effectively, coordinated and well-functioning supply chains, computer facilities and access to the Internet.
- **Human capital:** Includes scientific and technical expertise and experience in methods of surveillance, testing and control, risk assessment and other elements of risk analysis, and methods of hygienic control, research capabilities, and the legal and administrative knowledge to implement and enforce regulations and other rules. In turn, this requires appropriate teaching, training and research capacity.
- **Risk analysis:** Capacity to perform studies, based on rigorous risk assessment methods, to assess the level of risk to food safety and plant and animal health associated with new, emerging or established hazards.
- **Information dissemination:** Procedures for utilizing epidemiological information in decision making with respect to SPS controls in domestic production.
- **Surveillance and monitoring:** Epidemiological surveillance and monitoring of new and emerging hazards.

Note that the categories used for the identification of capacity changes required are similar to, but a more fine-grained categorization than, that used in the WTO typology of capacity building. The categories serve as a checklist for capacity requirements in enhancing export capabilities.

For the costs of building the identified capacity needs, there is another checklist in terms of the inputs required. These include investment in physical capital, supplies and operating expenditures, internal staffing and external services, for instance from hiring outside expertise. Opportunity costs are the costs of using technical assistance funds for other purposes. In calculating costs, the division into recurring and non-recurring costs is an essential one, which highlights the fact that technical assistance is normally not a one-off thing; investing in lab capacity might not help long term export capabilities if staffing and upgrading equipment is left to the humble resources of a developing country.

The above framework offers an ordered way of calculating the costs of compliance for any technical assistance project. In practice, cost calculation according to this framework requires veterinary and other technical expertise, legal and economic expertise, and thus involves a cooperative effort of experts from different disciplines. The framework focuses on building a national capacity for food safety and plant and animal health, which is the perspective most relevant to this report. However, Henson (2002) also presents a framework for assessing costs to firms of complying with SPS requirements. This framework is not presented in detail here, but for projects that are firm-specific in nature, it may be consulted.

7.2 Previous studies of costs of compliance

In calculating the costs of a project, other projects of a similar nature provide important input into the calculation. Though most donors do not use cost-benefit analysis, costs are at least computed for reasons of budgeting and accounting. The World Bank specifies the net present value of costs in its project appraisal documents, but unfortunately does not give a detailed overview of the components of its cost analysis. The aforementioned Animal and Health Protection Programme in Brazil carried a cost of almost \$140 million (cf. section 5.3), while a Pilot Fisheries Development Project in Morocco had a calculated cost of \$5 million, which perhaps illustrates that costs depend on both the targeted sectors and problems, and on the level of ambition for the project (Wilson, 2000).

Recently, the World Bank has also conducted studies of capacity building and associated compliance costs in several African countries. Nyangito (2002) refers to three such studies: Nyangito et al (2002) calculates the costs required for the flower industry in Kenya to meet the MRL standards in the EU. There is also a similar study of honey and coffee exports from Uganda. Finally, Jooste et al (2002) addresses the question of South African exports. These studies are as yet unpublished, and would have to be requested from the World Bank for further examination of their details.

A study of the impact of European aflatoxin regulations on African groundnut exports, conducted by World Bank researchers, contains some interesting points (Otsuki et al, 2001). The first point is that no estimates of the costs of compliance with EU regulations for African countries exist. This observation highlights the fact that compliance costs for developing countries are not always easily available, and need additional analysis. However, the US peanut industry has estimated the cost of complying with EU sampling methods at \$150 per lot (16 tons) of nuts, which is seen as a significant cost. Thus, where available, data from developed country producers is one point of departure for measuring compliance costs; however, this data cannot be directly translated to a developing country context, since the level of sanitary capacity and access to resources are radically different.

An overview of the estimation of costs of implementing HACCP in various countries is presented by Cato (1998). One example studied is an upgrading of the Bangladesh frozen shrimp processing industry in 1997 and 1998. At the

industry level, \$17.6 million was spent on the upgrading of plants, at the government level \$400,000 was spent on a HACCP monitoring programme, and the FAO spent \$72,000 on HACCP training. To maintain the system, it is estimated that the industry faces expenditures of \$2.2 million a year, and the government \$225,000 per year. This study highlights the importance of a calculation of both initial investment costs and recurrent costs of operation and maintenance.

