

Committee on Technical Barriers to Trade

TECHNICAL BARRIERS TO THE MARKET ACCESS OF DEVELOPING COUNTRIES

Background Note by the Secretariat

1. This Note has been prepared in response to a request by the Committee on Technical Barriers to Trade (CTBT) for the Secretariat "to establish the state of knowledge concerning the technical barriers to the market access of developing country suppliers, especially small and medium-sized enterprises (SMEs), as a result of standards, technical regulations and conformity assessment procedures".¹ The section on environmental requirements also responds to a request by the Committee on Trade and Environment (CTE) for a regular update of the effects of eco-labelling requirements on the market access of developing countries.²

2. It builds on a previous Secretariat Note entitled *Restrictive Trade Effects of Standards, Technical Regulations and Conformity Assessment Procedures*, prepared in April 1997 (G/TBT/W/42). The Secretariat wishes to draw the attention of delegations to the limited number of new studies conducted on this subject since that date, and to the fact that much of the literature is focused on environmental requirements.³

3. This Note begins with a general discussion of how technical barriers to market access may emerge, with a focus on developing countries. It then presents the most recent literature on this subject, with respect to: (1) national environmental requirements (which constitute the bulk of the recent literature), (2) other national requirements (where not much has been written), and (3) international standards (where the focus of the literature is on environmental and quality management standards).

I. HOW TECHNICAL BARRIERS TO MARKET ACCESS MAY EMERGE

A. DEVELOPING COUNTRIES AND STANDARDIZATION

4. For an understanding of how technical requirements⁴ and conformity assessment procedures may act as barriers to the market access of developing countries, it is important to begin by situating these countries in the field of standardization. In general, the literature on standardization indicates that developing countries tend to be "standard-takers" rather than "standard-setters"⁵ In other words, fewer standards are developed by these countries, than are by their developed counterparts.

¹The request was made during the Triennial Review of the TBT Agreement and is contained in document G/TBT/5.

²The request was made at the CTE meeting of 19-20 March 1998, and is contained in document WT/CTE/M/17.

³A number of CTE documents are relevant to this Note and include: WT/CTE/W/25-26 (1996) on the effects of environmental measures on market access, especially in relation to developing and least-developed countries, and WT/CTE/W/79 (1998) on the market access impact of eco-labelling schemes.

⁴In this Note, the term 'technical requirement' will be used to refer to both standards and technical regulations.

⁵Stephenson (1997). This view has also been expressed in a number of other works.

5. This situation is explained by the variables which tend to influence the pattern of standards development in different economic sectors: (1) industry size and concentration, (2) dominance of specific suppliers or buyers, (3) level and speed of technological advancement, and (4) public interest in safety, health and environmental protection.⁶ As industrialization has taken place on a greater scale in developed than in developing countries, and has been accompanied with a rise in the level of safety, health and environmental protection, standards development in these countries has outpaced the developing world.

6. Not only is the overall number of standards in developing countries smaller, but it has also been observed that fewer standards become mandatory. Amongst other reasons, this is attributed to the relatively less developed and diversified manufacturing sector in the developing world, and the resulting lack of a perceived need by industry to develop additional standards.⁷ With respect to standardization at the international level, the meaningful participation of developing countries in this process has been put into question (this issue is addressed in greater detail in Section IV).

7. The literature also states that in many developing countries, establishing conformity with technical requirements is difficult to undertake. The infrastructure and human resources for laboratory testing and calibration, as well as certification, are lacking. Moreover, many developing countries have not established accreditation systems. In Latin America and the Caribbean, for instance, only seven countries have: Argentina, Brazil, Chile, Colombia, Costa Rica, Peru and Venezuela.⁸ There also appears to be a dearth of agreements concluded in the areas of metrology, testing and/or certification involving developing countries, although efforts are underway in this regard within the framework of various regional groupings.⁹

8. While this information illustrates the limited role that developing countries play in the realm of standardization relative to their developed counterparts, it is not intended to indicate that they should undertake more standardization, or should evolve from being standard-takers to setters. Adopting existing standards could, in certain situations, be more economically efficient than inventing new ones. However, it aims at drawing attention to two issues in the literature of particular importance to this Note: (1) the extent to which developing countries rely on standards which they do not themselves develop, with all the difficulties that such a situation could entail (such as, a lack of familiarity with the process of standardization in export markets, with how to best comply, etc.), and (2) the limitations involved in carrying out conformity assessment activities domestically.

B. POTENTIAL BARRIERS¹⁰

9. Technical requirements and conformity assessment procedures have the potential to become barriers to trade. For instance, when they make different and stricter demands on imported than domestically produced goods, trade may be impeded. In addition, when they are insufficiently transparent, are frequently amended, and involve translation costs, additional impediments may arise.

