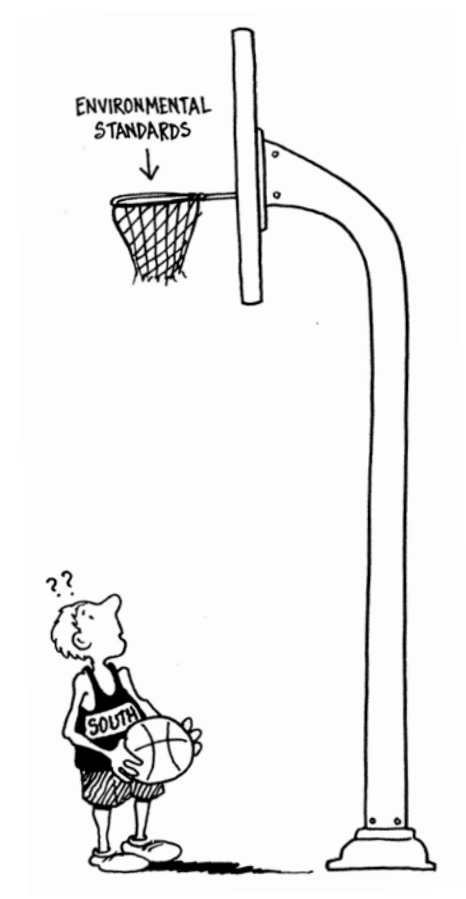


# Eco-labelling: Does (Should) One Size Fit All?



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This paper was researched and written by Arjun Dutta and Pramod Dev M of CUTS-CITEE, with significant contribution from Prof Srikant Gupta of Delhi School of Economics. Comments on the draft were received from Dr Sudhir Ghosh and many others, which have been suitably incorporated.

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# List of Acronyms

AOX	- Absorbable Organic Halides
CEC	- Commission for Environmental Co-operation
CO <sub>2</sub>	- Carbon Dioxide
COD	- Chemical Oxygen Demand
CPCB	- Central Pollution Control Board, India
ECP	- Environmental Choice Program, Canada
EPA	- Environmental Protection Agency, USA
EU	- European Union
FIFRA	- Federal Insecticide, Fungicide and Rodenticide Act, USA
FTC	- Federal Trade Commission, USA
GATT	- General Agreement on Tariffs and Trade
GEN	- Global Eco-labelling Network
GPN	- Green Purchasing Network
IBIS	- Integral Bio-diversity Impact Assessment System
ISO	- International Organisation for Standardisation
JEA	- Japan Environment Association
KELA	- Korean Environmental Labelling Association
LCA	- Life Cycle Analysis
MOE	- Ministry of Environment, South Korea
MoEF	- Ministry of Environment and forests, India
NO <sub>x</sub>	- Nitrogen Oxide
NTBs	- Non-tariff Barriers
OECD	- Organisation for Economic Co-operation and Development
PPM	- Parts Per Million
PPM	- Production and Process Methods
RAL	- German Institute for Quality Assurance and Labelling
SCS	- Scientific Certification Systems
SETAC	- Society of Environmental Toxicology and Chemistry
SSNC	- Swedish Society for Nature Conservation
TBN	- Technical Briefing Note
TEI	- Thailand Environmental Institute
TISI	- Thai Industrial Standards Institute
UNCTAD	- United Nations Conference on Trade and Development
VOC	- Volatile Organic Compound
WTO	- World Trade Organisation

# Preface

Ironically, environment policy has become one of the most contentious trade issues of the day. Though everybody agrees that environmental degradation is no longer a mere threat but a clear reality, there is hardly any unity of opinion on the remedial measures. Conservationists argue that indiscriminate exploitation of environmental resources for economic purposes and trade in them have caused environmental degradation. Their prescription is to control, regulate or ban consumption and trade that is detrimental to the environment. The opponents of this view, on the other hand, say that trade is not part of the problem but part of the solution. Trade raises resources for improvement of environmental quality. They point to the ability of the rich countries to afford better environmental standards to substantiate their claim. According to them, excessive controls could only lead to unsustainable resource exploitation through illegal trade.

The increasing awareness about worsening environment has given rise to different environment and economic policy tools like pollution taxes, tradable permits, setting standards and labelling requirements and so on to deal with environmental degradation. Market-based instruments are considered preferable over strict regulatory measures, as there is greater freedom in dealing with the problem, and they help in better internalisation of the social cost by the producers. It appears that the best policy is to deal with the environment problem at its source and the policy will have to employ a combination of tools, according to the nature of the problem at hand.

Standards and labelling requirements are just few of the policy tools available but have found maximum acceptance among countries. Eco-labelling, the focus of this study, is a mix of both the environment and economic policy tools. Eco-labels show whether the product has achieved specific environmental standards or not. The requirement can be either voluntary or mandatory. Voluntary labels are more dependent on the forces of demand and supply in the market. Though mandatory labels also take the market route to achieve the environmental objective, they hardly allow choice for either consumers or producers.

Many countries, especially developed ones, use eco-labels based on their perspectives on environmental issues. There is a high degree of awareness about environmental issues in these countries. Consumers are open to buying environment-friendly commodities, even if they are not too keen to pay a higher price for it. The demand for environmental friendliness mostly stems from genuine environmental concerns and the national government's compulsions to act.

However, when eco-labels are required on imported goods and services, they can result in trade restrictions. There is an apprehension that the developed countries use higher standards to control imports from the developing and least developed countries. Criteria requirements of most of the eco-labels in the developed countries are either difficult to meet or are irrelevant for the producers from developing countries. The concerns of the developing countries are heightened by the fact that criteria requirements may also pertain to the process of production of the commodity, which takes place in the exporting country and may not affect the environment and lives in the country of import. In such situations, use of ecolabels could restrict trade and become potential non-tariff barriers to entry and operation in markets.

The practice of applying eco-labels on trade gives rise to well-founded fear that the right of different countries to make decisions on their resources is compromised. It gives the importing country an undue say in the way in which another country's resources and environment are managed. It pushes for the same remedy for environmental problems of different countries, even though it is quite clear that the causes and consequences of a particular environmental problem in different countries could be different. Similarly, the capability to withstand environmental deterioration also varies across countries. This is the crux of the arguments presented by the authors of this paper. As the name suggests, the paper rejects the underlying notion of harmonisation of standards that 'one-size-fits-all'.

The paper employs both theoretical and intuitive arguments to present its case. A comparative analysis of differing criteria requirements of three products, namely batteries, paper and washing machine, in eco-labels from eight countries are presented to substantiate the case that across countries environmental valuation differ; and so do the standards. These products are selected primarily because of their coverage in the labelling schemes that the study covers. These products also have noticeable environmental impacts either or both during their use or disposal stages.

Harmonisation of standards is no longer a mere economic or environmental issue but it has also evolved into a confluence of political, social and moral issues. Many developing country governments feel the heat as their producers face the music in their export markets, but find themselves helpless. The small-scale sector that provides maximum employment in majority of developing countries is affected the most by higher standards. Most developing countries do not have enough resources to meet the cost of enhancing environmental standards for their exports, when it is not certain that the labelled products would fetch a higher price.

While deciding to invest on eco-friendly production, there is an inherent dilemma for the developing countries to deal with. Consumers in the domestic market either do not want eco-friendly commodities or just cannot afford them. Moreover, the particular environmental characteristics that a foreign label demands may

be irrelevant in the domestic conditions. In such a situation, a poor country will be forced to divert its scarce resources, which otherwise could have been used in ameliorating poverty, to import environment-friendly technology and materials and change its production techniques merely because countries that import their products want to inform their citizens 'fully' of the environmental impacts of what they consume. Sounds unfair!

Curiously enough, the practice of extra territorial application of eco-labelling opens a can of "dirty", but pertinent questions in the way in which the 'global commons' are managed, and the perceptions in the Northern countries on how they ought to be managed. Can the global community manage environmental resources? Or the countries that house those resources have the right to use them and prosper like the developed countries of the day did? There are another set of questions often skirted in the debate. Environmental degradation can also be considered as a global common- impacts sans borders and with out fail. Who ought to take up the responsibility here and pay for? The developing and poor countries that are the ultimate, and possibly the only sufferers of linking trade and environment, are neither responsible for the state of poor environment or given the their consumption nor in a position to pollute like the developed countries even in the distant future. But the irony is that, they are punished now for conserving their natural resources, even though out of default, because of their under development and low consumption.

There is a conscious effort to legitimise trade-related environment measures in the World Trade Organisation (WTO). However, applying domestic environmental standards on imports could be seen as yet another attempt to even out the positive effects of the rules-based international trading system and to protect domestic industries, than raising environmental quality or consciousness. It is important to note that even after decades of existence no label considered in the study could garner significant market share, thus limiting their environmental utility. Eco-labels and environmental standards could actually act as stumbling blocks to freeing of trade, if used in injudicious ways. The demand for harmonisation might be one of those.

This point of view might surprise few of our readers who is aware of CUTS' role in the establishment of the Indian Eco-labelling scheme, Ecomark and our on going advocacy to popularise the scheme. We do not see any dichotomy in our work. Through years of work on trade issues, and eco-labelling per se, we are in a unique position to sift the chaff from the grain. While we see eco-labelling as one of the tools of environment management, we also see the adverse impacts of them being linked with trade. This paper is a decisive step to throw light on these issues.

**Jaipur**  
**January 2005**

**Pradeep S Mehta**  
**Secretary General**



# 1

## Introduction

*The term 'eco-label' is diversely used to denote types of environmental standards. It is used to denote both voluntary and mandatory environmental performance labels and declarations*

Eco-labelling is one of the important policy tools available for environment protection. The practice of supplying information on the environmental characteristics of a commodity to the consumers is called eco-labelling. Eco-labelling schemes tries to inform consumers 'fully' about the product they purchase, not only with regard to the commodities' direct impact on the consumers' lives, but also with regard to the impact of production process on the environment in general. The term 'eco-label' is diversely used to denote types of environmental standards. In the general sense it is used to denote both voluntary and mandatory environmental performance labels and declarations. This paper also uses the term 'eco-labelling' in the general sense. On the other hand, the International Organisation for Standardisation (ISO) uses the term to denote a particular category of voluntary labels. The ISO has identified three broad types of voluntary labels, with eco-labelling falling under the Type I category<sup>1</sup>.

### Types of Voluntary Environmental Labels<sup>2</sup>

#### *Type I*

These are voluntary labels awarded by third parties (not the producers or industry associations) based on life-cycle-considerations. They are awarded to inform the consumer the overall environmental friendliness of a product. Most of the environment labels in operation at the moment are Type I labels. The awarding agency may be an impartial, private or government organisation.

#### **Type II**

These are informative self-declaration claims by producers about the environmental friendliness of the products. The labels may announce that the product is energy-efficient or it does not use ozone-depleting substances, and so on.

*GEN lists around 25 different eco-labels of the Type I category at different stages of development*

#### **Type III**

These types of labels provide quantified information, using an agreed set of parameters. The label gives selected data about the environmental impacts of the product, based on a life-cycle-analysis, without making any judgement about the desirability of one impact relative to another. Such schemes are developed and managed by third parties.

The Global Eco-labelling Network (GEN) is a global platform for eco-labels. GEN lists around 25 different eco-labels of the Type I category at different stages of development.<sup>3</sup> Both the developed

and the developing countries have active labelling programmes, with some like Sweden having more than one. The labels chosen for comparison of criteria in this study also fall in the Type I category. The eco-label is awarded for environmental leadership in the respective product category and restricted to the top 10 to 20 percent products of the market. Rigorous testing and verification methods are followed to ensure the product's compliance with criteria requirements of the labels. The criteria are periodically revised upwards to raise the environmental bar. The awarding agency periodically reviews the label-worthiness of the labelled products.

*The eco-label is awarded for environmental leadership in the respective product category and restricted to the top 10 to 20 percent products of the market*

Eco-labelling is considered to be a rather effective tool of conservation, as it regulates the production and the use of environmentally harmful commodities and tries to deal with environmental problems at their source. While achieving better environmental criteria requirements of the labels, the production process achieves higher standards in environment friendliness and sets benchmarks for future production and development of standards. Moreover, eco-labels generally set high standards on the quality of the product as well.

The key difference between voluntary and mandatory labels is that voluntary labelling is a form of product differentiation based on the production process and/or product characteristics. It allows the sale of both labelled and unlabelled products in the market. In principle, producers can choose whether or not to participate in such a programme. Whereas, mandatory labelling does not allow products without eco-labels to be sold. Thus, all producers must meet certification requirement for access to the market. In effect, mandatory eco-labels are nothing but mandatory environmental standards that might become trade-preventive. Similarly, voluntary labels could also become necessary conditions for entry to markets, under certain conditions.<sup>4</sup>

The main objective of this paper is to examine two issues: (i) whether, in principle, eco-labels (voluntary or mandatory) meet their primary rationale, namely, environmental protection, and (ii) whether eco-labels should be harmonised across the countries in the context of goods that are traded internationally.

*Voluntary labelling allows the sale of both labelled and unlabelled products in the market. In principle, producers can choose whether or not to participate in such a programme. Whereas, mandatory labelling does not allow products without eco-labels to be sold*

The plan of the paper is as follows. Section 2 presents a theoretical critique of eco-labelling and argues that eco-labels, in principle, can result in perverse environmental outcomes. Section 3 focuses on the second objective by making a conceptual case against harmonisation of eco-labels, and shows how it can be more useful for the protection of domestic producers than of the environment. In section 4, we trace the functioning of eco-labelling schemes in different countries. We compare the definition of the products and the criteria requirements of three products across different schemes to make the case that eco-labelling criteria can, and do, vary across schemes/countries. Section 5 presents an analysis of the conditions needed for the success of eco-labels. The final section refutes the utility of practices like mutual recognition and equivalency agreements, recommended for smoothening the process of harmonisation and concludes the arguments of the study.

