

# **Lowering barriers to agricultural exports through technical assistance**

Arne Wiig  
Ivar Kolstad

**WP 2003: 8**

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# Summary

Sanitary and Phytosanitary (SPS) regulations imposed by the developed world, significantly reduce the export opportunities of developing countries. Under the SPS Agreement, developed countries are obliged to provide technical assistance to developing countries, to help them meet SPS requirements. A survey of providers of technical assistance reveals, however, that assistance is allocated in an *ad hoc* manner. This article argues for a more systematic allocation of technical assistance to developing countries, based on relevant data and comparisons of benefits and costs of different kinds of capacity building. Data is presented which highlights the major problems of developing countries in exporting to the European Union, complementing earlier studies of exports to the United States.

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# Lowering barriers to agricultural exports through technical assistance\*

## 1. Introduction\*\*

Developing countries' share of world agricultural exports currently constitutes about 33%, compared to their 25% share of world merchandise exports (World Bank, 2003). Although agriculture was not negotiated on a comprehensive scale during the Uruguay round, tariffs on agricultural products were on average reduced by 36%. During the current negotiations at the World Trade Organization (WTO), efforts to liberalize world trade of agricultural products are stepped up. In the Doha Ministerial Declaration, there is a commitment to substantial improvements in market access; reductions of export subsidies; and substantial reductions in trade-distorting domestic support. This expands the opportunities for developing countries in developing their comparative advantages in agriculture and in penetrating new markets.

At the same time, developing countries are concerned that they are not fully able to make use of 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 (SPS) protection measures in order to secure human, animal and plant health. These are of course legitimate concerns, 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 (see Henson and Loader, 2000 and Maskus, Otsuki and Wilson, 2001). 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.<sup>1</sup> This Agreement places certain restrictions on SPS measures, but still leaves the importing country considerable discretion in imposing SPS regulations.

Since developing countries often do not have the resources needed to upgrade their sanitary capacity to meet export market requirements, there is an argument for development assistance in the form of SPS-related technical assistance. 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 SPS-related technical assistance. A commitment to this idea is expressed in the SPS Agreement, article 9, where industrialized countries agree to facilitate the provision of SPS-related technical assistance to developing countries. A joint statement from the FAO, the World Bank, the WHO and the three international standard-setting organizations (CODEX, IPPC and OIE) at the Ministerial Conference in Doha underscored this commitment.

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However, the SPS Agreement does not specify any criteria for how technical assistance should be allocated. There is thus a risk that technical assistance funds are allocated in an inefficient way, with little impact on the export opportunities of poor countries. This article reviews the allocation decisions of some major providers of technical assistance (section 2). Our main finding is that allocation decisions are made in an unsystematic manner, with little emphasis on the expected effect of technical assistance. The article then argues that to make allocation more effective, relevant data on the SPS-related problems of third world exporters should be consulted, and a cost-benefit analysis should be used to allocate technical assistance funds (section 3). Data from the European Union is presented which highlights the major sanitary problems restricting exports to that region, and which thus complements previous studies focusing on the United States. Finally, we conclude by considering possible directions for further research (section 4).

## **2. Who gives technical assistance, and by which criteria**

A commitment to providing technical assistance is all good and well, but it might not have much of an impact if the assistance is allocated to projects with small returns. To effectively improve the access of developing countries to developed markets, technical assistance ought to address the major impediments to exports of agricultural products. And since the funds available for technical assistance are limited, one should focus on building capacity in the areas where one can expect the greatest impact per dollar invested. Effective technical assistance thus requires a systematic comparison of the expected impact of capacity building investments, for instance in terms of a cost-benefit analysis.

We conducted a survey of major providers of SPS-related technical assistance, to deduce their main criteria for allocating assistance. The donors surveyed include the World Trade Organization (WTO), the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the European Union and the United States. The technical assistance programs of these organizations and countries are diverse and sometimes fragmented, and often SPS-related assistance is part of some greater program of technical assistance. Besides the EU and the US, quite a few other donor countries have bilateral programs of technical assistance. Other international institutions such as the standard setting institutions also have technical assistance projects.

*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.<sup>2</sup> 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 (WTO, 2000a). 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.

