

*Greening the Production and
Supply Chains in Asia:
Is there a Role for Voluntary Initiatives?*



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Greening the Production and Supply Chains in Asia: Is there a Role for Voluntary Initiatives?

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Abstract

In Asia, private sector has been the engine of much of recent economic growth, while its regional growth has kept the entire world growing. However, this expansion also came with a cost of environmental sustainability that starts shaking the development process itself. Increasing awareness and growing public concerns about the negative environmental impacts has prompted the Asian business and governments to reconsider their strategy for economic development and promote green production and consumption patterns through such approaches as voluntary initiatives. Broadly speaking voluntary initiatives is the process of encompassing a wide range of measures that aim to improve the environmental performance of business. They tend to go beyond existing laws and legislation related to environmental and social protection but may also act as an alternative to legislation. They may be unilaterally developed by companies and industry or designed and implemented by various stakeholders including multilateral institutions, governments, trade unions and non-governmental organizations. This paper aims at describing the overall situation with regard to voluntary initiatives in the Asia, and at analyzing the comparative implementation in different economies of the Region, at identifying the major trends such as the formation of powerful alliance of corporate business, local community and market forces for mutual recognition. Cross-cutting lessons from Asia in adopting voluntary initiatives lead to the conclusion that they undoubtedly represent key strategic components of business competitiveness and sustainability in production and supply chains. In other words, they have the potential to become an important tool to integrate economy, trade and environment. However, no existing scheme is fully appropriate to specific sectors like agriculture, manufacturing, services etc. More research is needed on these aspects as well as strategies to build certification systems and standards that can accommodate regional economies of different scale. Nevertheless, this study lead into overall understanding of the potentials of voluntary initiatives, basically aimed at providing orientation to corporate business and policy makers regarding the implementation of these initiatives and the important aspects to pay attention to.

Keywords: *business, environment, international trade, sustainable production, stakeholders*

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1. Introduction

Every type of economic activity for increased production involves utilization of environmental or natural resources. As modernization and globalization of trade proceed, business corporations have become more influential through expanding mass production and consumption, primary causes of environmental degradation. In Asia, business has been the engine of much of recent economic growth, while Asia's regional growth has kept the entire world growing. Increasing awareness and growing public concerns about the negative impacts on the environment and natural resource base has prompted the Asian business and government to reconsider their strategy for growth and economic development. Most of the Asian countries are now trying their best to balance the development and environmental needs based on the economic situation of their countries. Prior to the 1960's, the common business response, in the region to environmental issue was to ignore such problems. This was possible when the problems were relatively small, localized and the public awareness was low. From 1970s, governments of the region, particularly Japan, Korea, China, India, Thailand and others realized that pollution had exceeded the assimilate capacity of the environment. There were efforts to establish standards to regulate the environmental burdens. This resulted in the end-of-pipe treatment systems. Many laws to support them followed the traditional command-and-control model established by Europe and the United States. Besides the high cost, those approaches were found to be far from adequate (UNDP, 2003). Then policy response came from different forms, maturing gradually from command-and-control regime to voluntary systems such as environmental management systems of ISO 14000 series, eco-labeling programs, eco-action etc. These voluntary systems were some times found to be cost effective in greening the production and consumption pattern (Busch et al, 2004) than using a regulatory approach alone.

Broadly speaking voluntary initiatives is the process of incorporating environmental criteria or concerns in organizational behaviors, business decisions and international trade issues. But, the values of voluntary initiatives such as Global Compact, Global Reporting Initiative for improved environmental performance very much depends on the nature of the company and the sectors it works with. Most of the Asian business and governments view voluntary initiatives as a useful tool for simulating the development of environment friendly products to reduce overall environmental loading and help move their vibrant economies along the path of sustainable development. Business in East Asia tend to see these voluntary initiatives as an opportunity to stimulate the development of green products, decrease risks and liabilities and lower costs of the chain as a whole (APO, 1997). Moreover, voluntary initiatives can also open new markets for companies. As the trend indicates, governments in Japan, Korea, China, Taiwan, India and Indonesia are developing programs to environmentally friendly products (UNEP, 1998; 2004). In many cases, the passport to entry into sustainable trade is having a product competitive in terms of economic and environmental performance and offers desirable consumption characteristics (WBCSD, 2001). Moreover, because of the WTO initiated trade liberalization programs, intra-regional trade is expected to be more intense (Anbumozhi, 2004) and hence the environmental values attached to trade. Indeed for many companies in developing Asia, who seek to export to large buyers in Japan, Europe and USA., environmental criteria had becoming highly important as consumer expectations are forcing companies to rethink their product system design and management. The growth of eco-label programs across Asia is part of this overall trend. Thus voluntary initiatives are emerging as important tools for addressing international, domestic

environmental, social and ethical issues in Asia.

But there are a lot of challenges to achieve the full potentials of voluntary initiatives in Asia. To keep its position as the engine of world's economic growth, the Asian business have to make voluntary efforts in promoting sustainability in production and consumption to fully extended to small and medium enterprises (SME) whose operations are very sector specific. With increasing membership, SMEs are important to the Asian economies, as more than 90% of all enterprises in Asia are SME and employs over half of the workforce, contribute nearly half of the GDP and produce approximately 35% of the exports in many countries (APO, 2000). Those SMEs, which are very important to the national economy, have made less efforts in voluntary initiatives because of such constraints as lack skills, capital, low profits margins etc (WorldBank, 2000). Given the general skepticism among the SMEs towards greening the value chain it is essential to convince them that voluntary initiatives on environmental practices will not only save them money, but will actually enhance their business position. Also important is to limit government interventions to ensure that the initiatives are not construed as a non-tariff barrier to international trade, which could happen if governments are seen to be imposing schemes which standards that foreign competitors or not able to meet. To address the key aspects of these issues, this paper overviews voluntary initiatives taken by Asian business in response to calls for sustainable production and trade, examines two such innovations as case study analysis for identifying the barriers attached to implementation of specific voluntary initiatives and provides recommendations on how to further develop and promote cross-cutting sector specific voluntary initiatives.