## 2

# Does Eco-labelling Work? Conceptual Issues

*Proponents of eco-labelling argue that such measures help the environment. Though, the mechanism by which this happens is not clear*

Proponents of eco-labelling argue that such measures help the environment.<sup>5</sup> Though, the mechanism by which this happens is not clear. One line of reasoning is that certification for eco-labels necessarily improves the firm level operations and thereby improves global ecosystem health. In other words, eco-labels work on the supply side directly by making firms adopt better environmental practices<sup>6</sup>. Another channel in which eco-labelling could benefit the environment is through its effect on demand. It is argued, eco-labels enable environmentally conscious consumers to discriminate between products, leading to a reduction in demand, and hence reduction in output of products that are not eco-friendly. By corollary, an eco-label should create an additional demand for the labelled product and create a price premium for that item in the market. As a result, the labelling programme could make the production of the eco-labelled product more competitive *vis-à-vis* conventionally produced items and increase the supply of the labelled item.

There are several conceptual problems with either line of thinking. On the supply side argument a critical problem is that it focuses only on firms/sectors that come under the purview of such programmes. Thus, in taking what is essentially a partial equilibrium approach, they ignore impacts of these certification programmes on other sectors of the economy. Specifically, an important paper by Swallow and Sedjo<sup>7</sup> (henceforth SS), uses a general equilibrium framework to examine feedback effects of certification programmes that could result in undesirable environmental side effects.

*...an important paper by Swallow and Sedjo uses a general equilibrium framework to examine feedback effects of certification programmes that could result in undesirable environmental side effects*

The example SS consider is of mandatory certification of wood products that all wood producers must meet in order to access the consumer market<sup>8</sup>. They treat land as input in wood production, but land can also be put to other uses, such as intensive agriculture or even be left idle. In fact, land ( $L$ ) is the only factor of production in the simple stylised model of the economy used by SS. This economy produces wood ( $W$ ) and all other goods (denoted generically as  $Y$ ). Thus, demand for land is a derived demand (that is, it depends on the amount of  $W$  and  $Y$  produced). Finally, there are two types of consumers in the economy—‘eco-consumers’ ( $C$ ) who are willing to pay a premium for eco-labelled wood, so that, other things being equal, labelling will increase their demand for wood products, and consumers who remain unconcerned about forest management practices ( $NC$ ). A key theoretical result of SS is that

certification requirement for wood products drives up the price of wood and results in a reallocation of consumer spending from wood to other products<sup>9</sup>. A possible outcome here is that the derived demand for land shifts in such a way to result an increase in the land allocated to produce *Y* and a net decrease in land allocated to forestry (*W*). It is also possible that hitherto idle (perhaps pristine) land could also be brought into the production of *Y*. In sum, SS conclude “this example raises doubts that market changes from certification will led to large-scale ecological improvements *unequivocally*”<sup>10</sup> (emphasis added). Further, “the case illustrated...raises the possibility that eco-labelling *instigates market feedback* that cause the economy to reallocate land from forestry, or from ‘idle’, to production of other goods”<sup>11</sup> (emphasis added).

*A possible outcome here is that the derived demand for land shifts in such a way to result an increase in the land allocated to produce Y and a net decrease in land allocated to forestry (W). It is also possible that hitherto idle (perhaps pristine) land could also be brought into the production of Y*

It is important to note that SS do not assert that such an outcome will necessarily follow. They merely highlight the possibility of this occurring and argue (correctly) that proponents of eco-labelling should be prepared for such feedback effects. The policy implication of the SS paper is that these proponents may need to consider policies to address the potential side effects of market feedback. Otherwise, they may be disappointed if eco-labelling became a stimulus to convert more forest land to intensive agriculture (in regions where that is the competing land use). To re-emphasise the basic point of SS, partial equilibrium analysis (in contrast to general equilibrium) ignore the fact that improvements on certified forestlands could be accompanied by ecological losses of land in exiting forestry or entering the intensive economy anew (from idle status).

It should also be noted that the point made by SS applies quite generally beyond the example they construct. For instance, in the context of linking trade and labour standards, a similar argument can be made. Measures that require certification of products as labour-friendly could divert production away from these goods towards goods that also use labour but do not enter the trading system (implying thereby that trade-mandated labour standards do not apply to them). Along the lines of SS, it may be possible to show that in a general equilibrium setting, labour certification measures could actually be welfare reducing.

### 3

## Eco-labels: Another Brick in the Barrier Wall?

*...there is really no theoretically sound case for harmonisation demands that WTO should allow importing countries to countervail 'social' dumping*

In the context of international trade, mandatory certification of a product as eco-friendly (that is, mandatory eco-labelling in order to gain market access) is nothing but a mandatory environmental standard<sup>12</sup>. Therefore, any move towards harmonisation of eco-labelling schemes across countries is simply another name for harmonising environmental standards across these same countries. Ironically, this process could create disharmony in inter-state relationship, rather than harmony, as it overlooks the differences in the basic environmental preferences of different countries and their ability to afford them. By corollary, the same case can be made against mandatory eco-labelling, as that against harmonisation of environmental (and labour) standards, as a prerequisite for trade – the demand for so-called “fair trade before free trade”<sup>13</sup>.

Much has been written against harmonisation of environmental standards, or broadly against linking trade with environmental concerns. We do not repeat those arguments here but merely summarise the key points<sup>14</sup>. To begin with, there is really no theoretically sound case for harmonisation demands that WTO should allow importing countries to countervail ‘social’ dumping. This argument is what Bhagwati and Srinivasan call *CCII (cross-country-intra-industry) harmonisation of tax burdens*.

The CCII argument goes something as follows: suppose the same industry, in two countries that trade with each other, faces different pollution tax burdens, then the one with the lower tax has a competitive advantage, which must be neutralised. Bhagwati and Srinivasan term this argument fallacious for at least two reasons.

*...the consequences of differing environmental preferences cannot be imposed on trading partners. In this way, harmonisation is neither necessary nor desirable for trade to take place*

First, the diversity in CCII environmental standards (hence pollution taxes) follows logically from differences in trade-offs between pollution and income at different levels of income. Objecting to losing competitive advantage in an industry when a country places a larger negative value on a certain kind of pollution, whereas others do not, is to object to the larger negative valuation itself. In other words, the consequences of differing environmental preferences cannot be imposed on trading partners. In this way, harmonisation is neither necessary nor desirable for trade to take place.

The second reason has to do with the concept of absolute versus comparative advantage as a basis for international trade. For this reason, CCII differences across countries do not make all

industries in a country worse off, but only those that have a higher CCII burden in a comparative sense<sup>15</sup>.

Moreover, when imported products attempt to obtain eco-labels (whether mandatory or voluntary) in developed countries, they might discover 'rules of the game' rigged against them. Therefore, even though, in principle, the eco-labelling programmes in rich countries are open to both domestic and foreign suppliers, as Lohani and Ghosh<sup>16</sup> point out, it is still possible that eco-labelling criteria, methodologies, and certification procedures could be applied in a manner that denies or impedes market access to the products of developing countries. They list a number of reasons in which developed country eco-labelling schemes might end up being discriminatory to developing countries:

*Eco-labelling tends to be based on domestic environmental priorities and technologies in the importing country and may overlook acceptable products and manufacturing processes in the country of production...*

- (i) selection of product categories for eco-labelling may be easily guided by industry interests and consumer preferences in the importing country<sup>17</sup>;
- (ii) selection of labelling criteria and thresholds may be so narrow that they may actually mandate a particular technology or a particular production process that the local producers have exclusive access to;
- (iii) plant level inspection may not be viable or feasible in developing countries with extensive small-scale, dispersed and informal manufacturing; and
- (iv) packaging and recycling requirements could be prohibitively expensive and act as exclusionary mechanisms.

We elaborate on these and other points below:

Eco-labelling tends to be based on domestic environmental priorities and technologies in the importing country and may overlook acceptable products and manufacturing processes in the country of production. Eco-labelling criteria often lack flexibility to reflect relevant local environmental conditions and priorities in the country of production, for the obvious reason that the criteria development process is intrinsically a domestic one. On that account, technologies, which have been developed to deal with pollutants that are important in the importing country, but less important in the country of production, would need to be imported if a firm wishes to qualify for a label.

*Eco-labelling criteria often lack flexibility to reflect relevant local environmental conditions and priorities in the country of production, for the obvious reason that the criteria development process is intrinsically a domestic one*

Though the criteria for granting labels are the same for domestic and foreign suppliers, certain administrative procedures, such as plant inspection, may, in practice, imply differences in treatment. Domestic producers can more easily influence the development and implementation of national eco-labelling programmes. The argument that eco-labels could foster domestic industry bias is justified to an extent by the domestic industry participation in standardisation in the developed countries. Besides inputs during the criteria development stages, domestic manufacturers often invent environment friendly products and apply for labels in new product categories. For example, in Canada and Germany, it is said, more than 70 percent of the proposals for new product categories originate from the domestic industry, even though, in principle, anybody can apply for a standard.<sup>18</sup> This leverage for

the domestic industry in setting standards goes a long way in deciding criteria, which are sometimes be specific to one manufacturer and could lead to a virtual monopoly on the product sold or technology or both, in that particular product category.

*.....certain aspects of eco-labelling, such as the cradle-to-grave approach, add to its potentially discriminatory effects, in particular against producers in developing countries*

The 'cradle-to-grave' approach that considers, *inter alia*, production processes and methods as well as raw material use, may discriminate against developing countries, as they may be primary product exporters and may not use 'clean' production processes in the sense that developed country manufacturers apply them. In any case, 'clean' processes and products are a matter of definition that may in turn be driven by the processes, which are used domestically. Further, this approach demands systematic maintenance of the records of the production process and data on use of raw materials. In a country like India, where the production process is scattered across different states that are of the size of some of the developed countries, maintaining the records will be a Herculean task for the producers of finished product. The workers have to be trained in maintaining records and the collection of data. This could result in unemployment amongst the low-skilled labourers.

Two other factors also may have an impact on the competitiveness of products. First, the fact that in most schemes only a small proportion of products are able to comply with the labelling criteria implies that in a number of cases, developing countries will not be competitive enough to qualify for the label. As was stated above, the selection of criteria and thresholds may be so narrow that it may actually mandate a particular technology or production process. Secondly, the idea behind some eco-labelling schemes is not to provide a premium (through a higher price), but to keep labelled and non-labelled products at the same price to encourage the demand for the product. It is hoped that an increase in the market share of labelled products will compensate for the higher costs incurred in obtaining an eco-label. On the contrary, for developing countries, costs of compliance relative to developed countries are likely to be higher, and, for this reason, it may be more difficult to recover them. Additionally, testing procedures may also adversely affect the competitiveness of exports originating in developing countries.

*Environmental impacts of pollution may differ widely across countries, so also their preparedness in the form of environmental infrastructure, like municipal water treatment plants, solid waste treatment plants, and recycling stations*

To some extent, difficulties encountered by foreign suppliers in obtaining an eco-label represent the normal disadvantages of the exporter versus the domestic producer. Nevertheless, certain aspects of eco-labelling, such as the cradle-to-grave approach, add to its potentially discriminatory effects, in particular against producers in developing countries. Ensuring supplies of chemicals and other materials, which are acceptable for use in eco-labelled products and maintaining the records of their use may be difficult for foreign producers in developing countries. Foreign suppliers of inputs to eco-labelled products may also be discriminated against.

Environmental impacts of pollution may differ widely across countries, so also their preparedness in the form of environmental infrastructure, like municipal water treatment plants, solid waste treatment plants, and recycling stations. Certain parameters used

to calculate the environmental impacts of products throughout their life cycles may be based on the information collected in the importing country or countries with comparable environmental conditions, and may overestimate environmental impacts in the country of production. For example, parameters used to estimate the energy used in the manufacturing of products might not reflect the conditions in the country of production.

*Eco-labels do not just cater to a market for the labelled product but create markets for eco-friendly technologies, materials and expertise as well. This market creation is for both the process of production of the labelled product and testing and verification procedures needed to ensure the label worthiness of the particular product*

Differing environmental standards across countries reflect contrasting domestic environmental conditions as well. Countries that face or have faced grave environmental problems tend to have stricter or higher environmental standards or are in need of such standards. Countries with lower environmental damage could rightly opt for standards that suit their policies and needs.

Eco-labels do not just cater to a market for the labelled product but create markets for eco-friendly technologies, materials and expertise as well. This market creation is for both the process of production of the labelled product and testing and verification procedures needed to ensure the label worthiness of the particular product. Like this, the eco-labels could be used to create a demand for the domestic environment industry, which is a fast growing sector in many developed countries. Many of the labels specify only those raw materials that are available in the domestic markets as environment friendly and insist on their use as a part of criteria requirement. It will be illogical to expect standardisation agencies in any particular country to be aware of and accept all the environment friendly production techniques in operation all over the world. Similarly, the producers cannot be expected to know all the environment problems of the country they just want to export to, especially when their product will not have any role in creating those problems. It will be unfair on them if the importing country insists that only a few of the production processes are acceptable, because it is not aware of any alternative eco-friendly production method.