*The FAO* has a long history of providing technical assistance in the area of food control. Though early SPS-related technical assistance by the FAO focused on information dissemination, the focus of current assistance is on training technical and scientific experts and personnel and on regulatory frameworks (FAO, 2002). The FAO has a range of criteria by which to assess technical assistance projects. These include<sup>3</sup>:

- 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, interviews with FAO staff revealed that what governs the allocation of funds are political considerations.

*The World Bank* has funded a number of SPS-related projects since the introduction of the SPS Agreement (Wilson, 2000). 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. The World Bank also cooperates with other multinational agencies on technical assistance.

For the World Bank projects, the project appraisal documents reveal that a range of criteria is used to appraise potential projects (see e.g. World Bank (1999)). 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. Voices from within the World Bank have, however, argued that traditional cost-benefit analyses not be given too much weight in allocation decisions (Devarajan et al, 1996, 1997). It is however unclear exactly how cost-benefit criteria are traded off against other types of criteria in selecting projects.

Though much of the development assistance of *the European Union* is in the domain of the member states, the European Commission also has substantial programs of technical assistance. A general set of the EU criteria for technical assistance is hard to elicit. For projects in the ACP countries, however, the process of allocation is as follows (WTO, 2001a). Technical assistance 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.

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 which approximately \$12 million has been directly SPS-related.<sup>4</sup> 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

Finally, the United States also focuses on the degree to which a project leads to sustainable outcomes. A lot of different considerations are thus made in allocating US technical assistance. However, there is no clear specification of how the various criteria for allocation are ranked or traded off against each other.

In sum, the survey of five major providers of technical assistance reveals variations in the criteria of allocation, some simply provide assistance on request, others have a long list of criteria by which to select projects. However, the organizations that do employ formal criteria in the allocation of funds, have a vague specification of how the criteria are traded off against each other, and/or the criteria are to a large extent disassociated from practical allocation decisions. The allocation of funds by the major donors thus seems to be performed in an unsystematic way, with little emphasis on the effects of technical assistance. Given the current allocation practices, there is thus little reason to expect technical assistance to have a significant impact on the export opportunities of developing countries.

### **3. Data and methods for a systematic allocation of technical assistance**

For technical assistance to be effective, it should target the major impediments to exports caused by SPS regulations. And since technical assistance funds are limited, efficient allocation dictates that the funds be allocated where they do the most good per dollar invested. A more systematic approach to the allocation of technical assistance, thus requires relevant data on the impact of SPS regulations, and a comparison of the costs and benefits of building sanitary capacity in developing countries. There are various sources of data which can be used to assess the impact of SPS regulations. Below, we present the main sources of data for mapping SPS-related impediments to exports to the European Union. This is followed by a brief discussion of how to assess the costs and benefits of technical assistance aimed at reducing these impediments.

That SPS regulations significantly restrict exports from developing countries, has been established by Maskus, Otsuki and Wilson (2001). Henson and Loader (2000) conducted a survey of WTO delegations from developing countries, on the subject of agricultural exports. The EU was viewed as the most restrictive import market in terms of SPS measures. 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. The authors conclude: ".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" (Henson and Loader, 2000:93). However, although trade bureaucrats might be sufficiently informed, we are not convinced that exporters are similarly in the know. A reading of the SPS regulations of the European Union suggests that the sheer complexity of the rules may impose prohibitive compliance costs on individual exporters.<sup>5</sup>

For a more detailed review of the major SPS-related impediments to exports, there are at least three relevant sources of data (Kolstad and Wiig, 2002). Firstly, developing countries report their problems and technical assistance needs to donor countries and international organizations, on their own initiative or solicited by the donors. The only systematic documentation of perceived problems we are aware of, has been compiled by the WTO. The Secretariat of the WTO has circulated a set of questionnaires, identifying any assistance that had been provided, requested or received in respect of the implementation of the SPS Agreement. So far, 31 developing countries have replied to the questionnaires (see WTO 2001b, WTO 2002a and WTO 2000b). The major deficiencies of this data are that problems are not ranked in order of importance, and that responses reflect the perceptions of certain government officials rather than the problems faced by exporters.<sup>6</sup> An additional source of information on reported problems is the WTO Secretariat's yearly summary of specific trade concerns that have been brought to the attention of the SPS Committee.

