

Draft paper not to be cited

Implementation and Impact of EMS (ISO 14001) on Industries-The case of Pakistan

aneel SALMAN

Ecological Economics Values and Policy
Rensselaer Polytechnic Institute
Troy 12180 USA

SYNOPSIS

Business today is not selling a product or service to a customer around the corner. In this single world market an organization needs to demonstrate sound business management that includes concern for the environment. My paper focuses on the benefits of ISO 14001; Environmental Management System (EMS) in an organization.

The rejection of Pakistani products in the International markets on the basis of environmental standards framed by International Organization for Standardization (ISO) under its 14000 series has pushed the already poor industries of the country down the drain badly affecting the export business. The objective of ISO 14001 is to encourage the organizations to systematically address the environmental impact of their activities and establish a common approach to environmental management system. The standards are intended to be applicable to firms of all shapes and sizes through out the world. They provide a general framework for organizing the tasks necessary for effective environment management. The series of documents that encompass ISO 14000 includes components as environmental management systems, environmental auditing, environmental labeling and product life cycle assessment. Through the ISO 14001 standards, ISO wants to ensure a process that reduces the amount of any hazardous substance, pollutant or contaminant entering any waste stream or otherwise released into environment (including fugitive emissions) prior to recycling, treatment or disposal.

The non-availability of environment control equipment and shortage of experts to set up the EMS technologies in the country are some of the other hurdles being faced by the industrialists. An EMS provides a solid framework for meeting environmental challenges and realizing the benefits of the certification. There is a dramatic rise in return on investment in environmental performance as the company shifts its response to environmental pressures from pure compliance to active environmental management. The payback period for investments to improve company environmental performance can be surprisingly short. ISO 14001 is a route that inspires and channels the creativity of all members of the organization, making them active agents of change promoting environmental protection, resource conservation and improved efficiency. When all members in an organization are challenged to think in a more environmental friendly way, it leads to the creation of innovative products and services.

BACKGROUND

Pakistan generates over 54,888 tons of solid waste per day, where only 20 to 25% is collected and disposed. 3% of the industries treat their wastes according to National Environmental Quality Standards (NEQS). 47% of the population is without safe water and level of pollution is three times higher than acceptable limits¹. At international platform trade relations are routinely scrutinized for their environmental implications, particularly when trading partners are at different levels of development so implementation of environmental standards is evitable.

The world of standardization is changing. Looking ahead, the next decade promises continued change — both here in Pakistan and around the world. At the international level, standards are becoming a pillar of the new global system. As barriers to continue to eliminate and information technologies continue to

¹ National Conservation Strategy of Pakistan

evolve, standardization is taking on an increasingly important role in global affairs. At the same time, new international agreements and codes are setting out guidelines for a broadening range of health, safety and environmental issues. Standard systems can offer effective, less costly alternatives to meet these objectives. Standards have, for a long time, been closely associated with trade. Agreements on formal standardization are making life easier for buyers and sellers (of goods and services) around the world. Now, markets are becoming global and supply chains can cross many borders. International agreements and Standards, such as ISO 9000 and ISO 14001, can facilitate this cross-border trade. Environmental credibility is also becoming a factor in national and international competitiveness. Implementation of ISO 14001 and subsequent certification can facilitate progress towards increased competitiveness through measurement and innovation, leading to increased profit, more efficient processes, reduced costs and a more credible image.

INTRODUCTION OF AN ENVIRONMENTAL MANAGEMENT SYSTEM

An EMS is a tool encompassing practices, processes, resources and responsibilities, for implementing environmental management. Such a system should enable organizations to achieve and demonstrate ongoing compliance with environmental regulations. It should also allow organizations to control the environmental impact of all their activities, products and services in compliance with their self-declared environmental policy and objectives. These should also include environmental aspects that organizations can control and on which they can be expected to have an influence. These may include: Air, Land, Water, Natural resources, Fauna and Flora, People in the organization, and Interested and affected parties.