2. Types of Voluntary Initiatives Made in Asia

There are numerous different types of voluntary initiatives promoted in Asia. For the purpose of assessing the experience of voluntary initiatives in different sectors, and considering their usefulness, they shall be classified into four groups as follows.

- (i) *Broad Guiding Principles:* Establishing common principles and statements of intent across subscribing organizations. Such principles are often a first step, providing common policy direction and a broad framework for action. They can be generic, such as the Global Combat.
- (ii) *Process Based Management Systems:* Establishing a common, structure management systems approach across subscribing organizations. They focus on process that is how environmental risks and issues are managed in the production and trade, on the expectation that if a company is actively managing a particular issue, it will achieve whatever performance levels it sets for itself and will identify opportunities for improvements over time. ISO 14001 is a well known example of a process based environmental management system.
- (iii) *Performance Based Systems:* Establishing minimum levels of performance that must be met by all subscribing organizations. Such systems can take a variety of forms, including technical criteria, codes of conduct or best practices and other performance guidelines. Public disclosure of industrial pollution programs is examples of voluntary programs with clear performance standards.
- (iv) *Process-based Systems with Performance Elements:* Establishing a hybrid system that combines a structured management system approach with specific performance requirements. Performance requirements of company may be built into the initiative through reference to existing standards/codes, through the development of new standard/code, or through encouragement or requirement for individual companies to

establish performance targets. Eg. Sustainability Reporting.

3. Trends and Mechanism of Specific Voluntary Initiatives Practiced in Asia

3.1 ISO 14001

ISO 14001 is an internationally recognized Environmental Management System (EMS) standard developed by the International Organization of Standards (ISO). It is designed to be flexible enough to be implemented by any size of company within any sector, and can be applied to a single site or division that operates at many sites. ISO 14001 does not contain performance requirements. It is a tool that helps an organization set, achieve and continually improve on policies and objectives. Figure 1 shows that its adoption rate is growing rapidly in Asia. Japan is the top country in terms of the number of ISO14001 certificates (13,416), followed by China (5,064) and Korea (1,495), which also ranks in the top ten countries of the world. Taiwan, India and Thailand have increasing numbers of ISO certified companies. Although the number of companies with the ISO14001 certificate in Asia is still on the increase, the annual growth rate of the world total has slowed down recently, suggesting that reaching the predominant SMEs is problematic. The latest data for the period 2002-2003 shows an increase of 34%, which is lower than for two previous years. Still growth rates of Asian countries tend to be higher than the world total. Japan and China have had a dramatic growth period, and other countries appear to be following that trend.

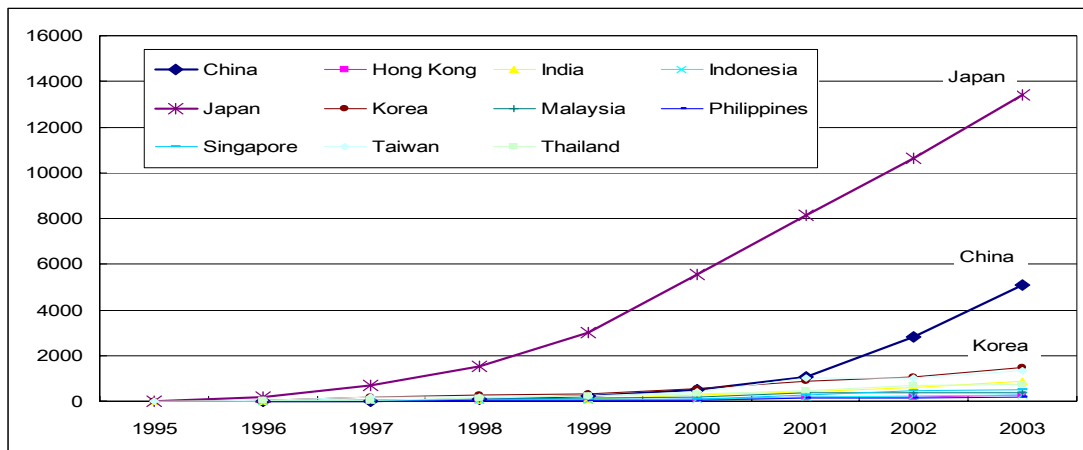


Fig 1. Number of ISO certified companies in major Asian economies

It has been estimated that approximately over 50,000 companies have received ISO 14001 certification in Asia. In addition, it is projected as many as 30,000 companies have based their EMS on the ISO standard, without seeking formal certification. Interest in the standards appears to depend in large part on government and customer pressures. And certain sub-sectors notably electrical machinery and general machinery have required suppliers to be certified. Companies in other sub-sectors under serious regulatory scrutiny-such as chemicals and chemical industries have also adopted ISO 14001. Some countries like China and India, have begun experiment with integrating requirements for ISO 14001 into regulatory structures.