Secondly, a number of importing countries conduct veterinary inspections in exporting countries. In the EU such inspections are undertaken by the Food and Veterinary Office (FVO). The Office yearly undertakes around 250 inspections, of which 80% are related to food safety issues. Four main criteria have determined the missions to third countries during 2001 and 2002 (European Commission 2000a, 2001a). These are i) the volume of trade in relatively high risk products (i.e. live animals and products of animal origin, including fish); ii) the nature and frequency of rapid alerts (see below) for food safety, animal health or plant health; iii) the results of previous inspections, particularly cases where weaknesses have been revealed; iv) requests from third countries for approval to export to the EU. Though quite informative, a main objection to using these reports to assess problems, is that the criteria for inspection exclude a number of countries. Moreover, the deficiencies addressed in veterinary reports reflect the perceptions of EU veterinary experts, rather than those of exporters.

The third source of data on SPS-related impediments to trade, are notifications related to products imported to the European union. The EU Rapid Alert System for Food and Feed (RASFF) distinguishes between two types of notifications; i) alert notifications are notifications relating to products which are on the market and which represent a serious risk to the consumer; ii) information notifications are 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 data' or for which the risk is limited). An annual report presents data on the number of notifications, the sources of contamination, the products involved, the origin of the notifications and the countries involved. Since this data reflects the impact of SPS regulations on actual exports to the EU, a closer examination of the data is useful.

The annual reports from the RASFF for the years 2000 and 2001 reveal the following (European Commission, 2000b and 2001b). In 2000 there were 473 notifications, compared to 708 notifications in 2001. Table 1 provides a cross-classification of notifications according to type of problem (chemical or microbiological), and country of origin. Chemical reasons are

mainly related to the outcome of the use of certain technologies, as in the cases of pesticide and toxin residues, while microbiological reasons are related to non-appropriate hygiene measures.

**Table 1: Notifications according to region and category of contamination**

Reason for Contravention		Africa	America <sup>1</sup>	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

Nearly 50% of the recorded problems stem from products of Asian origin, while European products caused 25% of the notifications in 2000, and 33% in 2001. Products from America and Africa have received fewer notifications. While the broad geographical pattern of notifications seems fairly stable from one year to the next, there is considerable variation in the types of problems identified. However, for exports from Asia and America, chemical problems seem to be in the majority, constituting 68% and 73% of cases in 2001. For exports from Europe and Africa, the pattern is more mixed.

If we compare these patterns to similar data from the United States, there are some interesting similarities and differences. The last published summary of import detentions in the US, presented by FAO (1999) and Henson and Loader (2000), is depicted in the following table.<sup>8</sup>

**Table 2: Contraventions cited for FDA import detention, June 1996-1997. %**

	Africa	Asia	Latin America, Caribbean	Europe	Total
Chemical	2,3	23,6	37,1	45,6	30,0
Microbiological	68,4	63,0	56,0	31,1	57,4
Other	29,3	13,4	6,9	23,3	12,6
Total	100,0	100,0	100,0	100,0	100,0
N	303	5784	3895	1184	11166

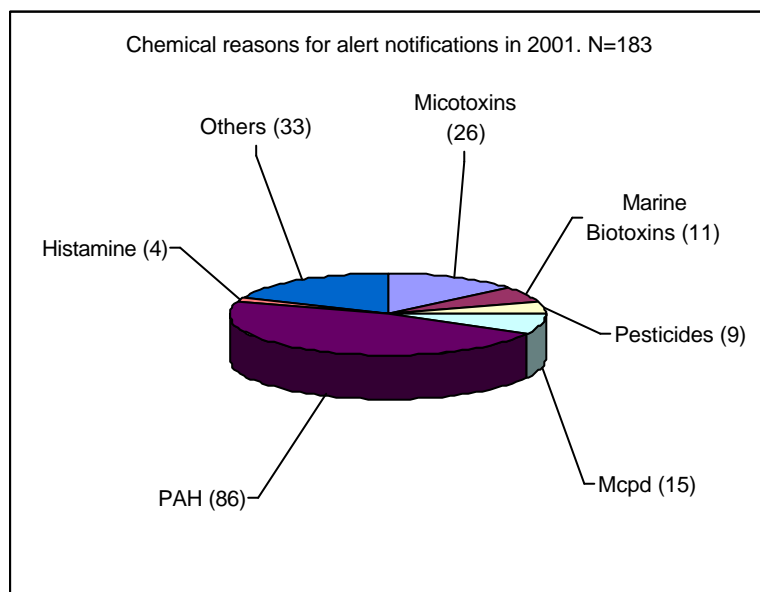
Source: FAO 1999

Again, Asian products have met with the greatest number of detentions, the Asian share of detentions is more than 50%. Products from Latin America and the Caribbean caused 35% of