Internationally, there has been an evolutionary process in terms of regulatory mechanisms to deal with environmental issues. At the one end of the scale, there are command-and-control mechanisms, the initial approach where regulatory bodies impose legislation and serve penalties for transgressing such legislation. At the other end of the scale is total self-regulation, whereby organizations provide evidence of their environmental compliance, with the result that regulatory bodies relax their control over these organizations.

ISO 14001 – THE INTERNATIONAL STANDARD

The ISO 14001 standard is a voluntary international standard that is used by an increasing number of companies worldwide to incorporate environmental aspects into their business plans. The market has been a major motivation factor behind the environmental management system (EMS) due primarily to changing consumer philosophies on environmental responsibility and stewardship. Since June 2002, there were only 2,040 U.S. companies that were International Standard Organization (ISO) certified companies compared to the 40,970 worldwide. This certification is seen as both prestigious and valuable for the company economically which has led to some cases where companies have pursued paper certification for legitimacy; however, have done little to implement the policy in actual practice.

The ISO 14001 standard is often referred to as the “green” standard because it sets forth specific requirements for a comprehensive EMS. Formally promulgated in 1996, the standard was developed to allow organizations to develop policies and goals within a structured managerial framework (Thornton, 2003). The ISO 14001 is a specific standard that is based on Total Quality management (TQM) business concepts of continuous improvement, or the plan do check cycle where a procedure is developed, implemented, and then improved upon if required (Goodshall, 2000). For the most part companies have been slow to adopt the standard and have been highly critical of its value. Proctor and Gamble has been very vocal about its opposition to 14001 and has stated it did not want to have anything to do with its policies (Business and the Environment, 1997; Goodshall, 2000). Many industries have taken a wait and see approach that has slowed the widespread national implementation of the policy. Somewhere between these extremes lies co-regulation, whereby bodies and organizations work together to achieve the environmental outcome most beneficial to all parties. Organizations that implement an EMS encourage the development of this co-regulatory relationship.

POTENTIAL TRADE IMPACTS OF EMS STANDARDS

There has been an increased level of concern that the ISO 14001 standard is likely to pose a barrier to trade, particularly for small and medium enterprises and for companies in developing countries. Some of the trade issues relevant to the EMS standards are:

1. There is a concern that the ISO 14001 standard will be adopted as a mandatory requirement by some countries and therefore may pose a barrier to trade.
2. There is a possibility that some countries may adopt/maintain laws more stringent than the ISO 14001 standard thereby affecting the global trade and also negating the process of harmonization of global standards.
3. It is possible that in future, government procurement practices will give preferential treatment to ISO 14001 certified supplier.
4. Providing training.
5. Participation in ISO committee meetings
6. Improved transparency in terms of early notification, information and communication about the ISO 14000 standards.

ISO 14000 STANDARD – THE GUIDELINES

The ISO 14000 set of standards and guidelines defines the core EMS itself, and the auditing procedures necessary for verification. It further defines three sets of tools that are very important in EMS implementation:

1. Life cycle assessment
2. Environmental performance
3. Environmental labeling

It challenges each organization to:

1. Take stock of its impacts on the environment
2. Establish its own objectives and targets
3. Commit itself to effective and reliable processes, prevention of pollution and continual improvement.
4. Bring all employees and managers into a system of shared and enlightened awareness and personal responsibility for the organization's performance with regard to the environment.

In the long term, it promises to establish a solid base for reliable, consistent management of environmental obligations.

COMPONENTS OF THE STANDARD

The environmental management system model follows the basic view of an organization, which subscribes to the following principles:

Principle 1 - Commitment and policy

An organization should define its environmental policy and ensure commitment to its environmental management system.

Principle 2 – Plan

An organization should formulate a plan to fulfill its environmental policy.

Principle 3 – Implement

For effective implementation, an organization should develop the capabilities and support mechanisms necessary to achieve its environmental policy, objectives and targets.

Principle 4 - Measure and evaluate

An organization should measure, monitor and evaluate its environmental performance.

Principle 5 - Review and improve

An organization should review and continually improve its environmental management system, with the objective of improving its overall environmental performance.

