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A Survey on Trade Implications of International Standards for Quality and Environmental Management Systems

(ISO 9000 / ISO 14000 Series)
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Technical Report of the Consultants

Parts I - III

Prepared by the United Nations Industrial Development Organization

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A Survey on Trade Implications of International Standards for Quality and Environmental Management Systems

EXECUTIVE SUMMARY

This survey is a contribution to a United Nations Industrial Development Organization (UNIDO) project to explore the extent to which the widespread adoption of Quality Management System (QMS) standards (ISO 9000) and the anticipated adoption of the Environmental Management System (EMS) standard (ISO 14001) might become additional barriers to trade for developing and newly-industrialized countries.

This report, prepared by UNIDO and based on the work of Resource (UK) Ltd, is presented in three Parts.

Part I (The Survey) describes the background to the overall project, its aims and objectives, and the response to a questionnaire issued to government departments, accreditation bodies, certification bodies and trade associations in 46 countries selected from Europe, Africa, Central and South America, the Middle East and South East Asia. A total of 198 questionnaires were distributed in the period March - April 1995 and 59 responses (30 per cent) were received by the deadline of 8 August 1995 from respondents in 30 countries.

Part II (The ISO 9000 Series of Management Standards for Manufacturing and Services) reports and discusses the results of the survey in relation to the ISO 9000 series of quality management standards (published in 1987/88), and presents recommendations to assist governments and enterprises in developing and newly industrialized countries to plan and implement quality strategies based on implementation of the standard.

Particular attention is given to establishing a national infrastructure for quality; consultancy and training requirements; and actions necessary to achieve international acceptance and mutual recognition of testing and certification with a view to reducing or eliminating potential barriers to trade.

Part III (The Proposed ISO 14000 Series of Standards) deals with responses to questions about environmental issues, the proposed ISO 14000 series of standards and ISO 14001, the proposed international standard for environmental management scheduled for publication in mid-1996.

Whilst respondents were generally less well-informed about ISO 14001 there are nevertheless many valuable comments on current perceptions of ISO 14001, on anticipated cost of compliance, and on infrastructure implications including accreditation and certification. Potential effects vis à vis trade barriers are discussed with regard to both ISO 14001 and ecolabelling. The situation of SMEs is highlighted.

It is recommended that a comprehensive strategy be developed to assist developing countries form and strengthen their internal administrative structures for the ISO 14000 series of standards and support their businesses to prepare for the new standards. Specific advice is addressed to: governments; national standards bodies; accreditation and certification bodies and industrial associations.

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ANNEXES

INTRODUCTION

As a consequence of the widespread adoption of Quality Management Systems (QMS) standards (ISO 9000) and the anticipated adoption of Environmental Management Systems (EMS) standard (ISO 14001) in developed countries, there is a fear that they will become additional barriers to trade for developing and newly industrialised countries.

Whilst there is substantial experience of the consequences of adopting and implementing these standards in developed countries there has been no systematic study to examine the implications for developing and newly industrialised countries, particularly in relation to their trade in goods and services.

Recognising the need to gain greater insight into this potential problem and to seek ways of assisting developing and newly industrialised countries to adopt strategies for dealing with it, UNIDO in late 1994 took an initiative to investigate the present situation and to stimulate a wide discussion on the issues involved.

UNIDO commissioned Resource (Science and Technology Expertise) Ltd, UK to undertake a fact-finding survey, based on a multi-choice questionnaire, in March 1995. This report, prepared by 3 UK experts in quality and environmental management systems, describes the results of that survey and discusses their implications for both the businesses and the certification/accreditation services of developing and newly-industrialised countries.

This study is complemented by a paper on the Environmental Management Standard ISO 14001 in relation to developing countries, presented by UNIDO at the ISO/CASCO meeting in Geneva on 12-13 June 1995, and by a presentation to an expert group meeting in Vienna on 23 - 25 October 1995, attended by representatives of both developed and developing countries.

Despite a somewhat disappointing response to the survey questionnaire (59 respondents from 30 countries) it is believed that this study, together with the complementary initiatives has met the objectives of the project: namely -

> "To enable developing countries, in particular the accreditation institutions and business associations in these countries, to exchange views on -
>
> - human resource and infrastructure requirements needed by accreditation and conformity assessment bodies;
>
> - mutual recognition of the certificates awarded by national conformity assessment bodies;

- cost and human resource obstacles that enterprises, primarily Small and Medium sized Enterprises (SMEs), would encounter in complying with international standards.

Terms of reference for the project are at Annex 1, together with details of the 3 UK experts (Annex 2).

PART I

THE SURVEY

PART I - THE SURVEY

I.1 Background to Project

The world-wide success of ISO 9000 has led to a general international acceptance of the benefits to be gained from applying quality management systems. With the growth in popularity of ISO 9000, a number of related issues have become of particular importance, especially internationally.

On one hand, a need has arisen for a system whereby companies can be satisfied that an ISO 9000 certificate issued in one country is not only of the standard as one issued elsewhere, but will also be accepted world-wide. On the other hand, it has been seen that the principles of quality management systems can be used in a wider sense than initially conceived. Quality management systems can be used by a company to monitor and reduce the impact of their activities on the environment.

ISO, the International Organization for Standardization, is currently exploring how both these aspects can be addressed, to the benefit of industry and consumers world-wide.

On Certification, since the publication of the ISO 9000 series of international standards for quality management systems in 1987/88, there has been a substantial growth in third-party certification of companies wishing to demonstrate conformance to the standard. Over 70,000 certificates have been issued world-wide in 76 countries (Mobil survey, June 1994).

At the national level, particularly in countries where certification services are offered by more than one certification body, a process of accreditation is often introduced to assure users of the services that each certification body operates according to widely accepted criteria and standards of service. In addition to national accreditation, certification bodies have themselves felt the need to establish bilateral and/or multilateral agreements with sister organisations world-wide in order to gain international acceptance of the results of their work.

At the General Assembly of ISO in Madrid in 1991, many countries supported the idea that ISO should develop a global unified scheme which would enable certification bodies to gain international acceptance against common criteria and procedures.

A special group, Quality Systems Assessment and Registration (QSAR) was established by ISO in association with the International Electrotechnical Commission (IEC) and presented its conclusions together with an outline scheme at the General Assembly of ISO in Nice in 1994.

The essence of the scheme (Annex 3) is to work with common criteria documents based on ISO standards and guides and to incorporate an assessment process based on peer evaluation.

Although the scheme has not yet achieved the operational phase, there are already fears that its implementation may introduce difficulties for certification bodies in developing countries and newly industrialised countries which, in many cases, are still at an early stage in the adoption and implementation of ISO 9000 itself. There is a fear as a consequence that although the scheme will doubtless benefit international trade in the long term, the scheme may benefit those countries more whose national certification arrangements are well advanced, and penalise those countries whose national systems are less well developed.

On the environment, world-wide interest in environmental protection has focused attention on the need for international standards to assist industry meet its environmental responsibilities. Work in this area is being undertaken as a matter of high priority by ISO, Technical Committee 207, and it is anticipated that the key standards (ISO 14000 Series) will begin to be published towards the end of 1995. (See Annex 4 for a description of TC 207 activities.) Whilst there is general support for this international activity, there is an understandable concern that the standards may require industry levels of environmental performance which may incur prohibitive cost and demand higher levels of management attention and capability than may be available.

1.2 Aims and Objectives

As a consequence of the widespread adoption of Quality Management Systems (QMS) standards (ISO 9000) and the anticipated adoption of Environmental Management System (EMS) standard (ISO 14001) in developed countries, there is the fear that international and bilateral QMS and EMS standards will become additional barriers to trade for developing and newly industrialized countries. In particular, there are perceptions that the potential disadvantages for developing countries could include:

- that there may not be sufficient/qualified infrastructure and human resources in accreditation and conformity assessment bodies in developing countries to certify conformance with QMS and EMS, thus limiting the access of businesses in developing countries to markets in industrialized countries;

- that the certifications of conformity assessment bodies in developing countries will not be recognized by industrialized countries, thus requiring certifications from developed country conformity assessment bodies; and

- that enterprises in developing countries, particularly SMEs, will not be able to demonstrate compliance because of cost and scarce human resources with voluntary international standards, thus denying them access to markets in industrialized countries.

The primary aim of this project therefore is to address these concerns and to formulate a developing countries' response to potential trade barriers issues associated with the implementation of these international standards in the fields of quality and environmental

management systems.

Specific objectives are to enable developing countries, in particular the accreditation institutions and business associations in those countries, to exchange views on:

- human resource and infrastructure requirements needed by accreditation and conformity assessment bodies;
- mutual recognition of the certificates awarded by national conformity assessment bodies;
- cost and human resource obstacles that enterprises, primarily Small and Medium Size Enterprises (SMEs), would encounter in complying with international standards.

Three outputs were anticipated from the project. These comprise:

1. A report describing the results of a multi-choice questionnaire addressed to a wide range of developing and newly industrialised countries soliciting opinions on the potential advantages and disadvantages of the wider implementation of international standards for QMS and EMS, and on possible solutions to perceived problems.

2. A presentation to an expert group meeting in Vienna (23 - 25 October 1995) of representatives of both developed and developing countries in order to obtain comments/consensus for a presentation to the ISO, the World Trade Organisation (WTO) and the Commission for Sustainable Development (CSD). The same expert group meeting would review the resource implications for technical assistance and international recognition, particularly for UNIDO.

3. A paper that exclusively addresses the concerns of developing countries about ISO 14001 for presentation by UNIDO at the ISO/CASCO meeting in Geneva on 12-13 June 1995.

The primary target beneficiaries of the project will be the representatives of businesses in developing countries and the accreditation and conformity assessment bodies in developing countries. These representatives will have a better understanding of the actual obstacles that businesses, primarily SMEs, will encounter and may be able to articulate a common view on ways to overcome these obstacles. The conformity assessment and accreditation bodies in developing countries will have a common understanding of their infrastructure needs/technical assistance requirements and of the options for obtaining mutual recognition.

Another beneficiary of the project will be UNIDO. To date, it has not assessed the infrastructure/technical assistance needs of accreditation and conformity assessment bodies

for implementing voluntary international standards, formulated a position on international recognition of national certifications nor addressed the implications of these standards for SMEs in developing countries.

UNIDO has committed itself in the 1996-2001 Medium-Term Plan to supporting developing countries' efforts to accelerate growth and competitiveness (the first development objective) and to achieve environmentally sustainable industrial development (the fourth development objective). In the context of the first development objective the Medium-Term Plan states that UNIDO will render advice on ISO 9000 issues. In the context of the third development objective, the Medium-Term Plan states that UNIDO will encourage industry, with an emphasis on SMEs, to comply with environmental norms through waste minimisation resulting in improved working conditions and quality of life.

This report is the first of the three outputs described above.

1.3 Methodology

In order to provide basic information and options for the first output of this project, UNIDO commissioned a survey on the implications of voluntary international quality and environmental management systems. Data collection was by means of a 48 question, multi-choice questionnaire.

The questionnaire is divided into three sections with questions designed to gather information on the respondents' organisation, experience with the ISO 9000 series of standards and the proposed ISO 14000 series of standards.

The questionnaire was circulated to UNIDO and UNDP offices in 46 countries selected from Europe, Africa, Central and South America, the Middle East, and South and South East Asia. Each received 4 copies of the questionnaire and were asked to distribute them to 4 types of organisation: government departments; accreditation bodies; certification bodies; and trade associations.

A total of 198 questionnaires were distributed in the period March - April 1995.

1.4 Questionnaire Distribution and Response

In total, 198 questionnaires were distributed to 46 countries. By 8 August 1995, 59 questionnaires had been returned by respondents in 30 different countries from Europe, Africa, Central and South America, Middle East and Asia Pacific (Table 1).

Table 1
Regional Distribution of Responses

Region	No. of Questionnaires	No. of Responses	%
Europe	50	6	12
Africa	55	13	24
Central & South America	34	14	41
Middle East	17	2	12
Asia Pacific	42	23	55
	198	**58**	**30**

Note: One of the respondents did not give his country.

This represents a 30% response rate; however, non-response was particularly high from European and Middle Eastern countries. By contrast, the level of response from countries in Africa (10 countries out of 12), Central America (7 out of 10), and Asia Pacific (9 out of 12) was remarkably high.

Whilst the analyses which are presented in this report are based on the 59 responses received by 8 August 1995, there were also 11 additional responses which are not included because they came to hand after that date.

1.5 Questionnaire Section I: About Your Organization

Section I of the Questionnaire aimed to establish the nature of the respondents' organization under five headings:

Government Department
National Standards Body
Industry Association
Certification Body
Accreditation Body

and the extent to which the respondents' country is associated with ISO:

Full member
Subscribing member
Correspondent member
Membership applied for
Membership under consideration
Not a member

Respondents came from all the organizations specified in the questionnaire with the majority coming from government departments or national standards bodies (Table 2). The total of thirteen recorded for 'Industrial Associations' includes four individual companies and a promotional organization.

Table 2
Nature of Respondent's Organization

Organization	No. of Respondents
Government Department	23
National Standards Body	17
Industry Association	13
Certification Body	11
Accreditation Body	10

Note: Eleven respondents selected two or more categories and two respondents did not answer Section I of the questionnaire.

Thirty-nine respondents indicated that their countries are associated with ISO as full, subscriber or correspondent members. Eighteen countries are full ISO members with two as subscriber members and two as correspondent members.

A more detailed list of respondents is at Annex 5, and an overall summary of their responses is given in the form of a completed questionnaire in Annex 6.

PART II

THE ISO 9000 SERIES OF MANAGEMENT STANDARDS FOR MANUFACTURING AND SERVICES

PART II - THE ISO 9000 SERIES OF MANAGEMENT STANDARDS FOR MANUFACTURING AND SERVICES

II.1 Introduction to Questionnaire Section II

In Section II of the Questionnaire respondents were asked to provide information about perceptions of the ISO 9000 series of quality management standards and their country's experience with implementation and related issues of conformity assessment. Answers to the general questions were invited even if experience with the standard was relatively limited.

The Section is divided into 7 parts covering:

1 General Awareness
2 Perceived importance of ISO 9000
3 Popular Perceptions of ISO 9000
4 National Infrastructure for Conformity Assessment: Government Support; Accreditation; Certification
5 QSAR (Quality Systems Assessment and Registration)
6 ISO 9000 Series and International Trade
7 Other comments

II.2 Results of Survey (Questionnaire Section II : ISO 9000)

2.1 Questionnaire Section II (ISO 9000): General Awareness (Questions II.1 and II.2)

Question II.1 about the awareness of the ISO 9000 series by all businesses attracted a very high response (50) showing a classic distribution about the mean (Table 3).

Table 3
Awareness of ISO 9000 by all Businesses (Question II.1)

Awareness from					No Response
High		to		Low	
4 (7%)	13 (22%)	16 (27%)	13 (22%)	6 (10%)	7 (12%)

The even distribution shows that few respondents believe that all businesses in their country are aware of the ISO 9000 series of standards. However, a very high proportion of respondents (45 out of 59) - reflecting views from 25 countries - do indicate the

business sectors in their country which are most aware. The vast majority mention manufacturing industry, particularly the sectors producing mechanical, electrical or electronic components and products. Other sectors which are quoted include:

Chemical	-	Chile, India, Mauritius
Textile	-	India, Pakistan, Tunisia
Mining	-	Brazil, Chile
Food	-	Mauritius, Pakistan
Oil	-	Nigeria
Software	-	Chile
Pharmaceuticals		Pakistan
Tourism/banks	-	Antigua & Barbuda
Services	-	Mauritius

Several correspondents, anticipating Question 2 (below) drew attention to the greater awareness of multinationals and of companies involved in supplying multinationals or in exporting.

Question II.2 seeks views on the awareness of the ISO 9000 series as between multinational companies, large national companies and small-medium national companies in the respondent's country. In the absence of any national definition of what constitutes a small-medium size enterprise (SME) it was suggested that, for the purpose of the survey, SMEs be regarded as businesses of less than 200 employees.

The results (Table 4) indicate clearly that in the view of most respondents multinational companies and larger national companies generally are perceived as having a higher awareness of the ISO 9000 series.

Table 4
Awareness of ISO 9000 by Multinational, Large National and Small-Medium Companies (Question II.2)

Type of Company	Awareness from					No Response
	High		to		Low	
Multinational	21 (36%)	15 (25%)	7 (12%)	3 (5%)	1 (2%)	12 (20%)
Large National	13 (22%)	20 (34%)	12 (20%)	2 (3%)	5 (9%)	7 (12%)
SME	2 (3%)	3 (5%)	9 (15%)	23 (39%)	13 (22%)	9 (15%)

Comparing the responses on the basis of the percentage of answers favouring "high" and "tendency to high" awareness the difference between multinational and large national companies (61% and 56% respectively) and SMEs (8%) is very striking indeed.

2.2 Questionnaire Section II (ISO 9000): Perceived Importance of ISO 9000 by Business (Questions II.3 to II.7)

These questions explore the perceived importance of ISO 9000 for four types of business:

Exporters
Importers
Producers for the Domestic Market
SMEs

and, in the case of exporters, seek to determine whether its importance is related to specific export markets.

Respondents were invited to comment on both the current position and the expected trend.

Results for the current position (Table 5) show that the perceived importance of ISO 9000 among exporters is believed to be high (53% of the potential respondents) whereas importers, producers for the domestic market and SMEs have a correspondingly low perception of its importance (41%, 61% and 51% respectively).

Table 5
Perceived Importance of ISO 9000 by Business (Questions II.3 to II.6) - Current Situation

Question No.	Type of Business	Perceived Importance			No Response
		High	Low	None	
II.3	Exporters	31 (53%)	12 (20%)	3 (5%)	13 (22%)
II.4	Importers	7 (12%)	24 (41%)	20 (34%)	8 (14%)
II.5	Domestic Market	4 (7%)	36 (61%)	9 (16%)	10 (17%)
II.6	SMEs	1 (2%)	30 (51%)	12 (20%)	16 (27%)

Looking to the future, respondents anticipate a significant increase in the extent to which importers, producers for the domestic market and SMEs will perceive the importance of the ISO 9000 series of standards.

The results for expected trends (Table 6) show anticipated increases of:

12 to 41% (for importers)
7 to 61% (for producers for the domestic market)
and 2 to 39% (for SMEs)

Table 6
Perceived Importance of ISO 9000 by Business (Questions II.3 to II.6) - Expected Trends

Question No.	Type of Business	Perceived Importance			No Response
		High	Low	None	
II.3	Exporters	38 (65%)	10 (17%)	1 (2%)	10 (17%)
II.4	Importers	24 (41%)	24 (41%)	1 (2%)	10 (17%)
II.5	Domestic Market	36 (61%)	13 (22%)	1 (2%)	9 (15%)
II.6	SMEs	23 (39%)	17 (29%)	4 (7%)	15 (25%)

It is interesting to note that some 41% of potential respondents believe that the perceived importance of ISO 9000 will remain low for importers.

In Question II.7 respondents are asked for their views about the importance of ISO 9000 for exporters in relation to specific export markets.

An overwhelming majority of 47 respondents (out of 51 responses) were of the opinion that the standard is important for exporters to a number of specific export markets, and nearly all respondents named one or more of the specific export markets which they regarded as significant now or in the future.

The export markets named and the number of respondents naming each export market are:

Export Market	No. of Respondents
European Market	44
United States (and NAFTA)	13
Far East (incl. Japan)	4
Africa	1
Caribbean	1

Two respondents (Indonesia and UAE) recorded "Developing Countries" and two (China and Turkey) "Electronics".

2.3 Questionnaire Section II (ISO 9000): Popular Perceptions of ISO 9000 (Question II.10)

Question II.10 concerns popular perceptions of ISO 9000, and in particular whether ISO 9000 is seen as appropriate by:

respondent's organization
business community
SMEs
consumers

for:

exporters only
home market suppliers only
manufacturers only
both manufacturers and service providers
all business
private sector only
public sector only

Responses to this multi-part question are summarized in Table 7.

Table 7
Popular Perceptions of ISO 9000 (Question II.1d)

ISO 9000 is seen as appropriate	by:				Totals
	Your Organization	Business Community	SMEs	Consumers	
For:					
Exporters only	5	19	23	2	49
Home market suppliers only	4	3	6	1	14
Manufacturers only	3	7	10	6	26
Both manufacturers and service providers	18	15	8	6	47
All businesses	38	14	6	10	68
Private sector only	3	4	4	0	11
Public sector only	2	3	3	1	9
Totals	**73**	**65**	**60**	**26**	**224**

It is significant that the number of perceptions recorded about consumers' views (26) is much lower than the numbers in each of the other three categories.

A total of 224 perceptions are recorded regarding the appropriateness of ISO 9000 for the 7 specified categories; this total comprises, in rank order:

Ranking	Category	No. of Responses	%
1	All businesses	68	30
2	Exporters only	49	22
3	Both manufacturers and service providers	47	21
4	Manufacturers only	26	12
5	Home market suppliers only	14	6
6	Private sector only	11	5
7	Public sector only	9	4
		224	**100**

Looking in more detail at the responses of each of the groups perceived as holding these wishes, the rank order in each case is as follows:

(a) **Appropriateness of ISO 9000 as perceived by: Your Organization**

Ranking	Category	No. of Responses	%
1	All businesses	38	52
2	Exporters only	18	25
3	Both manufacturers and service providers	5	7
4	Manufacturers only	4	6
5	Home market suppliers only	3	4
6	Private sector only	3	4
7	Public sector only	2	3
		73	**100**

(b) Appropriateness of ISO 9000 as perceived by: Business Community

Ranking	Category	No. of Responses	%
1	Exporters only	19	29
2	Both manufacturers and service providers	15	23
3	All businesses	14	21
4	Manufacturers only	7	11
5 =	Private sector only	4	6
5 =	Home market suppliers only	4	6
7	Public sector only	3	5
		66	**100**

(c) Appropriateness of ISO 9000 as perceived by: SMEs

Ranking	Category	No. of Responses	%
1	Exporters only	23	38
2	Manufacturers only	10	17
3	Both manufacturers and service providers	8	13
4 =	Home market suppliers only	6	10
4 =	All businesses	6	10
6	Private sector only	4	7
7	Public sector only	3	5
		60	**100**

(d) Appropriateness of ISO 9000 as perceived by: Consumers

Ranking	Category	No. of Responses	%
1	All businesses	10	38
2 =	Manufacturers only	6	23
2 =	Both manufacturers and service providers	6	23
4	Exporters only	2	8
5 =	Home market suppliers only	1	4
5 =	Public sector only	1	4
7	Private sector	0	0
		26	**100**

The detailed analysis of responses shows that all four groups (respondent's organization, business community, SMEs and consumers) share a common view that ISO 9000 is not perceived as appropriate to "home market suppliers only", "private sector only" or "public sector only".

Three groups (respondent's organization, business community and consumers) agree that ISO 9000 is highly appropriate for "all businesses" and for "both manufacturers and service providers".

Two groups (business community and SMEs) are both perceived as giving high importance to the appropriateness of ISO 9000 to "exporters only", a result which confirms results recorded in Tables 5 and 6 about the present and future importance of ISO 9000 to different types of business.

2.4 Questionnaire Section II (ISO 9000): Implementing the ISO Series (Questions II.11 - II.13)

Questions in this section examine in some depth the reasons why companies choose to implement the ISO 9000 series of standards and, conversely, the reasons why others choose not to implement them.

First, however, Question II.11 requests information on the number and type of companies which have registered an ISO 9000 system in the respondent's country. Respondents from 27 countries answered this question, but the answers given are not always self-consistent, and the data may therefore be unreliable in some instances. Results, presented on a regional basis, show the number given by each respondent in parentheses:

Europe: Romania (12, 810); Russia (30); Turkey (85).

Africa: Ghana (1); Kenya (3); Nigeria (1); Zambia (1); Morocco (less than 10); Tunisia (20); Mauritius (5).

Central & South America: Bolivia (0, 0, 0); Argentina (36); Brazil (730); Colombia (53); Chile (10, 11, 12); Barbados (0); Antigua and Barbuda (0).

Middle East: UAE (9)

Asia Pacific: India (about 700, 750, 800, 800); Pakistan (less than 10, 2 or 3); Philippines (55, 56); Vietnam (0); China (500, more than 100); Indonesia (70, 73); Taiwan (487); Sri Lanka (6); Thailand (34).

Whilst general trends are discernable at regional level from these data a more complete picture of the global situation can be obtained from the survey of ISO 9000 registration carried out periodically by the Mobil Oil Company. The most recent results, obtained in June 1994 are reproduced as Annex 7.