7.3 Summary

This section has provided a general approach to calculating costs of compliance. It is essential to cost calculation that the least costly way of capacity building is used, to correctly apply cost-benefit criteria to the selection of SPS-related technical assistance projects. Costs computed in previous studies can be used as benchmarks for specific types of capacity building. Once benefits and costs have been computed as described in this and the preceding section, the ratio of benefits to costs can be calculated for each technical assistance project, and the project or projects with the highest ratio selected.

8 Executive summary and recommendations

Food safety is an important concern for consumers in developed markets. This report argues that market imperfections in agricultural markets provide a rationale for public interventions, *inter alia* in the form of food safety and plant and animal health regulations. SPS requirements in developed markets do, however, influence the ability of developing countries to export their agricultural products. It is therefore important that these requirements not be excessive, i.e. stricter than a weighing of the advantages and disadvantages of the regulations dictate. Requirements ought also to be designed in a way that minimizes their impact on trade flows. These restrictions on SPS regulations are included in the SPS Agreement, but in practice there are clear examples of regulations that appear excessive (see e.g. Otsuki, Wilson and Sewadeh (2000) on aflatoxin standards in the EU).

Given the impact on developing countries' exports, the costs of food safety, plant and animal health are to an extent borne by producers in these countries. To shift this burden, there is thus a case for development assistance, for instance in the form of technical assistance to poor countries. Indeed, a commitment to such an idea is included in the SPS Agreement, article 9. This report takes the regulatory standards in developed countries as given, and asks how SPS-related technical assistance should be allocated between countries, industries, types of problem and types of capacity building. The aim of the report is not to identify specific technical assistance projects that merit support, but to suggest methods of identifying technical assistance needs, and a set of general, objective criteria by which to evaluate whether to implement projects addressing the needs uncovered.

The point of departure is that there is a limited amount of funds available for SPS-related technical assistance, and the basic perspective of the report is that funds ought therefore to be allocated to projects where they have the greatest impact per dollar spent or invested. In other words, cost benefit analysis is suggested as a suitable way of finding projects worthy of financial support. Due to the fact that this report restricts itself to discussion of SPS-related assistance, and not general allocation of aid money across types of assistance, the following four-step process of allocating technical assistance is suggested:

1. Identify needs and generate alternative technical assistance projects
2. Calculate benefits in terms of export potential, controlled for level of development
3. Calculate costs of compliance
4. Compute the ratio of benefits to costs for each alternative project, and select the project or projects with the highest score

From our review of the ways in which other donors identify technical assistance needs and allocate funds, the pattern is one of needs and priorities being determined through requests for assistance and political considerations.

This leads to an allocation of funds that is arbitrary and does not properly address the question of the effectiveness of technical assistance. This is a major argument against channelling funds through projects selected by other donor countries and agencies, and an argument for independent analyses of needs and priorities. This does not, however, rule out cooperation with other donors. The practical implementation of projects should be done on a pragmatic basis, where the comparative advantages of different cooperating partners are exploited.

For the identification of needs, we explored several different indicators that can be used: Reported problems or requested assistance, veterinary or other inspection reports and third country listing, and detention and alerts. Each indicator has its advantages and disadvantages. However, the different indicators are not mutually exclusive, and where they complement each other, a set of indicators can be used to map developing country needs. For instance, indicators of detentions complement indicators of requested assistance, by highlighting the impact of SPS requirements on exporters as opposed to needs perceived by government agencies. The main drawback of all indicators studied in detail in this report is that they are reactive, rather than proactive, and additional information is needed to correct for this unfortunate bias.

The purpose of using the available indicators is to generate a set of alternative technical assistance needs, and a set of alternative technical assistance projects to meet these needs. The needs detected can be in different sectors or industries in the same country, or in different countries. A comparison of alternatives is an integral part of a cost-benefit analysis, which establishes the alternative costs of any given project, in terms of net benefits forgone by not using the funds on other projects. Generating alternatives is thus absolutely essential for cost-benefit analysis to be a meaningful guide for allocation decisions. Merely calculating the benefits and costs of any single project, such as improving market access of Nepalese honey to the EU market, does not tell us very much. One needs to compare it to other alternative projects to see if the funds can be used more effectively elsewhere.