Critics express concerns about both the content and process of ISO14001. Some SME argue that their participation in industrial productivity and ongoing updating of the standard has been unduly constrained by the time and financial requirements of ISO process. Also there

are four main parts of flexibility. First, a certified organization is free to define the scope of operation whose environmental impact will be assessed. Second, it is free to determine which of its environmental impacts are significant enough to be addressed. Third, although it must establish procedures for reacting and responding to external interests, it need not actively engage them. Fourth, it is unclear to what extent companies must demonstrate environmental performance improvements-or even compliance-to be certified.

The lessons learned from the implementation of ISO14001 programs shall be summarized as follows.

- (i) *Uptake*: As an internationally accepted management system, it is capable of achieving high level of acceptance and broad and rapid uptake across companies and sectors.
- (ii) *Supply chain pressure*: Provided an effective means for extending the application of voluntary initiatives, particularly when backed up with technical assistance by the customer.
- (iii) *Certification*: Provided a useful mechanism for recognition (by customers, communities) and differentiation from competitors.
- (iv) *Demonstrated business value*: SME need to see business value to justify the cost associated with certification of compliance to a formal standard.

3.2 Global Compact

Global compact is a commitment by a network of organizations from business, labor and the NGO movement to support a set of principles promoted by UN for corporate social responsibility. It is not a code of conduct but rather as high level, universal set of principles like human rights, labor rights and environmental management.

Although developed countries have a higher rate of EMS certified companies, it does not necessarily mean that companies in the more developed countries of the Asian region have responded more to other voluntary initiatives such as Global Compact. Table 1 illustrates this point well. Developing countries of Asia responded well to Global Compact Initiative. To date 353 of companies including international business associations, environmental NGOs, labor unions have signed.

Table 1. Number of Asian companies participating in the Global Compact Initiative

China	India	Indonesia	Japan	Korea	Malaysia	Nepal
45	93	2	29	0	1	11
Pakistan	Philippine s	Singapore	Sri Lanka	Thailand	Total	World Total
5	116	1	36	14	353	1,983

(Source: www.unglobalcompact.org)

However, the number of Japanese and Korean companies participating in the Global Compact Initiative is relatively low in comparison with other developing Asian countries like Philippines, India and Sri Lanka. This may be due to the nature of the initiative itself which is voluntary and less rigorous or many companies in Japan and Korea may think that it is less useful. The high level of response from developing Asia demonstrates that there is demand for such platform where companies can demonstrate the commitment to greening their value chain. However, it is too early to determine whether the Compact will lead to improved performance or merely serve as a platform to publish actions taken for other reasons.

The lessons learned from the adoption of Global Compact Initiative shall be summarized as follows.

- (i) *Convening power of political system*: the UN used its position to pursued companies to join and to ensure that NGOs and labor participate on equal terms. Same political approach shall be taken by national and local governments.
- (ii) *Industry wide action*: Although commitment to participate is made on company basis, business associations are essential in mobilizing support for the Charter.
- (iii) *Coalition of advocates and practioners*: a coalition of issue are advocates are playing mutually supportive roles, with companies committing to act on the principles; and NGOs and labor providing credibility and public accountability by watching the performance of performance of participating companies.

3.3 Corporate Sustainability Reporting

Corporate sustainability reports are becoming important ways to ensure access to information regarding environmental and social performance of a company. They evaluate companies based upon information collected by various means, which include questionnaire surveys or interviews, as well as direct input from company management. Corporate sustainability reports are often the most basic information source, important for the public and local authorities to monitor progress made by a company to meet its voluntary environmental goals. These reports are also vital for promoting market-based eco-initiatives for greener production and to attract green investment funds.

Recognizing their importance, in Japan, the Ministry of the Environment, developed environmental reporting guidelines in 1997, and revised them in 2001 and 2004. The Ministry for Economy, Trade and Industry also issued similar guidelines in 2001, keeping in mind the different needs of various stakeholders. Specific guidelines were developed for SMEs. Figure. 2 indicates, a steady increase in the number of environmental reports prepared in Japan. However, attention to environmental reports is still not high enough. Awareness should be raised regarding the importance and usefulness of such reporting.

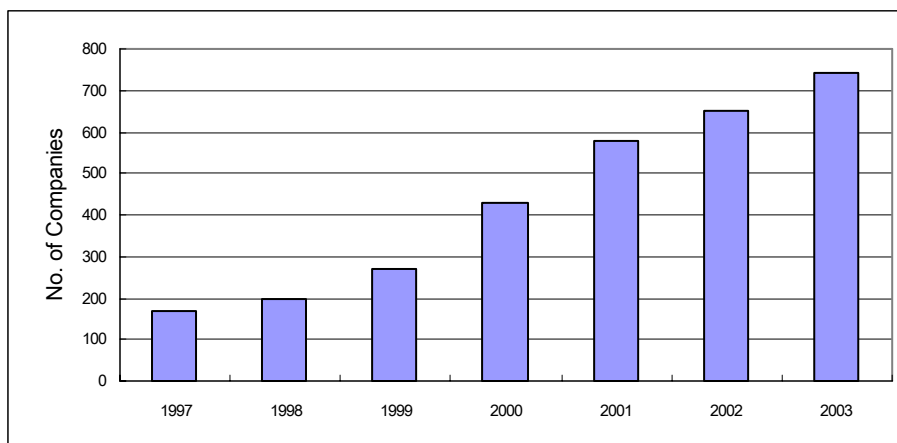


Fig 2. Increase in the number of companies publishing sustainability reports

Global Reporting Initiative (GRI) has developed guidelines for companies and other organizations, including public agencies, to prepare a sustainability report and to disclose it to the public. Several thousand stakeholders were engaged in the preparation process of

guidelines. As a result of these efforts, the number of organizations having published their sustainability report is on the increase. Table 2 shows a sharp increase in the number of organizations having produced a sustainability report over a half year period between August 2004 to March 2005 (from 507 to 645).