detentions in the US. European and African exports have faced far fewer detentions. With some natural modifications due to geographical proximity and trade flows, the geographical pattern of detentions seems consistent with the data from the European Union. However, if we study the type of problems reported, the US data differs markedly from the EU data. Notably, in the US a far greater share of detentions of Asian and African products seem to stem from microbiological contamination. This could reflect different rules and practices in the two import markets, and different import patterns. It could also be attributed to the fact that EU notifications are not immediately comparable to US detentions. Nevertheless, the terms are sufficiently comparable as to suggest significant differences in the patterns of sanitary problems detected in the EU and the US. Consequently, using data from several import markets seems vital to allocating technical assistance effectively.

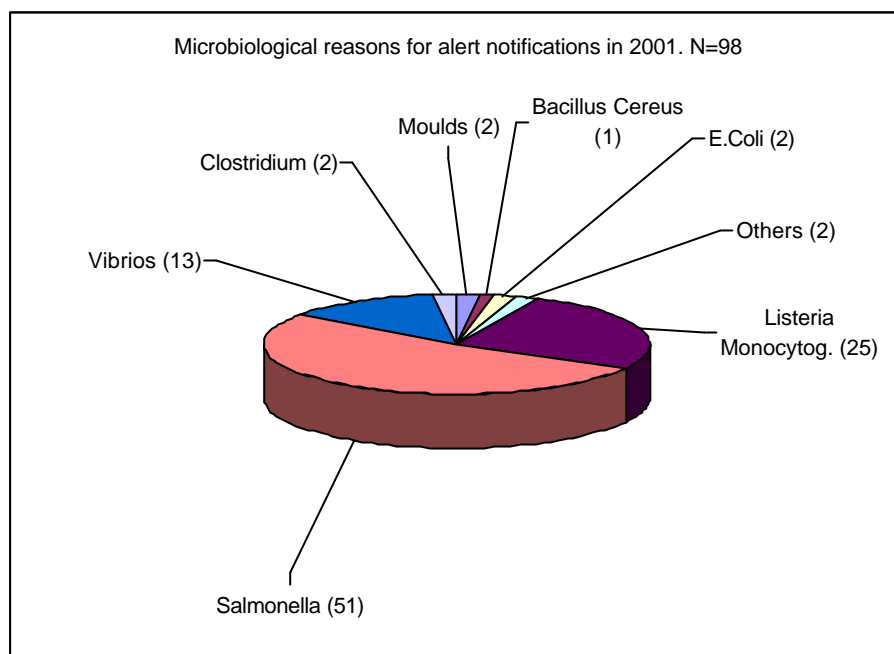
Returning to the EU data, the notifications can be disaggregated further according to more specific categories of sanitary problems. In figure 1, alert notifications based on chemical reasons, are divided into narrower categories. Most chemical reasons for alert notifications in 2001 were related to polycyclic aromatic hydrocarbons (PAH; 86 cases), micotoxins (26), monochloralpropane-diol (MCPD; 15), biotoxins (11) and pesticides (9). As measured by the number of information notifications, micotoxins constitute more than 50% of the cases.

**Figure 1: Chemical reasons for alert notifications, 2001**



A similar breakdown for microbiological notifications, is depicted in figure 2. The most important microbiological reasons for alert notifications in 2001 were salmonella (51), listeria (25) and vibrios (13). These are all bacteria, which are observed when appropriate hygienic measures are not taken.

**Figure 2: Microbiological reasons for alert notifications, 2001**



Finally, the EU data allows us to cross-classify notifications according to product category and sanitary problem. Table 3 ranks product categories according to their importance in terms of EU imports, and presents the reasons for notifications in each product category.

**Table 3: Notifications subdivided by descending import categories and category of contamination.%.<sup>9</sup>**

	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
<b>TOTAL</b>	<b>55</b>	<b>41</b>	<b>5</b>	<b>100 (473)</b>	<b>65</b>	<b>29</b>	<b>6</b>	<b>100 (708)</b>	<b>71 002</b>

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.