The problems for foreign exporters can be exacerbated when the labelling schemes are supported by the procurement policies of the governments of importing countries. For example, government purchasing rules may specify that only those products that sport particular domestic labels may be eligible for tender as an incentive measure for eco-labelled products. Increasingly, governments are using moral suasion and procurement programmes to enhance the use of products, which sport domestic eco-labels.

*The problems for foreign exporters can be exacerbated when the labelling schemes are supported by the procurement policies of the governments of importing countries*

So far our discussion centred largely on the impact of mandatory labels; let us now see how different the voluntary labels are.

### **3.1 Are Voluntary Eco-labels Really Voluntary?**

We now turn to an examination of voluntary eco-labelling, that is, situations where both labelled and unlabelled products can be sold in the market. As indicated at the beginning, voluntary labelling is, *de facto*, a method of product differentiation. It is a means by which eco-conscious consumers can make informed choices in the market and, perhaps, pay a premium for labelled products. This



situation is said to be an improvement over mandatory eco-labelling. But the following analysis tries to dispute this claim and shows that the improvement will be marginal, or nil, depending on the nature of the markets and the relationship between the exporter and the importer.

*The experiences of the exporters show that voluntary labels could become mandatory in effect. On most occasions, the importers in the developed countries insist that the imported products sport eco-labels of their countries*

Most of the eco-labels currently in operation are voluntary, i.e. there is no compulsion on the exporters to sport the label. In theory, this will not be trade restrictive. The experiences of the exporters show that voluntary labels could become mandatory in effect. On most occasions, the importers in the developed countries insist that the imported products sport eco-labels of their countries. This may be because of requirements in the government procurement policies of the importing country as mentioned earlier. This is a difficult situation for the developing country exporter to deal with. She/he has no choice but to comply or forget the deal. In some instances, the importers use this as a measure of bargaining as well. The exporters often seal the deal by reducing the price, with out going for the label.

On the contrary, in many instances when the exporters have got their products labelled, the importers in the developed countries have helped them in meeting the demands of the label, by way of technical and logistical assistance. The small and medium scale enterprise (SMEs) exporters have generally labelled their products on the insistence and with the support of the their importers abroad. In that sense, the producers' freedom of choice as espoused by the voluntary labels is non-existent.

Even if the producer voluntarily decides to apply for the label, his freedom of choice is limited whether to apply for the label or not. On the processes of production or materials used, the labels are not voluntary. Eco-labels in general have strict criteria requirements that are often mandatory or seldom allow choice on these counts even if eco-friendly alternatives exist.

*Different labels require different criteria to be met, which demand different technologies and equipment; and consume much time in the process of testing and verification even if the variations in criteria are minor*

For the SME exporters, this situation could inhibit their growth prospects and entry to multiple markets. Different labels require different criteria to be met, which demand different technologies and equipment; and consume much time in the process of testing and verification even if the variations in criteria are minor. The producer may have to accede to more than one label if she/he intends to export to markets with different labels. This could lead to a situation in which the exporter could be tied to one market/ one client, making her/him vulnerable to the changes in that market or be forced to accept all the demands of their importers.

### **3.2 Eco-labels as Non-tariff Barriers to Trade**

Several international trade organisations are investigating whether eco-labelling has the potential to constitute a non-tariff barrier to trade. This concern comes from both international trade and business organisations, such as the International Chamber of Commerce, and from some less developed countries fearing that eco-labelling could be used as a barrier against their exports. The major trade issues are:

- (i) whether there is equal access for domestic and foreign companies to carry eco-labels;
- (ii) whether programme development is open and transparent for both domestic and foreign stakeholders (interested parties). This includes foreign participation in any criteria development and review process and foreign input to the related public consultations;
- (iii) whether the criteria development has given undue attention to the demands of the local producers or insist on the use of materials or technology that is not readily accessible to the foreign producers; and
- (iv) whether there is insistence that 'all imports' should comply with eco-labels, rather than 'all goods sold' within the country.

*An OECD study has expressed concern that eco-labelling in many developed countries may not be sufficiently transparent, as decision-making on the final eco-label criteria is generally not open to outside participation*

Criteria or requirements that relate to the manufacturing process but which have no impact at the product use or disposal stages are referred to, in WTO parlance, as requirements arising from Non-product Related Production and Process Methods (NPR-PPMs). In an environmental context, NPR-PPMs normally refer to situations where the environmental damage caused by the production and process methods is not transmitted by the product itself. However, environmental effects for foreign countries even in the case of NPR-PPMs may occur as a result of trans-boundary pollution (regional impact), through effects on shared living resources (migratory species), by atmospheric or oceanic alterations (global impacts such as ozone depletion or climatic change), or by direct impact on the local environment of the exporting country.

Many countries are experiencing rapid economic growth and industrialisation and the environmental damage that can accompany such growth. Meanwhile, subsistence agriculture and traditional crafts remain important employment sectors of their societies. As the economies of these countries grow and compete for markets on a global scale, eco-labelling is frequently seen as a potential barrier to trade or as a way certain countries can impose their own standards beyond their national boundaries. An OECD study has expressed concern that eco-labelling in many developed countries may not be sufficiently transparent, as decision-making on the final eco-label criteria is generally not open to outside participation.<sup>19</sup> Further, the criteria may not be based on objective and scientific considerations; and that procedure for verification can be costly and time consuming. There is criticism that importing countries unilaterally determine criteria on production processes for products, which are principally produced in developing countries and whose negative environmental impacts during use or disposal are nil or marginal.

*International co-operation could make eco-labelling more useful as an instrument to promote the production of environmentally preferable products and use of environmentally sound technologies in developing countries*

International co-operation could make eco-labelling more useful as an instrument to promote the production of environmentally preferable products and use of environmentally sound technologies in developing countries. Indeed, a number of developing countries themselves are initiating or have initiated eco-labelling programmes. At the same time, greater attention is being paid to the possible benefits of eco-labelling as a means of maintaining or increasing market share, as a route to capturing new niche markets, and as a way to ease some domestic environmental problems through increased consumer awareness.

*Exporters in developing countries must consider a number of key factors before deciding to apply for an eco-label in a developed country. They may not have the resources to cover the costs of testing, verification, and plant inspection and certification procedures*

There is hardly any evidence in literature of deliberate use of eco-labels as non-tariff barriers (NTBs) to trade by foreign governments. Yet, there are instances of environment and health requirements (both voluntary and mandatory) in the developed countries resulting in loss of markets to developing country producers.<sup>20</sup> Though eco-labels are not currently barriers to trade, but may become so as they increasingly deal with products that are produced largely in the developing world. For example, strict criteria requirements for textiles and leather goods in some national eco-labelling programmes could have an impact on countries such as Bangladesh, Maldives, Laos and India producing those products.

Exporters in developing countries must consider a number of key factors before deciding to apply for an eco-label in a developed country. They may not have the resources to cover the costs of testing, verification, and plant inspection and certification procedures. Some of these procedures, such as monitoring residues of certain substances in textiles, often require the purchase of new equipment and demands considerable technical expertise. In addition, the existence of different requirements in different countries may make it necessary to modify processes, according to each market. An analysis of the costs and benefits of certification may well lead these producers to decide that it is not worth the costs involved.

### **3.3 Are Eco-labels Affordable?**

One of the prominent concerns with regard to eco-labels is that compliance with them is costly and can affect the competitiveness of the developing country exports. The following analysis shows that compliance with eco-labels can indeed be costly to developing country exporters, especially the SMEs.

*...the costs involved in mere application and use of label would be in the range of approximately US\$450 for the Blue Angel label and approximately US\$50,000 for the Nordic Swan label in Sweden*

There are wide disparities in the costs on application and use of labels across different labelling programmes as Table 1 shows. Nevertheless, the table does not show the entire compliance cost of obtaining and using the label, and therefore, does not reflect the actual burden on the producers who want to use the label. The actual cost of the labelling would include, among others, expenditure on heads like possible investments on equipments and technology, and even land, depending on the size of operation and the nature of the product. Further, the producers have to spend on environment friendly raw materials and intermediary goods that the criteria of the label require, and develop new supply chains of these goods. Additional expenditures on training the existing labourers on environmentally friendly methods, or even recruiting labour with new skills, will also have to be incurred.

In industries like textiles, where costs of materials and chemicals contribute to a major share of the final cost, the demands on newer and costly eco-friendly materials could spiral up the costs for the producers and affect the competitiveness of the final product.

Analysis of the chart shows that among the labels from the developed countries, with the exception of Taiwan, the costs involved in mere application and use of label would be in the range of approximately US\$450 for the Blue Angel label and approximately

**Table 1: Cost of Eco-labelling Programmes<sup>22</sup>**

Table 1: Cost of Eco-labelling Programmes <sup>22</sup>							
Programme/Country		Costs in Local Currency/US Dollars (rounded off) <sup>23</sup>					
		Application Charges	Annual License Fee (% of Sales of the labelled product)	Annual License Fee Limits		Compliance Costs (Materials, technology, testing and verification)	Other Charges
				Min.	Max.		
BLUE ANGEL Germany		•153.39 + VAT/ >US\$190	None	•178.95/ US\$221	•2,034.94/ US\$2,515	Extra	20% of Annual Charges towards fund for Advt. Marketing and PR
ECOLOGO Canada		None	Per licence basis	None		One time fee for testing and verification. Others extra	None
ECOMARK Japan		¥21,000/ US\$192	Not specified	Not specified		Extra	Not specified
NORDIC SWAN	Denmark	DKK 3,500/ US\$582	0.4%	Not Specified	DKK 250,000/ US\$41,559	Extra	None
	Finland	•2,000/ US\$2,472	0.4%	•675 /US\$834	•34,000 /US\$42,032	Extra	None
	Iceland	None	0.4%	None		Extra	None
	Norway	NOK 12,000/ US\$1,810	0.4%	NOK 10,000 /US\$1,509	NOK 300,000/ US\$45,258	Extra	None
	Sweden	SEK 18,000 / US\$2,452	0.3%	SEK 9,000/ US\$1,226	SEK 350,000/ US\$47,690	Extra	None
GREEN LABEL Thailand		THB 1,000/ US\$24		One time payment of THB 5,000/ US\$121 (for two years)		Extra	None
ENVIRONMENTAL LABELLING South Korea		None	Proportional to annual turn over	KRW 1,000,000/ US\$873	KRW 5,000,000/ US\$4,361	Extra	None
GREEN MARK Taiwan		TWD 2,000/ US\$59	None	None		Extra	None
ECOMARK India		INR 500/ US\$11	None	One time payment of INR 500/US\$11		Extra	None

US\$50,000 for the Nordic Swan label in Sweden<sup>21</sup>. Many of the developing country exporters may find the costs of application and compliance prohibitive.

On the other hand, labels in developing countries like India and Thailand charge low rates as application and licence fees. In the case of the Indian Ecomark, it is as low as US\$11 on each.

The analysis of costs raises an interesting point to ponder. Ironically, the Indian Ecomark label, which should have been very affordable to most of the producers, has an abysmal compliance record, with hardly any product sporting the logo in India or

elsewhere. Whereas labels with high compliance costs, like the Blue Angel and the Nordic Swan, have found wide acceptance and use even outside their regions. The possible explanation for this phenomenon could be that labels like the Blue Angel ensure high returns for producers who comply with them, in terms of higher prices and expanded markets, or they are inevitable for entry and operating in the market because of entry barrier concerns.

*The label's ability to improve environment quality is limited by the fact that labelling will ideally cover only a part of the market. This further complicates the valuation of the label's environmental effectiveness*

### **3.4 Environmental Effectiveness of Eco-labels**

The environmental effectiveness of eco-labelling in terms of improvements to the environment due to eco-labelling *per se* is difficult to evaluate. The label's ability to improve environment quality is limited by the fact that labelling will ideally cover only a part of the market. This further complicates the valuation of the label's environmental effectiveness. Anyhow, Economists consider trade measures to be poor tools for environment protection.<sup>24</sup> Environmental problems need environmental policy measures; and not application of trade measures that often have doubtful environmental utility.

Since measuring environmental benefits was difficult, consumer awareness regarding the label and environmental friendliness of the product is considered a better indicator of the environmental impact of the labels.<sup>25</sup> In a country with a high level of environmental awareness, such as Sweden, the level of consumer awareness about the eco-label is significant and there is a demand for eco-labelled products. The market presence and therefore, the visibility of eco-labelled products have contributed to the awareness of consumers. Eco-labels have also had an impact on the behaviour of manufacturers in specific product categories, such as detergents and cleaning agents. Indeed, manufacturers were forced to modify their products to obtain the eco-label criteria in order to keep their products in retail chains. From the perspective of eco-labelling programmes, the constant upward revision of environmental criteria is essential to ensure continuously improved environmental performance. In countries such as Germany, Canada and Japan, the level of consumer awareness of eco-labels seems to vary between 45 to 50 percent.

*In a country with a high level of environmental awareness, such as Sweden, the level of consumer awareness about the eco-label is significant and there is a demand for eco-labelled products*

In a study, carried out by the UNCTAD in 1995<sup>26</sup>, it was reported that a few years after the introduction of Blue Angel eco-labels for oil and gas heating appliances, emissions of sulphur dioxide, carbon monoxide, and nitrogen oxides were reduced by more than 30 per cent and the energy efficiency of these appliances improved significantly. Also, after the introduction of an eco-label, the market share of low-solvent paints and varnishes went up from 1 percent to 50 percent while the amount of solvents released into the environment were estimated to have been reduced by around 40,000 tons.