With this in mind, the environmental management system is best viewed as an organizing framework that should be continually monitored and periodically reviewed to provide effective direction for an organization's environmental activities in response to changing internal and external factors. Every individual in an organization should accept responsibility for environmental improvements. The level of detail and complexity of the environmental management system, the extent of documentation and resources devoted to it, will be dependent on the size of an organization and the nature of its activities.

An organization has the freedom and flexibility to define boundaries and may choose to implement ISO 14000 with respect to the entire organization, or to specific operating units or activities of the organization - provided the scope of the environmental management system includes all areas, activities, products or services which are relevant to the defined unit or activity, which it can control and can be expected to have a significant impact on the environment.

1. Definition of the company's environmental policy
2. Planning, identifying environmental aspects and meeting legal objectives, developing company policy and objectives, determining areas of efficiency within the company, establishing the EMS, and developing the criteria to achieve objectives.
3. EMS implementation
4. Assessment (auditing) of the company's conformity to the policy and coercive action in the case of non-conformity.
5. Management assessment period.

This process is initiated by looking at what the company has available, and what can be improved upon or made more efficient. In these initial stages of development a company should look at:

1. What chemicals it has that are listed in the Environmental Protection Agency's (EPA) and Toxic Substance Control Act (TSCA) chemical substances inventory.
2. Listing of chemicals it has outlined by the Occupational Safety and Health Act (OSHA).
3. Reports prepared for hazards and operations studies.
4. Company protocol procedures (i.e. worst case scenario procedures, fire drills etc.)
5. Examination of Tier I and Tier II reports submitted under the Emergency Planning and Community Right to Know Act (EPCRA).
6. Contingency or vulnerability studies completed relative to critical systems and equipment.
7. Information gathered from risk management studies
8. Information obtained from corrective action reports, especially data from preventative maintenance programs and inspections
9. Maintenance records

From these procedures the local environment is examined to determine the ambient environmental levels of pollution from testing and historical data. The landscape's topography is studied in relation to its use. A company's proximity to watersheds and past practices is also taken into consideration (Thornton, 2003; MacArthur and Bellen, 1998). From these preliminary undertakings objectives and targets are set and measures are implemented for certification. The criticism surrounding the policy is that it is often perceived as being nothing more than paperwork procedures where certification is nothing more than an exercise that does not result in improvements in environmental performance (Buchholz, 1999 and Morrison et al. 2000). It is believed that implementation based on these procedures undermine the implementation of the policy as a tool to achieve greater environmental responsibility and organizational efficiency.

ENVIRONMENTAL & BUSINESS BENEFITS OF ISO 14001

Percy Barnevik, President & CEO of ABB said, "There is still, in many places, a general perception that eco-efficiency means higher costs, lower profit – a sort of sacrifice you must do with respect to shareholder interests. However, if you look at the real world you find among companies a strong and positive correlation between being at the forefront of eco-efficiency and being profitable and generally successful. It is not a contradiction, it is a correlation." (Environment North Sea conference in Stavanger)

Increasing resource to standardization implies that the relationship between suppliers and consumers is characterized by a certain level of trust in the quality of the product or service. This trust, amongst other things, can be based on certification, which assesses the conformity of the goods, the service or the organization to specific Standards. It is no longer enough simply to have resources. Using resources productively is what makes for competitiveness today. How an industry responds to the environmental challenge may in future be a leading indicator of its overall competitiveness. Certification to ISO 14001 could be a key factor. Certainly, certification involves expenditure during the implementation phase, due to new procedures, testing, inspection and auditing. But there are acknowledged benefits which arise from the value added when both purchaser and legislator have a higher degree of assurance that the organization's activities meet the requirements of ISO 14001. It is just as true that well-managed organisations invest in certification as they invest in, for example, computer equipment.