Available data from major import markets thus gives us a good idea of how SPS regulations constrain exports. From the data we can identify the countries that are particularly affected by the regulations, the products that frequently do not meet sanitary standards, and the types of sanitary problems prevalent in exports from developing countries. The data thus tells us where the main impediments to exports are. Knowing the major problems, the next decision is how to allocate technical assistance towards their alleviation. Since technical assistance funds are limited, they ought to be allocated to the projects where they yield the greatest returns. In other words, a cost-benefit analysis should underpin allocation decisions.

How to compute the costs and benefits of technical assistance projects is not a straightforward matter. However, if the cost benefit approach is to be used to distinguish among SPS-related technical assistance projects only, and not to assess this type of projects versus other types of projects, it makes sense to focus on the expected impact on exports. A project that increases export revenues more is preferable, all things being equal. To assess the export potential of a technical assistance project, data on exports from developing countries and imports to developed countries can be used. For products from developing countries that have previously been exported, but where exports have been discontinued due to new SPS regulations, calculating the export potential of meeting the new regulations can be done in a pretty straightforward manner on the basis of past export flows. For products where there is no recent history of exports, estimating export potential is more difficult, however, exports of comparable products provide a rough guide. In addition, import data for developed countries provides a measure of the market potential of various products, complementing the export data.

To assess which technical assistance projects provide the greatest export revenue flows per dollar invested in improved sanitary capacity, the costs of each project must be calculated. The relevant costs in this context are the compliance costs, i.e. the minimal additional costs incurred in meeting the requirements of the SPS regulations in the import markets. Henson (2002) provides a general framework for calculating compliance costs. In the framework, calculating costs is done in a two-step process, where the first step is to identify the types of capacity needed to comply with the SPS requirements of export markets, and the second is to compute the costs of building this capacity in terms of the resources used.

It could be claimed that it is less costly to reduce 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. However, more precise estimates are required on a case to case basis. Previous calculations of compliance costs can be used as a guide. The World Bank has computed compliance costs for a number of products and countries, see Wilson (2000) for estimates on the costs of animal and health programs in Brazil and fisheries in Morocco, Nyangito et al (2002) on flower exports from Kenya, studies on honey and coffee exports from Uganda referred to in Nyangito (2002), Jooste et al (2002) on South African

exports, and Otsuki et al (2001) on African groundnut exports. In addition, the costs of implementing HACCP is discussed in Cato (1998), with an application to the Bangladeshi frozen shrimp processing industry in Cato and Dos Santos (2000).

Having estimated the exports revenues generated by a technical assistance project, and its costs, the ratio of benefits to costs (or alternatively its rate of return) can be calculated. By directing technical assistance funds to the projects that have the highest ratio of benefits to costs (or the greatest return), the assistance is made more effective in terms of the results attained per dollar invested. Donors of technical assistance might reasonably be more interested in improving the export potential of poorer countries. To reflect these preferences, the cost-benefit calculation might be adjusted for different levels of development of recipient countries. However, to avoid an *ad hoc* allocation, it is important that this is done in a consistent and well-founded manner. One way to do so would be to deflate the ratio of benefits to costs by the GDP level of the recipient country, or to weigh it by the HDI rank of the country.

#### **4. Concluding remarks**

Our review of major donors of SPS related technical assistance, shows that the assistance is allocated in an unsystematic and ineffective manner. The donors either do not have formal criteria for ranking technical assistance, or they have a list of criteria but no systematic way in which to trade one criterion off against another. In practical allocation decisions, political considerations tend to override whatever formal criteria of allocation exist. As a consequence, technical assistance as it is allocated at present, is unlikely to have much of an effect on trade and development.

Trying to prevent good money from being thrown after bad, this article presents sources of data for making more informed allocation decisions. In particular, data on import notifications in the European Union is presented, from which it is possible to identify major impediments to export from developing countries. Based on this data and similar data from other major import markets, we can thus more accurately identify the capacity building needs of developing countries. In determining which capacity building needs to address through technical assistance, we suggest that a cost-benefit approach be used. The projects that produce the greatest export revenues per dollar invested, should receive funding. In this way, SPS-related technical assistance is allocated in an effective manner.