There is a large set of objectives by which the effect, or the benefits, of a project can be gauged, such as its impact on poverty, inequality, growth, rights and security and so on. Ideally, a full calculation and weighing of the degree to which a project meets these various objectives would be desirable. For a more practical approach, one way to proceed is to look to the practices of other donors. However, most donors do not use cost-benefit criteria to assess SPS-related projects. Those that do, calculate benefits in a way that seems arbitrary in including some effects while excluding others, without reference to the underlying aims of SPS-related technical assistance. For instance, the World Bank calculates the benefits from animal health projects as the value of increased production, foregone costs of disease control and increased export revenue, while leaving out effects on e.g. consumers.

This report argues that the benefits attributed to a project, should reflect the fundamental objective of SPS-related technical assistance, which is to remove the constraint on exports to developed markets caused by SPS requirements.

Consequently, the export revenues realized through a technical assistance project are the relevant benefits of that project. We thus get a measure of benefits that is simple, focused and consistent with the underlying aim of SPS-related technical assistance. In addition, since poorer countries have more to gain from increased exports, expected export revenues may be corrected for differences in levels of development. This can be done by adjusting for GDP levels per capita, or by focusing on a certain set of countries for which a donor organization has higher priorities, such as the priority partner and partner countries of NORAD.

Measuring benefits as export revenue potential ought to focus on the net present value of exports, thus taking into account the sustainability of effects and possible negative side effects on exports in other industries. In calculating the expected export revenue from a project, one might also consider such items as recipient commitment, to the extent that it has an impact on the export revenues that will actually be realized. However, on a practical level, one most likely has to rely on simple proxies for expected export revenue. This report suggests that one important proxy for export potential, is the actual exports of various products in recent years. Using this as an indicator to determine which countries have a capability of exporting which products, has the advantage that it identifies products that developing countries have proved themselves capable of exporting, where productive capacity and channels of distribution already exist. To complement this data, however, one should also consider the demand side. The export potential is greater in large and growing markets than in small and flailing ones. Data on exports from developing countries should therefore be used in conjunction with import data from developed markets, in this case the EU, to determine future export potential.

An important dimension that current export and import data do not satisfactorily capture is potentially new export products from developing countries. Revealing export potential of this kind is an involved task, requiring an analysis of production capacity and domestic demand. Furthermore, for such products other constraints are probably binding; building an effective system of production and distribution is as much of a constraint as SPS requirements. Since the focus of this report is only on how to meet SPS requirements, these considerations fall outside the issues considered.

The relevant costs of a technical assistance project are the costs of compliance, i.e. the costs incurred to meet the SPS requirements of the relevant export market. It is important that the minimum costs for each project are calculated, i.e. what is the least costly way of building the necessary capacity to export. Cost effectiveness is important both in making the cost-benefit analysis accurate, and in conserving resources on projects that are actually implemented. Calculating compliance costs can be done in the way suggested in chapter 7, by identifying necessary changes to be made to capacity, and the inputs needed to make these changes. Costs for similar projects implemented by other donors also provide valuable information.

The final decision on which project or projects to implement is made by comparing the ratio of benefits to costs for each project, and choosing the

projects with the greatest benefits per dollar spent. The process of generating alternatives, and calculating relevant benefits and costs, ensures that the final decision has a solid and objective basis, on which scarce funds are allocated to the projects where they do the most good.

Simplifying the cost-benefit framework suggested here, while retaining its essential elements, a practical implementation of the framework might proceed as follows. Start with the priority partner countries of NORAD, and using the needs indicators presented in this report, find one or two industries in each country whose exports are constrained by SPS requirements. From this list of problems, delete those fully handled by other donors, and those whose solution is beyond the means of NORAD. We thus get a short-list of alternative projects, which must contain more than one project, perhaps four or five. For each of these alternative projects, calculate expected export revenue using recent export data for the industry in question. Generate an estimate of the costs of building the capacity each project requires. Divide export revenues for each project by its costs, and select the project or projects with the highest ratio of revenues to costs.

The objective of this report is to suggest a way of identifying needs for SPS-related technical assistance among developing countries, and criteria for allocating funds between projects addressing these needs. The report therefore does not suggest specific projects that deserve technical assistance. Nevertheless, we have presented data for each of the key indicators considered, which suggests that some products and countries are prime candidates for SPS-related technical assistance. Fish exports from partner countries are one such obvious candidate, and should in the very least be considered as an alternative to the promotion of honey exports from Nepal.