Compliance with ISO 14001 will, increasingly, become a selling point providing a competitive edge for organisations that sell goods or services on the global market. Customers involved in international transactions, banks and insurers are increasingly demanding recognized Environmental Management System (EMS) certification, such as ISO 14001, as proof of the environmental credentials of an organization, in terms of continual improvement in environmental issues. Some organisations are working with their suppliers on a gradual basis to encourage them to implement an EMS. Some have gone further in requiring that all their suppliers become certified to ISO 14001 within defined timescales, a good example being the Rover Group (vehicle manufacturers) in the UK. Thus it is clear that certification can result in increased competitive position, reduction of customer audits, reduction in waste/energy use, better communication internally, improved export possibilities, improved staff motivation.

The fear of the initial cost of implementing an EMS can be discouraging to some organisations especially smaller companies. The fact is, however, that many organisations already employ some form of environmental management and find that implementation of an EMS according to the Standard means that they do not have to start from scratch. Those that have not started to even consider how they might implement an EMS may find that their competitors are leaving them behind. The real concern for managers should be that environmental problems cause a lack of control over business operations. An EMS can give even managers who are not particularly motivated by environmental issues more control over the destinies of their enterprises. Such systems are useful because they help organisations comply with complex (and often ambiguous) rules ensure that reports and permit applications are submitted in time and improve communication of environmental requirements throughout the organization. The presence of an EMS helps companies to protect themselves against legal liabilities. Specific areas where benefits can arise are described below.

ENVIRONMENTAL LIABILITY

The Standard can be the foundation of an internal risk control program, helping to ensure that environmental issues are considered strategically, rather than as a one-off special exercise. Environmental management is no longer something extra which organisations need to do for moral or corporate responsibility reasons – it is part of every company's business strategy to help achieve that competitive edge. With stricter enforcement of environmental legislation, coupled with heightened awareness of customers and stakeholders about the potential risks associated with environmental liabilities, there is increased interest in legal, financial and commercial risks associated with environmental performance.

As the financial and legal risks associated with poor environmental performance have increased and become more quantifiable, other areas of business, notably those dealing with finance, risk management and insurance are becoming increasingly involved in the management of environmental performance. Insurance companies, for example, are starting to demand much more detailed information about pollution exposure. At one of the recent Climate Change Conferences in Geneva there was, for the first time at such a conference, significant representation (50 delegates) from the insurance industry. There was also a conference in the UK in 1997 devoted entirely to Environmental Insurance. At the 1997 Kyoto Climate Change Conference, insurers were present in large numbers and, also during the latter part of 1997, 71 insurance and reinsurance companies launched a scheme to curb global warming under the United Nations environment programs insurance initiative. Limited numbers of insurers offer "environmental impairment"

policies and there tend to be exclusions and conditions attached. With a good EMS in place, many potential environmental incidents or accidents (which may not be covered by insurance) can be avoided.

Failure to deal with identified problems can be potentially very serious. Breach of criminal law cannot be ignored, financial provision may have to be made for cleaning up contaminated land and the possibility for civil actions for damages may exist. Environmental and employee organisations can seize upon any kind of violation and use litigation and public comment to hamper, restrict and delay business operations. In addition, a reputation for non-compliance can lead to delays in the issuing of permits and licenses by the regulatory authorities and cause more intense scrutiny from environmental agencies and activist groups. A recent survey by the Environmental Technology Best Practice Program in the UK revealed that for many companies, meeting statutory requirements is the most important factor affecting profitability. Legal compliance is, after all, the main premise of ISO 14001, in addition to continual improvement. By systematically identifying all relevant environmental legislation, an organization can make an informed judgment on where it stands with regard to legal compliance. It can also monitor its compliance and take appropriate, timely and effective action in cases of any breaches of legislation.

REDUCED COSTS/INCREASED PROFIT

A properly designed EMS allows efficient identification of opportunities for cost saving – in other words, it can trigger procedural and/or technological changes that reduce the total cost of a product or improve its value. Such improvements allow companies to use a range of inputs more productively – from raw materials, to energy, to labor – thus offsetting the costs of reducing environmental impact. Indeed, it can often trigger an outbreak of "common sense" thinking, where sometimes very obvious and easy solutions to environmental problems are discovered.