## 4

# Eco-Labeling: Cross-Country Case Studies

*In practice, eco-labelling programmes have proven to be more difficult to implement than anticipated. Specifically, problems have been encountered in the comprehensive assessment of the life cycle of the product and in establishing product categories that should be labelled*

We now move from normative analysis to an examination of actual eco-labelling schemes in various countries. We attempt a comparison of identical products across different schemes in different countries to make the point that there can, and should, be legitimate variations in eco-labelling criteria.

In practice, eco-labelling programmes have proven to be more difficult to implement than anticipated. Specifically, problems have been encountered in the comprehensive assessment of the life cycle of the product and in establishing product categories that should be labelled. It has also been realised that there are multiple trade-offs between various objectives in the schemes. In addition, the hope that these schemes may eventually become self-financing has not yet been realised. Despite these difficulties, environmental labelling programmes have grown and spread across several countries. Nevertheless, at present their role must be viewed as a modest one and as part of a broader environmental management policy.

*The guiding principle is that a label's award should reduce the environmental damages associated with a product category. This implies that the product category selected for eco-labelling should contain a number of similar products, some of which are relatively environmentally benign*

In this section we present a comparative analysis of eco-labelling schemes of Canada, Germany, Japan, India, Thailand, South Korea, Taiwan and the Nordic Swan based on a survey of literature and information received from several experts from various countries who responded to two sets of surveys<sup>27</sup>. (Appendix 1 traces the historical development of selected eco-labelling schemes in these countries.) We consider three products, namely, paper, batteries, and washing machines with a focus on the criteria used for labelling. We also review bottlenecks faced by eco-labelling programmes in different countries. The administrative support received by such eco-labelling programmes, including green procurement by governments is also commented upon.

Details of the schemes are shown in Tables 2 and 3.

### 4.1 Selection of Products

The guiding principle is that a label's award should reduce the environmental damages associated with a product category. This implies that the product category selected for eco-labelling should contain a number of similar products, some of which are relatively environmentally benign. Thus, when all products in a particular product class, such as household chemicals, pose significant environmental dangers, then this entire category of products is excluded from the labelling programme. Obviously, from an

Name	Year started	Government/Non-government	No. of product categories covered	No. of products awarded	Methodology	Awarding authority
Germany- BLUE ANGEL	1977	Government	88	3,355	Modified LCA- only looks at final impact	Federal Environmental Agency
Canada- ECOLOGO	1988	Quasi-government	50	3,000	LCA	Terra Choice Environmental Services Inc.
Japan- ECOMARK	1989	Quasi-government	68	4,647	LCA	Japan Environment Association
The Nordic Council- NORDIC SWAN	1989	Quasi-government	46	1,200	LCA	Nordic Eco-labelling Board
India- ECOMARK	1991	Government	16	3	LCA	Bureau of Indian Standards
Thailand- GREEN LABEL	1993	Quasi-government	31	187	LCA	Thailand Environmental Institute
South Korea- ENVIRONMENTAL LABELLING	1992	Government	79	319	Modified LCA	Korean Environmental Labelling Association
Taiwan- GREEN MARK	1992	Non-government	72	1058	LCA	Environment & Development Foundation

*LCA - life cycle assessment*

Name	Acceptance		
	Used in procurement	Used in retail sector	Used within industry sector
Germany - BLUE ANGEL	Voluntary	Yes	No
Canada – ECOLOGO	Voluntary	Yes	No
Japan – ECOMARK	Voluntary	Yes	No
The Nordic Council - NORDIC SWAN	Compulsory	Yes	No
India – ECOMARK	No	Yes	No
Thailand - GREEN LABEL	Unknown	Yes	No
South Korea - ENVIRONMENTAL LABELLING	Unknown	Yes	No
Taiwan - GREEN MARK	Will be compulsory in future	Yes	Yes

environmental point of view this is a serious shortcoming of eco-labelling schemes. Moreover, as a general rule, countries exclude from their labelling programmes products inherently dangerous to human health, or those, which represent a potential danger in the form of fire and explosion. No labelling programmes have considered food products or pharmaceuticals. Perhaps as these are already labelled for reasons other than their environmental attributes.

*...as a general rule, countries exclude from their labelling programmes products inherently dangerous to human health, or those, which represent a potential danger in the form of fire and explosion*

There are key philosophical differences between different labelling organisations. The Environmental Choice Programme of Canada develops criteria that will represent roughly the 'top' 20 percent of market supply for a particular product type under the belief that this approach is a more effective means to promoting genuine industry leadership and progress in the Canadian marketplace. They would not like to set strict limits on environmental parameters which may retard the industrial progress.

A study of different eco-labelling methods to define and compare environmental impacts shows that an approach to do the same has to contain a significant element of subjectivity. So, views about the nature and significance of various environmental impacts are more significant than strictly scientific principles. In fact, the criteria of the various eco-labelling schemes tend to differ substantially in terms of scope, means of presentation, choice of parameters, test methods, product group definitions etc. as to render comparisons difficult, or even impossible. And such difficulties vary from product group to product group.

Take the case of textiles. Major differences exist concerning product group definitions, choice of regulated parameters and test methods. The level of diversity of product groups and criteria makes comparisons difficult or even irrelevant at times. The textiles criteria are mainly based on non-product related process and production methods, as most of the environmental concerns are connected to the wet processing step of textile manufacturing. A few of the schemes have, however, set requirements only on the end product, rather than on the actual process. Putting focus on the end product is considered to be an approach to reduce the health impacts of the product, rather than environmental impacts. Significant divergence further exists in the schemes' view on the feasibility of including requirements concerning the use of pesticides in the fibre production, and in the view on chlorine bleaching.

*In fact, the criteria of the various eco-labelling schemes tend to differ substantially in terms of scope, means of presentation, choice of parameters, test methods, product group definitions etc.*

Take the case of laundry detergents. Even though the various product group definitions concerning laundry detergents are rather similar, a number of difficulties arise trying to compare various schemes. Existing methods for testing washing performance of laundry detergents are considered to be expensive and laborious, and it is difficult to agree on a common international standard to use. Further, countries that use sludge as a fertilizer, do not agree with the approach of those schemes, which put the use of chemicals that are absorbed to sludge during sewage treatment on an equal footage with readily bio-degradable substances. The main controversy, however, concerns the use of phosphate as a



detergent component. The contribution of phosphates to the problem of eutrophication differs between countries. Since the phosphatic issue is connected to the use phase of the product, it is reasonable that the product should fulfil the requirements based on the conditions of the country where it is supposed to be used.

*While various countries attempt to develop eco-labelling standards based on ground realities in their respective countries, it is worth exploring whether harmonisation of standards of all or some of the countries is feasible or not*

Similar problems exist in other product groups. The difference is only in the degree of difficulty. While various countries attempt to develop eco-labelling standards based on ground realities in their respective countries, it is worth exploring whether harmonisation of standards of all or some of the countries is feasible or not. We look at three product categories – batteries, paper and washing machines. We selected these three products primarily because of their coverage in the labelling schemes that we considered. For instance, criteria for paper have been set by all the eight labelling organisations. For batteries and washing machines, all but two organisations have set standards.

The criteria for rechargeable and non-rechargeable batteries are the ones that display the highest degree of similarity between the various schemes, since the environmental impacts of heavy metals, which are considered to be the main environmental concern connected to batteries, are considered to be virtually independent of geographical location.

The main controversy regarding the criteria for paper concerns the different views on the use of recycled paper as a raw material. The existing differences in the requirements on the share of recycled paper in the product reflect different environmental priorities and conditions of the countries where the criteria have been developed. Countries that are net importers of paper and where waste management issues are given a high priority, tend naturally to put a much stronger emphasis on a high degree of recycled content than countries which are net exporters of paper.

*We look at three product categories - batteries, paper and washing machines. We selected these three products primarily because of their coverage in the labelling schemes that we considered*

In the case of washing machines, the requirements on energy and water consumption are central in all criteria. The schemes have, nonetheless, developed the criteria with respect to one of the main types of washing machines, top loaded or front-loaded. As a consequence, requirements are often not comparable, as a top-loaded machine uses typically much more water but also less energy, than a front-loaded machine. The latter uses, in turn, less detergent, as it relies more on mechanical cleaning rather than on chemicals.

## **4.2 Batteries**

Tables 4 and 5 provide a comparative position of different eco-labelling schemes for batteries.

The eco-labelling criteria for batteries have been divided into two sub-groups: non-rechargeable and rechargeable batteries. The dominating concern in case of non-rechargeable batteries is the heavy metal content of the battery like mercury, cadmium and lead. The main objective of criteria for rechargeable batteries is generally to promote alternatives to the environmentally hazardous nickel cadmium batteries.

Country	Product group definition	Product content criteria
Canada	Specialty batteries like zinc-air batteries	<ul style="list-style-type: none"> <li>• Zinc-air batteries must not contain mercury more than 40 mg/Ah rating</li> </ul>
Germany (product group 1)	Zinc-air batteries	<ul style="list-style-type: none"> <li>• The mercury content shall not exceed 60 mg/Ah</li> <li>• Should not contain substances (mercury excluded) which are listed in Annex 1 to Directive 67/548/EEC</li> </ul>
Germany (product group 2)	Lithium batteries	<ul style="list-style-type: none"> <li>• Should contain neither mercury nor cadmium</li> <li>• Should not contain substances which are listed in Annex 1 to Directive 67/548/EEC</li> </ul>
India	Dry cell batteries (non-rechargeable)	<ul style="list-style-type: none"> <li>• The amount of mercury shall not exceed 0.005 percent by weight</li> </ul>
Nordic countries	Primary batteries like domestic batteries	<ul style="list-style-type: none"> <li>• A round battery may contain impurities amounting to a maximum of 1 ppm of mercury and 1 ppm of cadmium, and a button cell may contain a maximum of 1 ppm of mercury</li> </ul>
Taiwan	Mercury-free batteries	<ul style="list-style-type: none"> <li>• The product shall not contain cadmium, mercury or other major hazardous substances</li> </ul>
Thailand	No mercury-added dry cell batteries	<ul style="list-style-type: none"> <li>• The product shall not be formulated or manufactured by adding mercury</li> </ul>

Country	Round batteries		Button cells	
	Zinc-carbon	Alkaline	Zinc-air	Lithium
Canada			✓	
Germany (product group 1)			✓	
Germany (product group 2)				✓
India	✓	✓		✓
Nordic countries	✓	✓		✓
Taiwan	✓	✓		✓
Thailand	✓	✓		

On comparative analysis it can be observed that various schemes differ in product definition, product content criteria and end-of-life management. For example, while Germany includes zinc-air and lithium batteries in the definition of non-rechargeable batteries, India considers dry cell batteries in this category. Regarding the collection of used batteries, the German scheme suggests requesting the applicant to treat batteries in accordance with the agreement

on recovery and utilisation of used mercury oxide batteries, set up between the industry and the Government Ministry. But the Indian Ecomark specifies that the manufacturers have to organise a collection payback system for used batteries.

*On comparative analysis it can be observed that various schemes differ in product definition, product content criteria and end-of-life management*

In Canada, while elimination of mercury from batteries is made desirable, its use may remain necessary in certain applications (e.g. hearing aids and pacemakers). If industry leaders in battery manufacture are, anyhow, able to limit the use of mercury to 40 mg/Ah, they are awarded EcoLogo. When a sufficient number of companies are able to meet the original criteria (i.e. over 20 percent), the guideline is reviewed with the aim of 'raising the bar'.

In Japan, no criteria have been set for batteries themselves. They have standards for Solar battery and Solar powered clock or watch. As per the standards, no battery shall contain cadmium, lead, mercury or any compound thereof. In fact, mercury is a hazardous substance, but the tolerance level of such a toxic substance in a country depends on the environmental loading of that country. In Taiwan, for example, the detection limits in batteries are 10 ppm for cadmium and 0.25 ppm for mercury.

In conclusion, it can be said that the scope and complexity of the battery criteria differ to some extent between the various eco-labelling schemes. The main concern of all the eco-labelling schemes is to regulate the heavy metal content of the batteries. Requirements on Processes and Production Methods (PPMs) used in the manufacturing of non-rechargeable batteries are not included by any of the schemes.

The use of mercury in non-rechargeable batteries is excluded or limited by all of the schemes, while a few of the schemes have put restrictions also on the use of cadmium and lead. Quantities of mercury expressed in PPM are too small to be useful to add to the battery, thus what is allowed are only trace elements occurring in the raw materials used. The differences in PPM levels set might be possible to trace back to practical issues of measuring the amount of heavy metals.

*The main concern of all the eco-labelling schemes is to regulate the heavy metal content of the batteries*

Only button cells of the lithium type are currently able to fulfil the requirement that the battery should be free from mercury. The Canadian and German schemes allow, however, for zinc-air button cells to be labelled, in order to promote an alternative to the mercury oxide button cells for special applications. Zinc-air batteries contain approximately 1 percent of mercury. Zinc-air batteries are still considered as the environmentally preferred alternative to mercury oxide batteries, for applications such as hearing aids (mercury oxide batteries could contain up to 30 percent of mercury). Most of the schemes have, in contrast, chosen to promote mercury-free batteries across the whole range of non-rechargeable batteries, rather than to focus on guiding the consumer choice in categories of application where no or few mercury-free alternatives exist. The German and the Canadian approach to eco-labelling of non-rechargeable batteries represents thus a point of divergence compared to the remainder of the schemes.