Only 12 respondents gave information about the types of company which have been registered (Table 8), but several others commented that companies in the manufacturing and processing sectors are generally among the first to seek registration to ISO 9000.

Table 8
Types of Company achieving Registration to ISO 9000

Region	Country	Type of Company			Sector
		Multi national	Large national	SME	
Europe	Russia	-	30	-	-
Africa	Ghana	1	-	-	-
Central & South America	Argentina	25	11	-	-
	Brazil	(a) 100 (b) 34	600 44	30 9	Electrotechnical Industrial components
	Colombia	24	16	13	Chemical
Asia Pacific	India	(a) 200 (b) 100 (c) 25 (d) 70	450 500 600 700	100 150 150 30	Electrotechnical Textiles Cement Engineering Process industry
	Indonesia	-	30	40	-
	Taiwan	25%		75%	Electronics

Question II.12 is a complex, multi-part question about companies' reasons for implementing the ISO 9000 series.

Ten possible reasons for implementing the standard are listed in the question and respondents are invited to assess the relative importance of these to all businesses and to SMEs.

Companies' reasons for implementing ISO 9000, ranked according to their perceived order of importance, are given in Table 9 (all businesses) and Table 10 (SMEs).

Table 9
Companies' Reasons for implementing the ISO 9000 Series
(Question II.12) - All Businesses

Rank Order	Reason	Important to Unimportant					No Response
1	To meet overseas customer demand	40 (68%)	5 (9%)	1 (2%)	0 -	0 -	13 (22%)
2	To remove barriers to export trade	28 (48%)	11 (19%)	0 -	2 (3%)	0 -	18 (31%)
3	To strengthen market share	21 (36%)	12 (20%)	6 (10%)	2 (3%)	2 (3%)	16 (27%)
4	To improve internal efficiency	18 (31%)	10 (17%)	6 (10%)	5 (9%)	1 (2%)	19 (32%)
5	Associated with TQM	15 (25%)	9 (15%)	5 (9%)	5 (9%)	6 (10%)	19 (32%)
6	Because their competitors have it	12 (20%)	13 (22%)	8 (14%)	5 (9%)	1 (2%)	20 (34%)
7	To meet domestic customer demand	7 (12%)	9 (15%)	11 (19%)	7 (12%)	5 (9%)	20 (34%)
8 =	To improve staff morale retention	6 (10%)	7 (12%)	7 (12%)	10 (17%)	6 (10%)	23 (39%)
8 =	To reinforce management authority	6 (10%)	2 (3%)	10 (17%)	8 (14%)	9 (15%)	24 (41%)
10	To demonstrate conformity to legislation	4 (7%)	5 (9%)	4 (7%)	11 (19%)	13 (22%)	22 (37%)
	Other	4	0	1	2	0	

Perceptions of the reasons why companies of all kinds ("all businesses") decide to implement ISO 9000 (see Table 9) are heavily weighted towards customer-related issues, the emphasis being on meeting overseas customer demand (68% of potential respondents), removing barriers to export trade (48%) and increasing market share (36%).

Between 20 and 30% of potential respondents believe that improving internal efficiency, supporting TQM (total quality management) and implementation of the standard by competitors may also bear on the decision.

Other reasons listed in Table 9 attract little support, with the demonstration of conformity to legislation appearing last in the rank order of importance.

Table 10
Companies' Reasons for implementing the ISO 9000 Series (Question II.12) - SMEs

Rank Order	Reason	Important to Unimportant					No Response
1	To meet overseas customer demand	18 (31%)	11 (19%)	2 (3%)	4 (7%)	2 (3%)	22 (37%)
2 =	To strengthen market share	12 (20%)	8 (14%)	7 (12%)	7 (12%)	3 (5%)	22 (37%)
2	To remove barriers to export trade	12 (20%)	7 (12%)	5 (9%)	7 (12%)	3 (3%)	25 (42%)
3	To improve internal efficiency	9 (15%)	2 (3%)	12 (20%)	5 (9%)	5 (9%)	26 (44%)
5	To meet domestic customer demand	7 (12%)	5 (9%)	5 (9%)	7 (12%)	7 (12%)	28 (48%)
6	Because their competitors have it	6 (10%)	5 (9%)	8 (14%)	7 (12%)	5 (9%)	28 (48%)
7	Associated with TQM	5 (9%)	3 (5%)	10 (17%)	6 (10%)	8 (14%)	27 (46%)
8	To reinforce management authority	3 (5%)	0 -	11 (19%)	11 (19%)	6 (10%)	28 (48%)
9	To demonstrate conformity to legislation	2 (3%)	3 (5%)	4 (7%)	7 (12%)	15 (26%)	28 (48%)
10	To improve staff morale/retention	1 (2%)	3 (5%)	7 (12%)	10 (17%)	8 (13%)	30 (51%)
	Other	1	0	0	2	1	

The spread of opinion about the reasons why SMEs implement ISO 9000 (see Table 10) is much less pronounced. Nevertheless it is significant that SMEs' perceived reasons for using ISO 9000 follow much the same rank order as reported for all businesses - with the meeting of overseas customer demand, strengthening of market share, removal of barriers to trade and improvement of internal efficiency occupying the first four places in rank order.

Question II.13 sets out eight possible reasons why companies may choose not to implement ISO 9000; as with the preceding question responses were invited with regard to the perceived views of all businesses and SMEs.

Results for "all businesses" (Table 11) and for SMEs (Table 12) show a remarkable similarity with regard to rank order. Indeed there is complete agreement about the order of importance of the three main reasons for not implementing ISO 9000:

Cost of introducing an ISO 9000 system

Lack of awareness of the ISO 9000 Series

Lack of management commitment

The cost of registration and certification is also perceived as an important reason for not implementing the standard.

It is interesting that management and cost-related factors are given greater emphasis by the majority of respondents.

Lack of customer demand (for ISO 9000), one of the factors related to the market place, ranks fourth or fifth in order of perceived importance, with "complexity", "insufficient commercial benefit" and "not needed for export users" in sixth to eighth positions.

Table 11
Companies' Reasons for NOT implementing the ISO 9000 Series
(Question II.13) - All Businesses

Rank Order	Reason	Important to Unimportant					No Response
1 =	Cost of introducing an ISO 9000 system	20 (34%)	12 (20%)	5 (9%)	5 (9%)	0 -	17 (29%)
1 =	Lack of awareness of the ISO 9000 Series	20 (34%)	7 (12%)	7 (12%)	5 (9%)	3 (5%)	17 (29%)
3	Lack of management commitment	18 (31%)	9 (15%)	5 (9%)	3 (5%)	2 (3%)	22 (37%)
4	No demand from customers	16 (27%)	11 (19%)	7 (12%)	2 (3%)	0 -	23 (39%)
5	Cost of registration, certification	9 (15%)	10 (17%)	13 (22%)	7 (12%)	1 (2%)	19 (32%)
6	Too complex	8 (14%)	12 (20%)	10 (17%)	4 (7%)	3 (5%)	22 (37%)
6	Not needed for export users	8 (14%)	9 (15%)	5 (9%)	6 (10%)	4 (7%)	27 (46%)
8	Insufficient commercial benefit	7 (12%)	16 (27%)	10 (17%)	3 (5%)	2 (3%)	21 (36%)
	Other	1	0	0	1	0	

Table 12
Companies' Reasons for NOT implementing the ISO 9000 Series
(Question II.13) - SMEs

Rank Order	Reason	Important to Unimportant					No Response
1	Cost of introducing an ISO 9000 system	27 (46%)	11 (19%)	1 (2%)	2 (3%)	0	18 (31%)
2	Lack of awareness of the ISO 9000 Series	24 (41%)	7 (12%)	2 (3%)	4 (7%)	2 (3%)	20 (34%)
3	Lack of management commitment	21 (36%)	6 (10%)	4 (7%)	0	3 (5%)	25 (42%)
4	Cost of registration certification	19 (32%)	9 (15%)	1 (2%)	2 (3%)	1 (2%)	27 (46%)
5	No demand from customers	18 (31%)	8 (14%)	4 (7%)	2 (3%)	2 (3%)	25 (42%)
6	Too complex	16 (27%)	9 (15%)	5 (9%)	3 (5%)	1 (2%)	25 (42%)
7 =	Insufficient commercial benefit	9 (15%)	17 (29%)	6 (10%)	1 (2%)	3 (5%)	23 (39%)
7 =	Not needed for export users	9 (15%)	12 (20%)	1 (2%)	5 (9%)	6 (10%)	26 (44%)
	Other	0	0	0	0	0	

It should be noted that all respondents to Questions II.12 and II.13 about the reasons for implementing ISO 9000 were also asked whether their views were based on survey data or anecdotal evidence. All replies to the supplementary question referred to anecdotal evidence only.

2.5 Questionnaire Section II: National Infrastructure for Conformity Assessment

Introduction

Responses to Questions II.14 to II.32 are not consistent in their approach, with some respondents giving only part answers. The results are presented as simple numerical data and are reviewed, commented upon and discussed in later sections.

2.5.1 Government Support (Questions II.14 - II.16)

Question II.14

Does the Government promote quality awareness in business?			
	Yes	No	No Response
For all businesses	45	5	9
SMEs only	11	11	37

Note: 9 respondents failed to answer the question

The replies indicate that Government support is generally available.Most forms of media appear to be used.

Question II.15

Does the Government support compliance with the ISO 9000 Series with:			
	Yes	No	No Response
Funding for awareness campaigns	26	17	18
Funding for consultancy	15	20	24
Funding for training	23	14	22
Funding for implementation	9	25	25
Funding for SMEs only	12	20	27

Note: 13 respondents failed to answer this question.

Awareness and training are the areas receiving most support from government although a high proportion do not. However the returns show that apart from these two areas most do not provide assistance. It is interesting to compare this result with Q II.32 in which the respondents mirror this return in their views on who should be funding the various activities.

Question II.16

Is there any legislation making conformity with the ISO Series mandatory for certain manufacturers?				
Yes	**Pending**	**No**	**Should Be**	**No Response**
4	4	35	9	11

2.5.2 Accreditation (Questions II.17 - II.21)

Question II.17

Does your country have a National Accreditation Scheme?				
Yes	**Pending**	**No**	**Should Do**	**No Response**
22	7	18	9	7

Approximately two thirds of the respondents to this question have, or are developing, accreditation.

Examining these results on a regional basis, the breakdown is as follows:

Region	Responses to Question II.17				
	Yes	**Pending**	**No**	**Should be**	**No response**
Europe	4	0	0	0	2
Africa	3	2	5	2	1
Central & South America	6	4	4	1	0
Middle East	0	0	1	1	0
Asia Pacific	9	1	7	5	3

Note: One respondent could not be identified, and several completed two columns. The scope of accreditation varies considerably from country to country.

Countries with accreditation bodies in place or pending are:									
Europe		**Africa**		**Central & South America**		**Middle East**		**Asia Pacific**	
Yes	Pending	Yes	Pending	Yes	Pending	Yes	Pending	Yes	Pending
Romania	-	Ghana	Kenya	Argentina	Bolivia	-	-	China	India
Russia		Tunisia	Morocco	Brazil				Indonesia	
Turkey		UAE		Chile				Malaysia	
				Colombia				Philippines	
								Thailand	
								Vietnam	

Question II.19

Is it associated with government?		
Yes	**No**	**No Response**
30	0	29

Question II.20

Does your National Accreditation Body have mutual recognition agreements with other countries?				
Yes	**Pending**	**No**	**Should Do**	**No Response**
3	10	8	5	33

A poor response to the question with under half of the respondents not giving an answer but a number appear to be in the process of developing agreements.

Question II.21

Does your main National Accreditation Body accredit?	
Domestic certification bodies	26
Domestic laboratories	25
Overseas certification bodies	11

It is to be noted that most of the accreditation bodies accredit both certification bodies and laboratories.

2.5.3 Certification (Questions II.22 - II.32)

Question II.22

Does your country have a National Certification Scheme for registration to ISO 9000?				
Yes	Pending	No	Should Have	No Response
24	10	10	6	12

A strong growth in registration schemes is indicated.

Question II.23

If so, how many?	
Domestic certification bodies	1 - 18
Overseas certification bodies (issuing certificates in your country)	0 - 5
Overseas certification bodies (with an office in your country)	0 - 5

Note: 32 respondents failed to answer this question.

A wide variety of answers indicating different growth patterns. A little surprising as other surveys show a pronounced penetration by overseas bodies.

Question II.24

Is certification from your domestic certification bodies recognised by trading partner countries?	
Most partners	12
Some partners	14
Main partners	0
Only certain sectors	1

Note: 32 respondents failed to answer this question.

It is likely that this question was not clearly understood. Many respondents did not answer; some appear to have product certification in mind. It is also likely that the recognition is between domestic certification bodies.

Question II.25

Are any of the certification bodies operating in your country accredited by?		
	Yes	**How many**
Domestic accreditation body only	8	13
Overseas accreditation body only	14	37
Both domestic and at least one overseas body	5	3+
Not accredited at all	8	2

Note: 30 respondents failed to answer this question.

A spread of activity with lack of correlation of figures.

Question II.26

Is there any pressure on certification bodies operating in your country to be accredited?				
Yes	**Sometimes**	**No**	**Should Be**	**No Response**
19	4	11	11	18

An indication of a pressure to obtain accreditation. (see Question II.27).

Question II.27

Where does this pressure originate?	
Legislative requirement	13
Domestic customer requirement	12
Overseas customer requirement	20

Note: 12 respondents failed to answer this question.

A high level of response suggesting legislative pressure which is not in accord with the answers to Question II.16. Either a misunderstanding or a skew of the results because of the nature of respondents' interest. It is more significant to note that there is pressure both from overseas and domestic customers.

Question II.28

Do any domestic certification bodies have mutual recognition agreements with overseas bodies?		
Yes	**No**	**No Response**
15	25	19

Some evidence of MRA's but it is not clear from the responses what these entail. The question did not extract specific detail and in view of the answers to Question 29 they may be mainly in the product certification area.

Question II.29

Does your main certification body also test products?		
Yes	**No**	**No Response**
32	6	21

An indication that on a national basis the growth of registration is in bodies previously carrying out product certification and as such very often the national body for such purposes.

Question II.30

If so, does it insist that conformity with ISO 9000 is necessary as well as compliance with the appropriate product standard itself?		
Yes	**No**	**No Response**
8	23	28

There is an interesting growth of the application of ISO 9000 to product certification by the certification bodies.

Question II.31

In your opinion, is access in your country to the following:			
	Adequate	**Inadequate**	**Too Costly**
Information on ISO 9000	29	21	1
Consultancy for implementation	14	21	14
Training for implementation	17	20	11
Trained assessors	16	24	15
Certification to domestic requirements	18	25	2
Certification for international recognition	12	25	10

Note: 10 respondents failed to answer this question.

Responses appear to indicate that the provision of information is adequate in a little more than half the responses. (Yet few are aware!) Also a similar response for training.

Question II.32

Should the costs of improving quality management through the adoption of the ISO Series be borne by?				
	government	**company**	**customer**	**other**
Promoting awareness	38	14	2	1
Consultancy training	16	39	0	0
Implementation	4	47	1	0
Registration	6	45	0	0

Note: 9 respondents failed to answer this question.

Clear conclusion that government should bear the costs of awareness but that all other costs should be taken by the company.

2.6 QSAR - Quality Systems Assessment and Registration (Question II.33)

Question II.33

a) In your opinion will QSAR facilitate your country's international trade if your domestic accreditation body secures QSAR recognition?

very much				not at all
a	b	c	d	e
13	8	6	1	1

b) Do you expect difficulty in securing QSAR recognition for your certification bodies?

great difficulty				no difficulty
a	b	c	d	e
3	16	13	9	5

c) Will it be harder for developing countries to meet QSAR requirements than developed countries?

much harder				no harder
a	b	c	d	e
16	14	12	3	2

d) Should accreditation/certification bodies in developing countries be helped to gain QSAR recognition?

yes				no
a	b	c	d	e
40	5	1	0	1

Note: It seems significant that only 6 respondents failed to answer this question

There is an overwhelming view that QSAR will assist in international trade. However there is also a view that it will be difficult for the certification bodies to gain recognition, which demonstrates some uncertainty about the process. As it is based on recognition of the accreditation body, then if the certification bodies perceive that they will have

difficulty, by definition they will have the same difficulty in obtaining domestic accreditation. It is anticipated (Question II.33c) that the domestic accreditation bodies will have difficulty and that they will require help (Question II.33d).

2.7 ISO 9000 Series and International Trade (Question II.34)

Responses to Question II.34 are of particular interest because they go to the heart of the main issue addressed by this part of the survey, namely - the trade implications of international standards for quality management systems.

Question II.34 is an open question inviting respondents to express their agreement or disagreement with seven propositions related to the role of ISO 9000 vis a vis international trade. Over 40 of the potential respondents answered this question and their numerical responses are summarised in Table 13.

Although a high level of agreement is recorded for five of the propositions (a, b, d, e and g), two propositions, (c) and (f), attracted a very mixed response, with the number of agreements matching disagreements in each case.

Table 13
ISO 9000 Series and International Trade
(Question II.34)

Propositions	Respondents' Opinions Agree to Disagree					No Response
(a) ISO 9000 helps to expand our international trade	41 (70%)	6 (10)	2 (3%)	1 (2%)	0 -	9 (15%)
(b) Overseas customers increasingly request ISO 9000 certification	27 (46%)	14 (24%)	2 (3%)	1 (2%)	2 (3%)	13 (22%)
(c) Overseas customers are reluctant to accept ISO 9000 certificates issued other than by their national certification bodies	12 (20%)	6 (10%)	12 (20%)	7 (12%)	10 (17%)	12 (20%)
(d) Securing certification by an overseas certification body is difficult/costly	32 (54%)	7 (12%)	4 (7%)	3 (5%)	1 (2%)	12 (20%)
(e) Lack of mutual recognition of ISO registration certificates hinders exporters	25 (42%)	12 (20%)	5 (9%)	1 (2%)	1 (2%)	15 (25%)
(f) Small exporters benefit most from ISO 9000 registration	10 (17%)	10 (17%)	5 (9%)	6 (10%)	14 (24%)	14 (24%)
(g) ISO 9000 registration helps domestic producers compete against imports	22 (37%)	10 (17%)	10 (17%)	3 (5%)	4 (7%)	10 (17%)

Whilst the numerical response is generally indicative of the overall situation regarding respondents' views about ISO 9000 and international trade, much more valuable insight is gained by examining the numerous comments which accompanied the replies:

Proposition II.34 (a) - ISO 9000 registration helps to expand our international trade

Support for this proposition is overwhelming with 70% of potential respondents registering agreement. Their reasons include:

- international recognition of the ISO 9000 series
  (Bolivia, Brazil and Chile)

- accepted common level of quality management
  (Philippines and Taiwan)

- improved customer confidence in quality and credibility
  (China, India, Pakistan, Philippines and Russia)

- demand by overseas customers
  (Argentina, Morocco and Sri Lanka)

- improved access to markets and reduced barriers to trade
  (Chile, Colombia, India, Indonesia, Pakistan and Vietnam)

- improved competitiveness
  (Ghana, Nigeria and Romania)

- increased exports
  (Indonesia and Pakistan)

Only one respondent (from UAE) expressed disagreement - on the grounds that his country exported relatively few products.

Proposition II.34 (b) - Overseas customers increasingly request ISO 9000 certification

This proposition receives general agreement (46% "agree" and 24% "tend to agree") and a number of reasons are given to support the view that overseas customers increasingly request ISO 9000 certification to:

- provide an assurance of quality
  (Argentina, Barbados, Colombia, Ghana, India, Pakistan, Philippines, Taiwan, Tunisia, UAE, Vietnam)

- protect the consumer
  (Bolivia, Chile, Indonesia, Pakistan)

- establish trust and gain confidence
  (Bolivia, Brazil, Romania, India)

- avoid multiple audits
  (Sri Lanka)

Respondents from Indonesia, Nigeria, Philippines and Russia believe that the trend toward requesting ISO 9000 certification is driven by increasing competition and market pressure, and there are interesting but contrasting comments from respondents in China and Brazil. The former believes that requests for ISO 9000 certification from overseas customers help to expand international trade, whereas the latter observes that such requests may be used to close national markets!

Respondents from Mauritius and Malawi disagree with the proposition, the latter reporting that reliance on traditional customers and the export of commodities as opposed to manufactured products have, thus far at least, shielded Malawi from the trend.

Proposition II.34 (c) - Overseas customers are reluctant to accept ISO 9000 certificates issued other than by their national certification bodies

Responses to proposition II.34 (c) are evenly distributed between agreement and disagreement, or as a respondent from Nigeria remarks "some say 'yes', some say 'no'" a view shared by respondents in Colombia and Russia.

Those who agree argue that overseas customers are reluctant to accept ISO 9000 certificates issued other than by their national certification bodies because:

- they lack confidence in other certificates
  (Chile, China, Colombia, Ghana, India, Morocco, Sri Lanka, UAE and Vietnam)

- other certificates are not well known or lack credibility
  (Brazil, Indonesia, Pakistan and Philippines)

- national certificates guarantee quality for consumers
  (Romania)

- of habit and fear of the unknown
  (Pakistan)

Respondents disagreeing with the proposition believe, on the contrary, that overseas customers will accept ISO 9000 certificates from other than their national certification bodies because:

- ISO 9000 is internationally recognised
  (Bolivia)

- mutual recognition agreements exist
  (Chile)

- name and reputation of the certification body count
  (Philippines)

- accreditation gives confidence
  (Brazil and India)

Proposition II.34 (d) - Securing certification by an overseas certification body is difficult/costly

This proposition receives strong support with 54% and 12% of potential respondents who "agree" and "tend to agree" respectively.

There is near universal agreement that the costs of securing certification by an overseas certification body are high, due to a combination of foreign experts' fees, travel and accommodation. Attention is also drawn to the additional costs incurred to meet demands for extra preparation and inspection (Bolivia and Pakistan).

Surprisingly, only one respondent (China) refers to the difficulties created by language when companies seek certification by an overseas certification body.

Only one respondent (from Brazil) disagrees with the proposition, arguing that certification by an overseas certification body is "the final component of a management system".

Proposition II.34 (e) - Lack of mutual recognition of ISO 9000 registration certificates hinders exporters

Respondents who agree (42%) or tend to agree (20%) with the proposition that lack of mutual recognition of ISO 9000 registration certificates hinders exporters believe that lack of mutual recognition:

- causes multi-assessment and adds to costs
  (Argentina, China, India, Nigeria and Romania)

- hinders trade
  (Chile, Philippines and Sri Lanka)

- creates trade barriers
  (Colombia, Ghana and Taiwan)

Respondents from India, UAE and Vietnam suggest that mutual recognition is difficult to achieve due to lack of trust and mutual confidence, views supported by respondents from

Pakistan and Philippines who refer to "procedural difficulties" and "customer demand for familiar certificates".

However, support for the proposition is not unanimous with several respondents disagreeing on the grounds that:

- mutual recognition does not necessarily remove technical barriers to trade (Bolivia)
- mutual recognition schemes already exist (Brazil)
- the perceived importance of ISO 9000 for exporters is low (Indonesia)

Proposition II.34 (f) - Small exporters benefit most from ISO 9000 registration

Forty five respondents comment on the proposition that small exporters benefit most from ISO 9000 registration. Opinions are equally divided between 20 (who agree or tend to agree) and 20 (who disagree or tend to disagree).

Those who agree believe that small exporters benefit most from ISO 9000 registration because it:

- leads to better quality (Philippines, Romania, Sri Lanka and Tunisia)
- improves competitiveness and market share (Ghana, Nigeria and Philippines)
- opens up overseas markets (Colombia)
- creates confidence and gives a better image (Brazil and Chile)

These opinions confirm answers received in response to Question II.10 regarding the appropriateness of ISO 9000 to different types of firm. Results in Table 7 (page 19) show that SMEs perceive ISO 9000 as being particularly appropriate for exporters.

Nevertheless, a number of respondents appear to disagree; their stated reasons are

- ISO 9000 is not relevant to SMEs (Chile and UAE)

- ISO 9000 is too costly for SMEs
  (Pakistan)

- SMEs have low levels of exports
  (Indonesia and Malawi)

Other comments indicate the difficulty of presenting a simple view. For example:

- it depends on demands from customers
  (Argentina and Indonesia)

- it depends on each case
  (Bolivia)

- big exporters benefit most
  (Pakistan)

- it's the same for all
  (India)

Proposition II.34 (g) - ISO 9000 helps domestic producers compete against imports

This proposal attracted a fair measure of agreement but there are some notable exceptions.