It is a fact that reducing pollution and environmental impact is likely to result in increased competitiveness. Pollution is often a form of economic waste. When waste and harmful substances resulting from manufacturing, energy generation, service provision, are released into the environment as pollution, it is a sign that resources have been used incompletely, inefficiently or ineffectively. Organisations then have to carry out additional activities that add cost but create no value for customers, for example disposal of releases.

Environmental improvement efforts have traditionally focused on direct pollution control through better identification, processing and disposal of releases or wastes, which are often costly approaches. These are commonly known as "end of pipe" measures. In recent years, however, more advanced companies have embraced the concept of pro-active pollution prevention, sometimes called "source reduction", which attempts to reduce pollution and environmental impacts by addressing the problem earlier in the life cycle of the product. The concept of "continual improvement" described in ISO 14001 encourages improvements at all stages of the life cycle of a product or service.

When the concept of Quality Management Systems was introduced, many organisations saw it in terms only of increased costs. As knowledge and experience of Quality Systems has improved (and moved away from the old bureaucratic image), organisations are abandoning the old mind-set. Defects (in Quality terms) are now seen as a sign of inefficient product and process design, not an inevitable by-product of the manufacturing process. Companies strive to build Quality into the entire process or service. In the same way, some organisations now are trying to build reduction of environmental impacts into their entire processes. Like defects, pollution often reveals flaws and inefficiencies in the product design or production process. Efforts to reduce environmental impacts frequently result in improvements to the process or service. For example, in a study reported by Michael E Porter & Claas van der Linde, of major process changes at 10 manufacturers of printed circuit boards, environmental personnel initiated 13 of 33 major changes. Of the 13 changes, 12 resulted in cost reduction, 8 in quality improvements and 5 in extension of production capabilities. There are now many examples available (and frequently reported in the environmental press) which show that there are considerable opportunities to reduce environmental impacts through innovations that re-design products, processes and methods of operation.

TABLE 1: POTENTIAL COMPETITIVE BENEFITS FROM ENVIRONMENTAL IMPROVEMENT
Materials savings from more complete processing, substitution, re-use or recycling of product inputs Increases in process yields Less downtime through more careful monitoring and maintenance Improved utilization of by-products Conversion of waste into commercially valuable forms Reduced energy consumption Reduced material storage and handling costs Savings from safer workplace conditions Reduction of costs associated with emissions, discharges, waste handling, transport & disposal Improvements in the product as a result of process changes Higher quality, more consistent products Lower product costs (e.g. from material substitution) Reduced packaging costs More efficient resource use Safer products Lower net costs of product disposal to customers Higher product re-sale and scrap value

Table 1 lists some typical benefits

MANAGEMENT OF CHANGE IN SUPPLY

Implementation of an EMS can provide strategic value to business in its management of change in the direction of the supply side. It would allow the development of a system approach for checking to see if certain supplies will be available in the near term and long term. Many companies were, for example, caught out by the phase-out of ozone depleters. An EMS would have enabled them to consider such issues well in advance. Similar situations can be envisaged where regulatory pressures on the suppliers' side have an impact on the organization, leading to a possible restriction in supply and/or a greater cost. A pro-active EMS in certain situations will get the organization to understand the regulatory framework governing their strategic suppliers. If nothing else, the management system would prevent financial shock.

IMPROVED IMAGE

With increasing public awareness of environmental issues, it is becoming more likely that environmental credentials will play a part in customer loyalty. For example, environmental aspects are now commonly being incorporated in labeling and packaging of many mainstream products. Although ISO 14001 cannot be used to imply that any particular product is environmentally friendly, the fact that the manufacturer or service provider is consciously trying to reduce its impact on the environment may persuade customers to buy from that supplier, rather than one, which does not demonstrate any sort of environmental policy.

EMPLOYEE MOTIVATION

The implementation of an EMS in an organization, which has not previously had a record of caring for, the environment can often lead to improved employee morale and motivation. The public in recent times has demonstrated an increased awareness of environmental issues and more people are taking more care of the environment, recognizing the damage that is being caused and stored up for future generations if they do not try to reduce environmental impact. Apart from the "feel good factor", a real competitive benefit of such increased employee motivation can be suggestions for improvements and cost savings.