10. Technical requirements may also have an adverse impact on trade when products are over-regulated (i.e. when they must conform with too many requirements); when incompatible requirements are set for the same products by different countries; etc. Conformity assessment procedures may also do so when the same products have to be tested in different countries using

⁶Ibid.

⁷Ibid

⁸OAS Trade Unit (1997).

⁹Stephenson (1997).

¹⁰This section is, to a certain extent, based on OECD (1997) and OECD (1998).

different procedures; when the assessment facilitates to be used are inconveniently sited and charge high fees; etc. The resource constraints of developing countries may exacerbate these problems.

11. Technical requirements and conformity assessment procedures impose "compliance costs" on businesses. One author defines these as "the additional costs incurred by businesses in meeting requirements for complying with a given standard. They include both the costs of *achieving* compliance and the costs of *demonstrating* compliance through established conformity assessment procedures."¹¹

12. In meeting the requirements of their export markets, the compliance costs incurred by businesses are not only a function of the stringency of those requirements, but of the requirements that they already meet in their domestic markets. When the latter are significantly less stringent, the costs of achieving compliance with export markets are raised (as even the most preliminary adjustments then have to be made). As developing countries tend to be standard-takers, and have fewer domestic standards than their developed counterparts, their compliance costs are therefore high.

13. The breakdown of compliance costs in any given situation can also influence the extent to which they may act as barriers to trade. Compliance costs can be broken down into direct and indirect ones. Direct costs are those associated with the necessary changes to products and/or process and production methods (PPMs), and could include modifications to product design, investment in new machinery, staff training and changes to product testing. Indirect compliance costs are associated with more general impacts, such as loss of economies of scale in production, distribution and marketing.

14. Compliance costs can also be classified into recurring and non-recurring ones. Non-recurring costs are expenditures that are only incurred for initial compliance - the purchase of new machinery for instance. Recurring costs are the repeated expenditures associated with routine conformity assessment, increased operating costs as a result of compliance, etc. Recurring costs have the potential to impede market access most significantly when economies of scale are not achieved by standardization, or are even reduced. They then come to represent a more significant proportion of overall cost.

15. In general, all compliance costs can act as obstacles to developing country trade when high. However, direct non-recurring costs can be made particularly high for developing countries in the absence of the required technology or the necessary human resources for compliance. Also, SMEs may be unable to assume high non-recurring costs due to their limited financial resources, and recurring ones when they cannot achieve economies of scale (SMEs are addressed in greater detail in Section II).

II. RECENT LITERATURE ON NATIONAL ENVIRONMENTAL REQUIREMENTS

16. A number of case studies have been conducted by Jha et al. to determine, amongst other issues, the impact of environmental policies on the market access and competitiveness of developing countries and economies in transition.¹² The types of environmental policies that they have examined include both standards and technical regulations, such as product-content requirements (e.g. regulations limiting the amount of hazardous substances contained in products), recycled-content requirements, and labelling and packaging requirements.

¹¹OECD (1998).

¹²Jha, Markandya, and Vossenaar (forthcoming publication). The countries examined include: Zimbabwe in Africa; China, India, Malaysia, the Philippines, and Thailand in Asia; Brazil, Colombia and Costa Rica in Latin America and the Caribbean; and, Poland and Turkey in other regions.

17. The authors indicate that environmental requirements in developed countries tend to be sector-specific, affecting in particular fisheries and forestry, leather and footwear, textiles and clothing, and certain consumer products. They add that:

"A significant share of developing country exports are in product categories which already have to comply with environmental regulations of developed country markets. An analysis carried out by UNCTAD [United Nations Conference on Trade and Development] indicates that, on average, about one-third of the value of total exports and about half of the value of manufactured exports of developing countries originate in such sectors. This is particularly relevant for Asian developing countries, since over 60 per cent of their manufactured exports, in value terms, originate in such sectors."

18. Jha et al. construct a useful model of the factors which tend to have a bearing on the trade and competitiveness effects of environmental policies, which include:

- (1) The destination of exports: Trade is affected more significantly when exports are destined to markets that are heavily environmentally regulated;
- (2) The basis for export competitiveness: When such competitiveness is based on low prices, compliance with environmental requirements can undermine it;
- (3) Firm size: Compliance with environmental requirements can be particularly difficult for SMEs;
- (4) Availability of raw materials, specialized inputs, technology and information: Their availability facilitates compliance;
- (5) Corporate structure: The more vertically integrated companies are (i.e. the more the companies producing finished products can exercise control over their suppliers), the greater their ability to control environmental quality throughout a product's life cycle; and
- (6) Relationship with foreign firms: Strong links with foreign firms can facilitate compliance by, for instance, increasing access to environmentally sound technologies.