The majority of respondents agree on the basis that ISO 9000 implementation brings a number of benefits:

- improves quality
  (Argentina, Barbados, China, Pakistan, Philippines, Romania, Sri Lanka, Tunisia and UAE)

- improves efficiency and reduces costs
  (Brazil, India and Taiwan)

- enhances reputation
  (India, Pakistan and Vietnam)

- meets the increasing demand for quality
  (Brazil)

- establishes equal competitive conditions
  (Bolivia, Ghana and Philippines)

However, other respondents (from China, Colombia, Indonesia, Malawi and Russia)

disagree pointing to the low level of awareness and the lack of demand for quality from consumers in their home markets.

Overall the responses to Question II.34 indicate that in the context of international trade ISO 9000 registration/certification is generally perceived as contributing to international trade and to the reduction of technical barriers to trade, as well as having the potential to reduce the need for multi assessments.

However, for various reasons this view is not shared by all respondents. This is either because their country's exports are not at present affected by demands for ISO 9000 or because their exporters already have mutual recognition agreements with trading partners

A number of respondents believe that the question of ISO 9000 registration in relation to exporting is a matter of greater relevance to multinational and large national firms, and that the situation for SMEs will vary according to their business and their customer base.

Concerns are expressed about the cost of obtaining certification registration by overseas certification bodies, and about the reluctance of overseas customers to accept ISO 9000 certificates other than those issued by their national certification bodies.

Most respondents believe that lack of mutual recognition of ISO 9000 certificates hinders international trade, but understand and accept the need to establish mutual confidence as a basis for such recognition.

Views are mixed about the benefits of implementing ISO 9000 to serve the home market, but the majority of respondents perceive the advantages of so doing in terms of improved quality and greater efficiency.

2.8 Other Comments (Question II.35)

Relatively few respondents took advantage of the opportunity offered by Question II.35 to make other comments about the ISO series of management system standards. Those that did emphasised the need to:

- focus discussion of the results of the survey on the needs of developing countries
  (Nigeria)

- make foreign consultants available on a full-time basis when appropriate
  (Pakistan)

- ensure that ISO/IEC's fundamental role of producing international standards is compatible with the mutual recognition of accreditation bodies as envisaged by QSAR
  (Taiwan)

II.3 Discussion of Results (Questionnaire Section II - ISO 9000)

3.1 Human Resource and Infrastructure needs of Developing Country Accreditation and Conformity Assessment Bodies

3.1.1 Background

(a) General

When considering the resource and infrastructure needs for accreditation and certification on a national basis one has to consider the needs of a national conformity assessment system. For the purposes of this discussion, it is presupposed that such a system will be predominately a voluntary process, adopted through an understanding of the benefits to be achieved and to meet national and international needs and practices. It follows therefore that Industry, as the major participant and beneficiary, will need to be convinced of add-on value in respect of increased confidence and increased sales to compensate for and preferably exceed the costs of participation.

(b) Reasons for Conformity Assessment

The fundamental of conformity assessment is the demonstration of conformity of a product to technical standards, specifications, rules and regulations. All trade is in products (services are a defined product) and whatever the conformity assessment process, it cannot be divorced from product conformity in the end result. Quality systems are not an end in themselves but a means to an end - product conformity. It follows that the reasons for requiring conformity assessments are many and various.

First and foremost is the need for a producer to be satisfied that the product he has made is in conformity to the specification to which it has been made. This need is in relation to all his production so as to assure himself that he can meet his responsibility to his customer or in respect to legal requirements and also to maintain his reputation in the market.

Depending on his customer base and their ability to determine suitability and quality of a product there will be the need for a demonstration of conformity with legal requirements (usually safety-related) and customer expectations. Whilst the latter has often been done by the customer himself, the tendency now is to look for a third party certification facility as is normal for safety-related product certification. It will be conditioned by the nature of the technical specification eg. national or international standards, company specification or customer specification.

From a national point of view there is the need, by governments to encourage industry to adopt good quality management practices so as to raise industrial performance. By this means national image in international trade can be established.

(c) Conformity Assessment - Component Parts

Testing

Testing is an inescapable part of conformity assessment. The only way to demonstrate conformity of a product to a given set of technical requirements is through an evaluation of the product which has been manufactured by testing. From this basic premise it is clear that the technical requirements must be such that they are capable of evaluation.

It follows that the results of such tests must be seen to be accurate and hence there has to be a system of calibration such as to create the necessary confidence in their accuracy.

Thus we see the first essential of the conformity assessment process, namely, a soundly based national measurement system with traceability of calibration back to acceptable (internationally) primary measurement standards.

Control of Production

There are two aspects which make it important to have control over production namely: continuing conformity and efficiency.These require a systematic approach with effective feedback and control - a process usually known as quality assurance.

Continuing Conformity: Given that a satisfactory test result can show only that the item actually tested was in conformity then it can only give a presumption that the subsequent production will also conform. Hence in order for the producer to maintain confidence that his product continues to be in conformity, he has to have an effective control over all aspects of his production. This means effective management control over purchase, production and verification.

Efficiency: Additionally, in order that the producer can be competitive in the marketplace, the costs of producing the product must be kept as low as possible. This means effective management control over all aspects of his business, starting with marketing through design, purchase, production, sales and after sales service.

Verification

Having gained confidence in the capability of the supplier to produce products in conformity with the technical specification, there is frequently the need for a check that all the measures put into operation are indeed working. Thus we have a periodic verification or audit requirement which needs to be carried out both in respect of testing and systems.

(d) Certification

We have considered the benefits which arise as a result of a comprehensive conformity

assessment process and can appreciate the need for such an approach in order to be competitive. It may not be sufficient however, in a highly competitive and customer selective marketplace, to rely upon the manufacturers own declaration of conformity. Hence the need for some form of independent evaluation arises, which may be simply in the form of independent testing or, increasingly, of the manufacturers capability ie. effective implementation of a quality system.

Such independent evaluation (audit) can of course be done by the "informed"customer who has the capability and this has commonly be the case. However, this customer has his own market pressures and now sees this process as wasteful and costly. He therefore turns to independent third party certification where he has confidence in it.

Thus we see the second essential of a national conformity assessment system; the provision of effective testing and certification facilities in which the user can have confidence.

This brings us on to a consideration of accreditation.

(e) Accreditation

There are two forms of accreditation which are commonly used,both of which are important from a national and international viewpoint.

Testing

The action of accreditation of test laboratories is synonymous with the certification carried out by a certification body. It is the activity which determines the capability of a test laboratory to carry out a defined scope of testing. It will establish the measurement capability and uncertainty of measurement together with aspects such as the independence and impartiality of the laboratory. thus it has a very important role in providing the essential confidence in a laboratory's test results both for in-house and external needs.

Certification

Traditionally, certification was concerned with products and usually in respect of safety considerations. The requirements were enshrined in national and international standards and it was (and is) common for the national standards body (NSB) to establish a test and product certification capability. As such it was a single activity and in the case of many developing countries, a governmental or quasi - governmental body. For this activity therefore there was no perceived need for accreditation.

Note: 84% of the respondents to question II 29 of the questionnaire certify products also.

As the adoption of quality system techniques grew in the industrialised countries, with particular reference to the ISO 9000 series of standards, so there was a growth of

independent certification of company quality systems and a corresponding growth of independent certification bodies. The market for such independent certification reacted by requiring some assurance that they could have confidence in the certification bodies and hence accreditation of such bodies developed.It is different from the accreditation of laboratories in that it is accrediting the bodies which provide the certification.

The need for this accreditation in a developing country arises from a multiplicity of certification bodies offering services, either of a domestic origin or from overseas bodies offering services.

Thus we see the third essential of a National Conformity assessment structure in the provision of effective accreditation of the bodies carrying out the verification task.

Note: 37% of the respondents to the questionnaire have a national accreditation body with a further 12% in the process of establishing one.

(f) The Marketplace

Internal or Domestic Market

The indigenous customer is increasingly becoming selective. His expectations rise. Nationally manufactured products compete with imported products often and perhaps wrongly carrying an image of being "better". Indigenous manufacturers therefore have to develop a "quality" image to counter import penetration and this can be achieved through the adoption of quality assurance and independent certification.

Export Markets

Sophisticated and selective, very competitive, it is essential for manufacturers to establish confidence. Again, adoption of quality assurance and independent certification to internationally recognised standards and criteria is essential.

3.1.2 Infrastructure and Role of Government

The role of government is crucial. It is governments' responsibility to provide the framework and support (not necessarily financial) for a national attitude and programme related to quality assurance.

First and foremost is the need for quality awareness programmes. Industry has to be educated and persuaded of the benefits which it will derive both to its own success and to the national economy.

Note: 44% of the respondents to the questionnaire have government support for awareness.

The experience of industrialised countries needs to be understood and adapted to each country's particular situation. It is government's task to establish a plan for implementation and development of a national quality policy.

As will have been seen, first is the establishment of a national measurement system. Coupled with this is the support for the setting up of a laboratory accreditation service to provide the national confidence in test results. This service should have the authority of government behind it.

It is worth noting although not advocated, the Japanese approach in the 1950's of an export inspection law.This was effective in that, by requiring specified goods for export to be tested for conformity before shipment, the quality image was considerably enhanced. It must also be noted that a drive to implement quality systems was also part of the success story.

Additionally however, government policy is the key to the effective adoption of quality assurance and government has to provide the drive. Experience shows that an effective process tends to follow a pattern starting with a government quality campaign to create awareness in industry and education through consultancy. The demand then arises from industry for independent certification/registration. Accreditation then follows as necessary.

This has to be managed in that development of a certification/registration activity has to ideally match the creation of a demand for it. It is largely a resource problem, discussed in Section 3.3.

A two-pronged thrust is required, coordinated so as to achieve the objectives of the adoption by industry of ISO 9000 series standards at the same time as the development of certification/registration and accreditation procedures.

It is for government to ensure that such procedures fully meet international criteria.

Given therefore that it is governments role to provide the drive and coordination, the aspects of education and training also need government attention.

Note: 38% of the respondents to the questionnaire have government support for training.

3.1.3 Resources

(a) Measurement system

Access to a primary standards source which has international recognition through OIML is necessary. Decisions need to be taken on whether to provide all or some of this resource on a national basis or whether to access another suitable resource. Facilities and trained personnel will be required for the former and a national facility has to be

established by government.

(b) Testing

For national organisations there will be a need for adequately trained and competent staff. Initially their training may have to be provided by external assistance but there has to be consideration to providing appropriate secondary and tertiary education.

(c) Certification/Registration

One of the key features leading to the credibility of a certification/registration body is the qualification and competence of its audit staff. This is also the most difficult problem. It is essential that its auditors have a recognised qualification. Work is taking place to establish a common international system which is much needed. The separate growth of systems is being brought together through a group known as the International Auditor and Training Certification Association (IATCA). Within Europe the European Organisation for Quality (EOQ) have also published proposals. Work is in hand to bring harmonisation so as to develop a single international approach to the recognition of auditor training and competence. In broad terms it is likely that these criteria will have three main components.

There will have to be evidence of having worked in a quality assurance role for a number of years. A points system recognises work in industry and in particular experience in quality systems and their auditing. Further points are allocated on the basis of academic qualifications. In the short term this may present problems in developing countries.

There has to be attendance at a recognised training course with an examination pass at the end of it. This should not present difficulty to a developing country as there are a number of training organisations providing such courses.

There is a need to have audit experience. This is the most difficult problem for a developing country, at least in the short term. For registration as an auditor, it is generally required to have participated in a minimum of five assessments. For lead auditor, a further five as team leader are required. Hence one can see the need not only for coordination to ensure that there is a flow of companies seeking registration but also the need for some external resource initially. Once a corpus of recognised auditors are available then a self-sustaining capability is built up. A carefully planned and managed programme is necessary.

Note: 66% of the respondents to the questionnaire considered that the position in respect of trained assessors was inadequate or too costly.

(d) Accreditation

It is unlikely that an accreditation body accrediting certification bodies can support a

permanent staff as auditors. A process which can utilise the recognised auditors in the certification activity, albeit with additional training will be required.

3.1.4 Conclusions

The essentials for a national conformity assessment system are seen to be:

- A soundly based national measurement system with traceability of calibration back to internationally acceptable primary measurement standards.
- The provision of effective testing and certification facilities in which the user can have confidence.
- The provision of effective accreditation of the bodies carrying out the verification task.
- The provision of a national system to train and certify auditors to international standards.

Government has a major role in providing the support, encouragement and environment for the development of an effective National Quality policy and system.

Awareness, education and training present the biggest problems and challenge for the bodies concerned.

It is essential to follow international developments and adopt international practices and criteria

3.2 Mutual Recognition Agreements and QSAR

3.2.1 Mutual Recognition Agreements (MRAs)

(a) Introduction

The so-called mutual recognition agreement needs to be understood in three particulars in order to be clear as to the potential and results of the agreement.

These three particulars are:

The Purpose and Extent of the Agreement

Historically, it is probable that the first such agreements between certification bodies was that between BSI and CSA (British and Canadian Standards bodies) in 1959. Also around the same time there were agreements in Europe through the CB scheme for safety

of electrical household appliances. Both these agreements were in the electrotechnical field and were based on the acceptance of test results carried out by another body as the basis for granting product certification. The deficiencies in these systems as far as the manufacturer was concerned were that application and certification were still on a country by country basis, albeit that the testing was done once only. As such they were a considerable advance on the previous need for multiple testing.

Thus we see the need for complete understanding of the objective of a MRA. What is actually possible within a specific MRA may not necessarily be what is thought to be the aim. We have to be clear as to the scope of the agreement ie what is "mutually recognised", one issuing the certification.

In recent years agreements have been developed in the process of certification of quality systems as distinct from products and the same need for understanding exists.

The Parties participating in an Agreement

Again, from a historical basis, the first agreements were largely unilateral or bilateral. The BSI CSA agreement was initially unilateral becoming bilateral as trading patterns made it appropriate.

During the last decade there has been an increase in bilateral agreements, with particular emphasis on quality system certification. These arise largely because of trading needs and particularly because of a perception that such certification would be needed for the European market.

However, as these multiplied it became apparent that they were creating problems of multiple assessment between the participating bodies as they found themselves evolving circuitous relationships.

Thus the need for multilateral agreements became pressing. By their very nature, a multilateral agreement requires managing. A control mechanism has to be established and rules established.

To return for a moment to the previously mentioned CB scheme. This evolved into the IECEE scheme with an international control and management.

These agreements were developed initially by test laboratories and certification bodies. They were made up of a number of bilateral agreements which, in some cases became multilateral. recently we have seen the same approach by the accreditation bodies.

Methodology

In the case of a bilateral agreement the process is simple in that each of the bodies carries out an evaluation of the competence of the other as seen necessary.

However, as these numbers grow and overlap, the multiplicity of agreements develops and this process becomes cumbersome, uncontrolled and creates a large measure of duplication and increased cost.

Thus means have to be sought to alleviate this problem and the well tried "peer review" process, as developed in the early electrotechnical schemes appears to offer a solution and is attractive.

It is necessary to consider at which level " peer review" should take place in order to achieve the objectives sought by industry and keep costs and bureaucracy to a minimum.

(b) Discussion

We have seen that the early approaches focused on acceptance of testing. It is important to note that even this statement requires some examination in that, in general, the acceptance was of a test result (report) which the accepting body used to consider when granting certification in lieu of doing its own tests.

As we have developed agreements in the quality system area we see a similar approach ie. acceptance of an assessment report by another certification body rather than the acceptance of registration per se, to enable it to issue its registration on the basis of work done by another. To some extent this is a result of the insistence of accreditation bodies that an accredited certification body takes responsibility for all registrations granted in its name.

Turning to the agreements between accreditation bodies we see another approach in the sense that the recognition would seem to be essentially in respect of the equivalence of the system. Thus a promotional facility arises to assure users that they can have the same confidence in using a certification body accredited by a participating accreditation body to the agreement as in one accredited by their own national accreditation body.

Underlying all these agreements is the question of legal liability and responsibility. In general this rests with the certification body and not the accreditation body. Clearly it would seem that the accreditation bodies have some responsibilities and legal liability in respect of the certification bodies it has itself accredited but it is unlikely that this extends to those in other countries even if their accreditation body is party to the agreement.

(c) Results of the Questionnaire

Thirty-seven percent of the respondents who answered the question indicated that domestic certification bodies had mutual recognition agreements with other countries. This represented 67% of the total responses to the questionnaire. When one compares answers to other questions it seems likely that a proportion of these are agreements in respect of testing or product certification as is also likely in the case of the 44% of the respondents who indicated that they had some measure of recognition of their certificates

in other countries.

On accreditation, 14% of those answering the question indicated that they had a mutual agreement with another country. This represented 3.7% of total respondents. The similar figures for agreements pending were 47% and 17% showing that this activity is increasing.

(d) MRA's Conclusions

Whilst multilateral agreements are a step forward they would appear to have limitations in providing the much sought after "one stop certification" by industry. However in moving forward towards this objective we need to examine the methodology and procedures which have been employed so far and use them to the full in any new developments. Thus the ISO IEC QSAR initiative was conceived and developed with these principles in mind.

3.2.2 Quality System Assessment and Recognition (QSAR)

(a) Background

QSAR was set up by ISO and IEC in 1993 to prepare proposals for an international system it was in response to market demands for a system of worldwide recognition of quality system assessment and certification/registration, in relation to ISO 9000.

(b) Objective

At its first meeting the group established the objective of the system which has remained unaltered.

"When a supplier is registered by a participating certification registration body in the ISO IEC system, that certification / registration should be recognised as being valid by his customers, regardless of the location of the certification / registration body, the supplier or the customer."

Thus the emphasis is on producing a system which will benefit the producer (supplier) in his international trade.

The system has to prove its competence and develop the confidence of the purchaser. Thus the existing situation was explored to see how it could be used.

(c) Methodology

It was clear that much work had been done by accreditation bodies through a process of peer review in developing mutual recognition agreements. With the support of accreditation bodies the procedure was developed to base the ISO IEC system on accreditation bodies being recognised into the system on the basis of a peer review

managed and controlled by the international system. It then follows that any certification / registration body accredited by a participating accreditation body is recognised and any supplier certified or registered by that body may be given the right to use an international certificate.

A simple system requiring the minimum of bureaucracy and providing the supplier with what he wants - one certificate recognised worldwide.

(d) Results of Responses to Question II.33 of the Questionnaire

i) 82% of those responding to the question felt that QSAR would facilitate their international trade. This was 66% of total replies.

ii) 41% of those who responded to the question thought that it would give them some difficulty in securing QSAR recognition. This was 32% of total replies.

iii) 63% of those who answered the question thought that it would be harder for developing countries. This was 51% of the total replies.

iv) 95% of those who answered the question felt that developing countries should be helped to gain QSAR recognition. This was 76% of total replies.

(e) QSAR Conclusions

It is clear that the majority of developing countries see the QSAR approach as being important to them in improving international recognition. Equally, it is expected to be more difficult, a conclusion which arises else where in this survey.

It is without question that the developing countries will need a considerable amount of assistance from the experienced countries, particularly in the matter of recognised human resource. In turn the developed countries have difficulty in responding effectively to this need as they operate at present.

Ways must be found to overcome this problem so as to enable the developing countries to participate in international agreements as quickly as may be possible.

3.3 Cost of Human Resource Obstacles (primarily SMEs)

Earlier sections in this chapter on the discussion of results have been largely concerned with considerations of overall cost and resource requirements at national level. This section deals primarily with the situation as perceived by individual manufacturers and suppliers, particularly SMEs.

Results of the survey in Table 7 reveal a common perception that the business community and consumers regard ISO 9000 as being highly appropriate for "all businesses" and for

"both manufacturers and service providers". Furthermore, two groups (business community and SMEs) are perceived as giving high importance to the appropriateness of ISO 9000 to "exporters only".

Other results however (Table 5), whilst confirming the perceived importance of ISO 9000 to exporters, indicate that its importance as perceived by SMEs themselves is at present very low.

Looking in more detail at the reasons why SMEs choose to implement ISO 9000 (Table 10) the main reasons given are: to meet overseas customers' demand; to strengthen market share; to remove barriers to export trade and to improve internal efficiency.

Reasons given for not implementing the standard (Table 11) are: cost of introducing an ISO 9000 system; lack of awareness of the ISO 9000 series; lack of management commitment and cost of registration/certification.

Clearly cost is seen as one of the key factors exerting a negative influence on the decisions of SMEs to implement ISO 9000, whereas market-driven factors such as meeting customer demand, overcoming barriers to trade and increasing market share are perceived as positive influences.

A number of elements may contribute to the potential cost of implementing ISO 9000, they include:

- consultancy
- training
- documentation
- equipment
- re-organization
- assessment, registration and certification
- maintenance of the system

The extent to which these items add to the total cost varies from case to case, but answers to Question II.34 make it clear that the costs of consultancy, training and assessment/registration (especially by overseas certification bodies) are widely perceived as constraints, particularly in developing and newly-industrialized countries. These concerns are perceived as bearing more heavily on SMEs because the additional costs often represent a significantly higher proportion of the firm's turnover and take much longer to recover.

This is, or will become, a serious issue for SMEs world-wide, not only because many of them may feel obliged to implement ISO 9000 to meet the needs of overseas customers or of major exporters, but also because they may decide that it would be of benefit to them for other reasons.

Fortunately progress has been made in addressing the issue over the past few years and advice on quality systems in the small firm is available in the form of a guide to the use of the ISO 9000 series, published by the UK Institute of Quality Assurance (March 1995).

The guidance is addressed to purchasers, consultants and certification body assessors as well as to SMEs.

Recognizing that there is evidence to suggest that ISO 9000 certification may be called for in an indiscriminate manner, purchasers are advised to judge each situation on its merits - whether purchasing a product or a service or both - and to demand certification against one of the ISO 9000 standards only where the risk arising from the defect justifies it.

Reliance on past performance or on product certification/approval schemes may well be entirely adequate - a point made by several respondents to this survey.

Guidance for consultants and certification body assessors aims "to reduce the variability in interpretation of the standards between individual assessors and between assessors and consultants and to give small firms and their consultants greater confidence to apply the full flexibility inherent in the standard".

That flexibility in approach is essential in order to reflect the differences characteristic of small firms where lines of communication are shorter and delegation is often limited, with all individuals in the firm having access to senior management. This will certainly affect the way the quality management systems are documented and implemented.

Guidance to the SMEs themselves comprises a re-statement in simplified form of the main requirement of each clause of the standard with a view to:

- clarifying what might be expected of a small firm
- highlighting potential areas of misinterpretation or misconception
- pointing out areas where inappropriate techniques are often adopted
- providing examples of where advantage can be taken of the flexibility of the standard.

Whilst the special situation of SMEs vis à vis ISO 9000 is a global issue it is likely that many of the smaller firms in developing countries may gain particular benefit from wider availability of this guidance.

The survey also provides evidence that lack of awareness and of management commitment are also reasons why firms, including SMEs, do not implement ISO 9000. In such cases the human resource obstacle is generally at the more senior levels of management. Indeed, even when a firm has decided to embark on the implementation of ISO 9000 the

initiative may fail through inadequate commitment from the Chief Executive and/or senior managers.

Whilst the questionnaire does not directly address the resource implications of management and staff training this is without doubt an important aspect of ISO 9000 implementation. The effectiveness of a quality management system is critically dependent on a proper understanding and appreciation of the system by staff at all levels, particularly those whose jobs directly affect the quality of the product or service. That understanding and appreciation is usually tested during the course of assessment and registration.

Appropriate training programmes are essential and various options such as group training, workshops and distance learning are available to minimise costs. It is in this area that SMEs have a significant advantage over larger firms obliged to train larger, often dispersed work forces.

In conclusion, it is important to note that equipment costs may also be incurred in implementing ISO 9000. This is because the achievement of quality, particularly in manufacturing and process industries, nearly always depends on the availability of appropriate manufacturing, processing and measuring equipment capable of delivering materials, components and products in accordance with specification.

II.4 Recommendations (Questionnaire Section II - ISO 9000)

4.1 Introduction

According to the third, world-wide Mobil Survey of ISO 9000 registered companies published in the ISO 9000 News in January/February 1995, more than 70,500 ISO 9000 certificates had been issued in 76 countries up to the end of June 1994.