*The criteria for both non-rechargeable and rechargeable batteries, in most of the cases, contain a quality requirement. Nevertheless, the view on test methods differs somewhat between the schemes...*

In the case of rechargeable batteries, mercury and cadmium are not allowed to occur other than in the form of trace elements. The differences in permitted levels of heavy metals set by the various schemes are not significant. Still, the somewhat peculiar observation is made that the Indian scheme does not exclude the use of cadmium in rechargeable batteries, which is notable, considering that eco-labelling criteria for rechargeable batteries generally aim to promote alternatives to nickel-cadmium batteries. The Canadian scheme is the only scheme, which has included a requirement on the manufacturing process for rechargeable batteries. The requirement excludes discharges of acutely lethal effluents or waste from the manufacturing process. The same level of criteria is, however, likely to be assured by the criteria of the other schemes, as this requirement would be covered by local regulations.

The criteria for both non-rechargeable and rechargeable batteries, in most of the cases, contain a quality requirement. Nevertheless, the view on test methods differs somewhat between the schemes, where some of the schemes have chosen not to specify any means of verification of compliance with the criteria. International standards for testing of battery performance exist and could be employed in the requirements of all the schemes. No international methods have, on the other hand, been developed for the testing of minute quantities of heavy metals.

The requirements made in the battery criteria are somewhat comparable and of similar stringency. The environmental impacts related to the highly standardised production of batteries are mainly connected to the use of heavy metals in the product, and thus, no PPM related requirements are made. Further, the environmental impact of heavy metals is generally considered to be virtually independent of geographical location. The points of divergence are, of course, the acceptance of a common definition of the product group and an agreement on a method for testing of heavy metals.

### 4.3 Paper

Tables 6 and 7 provide a comparison of different eco-labelling schemes for fine paper.

<b>Table 6: Fine Paper</b>	
Country	Product group definition
Canada	Office papers, envelopes, exercise and related papers made from recycled paper
Germany	Recycled paper products designated for those fields in which they can replace products made of primary fibres
India	Paper
Japan	Recycled paper for printing and office use, stationery and packaging
Korea	Printing and stationery papers
Taiwan	Office use automation papers from recycled paper
Thailand	Printing, writing, stationery and packaging papers
Nordic countries	Printing paper without a ground wood content for printing, writing and copying plus self-copying papers

**Table 7: Raw Materials Requirements in Fine Paper**

Country	Minimum requirement on recycled content	Other requirements
Canada		Products are assessed on a load-point system that requires consideration of several aspects of production (resource consumption, energy consumption, creation of solid waste and the toxicity and COD of production effluent). An appropriate balance of these parameters is required. For example, less recycled content may be compensated by extremely good energy efficiency.
Germany	100 percent recycled paper	Minimum 51 percent low-medium-Kraft and special grade papers
India	60 percent from materials other than bamboo, hard woods, soft woods and reed 100 percent recycled waste paper for products sold as recycled paper 70 percent recycled paper for printing paper	
Japan	70-100 percent recycled paper for office use paper 50-70 percent recycled paper for paper stationery 50-60 percent recycled paper for newsprint paper	
Korea	20-50 percent recycled paper for medium-Kraft 20-50 percent recycled paper for stationery paper	
Taiwan	Different recycled content for office use automation paper, stationery paper, writing paper and packaging paper	
Thailand	50-100 percent recycled paper for packaging paper 100 percent recycled paper for recycled printing paper	
Nordic countries	No requirement of a minimum quantity	Fibre raw material specified for printing, tissue and packaging papers.

*Criteria for paper products have often been among the first criteria to be developed in many schemes, and have, therefore, in a number of cases already gone through several revisions*

Criteria for paper products have been developed by almost all the schemes. Criteria for paper products have often been among the first criteria to be developed in many schemes, and have, therefore, in a number of cases already gone through several revisions. Throughout the different revisions, the schemes have often tested various ways of presenting criteria, and made changes in testing methods, content and stringency. As a consequence, one would expect paper criteria documents to be rather mature and that only minor change would be likely to occur. For some schemes, e.g. the German scheme, this seems to be true, but the majority of the schemes are still under development and major changes

are likely to take place also in the future. Particular areas where much controversy exists, but also where development is proceeding more rapidly than in other areas, is the type of criteria used (single requirements or load point equations), raw materials, energy, use of chemicals, and the choice of emission parameters.

Much variation also exists between the different schemes in regards to the product group definition. The product groups often differ in terms of the level of detail, the range of products included, and the exclusions of certain products from the group. Requirements on the recycled content are made already in the product group definition in some cases. Though different product groups for paper to a certain degree might relate to different functions, they largely depend on similar production technology and material.

*Much variation also exists between the different schemes in regards to the product group definition. The product groups often differ in terms of the level of detail, the range of products included, and the exclusions of certain products from the group*

Although development is taking place concerning how criteria are presented, there is considerable disunity between several of the schemes and the way they develop in this matter. From previously using single type criteria, several schemes have chosen to present the criteria in load point equations. The results have been varying. Some schemes have decided to give up the load point equations while others are committed to continue and expand the use of them. Several other schemes have decided not to try them at all. Unfortunately, the load point equation reduces the transparency and comparability between the criteria substantially. Primarily, because it makes the criteria incomparable to the single criteria documents, but also because the inherent qualities of the different types of equations are so different to each other that a comparison is impossible. The issue of how to present the criteria requirements is a fundamental one, and must be resolved before any harmonisation is possible. As of today, the two strands of schemes advocate their own way of presenting the criteria rather persistently.

Another related issue to be resolved is that what part of the paper producing process the criteria relates to. The schemes often establish what parameters shall be included, and what part of the process they shall relate to. This leads to incomparable criteria requirements. Also, to be resolved is the issue of testing methods and various definitions used in the criteria document. Waste paper is often defined differently among the various schemes, as well as the paper grades that shall be included in it. Testing methods are generally poorly outlined and reference is seldom given to international standards.

*Some schemes have decided to give up the load point equations while others are committed to continue and expand the use of them. Several other schemes have decided not to try them at all*

Although a fair amount of coherency exists, particularly for tissue paper, the requirements on recycled content of the raw material are indeed a controversial parameter. The schemes' requirements on recycled content often differ for fine and tissue paper. One reason is that the use of a large portion of waste paper in the case of tissue paper results in higher emissions than when used in making fine paper, as the requirements on the cleaning of waste material for tissue paper is higher.

*A requirement on a high-recycled content of the paper would have to rely on a substantial import of waste paper from countries, which are not exporters of paper, and the increase in transportation that would follow is considered to outweigh the environmental benefits of recycling the paper*

Although the criteria seem to develop towards more and higher requirements on the recycled content, there are still schemes that do not consider including such a requirement at all. The Nordic scheme excludes, for example, this type of requirement for tissue paper, as increased recycling is not considered to be feasible in the Nordic region. The share of waste paper being recycled is already high in this region. A requirement on a high-recycled content of the paper would have to rely on a substantial import of waste paper from countries, which are not exporters of paper, and the increase in transportation that would follow is considered to outweigh the environmental benefits of recycling the paper.

Originating from the same region, the Swedish Good Environmental Choice scheme argues the opposite and sets a requirement on the recycled content. Inclusion of requirements on recycled content has been justified by the need for increased recycling as well as for the fact that it results in a less hazardous production. Exclusion of the requirement has, on the other hand, been justified by arguments, such as, there is industry resistance to inclusion of the requirement and that virgin pulp is required for satisfactory product quality and performance. Another emerging requirement on raw material is that of sustainable management of forests. So far, such a requirement has only been included by a few schemes. But as more schemes are considering doing so, more consensus and standardisation in the area has been achieved lately. It is, though, difficult to find one common set of criteria for sustainable forestry, due to the differences in the conditions for forest management in various parts of the world.

Requirements on energy is an equally, or even more, disputed parameter among the different schemes. The difficulties associated with a scientific evaluation of the environmental qualities of the different energy sources, together with varying national energy policies, have in particular been identified as the reasons for requirements on energy being few and divergent. Although the development indicates that more schemes intend to include such requirements, there are still few schemes that have set any requirements concerning energy use. Most schemes have either avoided any energy-related requirements or chosen to place requirements on emissions related to energy production, such as CO<sub>2</sub>, NO<sub>x</sub> and sulphur.

*References in criteria to laws and regulations, as well as various national chemical lists, seriously reduce the transparency of the schemes*

Use of chemicals and emissions resulting from the pulp and paper production is yet another complex area for comparisons. References in criteria to laws and regulations, as well as various national chemical lists, seriously reduce the transparency of the schemes. In this respect more effort is needed by the individual schemes in order to clarify in detail what the criteria actually prohibit. Among the regulated chemicals, consensus has been achieved concerning requirements on chlorinated organic substances. It is, however, interesting to note that although the majority of the schemes prohibit the use of chlorine bleaching, there are schemes that do not see this as necessary. The view on chlorine bleaching is also related to what type of pulp is commonly used within the paper industry of a particular region, as some pulps are easier to bleach than others are and thus require less addition of bleaching agents.

Sulphite pulp is such a pulp, which is commonly used in Germany, but it also has the disadvantages of giving high emissions of sulphur, being resource intensive, and producing paper of lower quality. Similar conflicts apply to several other chemical substances used in the production.

*Although the emission parameters generally suffer from disunity of testing methods between the different schemes, there is some consensus on what parameters shall be included among the schemes that list concrete requirements on emission parameters*

Although the emission parameters generally suffer from disunity of testing methods between the different schemes, there is some consensus on what parameters shall be included among the schemes that list concrete requirements on emission parameters. COD, sulphur and AOX are included in most emission requirements, and the latter is often regulated indirectly by the limits for the use of chlorine bleaching. Concerning other parameters, there seems to be an emerging trend to include NOX and phosphorous emissions. This is often done as a response to the difficulties associated with establishing energy requirements. Requirements concerning production and process related measures prevail, even though some schemes lack such criteria. In some countries, access to industry data on process, emissions, etc., is very limited and as a consequence the criteria tend to become more product oriented. Most of these schemes also set requirements on recycled content, which indirectly regulate many of the production process related parameters.

In Canada while load-point system as mentioned earlier is used, the formula applied to the load-point calculations were determined after an extensive review of what would realistically represent the top 20 percent in the Canadian paper market.

In Japan for paper products, a minimum of 50 percent-recycled content is set in order to keep quality. They do not include non-pulp fibre such as kenaf in their criteria because environmental impact of such plants is not clear yet in Japan. But, in Nordic scheme, there is fibre input restriction. In Nordic Swan criteria of "Printed paper 044/203", it is said that at least 50 percent of the fibre raw material in the paper must be return fibre or fibre raw material from sawdust/cutter chipping and waste wood from saw mill operations.

In South Korea the recycled content in paper has been set depending on the usage of paper products corresponding to the industrial situation and policy of the country.

*Most of these schemes also set requirements on recycled content, which indirectly regulate many of the production process related parameters*

The view from Taiwan is that the reason why the recycled content varies is mainly because different types of paper products need different fibre strengths. The longer the fibre, the stronger the fibre strength. The fibre strength will be shortened each time the paper product is recycled and paper fibre can be recycled only seven times. So, office automation papers, which need to be strong, will have less recycled paper pulp added to virgin pulp. For sanitary papers almost 100 percent recycled paper pulp can be used. Other reasons for differing recycled content are prices of virgin and recycled pulps, technology to recycle paper, scale of recycled paper industry and the attitude of general consumers to accept recycled paper.



*In Nordic Swan scheme there are no requirements on a minimum quantity of recycled paper in any of the criteria documents. The reason for this is that the Nordic countries are net producers of virgin fibres*

In Nordic Swan scheme there are no requirements on a minimum quantity of recycled paper in any of the criteria documents. The reason for this is that the Nordic countries are net producers of virgin fibres. The amount of recycled fibres collected from the market is already the highest in the Nordic countries compared to the other European countries. All the recycled papers collected are used in the manufacturing of newsprint, packaging paper and tissue and especially in Sweden the companies are importing recycled fibres. When the criteria documents were developed the conclusion was therefore that there was no need of requirements of a minimum quantity of recycled fibres. Other factors already took care of the usage of recycled fibres. Pulp and paper production uses a lot of chemicals, energy and fibre raw material and has high emission. Therefore it is important in developing criteria to regard the whole paper making process and its impact on the environment instead of focusing only on the amount of recycled fibres used.

#### 4.4 Washing Machines

The following table provides a comparative position of different eco-labelling schemes.

<b>Table 8: Washing Machines</b>		
Country	Consumption requirements	
	Water	Energy
Canada	15 litres per kg of clothes	2.0 kWh per washing cycle
Germany	11 litres per kg of clothes	Max. 0.5 watt
Korea	For washing machines taking under 7 kg. of clothes, 28 litres per kg of wash load For washing machines taking over 7 kg of clothes, 25 litres per kg. of wash load	For washing machines taking under 7 kg of clothes, 23 kWh per kg of wash load For washing machines taking over 7 kg of clothes, 20 kWh per kg. of wash load
Nordic countries	32 litres per kg	0.35 kWh per kg.
Taiwan	30 litres per kg of wash load	0.04 kWh per kg. of wash load
Thailand	35 litres per kg of wash load	0.04 kWh per kg. of wash load

*The Nordic countries have abundance of water and do not have the same problem as they have in the southern part of Europe where they have to control the water consumption. So the Nordic Swan has specified a high level of water consumption*

In Canada, the leading conditions considered are the technological degree of industry and the degree of consumer expectations. In Japan, the establishment of criteria for washing machines has not been discussed in any depth because there has not been any proposal implying that the demand for EcoMark for washing machines is not strong yet. The Nordic countries have abundance of water and do not have the same problem as they have in the southern part of Europe where they have to control the water consumption. So the Nordic Swan has specified a high level of water consumption. This is a quality requirement since rinsing in less water will not be good enough.