OTHER ADVANTAGES OF ISO 14001

Far beyond just giving your organization a "green sheen", registration to ISO 14001 can actually improve the bottom line. A properly designed EMS promotes efficient identification of opportunities for cost savings by triggering procedural or technological changes that ultimately reduce the cost or improve the

value of a product. The requirement to show continuous improvement in environmental impact continuously drives more productive use of all inputs, from raw material to energy to labor. Pollution in and of itself is an incomplete use of resources. By continually striving to reduce pollution, one constantly improves the productivity by revealing flaws in the process or product. Table 2 shows direct cost savings and intangible benefits to product or process.

TABLE 2 ADVANTAGES OF ISO 14000	
Direct Benefits	Intangible Benefits
Material savings through more complete processing, substitution or recycling of product inputs	Lower risk to your customers
Reduction in down-time due to increased monitoring and maintenance	Improved corporate image among regulators, customers, and the public
Improved utilization of by-products and conversion of waste into commercially valuable forms	Proof of social responsibility
Reduction in energy consumption	Proof to the citizens and government leaders of your community and state of your commitment to their future well-being
Reduction in costs for material storage	Natural resources last longer; air, water, and soil are cleaner; landfills usage decreases
Reduction in distribution costs	Reduction in audits from customers
Reduction in costs for emissions, discharges, waste handling, transport, and disposal	Improved employee morale
Reduction in cost of packaging	
Increase in process yields	
Safer work environment	
Improvement in insurance rates	

INTERNATIONAL STANDARDS – BARRIERS TO TRADE?

The role of International Standards as the technical foundation for the global market is explicitly recognized in the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT). The TBT Agreement urges governments to make the utmost use of International Standards in order to prevent unnecessary trade barriers. Many companies around the world still see standards as restrictive and imposing potential trade barriers. The intention of International Standards is not, however, to introduce more trade barriers, but to overcome trade barriers, which currently exist as a result of the current diversity of national standards.

The benefits of an internationally accepted standard can clearly be seen. Successful tendering in international competitive bidding means conforming to the specifications and standards included in the terms and conditions. International standards, therefore, guarantee equal opportunity for tenderers in principle. ISO 14001 offers a common, harmonized approach for use among all organizations, wherever they are in the world. Designing processes/equipment to include environmental considerations requires an evaluation of all aspects of a product or service (ideally, from "cradle to grave", although this is not explicitly stated by ISO 14001). It is only through the establishment of an Environmental Management System (EMS) that an organization can, over time, monitor and control these aspects. In other words, an effective program of design for the environment requires an EMS. Most people will recognize the massive growth and acceptance of ISO 9001/2 around the world during the last decade. Now, although ISO 14001 has only been in formal existence for just a year and a half, the signs are that it will eventually overtake ISO 9001/2 in its scope and acceptance. At present there are more than 5,000 ISO 14001 certificates worldwide.

BARRIERS AND CONSTRAINTS IN IMPLEMENTING EMS IN PAKISTAN

The barriers and constraints in implementing Environmental Management Systems in our country can be perceived at two levels. One is at the Policy level and the other is at the enterprise level.

At the policy level, implementation of EMS may be hampered on account of:

1. Command and control regulatory framework encouraging end-of pipe pollution control while EWMS focuses on preventive strategies.

2. Lack of incentives to encourage adoption of EMS e.g. EMS certified companies need not apply for consent every year. Consent presently given every year may be given for 3 years i.e., period of certificate. If certificate is withdrawn during bi-annual surveillance, consent would also be withdrawn.
3. No clear accreditation policy in the country to accredit certifying agencies.
4. Cost of Certification is prohibitive, especially SMEs, find it difficult to bear the cost of getting auditors from abroad.
5. Recurring cost of certification. Every 3 years companies need to apply for re-certification. This is a recurring cost wherein the application fee also is payable every time. This fee itself is very high and this is a deterrent.
6. Lack of trained and qualified manpower e.g., auditors in the country. Industry would largely have to depend on manpower and resources outside the country for training, design and auditing the EMS.
7. No clear emphasis on developing/strengthening institutions within the country to promote implementation of EMS.