The fact that this number represents a 24,000 increase over September 1993 (when the total was 46,500) is a graphic illustration of the accelerating growth in the issue of certificates. Further evidence is provided by the increase in the number of countries revealing ISO 9000 certification activity (ie. one certificate or more) which has risen from 48 (January 1993) through 60 (September 1993) to 76 (June 1994).

The Mobil Survey also reports: "Many countries are now building on their base of certificates, including:

- most of Western Europe
- Japan, China, Hong Kong, Korea and Taiwan in the Far East
- Brazil and Mexico in Latin America
- India, Israel and South Africa in the Rest of the World.

Regions where countries are emerging with certificates include:

- Eastern Europe
- Central and South America
- Middle East
- North Africa."

Against this background of practical experience and solid achievement it is perhaps not surprising that respondents to the present UNIDO Survey have provided a rich variety of informed opinion and helpful comments on the relevance of ISO 9000 to their countries' trade and national economies.

However, whilst the evolution of ISO 9000 certification is well under way in many countries and their experience is available for all to share, others are still coming to terms with its significance and potential impact. It is to those countries that our recommendations are primarily directed, both to assist their governments, businesses and quality conformity practitioners to plan and implement their response to this global trend and to enable them to achieve results in terms of national infrastructure and quality management systems which gain international recognition and acceptance.

4.2 Need for ISO 9000

The recommendations in the sections which follow (4.3 to 4.6) are all concerned directly or indirectly with the implementation of ISO 9000, and there is a presumption that this is an issue which will continue to develop globally and to demand the attention of governments, sectors of industry and commerce, and individual firms world-wide.

At the national level the issue relates to the country's economic position, to its government's strategy for economic growth, and to the prospects of improving its trade balance. For sectors of industry the focus moves to the future prospects for each particular sector, to the opportunities offered by new markets, and to the threat of competition. Individual firms, operating close to the market place and sensitive to the needs of their customers will need to assess whether investment in ISO 9000 is worthwhile, whether to improve their internal management, to reduce costs, or to gain market advantage.

A national strategy for quality requires careful consideration at all these levels of interest and activity, not least because it is so important to determine priorities based on a sense of purpose and direction before setting out on a journey which is bound to involve a great deal of time, effort and commitment from many participants.

Developing countries in particular will benefit from such a strategic review to ensure that their own resources are used to best effect and that technical cooperation programmes are designed and implemented to meet well-defined, practical objectives in accord with an overall plan.

By the same token Chief Executives of individual firms need to define their priorities and to develop their strategy. In that connection it is important to note that a decision to implement a quality management system based on ISO 9000 does not necessarily commit a firm to seek assessment and certification. It is for each firm to review the potential benefits of so doing.

Whilst direct responsibility for quality improvement can rest only with manufacturers and suppliers, governments too have a vital role in encouraging the development of a quality culture and in ensuring that a satisfactory institutional framework exists to promote and support the drive for quality and to gain international acceptance of the results. Our recommendations reflect that belief.

4.3 The Implementation of ISO 9000 Series Standards

General comments

The common problem for all developing countries is a lack of trained auditors; moreover, industry has little awareness of the benefits of adopting ISO 9000 (quality awareness).

If one considers the UK experience, the current high level of adoption arose out of a government-led quality campaign, following the publication of a policy declaration the White Paper in 1982. It was this campaign which, being aimed at industry, created the demand for consultancy and the consequential demand for certification. Thus the pattern of growth was: first, awareness by industry; then consultancy; then certification bodies to meet demand, and finally accreditation to provide a measure of regulation of the certification bodies.

The situation in the developing countries is not dissimilar and the experience of industrialised countries needs to be used to best advantage. There is little advantage in training auditors and consultants if there is no demand for their services when trained. Equally the development of awareness would falter if there were no consultants or auditors to meet the demand

RECOMMENDATION A: It is recommended that there be two parallel thrusts, coordinated so as to achieve the objectives of (i) industrial adoption of ISO 9000, and (ii) availability of internationally accepted certification and accreditation procedures, wherever this is not already the policy.

4.4 Assisting companies to Implement ISO 9000

4.1 National Attitude

Mention has been made of the quality campaign run by government in the UK. It is considered essential that there is a commitment by the national government to the adoption and implementation of ISO 9000 for there to be a managed approach to the

problems. Without such commitment the implementation would be piecemeal with companies having to do their best to find assistance in response to perceiving the need. Similarly, there will need to be government support to achieve international recognition of certification and accreditation. It is clear from the responses to the questions II.31 and II.32, that respondents see this support as crucial.

RECOMMENDATION B: It is recommended that assistance be given to providing study tours for the policy makers to countries with long experience in such matters whereby they can be introduced to national quality institutional structures and meet with key officials and organisations.

The benefits to be derived are:

- a clear understanding of the key features;
- a sense of ownership of a project;
- a commitment at the highest level.

4.4.2 Company Needs

An enterprise first needs to be made aware of the principles of quality assurance. The questionnaire demonstrated that there is a great lack of knowledge and this can only be corrected through an awareness type of programme. Assistance will be needed to provide seminars from experienced training providers to introduce industry to the benefits of adopting ISO 9000 and its role in international trade. There will be organisations (universities etc) in the country who will be able to sustain such programmes and they should be targeted for initial awareness activities.

It is stressed that this stage should be considered as completely separate from assessment and registration. Its purpose is to introduce quality management for the benefit of the enterprise. The assessment and registration exercise follows as a result of a defined need to go on to this stage.

The companies will incur costs for training and implementation but as has been indicated in the response to the questionnaire, these are seen to rightly fall on the company.

SMEs have particular problems but this is frequently because of confusion between the implementation of good management practices (ISO 9000) and the need for a third party registration. It is recommended that reference is made to a booklet published by the Institute of Quality Assurance in the UK, entitled " Quality Systems in the Small Firm". This was prepared jointly by the association of British Certification Bodies (ABCB) and the National Accreditation Council for Certification Bodies (NACCB).

It is frequently neces ary for a company to require assistance in establishing an appropriate quality system. The development of the management system must be aimed at meeting the needs of the firm and its customers and not that of an assessment body.

Hence the selection of a consultant is a process that needs some care. The small firms guide mentioned above gives helpful advice in this respect. However it may be that some assistance will need to be given to governments in compiling lists of consultants who they can recommend, particularly if there is to be financial assistance to the company for consultancy services.

RECOMMENDATION C: It is recommended that consideration be given to the provision of assistance whereby governments be able to compile lists of recommended consultants and financial assistance to SMEs for consultancy help.

4.5 Quality Supporting Infrastructure

4.5.1 Essentials for a National Quality Infrastructure

Essentials for a national quality structure are seen to be:

a) A soundly based national measurement system with traceability of calibration back to primary measurement standards.

b) The provision of effective testing and certification facilities.

c) The provision of effective accreditation of the bodies carrying out the verification task

d) The provision of a national system to train auditors to international standards.

This review is concerned primarily with certification to ISO 9000 although the matter of a measurement and testing infrastructure cannot be ignored.

4.5.2 Certification

Many of the respondents already offer product certification and hence their main need is to enhance the skills of their personnel. In the main this implies the development of an auditor base. The training should be such as to achieve international recognition. It is the most difficult problem facing a developing country and for this reason is dealt with specifically under para 4.6.

A certification body should comply with the requirements of ISO/IEC Guide 62, and assistance will be needed by certification bodies entering the quality system registration field, to develop their quality systems and processes to be in line with this guide and established international practice.

RECOMMENDATION D: It is recommended that the current programmes for providing expert advice to national certification bodies be supported and enhanced. (eg. World Bank projects).

4.5.3 Accreditation

By its very nature the accreditation function requires only a small permanent staff. It is unlikely that it will be able to have its auditors employed permanently and ways will need to be found to utilise a national resource of consultants without compromising the integrity of the accreditation process.

The accreditation body will need to comply with ISO/IEC Guide 61 and any other requirements which are part of the ISO/IEC QSAR system.

The requirements of Guide 61 specifically state that the accreditation body should not be influenced in its decisions by financial considerations and hence consideration may be given to government funding of this activity.

It should also be noted that Guide 61 precludes an accreditation body from offering the services which it accredits, ie. an accreditation body cannot also be a certification body

RECOMMENDATION E: It is recommended that the current programmes for providing expert advice to accreditation bodies be supported and enhanced. (eg. World Bank projects).

RECOMMENDATION F: It is also recommended that as the accreditation activity in a single country will inevitably be a small operation, encouragement could be given to considering a suitable regional accreditation basis, so as to provide for economies.

4.6 Auditors

Auditors form the basis for the development of the National Quality System. Starting from the basic consultancy activity, it is beneficial if the consultants used are trained auditors. Although this would seem to be against the advice in the small firms guide, in the case of developing countries the problem of resource is paramount.

RECOMMENDATION G: It is recommended that the following approach be adopted.

4.6.1 Implementation Consultancy

Given the interest in industry resulting from the awareness seminars there will be the need to provide consultancy and for sustaining the programme, for the training of consultants who are nationals and can continue the work. This will require the setting up of courses of probably two weeks duration.

The course could usefully be a combination of consultancy training, knowledge of ISO 9000 and auditing. The latter should comprise the same training course as for auditors.

The advantage would be that, in a situation of limited resources, training should be aimed at producing a national corpus able to operate in all three fields as required and within the need to avoid compromising any function.

This approach will have the added benefit of creating a corpus of people who can then be further developed as required.

4.6.2 Auditor Training

It will be of benefit if the persons selected for auditor training also do the above mentioned consultancy course.

Auditor training has to be considered in two aspects. Given that the prime need is for auditors trained and registered to international requirements, careful selection of participants is needed to ensure that they meet the qualifying requirements of the developing international system. In the absence of agreement on the criteria at present, it is suggested that the requirements of the UK's IQA IRCA system are followed.

The requirements leading to registration under the scheme are to:

- have passed the examination at the end of a recognised training course
- have participated in 5 assessments as a team member, (this qualifies as an auditor)
- have been a team leader for a further 5 assessments, (this qualifies as a lead auditor)

In the light of these requirements only a limited number of participants can be considered. It is therefore economically and viably necessary to run joint courses with participants from geographically adjacent and appropriate countries.

The training programme has to provide for the course plus the assessment experience. Both can be provided either in the home environment or in the developed country providing the resource. There can be advantage in gaining experience in one's own environment. In this case there is the practical problem of having enterprises ready for assessment in the time frame required. Also there would be resistance to audit teams comprising a high number of trainees. It is therefore considered that the most effective and economical method is to run the course in the country providing the training and thus enable a proportion of the assessment experience to be gained there also.

Participation in a course with other participants from the developed country will add to the training through interchange of experience.

The lead auditor training can only be given in the home environment and is likely to need

support by overseas experts, at least initially. It should also be noted that the training courses have to have two lead auditors as tutors. The ability to sustain training will therefore only become possible towards the end of any programme.

4.6.3 Auditor Resource

The basic problem is, as has been explored, the coordination of the two thrusts ie. companies ready for assessment and the availability of trained and qualified auditors. A structured training programme as outlined below will provide for:

a) trained auditors who could be employed by consultants, certification bodies and enterprises.

b) a base for lead auditors to develop

c) a base for accreditation purposes

d) a base for training thus providing a sustaining element to the programme.

The training programme should be a two week course, the first week being a combination of teaching consultancy skills and guidance on the implementation of ISO 9000. The second week should be a full auditor training course with examination.

The participants should be selected for their ability to work in selected or all fields. It may be appropriate to consider such training on a regional basis given that some countries may wish to put only a small number on training, at least initially.

However, in view of the experience requirements for registration of auditors, it is inevitable that early assessments will need some support from overseas expertise. This may follow naturally if the enterprise is seeking registration by an overseas certification body. In such an instance the opportunity should be taken, if possible to put national trainees on such assessment teams.

Attention is drawn to the developments taking place through the International Auditor and Training Association (IATCA) which is introducing international recognition of auditor qualifications.

PART III

THE PROPOSED ISO 14000 SERIES OF STANDARDS

PART III - THE PROPOSED ISO 14000 SERIES OF STANDARDS

III.1 Introduction to Questionnaire Section III

This section details the findings of Section III: The Proposed ISO 14000 Series, of the UNIDO questionnaire: Trade Implications of International Standards for Quality and Environmental Management Systems (ISO 9000/ISO 14000 Series). Findings are based on responses in 59 returned questionnaires out of the 184 UNIDO questionnaires distributed. The response rate is 32%; however, non response is particularly high in Section III and in particular in its sub-sections dealing with infrastructure, accreditation and certification.

This section analyses the salient features and trends of Section III's six subsections:

- Significance/Development of Environmental Issues;
- Awareness/Perception of the ISO 14000 Series;
- Cost of Compliance;
- Infrastructure - Accreditation and Certification;
- International Trade; and,
- Environmental Labelling.

Respondents general comments are also discussed.

III.2 Results of Survey (Questionnaire Section III - ISO 14000)

2.1 Significance/Development of Environmental Issues (Questions III.1 - III.5)

Respondents indicated, in Question III.1, that the governments of 23 out of the 30 countries represented had declared policies on environmental issues. The majority of respondents were aware of their country's mandatory environmental requirements either fully or partially, but fewer were fully aware of national environmental voluntary agreements (see Table 1).

Table 1
Awareness of National Mandatory and Voluntary Environmental Requirements (Question III.2)

Requirements	Not Available	Awareness			No Response
		Yes	Partly	Not at all	
Mandatory	3 (5%)	30 (51%)	16 (27%)	0 (0%)	10 (17%)
Voluntary	5 (9%)	14 (24%)	21 (36%)	2 (3%)	17 (29%)

Over two thirds of respondents in Question III.3 indicated that domestic businesses were under pressure to avoid environmental damage and 76% of respondents in Question III.4 stated that this pressure was growing. None stated that the pressure to avoid environmental damage was declining and only six respondents (10%) believed the pressure was constant. These six respondents came from Romania, Bolivia, Colombia, Pakistan and two from the Philippines, interestingly one of the two Filipino respondents was from a local company.

Respondents indicated the origin of the environmental pressure on local business. The top four rankings for those groups exerting the most and least pressure on local business are shown in Table 2.

Table 2
Groups Ranked for High and Low Environmental Pressure on Local Business (Question III.3)

Rank	High Pressure	Low Pressure
1st	Government	Domestic Customers
2nd	Environmental Organisations	Trade Organisations
3rd	General Public Interest	Importers
4th	Overseas Customers	Consumer Organisations

Respondents identify the highest pressure to avoid environmental damage as coming from their national governments and environmental organisations. Domestic customers exerted the lowest pressure on businesses to avoid environmental damage. Domestic/international companies exerted moderate pressure as did consumer organisations.

The majority of respondents (39 i.e. 66%) believed compliance with the ISO 14000 series would definitely or almost certainly lead to less pressure on local business. Only three respondents i.e. from the accreditation body in China, the national standards body in Nigeria and the Government customs laboratory in Ghana stated the series would not lessen the pressure to avoid environmental damage.

Regional variation is shown in Table 3. Central and South American respondents appear to be less convinced that the ISO 14000 series of standards will assist local business in reducing the pressure on them to avoid environmental damage than Asian respondents.

Table 3
Respondents Views (World and Regions) on Compliance with ISO 14000 Series of Standards as a means to reduce Pressure (Question III.5)

Regions	Pressure Scale from					No Response
	Yes		to		No	
Europe	2	0	2	1	0	1
Africa	4	1	0	1	2	6
Central & South America	5	6	1	1	0	0
Middle East	1	1	0	0	0	0
Asia	12	7	0	0	1	3
World	24	15	3	3	3	11

Note: Unknown respondent included in world figures.

2.2 Awareness/Perception of the ISO 14000 Series (Questions III.6 - III.14)

Table 4 ranks the awareness of different groups of the proposed ISO 14000 series of standards. Unsurprisingly, the greatest awareness of the proposed series was amongst national standard bodies and the lowest, if not non existent, knowledge of the standards was amongst small and medium-sized enterprises (SMEs). Government departments and agencies and large national companies had moderate awareness of the series.

Table 4
Groups Ranked for High and Low Awareness of the Proposed ISO 14000 Series of Standards (Question III.6)

Rank	High Awareness	Non Existent Awareness
1st	National Standards Body	SMEs
2nd	Consultants/Training Organisations	Business Generally
3rd	Multinational Companies	Importers
4th	Certification/Accreditation Body	Exporters

Respondents indicated, in Question III.10, that the objectives of the ISO 14000 series were least well understood by consumers, closely followed by SMEs, and were most fully understood by accreditation/certification bodies. Mixed views were expressed by respondents about their governments awareness of the series. Consultants were expected to have an average understanding of the ISO 14000 series of standards.

Less than half of all respondents indicated in Question III.7 that they had seen documents in the ISO 14000 series (see Table 5). Respondents from Africa were least likely to have seen any of the ISO 14000 series drafts.

Table 5
Respondents Access to ISO 14000 Series of Standards (Question III.8)

Regions	Sight of ISO 14000 Series		
	Yes	No	No Response
Europe	2 (3%)	3 (5%)	1 (2%)
Africa	1 (2%)	9 (15%)	3 (5%)
Central & South America	11 (19%)	3 (5%)	1 (2%)
Middle East	0 (0%)	1 (2%)	1 (2%)
Asia	10 (17%)	6 (10%)	8 (14%)
World	27 (46%)	22 (37%)	10 (17%)

Note: Unknown respondent included in world figures.

Of the 27 respondents which indicated where they had obtained copies of the ISO 14000 draft standards, most (15 respondents) stated they had obtained access to the documents either through ISO or its committees. Three had received copies through their national standards bodies, three through other trade organisations, two via personal contact and one had seen them reproduced in a publication. Twenty-seven respondents (46%) stated that their countries were involved in developing and/or commenting on the series of standards primarily by participating in committees or sending comments to ISO, 22 respondents (37%) were not involved and the remaining 10 (17%) did not respond.

Respondents from Central and South America and Asia are participating in the ISO 14000 standards more fully in their development than respondents from either Europe or Africa. African respondents are the least involved with only one respondent from Morocco (Government Department) having seen documents and being involved in the ISO process.

General environmental awareness is actively promoted to industry by 25 of the 30 countries (i.e. 83%) represented by the 60 respondents (Question III.9). Respondents from Antigua, Kenya and Argentina stated awareness programmes did not exist in their countries, the respondent from Russia did not reply and one respondent did not give his country of origin. Only five countries (India, Philippines Pakistan, Sri Lanka and UAE) actively promote the ISO 14000 series to all business. One respondent from China stated the ISO 14000 series of standards was only promoted to large companies. Three respondents, two from India and one from Indonesia, stated that the ISO 14000 series was promoted solely to SMEs. The respondents from India gave conflicting answers.

The majority of respondents (39 i.e. 66%) believed that compliance with the requirements of the ISO 14001 environmental management systems (EMS) standard would facilitate wider compliance with local environmental requirements (Question III.11). One respondent from Mauritius (para statal body) believed the standard would definitely not help with regulatory compliance.

The key factors which respondents identified as likely to encourage all businesses to adopt ISO 14001 are ranked in Table 6. Although the ranked factors for SMEs and all businesses are almost identical, except for the reversal of ranks two and three, the picture was less clearly defined for SMEs because a high proportion (between 20 to 25%) of respondents did not answer Question III.12.

Table 6
Factors Ranked for Likelihood of influencing Businesses to adopt ISO 14001 (Question III.12)

Rank	All Businesses	SMEs
1st	Demonstrate conformity to legislation	Demonstrate conformity to legislation
2nd	Meet overseas environmental legislation	Improve internal efficiency in achieving mandatory environmental standards
3rd	Improve internal efficiency in achieving mandatory environmental standards	Meet overseas environmental legislation
4th	Meet overseas consumer demand	Meet overseas consumer demand

Respondents indicated that for all businesses, including SMEs, the improvement of staff morale retention and the need to meet domestic consumer demand were the factors least likely to influence business to adopt ISO 14001. The reinforcement of management control and the achievement of self imposed environmental targets were also thought unlikely to influence SMEs in favour of adopting ISO 14001. A factor likely to influence all business, but not particularly SMEs, is the ability ISO 14001 may have to strengthen market share. Respondents had mixed feelings about the factor: to improve internal efficiency in achieving voluntary environmental standards, with half stating it would influence businesses both large and small and the other half stating it would not.

The key factors which respondents identified that might deter business from adopting ISO 14001 are ranked in Table 7.

Table 7
Ranked Factors which might deter Businesses from adopting ISO 14001 (Question III.13)

Rank	All Businesses	SMEs
1st	Lack of awareness of benefits	Cost of setting up an ISO 14001 EMS
2nd	Cost of setting up an ISO 14001 EMS	Lack of awareness of benefits
3rd	No management commitment	No management commitment
4th	Lack of technical equipment	Cost of consultancy
5th	Cost of consultancy	Lack of technical equipment
6th	Low commercial return	Lack of competence/experience

The rank positions of deterrents is similar for business in general and SMEs. The top four deterrents for SMEs each received 35% or more of respondents support; whereas, only the first ranked deterrent for all business received this percentage of replies. For all business, including SMEs, the impracticality of achieving ISO 14001 is the least deterring factor for ISO 14001 implementation.

Approximately half the respondents did not indicate in Question III.14 which organisations should adopt ISO 14001; nevertheless, just under a third of replies indicated that all businesses should always adopt ISO 14001. ISO 14001 was always thought appropriate for manufacturers by 22% of respondents and for exporters by 19%. ISO 14001 was considered unimportant for retailers with only 5% of respondents suggesting they should always adopt the standard.

2.3 Cost of Compliance (Questions III.15 - III.23)

The majority of respondents (44%) stated that compliance with mandatory environmental standards was a significant burden on business. Fourteen respondents (24%) stated that compliance could be a burden in some cases. Six respondents from Malaysia, Philippines, India, Pakistan and two from Romania stated no burden arises from mandatory environmental standards. Regional differences are shown in Table 8.

Table 8
Regional Analysis of the Burden of Compliance with Mandatory Environmental Standards (Question III.15)

Regions	Are they a burden?			No Response
	Yes	In some cases	No	
Europe	2	1	2	1
Africa	7	1	1	4
Central & South America	6	4	0	4
Middle East	1	1	0	0
Asia	10	7	3	3
World	26	14	6	13

Note: Unknown respondent included in world figures

Twelve respondents mentioned in which cases mandatory environmental standards were a burden. The sectors listed were the chemical industry and manufacturing sectors. SMEs were listed along with any company where the cost of compliance exceeds 4% of turnover or where compliance involves external consultancies or where standards go beyond technical and management feasibility.

Respondents were less certain about whether or not existing voluntary agreements were a significant burden on business (Question III.16). Just under 17% thought voluntary agreements were a burden and a further 19% thought they were in some cases; whereas, 22% thought they were not. Respondents from India, China and Morocco stated there were no voluntary agreements in their countries. Regional variation is shown in Table 9.

Table 9
Regional Analysis of the Burden of Compliance with Voluntary Environmental Agreements (Question III.16)

Regions	Are they a burden?				No Response
	Yes	In some cases	None Exist	No	
Europe	0	2	0	3	1
Africa	3	1	2	0	7
Central & South America	2	2	0	6	4
Middle East	1	0	0	1	0
Asia	4	6	4	3	6
World	10	11	6	13	19

Note: Unknown responded included in world figures.

Respondents found it difficult to value the cost of compliance to ISO 14001 with just over a third answering Question 17; however, 25% thought mandatory requirements would cost between less than 1% to 2% of annual production cost. A further 12% thought they would cost more than 5%. The majority (19%) believed compliance with voluntary standards would cost less than 1% of annual production. Whereas respondents had no strong position of the cost of compliance with ISO 14001 (see Table 10).

Table 10
Compliance Costs as a Percentage of Annual Production Costs (Question III.17)

Percentage of Annual Production	Standards		
	Mandatory	Voluntary	ISO 14001
No Cost	0%	0%	7%
Less than 1%	14%	19%	9%
1% to 2%	12%	2%	7%
2% to 5%	5%	7%	5%
More than 5%	12%	3%	9%
No Response	58%	70%	64%

In general, respondents indicated that the cost of compliance to ISO 14001 could definitely (20%) or almost definitely (25%) be incorporated into the price of products (Question III.18).
Just over 15% of respondents stated costs could not be incorporated into product price and just under 17% were unsure.

A more clearly defined picture emerged from Question III.19 when respondents were asked to indicate what organisations should bear the cost of six facets of ISO 14001 (see Table 11).