The latter recommendation is based on the assumption that there is a given sum of money to be allocated to SPS-related projects. In other words, we do not address the question of whether funds should be allocated to SPS-related projects or to other types of development assistance. It is quite possible that development assistance could be more effective in some other form. Nevertheless, the importance of trade for development, and the fact that SPS regulations effectively restrict exports from developing countries, in part justifies the tight focus of the article.

SPS regulations represent an important topic for further research. There is room for more studies highlighting the trade-off between consumer safety in developed countries, and export opportunities of poorer countries, expanding on the work Otsuki et al (2000) have done on aflatoxins. In particular, the question of legislative complexity is an important one to address. For exporters, complexity is in itself a prohibitive factor, so an important question is how complex regulations need to be to adequately protect human, animal and plant health. Another



interesting area of study is how the SPS regulations affect the structure of the supply chain for agricultural products. For instance, the “farm to table” perspective of the new EU Food Law is likely to affect the degree of vertical integration in the food industry.

## References

Cato, James C. (1998), *Economic issues associated with seafood safety and the implementation of seafood (HACCP) programmes*, Rome: FAO.

Cato, James C. and C.A.L. Dos Santos (2000), “Costs to upgrade the Bangladesh frozen shrimp processing sector to adequate technical and sanitary standards”. In L. J. Unnevehr (ed): *The economics of HACCP*. Eagan Press, Saint Paul, MN.  
Measures, G/SPS/GEN/295/Add.6.

Devarajan, S., Squire, L., Suthiwart-Narueput, S. (1996), ‘Project Appraisal at the World Bank’, in Kirkpatrick, C. Weiss, J. (eds.), *Cost-benefit analysis and project appraisal in developing countries*, Cheltenham, U.K.: Elgar, 35-53.

Devarajan, S., Squire, L., Suthiwart-Narueput, S. (1997), “Beyond Rate of Return: Reorienting Project Appraisal”, *World Bank Research Observer*, 12, 1, 35-46.

European Commission, (2000a), *Food and veterinary office programme of inspections 2001/2002*, DG (sanco)/1099/2001, rev1.

European Commission, (2000b), *Rapid Alert System for Food, Final Report for the year 2000*, mimeo.

European Commission, (2001a), *Food and veterinary office Programme of inspections 2002*, DG (sanco)/1230/2002, final.

European Commission, (2001b), *Rapid Alert System for Food, Final Report for the year 2001*, mimeo.

FAO, (1999), *Importance of food quality and safety for developing countries*, Committee on world food security 25th session. Rome: FAO.

FAO (2002), *Trade related capacity building programme for agriculture, fisheries and forestry – Umbrella Programme II*, Rome, April 2002.

FAO/WHO (2002), *Technical assistance to developing countries: Experiences and lessons learned*, Country paper proposed by the USA, FAO/WHO Global Forum of Food Safety Regulators, Marrakesh, Morocco, 28-30 January 2002, GF/CRD USA-4.

Henson, Spencer (2002), *Measuring the economic impact of technical measures on trade in agricultural commodities*, Department of Agricultural Economics and Business, University of Guelph.

Henson, Spencer and Rupert Loader, (2000), “Barriers to agricultural exports from developing countries”, *World Development* (1), pp 85-102.

Jooste, A et al (2002), *Bridging the standards divide: Challenges for improving Africa's international market access with specific reference to South Africa*, Unpublished Research Report for the World Bank Group, Washington D.C.

Kolstad, I. and Wiig, A. (2002), *A cost-benefit framework for allocating SPS-related technical assistance*, Report 2002:19, Chr Michelsen Institute, Bergen, Norway.

Maskus K.E, Otsuki T. and J.S. Wilson, (2001), "An empirical framework for analysing technical regulations and trade" Chapter 2 in *Quantifying the impact of technical barriers to trade: Can it be done*, University of Michigan Press.

Nyangito, H. O. (2002), *Post-Doha African challenges in the sanitary and phytosanitary and trade related intellectual property rights agreement*, Paper presented at the ABCDE-Europe conference, Oslo, 25 June 2002.

Nyangito H. O. et al (2002), *Bridging the standards divide: Challenges for improving Africa's market access. The case of Kenya*. Unpublished Research Report for the World Bank Group, Washington D.C.

OECD (2001), *Tariffs and trade, OECD query and reporting system*, CD-rom.