19. On the basis of the case studies conducted, they reach the conclusion that:

"There is no empirical evidence to suggest that existing environmental policies have widespread effects on market access. However, effects could be more significant for some sectors and for small and medium-sized enterprises. Environmental policies may have differentiated competitiveness effects on developed and developing countries. In most cases, however, competitiveness effects of environmental policies can be addressed by appropriate policies at the national, regional and international levels."

20. However, Jha et al. also indicate that account should be taken of the fact that the "compliance costs of environmental policies may become more significant in future. For example, increased efforts to avert the problem of climate change may have strong trade and competitiveness effects on certain sectors." At present, however, they suggest that environmental requirements need not act as barriers, but, rather, could open up new trade opportunities for environmentally-friendly products.

21. Both UNCTAD and the Economic and Social Commission for Asia and the Pacific (ESCAP), point out that open economies have greater scope for reducing the competitiveness effects of foreign technical requirements because of better access to information, inputs and technology. In addition,

liberal foreign investment laws and the protection of intellectual property can facilitate the access to clean technology.¹³

22. ESCAP maintains that there is "little evidence to suggest that trade-related environmental measures adopted in developed country markets have had a significant impact on the export performance of the ASEAN countries [reference is made to the timber, textile and electronic sectors] ... It is also difficult to separate vulnerability to trade-related environmental measures from policy choices made by Governments." However, it also states that adverse effects tend to be experienced by SMEs, and that Asian developing countries are concerned about the emergence of environmental policies based on PPMs (which may not reflect developing country environmental priorities, and which could reduce their welfare).¹⁴ In addition, a number of other authors have expressed concern regarding the potential inability of developing countries to obtain reasonable price premiums for the environmental improvements they introduce.¹⁵

23. However, while the conclusion of recent studies appears to be that environmental requirements have not restricted market access, this does not mean that there are no examples of impediments to trade. Numerous examples are documented in the literature, but, overall, their effects are not seen to have been significant, and it is argued that appropriate national policies could have mitigated them. Cited in the literature, for instance, are the difficulties which India experienced in phasing out AZO dyes in the textiles sector in response to a new German regulation, and the high compliance costs that were involved.¹⁶

A. LEAST-DEVELOPED COUNTRIES (LDCs)

24. UNCTAD indicates that LDCs experience particular difficulty in complying with the environmental regulations of their export markets. Packaging requirements, such as the German Packaging Ordinance of 1994, have been of concern. In addition, campaigns by non-governmental organizations (NGOs) against LDC exports on the grounds of low environmental and labour standards have also been a problem. Nepal's carpet exports to Germany, for instance, were adversely affected by environmental and child labour campaigns. The sector accounted for 58 per cent of all Nepalese exports.¹⁷ UNCTAD states that:

"LDCs have in general had some difficulty in adapting to environmental and health-related standards in their export markets. Some of these standards, particularly technical regulations and sanitary standards, are consistent with WTO rules but may nevertheless entail significant costs for LDCs wishing to comply with them. It would thus be useful to examine the extent to which technical assistance provisions in the TBT Agreement and the SPS [Sanitary and Phytosanitary Measures] Agreement have alleviated the burden of compliance for LDCs."

¹³UNCTAD (1995a) and ESCAP/UNCTAD (1996).

¹⁴ESCAP/UNCTAD (1996).

¹⁵Jha, Hewison and Underhill (eds.) (1997).

¹⁶Ibid. In addition, the problems experienced by the Colombian flower industry due to foreign eco-labelling schemes was recently presented to both the CTBT and the CTE (G/TBT/W/60 and WT/CTE/W/76).

¹⁷UNCTAD (1998).

B. SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs)

UNCTAD has identified a number of factors which make it difficult for SMEs to comply with environmental requirements. These factors may prevent SMEs from complying with other types of technical requirements as well.¹⁸

- (1) They may lack the necessary information, technology and capital for compliance;
- (2) They may not achieve the economies of scale necessary to make their environmental investments profitable;
- (3) The limited physical space of their industrial facilities may make it difficult to place environmental equipment;
- (4) They may be unable to ensure that their raw materials are produced in accordance with eco-labelling and other environmental criteria;
- (5) They may be unable to acquire production inputs at competitive prices, and thus, to transfer part of the adjustment costs to their suppliers; and
- (6) The costs of testing, inspection, and verification may be too high for them to assume.