Table 11
Organisations most appropriate to bear the costs of ISO 14001 (Question III.19)

Types of Costs	Organisations			
	Government	Company	Consumer	Other
Awareness Raising	39	12	1	1
Consultancy	14	37	0	0
Implementation	6	41	6	1
Certification	8	40	3	0
Promotional	24	21	6	3

Note: Respondents could stipulate more than one organisation.

In general, respondents viewed their government's role as providing finance for awareness raising on ISO 14001; whereas, it was expected that the company would carry the costs of implementation, certification and consultancy services for ISO 14001. Interestingly, respondents stated that promotional costs should be the shared responsibility of both their governments and individual companies. The role of the consumer was considered unimportant by respondents; although a few respondents indicated that the implementation and promotional costs of ISO 14001 could be borne by consumers possibly by passing these costs on via company products.

Question III 20, in which respondents indicated what funding governments should provide to support compliance with voluntary environmental management standards such as ISO 14001, reinforces the picture in Question III.19 (see Table 12). The majority of respondents stated that their governments should be responsible for funding awareness campaigns. Furthermore, just over half of respondents stated that awareness campaigns should be fully funded by their governments. The majority of respondents indicated that the government should definitely not or only partially provide funding for certification and registration, implementation and accreditation. A quarter also believed the government should not provide funding for consultancy services; however, just under half stated these services should be fully or partially funded.

Table 12
Support for Government Funding Option for ISO 14001 (Question III.20)

Types of Activity	Funding Options			No Responses
	Full	Part	None	
Awareness Campaigns	31	13	1	12
Consultancy	2	26	15	27
Training	5	19	4	12
Implementation	2	21	20	12
Certification/Registration	1	18	24	12
Accreditation	9	21	12	17

Note: Respondents could indicate more than one option.

In Question III.21, two respondents, from China and Pakistan, believed compliance to ISO 14001 would lead to the migration of companies to other regions. A further six from the UAE, Nigeria, Philippines, Kenya, Brazil and India thought the compliance to the standard was highly likely to lead to company migration. Over a quarter of respondents thought the standards would have no effect on company location, in fact, 33 respondents (57%) thought ISO 14001 would definitely or almost definitely help their countries access new markets or strengthen market position (Question III.23). Only one respondent from Pakistan stated that ISO 14001 would be a hindrance to new markets but 15 respondents

did not answer Question III.23.

Over 40% of respondents did not answer Question III.22 on how ISO 14001 could reduce inputs of energy and raw materials and therefore lessen cost. Nevertheless, of the remaining respondents, the majority, 17 (29%), indicated that ISO 14001 would reduce cost by between 10% and 30%. One respondent thought ISO 14001 had the potential to lesson costs by more than 50%. Five respondent from the Philippines, Mauritius and three from Pakistan stated that ISO 14001 would not reduce costs.

2.4 Infrastructure (Questions III.24 - III.39)

2.4.1 Accreditation (Questions III.24 - III.29)

Sixteen out of the 18 countries represented in the results intend to establish a national accreditation body for the ISO 14000 series (Question III.24). The proposed national accreditation body of eight countries: Chile, China, Taiwan, Romania, Argentina, Brazil, Pakistan and India will accredit domestic, overseas and international certification bodies. Bolivia and Indonesia's proposed national accreditation bodies will accredit both domestic and international certification bodies. Colombia and Kenya intend to accredit overseas certification bodies only; Malaysia, Nigeria, Turkey and Malawi aim to accredit domestic certification bodies only; and Sri Lanka international certification bodies solely. Barbados shall accredited overseas and international certification bodies.

Sixteen countries stated, in Question III.26, any proposed accreditation body would be largely public in character. Only the respondent from Argentina stated its accreditation body would be private. All respondents to Question III.27 stated their accreditation body would seek mutual recognition. Respondents from Bolivia, Chile, India and Indonesia stated they would seek mutual recognition with as many countries as possible. Malaysia and Taiwan will consider their trading partners and Malawi intend to focus on ISO members countries. European countries and the European Union were mentioned by nine countries and the USA by three. Japan is only specifically mentioned by Ghana and Brazil.

Just under half of all respondents (46%) to Question III.28 generally believed developing countries would have difficulty or great difficulty meeting the requirements for international acceptance of their national accreditation bodies. Nine respondents from the UAE, China, Ghana, Nigeria, Zambia Romania, Argentina, Tunisia and an unnamed country, stated developing countries would have great difficulty.

Over half of respondents (56%) stated, in Question III.29, that a single accreditation body should exist to accredit certification bodies for both ISO 9000 and 14001 series of standards. Reasons given to have a single accreditation body included:

- the similar approaches of the two series of standards;
- more effective co-ordination and utilisation of limited resources e.g.

training assessor costs could be minimised;
- prevention of confusion and inconsistency;
- criteria for accreditation should be the same;
- environmental management and quality management should be aligned; and,
- prevent proliferation of bodies.

Nine respondents (15%) did not want a single body for both standards citing the following reasons:

- the body will be too powerful;
- it will be too much work and will overload the body;
- promotion of ISO 14001 might be impaired;
- a single body will not do justice to either standard; and,
- the standards are different e.g. ISO 14001 addresses many legislative differences which ISO 9000 does not address.

2.4.2 Certification (Questions III.30 - III.39)

Respondents representing seven countries stated that their country would have a separate national certification scheme for ISO 14001. A further nine countries should have a separate scheme and the remaining six would not (see Table 13). Over a third of respondents did not answer Question III.30 and some respondents contradicted each other; in these case the most positive response was taken.

Table 13
Countries intentions towards establishing a separate National Certification Scheme for ISO 14001 (Question III.30)

Yes	No	Should Do
Ghana	Bolivia	Chile
Nigeria	Colombia	UAE
Argentina	Morocco	Taiwan
India	Sri Lanka	Vietnam
Thailand	Turkey	Barbados
Brazil	Indonesia	Romania
Pakistan		Malawi
		Tunisia

Overwhelmingly, respondents (34 out of 36 replies) felt their countries should have domestic certification bodies for ISO 14001 (Question III.31). When asked how many certification bodies should exist in their country, only 16 out of 34 respondents replied, but the majority (9 responses) suggested only one body. The remaining suggested between two and ten bodies with, the respondents from Argentina, India and Brazil suggesting 10 certification bodies.

Domestic certification bodies were expected by respondents to Question 32, to certify domestic private (32 replies) and public (33 replies) companies and, to a lesser extent, domestic companies based overseas (25 replies). Domestic certification bodies were considered slightly less likely to certify overseas companies (20 replies). Antigua, Argentina, Bolivia, Brazil, China, India, Mauritius, Morocco, Pakistan, Romania, Taiwan and Turkey all anticipate undertaking certification/registration of all type of companies. Registration of only domestic private and public companies is expected in UAE, Malaysia, and Malawi. Thailand proposes to certify domestic companies based overseas in addition to domestic companies. Colombia, Ghana and Kenya would only certify one group of companies: domestic private companies; public companies and overseas domestic companies respectively.

Few respondents, i.e. only 33 out of 59, indicated the ownership characteristics of their domestic certification bodies in Question III.33; nevertheless, the majority (27%) stated their certification bodies had a public character. Respondents indicated that such bodies in Bolivia, Chile and India were largely private, whereas certification bodies in Ghana, Morocco, Nigeria, Philippines, Taiwan and Turkey were totally private.

Only representatives from Bolivia, Brazil, Ghana, Chile and Taiwan stated certification by their domestic certification bodies was always recognised by their trading partners, however over half of all respondents did not answer Question III.34. Although respondents from the same country gave contradictory answers (see Table 14), the majority believed their domestic certificates had a 50% rate of being recognised. A representative from Thailand and one of three from Pakistan, stated certifications from domestic certification bodies were never recognised.

Table 14
Recognition of Domestic Certification Bodies by Trading Partners (Question III.34)

Rate of Recognition of Certificates		
More than 50%	**50%**	**Less than 50%**
Bolivia	India	Turkey
Chile	Malaysia	Pakistan
Colombia	Nigeria	Indonesia
Philippines	Malawi	India
Taiwan	Tunisia	Thailand
Romania	Indonesia	
Kenya	Pakistan	
Russia		
Ghana		
Brazil		

Just over a third of representatives believe developing countries would have greater difficulty in meeting the requirements for international acceptance of national certification bodies. Representatives from Argentina, China, Ghana, Nigeria and Pakistan foresaw the greatest difficulties. Only representatives from the Philippines and Taiwan believe they would have no difficulty. The remaining respondents (13) grouped around the middle position on the "difficulty" scale.

The majority of respondents (30 out of 40) in Question III.36, believed certification to ISO 14001 should be undertaken by bodies already certifying against ISO 9000 series of standards. Only three disagreed with this view.

Except for respondents from UAE, Sri Lanka and Taiwan, generally, respondents to Question III.37, (36%) believe their local business do not have access to the necessary skills and resources to meet the requirements of the ISO 14000 series. Similarly, most respondents (58%) stated that compliance with ISO 14001 would almost definitely be constrained by a national shortage of qualified consultants, auditors and training (Question III.38). Only the respondent from Sri Lanka and one from India believed sufficient national consultants existed to not constrain the compliance of businesses with ISO 14001 specification.

Unsurprisingly, given respondents views about their nations lack of relevant qualified consultants and auditors, over half of all respondents believed their nations businesses would have to rely on overseas sources of expertise. Representatives from Barbados, Colombia, Ghana, India, Kenya, Mauritius, Tunisia, Pakistan, UAE, Vietnam and Zambia all stated their countries businesses would definitely have to rely on overseas expertise. Once again, only Sri Lanka believed it would not be necessary for its businesses to draw on overseas expertise.

2.5 International Trade (Question III.40)

No clear consensus exists amongst respondents as to whether or not overseas environmental requirements currently act as a barrier to exports, however regional differences are apparent (see Table 15). Although just under a quarter of all respondents take a the middle view to environmental barriers to trade, slightly more (31%) do believe definitely or almost definitely that barriers exist. Respondents from Africa believe barriers do exist whereas the two respondents from Middle East take the opposite view Respondents from Central and South America and Asia are relatively evenly spread across the positions but with more taking a middle road. Both respondents from China state trade barriers do exist.

Table 15
Regional Analysis of the Potential Barrier to Exports caused by Overseas Environmental Requirements (Question III.40)

Regions	Barrier Scale From					No Response
	Yes		to		No	
Europe	0	1	2	2	0	1
Africa	5	2	1	0	1	4
Central & South America	1	1	5	2	1	4
Middle East	0	0	0	2	0	0
Asia	4	3	5	3	3	5
World	11	7	13	9	5	14

Note: Unknown respondent included in world figures.

Thirteen respondents listed examples of trade barriers on products or their materials and packaging. Five mentioned packaging materials, two respondents indicated environmental/green labels and the EU ecolabel and the Malawi respondent specifically mentioned standards emanating from Germany. Three mentioned textile products and in

particular forthcoming bans on azodyes vat dyes. Agricultural products were mentioned by three respondents: the Kenyan listed horticultural exports, both the Chilean and Brazilian respondents mentioned forest products such as pulp and paper. Fishing was listed by the two Colombian respondents. A respondent from Indonesia mentioned the requirement to have pesticide-free products. Primary products included iron ore, oil and cellulose and were listed by the two Brazilian respondents.

Even though 20 did not answer Question II.41, stronger negative views were taken about the potential of ISO 14001 to increase non-tariff international trade barriers. Only two respondents from Antigua and the UAE stated that ISO 14001 would not increase trade barriers; the majority (48%) foresaw the standard definitely or almost definitely strengthening non-tariff barriers to trade. Regionally, respondents from Africa, Central and South America and Asia were more convinced that the introduction of the ISO 14000 series of standards would lead to trade barriers.

Twenty-seven of the 59 respondents submitted comments on how the potential trade barriers from ISO 14001 could be avoided. Respondents comments fell into the following three categories:

- Observation on ISO 14001 and its introduction
- Comments on recognition and certification
- Observation on compliance and promotion of free trade

ISO 14001 and its Introduction

Sixteen comments were made about ISO 14001 and its introduction. Comments fell into five areas: origin of comment appears in brackets after the comment. Firstly, it was pointed out that the ISO 14001 should be a voluntary (UAE), market based (India approach and not a specific requirement of trade (Thailand) such that buyers make it mandatory before purchasing (Mauritius). Secondly, by encouraging uniform internal implementation (Argentina and India) and by implementing the standard widely (Romania). Thirdly, by starting organising along ISO 14001 lines now (Pakistan) but making allowances for the time it takes to develop in this area (Chile) and allowing "introduction in a phased manner providing scope for continuous upgrading" (India). Fourthly, by promoting awareness and enhancing training (Colombia and Malawi) so that ISO 14001 is fully known. Finally, by proving funding from international agencies like UNIDO, World Bank, and WHO to help developing countries to meet the standards requirements.

Recognition and Certification

Seven respondents mentioned recognition and/or certification. Proper recognition of certifications and the development of bilateral and multilateral recognition for national certification was perceived as important by Bolivia, Brazil and Nigeria as a means of avoiding trade barriers. The Sri Lankan respondent suggested their should be a "unique

international environmental management systems certification scheme" and a Brazilian respondent stated "an efficient scheme for accreditation/certification" would help. This was also supported by a Romanian respondent. The respondent from Barbados suggested "treating the subject of environmental management in the same way as quality management and incorporating environmental management into the QSAR, developed by ISO and IEC".

Compliance and Promotion of Free Trade

Two respondents mentioned the need to have stricter domestic legislation (Colombia) and for compliance to be achieved (Philippines). The Taiwanese respondent stated there should be a general effort "to promote free trade and to reduce trade in the spirit of the World Trade Organisation" and an Indian respondent commented that international trade should be delinked from such standards.

Twenty-five respondents considered the consequences of not introducing ISO 14001 in Question III.43. Three respondents thought their would be no impact from not introducing ISO 14001 since, as the respondent from Zambia stated, "exporting countries could still export using existing technologies and remain competitive". Nevertheless, the majority thought there would be exporting disadvantages. Thirteen respondents from 10 different countries believed the loss of markets for export products as a potential consequence of not introducing ISO 14001, especially if international trade and competition becomes based on the standard. If the standard becomes a pre-requisite for trade a Ghanaian respondent identified Europe and the USA as markets which would become more difficult to export resulting in trade balance problems. A Pakistani respondent had a gloomy prediction which forecast declining export business resulting in a recession with the consequence of unemployment and social unrest.

On balance, over half of all respondents (54%) believed that implementing ISO 14001 would help exporters almost exclusively. Respondents had mixed views on the benefits of ISO 14001 for the other three groups in Question III.44. They believed ISO 14001 would have a neutral effect on importers and SMEs and slightly help domestic companies only trading nationally.

2.6 Environmental Labelling (Question III.45 - III.47)

The existence of different national environmental product labels is perceived as hindering respondents' countries export opportunities (Question III.45). Twenty-three respondents (40%) stated that such labels would either very likely or definitely hinder exports; whereas only 6 respondents (10%) stated such labels had little or no effect on national exports. Over half of all respondents (54%), in Question III.46, believed internationally recognised labels could improve national export opportunities. No respondent specified that such labels would definitely hinder export potential and only two respondents from the UAE and India indicated some hindrance to exports.

Respondents in Question III.47, (62%) strongly supported the view that world-wide harmonisation of national labelling schemes would be promoted by the introduction of an international environmental labelling guideline like ISO 14020. No respondent suggested the reverse of this view.

2.7 Other Comments (Question III.48)

Few respondents (8 out of 59 i.e. 14%) made any additional comments to the subjects in the UNIDO questionnaire. Both the Indian and the Zambian respondents observed that ISO 14001 could improve environmental management and provide adequate protection of the environment. The Zambian respondent noted that depending "on the way it will be implemented internationally and national, it could act as a barrier to trade" especially for developing countries which would be the most affected. A Brazilian respondent noted to be aware for life cycle analysis and environmental performance evaluation activities at ISO.

Two respondents identified assistance for developing countries. A Colombian respondent suggested that technical help on environmental matters should be provided by the developed countries to the developing countries through the Word Trade Organisation. The Nigerian respondent believed that there was very limited distribution of information about the ISO 14000 series of standards and that information should be sent to each country regardless of membership in ISO. A Pakistani respondent stated that they would be providing their fullest co-operation.

III.3 Discussion of Results

3.1 Current Perceptions of the ISO 14000 Series of Standards

The survey shows that current awareness of the ISO 14000 series of draft standards is low. Perceptions of the series appear therefore, not to be based on detailed knowledge of the documents but more on experience with the quality standard series ISO 9000 and the impact of environmental regulations both domestic and overseas. Nevertheless, respondents perception of the series and in particular the ISO 14001 standard can be divided into five areas:

- Relationship to Government environmental Policy
- Current awareness and access to standards
- Achievement of awareness
- Costs of ISO 14001
- Pressures and Opportunities for ISO 14001

Relationship to Government Environmental Policy

The survey shows that most governments are defining and driving mandatory environmental policy and that these policies exert an ever increasing pressure on local

business. Voluntary national environmental agreements are in evidence but not as prominent as mandatory ones. Confusion is apparent amongst respondents between environmental legislation i.e. mandatory standards set for such issues as emissions to air and water and environmental standards i.e. voluntary initiatives taken by an organisation to improve its environmental performance. This confusion is possibly because most developing countries governments are pursuing environmental regulation solely and have not embraced the notion of self regulation which voluntary environmental standards embody.

The survey shows that there is a positive relationship between government policy as defined in legislation and the implementation of ISO 14001. Compliance with the ISO 14000 series of standards and ISO 14001 in particular, is perceived as being a positive means for business to reduce the pressure exerted by government policy and facilitate compliance with environmental legislation.

Most governments actively promote environmental awareness amongst businesses but have not established mechanisms to promote the ISO 14000 series of standards for a number of possibly reasons. Firstly, because the standards are still in draft form; secondly, because governments themselves are not fully aware of standards and their objectives and thirdly, because limited human and financial resources prevent promotion. Governments which do not actively promote environmental awareness to business are less likely to have the administrative structures in place to promote the ISO 14000 series of standards

Government mandatory requirements are considered a significant burden on business and so are voluntary agreements; however, few respondents found it possible to put a value, in terms of annual production costs to achieve compliance. This possibly indicates that the environment is not incorporated into business costing or absorbed in product price. It may be expected that the environment is largely being zero valued by business and not viewed as a potential source of opportunities such as cost saving. Acceptance of the ISO 14000 series of standards may therefore, be seen as a necessary evil to stay in the market place rather than a proactive choice.

Current Awareness and Access to Standards

Current low levels of awareness of the draft ISO 14000 series amongst all business and importers and exporters in particular, and the corresponding higher levels of awareness amongst national standards bodies and consultants reflects the lines of dissemination of ISO standards. Document distribution is not comprehensive Those involved in the standards making process directly or who have contact with ISO committees obtain copies of standards as they are being developed. Other parties interested in the developments appear to have haphazard access to information, possibly because few countries actively promote the ISO 14000 series and/or because there are not the mechanism in place to effectively consult interested parties, especially businesses.

Lack of ISO 14000 series promotion by governments and effective dissemination through standards bodies and industrial association means information will trickle down to business. Worryingly, one industrial respondent stated he had an "unofficial copy" of ISO 14001, giving the impression that information has an official path which excluded, in this case, businesses.

Copies of the draft standards in the ISO 14000 series do not appear to be distributed effectively, especially in Africa and to business in general. This hampers the understanding of the series objectives and means that opportunities to actively participate in the ISO process are undermined limiting the penetration of views from developing countries.

Achievement of Awareness

The survey shows awareness raising of ISO 14001 is an important, if not crucial issue, if the objectives of the draft standard are to be fully understood. Businesses are the prime users of ISO 14000 series of standards but they are the least aware. If governments want companies to achieve certification to ISO 14001, awareness raising and promotion of the standard should be undertaken.

Although few governments currently have national ISO 14000 series promotional strategies, such strategies need to be developed to target all businesses. Such strategies could effectively mobilise industrial and trade associations in an effort to reach a wide range of industries. The survey supports the idea that promotional strategies should include funding options to assist implementation by partially covering the cost of consultancy fees, training and implementation.

Ideally, governments could develop promotional and support structures for ISO 14000 series of standards which could effectively facilitate raising business awareness and adoption of the standards. In reality, most developing countries governments are geared towards achieving regulatory compliance amongst businesses hence efforts are directed towards this objective.

Cost of ISO 14001

Unsurprisingly, no clear valuation was suggested for the cost of compliance with ISO 14001; however, it is anticipated that companies will bear the costs of implementation, certification and any consultancy costs. Partial funding to support company efforts was expected from governments for consultancy, training, implementation and registration. Establishing government funding strategies to assist businesses is likely to be difficult for most countries with stretched financial resources and limited human resources/expertise.

Governments may be more inclined to fund projects which enable businesses to meet mandatory standards rather than voluntary ones, especially considering the survey majority view is that compliance with ISO 14001 could be incorporated into product

prices. However, if the standard follows the ISO 9000 route, than gaining access to new markets will be attractive to both companies and governments and potentially a strong reason for government support. A more potent reason for government support may be if companies find their survival is threaten by loss of markets if compliance to ISO 14001 is not achieved.

It was not anticipated that the cost of compliance would lead to the migration of companies to other regions. In fact, it is possible that as ISO 14001 is implemented by businesses in developed countries and/or companies adopted regional schemes such as the European Union's Eco-management and audit scheme companies will relocate their more polluting activities to developing countries. In doing so, enterprises could achieve compliance with their environmental policy's commitment to comply with environmental legislation in developed countries because more polluting processes have been exported overseas. This double standard approach would be technically possible under ISO 14001.

Pressures and Opportunities for ISO 14001

The survey indicates that the pressures and opportunities for implementing ISO 14001 largely come from external factors to the business, such as the demonstration of legal compliance, rather than internal factors, such as achieving self imposed environmental targets. The focus on external pressures in particular may be due to the lack of practical experience in implementing environmental management systems or the fact that few respondents to the survey came from industry.

Conformity with legislation and meeting the requirements of overseas consumers were the factors identified by the survey as most likely to influence businesses to adopt ISO 14001. The emphasis on using ISO 14001 to demonstrate achievement of domestic legislation is consistent with companies which are currently implementing national environmental management systems standards such as the Irish standard IS 310 and the South African standard. What is distinctive, is the fact that respondents listed ISO 14001 as a means of showing compliance with foreign legislation. This illustrates that foreign legislation is perceived as a threat and is potentially already affecting domestic businesses in developing countries. ISO 14001 is therefore, seen as a way of elevating such pressure.

The survey illustrates that ISO 14001 may follow similar lines of demand as ISO 9000, with customer demand driving the implementation of the standard. In turn, there was support for the idea that compliance with ISO 14001 would provide access to new markets. It is apparent that the overseas customer focus probably draws on experience with the international quality standard. The need to consider a broader range of stakeholders with ISO 14001 than with ISO 9000 is not clearly identified in the survey. Consideration is not given to other stakeholders such as staff or the local community.

A particular pressure on companies implementing ISO 14001 in developing countries will be the successful consideration of stakeholder views. The apparent under participation of these regions, especially Africa, in the ISO standards making process may mean the need

to consider different stakeholder views is not incorporated into the specification. For example, local communities in developing countries may often be more dependent on their local environment for resources, drawing water directly from streams and rivers into which industrial effluent is discharged. The need, therefore, to consider the local community as an important stakeholder in the businesses environmental policy is considerably more important than other stakeholders such as the media or financial institutions.

Businesses in developing countries will not be motivated to adopt ISO 14001 until the perceived disadvantages, such as High cost of implementation and a lack of awareness of benefits, are out weighed by the perceived advantages of implementation, such as strengthening market share and meeting overseas requirements. Unless a positive effort is made to highlight the benefits of ISO 14001 the majority of business will react to threats, such as loss of customers, as and when they arise. As a result, implementation of ISO 14001 is likely to be more costly and more dependent on external or overseas expertise as opposed to internal skills or domestic consultants. Consequently, the successful integration of ISO 14001 principles into core business objectives will be limited.

3.2 Infrastructure Implications

For the countries surveyed, the ISO 14000 series of standards will definitely have infrastructure implications in three fields: accreditation, certification and training and skills development.

Most countries will need to establish and fund a national accreditation body. Generally there will be just one public body per country to accredit certification bodies for both ISO 9000 and ISO 14001 and this body will seek mutual recognition; however, it is anticipated that these bodies will have difficulty meeting requirement for international acceptance. The establishment of a single body raises the issue of how it should be structured to take account of the two different standards and whether or not the technical skills exist to establish such a body. This model has been used in such countries as Ireland and the UK and is seen as an effective use of resources but, as one respondent pointed out, such a body could become too powerful.