Table 2. Number of sustainability reports registered at the GRI reports database

Time, as of	China	India	Japan	Korea	Malaysia	Thailand	Total	World Total
Aug 9, 2004	4	3	88	5	2	2	104	507
Mar 28, 2005	5	6	122	6	2	3	144	645

(Source: www.globalreporting.org)

The Asian market is dominated by Japanese companies. Among the 145 Asian companies submitting sustainability reports, only one company prepared their report at the strictest level of "in accordance with the GRI guidelines." This may indicate that although development of the guidelines involved many stakeholders concerns held by Asian companies may have not been adequately reflected in the guidelines, or awareness of this initiative is not yet sufficient in Asia.

The following list summarizes the lessons learned from the adoption of global reporting initiative in Asia

- (i) *Roles of Sustainability Reports:* A company sustainability report can provide as useful initial element for increasing awareness and commitment across its workers, management, and supplier.
- (ii) *Communication with stakeholders:* In the absence of efforts to engage stakeholders to reflect their opinion, such reports receive limited recognition.
- (iii) *From reporting to improved performance:* Sustainability reports can provide a common basis set of principles to guide corporate behavior, in general terms, on a range of sustainable development issues. However, they risk being both used by companies and perceived by stakeholders, as broad commitments only, and are insufficient on their own to ensure improved industry performance.

3.4 Eco-Action Programs at Local Level for Small and Medium Enterprises

There may be as many as 50 million small and medium enterprises (SME) in Asia. ISO and the other voluntary initiatives elaborated above have captured a tiny fraction of them. Without changing the behavior of these companies, there can never be sustainable production, trade and consumption in Asia. Eco-action schemes that promotes the 'greening' of the supply chain should be a key strategy to improve the environmental performance of SMEs in Asia. As many SMEs in Asia supply parts or products to big multinational corporations based in USA and Europe, pressure from these large companies to improve environmental performance may be the most effective way to reach SMEs (UNIDO, 2002). Towards that end, corporate environmental goals are introduced to the SMEs as a condition of their participation in the supply chain and regular monitoring of performance is to be conducted. While the costs for meeting environmental goals and conducting monitoring could be a substantial burden on SMEs, their counterpart corporations in the advanced economies can help them by providing access to hardware such as pollution abatement technologies or specific technical guidance to help identify win-win situations. It also helps companies to gain broad acceptance and support

from its stakeholders. Certainly SMEs will have to catch up with these worldwide trends (Heeswijik, 2004). Despite the perception of most SMEs, there is a growing body of case studies (ADB, 2005) and other research (Dean et al, 2005; Johanson, 1994) indicating that implementing certain basic environmental management practices does lead to both lower pollution and cost saving for SMEs. Getting this message across SME managers in a convincing manner has become one of the main challenges for industrial and environmental ministries around Asia. Given the general skeptics among the SMEs towards environmental issues, it is essential to convince them that voluntary initiatives on environmental practices will not only save them money, but will actually enhance their business position.

Even in Japan, the number of ISO14001 certified companies has increased at an accelerated pace, but participation by SMEs is not very high. To address this lacuna, several initiatives are being undertaken by local governments in partnership industry and public. (MOE, 2002). The successful cases of environmental management systems include Kyoto Environmental Standard (KES), Kobe Environmental Management Systems (KEMS), Nagaoya City Industrial Environmental Systems etc, which evolved individually based on regional socio-environmental characteristics. Each of these voluntary initiatives has their own implementation plan, objectives and targets. Based on the experience from these regional initiatives, as well as a way for mutual recognition and cooperation, a set of broad based environmental guidelines for SMEs and a registration and certification program called "Eco-action 21" is formulated (MOE,2004). They have the same objectives as that of regional initiatives and in a way complement them vigorously. One key aspect of Eco-action has been its ability to promote continuous improvements through the effective use of guidelines and regional peer pressure to foster a dynamic systems in which member companies do not want to be seen to be left behind the peers in the region. Moreover, it costs are less compared to global level ISO 14000 and has been bolstered by sharing of information about best practices across the companies. In theory, the incentives for Japanese companies to participate include: enhanced reputation by demonstration of sustainable production methods; the potential for preferred supplier status among customers who have added environmental value for certified products; and the potential for improved returns of a premium can be charged for Eco-Action certified products across the regional countries in new international trade regimes.

3.5 Environment Labeling Programs

The market for environmentally-sound goods and services has expanded in many Asian countries. Originally introduced in Germany in 1978, eco-labeling or environmental labeling has played an important role in this expansion. Now many countries are promoting environmental labeling in accordance with the basic standards set out in ISO 14020, developed in the late 1990s. As shown in Table 3, the environmental labeling program is being widely promoted in many Asian countries, but has yet to gather sufficient momentum. The effectiveness of eco-labeling schemes in Asia needs to be improved further, mainly by increasing awareness on the part of consumers as well as strengthening the enabling policy environment.