At enterprise level, the process of designing and implementing an effective EMS may be constrained on account of:

1. Lack of management commitment
2. Employees are unable to perceive the benefit of EMS and relate these to their own benefits
3. Lack of awareness about EMS
4. No emphasis/focus on training the employees to be able to meet the Environmental Policy Objectives
5. The organization structure is not clearly defines and key personnel are not made aware of EMS requirements.
6. Changing priorities for the company e.g., lower profits may result in shifting of priorities and hence EMS may not be implemented.
7. Documentation may prove a deterrent. Companies may feel that EMS leads to generation of too much paperwork and hence may not implement the system.
8. The system may remain on paper and be implemented only for audit purposes.

ESTABLISHING AN ENVIRONMENTAL MANAGEMENT SYSTEM: A WORKING MANUAL FOR TEXTILE INDUSTRIES

A gradual move towards sustainable development is likely to push environmental management to the forefront of company activities. This has already taken place to a large extent in most developed nations. Newly industrialized countries are showing signs of jumping on the bandwagon by increasingly incorporating environmental safeguards into economic activities. The wide acceptance of ISO 14000 at the international level has also raised considerable alarm for developing countries like Pakistan as many international buyers of textile products have now included environmental components in the code of conduct to make their suppliers more accountable from an environmental perspective. The concern of textile producers in Pakistan is that these demands might turn out to be another trade barrier, which would restrict access to international markets. About the project Keeping in mind the changing global paradigm, and understanding that such changes affect the individual settings at national levels, SDPI has launched a project that aims to develop a working manual to assist textile industries in developing an Environmental Management System (EMS) as per ISO 14001 requirements. The working manual will be designed in accordance with the existing production set up of these industries. It will facilitate the implementation of EMS without incurring substantial changes in the given set up of these companies. Because each organization is different, the guidelines will be specific enough to set up and implement an EMS but general enough to allow the flexibility for addressing unique characteristics of textile companies. The various sections of the manual will describe each element of the ISO 14001 standard and provide step-by-step procedures for typical textile processing industry of Pakistan. The manual will promote and assist capacity building efforts to ensure enforcement/compliance with environmental management systems and better define the resulting costs and benefits. It will also demonstrate environmental management systems implementation in local industrial units. The manual will also serve as a learning aid in visualizing ISO 14001 required documents and a tool to jump start development and implementation activities.

THE RESPONSE AND ADOPTION OF INDIAN FIRMS TO ISO 14001

As in other Asian countries, the response of firms in India to ISO 14000 has been enthusiastic. In India the largest number of certified firms are private Indian firms. Public Sector undertakings (PSUs), which are resource based infrastructure plants, also form a high proportion of certified firms. Transnational Corporations (TNCs) and their affiliates have been slow to take up certification. Most Indian firms and TNCs sought certification for improving their corporate image. Joint venture firms (JVs) have by and large worked towards certification collaboratively. Public Sector Units (PSUs) also are pursuing certification actively. Most PSUs have got all or most their units certified in rapid succession as a result of the clearly visible and perceived benefits of a structured response to environmental issues through EMS.

DIFFICULTIES ENCOUNTERED BY FIRMS IN INDIA

The most common difficulty was defining the full range of environmental aspects, and defining a methodology for their impacts. Some firms had difficulties setting realistic and meaningful targets. Some firms reported difficulties finding access to necessary external resources. Documentation and document control were not identified as impediments to ISO 14001 implementation by those organisations who had an ISO 9000 certificate. SMEs and those large-scale enterprises which were not ISO 9000 certified found difficulty in documentation process. Some firms found it difficult to identify end-of-pipe technology, as well as to implement necessary monitoring and measurement processes. Other difficulties include: identifying key personnel for EMS responsibility; attaining regulatory compliance gaps in emergency response plans; carrying out an initial environmental review.