Similarly, the survey identified that domestic certification bodies would be established for ISO 14001 and that these bodies would be largely public in character and already certifying to ISO 9000. They would certify a range of companies both public and private from home and overseas. Difficulties are anticipated. Gaining recognition for domestic certificates by trading partners is sometimes a problem for ISO 9000 and this is likely to be amplified with ISO 14001, as is meeting the requirements for international acceptance of national certification bodies. Essentially, recognition problems stem from the scope of issues covered by ISO 14001 which is greater than ISO 9000, and because more and varied stakeholders are involved in ISO 14001 than just customers. A powerful

stakeholder being the public which will exert different pressures depending on their location.

Local business will generally not have the necessary human or financial resources to put ISO 14001 in place and unlike in developed countries, where businesses have recourse to external consultants, a shortages of qualified constants and auditors will. The possible need to rely on overseas consultants to fill this gap will be potentially costly and inappropriate. Home based resources of consultants and auditors, along with associated training need to be developed to match local needs. One of the disadvantages of relying on overseas expertise is its limited effectiveness in being part of a wider strategy of training and skills building. The useful exchange of information and skills could enable developing countries to overcome the obvious forthcoming problem for their exporting business of lack of mutual recognition.

3.3 Trade Barriers

3.3.1 ISO 14001

The survey identified that overseas environmental requirements are being used as a barrier to exports. Regional variation indicated the African respondents believed their exports were most subjected to such barriers. Country and regional variation probably stems from the way environmental requirements are imposed. Such requirements are often product specific and can be traced back to public pressure in the developed country targeted at specific environmental issues. For example, the boycott of tropical hard wood products and the preference for so called dolphin friendly tuna.

ISO 14001 is predicted, in the survey, to strengthen non-tariff trade barriers. Respondents were uncertain about how this will occur in practice; however, they may have drawn on their experience with ISO 9000 to indicate what could happen. Although the standard does not apply to products which are traded and can be excluded, the text of ISO 14001 would allow implementing companies to establish trade barriers (see Annex 8).

Implementing companies could establish barriers by either defining environmental objectives in their polices which preclude other companies which do not have ISO 14001 or investigating the environmental probity of their suppliers, sending out questionnaires asking about performance and then excluding those which do not meet certain internal company standards. It is unlikely that ISO 14001 will increase the trade barriers related to environmental legislative standards by applying the legislation to suppliers. This would be a blunt and unsubtle way of excluding suppliers. Non-tariff trade barriers are more likely to arise from company standards and these could, for example, include how a supplier assess stakeholder interests or the views of interested parties in its business operations.

A strongly voiced message from the survey was that customers should not demand ISO

14001 with undue haste. Recognition needs to be given to the fact that barriers exist to implementation not only because of lack of expertise, but also because full recognition is not afforded to all countries' certification. In fact, companies in developing countries face a double edged sword: on the one hand, being pressed to conform to voluntary standards and then on the other hand, finding their certification is not recognised and that they must rely on the certification from an international company for certificates to be acceptable.

3.3.2 Environmental Labelling

As an instrument, environmental labels are potential more potent at creating trade barriers than ISO 14001 because they apply to products which are traded. The survey identified the inhibiting quality of national labels to exports and the benefit of introducing internationally recognised labels to improve export opportunities. In addition, the survey also showed that the environmental labelling guideline ISO 14020 could lead to harmonisation.

The existence of numerous environmental labels is confusing and costly to exporters, especially if the label has little credibility or recognition from the consumer. Streamlining the labels that exporters need to apply to their products would be a benefit because it would reduce costs and administration, ensuring that exporters received recognition for their efforts to improve their products. The simplification of procedures needed to gain environmental labels will help to lessen the impact of trade barriers that can, in the first place, be introduced by labels. Although environmental labels can be requested on exporters' products, it is finally the end consumer which makes the buying decision about each particular product and this buying decision can create barriers.

3.3.3 SMEs

Awareness amongst SMEs is pitifully lacking, as is their understanding of the objectives of the ISO 14000 series of standards. This is unsurprising considering all businesses are woefully short of information on the standards even though they are the target market for these products. The survey did not identify any particular factors which would encourage or deter SMEs separate from all businesses; however, factors likely to deter SMEs were more strongly emphasised, especially the cost of setting up an environmental management system and lack of awareness of the benefits.

Before considering ISO 14001 for SMEs there needs to be some consideration of whether or not it will be valuable to these enterprises. If an SME is an exporter, then it is likely that ISO 14001 will become a business factor; if however, the SME serves the domestic market then the standard will only become important if the local market develops a preference for the standard.

Most economies are made up largely of SMEs, and by their very nature they are diverse, making the task of providing them with information and assistance difficult.

Nevertheless, SMEs, as with larger companies, may identify clear internal as well as external benefits from implementing an environmental management system such as ISO 14001. Consequently, it is necessary that they are not neglected as potential beneficiaries. No doubt, deeper investigation will identify that SMEs will require straight forward environmental awareness raising before moving on to consider environmental standards. Providing such programmes will be expensive if developing countries have to rely on overseas expertise.

III.4 Recommendations

The awareness and understanding of the ISO 14000 series of standards and ISO 14001 in particular, is limited in developing countries. Nevertheless, the perceived threat that these draft standards will disadvantage companies in developing countries is real. Confusion exists about how the threat will manifest itself but the survey highlighted increasing environmental legislation, growing customer and government pressure for improved environmental performance and existing examples of environmental trade barriers. Against this backdrop, developing countries have weak internal infrastructure (i.e. accreditation and certification bodies, training and human and financial resources) to support their business communities as they tackle these new market requirements.

It is therefore, recommended that a comprehensive strategy is developed to assists developing countries form and strengthen their internal administrative structures for the ISO 14000 series of standards and support their businesses to prepare for the new standards. The strategy would need to embrace all the key players instrumental in facilitating the introduction of ISO standards: government, accreditation and certification bodies, national standard bodies and industrial associations. Where possible existing ISO 9000 structures and experience should be utilised; however, recognition need to be given to the distinctive nature of standards which tackle environmental subjects. For example ISO 14001, covers environmental legislative requirements applicable to a company and it also requires a company to assess numerous stakeholders views not just customers as in ISO 9000.

The following list shows the recommended elements which could form the basis of an effective strategy.

<u>Government</u>

- Undertake the identification of businesses likely to be under the most pressure to implement ISO 14001.
- Define environmental policies which support self-regulatory initiatives along side the existing regulatory framework.
- Promote the benefits of undertaking improvements in environmental performance to all sectors including SMEs and government departments.

- Organise an awareness raising programme which establishes a baseline of understanding on the importance of environmental issues for business.

- Encouraging the incorporation of environmental subjects into all levels of formal training from high school to university degrees.

National Standards Bodies

- Improve means of disseminating information on developing standards to business.

- Strengthen links with industrial associations to disseminate information.

- Promote awareness of standards and the benefits to be achieved from adopting standards.

Accreditation and Certification bodies

- Begin planning for the introduction of the ISO 14000 series of standards by drawing on other bodies experience.

- Review skills of personnel and investigate straightening their experience on the new standards.

Industrial Association

- Utilise communication links with members to inform them of the forthcoming standards.

- Build links with national standards body to keep informed of developments.

- Organise seminars to raise the environmental awareness of their members.

Fundamental to all businesses in developing countries is the access to information and experience. Lack of awareness is a basic barrier to be able to plan and respond to the growing environmental pressures. It is recommended that the following four programmes are developed:

1. Awareness raising seminars targeting business, industrial associations and accreditation and certification bodies. The seminars should be specifically designed for each audience and draw on as much practical experience as possible.

2. Exchange of information to improve the flow of information from ISO to a wider audience than just its members and increase the flow of information to business from a variety of sources. Promote the exchange of information between similar

organisations in developed and developing countries.

3. Training specifically for auditors in certification bodies and in companies need to be provided and courses to build local training capacity need to be undertaken i.e. training of the trainers.

4. Networking should be promoted between developed and developing countries organisations so that the experiences in developed countries can inform the developing country. For example, models used in the UK for the accreditation body could usefully inform accreditation bodies in developing countries

ISO 14001 may follow the same path as ISO 9000 and be requested by customers with little regard to how the supplier will respond. Customers need to be made aware of the time it takes for companies to implement environmental management systems. It is recommended that customers are encouraged to work with suppliers rather than simply demanding a particular standard.

The ISO 14000 series of standards offer businesses opportunities to improve environmental performance and demonstrate environmental action. The standards will have positive benefits to companies; however, if companies are not prepared opportunities will be missed and such standards will potentially act as non-tariff trade barriers. Adequate preparation in developing countries is essential and requires assistance.

ANNEXES

TERMS OF REFERENCE

Part C. Project Objective, Outputs and Activities

To formulate a developing country response to trade barrier issues associated with emerging international and bilateral standards in the fields of quality and environmental management systems

Output 1

A report to be presented to ISO, WTO, CSD and other multilateral and bilateral organizations on the trade barrier implications of voluntary international standards for quality and environmental systems.

Activities

1.1 Preparation of a survey instrument and list of institutions to receive the questionnaire by experts

1.2 Review of questionnaire by UNIDO staff and ISO Secretariat with international expert in Vienna

1.3 Conduct mail survey in approximately 30 developing countries, one questionnaire to accreditation body and one to industry association

1.4 Analyze results of survey

1.5 Prepare preliminary report for expert group meeting

1.6 Hold expert group meeting in Vienna to review results of survey and to comment on draft background report to be submitted to ISO, WTO and CSD

1.7 At the same expert group meeting, discuss the procedures for and resource implications of mutual recognition of national certification, including the potential role of UNIDO

1.8 Finalize report taking into account the comments of representatives from developing and developed countries

Output 2

A paper on the concerns of developing countries with ISO 14000

Activities

2.1 Extract from the above material a paper exclusively on ISO 14000 for the CASCO meeting

2.2 Present paper to CASCO meeting in June 1995

DETAILS OF AUTHORS

Certification

Dr Ivan Dunstan, Chairman of the UK National Forum on Quality Policy, Vice-President of the UK Institute of Quality Assurance and former Director General of the British Standards Institution has worldwide experience of ISO 9000 and its implementation. He has been involved in the introduction, design and upgrading of national quality systems in many countries including: India; Pakistan; Malaysia; Argentina; Egypt; Vietnam; Bulgaria; Brazil; Chile.

Mr John Ware, former Director of BSI Quality Assurance was Chairman of Quality Systems Assessment and Registration Group of ISO. He has extensive experience of operating certification services in the UK, has served as Chairman of the Association of British Certification Bodies and has assisted countries world wide through training and consultancy to adopt and implement ISO 9000 and associated certification schemes. As Chairman of the ISO Committee on Conformity Assessment (CASCO), Mr Ware became familiar with the problems of developing countries. Countries of experience include: China; Thailand; Singapore; USA; Malaysia; Kenya; Malawi; Ghana; Nigeria; Mexico; India and Bahrain.

Currently Mr Ware is Chairman of CEN/CENELEC TC1, responsible for the European EN45000 series of standards on criteria for organisations involved in testing, inspection, certification and accreditation.

Both experts will bring their extensive experience to bear for the project, and in particular, in his capacity as Chairman of QSAR, Mr Ware has a keen interest in seeing the project carried through to as successful conclusion.

Environment

Ruth Hillary has extensive experience of policy development and implementation of environmental auditing and management. She was placed with the European Commission's DG XI where she worked on the draft Eco-Management and Audit Regulation during its progress towards adoption and application. She is currently working on implementation pilot project of the Eco-Management and Audit Scheme in SMEs supported by both the European Commission and the Department of the Environment, and is a member of the Government's Advisory Group on the Eco-Management and audit scheme.

Ruth Hillary will be backed up by the expertise of the Imperial College of Science, Technology and Medicine's Centre for Environmental Technology (this back-up, for the purposes of calculating day-rates, will be counted as one expert). The Centre for Environmental Technology (ICCET) is the pioneer UK interdisciplinary academic organisation for environmental technology and research.

QSAR - QUALITY SYSTEMS ASSESSMENT AND REGISTRATION

1. QSAR Principles and Policies

Access and openness of the system

The QSAR Programme is one in which accreditation bodies become recognized through a peer evaluation against criteria approved by ISO and IEC. A grouping of accreditation bodies may be necessary to meet regional needs. If such a grouping results in a formalized regional body which wishes to act as a regional qualifying authority, the QSAR Board will propose rules and operating procedures, for approval by ISO and IEC, by which the regional body can be involved.

The QSAR Programme (in agreement with prior CASCO recommendations approved by the ISO Council) shall be fully open. Any accreditation body wishing to enter the system should be eligible to make an application. Their acceptance into the system shall not be influenced by any factors other than those related to meeting the technical and operational criteria for acceptance into the system. A body's acceptance into the system should not be discriminated against for reasons of geographic location, activities in other sectors (providing these activities meet the requirements of the relevant ISO/IEC guides), relationships with standardizing bodies, or relationships to governments or trade associations.

International character of the programme

It is recommended that careful consideration be given by ISO and IEC to the choice of initial Board members from developing countries. Nominations should be managed by the Secretaries-General and should be based on such criteria as geographic location, experience, and knowledge of QS conformity assessment activities in the various parts of the world.

Without exception, all standards and acceptance criteria documents used by ISO/IEC QSAR shall be ISO, IEC or ISO/IEC consensus based documents (Standards and Guides), where they exist, and that as these documents are revised and re-issued their immediate use by ISO/IEC QSAR is obligatory.

Should there be a need for standards and criteria documents that do not exist at the international level, the QSAR Board should make a formal request that ISO and IEC establish a new work item in the specific area. Recognizing that the development of international consensus documents is a relatively slow process, the QSAR Board may request authorization from ISO and IEC to temporarily use other normative documents, such as European Norms, until corresponding ISO/IEC documents are available.

Autonomy of the peer review decision process

It needs to be clearly stated that the peer review procedures established for ISO/IEC QSAR must be operated with autonomy and integrity, and that the results of the application of these procedures may not be changed by any governing bodies in ISO or IEC, nor by any ISO or IEC members other than by successful exercise of the formal ISO/IEC QSAR appeal procedures.

Financial autonomy vis-à-vis other ISO and IEC programmes

Initial assumptions have been that the ISO/IEC QSAR operation would be both not-for-profit and self-financing. This implies the need for separate budgeting and accounting for the programme, and for deficit spending only when approved by the appropriate ISO/IEC authorities. If ISO/IEC QSAR collects more money than it spends in a given year the excess revenues, after establishment of appropriate reserves, shall be used to reduce fees for QSAR members.

Avoidance of conflict of interest

Within the QSAR programme there are three kinds levels of assessment activity, i.e. recognition of Accreditation Bodies by QSAR itself, accreditation of Certification/Registration Bodies by Accreditation Bodies, and certification/registration of suppliers by Certification/Registration Bodies. To be a participating member in QSAR no single body can be involved in more than one of these activities. That is to say that the QSAR itself shall not be involved in accreditation, and accreditation bodies shall not themselves be involved in certification/registration.

Applicability to other international conformity assessment recognition schemes or programmes

The QSAR functions of international recognition, accreditation, and certification/registration of conformity to international standards can in principle be applied to any international standard for which third party conformity assessment is feasible. As an example, the IECEE scheme which is based on IEC product standards could, if desired by its members, establish accreditation and recognition mechanisms analogous with those same functions in the QSAR programme. While not envisioned in the immediate future, there might be benefits in associating such additional schemes under one ISO/IEC programme, depending of course on experience from which it is possible to judge the success of QSAR.

Use of the ISO/IEC QSAR Logo

An **ISO/IEC QSAR logo** especially designed and registered for the ISO/IEC QSAR purpose will have to be registered and legally protected (on a world-wide basis). Registering the mark should be done by ISO and IEC in the same way ISO and IEC register their existing logos.

The availability and use of a logo mark will require a commensurate amount of protection and policing. The authorization to use this ISO/IEC QSAR logo will extend (also under well-defined rules based on currently available guidelines) to any supplier who has been assessed and registered as complying with one of the ISO 9000 series standards by a certification/registration body qualified by ISO/IEC QSAR.

Unauthorized use of the ISO/IEC QSAR logo needs to be prevented to the maximum extent possible, and prosecuted when it occurs. This policing function, while assisted by the QSAR member(s) concerned, is the ultimate responsibility of the ISO and IEC Secretaries-General, who may request assistance as necessary from the ISO and IEC members in the country concerned.

Policing the mark would have two facets. The first would be formally informing qualified bodies that they may use the mark as well as providing guidance on how the mark can be used

The second facet of policing the mark would be informing bodies if their right to use the mark has been removed (e.g. they no longer meet the system criteria and are suspended from the system) or taking action against bodies which use the mark improperly or without authorisation.

Because the logo will be the main means of identifying recognized, accredited, and certified/registered bodies in QSAR, registration and policing of the logo/mark will have to vigilant

2. QSAR Procedures

Any QS Accreditation Body wishing to be recognized by ISO QSAR shall submit an application for QSAR Membership, in which it shall declare its adherence to all relevant ISO/IEC criteria, identify its sphere of operation including any affiliations or mutual recognition agreements with other QS Accreditation Bodies; and state its willingness to provide its fair share of peer evaluation assessors in the programme and to pay the necessary fees for admission and continuing QSAR membership.

For each applicant the QSAR executive shall appoint a peer evaluation team consisting of at least three representatives of existing ISO QSAR accreditation body members.

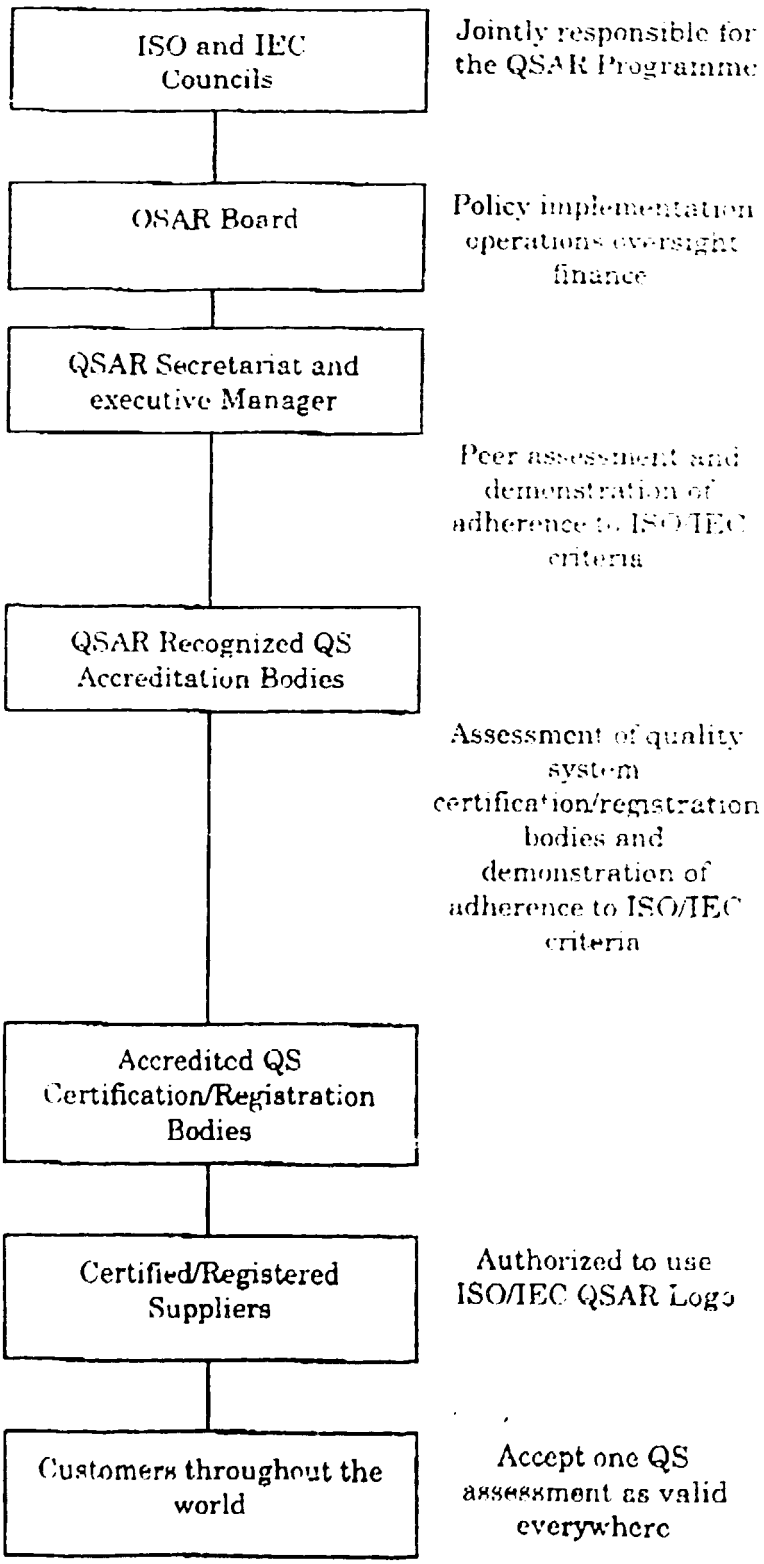
The peer evaluation team shall take such steps as necessary to conduct a full review of the operations of the applicant QS Accreditation Body and report its recommendations to the QSAR executive, i.e. whether or not the application for QSAR recognition and membership should be accepted. In order to avoid unnecessary assessment visits, the peer evaluation team shall take account of existing recognition agreements between QS Accreditation Bodies, provided that such agreements are also based on peer assessment procedures based on the relevant ISO and IEC criteria.

The QSAR executive shall decide, subject to ratification by the QSAR Board, on the basis of the peer evaluation team's recommendation, whether or not to admit the applicant to QSAR membership

Each QSAR member wishing to remain in the QSAR Programme must undergo periodic re-evaluation by a peer evaluation team, which is also appointed by the QSAR executive, consisting of different members than the immediate prior peer evaluation team. The frequency of periodic re-evaluations to confirm QSAR membership shall be once every three years, unless the QSAR Board decides to increase the frequency for certain cases.

Any appeal against a decision of the QSAR Board shall be handled by an ad hoc arbitration panel established by ISO and IEC.

3. ISO/IEC QSAR Structure



ENVIRONMENTAL MANAGEMENT SYSTEMS AND ENVIRONMENTAL AUDITING STANDARDIZATION

ISO/TC 207 AND THE 'ISO 14000 SERIES'

ISO/TC 207 'Environmental management' was set up in June 1993. Its scope is 'Standardization in the field of environmental management tools and systems'It has Six Subcommittees and 17 Working Groups currently working on some 25 standards. Several documents deal with environmental management systems (EMSs) (in the areas of EMS, Environmental auditing, and Environmental performance evaluation); others encompass product considerations (in the areas of Environmental labelling, Environmental life-cycle assessment, and the inclusion of environmental aspects in product standards). ISO/TC 207 has close cooperation with ISO/TC 176 'Quality management and quality assurance' in the field of environmental management systems and audits.