With the development of global green trade, many businesses have adopted green procurement practices that are gradually becoming non-tariff barriers. In line with the globalization of business, green procurement practices and eco-labeling are essential for stimulating research on green productions and represent important components of a successful business strategy (APO, 2002). In the era of global green trade, promotion of

Table 3. Progress of environmental labeling programs in Asian economies

Economy	Program(s) Delivered	Voluntary Standards/ Criteria Sets	Licenses Issued to Companies	Certified products/ Services
Japan	Eco Mark Program	64	1,867	5,391
India	Ecomark Scheme	16	2	3
Korea	Environmental Labeling Program	84	221	441
Singapore	Singapore Green Label Scheme	35	-	130
Taiwan	Green Mark	77	381	1,557
Thailand	Thai Green Label Program	33	34	200
China	Environmental Labeling	-	700	8,000
Hong Kong	Green Label	37	3	7
Philippines	Green Choice	5	-	2

(Source: GEN, 2002)

trans-national green procurement can reduce production costs and strengthen a company's image. In addition, cooperative voluntary efforts can simultaneously improve the environmental performance of both the central company and synergy corporations, creating a win-win situation.

A few countries in Asia have introduced policies to encourage the purchase of environmentally-sound products, and to help narrow the cost difference. Japan enacted the Law on Promoting Green Purchasing in 2000. This law targets the consumption power of public entities, and requires the national government, its affiliated organizations and local governments to purchase more environmentally-sound products by setting up procurement plans every year. Companies and people are also encouraged to choose environmentally sound products. The list of environmentally-sound products is prepared by the national government, consolidating information from manufactures and environmental labeling organizations. The list ranges from typical goods and services such as recycled paper and renewable energy, to certain types of public works. The Korean government is in the process of legislating a similar "Green Purchase Act" (Sook, 2003). Prior to that, the Seoul Metropolitan Government has enacted its own initiative starting from 2004 (KELA, 2003).

At the same time, consumers' awareness for purchasing environmentally-sound products seems to be growing in many countries of Asia. The Green Purchasing Network (GPN) was established in 1996. GPN consists of corporations, local governments and consumer organizations, and provides information on environmentally-sound products through printed materials and a web-based database, as well as by holding seminars. Membership has now grown to 2,889 organizations, and local GPNs are emerging in some parts of Japan. South Korea formed a GPN in 1999, and Malaysia established one in 2003. Taiwan and Thailand are making preliminary arrangements for setting up a GPN, further illustrating policy convergence in this area. Networking of national GPNs, such as the recently established international GPN, is underway, which is expected to build on and further accelerate the GPN movement in Asia.

3.6 Eco-funds and UNEP Financial Initiative

Business stakeholders and consumers are increasingly interested in the environmental behavior of the corporations they wish to invest in. Socially Responsible Investment (SRI) is investment which allows investors to take into account wider concerns, such as social justice, economic development, peace or a healthy environment, as well as conventional financial considerations. As a result, SRI funds exclude companies with poor environmental performance from funding, and instead reward green companies. Eco-funds are now emerging in leading Asian economies. In Japan, there are 12 SRI mutual funds as of November 2003, seven funds targeting domestic corporations and five funds investing in international corporations. The first Japanese SRI fund started operation in 1999, and the number of SRI funds gradually increased between 1999 and 2001, but little progress has been made since then. Total assets of eco-funds funds is 137.9 billion yen as detailed in Table 4.

Table 4. Important assets of eco-funds in Japan

Nikko Securities Asset Management Co. Ltd	71.8 billion yen
Yasuda Kasai Global Asset Management Co. Ltd	22.0 billion yen
DLIBJ Asset Management Co. Ltd	35.0 billion yen
UBS Fund Management Co. Ltd	9.1 billion yen
Total	137.9 billion yen

(Source: ASrIA, 2004).

In Japan, in order to screen portfolios, the analyst team in the eco-fund carefully review the environmental management practices and performance of selected countries, based on information available to general public, the results of questionnaire and interviews. For example the following three aspects are taken under consideration in the eco-fund jointly developed by Yasuda Asset Management Co. Ltd.

- Development of environmental management system
- Publication of environment-related information and
- Reduction of environmental impact and promotion of eco-efficiency.

The fastest growing component of socially responsibly investment in Japan is the growth of portfolios that employ both screening and shareholder advocacy, in which shareholders use their ownership positions to influence corporate actions.

SRI is closely related to operation of security, banking and insurance sectors. Table 5 indicates the extent to which financial institutions in Asia have committed themselves to finance for sustainable development. UNEP started its financial institutions initiative by

Table 5. Institutional signatories of UNEP-Finance initiative

Initiative	China	India	Japan	Philippines	South Korea	Thailand	World Total
Financial Industry	1	1	9	8	2	1	163
Insurance Industry	0	0	6	0	1	1	68

(Source: www.unepfi.org)

adopting the “UNEP Statement by Banks on the Environment and Sustainable Development” in 1992, and its insurance industry initiative in 1995 by adopting the “UNEP Statement of Environmental Commitment by the Insurance Industry”. The Statements expect signatories to conduct internal reviews and measure their activities against their environmental goals, share information with customers and other stakeholders.