CONCLUSION

The benefits of ISO 14001 have been realized by organizations everywhere. Firms with established EMSs and some with headquarter driven customized EMS have adopted this standard. ISO 14001 is an ideal catalyst to break the inertia in firms that do not have an EMS and have not advanced over their existing EMS. The immediate operational benefits of ISO 14001 include improved efficiency in resource utilization, greening of supply chain, and improved corporate commitment. The largest benefit perceived by firms vis-a-vis the overall industrial environment is the realization of the importance of the greening of the suppliers. Almost all firms have reported the benefits of the ISO 14001 like greater cost savings, resource conservation, and improved corporate image.

In many countries for example in India few initiatives have been taken by industrial organisations to promote ISO 14000 proactively. The government and industrial associations have now started focusing on small and medium scale enterprises, which account for a large percentage of India's exports. Many firms have developed innovative measures to further the benefits of the ISO 14001 process. Many firms are considering Greening of supply chain through vendor development programs and defining environmental specification for procurement and sourcing. Vendor development and procurement of services and raw materials both domestically and internationally has been initiated in a few firms already. A major auto manufacturer has selected its key vendors to create a viable model for other vendors to follow. An increasing trend in firms is that they have graduated from a 'wait and watch' policy to actively pursuing certification. Gap analysis has confirmed that by changing current EMS conform to ISO 14001 standards give positive benefits. The initiative of regulatory bodies like EPAs and Pollution Control Board in promoting the ISO 14000 protocol through various programs will make the organisations aware of the various perspectives of the protocol.

However, to remain effective and ensure that international standards benefit Communities, we need a comprehensive standards strategy that sets out clear directions for continuous improvement and involves the broadest range of standardization players. This puts forward a broad vision and over-arching strategic directions designed to standardize activities in the dynamic international and domestic environment ahead. There are sound economic and business reasons for developing Environmental Management Systems. Some companies still fight environmental standards that actually could enhance their competitiveness, but there will always be competitors who take a pro-active stance on environmental issues and these are the

companies that will win in the 21st century. Policy-makers, organisations and managers need to stop clinging to the old mind-set, which can cause heavy penalties in the longer term. They must start to recognize that environmental improvement is an economic and competitive opportunity, and that ISO 14001 can be an important element in modern business survival.

REFERENCES

1. Buchholz, K. (1999). Clean and Green With ISO 14001. Automotive Engineering
2. Business and the Environment's ISO 14001 Update (1997). Proctor and Gamble,
3. Forgoing ISO 14001 Registration, Opt for Independent Assessment. Cutter Information Corporation 3: 1-2
4. Goodshall, L. E. (2000). ISO 14001: A Case Study in Certification at Bayer
5. Pharmaceuticals in Berkeley, California. Paper to the POSTI meeting in collaboration with the ESST Annual Scientific Conference, 27-28 May 2000, Strasbourg, France.
6. MacArthur, J and B. Gordon (1998). ISO 14001 in State Regulatory Offices: A Survey of Activities. Environmental Quality Management 7:14.
7. Morrison, J., K. Kao Cushing, Z. Day, and J Spier (2002) Managing a Better Environment: Opportunities and Obstacles for ISO 14001 in Public Policy and Commerce. Pacific Institute for Studies in Development, Environment, and Security. Oakland California.
8. Thornton, R. (2003). Seeking ISO 14001 Compliance: A Step-by- Step Guideline. DNV Certification. 2003
<http://www.dnvcert.com/DNV/Certification1/Resources1/Articles/Environmental/SeekingIS>
9. Environmental Resource Services (2003). ISO 14001, Audits, Assessments, Gap Analysis, Environmental. 2003. <http://www.envsource.com/envsource.htm>
10. "World Trade Needs Worldwide Standards", Henri Schwamm, Honorary Professor, University of Geneva ISO Bulletin September 1997.
11. "Green & Competitive – Ending the Stalemate" Michael E Porter & Claas ven der Linde, Harvard Business Review September-October 1995
12. ISO 14000 InfoCentre, <http://www.iso14000.com>