ISO 14000 SERIES STANDARDS REFERRED TO IN THIS INFORMATION SHEET

14000 -	'Environmental management systems - General guidelines on principles, systems and supporting techniques'
14001 -	'Environmental management systems - Specification with guidance for use'
14010 -	'Guidelines for environmental auditing - General principles'
14011/1-	'Guidelines for environmental auditing - Audit procedures Part 1 - Auditing of environmental management systems'
14012 -	'Guidelines for environmental auditing - Qualification criteria for environmental auditors'

ISO/TC 207/SC 1 'ENVIRONMENTAL MANAGEMENT SYSTEMS'

ISO/TC 207/SC 1 has recently had its third meeting (June 1995 in Oslo), at which it was agreed that both ISO/CD 14000.2 and ISO/CD 14001.2 should be elevated to Draft International Standard (DIS) stage. The best possible timetable is now as follows:

MID JULY 95 - TEXTS SENT TO ISO/CS BY BSI SECRETARIAT
END JULY 95 - ISO/CS CIRCULATES TEXTS TO ALL ISO MEMBER BODIES FOR 6 MONTH VOTING PERIOD ***(Parallel CEN process)***
END JANUARY 96 - END OF DIS VOTING PERIOD ***(Parallel CEN process)***
BY END FEB 96 - REVISED DIS SENT TO ISO ***(Parallel CEN process)***
END FEB 96 - REVISED DIS CIRCULATED FOR 2 MONTH VOTING PERIOD ***(Parallel CEN process)***
END APRIL 96 - END OF VOTING PERIOD
(International and European Standards agreed or International Standard proceeds separately from European Standard)
BY END JULY 96 - PUBLICATION ***(subject to ISO/CS agreement to expedite process)***

Annex 5

RESPONDENTS
Country, Organization and ISO Affiliation

No	Country	Organization GD - Government Department NSB - National Standards Body IA Industry Association CB - Certification Body AB - Accreditation Body	ISO FM - Full member SM - Subscriber CM - Correspondent AF - Applied for UC - Under consideration XM - Not a member
1	UAE	Directorate of Standardisation and Metrology, Ministry of Finance and Industry - GD	Not specified
2	Antigua and Barbuda	Antigua and Barbuda Bureau of Standards - NSB	SM
3	Bolivia	Bolivian Institute for Standardisation and Quality (IBNORA) - NSB, CB and AB	SM
4	Bolivia	Secretariat of Industry and Commerce (Industry Policy) - GD	SM
5	Chile	Bureau Veritas Chile, SA - CB	FM
6	Chile	Asosiacion de Exportadores de Manufacturas de Chile (ASEXMA - Chile AG) - IA	Not specified
7	Chile	CESMEC LTDA - CB	FM
8	China	China National Accreditation Committee for Quality System Registration Bodies - AB	FM
9	China	China State Bureau of Technical Supervision - GD and NSB	FM
10	Colombia	Instituto Colombiano de Normas Technicas (ICONTEC) - NSB and CB	FM
11	Colombia	Superintendencia de Industria y Comercio - GD and AB	Not specified
12	UAE	The Economic Department - GD	Not specified
13	Ghana	Ghana Standards Board - NSB	FM
14	India	Quality Care - not specified	Not specified

15	Malaysia	Malaysia Accreditation Council - AB	Not specified
16	Morocco	Service de Normalisation Industrielle, Ministere du Commerce et de l'Industrie - GD	FM
17	Nigeria	Standards Organisation of Nigeria - NSB, CB and AB	FM
18	Philippines	Bureau of Product Standards - GD, NSB and AB	FM
19	Philippines	Certification International Philippines Inc - CB	FM
20	Philippines	National Steel Corporation, Pasig Plant - not specified	FM
21	Philippines	Unilever, Philippines - IA	Not specified
22	Sri Lanka	Sri Lanka Standards Institution - NSB	FM
23	Taiwan	Bureau of Commodity Inspection and Quarantine, Ministry of Economic Affairs - GD and CB	XM
24	Turkey	Turkish Standards Institute - NSB	FM
25	Vietnam	Directorate for Standards and Quality - NSB and AB	FM
26	Zambia	Zambia Bureau of Standards - NSB	XM
27	Bolivia	Camara Nacional de Industrias - NSB, CB and AB	SM
28	-	No details given in Questionnaire Section I	-
29	Chile	National Institute for Standardization (INN) - NSB	FM
30	Barbados	Barbados National Standards Institution - NSB	CM
31	Romania	Romanian Standards Institute - NSB	FM
32	Romania	Ministry of Water, Forests and Environmental Protection - GD	FM
33	Kenya	Federation of Kenya Employers - IA	Not specified
34	Ghana	Ghana National Chamber of Commerce - IA	FM
35	Turkey	Ministry of Environment - GD	Not specified
36	Ghana	Customs Laboratory - GD	FM
37	Argentina	National Institute of Industrial Technology (INTI) - AB	FM

38	Romania	Ministry of Industry - GD	FM
39	Russia	All Russian Scientific Institute for Certification (VNIIS) - CB	FM
40	Ghana	Food Research Institute, Council for Scientific and Industrial Research - GD	FM
41	Brazil	No details given in Questionnaire Section I	-
42	Malawi	Malawi Industrial Research and Technology Development Centre - GD	CM
43	India	Bureau of Indian Standards - NSB	FM
44	India	Associated Chambers of Commerce and Industry of India - IA	FM
45	India	Standardization, Testing and Quality Certification Directorate - GD and CB	FM
46	Thailand	Federation of Thai Industries - IA	Not specified
47	Thailand	Thai Industrial Standards Institute, Ministry of Industry - GD, NSB, CB and AB	FM
48	Algeria	Ministry of Commerce letter - GD	Not specified
49	India	National Productivity Council - promotional body	FM
50	India	Confederation of Indian Industry - IA	FM
51	Mauritius	SMIDO - GD	Not specified
52	Mauritius	Export Processing Zones Development Authority - GD	Not specified
53	Tunisia	Union Tunisienne de L'Industrie, du Commerce et de L'Artisanat (UTICA) - IA	FM
54	Brazil	Companhia Vale do Rio Doce - Industrial company	FM
55	Indonesia	Indonesian Chamber of Commerce and Industry - IA	Not specified
56	Indonesia	Centre for Industrial Standardization - GD	FM
57	Pakistan	State Engineering Corporation - GD	AF
58	Pakistan	Leather Industry Development Organization - GD	UC
59	Pakistan	Metal Industry Research & Development Centre (MIRDC) - GD	FM

Annex 6

UNIDO

United Nations Industrial Development Organisation

Questionnaire

Trade Implications of International Standards for Quality and Environmental Management Systems (ISO 9000/ISO 14000 Series)

Implemented by Resource

On behalf of UNIDO

CONTENTS

INTRODUCTORY NOTES

The growing popularity of quality management systems for business activities has led to world-wide recognition of the benefits achievable through the implementation of the ISO 9000 series of quality management standards. Over 90 countries have now adopted the ISO 9000 series as the model for their own national standard for quality management. For many companies in developing countries, however, lack of awareness of these benefits and constraints on achieving and demonstrating conformity with the ISO 9000 series, particularly to overseas customers, may be an obstacle to achieving a company's trading potential.

UNIDO and ISO need your help in researching issues affecting the implementation of the ISO 9000 series in developing countries and whether similar considerations are likely to arise with the introduction later this year of the ISO 14000 series of standards for management systems to monitor and reduce the impact of business activities on the environment. This questionnaire seeks information required for an expert review of these issues. The findings will form the basis of a report to ISO, WTO, CSD that addresses the concerns of developing countries about ISO 9000 and 14000.

The ISO 9000 Series of Quality Management Standards

The ISO 9000 series of standards provides criteria and guidelines for establishing systems to ensure consistent quality in both manufacturing and service activities. Demonstration of compliance with the Standard increasingly requires assessment and certification (or registration) of a company's quality management systems by an independent certification body, either domestic or international. To help secure international recognition of such certificates, most certification bodies are themselves accredited by a third party organisation, usually government appointed. Mutual recognition of the competence of accreditation and certification bodies facilitates international acceptance of company-held ISO 9000 certificates and thereby encourages the expansion of international trade. Conversely, difficulty in securing international recognition for locally issued ISO 9000 certificates may create a barrier to trade.

Quality Systems Assessment and Recognition (QSAR)

QSAR is a global unified scheme, developed by ISO in association with the International Electrotechnical Commission (IEC), to enable certification bodies to obtain international acceptance of their competence and therefore the validity of the ISO 9000 certificates which they issue. It will operate a procedure for international recognition of accreditation bodies, each of which will be assessed by their peers in other countries against mutually agreed criteria derived from ISO/IEC guides. It is expected that a founding membership of 10 accreditation bodies will be in place later this year.

Background Information on the Proposed ISO 14000 Series of Standards

Various parts of the proposed ISO 14000 Series of Standards are expected to be progressively published as Draft International Standards (DIS) from June 1995.

(a) **ISO 14001 - Environmental Management System (EMS)**

ISO 14001 will provide organisations with a specification on how to implement and improve an EMS.

It will contain those system elements that may be objectively audited for certification/registration purposes and for self declaration purposes. It will not itself state specific environmental performance criteria, but will require an organisation to formulate a policy and objectives taking into account National legislative requirements and significant environmental impacts.

Establishment and maintenance of an EMS enables an organisation to anticipate and meet growing environmental performance expectations, to ensure ongoing compliance with national and/or international requirements and to support continual improvement of its environmental performance.

In order to ensure the effectiveness of such an EMS according to its objectives the following core elements of an EMS should be implemented:

- Environmental Policy: Statement by the organisation of its intentions and principals in relation to its overall environmental performance.
- Planning: including the identification of environmental aspects and legal requirements as well as the setting of objectives and an environmental management programme.
- Implementation & Operation: of required actions, such as structures, responsibilities, training, awareness, communication, documentation, control and emergency preparedness.
- Regular checking & corrective actions: (eg monitoring, measuring and auditing)
- Management review: check EMS' continuing suitability, adequacy and effectiveness according to its objectives and changing circumstances.

(b) **ISO 14010, ISO 14011, ISO 14012: Environmental Auditing (EA)**

The general purpose of ISO 14010 will be to inform organisations about the general principles common to the execution of environmental audits. Whereas the ISO 14011 will provide specific procedures for the conduct of EMS audits. ISO 14012 will address the qualification criteria for auditors.

The main objectives of conducting an environmental audit will be to determine conformity with ISO 4001, as well as to identify areas of potential improvement within the EMS.

(c) **ISO 14020: Environmental Labelling (EL)**

This international standard will contain guiding principles and practices, criteria procedure and guidance for certification procedures for the development of multi criteria-based, third party certified environmental labelling. Note that, currently, it is not intended to create an international label for which an organisation could apply. ISO 14020 is at this point only a guidance for national labelling schemes aiming at harmonisation of National schemes world wide.

Environmental labelling, in this context, means the use of labels in order to inform consumers that a labelled product is environmentally more friendly relative to other products in the same category. The criteria for the award of a label call for an overall assessment of the environmental impact of a consumer product during its life cycle.

Small and Medium Sized Enterprises (SME)

The cost of compliance with international standards for quality management and environmental management may have a disproportionate impact upon SME's. The questionnaire therefore pays particular attention to the implications for SME's of certain issues raised by these international standards.

Definitions of SMEs vary from country to country. In completing the questionnaire you are invited to state and use your own national definition. Where none exists, we suggest that SME's are businesses of less than 200 employees.

Accreditation

Accreditation is the process of approval of an organisation (certification body) wishing to certify other companies' quality systems (and probably environmental management systems). Usually a body of national standing acting on behalf of or as advisory to Government or government department.

Certification (Also known as Registration)

Certification is the approval of public and private sector enterprises' management systems against those requirements stated in accepted standards for such management systems. For credibility purposes, certification should be carried out by third party bodies, essentially independent of any statutory influence or commercial interest and preferably, but not mandatorily, accredited by a recognised (either national or international) accrediting body.

Enquiries and Returns

Any queries or comments relating to this questionnaire and its return should be addressed to:

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Resource (Science & Technology Expertise) Ltd
March 1995

Section I: About Your Organisation

Name of Organisation:

Address:

Contact:

Telephone:

Telefax:

Nature of Organisation :

Government Department	23	
National Standards Body	17	
Industry Association	13	Sector
Certification Body	10	
Accrediting Body	10	

Is your Country associated with ISO:

as a full member	33
as a subscriber member	4
as a correspondent member	2
membership applied for	1
membership under consideration	1
not a member	2

Section II: The ISO 9000 Series of Management Systems Standards for Manufacturing and Services

This section seeks information about perceptions the ISO 9000 series of quality management standards and your country's experience with implementation and related issues of conformity assessment. Even if experience of the standard is minimal (say less than 10 local registrations) your opinion in answer to more general questions would be most welcome.

General Awareness

II.1 Is awareness of the ISO 9000 Series by all business

high				low
4	13	16	13	6

Which sectors are most aware _____

II.2 Is awareness of the ISO 9000 Series in

	high				low
Multinational companies based in your country	21	15	7	3	1
Large National Companies	13	20	12	2	5
Small/Medium National Companies	2	3	9	23	13

(Note: see definition for Small/Medium Enterprises)

Perceived Importance of ISO 9000 by business

		Current			Expected Trend		
		High	Low	None	Greater	Same	Less
II.3	For exporters	31	12	3	28	10	1
II.4	For importers	7	24	20	24	24	1
II.5	For Domestic Producers (for domestic market)	4	36	9	36	13	1
II.6	For SMEs	1	30	12	23	17	4

II.7 For exporters is importance related to specific export markets

Yes 47 No 4 Which markets _____

Popular Perceptions of ISO 9000 in:

II.10 ISO 9000 is seen as appropriate by	Your Organisation	Business Community	SMEs	Consumers
For:				
Exporters only	5	19	23	2
Home markets suppliers only	4	3	6	7
Manufacturers only	3	7	10	6
Both manufacturers and service providers	18	15	8	6
All businesses	38	14	6	10
Private sector only	3	4	4	6
Public sector only	2	3	3	1

Implementing the ISO 9000 Series

II.11 How many companies in your Country have registered an ISO 9000 system: _____

If more than 30

(a) numbers of registrations by company size:

Multinational _____
Large National _____
SME _____

(b) which sectors have most registrations _____

II.12 Companies' reasons for implementing the ISO 9000 Series:

	All businesses					SMEs				
	Important			Unimportant		Important			Unimportant	
To improve internal efficiency	18	10	6	5	1	9	2	12	5	5
Associated with TQM	15	9	5	5	6	5	3	10	6	8
To meet domestic customer demand	7	9	11	7	5	7	5	5	7	7
To meet overseas customer demand	40	5	1	0	0	18	11	2	4	2
To strengthen market share	2	12	6	2	2	12	8	7	7	3
To demonstrate conformity to legislation	4	5	4	11	13	2	3	4	7	15
To improve staff morale/retention	6	7	7	10	6	1	3	7	10	8
Because their competitors have it	12	13	8	5	1	6	5	8	7	5
To reinforce management authority	6	2	10	8	9	3	0	11	11	6
To remove barriers to export trade	28	11	0	2	0	12	7	5	7	3
Other _____	4	0	1	2	0	1	0	0	2	1

Is this information based on

Survey data [ ] Can we have a copy?

or

Anecdotal evidence [ ]

II.13 Companies' reasons for NOT implementing the ISO 9000 Series

	All businesses					SMEs				
	Important			Unimportant		Important			Unimportant	
Lack of awareness of the ISO 9000 Series	20	7	7	5	3	24	8	2	4	2
Cost of introducing up an ISO 9000 system	20	12	5	5	0	28	11	1	2	0
Cost of registration/certification	9	10	13	7	1	19	9	1	2	1
Not needed for export users	8	9	5	6	4	9	12	1	5	6
No demand from customers	16	11	7	2	0	18	8	4	2	2
Too complex	8	12	10	4	3	16	9	5	3	1
Insufficient commercial benefit	7	16	10	3	2	9	17	6	1	3
Lack of management commitment	18	9	5	3	2	21	6	4	0	3
Other _____	1	0	0	1	0	0	0	0	0	0

Is this information based on

Survey data ☐ Can we have a copy?

or

Anecdotal evidence ☐

Regarding your National Infrastructure for Conformity Assessment

Government Support

II.14 Does the Government promote quality awareness in business

	Yes	No
For all businesses	45	5
SMEs only	11	11

How _____

II.15 Does the Government support compliance with the ISO 9000 Series with

	Yes	No
Funding for awareness campaigns	26	17
Funding for consultancy	15	30
Funding for training	23	14
Funding for implementation	9	25
Funding for SMEs only	12	20

Other _____

II.16 Is there legislation making conformity with the ISO 9000 Series mandatory for certain manufacturers

Yes 13 Pending 4 No 35 Should be 9

Accreditation

II.17 Does your country have a National Accreditation Scheme

Yes [22] Pending [7] No [18] Should do [9]

If not, proceed to question II.22

II.18 If so, what is the National Body's name _____

II.19 Is it associated with Government

Yes [30] No [0]

II.20 Does your National Accreditation Body have mutual recognition agreements with other countries

Yes [3] Pending [10] No [8] Should do [5]

With whom _____ To do what (briefly) _____

_____ _____

_____ _____

II.21 Does your main National Accreditation Body accredit

Domestic Certification Bodies [26]
Domestic Laboratories [25]
Overseas Certification Bodies [11]

Certification

II.22 Does your country have a National Certification scheme for registration to ISO 9000

Yes [24] Pending [10] No [10] Should do [6]

II.23 If so, how many:

Domestic Certification Bodies ____ Names _____

_____

Overseas Certification Bodies (issuing certificates in your country) ____ Names _____

_____

Overseas Certification Bodies (with an office in your country) ____ Names _____

_____

II.24 Is certification from your domestic certification bodies recognised by trading partner countries

Most partners	12
Some partners	14
Main partners	0
Only for certain sectors	☐ Which? _____

II.25 Are any of the certification bodies operating in your country accredited by:

	Yes	How many
Domestic Accreditation body only	8	13
Overseas Accreditation body only	14	37
(Which body/country? ____/____)		
Both Domestic and at least one overseas body	5	3
(Which body/country? ____/____)		
Not accredited at all	8	2

II.26 Is there any pressure on Certification Bodies operating in your country to be accredited

Yes 19 Sometimes 4 No 1 Should be 1

II.27 Where does this pressure originate

Legislation requirement	13
Domestic customer requirement	12
Overseas customer requirement	20

II.28 Do any Domestic Certification bodies have mutual recognition agreements with overseas bodies

Yes 15 No 25

Domestic Body	Overseas Body	To do what (briefly)
_____	_____	_____
_____	_____	_____

II.29 Does your main domestic certification body also test products

Yes 32 No 6

II.30 If so, does it insist that conformity with ISO 9000 is necessary as well as compliance with the appropriate product standard itself

Yes 8 No 23

II.31 In your opinion, is access in your country to the following

	Adequate	Inadequate	Adequate but too costly
Information on ISO 9000	39	21	1
Consultancy for implementation	14	31	14
Training for implementation	17	20	11
Trained assessors	16	24	15
Certification to domestic requirements	18	25	2
Certification for international recognition	12	25	10

II.32 Should the costs of improving quality management through the adoption of the ISO 9000 Series be borne by

	The Government	The Company	The Customer	Other
Promoting awareness costs	38	14	2	1
Consultancy training costs	16	39	0	0
Implementation costs	4	47	1	0
Registration costs	6	45	0	0

QSAR (Quality Systems Assessment and Registration)

II.33 (a) In your opinion will QSAR facilitate your country's international trade if your domestic accreditation body secures QSAR recognition (if applicable)

Very much				Not at all
31	8	6	1	1

(b) Do you expect difficulty in securing QSAR recognition for your certification bodies

Great difficulty				No difficulty
3	16	13	9	5

(c) Will it be harder for developing countries to meet QASAR requirements than developed countries

Much harder				No harder
16	14	12	3	2

(d) Should accreditation /certification bodies in developing countries be helped to gain QSAR recognition

Yes				No
40	5	1	0	0

ISO 9000 Series and International Trade

II.34 In your opinion how would businesses in your country respond to the following propositions

		Agree				Disagree
(a)	ISO 9000 registration helps to expand our international trade Why _____	41	6	2	1	0
(b)	overseas customers increasingly request an ISO 9000 certification Why _____	27	14	2	1	2
(c)	overseas customers are reluctant to accept ISO 9000 certificates issued other than by their national certification bodies Why _____	12	6	12	7	10
(d)	securing certification by an overseas certification body is difficult/costly Why _____	32	7	4	3	1
(e)	lack of mutual recognition of ISO registration certificates hinders exporters Why _____	25	12	5	1	1
(f)	small exporters benefit most from ISO 9000 registration Why _____	10	10	5	6	14
(g)	ISO 9000 registration helps domestic producers compete against imports Why _____	22	10	10	3	4

II.35 Any other comments

Section III: The Proposed ISO 14000 Series

Significance/Development of Environmental Issues

III.1 Does your government have a declared policy on environmental issues

Yes 47 No 5

III.2 Are you aware of the contents of National environmental

	Not available	Yes	Partly	Not at all
mandatory requirements	3	30	16	0
voluntary agreements	4	14	21	2

III.3 Is your local business under pressure to avoid environmental damage and if yes where does this pressure originate from

Yes 41 No 4

originated from:	high	< Pressure >			low
government	27	13	5	1	1
general public interest	6	15	11	5	5
domestic customers	0	5	8	6	13
overseas customers	6	9	12	2	4
domestic/international companies	1	8	11	1	3
importers	0	4	4	11	6
organisations (trade)	0	7	5	14	6
organisations (consumer)	4	8	11	8	4
environemntal organisation	23	16	3	1	1

III.4 Are these pressures

growing 45 constant 6 declining 0

III.5 Do you think compliance with the ISO 14000 series would lead to less pressure

Yes				No
24	15	3	3	3

Awareness/Perceptions of the ISO 14000 Series

III.6 Is present awareness of the proposed ISO 14000 series in

	high				non existent
govt depts/agencies	7	5	14	12	7
national standard body	19	12	8	7	2
certification/accreditation body	6	11	9	6	4
business generally	0	2	9	18	12
multinational companies	5	14	13	4	6
large national companies	3	11	15	10	5
SMEs	0	0	4	21	19
exporters	3	9	10	16	7
importers	1	2	8	17	12
consultants/training organisations	5	14	13	8	3

III.7 Has your organisation seen a draft of the ISO 14000 series (or any part of it)

Yes 27 No 22

Which? _____ Where from? _____

III.8 Is your country participating in developing/commenting on these standards

Yes 27 No 19

How _____

III.9 Does the government have an active policy to promote environmental awareness in industry

		All business	Large companies only	SMEs only
Yes, general awareness	for	41	6	0
Yes, ISO 14000 series	for	7	1	3
No	13			

III.10 Are the objectives of the ISO 14000 series standards well understood

as viewed by

	Fully				Not at all
government	7	8	10	11	7
business	2	3	13	17	6
SME	1	1	5	16	18
consumer	1	2	4	16	19
consultants	3	6	17	8	5
accreditation/certification bodies	8	15	3	2	4

III.11 Do you think that compliance with the requirements of the ISO 14001 management model would facilitate wider compliance with local environmental requirements

Definitely				Definitely Not
19	20	7	6	1

III.12 In your opinion, which factors are likely to influence business in favour of adopting the ISO 14001 specification

	All business					SME				
	high				low	high				low
To demonstrate conformity to legislation	21	9	11	1	1	6	17	5	9	5
To improve internal efficiency in achieving voluntary environmental standards	10	12	8	4	9	6	11	5	7	5
To improve internal efficiency in achieving mandatory environmental standards	16	16	6	2	3	1	10	9	10	5
To meet domestic consumer demand	2	3	17	9	9	0	2	1	8	12
To meet overseas consumer demand	14	13	11	4	0	2	5	12	11	6
To meet overseas environmental legislation	17	11	9	3	2	6	9	9	13	1
To meet self imposed environmental targets	8	7	12	3	7	0	5	3	10	9
To strengthen market share	10	11	10	6	5	0	4	7	9	6
To improve staff morale/retention	5	4	13	5	12	0	3	5	7	8
Because competitors have it	6	8	16	4	5	0	1	5	16	3
To reinforce management control	3	12	12	10	6	0	2	5	11	9
Other _____										

III.13 Similarly, which factors might deter business from adopting the ISO 14001 specification

	All business					SME				
	high				low	high				low
Lack of awareness of benefits	22	12	7	1	1	22	8	5	1	1
Cost of consultancy	13	8	19	1	1	21	5	8	0	1
Cost of setting up an ISO 14001 EMS	16	10	11	4	0	23	5	4	2	0
Cost of registration/certification	6	13	13	6	2	15	7	7	5	6
Adoption of such standards will expose non-compliance to legislation	7	9	9	9	4	2	5	9	4	6
Adoption of standards will generate more legislation	4	7	13	6	7	9	4	8	4	8
Lack of local demand	8	18	8	3	4	11	11	6	1	5
Lack of overseas pressure	8	13	10	5	3	12	10	7	2	3
Impracticality	5	3	9	9	9	10	11	6	7	8
Low commercial return	10	11	9	8	10	6	9	4	4	1
No management commitment	5	8	7	8	1	2	4	7	2	0
Lack of technical equipment	13	10	6	7	1	14	6	4	3	1
Lack of competence/experience	7	12	10	7	0	14	6	3	4	0
Other _____										

III.14 Do you believe ISO 14001 management systems should be adopted by:

	Always				Never
exporters only	☐	☐	☐	☐	☐
manufacturers only	☐	☐	☐	☐	☐
public sector companies only	☐	☐	☐	☐	☐
private sector companies only	☐	☐	☐	☐	☐
all businesses	☐	☐	☐	☐	☐
retailers	☐	☐	☐	☐	☐
service providers	☐	☐	☐	☐	☐
none	☐	☐	☐	☐	☐