Otsuki, Tsunehiro, John S. Wilson and Mirvat Sewadeh (2000), *Saving two in a billion: A case study to quantify the trade effect of European food safety standards on African exports*, Development Research Group, The World Bank, Washington D.C.

Wilson, John (2000), *The development challenge in trade: Sanitary and phytosanitary standards*, statement prepared for the World Trade Organization, 21-22 June 2000.

World Bank (1999), *Project appraisal document on a proposed loan in the amount of US\$ 44.0 million to the Federative Republic of Brazil for an animal and plant health protection project*, Report no 19255 BR.

World Bank (2003), *World Development Indicators*, Washington D.C: World Bank.

WTO (2000a), *Technical assistance typology*, Note by the Secretariat, Committee on Sanitary and Phytosanitary Measures, G/SPS/GEN/206.

WTO (2000b), *Summary of the replies to the questionnaire on technical assistance*, Note by the Secretariat, Committee on Sanitary and Phytosanitary Measures, G/SPS/GEN/143/REV1.

WTO (2001a), *Technical assistance to developing countries*, Statement by the European Communities at the meeting of 14-15 March 2001, Committee on Sanitary and Phytosanitary Measures, WTO, G/SPS/GEN/244.

WTO, (2001b), *Questionnaire on technical assistance*, Committee on Sanitary and Phytosanitary Measures, Note by the Secretariat (G/SPS/W/113).

WTO (2002a), *Technical assistance -responses to the questionnaire*, Note by the Secretariat", Committee on Sanitary and Phytosanitary Measures, G/SPS/GEN/295.

WTO (2002b), *Technical assistance -responses to the questionnaire*, Note by the Secretariat", Submission by Uganda, Committee on Sanitary and Phytosanitary Measures, G/SPS/GEN/295/Add.5.

WTO (2002c), *Technical assistance -responses to the questionnaire*, Note by the Secretariat", Submission by Indonesia, Committee on Sanitary and Phytosanitary Measures, G/SPS/GEN/295/Add.6.

## Notes

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<sup>1</sup> First of all, SPS measures must have a *scientific justification*. This can be achieved by *harmonizing* 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), or a country may undertake its own risk assessments. Other general principles are based on non-discrimination, equivalence and transparency. An importing country cannot impose different requirements on imports than on domestically produced goods (national treatment), nor can it favor imports from certain countries (most favored nation). Members must also 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. 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.

<sup>2</sup> [http://www.wto.org/english/thewto\\_e/whatis\\_e/whatis\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/whatis_e.htm)

<sup>3</sup> Source: Written response from FAO officials, submitted to the authors.

<sup>4</sup> <http://qesdb.cdie.org/tcb/overview.html>

<sup>5</sup> For instance, in the EU a new Food Law seeks to harmonize national food law legislation and maintain a high level of protection of human health, safety and of consumer protection. The definition of food includes all elements in the supply chain ('from farm to table') including animal feed, as long as the substance is 'reasonably expected' to be ingested by humans. In addition, there is a mixture of numerous vertical directives across product categories and horizontal directives (for instance regarding hygiene and residues) which form the basis of the regulatory regime. 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. Countries must apply to be included on an approved list prior to exporting to the Union. Inspections are performed and control samples collected. For food of plant origin (fruit and vegetables), there are, as yet, no positive lists of countries allowed to export to the EU. Horizontal directives regulate the accumulation of substances such as pesticides. 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 new markets.

<sup>6</sup> A comparison of the responses submitted by Uganda and Indonesia suggests, for instance, that the particular background of the official(s) completing the questionnaire, colors the submission. The Ugandan response was prepared by the Head of the Phytosanitary Inspection Services, and contains almost exclusively information on plant health problems. The Indonesian submission involves several institutions, and has more balance (WTO, 2002b,c).

<sup>7</sup> America includes North America, Central America, South America, the Caribbean and Oceania

<sup>8</sup> The FDA has automated its import operations and created a database, U.S. Food and Drug Administration Import Refusal Reports (IRR), which is available at [http://www.fda.gov/ora/oasis/ora\\_oasis\\_ref.html](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. Summary reports are, however, not easily available and it is a cumbersome procedure to systematize this data.

<sup>9</sup> Import figures are taken from OECD, 2001. Data of notifications is derived from European Commission 2000b and 2001b.