Taiwan has water and electricity shortage problems. Although Taiwan has a lot of rainfall, it is not evenly distributed. There is

drought season in the North in summer and in the South in the winter. So Taiwan sets the criterion at a more stringent level than other countries. In fact, the water and energy consumption requirements were based on the performance of the major brand name washing machines marketed in Taiwan. Only the best 20-30 percent of the products could meet the water and energy requirements and they were awarded the Green Mark label.

*Two types of washing machines are included in the different criteria, which represent two significantly different types of machines and cause a number of problems in a comparison*

The washing machine criteria suffer from a number of issues that makes a comparison of the different criteria very difficult. Two types of washing machines are included in the different criteria, which represent two significantly different types of machines and cause a number of problems in a comparison. Machines that are top loaded have a warm water supply, and machines that are front-loaded have a cold water supply. The top-loaded machines use typically much more water but less energy than the front-loaded ones. The latter uses, in turn, less hazardous detergents as it puts the emphasis on mechanical cleaning rather than on chemicals.

In the cases where the criteria are aimed at one type of machine, they generally disqualify the other machine type from passing the criteria. Comparability of the criteria also suffers from the controversy concerning the different testing methods of the various schemes. The lack of specification on testing methods, or the use of completely different test methods, makes a comparison of the criteria very difficult. It can be concluded that the focus in all schemes has been placed on the user phase. Other requirements have been included in only a few of the schemes, or are presented as very general requirements.

Water and energy requirements have been included by all schemes, but a complete comparison of the actual levels is strenuous. Comparison of energy requirements has been constrained as some of schemes have set criteria based on hot water supply, while others have not. A comparison of the water requirements has further been constrained partly due to the fact that schemes have set the requirements, according to the performance of the two different types of machines. Water requirements are, after all, more comparable than those for energy, and it can be concluded that limits are rather similar among the schemes which have referred to the same type of machine.

*Water and energy requirements have been included by all schemes, but a complete comparison of the actual levels is strenuous*

The Nordic scheme has, however set requirements, which allow for a much higher water as well as energy consumption than the other schemes. The reason is mainly that the Nordic requirements on rinsing performance are very demanding. The reason for the strict requirements on rinsing performance is said to be the fact that this is in line with consumer preferences. According to a previous experience in the Nordic region, lowered demands on rinsing in testing of washing machines have lead to customer complaints. As a consequence, a wash load under the Nordic scheme is estimated as being approximately 3.5 kg, rather than 5 kg as in the EU scheme, as it is not possible to achieve the required rinsing performance if the drum of the washing machine is too

full of laundry. According to the Nordic scheme, it is more realistic to relate water and energy figures to a lower wash load anyway, since the average consumer washes on half rather than full load.

*Only four of the schemes have included requirements on spin-drying performance and moisture residues in the laundry, but, on the other hand, no significant differences exist between the requirements set by these schemes*

Only four of the schemes have included requirements on spin-drying performance and moisture residues in the laundry, but, on the other hand, no significant differences exist between the requirements set by these schemes. The schemes, which have included a requirement on spin-drying performance, are, nevertheless, operating in countries where a cold climate limits the possibilities for air-drying of the laundry. The additional energy consumption from a high spinning performance is accepted, since it is considered more efficient to save energy in a later stage by reducing the need for further electricity powered drying. In countries with a warmer climate, the issue of moisture residues in the laundry is naturally of less interest. In the case of mutual recognition, it has to be recognised that a high spinning performance is a basic requirement on a washing machine in some countries, whereas it is unnecessary in others.

#### **4.5 Eco-labelling Schemes - Bottlenecks and Progress**

All the eco-labels considered in this study, however successful they are now, faced bottlenecks of different kinds ranging from lack of consumer interest and resources to label fatigue. Even for the most successful labels, like blue Angel or Nordic Swan, the out reach and acceptance have not been a smooth ride as the following discussion shows.

##### **India**

The overall response to the Ecomark programme within India itself has been quite limited and manufacturers are hesitant to apply for the Ecomark label. Several factors are seen as possible reasons for this hesitation. First, the Ecomark scheme is a self-financing programme, requiring manufacturers to pay for the application, testing, licensing fee, and renewal costs involved in certification. Though the fee is a mere Rs. 1000 (US\$22), some estimates indicate that compliance costs can amount to up to 10 percent increase in a manufacturer's production costs-which are not guaranteed to be returned in increased profits. Second, products have to comply with BIS's quality standards before being able to apply for the Ecomark. The BIS standards add another layer of regulation and approvals for manufacturers, which are perceived as a burden with few immediate benefits.

*...industry has complained that India's Ecomark has not done enough to involve it in product criteria development. Industry feels the Indian Government has rushed through with the Ecomark*

Additionally, industry has complained that India's Ecomark has not done enough to involve it in product criteria development. Industry feels the Indian Government has rushed through with the Ecomark. Industry feels that the labelling programme will not help environmental improvement if criteria concentrate on single issues, or if they are based on other programmes that do not take the local situation into account. Industry also says that the labelling programme inhibits innovation that comes with consumer goods production. Since Ecomark develops product criteria without involving industry and can, therefore, be a hindrance to

environmental improvements. Finally, industry feels that because of the lack of consumer awareness of environmentally preferable products, the Ecomark programme may send consumers the wrong message by indicating to consumers that non-Ecomark labelled products are not environmentally safe.

*...the Ecomark programme may send consumers the wrong message by indicating to consumers that non-Ecomark labelled products are not environmentally safe.*

Indian exporters feel that many of the product categories chosen for Ecomark, with the exception of textiles and certain food items, do not reflect India's major export products for which an Ecomark might be of value. Several manufacturers have, in fact, adopted the eco-labelling standards of their importing countries in order to gain entry into those markets. The textile and leather products sectors have made efforts to conform to eco-labelling standards in EU countries such as Denmark and Germany. Such conformance has been possible through bilateral support from these foreign governments. In response, the Indian Government is now in the process of developing award criteria for the leather and leather products categories.

### **Japan**

More than half of the companies who had acquired the logo did so to improve their corporate image, citing also "requests from customers and increased sales." Almost all local governments were aware of the programme, compared to only 40 percent of distributors. A 1990 public opinion poll conducted by the Prime Minister's Office, found that 22.3 percent of the respondents were familiar with the EcoMark. By 1993, this rate had jumped to 53 percent.

The important bottleneck in Japan is that it is hard to raise awareness of consumers about global environmental issues. They cannot realise direct merits from preventing deterioration of global environment.

### **Germany**

*Indian exporters feel that many of the product categories chosen for Ecomark, with the exception of textiles and certain food items, do not reflect India's major export products for which an Ecomark might be of value*

The success of the Blue Angel can be attributed to the growth of environmental awareness on the part of consumers and producers. As far back as 1988 a survey of 7,500 German households found that 79 percent respondents were at least familiar with the eco-label, and 68 percent correctly linked the eco-label with the concept of environmental protection. Similar opinion polls have been performed on a regular basis, showing that the Blue Angel is perceived as a reliable eco-label.

The Blue Angel programme has been and continues to be popular among manufacturers and consumers. Compared to current levels, the programme grew slowly at first, issuing only 500 eco-labels in 33 product categories as of 1984. By mid-1993, however, the eco-label appeared on 3,503 different products in 75 categories. As of date standards have been set for more than 4,000 products.

One problem that the label faces is that there is an element of 'label' fatigue among consumers because of the numerous labels present in the market.

## **Thailand**

The Thai Green Label programme is accessible to both small and medium sized business. The obstacles to the Thai Green Label scheme are the lack of Public relations budget and environmental awareness of Thai people. The Ministry of Industry try to promote the Green Label scheme in Thailand by blocking government procurement for Green Label products. But it is still a long way to go.

*The obstacles to the Thai Green Label scheme are the lack of Public relations budget and environmental awareness of Thai people*

## **Taiwan**

The budget of implementing the Green Mark programme comes almost totally from the government agency, the Environmental Protection Administration. The budget has been decreasing in the recent years. This implies that unless an eco-labelling programme can become self-sufficient, its development depends very much on the overall economic situation (the worse the overall situation, the less the government funding), politics and other non-technical parameters.

Since Green Mark is a government project, there are quite a lot of bureaucratic limitations or restrictions. These are bottlenecks for an eco-labelling scheme to make profit and become self-sufficient.

## **South Korea**

The Eco-Mark programme has found that, in practice, the significant data requirements of the life-cycle assessment approach typical for determining award criteria are difficult to meet. The Korean Eco-Mark's approach to product certification is therefore based on defining the single most important environmental impact for each product category. Further the producers find it difficult to meet requirements like recycled materials because of their higher price or absence of effective system to collect and classify materials.

*The Eco-Mark programme has found that, in practice, the significant data requirements of the life-cycle assessment approach typical for determining award criteria are difficult to meet*

Some times choice of the standard becomes tricky as in the case of washing machine. Here, it is necessary to estimate "trade-off" relationship between water saving and energy-saving. If the standard is put on the water-saving aspect of the machine, it is possible to decrease the washing performance by checking the amount of spinning, discouraging the consumers from purchasing the machine. Another aspect is that manufacturers prefer to produce washing machine with large capacity (more than 15 kg) while environmental labelling has been awarded to washing machine with the capacity of less than 10 kg, the capacity of commonly used machines.

## **Canada**

The Canadian Environmental Choice has done studies on the effectiveness of the label. Some of the general problems or bottlenecks revealed by the research have been related to label trust (questionable eco-criteria), non-transparent criteria and label fatigue (too many different labels confusing the consumer).

## 4.6 Government Support in Various Countries

Effective direct or indirect government support has been the mark of most successful labels considered in the study. Direct government support could be in the form of laws and regulations, resources, recognition, tax exemptions and explicit provision in its procurement policies. The indirect support could be in the form of government campaigns for environment friendly products and moral persuasion on sellers to stock eco-labelled products.

### India

*Effective direct or indirect government support has been the mark of most successful labels considered in the study*

In India, with regard to trade, the Indian Ecomark programme does recognise the increasing popularity of eco-labelling schemes around the world. The Ecomark Steering Committee recognises that whilst there is a need for greater transparency, voluntary eco-labelling schemes should not be brought under the scope of the technical barriers to trade agreements. As a result, the Indian Government stresses that the Ecomark programme is a purely voluntary scheme open to all manufacturers, both domestic and foreign. According to the Ecomark Technical Committee, in order to make the scheme more globally transparent, much of the information on the Ecomark can be found on the World Wide Web.

The direct government support for Ecomark per se, in terms of incentives to the industry has been absent in India. The government support in the field of environmental quality was mainly to facilitate exports and the domestic perspective has been over looked.

To help exporters understand the new environmental regulations being enforced in the export markets, the Indian Government has set up committees in charge of information dissemination to trade and industry; legal measures, research and development, and identification of substitutes. The committees have asked trade and research associations, export promotion councils, state governments, and other textiles-related organisations, to produce outreach materials (e.g., pamphlets, leaflets, publications, videos, advertisements in daily publications, workshops, and seminars), in both English and local languages, to provide manufacturers with information regarding the regulations.

*The direct government support for Ecomark per se, in terms of incentives to the industry has been absent in India. The government support in the field of environmental quality was mainly to facilitate exports and the domestic perspective has been over looked*

India's Ministry of Environment and Forests has issued restrictions on manufacturing many dyes banned in the EU, as well as placed them on a list of restricted imports under India's Export-Import policy. In addition, a provision in the Textiles (Development and Regulations) Order of 1993 was included specifying the toxic or harmful dyes and chemicals that should not be used in the manufacturing of textiles. Further, a list of the banned dyes, a list of safe substitutes, product related eco-standards, and a list of guidelines for manufacturing environmentally preferable textiles have also been distributed.

Research institutions like the Department of Chemical Technology at the University of Bombay, the Technology Institute of Textiles and Sciences, and others are requested to identify toxic chemicals and dyes to be phased out from textile manufacturing. Additionally,

numerous laboratories have been set up throughout textile centres in the country to perform tests on the banned dyes and to find possible alternatives.

### **Japan**

*In Japan, EcoMark has a strong relationship with procurement programmes. For example, the central government is in the process of establishing guidelines for green procurement and references the EcoMark as one possible source of information*

In Japan, EcoMark has a strong relationship with procurement programmes. For example, the central government is in the process of establishing guidelines for green procurement and references the EcoMark as one possible source of information. Some of the more progressive local governments have already established green procurement guidelines and also reference the EcoMark.

According to JEA, the programme has not been involved in any critical trade conflicts to date. In fact, JEA has shown initiative in addressing trade issues before a conflict can arise. For example, in 1996, JEA made a concerted effort to get input from the US on the trade implications of developing product categories for personal computers and copy machines. By including the US in its process, it hoped to avoid any trade conflicts.

Similar to the eco-labelling programme, the Green Purchasing Network (GPN) was created in February 1996. The GPN is sponsored by the Environment Agency of Japan, and consists of organisations committed to reducing stress on the environment by promoting green purchasing. Thus far, 1957 companies, 357 local governments and government agencies, and 263 non-profit organisations are members as of September 2001. The GPN establishes purchasing guidelines in product categories, publishes annual guidebooks concerning the environmental impact of products, publishes a quarterly newsletter, and conducts meetings. Although the GPN programme and the EcoMark are independent of each other, the GPN has a significant influence on the EcoMark.