As noted previously, the framework for making allocation decisions suggested in this report, is designed only for allocating SPS-related technical assistance. This narrow focus reflects the mandate of this study, but it does not necessarily imply that decisions on SPS-related assistance ought to be made in isolation from other allocation decisions. There are strong arguments for taking a wider approach to development assistance, and comparing projects of different types. Assessing the merits of a wider set of development assistance projects would, however, require a more comprehensive approach than the one suggested in this report. Further studies are thus needed to assess how effectively SPS-related assistance fulfils developmental goals, compared to other kinds of assistance.

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Appendix 1

Mandat 15.05.2002

WTO. SPS-bistandsprosjekt. Forstudie om teknisk bistand for å bedre utviklingslands evne til å oppfylle eksportmarkedskrav som gjelder hensyn til liv og helse hos mennesker, dyr og planter (SPS-tiltak)

1. Bakgrunn

SPS-avtalen trådte i kraft i 1995. Målsettingen med avtalen er å fastsette rammer for de tiltak som kan iverksettes for å beskytte folke-, dyre-, og plantehelse ved internasjonal handel.

Utviklingslandene har et betydelig eksportpotensiale når det gjelder matvarer, næringsmidler og planter. Samtidig mangler de fleste utviklingsland nødvendige ressurser på SPS-området, både når det gjelder kompetanse, materielle ressurser og infrastruktur. I tillegg opplever utviklingslandene ofte vanskeligheter med å skaffe seg oversikt over hvilke krav de ulike eksportmarkeder stiller til matvarer og næringsmidler. Det største problemet ligger i å kunne oppfylle de ulike hygieniske og tekniske produksjonskrav som eksportmerkene stiller. Behovet for faglig bistand er derfor stort, noe som blir fremhevet bl.a. i SPS-komiteen i WTO, og reflekteres i SPS-avtalen art. 9.

I Regjeringens handlingsplan for bekjempelse av fattigdom i sør mot 2015, fremheves bedring av utviklingslandenes markedsadgang for deres eksportprodukter som et bidrag til verdiskapning, økt sysselsetting og næringsutvikling i utviklingslandene, og at Regjeringen vil arbeide for en økning av relevant faglig og økonomisk bistand. Forstudien vil være et grunnlag for å klarlegge hvordan norsk bistand innenfor SPS-området kan gjennomføres for å nå de overordnede politiske målsettinger.

På et internasjonalt seminar i Oslo 10. og 11. april om "Retten til mat", ble betydningen av å sikre befolkningen i utviklingsland trygg mat fremhevet. Teknisk bistand på SPS-området aktualiseres av at Norge fra 1. juli innfører toll- og kvotefri markedsadgang for alle produkter fra de minst utviklede land (MUL). Enkeltaker hvor nytt norsk SPS-regelverk har ført til at utviklingsland ikke lenger kan eksportere til Norge, illustrerer behovet for teknisk bistand på SPS-området ytterligere.

2. Behov og utføring av forstudie

Norske myndigheter har relativt liten erfaring med teknisk bistand på SPS-området. Samtidig ligger det en betydelig utfordring i å identifisere prosjekter med høy nytte-kostnadsfaktor. Dette tilsier at en frittstående institusjon gjør en forstudie for å finne metoder for å identifisere bistandsbehov som kan bli gjenstand for norsk bistand.

Forstudien skal utføres av Christian Michelsens Institutt v/Arne Wiig og Ivar Kolstad (CMI).

3. Formål

Formålet med teknisk bistand på SPS-området er å *bedre utviklingslands evne til å oppfylle eksportmarkedskrav som gjelder hensyn til liv og helse hos mennesker, dyr og planter* (SPS-tiltak).

Slik bistand skal:

- Legge til rette for å bedre utviklingslandenes markedsadgang, særlig for landbruksprodukter
- Legge til rette for å bedre helse- og kvalitetsmessige standarder på matvarer og andre landbruksprodukter som konsumeres i utviklingsland
- Etablere langsiktig kontakt mellom fagmiljøer i Norge og mottakerland

Formålet med forstudien er:

- Å finne hensiktsmessige *metoder* for å identifisere konkrete bistandsbehov i samarbeidsland: hva hindrer eksport av gitte produkter og hva må gjøres for å avhjelpe problemet?
- Danne et *grunnlag* for å avgjøre i hvilken grad norsk teknisk bistand på SPS-området skal prioriteres i fremtiden – eventuelt i samarbeid med andre givere