4. Case Study Analysis on Implementation Process of Voluntary Initiatives

4.1 Case Study 1: ISO 14001 Implementation in Japan

The number of organizations that have obtained ISO14,001 in Japan is high. Fig 1 indicates increasing trends. Fig 4 shows the industrial sub-sector companies. Nearly 65% registrations were awarded in the electrical machinery and general machinery sectors. As many of these categories operate at the international level, they may consider that taking up

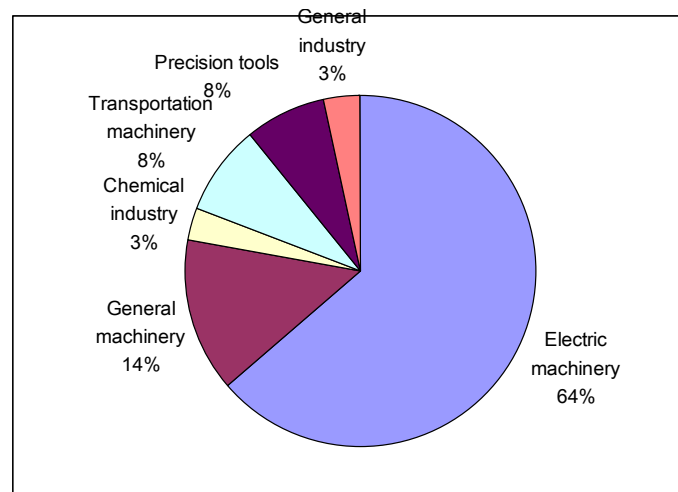


Fig 4 Major categories of ISO 14001 registered companies in Japan

environmental issues at the company level would positively affect the trade. The percentage of registrations in the chemical industry, which was thought to have a high awareness of environmental issues, may seem unexpectedly low. In fact, nearly 100 firms which account for almost 75% of total sales that occur in the Japanese Chemical industry, have already taken up the industry's Responsible Care programs, the safety and environmental management systems that was proposed in 1980s (Terui, 2000). These firms are expected to steadily move towards EMS registration, given that Responsible Care Serves as base for ISO 14001 registration. From 2000 onwards, registrations have been sought by retailers, distributors, trading companies and business in the service sectors, healthcare, insurance and waste treatment. This is in contrast with registrations relating to the ISO 9000 series of standards, which are embraced mainly by manufacturing industry.

Actors and Driving Forces of Increased Adoption

By the number of ISO certified organizations in a country, Japan has the highest compared to other countries in Asia as well as Europe. Possible reasons for these are as follows. The First reason for the high number of ISO 14001 registrations is, given Japan's past experience, due to the high level of interest in environmental issues in Japan. The high rate of economic growth that the country enjoyed in 1960s and 70s brought with it horrific levels of pollution in the industrial sector. Japan has since introduced very strict regulations aimed at reducing pollution in the industrial sectors, as well as regulations concerning the release of toxic chemicals. The second reason is that Japanese interest in global environmental issues was heightened by their efforts towards various activities relating to the 1992 Earth Summit, where the deliberation on ISO14000 series was triggered. The Japan Federation of Economic

Organizations, known as *Keindanren*, drafted the *Keindanren* Global Environmental Charter in 1991 and actively participated in discussions on the development of ISO14000 standards. In order to accelerate the industrial sectors' response to Global Environmental Problems, The Ministry of Economy, International Trade and Industry (METI) requested major industrial groups in 1992 to establish a voluntary plan that gives consideration to environmental issues in their business activities. In an effort to solve global environmental problems such as climate change, The Japanese government enacted the Basic Environmental Law, which was used as basis for Basic Environmental Plan, the contents of which include recommendation for companies to implant EMSs. National and local governments were also asked to support their implementation.

The third reason can be found in the widespread implementation of the ISO 9000 series of quality management system standards in Japan. Due to the general acceptance of quality standards, Japanese companies had little difficulty incorporating ISO 14001 into their existing management systems. The fourth reason is that voluntary initiatives compliments the needs of the company. In today's society, tackling environmental issues has become an important item on the business management agenda. By opting for ISO 14001 implementation, rather than simply complying with regulations, a company can create a business structure for solving global environmental problems, for clarifying and streamlining its business management system, and for enhancing company credibility which builds confidence among stakeholders and interested parties. In short voluntary initiatives like ISO14001 implementation can provide companies with management tools that allow them to meet their own needs as well as their considerations of environmental issues to interested parties such as business partners in supply chain, consumers, local communities, NGOs and governmental authorities. Many companies also believe that environmental considerations will also lead to competitive advantage in the market place.

4.2 Case Study 2: PROPER program for Rating Environmental Performance of Companies in Indonesia

Environmental agencies in developing countries have a mandate to regulate industrial pollution, but they often lack institutional capacity. Although equipped with conventional options such as regulatory standards and/or market-based instruments (e.g., pollution taxes, tradable permits), they remain hard-pressed to achieve substantial results. A good example is provided by BAPEDAL, Indonesia's Environmental Impact Management Agency. During the late 1980's, BAPEDAL introduced several measures to counter rapidly-increasing pollution from the manufacturing sector. However, monitoring and enforcement problems frequently limited the agency to voluntary agreements, out-of-court settlements and other ad hoc approaches.

This set the stage for experimenting voluntary agreements. In 1993, BAPEDAL's Deputy for Pollution Control began to develop the Program for Pollution Control, Evaluation and Rating, now known as PROPER (Afsah and Vincent, 1997). In PROPER, the agency would receive pollution data from factories, analyze and rate their performance, and disseminate the ratings to the public. The initiative signaled a bold move toward transparency by recognizing the new power of the media and public participation in a rapidly-industrializing economy. BAPEDAL hoped that public performance ratings would recruit two major allies in its effort to reduce pollution. Local communities, worried about health consequences, would pressure poorly-rated neighboring plants to pollute less. In financial markets, access to capital or stock values would fall for firms whose low ratings increased the risk of liability suits, regulatory

shutdowns, or reduced product demand. By mobilizing these agents, BAPEDAL hoped to strengthen the regulatory 'stick' faced by heavy polluters. But the program was also designed to recognize excellent performance, in the hope that this would promote the adoption of clean technologies and development of in-house environmental management capabilities.