### **Canada**

*In Canada... most departments in the government are required to be "green", creating a large market for products with the label*

In Canada the programme is informally connected to several governmental and non-governmental procurement programmes. In part, because the government owns the programme, the eco-label is used for government procurement; most departments in the government are required to be "green", creating a large market for products with the label. Additionally, the Green Procurement Institute is a Canadian organisation set up to encourage green procurement. They work closely with ECP and provide a wealth of information to retailers and governments interested in green procurement. The ECP uses the 'EcoBuyer' newsletter to reach out to retailers and purchasing departments in private companies to inform them about ECP-labelled products. The ECP reports that, in addition to specifying labelled products, some retailers rely on the criteria outlined by the Canadian eco-label but use their own verification process.

### **Germany**

In Germany the Blue Angel has served as a way to identify environmentally preferable products. Many public procurement guidelines in local states and municipalities suggest buying Blue

Angel-certified products, or at least to consider the criteria developed for product categories when making procurement decisions.

### **Taiwan**

The government's green procurement is a strong stimuli for the Green Mark programme. Efforts are on to insert a provision under the Government Procurement Law which give green products preference over other products with same functional characteristics. Green products may have a maximum of 10percent price preference.

### **South Korea**

In South Korea, the Ministry of Environment and Korea Environmental Labelling Association (KELA) jointly run the eco-labelling programme. Government subsidises up to 30 percent of the operation expenses of KELA. The Government purchases the Eco-labelled products first in its procurement.



## 5

# The Other Side of the Coin: Essentials for the Success of Eco-labels

So far we have been discussing the problems emanating from the use of eco-labelling and approaches to deal with them. This section talks about factors relating to the success of eco-labelling programmes.

*In the case of negative labelling, i.e. to discourage the use of an environmentally harmful product, consumers and the sponsoring organisation (typically governments) will be major forces*

Largely domestic forces drive the formation of eco-labelling programmes. Because environmental labelling programmes serve to inform the public of the relevant country, they tend to form around environmental goals and needs that are considered high priorities in that country. In general, these forces include some combination of consumer demand, competition among producers, and the leadership position of a sponsoring organisation. Consumer demand drives programme formation by creating a market for a reliable source of information about the environmental characteristics of a product. Competition among producers acts as a driving force as producers seek ways to communicate the environmental attributes of their products to gain a competitive edge. Finally, sponsoring organisations can also play a role in programme formation by promoting the usefulness of environmental labelling as a tool in a country's overall environmental protection plan. The relative importance of each of these forces will depend on the type of environmental labelling desired. In the case of negative labelling, i.e. to discourage the use of an environmentally harmful product, consumers and the sponsoring organisation (typically governments) will be major forces. On the other hand, producers will have a stake in promoting positive labelling (which is awarded only to "referable products" and perhaps, to a greater extent, neutral labelling, which is available to all products regardless of differences in environmental attributes.

*...producers will have a stake in promoting positive labelling (which is awarded only to "referable products" and perhaps, to a greater extent, neutral labelling, which is available to all products regardless of differences in environmental attributes*

The diversity in these domestic forces across countries has resulted in a varied group of environmental labelling programmes; each programme differs in its mandate, operations, organisational affiliation, and role in the marketplace. For programmes with government involvement, the programme mandate often reflects the government's environmental policy goals, which are typically stated as the protection of human health and the environment. In such settings, labelling efforts range from regulatory programmes (such as the FIFRA, ozone-depleting substances, and battery labelling requirements in the US) to "soft" policy tools (such as EPA's Energy Star programme in the US, and the Blue Angel Programme in Germany). In addition, there are private and quasi-

government programmes that may have similar mission statements but are far more limited than the government labels in their mandate and authority over environmental matters. Japan's Ecomark and the Nordic Swan programmes report that environmental quality improvement and/or protection of public health are the most important mandate of their programme. Few labelling authorities initiate standardisation in product categories that may be unpopular or for which the programme will not be able to cover its costs, irrespective of their environmental impacts. Government regulatory programmes, on the other hand, can address such categories.

*Few labelling authorities initiate standardisation in product categories that may be unpopular or for which the programme will not be able to cover its costs, irrespective of their environmental impacts*

Although there are many other forces involved, the implications of these differences in programme mandates can be profound. For example, the EU sees its role as an information disseminator, responsible for formulating a consensus standard across EU markets. Consequently, the programme is challenged to balance its need for consensus on labelling standards from competent bodies against the establishment of its own more stringent award criteria for the entire EU market, which might arguably provide greater environmental benefits.

Important factors influencing the formation of environmental labelling programmes include public/societal interests, consumer interests, retailer interests, producer interests, operating costs/profits, standardisation, and procurement applications.

The attraction of environmental labelling to those involved in formulating and implementing public policies related to preserving and enhancing environmental quality is that, as a policy tool, the benefits of environmental labelling are closely connected to consumers' concerns regarding the value of product environmental aspects, general environmental concern, and any trade-offs considered in particular purchasing decisions. Thus, the collective shifts in consumer demand might be expected to reflect the interests of a large portion of society.

*Important factors influencing the formation of environmental labelling programmes include public/societal interests, consumer interests, retailer interests, producer interests, operating costs/profits, standardisation, and procurement applications*

For environmental labelling to be an effective policy tool, a number of conditions must hold true. First, product evaluations must be known and accurate. Second, product standards must be associated with significant environmental differences among the products. Third, this information must be disseminated to consumers. Fourth, consumers must understand environmental issues and product-specific information well enough to make informed purchasing decisions. Finally, the label must have substantial market penetration in order to affect a significant number of producers.

The power of consumer interest in response to environmental problems is undeniable. The continued funding and expansion of both governmental and non-governmental environmental programmes throughout the world, many of which have been in existence for over 25 years, is compelling evidence of the strength of individuals' concerns about environmental issues. Intermittent consumer activism in the marketplace, as seen in reactions to companies' environmental performance or disclosure of environmental attributes of particular products, has been well

documented and is often referred to as the power that labelling programmes seek to harness. A recent example is the successful consumer boycott of household detergents in Sweden, promoted by the Swedish Society for Nature Conservation (SSNC). The boycott gave rise to the first multi-national environmentally labelled detergent on the Swedish market.

*Environmental labelling is also tied to consumers' right-to-know initiatives in several developed markets, particularly the US*

Environmental labelling is also tied to consumers' right-to-know initiatives in several developed markets, particularly the US. The premise is that consumers have a right to know about the ingredients contained in a product, as well as each ingredient's health and environmental hazards, so that they can use this information to make informed decisions regarding the products they purchase. The US Federal Trade Commission's (FTC) Guides for Environmental Marketing Claims was a direct result of an increase in consumers' right-to-know developments. The concept of consumers' right-to-know, nonetheless, is relatively new and not widely recognised. As such, it remains a highly contentious issue. Opponents argue that consumers' right to know may, in some instances, be in direct conflict with GATT's trade efforts and manufacturers' proprietary interests.

Retailers can play an important role in environmental labelling programmes. On the one hand, they can play a significant role in fostering environmental labelling by selecting products to sell based in part on environmental attributes. For example, in the United States, Home Depot has made a commitment to stocking products considered to be environmentally preferable. On the other hand, some retailers have also attempted introducing their own environmentally sensitive product lines by setting environmental norms for their products.

One of the unique qualities of environmental labelling is that it opens up an untapped source of information to consumers. Manufacturers currently generate much of the information concerning the health and environmental effects of products and product constituents. This information, anyhow, typically does not make it to the ultimate consumer in a form that is readily understandable. Producers have the ability to make information easy to read and comprehend, but doing so is a double-edged sword because some consumers will switch to products deemed to be more environmentally sensitive.

*An important factor in the success of any environmental labelling programme is its ability to cover its costs and therefore stay in business*

An important factor in the success of any environmental labelling programme is its ability to cover its costs and therefore stay in business. The ease with which programmes will be able to cover costs varies, depending on two questions:

- (1) Can the programme charge enough in application, testing, audit and other fees to cover its costs; and
- (2) Can the programme subsidise its environmental labelling activities from other programme activities?

Subsidies may be in the form of professional and administrative time, office space and supplies, etc. Because government-sponsored

*For privately run programmes and other programmes that do not have other resources to draw on, however, the ability to cover costs will be critical to whether or not they remain in operation in the long run*

and/or operated programmes will typically have other resources to draw on, profitability may not be critical to the success or longevity of the programme. The same may be true for quasi-government programmes, where there is still some access to government resources, and for programmes run by national standards institutes, for which environmental labelling is just one part of their operations. For privately run programmes and other programmes that do not have other resources to draw on, however, the ability to cover costs will be critical to whether or not they remain in operation in the long run. For these programmes, there is an inherent conflict in prioritising efforts to develop award criteria and issue awards or otherwise evaluate products. Programmes can lose credibility if they are thought to be motivated by profit in their selection of product categories or in the awarding of labels.

## 6

# Conclusion

*The biggest shortcoming of these methods is that, they also can overlook the differing environmental preferences of the countries. The power equations between the two parties could affect the process of negotiations on recognition and equivalency...*

Mutual recognition and equivalency of labels and criteria requirements either or both at bilateral or multilateral levels are reckoned as concepts that may help to minimise the potential trade effects of eco-labelling programmes. Though, they are not devoid of shortcomings. The problems could be accentuated when there are wide variations in the criteria requirements, or when one side does not have a standard – a possible situation in trade between a developed country and developing country. In that situation, it might be impossible to arrive at mutual recognition or equivalency agreements. Both processes are too time consuming (for India, on an average, two years for each importing country<sup>28</sup>) and resource eroding; and would require excessive bargaining on both sides. At times, by the time labels are mutually recognised and equivalency established, the criteria of the developed country label might be up for change due to technological changes. The process, inevitably, forces the labels with the lower standards to do the ‘catching up’ with those requiring conformity on higher standards. The biggest shortcoming of these methods is that, they also can overlook the differing environmental preferences of the countries. The power equations between the two parties could affect the process of negotiations on recognition and equivalency status. The bilateral negotiations that are inevitable part of the mutual recognition process could leave developing countries knocking at the doors of the developed countries for recognition and equivalency status and the situation will not be an improvement for them. Multilateral recognition process is seldom feasible because of the wide variations in the environmental conditions and production standards. Further, the emphasis of these programmes is towards the one-size-fits-all solution, rather than peaceful co-existence of the labels with different criteria requirements.

Now, to conclude we emphasise the following issues:

*Multilateral recognition process is seldom feasible because of the wide variations in the environmental conditions and production standards*

- (1) Though eco-labelling programmes have been initiated in many countries of the world, mass awareness is yet to be achieved. Such programmes have not become popular movements in many countries. [Though, in some countries, like Germany, the situation is different. In Germany, people are complaining about price premium and are partly label fatigued, but overall, the products are well established and popular].
- (2) As our analysis in the fourth chapter showed, while many countries have developed standards in similar product categories, there is not much scope for harmonisation of such standards since the standards are based on ground realities in their domestic countries.

- (3) There is an acute danger that eco-labelling standard will be used against developing countries as a non-tariff trade barrier since the lesser developed countries in many cases will not be able to comply with PPM requirements. Also, many standards & programmes are not adequately transparent to provide equal access to domestic and foreign products. And finally, producers in developing countries cannot bear all the costs to be incurred to comply with the standards.
- (4) Most of the eco-labelling programmes are not financially self-sufficient and have to rely on government resources.

*The one-size-fits-all policy is inherently undemocratic since it eliminates policy options for backward countries. Moreover, it could tamper with the sovereignty and even security of the countries with lower eco-standards, as the policy provides opportunities for others to dictate dos and don'ts to those countries*

Eco-labelling can be used as one of the effective environment policy tools. So, we need to remove obstacles to the development of eco-labelling programmes in different countries, which collectively make the whole world. Why shouldn't each country develop its own eco-labelling standards depending on its own realities? Differing environmental standards across countries reflect differing environmental conditions as well. Countries that face or have faced grave environmental problems tend to have stricter environmental standards or are in need of such standards. Countries with lower environmental damage should rightly opt for a standard that suit its policies and needs.

The one-size-fits-all policy is inherently undemocratic since it eliminates policy options for backward countries. Moreover, it could tamper with the sovereignty and even security of the countries with lower eco-standards, as the policy provides opportunities for others to dictate dos and don'ts to those countries. This policy is unjust, especially when pollution is limited to the production process and country of production.

A country or society's right to decide on the use of its own resource is fundamental to the development of countries that are resource rich, yet remain poor. These countries have a right to consume their resources so that they can avoid poverty, which was described as the 'biggest polluter' by the former Prime Minister of India, Indira Gandhi at the 1972 Stockholm Conference on Human Environment. Acute poverty has left the poor countries with fewer resources for environmental management. In such conditions, if eco-labels are used as unilateral environmental measures, they are certain to fail in achieving their environmental objective and will only be useful as a tool to block imports. Worse still, they could inadvertently result in more poverty and thereby further degradation of environment by becoming barriers to trade and consumption.