4. Forstudiens innhold

Forstudien skal:

- *Finne* en eller flere mulige metoder som kan identifisere konkrete bistandsbehov på SPS-området
- *Vurdere* metoden(e), bl.a. med henblikk på egnethet og effektivitet
- *Anbefale* en eller flere metoder
- *Peke på* kriterier for valg av konkrete bistandsprosjekter
- *Identifisere* hvilke typer bistand som er aktuelle, i den grad det er mulig å si noe om dette

Som eksempel på et av flere *utgangspunkter* for metoder som kan identifisere konkrete bistandsbehov, kan nevnes EU-kommisjonens positivlister og veterinær-rapportene som danner grunnlag for positivlistene. Det forutsettes at forstudien vurderer hvilke metoder som kan utvikles med disse utgangspunktene. Også andre utgangspunkter og metoder skal vurderes.

Ved anvendelse av de metoder som anbefales i forstudien, vil man få identifisert bistandsbehov. På et senere tidspunkt må NORAD velge/prioritere mellom potensielle mottagere av bistand, fortrinnsvis basert på anmodninger fra disse. Dette valget vil måtte bero på et sett av kriterier. Forstudien skal derfor også peke på mulige kriterier for valg av konkrete bistandsprosjekter.

Forstudien skal ikke drøfte relevante bistandsprosjekter, gi anbefalinger om valg av mottagere for bistand eller om hva slags bistand som konkret skal ytes, men skal fokusere på å identifisere bistandsbehov. I den grad det skulle

fremkomme som et klart resultat av forstudien, kan det likevel pekes på områder som kan være aktuelle for norsk bistand.

5. Samarbeid og kontakt med andre institusjoner

SIDA arbeider for tiden med et forprosjekt som også har som siktemål å identifisere bistandsbehov, men i tillegg å gi konkrete anbefalinger på mottagere av bistand, både på SPS- og TBT-området. Det forutsettes at det etableres nær kontakt mellom CMI og de som arbeider med Sida-prosjektet v/Ivar Foss, særlig når det gjelder informasjonsinnhenting og utveksling av informasjon.

Arbeidet med forstudien vil gjøre det nødvendig med direkte kontakt med EU-kommisjonen, som det er aktuelt å besøke. Det er også aktuelt med direkte kontakt med andre land og organisasjoner, slik som Verdensbanken, WHO, FAO og SPS-sekretariatet i WTO. Det forutsettes at CMI tar kontakt med Ivar Foss for mulig deltagelse på relevante møter.

6. Referansegruppe

Christian Michelsens Institutt skal under arbeidet med forstudien holde nær kontakt med en referansegruppe som består av følgende personer:

- Didrik Tønseth, UD: Overordnede spørsmål
- Toralv Follestad, UD: SPS-avtalen og løpende kontakt vedrørende fremdrift
- Steinar Svanemyr, LD: Overordnede spørsmål knyttet til SPS-avtalen
- Bente Odlo, LD: EU/EØS-spørsmål og det løpende arbeidet på SPS-området
- Else Berit Eikeland/Tore Selvig, NORAD: Bistandsfaglige spørsmål

Toralv Follestad er gruppens sekretær.

Appendix 2: Specific trade concerns: European Communities - Maximum levels for certain contaminants (aflatoxins) in foodstuffs

Raised by:	Argentina, Australia, Bolivia, Brazil, The Gambia, India, Indonesia, Malaysia, Philippines, Senegal, Thailand
Supported by:	Canada, Colombia, Mexico, Pakistan, Paraguay, Peru, Philippines (ASEAN), South Africa, Turkey, United States, Uruguay
Dates raised:	March 1998 (G/SPS/R/10, paras. 24-31), June 1998 (G/SPS/R/11, paras. 15-19), September 1998 (G/SPS/R/12, paras. 11-14), November 1998 (G/SPS/R/13, para. 26), March 1999 (G/SPS/R/14, paras. 64-66)
Relevant document(s):	G/SPS/N/EEC/51, G/SPS/GEN/50, G/SPS/GEN/52, G/SPS/GEN/54, G/SPS/GEN/55, G/SPS/GEN/56, G/SPS/GEN/57, G/SPS/GEN/58, G/SPS/GEN/61, G/SPS/GEN/62, G/SPS/GEN/63, G/SPS/GEN/93
Solution (if reported):	Maximum levels for some products and sampling procedures revised.