Actors and Driving Forces of Increased Adoption

Since PROPER is a public performance rating system, its disclosure strategy has also been a primary focus of attention. Certain problems had to be confronted at the outset. First, the grading system adopted had to accommodate polluters with widely different characteristics. Second, the ratings had to be simple and their implications easily understood by the public. Third, the system had to clearly discriminate between firms in compliance with the regulations and those out of compliance. Finally, the program had to provide incentives for progressive firms to go beyond compliance. BAPEDAL settled on the five-color scheme. Its color-coding is a simple but effective format for communicating environmental information about individual plants to the public, media, judicial system and financial markets. The colors of the rating system are easily identifiable and, in the Indonesian cultural context, symbolic of the polluters' environmental performance.

For its first disclosure, BAPEDAL decided on a sequential strategy which would publicly recognize the best performers at the outset and give others a chance to improve before bad ratings were revealed. This approach was intended to serve several objectives. First, it would promote an image of fairness in the business community by allowing time for adjustment to the new program. Second, it would develop a new alliance between the regulatory agency and firms whose good performance was publicly recognized. The latter, having already invested in costly abatement, could be counted on to support PROPER because it would 'level the playing field.' Finally, and perhaps most critically, BAPEDAL wanted time to gauge the possibility of extreme reactions to Red- or Black-rated plants by neighboring communities.

Impacts and Implications

PROPER PROKASIH was developed in June 1993, and was extensively covered in the national and international press. Five factories were publicly awarded the Green rating (no factories were rated Gold). For the remaining 182 plants, only the distribution by color rating was disclosed: 61 were Blue, 115 were Red and 6 were Black. This announcement was, in itself, a remarkable exercise in self-criticism. By announcing that almost two-thirds of the plants were non-compliant, BAPEDAL was confessing its own previous ineffectiveness to the Indonesian public. BAPEDAL gave plants rated Black or Red ten months time to improve their performance before their names and ratings were publicly disclosed. Under the threat of public disclosure, ten factories managed to improve their rating to Red or Blue within six months. The primary driving force behind these improvements was probably concern about potentially strong responses from local communities and markets. In December 1995, PROPER was fully implemented: A sequenced disclosure campaign was launched by industry sector, with new announcements at regular intervals to keep the media interested. Disclosure included the color ratings, the locations and names of the plants, their managers, and their parent companies.

The movement of firms to compliance is impressive. In June 1995, 65% of the factories were rated Black or Red. By September 1996, non-compliant plants had dropped to 47% (Afsah and Vincent, 1997). Since it is highly unlikely that other Indonesian polluters improved at the same rate, this reaction suggests that PROPER is creating strong new incentives for greening the production and value chain. While reputational incentives are obviously at work, it is interesting to note that PROPER was frequently the means by which companies first learned about the environmental performance of their plants. In direct consultations between BAPEDAL and the owners, it became clear that PROPER performs a valuable educational function, both by increasing the awareness of owners, managers and employees and by providing guidelines for improved performance. It is also interesting to note that factories volunteering to participate in PROPER doubled from June to December of 1995, from 11 to 23 (Lopez et al, 2004). Clearly, these factories expected disclosure to enhance their market position. This illustrates a primary strength of the approach. Unlike many previous environmental initiatives, PROPER supplies incentives to polluters to move beyond compliance and toward attainment of higher performance ratings. By improving a firm's reputation in the competitive marketplace, higher ratings can raise expected profitability.

This new approach of voluntary initiative in Indonesia is showing that local communities and market forces can be powerful allies in the struggle for sustainable production and trade. PROPER's ratings are designed to reward good performance, and to call public attention and government interference. Armed with this information, local communities, international trading partners can negotiate better environment arrangements with factories; firms with good performance can advertise their status and earn market rewards; investors can accurately assess environmental liabilities; and regulators can focus their limited resources on the worst performers. By committing itself to a voluntary public disclosure strategy, it chooses to reveal its own ability to process information reliably and enforce the existing regulations.

5. Cross Cutting Lessons from Voluntary Initiatives Adopted in Asia

From the above discussion, one might conclude that voluntary initiatives have become an important tool to integrate the economy and the environment. However, the effectiveness of voluntary initiatives remains weak in Asia. Only big businesses have committed to voluntary initiatives and this approach is yet to be accepted by SMEs. There are few strong incentives for businesses in the region to adopt potentially costly initiatives when the market place is not demanding improved performance (De Simone and Bopoff, 1997). Hence there is a need for developing systems at national level so that companies that have provided information on their environmental and social performance are rewarded with appropriate incentives, such as green procurement contracts.

The trends also indicates that voluntary initiatives with high potential for conflict are less likely to diffuse rapidly (Brink, 2002; UNEP, 1998), in contrast to initiatives that do not necessarily induce fundamental change like ISOs or eco-label programs, spread significantly faster. By and large, the voluntary initiatives adopted in Asia and analyzed here draws following general lessons that can be applied specific sectors like agriculture, forestry, manufacturing, tourism, mining etc.