Cost of Compliance

III.15 Is compliance with existing mandatory environmental standards a significant burden on business

Yes ☐ In some cases ☐ Which? _____ No ☐

III.16 Is compliance with existing voluntary environmental agreements a significant burden on business

Yes ☐ In some cases ☐ No, there aren't any ☐ No ☐

III.17 How much in percent of annual production cost are/would compliance costs for:

	mandatory standards	voluntary standards	ISO 14001
No cost	☐	☐	☐
Less than 1%	☐	☐	☐
1% - 2%	☐	☐	☐
2% - 5%	☐	☐	☐
more than 5%	☐	☐	☐

III.18 Could the costs of compliance with ISO 14001 be incorporated into prices of products

Yes				No
☐	☐	☐	☐	☐

III.19 Should the costs of the following facets of the ISO 14001 management model be borne by

	Govt	Company	Consumer	Other
Awareness raising costs	☐	☐	☐	☐
Consultancy costs	☐	☐	☐	☐
Implementation costs	☐	☐	☐	☐
Certification costs	☐	☐	☐	☐
Promotional costs	☐	☐	☐	☐

III.20 Should the government support compliance with voluntary environmental standards (including the proposed ISO 14001 model) by

	Full	Part	Not
Funding for awareness campaigns	31	13	4
Funding for consultancy	12	26	15
Funding for training	5	19	24
Funding for implementation	2	21	20
Funding for certification/registration	1	18	24
Funding for accreditation	9	21	12

III.21 Would the costs of compliance to ISO 14001 lead to migration of companies to other regions

Yes				No
2	6	6	13	45

III.22 Do you think compliance with ISO 14001 could reduce your inputs of energy and raw materials and therefore lessen your costs

Yes, more than 50%	1
Yes, between 30% and 50%	5
Yes, between 10% and 30%	17
Yes, less than 10%	7
No	4

III.23 Do you think that compliance with ISO 14001 could help you access new markets or strengthen your market position

Yes				No
19	14	7	3	1

Infrastructure

Accreditation

III.24 Will your country have a National Accreditation Body for ISO 14000

Yes 31 No 16

III.25 Who will it accredit

Domestic certification bodies	26
Overseas certification bodies	16
International certification bodies	19

III.26 Will your Accreditation Body have a more private or public character

Private [2] [3] [2] [8] [20] Public

III.27 Will your Accreditation Body seek mutual recognition agreements with other countries

Yes [33] No [6]

Which countries _____

III.28 Would you expect developing countries to have difficulty in meeting requirements for international acceptance of National Accreditation Bodies

Great difficulty [12] [15] [9] [2] [3] No difficulty

III.29 Should there be a single Accreditation Body accrediting Certification Bodies for both ISO 9000 and ISO 14001 registration

Yes [33] No [9] Why? _____

Certification

III.30 Will your country have a separate National Certification Scheme for ISO 14001

Yes [9] No [14] Should do [15]

III.31 Should your country have domestic Certification Bodies for ISO 14001

Yes [34] How many? [37] No [2] Who registers instead? _____

III.32 Who should they certificate/register

Domestic private companies	[32]
Domestic public companies	[33]
Domestic companies based overseas	[25]
Overseas companies	[26]

III.33 Have your certification bodies a private or public character

Private [4] [6] [3] [4] [16] Public

III.34 Is certification by your domestic certification bodies recognised by trading partner countries

Always [7] [5] [1] [3] [2] Never

III.35 Would you expect developing countries to have difficulty in meeting requirements for international acceptance of National Certification Bodies

Great difficulty 5 15 13 8 2 No difficulty

III.36 Should certification be done by bodies already certifying against ISO 9000 series standards

Yes 30 No 10

III.37 Does local business have access to the necessary skills, experience and human and other resources to meet the requirements and guiding principles of the ISO 14000 series

Yes 5 3 14 18 3 No

III.38 Will compliance with ISO 14001 specification be constrained in your country by shortages of qualified consultants, training and auditors

Yes 23 11 10 2 2 No

III.39 Would business have to rely on overseas sourcing for such qualified expertise

Yes 16 15 11 5 1 No

International Trade

III.40 Are overseas environmental requirements already a barrier to your exports

Yes 11 17 13 9 5 No

If Yes, examples _____

III.41 Do you foresee circumstances in which the introduction of ISO 14001 could strengthen non-tariff barriers to international trade

Yes 16 12 7 2 2 No

III.42 How could such barriers be avoided

_____

_____

_____

III.43 What would the consequences in terms of international trade and competitiveness for your exporting companies be if ISO 14001 was not introduced

_____

_____

_____

III.44 On balance will implementing an ISO 14000 EMS help or hinder

	Yes				No
Exporters	2	10	4	0	1
Importers	7	5	13	5	3
Domestic companies trading internally	6	9	13	4	3
SMEs	7	7	13	4	3

Environmental Labelling

III.45 Does the existence of different national labels hinder your export opportunities

Yes				No
11	12	11	2	4

III.46 Do you think that internationally recognised environmental labels, for products, whether they are national or international ones, could improve or hinder your export opportunities

Improve				Hinder
18	14	7	2	0

III.47 Do you think that the introduction of an international environmental labelling guideline like ISO 14020 will lead to a worldwide harmonisation of national labelling

Yes				No
21	15	4	1	0

III.48 Any other comments

* NOTE: PLEASE ATTACH ANY WRITTEN INFORMATION ON ANY OF THE ISSUES COVERED BY THIS QUESTIONNAIRE WITH YOUR RESPONSE.

THANK YOU FOR YOUR TIME

MOBIL SURVEY OF COMPANIES REGISTERED TO ISO 9000 SERIES
(JUNE 1994)

ISO 9000 certifications worldwide:

	Jan 93	*Sep 93*	*June 94*
CANADA*	[illegible]	[illegible]	[illegible]
USA*	[illegible]	[illegible]	[illegible]
North America*	***1 185***	***2 589***	***4 830***
% Share	[illegible]	[illegible]	[illegible]
Countries	[illegible]	[illegible]	[illegible]

	Jan 93	*Sep 93*	*June 94*
UNITED KINGDOM	[illegible]	[illegible]	[illegible]
% Share	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

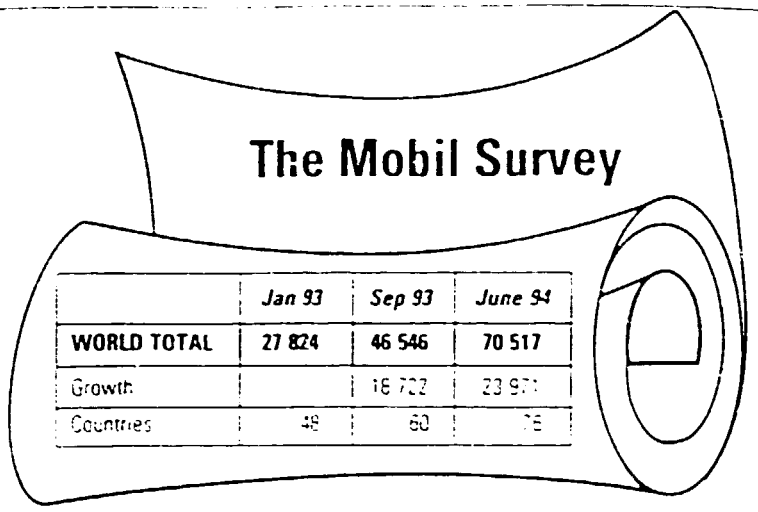
	Jan 93	*Sep 93*	*June 94*
ARGENTINA	[illegible]	[illegible]	[illegible]
BAHAMAS			[illegible]
BRAZIL	[illegible]	[illegible]	[illegible]
CHILE			[illegible]
COLOMBIA		[illegible]	[illegible]
COSTA RICA		[illegible]	[illegible]
EL SALVADOR			[illegible]
MEXICO	[illegible]	[illegible]	[illegible]
PUERTO RICO		[illegible]	[illegible]
VENEZUELA		[illegible]	[illegible]
Americas	***39***	***156***	***533***
% Share	[illegible]	[illegible]	[illegible]
Countries	[illegible]	[illegible]	[illegible]

	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			
[illegible]			
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
MALTA		[illegible]	[illegible]
[illegible]	1	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
SLOVENIA	3	[illegible]	[illegible]
SPAIN	43	[illegible]	[illegible]
SWEDEN	229	[illegible]	[illegible]
SWITZERLAND	410	[illegible]	[illegible]
TURKEY	26	[illegible]	[illegible]
UKRAINE		1	4
YUGOSLAVIA	1	1	1
Europe exc. UK	4 515	9 683	18 577
% Share	16.23	20.80	[illegible]
Countries	[illegible]	[illegible]	[illegible]

* [illegible]

** [illegible]

Growth from January 1993 to June 1994



	Jan 93	Sep 93	June 94
WORLD TOTAL	**27 824**	**46 546**	**70 517**
Growth		18 722	23 971
Countries	48	60	76

	Jan 93	Sep 93	June 94
BRUNEI		[illegible]	[illegible]
CHINA	[illegible]	[illegible]	[illegible]
HONG KONG	[illegible]	[illegible]	[illegible]
INDONESIA	[illegible]	[illegible]	[illegible]
JAPAN	[illegible]	[illegible]	[illegible]
MALAYSIA	[illegible]	[illegible]	[illegible]
PHILIPPINES	[illegible]	[illegible]	[illegible]
SINGAPORE	[illegible]	[illegible]	[illegible]
SOUTH KOREA	[illegible]	[illegible]	[illegible]
TAIWAN	[illegible]	[illegible]	[illegible]
THAILAND	[illegible]	[illegible]	[illegible]
Far East	***683***	***1 583***	***3 091***
% Share	[illegible]	[illegible]	[illegible]
Countries	[illegible]	[illegible]	[illegible]

	Jan 93	Sep 93	June 94
BAHRAIN			[illegible]
EGYPT			9
GHANA			[illegible]
INDIA	[illegible]	[illegible]	329
ISRAEL	[illegible]	[illegible]	253
MOROCCO			2
OMAN			2
PAKISTAN			[illegible]
QATAR			[illegible]
SAUDI ARABIA	4	10	30
SOUTH AFRICA	933	1 146	1 367
SRI LANKA	[illegible]	[illegible]	[illegible]
SWAZILAND			[illegible]
TUNISIA	[illegible]	[illegible]	2
UAE	[illegible]	[illegible]	25
ZAMBIA		[illegible]	[illegible]
Africa/ West Asia	***963***	***1 255***	***2 035***
% Share	3.46	2.70	2.89
Countries	7	8	16

	Jan 93	Sep 93	June 94
AUSTRALIA**	[illegible]	[illegible]	[illegible]
NEW ZEALAND**	[illegible]	[illegible]	[illegible]
Australia/NZ*	***1 862***	***3 184***	***4 628***
% Share	[illegible]	[illegible]	[illegible]
Countries	[illegible]	[illegible]	[illegible]

Annex 8

ISO 14001 and EMAS Comparison

by Ruth Hillary

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This paper compares the draft international standard for environmental management systems ISO 14001 and the European Union (EU) Regulation, the Eco-management and audit scheme (EMAS) drawing out the issues arising from the two initiatives.

This paper gives a brief overview of the two initiatives, comparing the subclauses of the ISO 14001 draft with the articles and annexes of EMAS (see Table 1) and highlighting the differences between the two initiatives in Tables 2 and 3. The relationship between EMAS and standards is discussed. The potential for both initiatives to develop trade barriers is reviewed illustrated by experiences with the international quality management systems standard ISO 9000 and the UK experience with the British environmental management systems standard BS 7750 and the supplier chain.

EMAS and the draft ISO 14001 standard

EMAS is a voluntary Regulation, adopted in June 1993 and open to company participation on the 10th of April 1995. It is a market based initiative and like the ISO 14001 draft voluntary for company participation. As a Regulation, EMAS is binding on the 15 EU Member States, they must establish the administrative structures set out in the Regulation which allow companies to participate. An international standard is not automatically binding on the members i.e. EU and EFTA countries, of the European standardisation body (CEN) consequently when ISO 14001 is adopted CEN members may continue to operate their own national environmental management systems standards. (Currently, France, Spain, Ireland and the UK have national standards.) However, if CEN adopts ISO 14001 all its members must remove their equivalent national standards. The worse case scenario could be, therefore, a plethora of national environmental management systems standards running in parallel to an international standard.

The principle objectives of EMAS is to stimulate industrial activities to improve their site's environmental performance and the provision of environmental performance data to the market place so that improved environment performance becomes a market factor. EMAS requires companies to establish an environmental policy which includes commitments to improve environmental performance and compile with relevant environmental legislation, select a site to undertake an environmental review, develop a site environmental programme and a management system to deliver the programme, audit the performance and system and provide information to the public in the form of an environmental statement. Before a site can be registered it is examined by an external third party accredited environmental verifier.

Table 1 - Comparison between the draft ISO 14001 Standard & EMAS

Requirements of draft ISO 14001 Subclause / Requirements of Regulation Articles & Annexes	General 4.0	Environmental Policy 4.1	Planning 4.2	Implementation & Operation 4.3	Checking & Correction 4.4	Management Reviews 4.5
Environmental Policy I.A.1.2.3, I.B.1, I.C & I.D		•				
Environmental Objectives I.A.4 & I.B.1			•			
Environmental Programme I.A.5, I.B.1 & I.C			•			
Environmental Management System I.B	•					
Organisation & Personnel I.B.2			•	•		
Environmental Effects I.B.3			•			
Operational Control I.B.4				•	•	
Management Records I.B.5				•	•	
Management Audits I.B.6					•	•
Environmental Review I.C						
Environmental Audit I.C & II						
Environmental Statement Art. 5 & V						
Validation Art. 4 & III						

N.B. A • in a cell denotes a relationship between the intentions of the Regulation and the draft standard.

The draft ISO 14001 standard establishes the specification for an organisation to develop an environmental management system. Environmental performance improvements are referred to as a by-product of implementing and improving an organisations management system; therefore, performance indirectly emanates from the systems as a result ISO 14001 is "weaker" than EMAS (see Table 2).

This fundamental difference between the draft ISO 14001 and EMAS means that two levels of achievement may be attained i.e. certification to ISO 14001 for non-EU countries and registration in the EU to the stricter EMAS.

The ISO 14001 draft requires an organisation or part of an organisation to establish an environmental policy which makes commitments to continual improvement of the organisations environmental management system, prevention of pollution and compliance with relevant legislation. Unlike EMAS, the ISO 14001 policy distances top management commitment to environmental performance improvements by stating continual improvements are necessary in the management system. This indirect link is one of the reasons why the ISO 14001 draft is considered weaker.

A new term is introduced into the ISO 14001 draft which does not appear in EMAS: "environmental aspects" (subclause 4.2.1). Organisation's are required to identify environmental aspects of their activities, products, services to determine those which have significant environmental impacts. These impacts are then considered when the organisation set its objectives and targets.

Environmental aspects appear, therefore, to be similar to environmental effects in EMAS (Annex I.B.3); however, unlike EMAS, the ISO 14001 draft does not state clearly that the purpose of identify and setting objectives and targets for significant environmental aspects/effects is to improve environmental performance and reduce environmental impacts. The draft ISO 14001 makes an oblique reference to reducing environmental impacts by stating objectives and targets should be "consistent with the environmental policy, including the commitment to prevent pollution". This convoluted way in which the draft standard introduces environmental improvement reinforces the view that the ISO 14001 draft is easier to achieve than EMAS.

The ISO 14001 draft is more prescriptive about structure and responsibility (subclause 4.3.1), training and awareness (subclause 4.3.2), and document control (subclause 4.3.5) than EMAS (Annex I.B.2, and I.B.5) giving the impression that its management system will be more heavily documented and therefore, possibly more bureaucratic than EMAS. The somewhat negative view many businesses have about ISO 9000 ie. that the standard has little to do with good quality and is all about documentation, could be repeated with the draft ISO 14001.

Table 2 - Differences between ISO 14001 and the EMAS for Organisations and Companies	
Requirements of the EMAS	*Requirements of ISO 14001*
1. An EU legislative instrument i.e. a Regulation	1. A draft standard
2. Applies across the whole of the European Union	2. Applies to the international arena
3. Applies to sites only	3. Can apply to the whole organisation or part of an organisation
4. Restricted to industrial activities	4. Open to any sector or activity
5. Non-industrial activities can only be included on an experimental basis	5. Open to non-industrial activities e.g. transport and local government
6. Direct focuses on environmental performance improvements at a site and the provision of information to the public	6. Focuses on organisations implementing environmental management systems indirect link to environmental improvements emerging from the system
7. Initial environmental review essential	7. Review suggested in Annex 4.2.1 but not a specification of the draft standard
8. Environmental policy commitment to continuous improvement of environmental performance and compliance with relevant environmental legislation	8. Environmental policy commitment to continual improvement of environmental management system and compliance with relevant environmental legislation.
9. Environmental audit assess management systems, processes, factual data and environmental performance	9. Environmental management audits concerned with the assessment of environmental management systems only
10.Maximum audit frequency specified at 3 years	10.Frequency of audits not specified
11.A description of the environmental policy, programme and management system made publicly available in the statement	11.Only the environmental policy must be publicly available
12.Public environmental statement and annual simplified statement including factual data essential	12.Not required, consideration must be given to external communication (subclause 4.3.3) but left up to management as to how much information to disclose

Table 3 - Differences between the draft ISO 14001 and EMAS Administrative Structures	
Requirements of the EMAS	*Requirements of ISO 14001*
1. Third party verification essential	1. Third party certification optional
2. Verification duties detailed and systems specified for who conducts verifications and supervises these activities	2. Certification details not specified
3. Defined de-registration procedures for sites	3. Not specified
4. Means of advertising site participation specified by Statement of Participation	4. Not specified
5. Government assigned national competent body controls registration of sites	5. No such body
6. Centrally held at the European Commission and annually up-dated list of EMAS registered sites	6. No such registration structures established

The Relationship between EMAS and Standards

Companies implementing and being certified to a national, European or international standards which meet certain aspects of EMAS, such as its requirement for an environmental management system, will be deemed to have met those parts of the Regulation as long as the standard they use fulfils two conditions.

1. The standard must be submitted to and recognised by the European Commission via its Article 19 Regulatory Committee, established by the Regulation.

2. Certification to the standard is essential and must be undertaken by a body whose accreditation is recognised by the Member State where the site is located.

It is the intention of the Regulation that companies implementing EMAS should be able to meet aspects of the scheme using established national standards such as the British environmental management systems standard BS 7750 or a European standard. Standards utilisation was designed to reflect the various routes companies may take to achieving EMAS.

The European standardisation body CEN has received and accepted a mandate from the European Commission to dévelop an European wide environmental management systems standard to satisfy the Regulation's requirements. CEN has avoided duplication of effort by deferring this work to and involving itself in the international standards discussions. Thus once the draft ISO 14001 standard has been adopted and if it meets the requirements of CEN's mandate, CEN could adopt ISO 14001 as an European standard and submitted it to the Article 19 Regulatory Committee for recognition.

The issue for both CEN and the European Commission is whether or not the draft ISO 14001 standard meets the requirements of the original mandate. If, as is currently anticipated, the ISO 14001 draft does not meet the requirements of the mandate CEN will be placed in an awkward position as it will need to produce its own standard to satisfy the mandate. Hence, there could be stand alone international and European environmental management systems standards. The European standard would be recognised by the Committee and could be used in conjunction with EMAS; whereas, ISO 14001 would, at best, only partly satisfy the requirements of EMAS and would as a result only be recognised for those parts.

Potential Trade Barriers

Both EMAS and the ISO 14001 draft relate to sites/organisations and their activities not to traded products; therefore, the obvious barriers to trade are not realised by the two initiatives as would occur with environmental product labelling schemes such as the EU's Eco-labelling scheme. In fact, the ISO 14001 draft makes specific reference in its introduction stating that the standard "should not be used to create non-tariff trade barriers". Nevertheless, the potential to develop trade barriers does exists within both EMAS and the ISO 14001 draft.

The potential formation of trade barriers occurs in the following two areas:

1. Environmental policy

2. Supplier performance

1. Environmental Policy

Both EMAS and the ISO 14001 draft require the formulation and adoption by top management of an environmental policy which includes addressing the environmental impacts of the companies/organisation's products

The environmental policy requirements in EMAS (Article 3.a and Annex I C) are essentially focused on the environmental performance improvements of industrial activities at specific sites; however, a company's policy must address the issue of product planning, design, packaging, transportation, use and disposal (Annex I.C.7). Thus, it would be possible, during management's assessment of the environmental performance of their company's products, for a policy to be established which excluded certain raw materials or sources of raw materials because of their environmental impact. For example, CFC used in production or tropical timber because of its origins.

The ISO 14001 draft appears to place greater emphasis on establishing a policy which not only takes account of activities and products of an organisation, but also focuses on services, not included in EMAS. Top management is required to ensure its policy is "appropriate to the nature, scale and environmental impacts of its activities, products or services" (subclause 4.1.a) and that these impacts are considered when "setting its environmental objectives" (subclause 4.2.1). A caveat is added, that the environmental aspects of an organisation's activities, products or services need only be identified if the organisation can be expected to control or have influence over them. Nevertheless, any evaluation

by an organisation of its products could mean the development of a procedure which could restrict trade.

2. Supplier Performance

The most obvious parts of both EMAS and ISO 14001 which could result in trade barriers is the requirements of both schemes to consider suppliers.

EMAS requires the "environmental performance and practices of .... suppliers" (Annex I.C.8) to be addressed within the framework of the company's policy, environmental review, environmental programme and environmental audit. The ISO 14001 draft requires an organisation to establish and maintain a procedure to identify environmental aspects of goods and services and communicate any relevant procedures to suppliers (subclause 4.3.6.c).

Thus both schemes require management to communicate with their suppliers on environmental matters and in doing so organisations could stipulate supplier requirements which establish trade barriers, probably in a similar way to ISO 9000 and BS 7750.

ISO 9000 Experience

Experience from the international quality management systems standard ISO 9000 has shown that customers have made demands of their suppliers to have ISO 9000 in place.

This request has had a number of effects:

- Smaller organisations have found the task of implementing ISO 9000 onerous as they lack the human and financial resources to undertake the task;

- ISO 9000 has been used to exclude certain organisations from tendering for contracts; and,

- A large number of consultancies have been spawned and, in some cases, have taken advantage of market ignorance.

Consequently, ISO 9000 has a poor reputation amongst some sectors of the business community. The ISO 14001 draft could repeat the ISO 9000 experience.

UK Experience with BS 7750

UK experience with the British environmental management systems standard BS 7750 illustrates how suppliers to organisations certified to an environmental management systems standard may be affected. Currently, there are 20 organisations with certified to BS 7750 all have to some extent investigated their suppliers. The most common way of satisfy BS 7750's requirement is to send out a supplier questionnaire asking the supplier about its environmental performance. Questionnaires vary in complexity from the simple to the draconian. In some cases, suppliers need to undertake extensive investigation to answer the questions.

For example, one certified company, Design for Distribution (D2D), has its own accredited vendor programme in which suppliers wishing to become accredited vendors are required to satisfy a set of entry criteria which include environmental criteria. Suppliers are placed in one of four grades depending on the answers to the D2D questionnaire. Suppliers which fail to improve their performance are dropped. D2D has taken the process of "greening" the supplier chain one step further and are now asking their suppliers to question their own suppliers, asking for example: "Are contracts awarded preferentially to environmentally appealing suppliers?"

Conclusions

Many organisations, generally in developed countries, are already adopting environmental management systems to enable them to manage and control the environmental aspects of their operations. Formalisation of environmental management systems into a recognised form such as EMAS or the ISO 14001 draft will assist current business efforts.

Nevertheless, the formalised schemes such as EMAS and the draft ISO 14001 standard raises key issues.

1. Duplication of effort between the EU and ISO

2. Incompatibility between national, European and international initiatives may lead to confusion and regionalisation.

3. Potential to develop trade barriers using such initiatives.

4. Lack of human and financial resources in smaller organisations and in organisations based in developing countries to achieve the standard.

Reference Documents

[1] ISO/TC 207/SC 1/WG 1 N71, 1995, Environmental Management Systems Specification with Guidance for use, ISO Committee draft 14001.1 Revision, February 1995.

[2] Council Regulation (EEC) No 1836/93 of 29 June 1993 allowing voluntary participation by companies in the industrial sector in a Community Eco-management and audit scheme. OJ L168, Vol. 36, 10.7.93.