III. RECENT LITERATURE ON OTHER NATIONAL REQUIREMENTS

25. A World Bank Working Paper has recently reviewed the state of standards development in developing countries, and reached conclusions on how foreign technical requirements and conformity assessment procedures may affect their exports.¹⁹ The Paper states that standardization activity in developing countries remains limited, and that it has been neglected as a policy area in favour of trade and industrial policies. It argues that, as the share of developing country exports in international trade has been limited, and as many developing countries in Latin America and Africa and, to a lesser extent Asia, export mainly primary products (where standards are few), the incompatibility of emerging foreign and domestic standards could not have played a major role in deterring developing country exports.

26. As a result, the paper states that the potential for technical requirements and conformity assessment procedures to become non-tariff barriers, should not, at this stage, be of priority concern to developing countries. Rather, attention should be devoted to building the necessary infrastructure for standardization and conformity assessment activities, and developing the necessary human resources. It recommends that, since developing countries tend to be standard-takers, their immediate priority should be to adopt the standards of their main trading partners and/or international ones.

IV. RECENT LITERATURE ON INTERNATIONAL STANDARDS

27. Most of the literature on international standards recognizes the important role which they can play in facilitating trade by reducing the divergence of national technical requirements. However, concerns have been expressed about the inability of developing countries to effectively participate in their design. Their need for technical assistance in this regard has been highlighted.

28. UNCTAD has undertaken extensive work on the implications of international environmental standards on developing country exports. It indicates that it is too soon to predict the trade effects of ISO's Environmental Management Systems (EMS) standard, known as ISO 14001.²⁰ It argues that ISO 14001 certification could be a tool for developing countries to increase their export

¹⁸UNCTAD (1995b). These issues are also raised by the ESCAP/UNCTAD (1996) study, and by Jha, Hewison and Underhill (eds.) (1997).

¹⁹Stephenson (1997). The author also examines the impact of international standards, and his views on this issue are briefly presented in Section IV.

²⁰UNCTAD (1997a).

competitiveness and strengthen their market position. However, if such certification becomes a requirement due to overseas supply-chain pressure and/or public procurement policies, it could constitute a non-tariff barrier to trade.

29. In a recent UNCTAD Expert Meeting on the trade and investment impacts of international environmental standards on developing countries, similar conclusions were reached.²¹ However, it was felt that the concept of 'trade barriers' in relation to ISO's EMS needed to be further defined.

30. The Expert Meeting identified two potential problems for developing countries: their inadequate participation in the formulation and implementation of ISO 14001, and the lack of the international accreditation of their certification bodies. It also drew attention to the special difficulties which SMEs could confront, such as their inability to assume the financial costs involved, lack of technical expertise and experience, limited human resources as well as management time, and general lack of awareness about ISO 14001.

31. The United Nations Industrial Development Organization (UNIDO) has recently surveyed a number of developing countries and emerging economies in Latin America, the Caribbean, Africa, Asia and Eastern Europe, to determine the impact of ISO 9000 (Quality Management) and 14000 (Environmental Management) standards on their market access.²² On the ISO 9000 series, the survey demonstrates that while some respondents believe the standards could improve their competitive position and their internal efficiency, others are concerned about the practical problems involved in certification and accreditation.

32. With respect to the ISO 14000 series, the survey demonstrates that some government departments and national standardizing bodies fear the emergence of new barriers to trade. The problems identified in relation to the series include: that the lack of the necessary infrastructure could increase compliance costs, that few developing countries have national certification and accreditation bodies, that there is a lack of qualified consultants, trainers and auditors, and that technical equipment are frequently unavailable. However, ISO 14001 is seen to be of benefit by some in that it facilitates conformity assessment with the environmental requirements of export markets, and improves environmental management at the firm level.

33. ESCAP fears that ISO 14000 standards will one day become de jure requirements for international transactions (through public procurement policy for instance).²³ Developing countries do not have the resources to participate in their development, and the standards could hurt SMEs. This view is shared by the World Bank Working Paper, where it is also argued that international standards are frequently skewed towards developed country interests.²⁴

34. A survey conducted by ISO on the proliferation of ISO 9000 and ISO 14000 certificates, indicates that certification in developed countries has been much greater than in developing countries.²⁵ However, certificates spread in 1997 to a number of new developing countries and economies in transition (for instance, ISO 9000 certificates were awarded for the first time in Sudan and Senegal, while ISO 14000 certificates were awarded in Saudi Arabia, the Czech Republic and the Republic of Korea). The survey may be used as an indication of the extent to which firms in developing countries have succeeded in becoming certified.

²¹UNCTAD (1997b).

²²UNIDO (1997). Questionnaires were distributed to trade and industry government departments, national standardizing bodies, certification and accreditation bodies, and SMEs and larger firms.

²³ESCAP/UNCTAD (1996).

²⁴Stephenson (1997).

²⁵ISO (1998).

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