- (i) Each sector shall develop its own voluntary initiatives tailored to its particular needs. Initiatives and responses to them as in the case of ISO varies in different

sub-sectors vary considerably, reflecting stakeholder expectations and challenges based by the industry. No existing scheme will be fully appropriate to agriculture, aquaculture, mining and tourism (Blanco et al, 2005). Efforts are needed to avoid the proliferation of competing schemes. In practice, as can be seen in ISO and GCI, proliferation of schemes brings in major risk as they can prevent an industry wide set of norms may devalue the participation in any of the schemes and may confuse consumers and the public.

- (ii) An interactive approach may be most effective. It can take several years to develop, build credibility and have significant uptake of a common, voluntary integrated performance improvement program across a sector. It may, however, be possible to build momentum and buy-in through an incremental approach that focuses first on elements already accepted.
- (iii) Significant investment is required in the design phase and in ongoing implementation, including through:
 - Corporate leadership and financial contributions
 - Allocation of appropriate resources, both by the body providing administrative oversight; by the participating companies; and by stakeholders committed to the process of development and playing the role in implementation of the initiative.
- (iv) Industry-led schemes such as those designed and implemented by associations as requirements for their members may be more effective, at least in the short term, in attracting support and uptake from a substantial segment of an industry. On the other hand, programs conceived, designed and/or implemented by multi-stakeholder groups or with active involvement of stakeholders will build greater credibility as seen in the case of ISO adaptation in Japan, and in the long run may well be necessary to create the conditions for substantial improvements in terms of industry performance.
- (v) Tradeoffs are inevitable in the approach used to implement a voluntary initiative. For e.g., trade offs may be required to balance
 - Credibility, through transparency and continuing stakeholder involvement
 - Effectiveness, which engenders more rapid and broader industry uptake, leading to measurable improvements in performance
 - Efficiency in time and effort, including through transaction costs for companies and stakeholders, in participating in a voluntary initiative.
- (vi) It is important to create incentives for participation and for continuous improvement. These distinct objectives may require different features, including
 - peer pressure within industry sector, particularly involving strong leadership from pioneering companies.
 - internal incentives provided by the initiative, such as access to mentoring and technical assistance, and making participation a condition of membership in industry associations.
 - external incentives provided by government, including rewards for good performers and maintaining of the credible threat of regulation, as seen in the PROPER program of Indonesia.
 - mechanism to encourage consumer demand for demonstrated improvements in

performance underlying the products they buy.

- (vii) Verification is important and should be tailored to the voluntary initiative program. The rigor of the verification mechanism used to ensure adherence to the establish norms and procedures should reflect the significance of the initiative, and the nature of rewards, participating companies will expect from government, local communities, investors or other stakeholders. Means of verification can include self-monitoring and internal audit, external verification with stakeholder involvement, or independent third party certification.
- (viii) Adequate funding is crucial: Development of a voluntary initiative can either be funded by industry directly or by a coalition of sponsors such as business associations, governments and companies. In the implementation phase, the scheme can be funded either from industry dues or revenues generated through application of processes such as certification and accreditation.
- (ix) Government involvement is a complex issue. Governments need to be involved if there is any expectation that they will integrate the voluntary initiatives into their own policy framework and incentive structures. Government involvement can also help foster public confidence in and acceptance of the initiative. Another important reason to limit government involvement may be the need to ensure the initiative is not construed as a non-tariff barrier to trade, which could happen if governments are seen to be imposing schemes which standards that foreign competitors or not able to meet. Regardless of their level or mode of involvement, it will be important for governments to ensure that they retain their sovereign right to modify or replace rules over time.

6. Conclusion

Voluntary initiatives undoubtedly represents a key component of business competitive strategy, national level sustainability strategy in production and international trade strategy for greening the value chain. As business competition becomes increasingly intense in economies of similar industrial structure, Asian companies begin to seek leverage for competitive advantages across their value chain. Voluntary initiatives gives an opportunity for a closer integration of environmental quality management just as pressure to supply greener products is requiring closer cooperation with suppliers. Initial trends indicates that companies are finding considerable advantages in terms of improving both their own efficiency and the eco-effectiveness of their products through such efforts thus contributing for green trade.

The future prospects for voluntary initiatives in greening the production and supply chain in Asia are substantial but at this moment, it is difficult to judge its ultimate potential. Broadening the application of voluntary initiatives in Asian economies will require more dissemination of information about the practices and advantages. Where there is string anecdotal evidence for the business values of voluntary initiative, more research is needed to quantify the sector wise business cases. In addition, more work is needed in building the regional infrastructure and standards to allow the economies of same production and trade structure to join in good initiatives.

Excellent models of voluntary initiative and its transfer has been developed in Japan, and the next step is to expand their scale. Eco-Action model represents one viable option for

integrating regional production and consumption, but the number of companies within those systems is still only a small percentage. Market forces will undoubtedly help push more companies classified with each sector to independently join such systems or alternative arrangements. However, governments and community based organizations must also consider how they can help this process to move further.

Governments have a role to play in helping to accelerate the process of voluntary initiatives, as they have the means to ignite a change by and within business. The responsibility is on them to provide free and open markets which enhance the willingness of companies to sign in voluntary initiatives. Restrictions and barriers, however well intentioned, will counter productive from both environmental and free trade perspective. Work on the areas of voluntary initiatives in developing Asia is still in its early stages, but undoubtedly a key piece in the puzzle of sustainable production, trade and consumption. Nevertheless, greening the production and supply chains through voluntary initiatives, can serve as a catalyst for the development of environmentally friendly products for trade as well as help business to improve their environmental performance.

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