In March 1998, a number of countries argued that the EC proposal to set new maximum levels for aflatoxins would impose severe restrictions on trade while not resulting in a significant reduction in health risk to consumers. The proposal did not seem to be based on a proper risk assessment. Furthermore, the proposed sampling procedure was unduly costly, burdensome and unjust. Although an international standard on the subject did not yet exist, the Codex Committee on Food Additives and Contaminants (CCFAC) was considering the matter. The complaining Members felt that the timing was unfortunate, and urged the European Communities to review the proposed measure.

The European Communities noted that there had been no consensus in the CCFAC on the issue; although many countries supported the Codex norm, the European Communities did not. The proposed measure reflected the EC level of protection. With regard to the sampling procedure, since contamination appeared in a small percentage of kernels, one simple sample was not sufficient to minimize risk to consumers. The proposed methods were already used by some EC member States. The European Communities planned to evaluate the comments received until May 1998 and formalize the proposal in June 1998. The measure would enter into effect relatively shortly afterwards.

In June 1998, the European Communities reported that it had forwarded a revised proposal to its member States. The EC Standing Committee on Foodstuffs would consider the proposed modifications on 17-18 June 1998. Apart from revising some of the maximum levels, the European Communities was considering transitional arrangements, and the new measures would not enter into force before 1 January 1999.

In September 1998, Bolivia informed the Committee that the proposed EC measure would have severe effects on Bolivian exports of Brazil nuts. Bolivia requested to see the EC risk assessment, and indicated it was prepared to enter into bilateral discussions with the European Communities in order to find a mutually agreeable solution. The United States encouraged the European Communities to take into account the recommendations contained in the FAO/WHO risk assessments establishing maximum levels for aflatoxin in consumer-ready products. The ASEAN countries expressed concern with maximum levels in milk, which would affect developing countries' feed exports.

The European Communities noted that the deadline for comments had been extended to allow for further comments from Members. The European Communities had also revised its proposal, and was prepared to raise the proposed maximum levels in nuts. With regard to milk, the proposed EC levels were in line with the standards being discussed in Codex.

In November 1998, the Chairman informed the Committee about bilateral consultations between Bolivia and the European Communities which he had been requested to facilitate. The Chairman reported that the discussions had been very fruitful, and had helped Bolivia to better understand the rationale behind the EC measures, as well as the EC procedures followed. They had also helped the EC understanding of the potential effect of some of its measures on the Bolivian industry. Technical consultations were continuing.

In March 1999, Bolivia reported that it had presented a plan to improve its Brazil nuts, and consultations with the European Communities were ongoing. Bolivia considered that this was a good case for the application of special and differential treatment. Peru indicated that several countries had brought their problems with the new EC regulation on aflatoxins to the attention of the European Communities through their missions in Brussels, without having obtained a satisfactory response. In particular, the European Communities had not presented a risk assessment. The European Communities assured Bolivia that their common examination of the problem would continue through a rapid procedure. In response to other Members, the European Communities indicated that there had been ample time for comments, and that the proposal had been revised in response to comments received. On cereals, the European Communities was prepared to continue accepting comments until 1 July 1999 and to modify the measure if there was scientific justification.

Source: WTO 2001. G/SPS/GEN/204/Rev.1 page 11

Summary

Sanitary and phytosanitary (SPS) measures designed to protect human, animal and plant health, constitute a significant barrier to exports of agricultural products from developing countries. Though the WTO Agreement on the Application of Sanitary and Phytosanitary Measures places restrictions on SPS measures, regulations in major import markets are extremely complex and compliance beyond the means of many exporting countries. This report argues that for technical assistance to effectively redress the undesirable consequences of SPS measures, a cost-benefit framework should govern the allocation of assistance. To map the major SPS-related problems of developing countries, a set of indicators is suggested, consisting of reported problems and needs, inspection reports and third country lists, and detentions and alerts. For the capacity building needs thus uncovered, funds should be allocated to projects where the effect per dollar spent is the greatest, i.e. where the ratio of benefits to costs is the highest. Given the focus of SPS-related technical assistance, it is appropriate to measure benefits as export revenue generated, adjusted for differences in development. For compliance costs, suitable methods of calculation are reviewed.

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