*...if eco-labels are used as unilateral environmental measures ...they could inadvertently result in more poverty and thereby further degradation of environment by becoming barriers to trade and consumption*

## Endnotes

1. See ISO (1999) Environmental Labels and Declarations – Type I Environmental Labelling- Principles and Procedures. Geneva :ISO and GEN (2004) Introduction to Ecolabelling, <http://www.gen.gr.jp/publications.html>
2. As of July 2004, international ISO standards have been developed and implemented for Type I and Type II labeling, while work continues on development of a standard relating to Type III. Consequently, the ISO definition for Type III should be considered a “draft working definition” that could be revised.
3. [http://www.gen.gr.jp/product\\_b.html](http://www.gen.gr.jp/product_b.html)
4. Discussed in detail in section 3.
5. In the context of internationally traded goods there is also the moot question of whose environment is sought to be protected through eco-labelling. We address this issue in section 3.
6. Presumably, this effect would be stronger if eco-labels were mandatory.
7. See, Swallow, Stephen K. and Roger A. Sedjo (2000), “Eco-labelling Consequences in General Equilibrium: A Graphical Assessment”, *Land Economics*, 76, 1.
8. The results are robust under a voluntary system where some producers could ‘opt out’ of the certification programme.
9. This reallocation is more pronounced for non eco-consumers (NC), who do not care whether the wood they consume is certified or not, than for eco-consumers who do care (C). For the latter, that is C-type consumers, certified wood provides greater utility and creates an incentive to reallocate expenditures towards wood and away from other goods. But, at the same time, since the price of wood is increasing, eco-consumers have an incentive to substitute it with all other goods. If the net effect is an overall increase in the demand for Y, the derived demand for land in wood production (W) is likely to decline.
10. Swallow, Stephen K. and Roger A. Sedjo (2000) op. cit. No. 7. p. 33.
11. Ibid.
12. By mandatory eco-labelling what we mean here is that all products in the same product category sold in a particular country (imported and domestic) have to comply with the eco-labelling scheme(s) of that country.
13. While we do not deal with labour standards in this paper, we note, in passing, that much of the reasoning against harmonisation of environmental standards applies to labour standards as well.
14. The seminal paper in this context is Bhagwati and Srinivasan (1996). For a more non-technical exposition see, Bhagwati (2000).
15. Consider a two-industry (X, Y) two-country (A, B) world. Absolute advantage arises when country A is more efficient than country B in producing both goods, X and Y. Comparative advantage is a situation when even if country A has an absolute advantage, it may still be *relatively* more efficient in good X than good Y, compared to country B. The basis for trade is comparative advantage and not absolute advantage and this notion dates back to David Ricardo. Introductory textbooks in international trade often provide intuitive examples of the difference between these two key concepts—suppose I am a lawyer and more efficient than my gardener in law practice and in gardening (absolute advantage). But also suppose (plausibly) that compared to the gardener, I am much better as a lawyer than I am as a gardener. This is comparative advantage and the implication is that both of us are better off if we were to specialise—I as a lawyer and he as a gardener. The same logic holds for nations trading with each other—there are gains from trade when countries specialise, even if one country has an absolute advantage in both goods.
16. Lohani, Bindu N and P. Ghosh (2000), “Eco-labelling: Developing Country Apprehensions”, *Environment and Development Economics* 5 (2000).
17. At times, the selection of product categories may be narrow so as to exclude other similar products. For example, labelling schemes on tropical timber exclude temperate or other such woods.
18. Zarrilli, Simonetta, et. al (1997) Eco-Labelling and International Trade. U.K: Macmillan Press. p. 279.
19. OECD(1997), Eco-Labelling: Actual Effects of Selected Programmes. Paris: OECD.
20. The most famous example is of USA’s ban on shrimp harvested without the use of turtle excluder devices (TEDs) (a mandatory labelling requirement). This led to two cases in WTO, known as the *Shrimp – Turtle Cases*. USA lost both cases on technical grounds. However, developing country shrimp exports were continued to be banned from the US markets till they complied with the use of TEDs to gain re-entry into the US markets.

21. Application costs + annual licence fee (min. or max., as the case may be)+ other charges that are compulsory. Information on fees of Ecologo, Canada and licence fee of the Japanese Ecomark programme was not available and therefore both labels were excluded from this comparison.
22. Based on data available at <http://www.gen.gr.jp>
23. Figures in local currency are actual figures mentioned in the respective websites. The Dollar figures are rounded off for comparison. Conversion by [www.xe.net/ucc](http://www.xe.net/ucc) on 14.10.2004.
24. Lohani and Ghosh(2000) op. cit.
25. OECD (1997) op. cit.
26. Neitzel, Harjld, "*Development of the Blue Angel Scheme in Germany*", UNCTAD, Berlin, March 1995, as cited in OECD (1997) op.cit
27. In particular, we thankfully acknowledge the support received from Yolanda Clegg, John Polak, Ian Meredith and Evan Bozowsky (Canada), Tobias Reichert and Ulrike Grote (Germany), Arjun Dutta and Sandeep Singh (India), Hiroko Mizuno (Japan), Hun Kim (South Korea), Victor de Lange (the Netherlands), Jan Erik Stokke (Norway), Aton Elejabeitia (Spain), Ragnar Unge, Lena Rogeman, Ulla Sahlberg, Tove Engstrom and Ewa Eiderstrom (Sweden), Pongvipa Lohsomboon and Pornphan Phanphattrapong (Thailand), Ning Yu (Taiwan), and Anna Fielder and Charles Cox (United Kingdom).
28. Source: Export Inspection Council, India.



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# Appendix 1

## Description and Evolution of Selected Eco-labelling Schemes and Questionnaire

### 1. Blue Angel (Germany)

Germany introduced the Blue Angel programme in 1977, making it the first country to implement a national eco-labelling programme. The German government views its eco-labelling programme as a “soft instrument” of environmental policy, since the programme cannot establish binding requirements or bans and participation in the programme is completely voluntary. The Blue Angel is a seal-of-approval programme, and relies on information, motivation, and a commitment to the environment from both manufacturers and consumers.

The primary goals of the Blue Angel programme are:

- guiding the consumer in purchasing quality products with fewer adverse environmental impacts;
- encouraging manufacturers to “develop and supply environmentally sound products,” and
- using the eco-label as a “market-oriented instrument of environmental policy”. As the oldest eco-labelling programme, the Blue Angel programme has served as a model for many other eco-labelling programmes in existence around the world today.

As of April 2001, 710 manufacturers have been awarded the Blue Angel for 3,355 products in 88 product categories.

The Blue Angel programme is administered by three organisations: Environmental Label Jury, the German Institute for Quality Assurance and Labelling (RAL), and the Federal Environmental Agency. The Environmental Label Jury is made up of representatives from industry, the scientific and business communities, environmental organisations, consumer organisations, trade unions and churches. The RAL is a non-profit standards organisation that acts as the administrative body for the Blue Angel programme.

The process of developing and awarding the Blue Angel eco-label has three steps. First, product categories are proposed (typically by manufacturers). From these proposals, the Federal Environmental Agency and the Jury choose suitable product categories for the Blue Angel. Each year, an average of 150 product categories is proposed; typically, only six are selected as suitable product categories for the eco-label.

Once product categories are selected, the Federal Environmental Agency drafts criteria for each product group. It takes between six months and a year to draft the basic product criteria. Criteria are typically revised after every three years. If there are major technology or innovative breakthroughs in the product category, criteria may be re-assessed prior to the end of the three year period.

Draft criteria are forwarded to RAL, which organises “expert hearings” to address technical questions regarding the draft criteria. Representatives from industry, manufacturing, consumer and environmental organisations, and, occasionally, scientists and representatives from testing institutes, are invited to ask questions and make comments on the draft criteria. Representatives from foreign companies are also welcome to make suggestions and comments at the hearing. Comments from the expert hearing are taken into consideration when the Federal Environmental Agency revises and

the Label Jury finalises the criteria. The results are published in press reports of the Federal Minister for the Environment, Nature Conservation, and Nuclear Safety. RAL published the final basic criteria.

In the last step, manufacturers submit applications to become certified to use the eco-label on particular products. Compliance with criteria is verified by statements from the manufacturer, testing by independent facilities, and data and product information sheets. If everything is in compliance with the basic product criteria, RAL forwards the application to the Federal Environmental Agency and the federal state in which the manufacturer is located. A contract is signed for the use of the eco-label, for a duration of four years. If during these four years, the Jury revises product criteria, then the manufacturers must re-apply for the contract for those products. Applicants must pay an initial application fee equivalent to US\$190, and an annual fee based on estimated annual sales of the labelled product. In addition, users of Blue Angel must also contribute to an advertising fund for the programme. All fees are paid to RAL.

Producers come forward to the Blue Angel programme and make product proposals. However, unlike many other eco-labelling programmes, the Blue Angel does not conduct an impact analysis when choosing product categories. Characteristics of the manufacturing process used to produce the product are of less importance for Blue Angel certification. The programme's reasoning for excluding earlier stages of the product life cycle is that Germany's environmental protection laws and regulations address the reduction and avoidance of environmental damage during the production stages. Instead, when choosing product categories, the Blue Angel considers the following: transportation and distribution costs, product uses, potential for the product to be reused, maintenance costs, recyclability, final disposal, and the product's ingredients and materials' restrictions.

When developing draft award criteria, the Blue Angel considers previous literature and studies relating to the product category as well as other programmes' life-cycle assessments of the category. Additionally, the programme may also conduct its own independent tests and studies and often obtains information from participating producers themselves about the product category. Draft criteria are based on the potential environmental damage the products may have during usage and disposal. A series of environmental and other factors are assessed. This series includes:

- the amount of toxic and/or hazardous substance in the product;
- the emissions to air, water, and soil;
- noise pollution;
- waste prevention, waste reduction and/or recycling opportunities at each stage;
- amount of natural resources used;
- the safety of the product; and
- finally, the minimum requirements for the product's performance.

The Blue Angel follows SETAC (Society of Environmental Toxicology and Chemistry) guidelines when developing its award criteria.

Recently, the Blue Angel has served as a way to identify environmentally preferable products in Germany. Many public procurement guidelines in local states, and municipalities suggest buying Blue Angel-certified products, or at least to consider the criteria developed for product categories when making procurement decisions. It has been suggested that eco-labelling programmes can act as a barrier to trade for imported goods, when product criteria relate to production stages. The Blue Angel programme does not include production process-related criteria, but instead concentrates on the final environmental impact of the product, this aspect of the programme is viewed as avoiding a potential trade barrier. Many of Germany's award criteria do have minimum recycled content requirements, which are however, difficult to meet for many exporters to Germany. In this respect, many foreign countries (for example, Brazil, who is faced with these minimum requirements for its paper packaging) see these requirements as trade barriers. Any manufacturer, domestic or foreign, may apply for the Blue Angel eco-label, as they meet the specified product criteria.

## 2. EcoLogo (Canada)

“The mission of the Environmental Choice Programme (ECP) is to reduce the stress on the environment by encouraging the demand for and the supply of environmentally responsible products and services” (Canada’s Environmental Choice Programme, 1996). ECP was created as a voluntary eco-labelling programme by Environment Canada (the environment department of the Government of Canada) in 1988. In 1995, Terra Choice Environmental Services Inc., a Canadian private sector company, assumed the management of the eco-labelling programme, though Environment Canada still retains its ownership.

ECP has published 50 final guidelines, has generated over 90 certification criteria documents through the Panel Review and Certification Process, and has awarded the EcoLogo to over 3,000 products, services, technologies, and events as an indication of their positive environmental attributes.

Terra Choice is responsible for selecting product categories, and does so based on approaches either supply-side or demand-side indicators. The supply-side management approach, one of the approaches used by eco-label programmes most commonly, selects product categories based on the volume of the particular product in the marketplace and the potential for environmental improvement (generally the basis for the aforementioned “Final Guidelines”). The demand-side approach, unique to the ECP programme, allows manufacturers to request a label for a particular product category (leading to the development of “Panel Review Criteria”). If several manufacturers express interest in certification of such product categories, Terra Choice then recommends to Environment Canada the development of labelling criteria for the whole class of products. These are thus transformed into Final Guidelines. Both types of certification guideline carry the same weight, in terms of verification and market recognition.

Initial or draft criteria for the Final Guidelines are generally developed using a Technical Briefing Note (TBN) characterising the lifecycle of a product as well as market, economic, and technical information about the product category. In developing the Technical Guidelines, information from public sources is gathered and evaluated. A Review Committee, including experts from various fields, then reviews the draft guidelines for scientific validity. Upon completion of the proposed guideline by the Review Committee, there is a four-to-eight-week public review period. While they are not formally required to reply, Terra Choice responds to most comments. Terra Choice officials, along with the Review Committee, revise the draft guidelines based on the public comments received. Upon acceptance by the government, the final guideline is released.

Manufacturers can then apply for an eco-label for a product, meeting the published criteria for the relevant product category. Applicants undergo a confidential certification and audit process conducted by Terra Choice. Applicants are responsible for the cost of verifying that their product meets the criteria and that they meet general licensing requirements (for example, compliance with applicable environmental safety and performance legislation).

Companies can also apply for certification for a product for which criteria have not been developed, referred to as the Panel Review and Certification Process. Certification of applicants with unique or niche products or services for which product category standards have not been established are recommended. An expert panel reviews each specific product application. While manufacturers are not charged a higher fee for this process, it tends to be more labour intensive than the process for technical guidelines; the applicant must present a large amount of technical and marketing information documenting its environmental excellence. If several similar products apply for the award through the Panel Review and Certification process, Terra Choice may develop a set of criteria for the product category as described above in the supply-side approach. Once a manufacturer has been awarded use of the eco-label, the company has to enter into a contract with Terra Choice.

### 3. Eco-Mark (Japan)

The Ecomark programme, the third oldest eco-labelling programme was started in February 1989, as a positive seal-of-approval programme to “disseminate information on the environmental aspects of products and to encourage consumers to choose environmentally sound products.” The programme is implemented by the Japan Environment Association (JEA), a non-governmental organisation, under the guidance of the Environment Agency. As of September 2001, the programme has issued 4,647 awards in 68 product categories.

The Ecomark Secretariat function within the Japan Environment Association and has “The EcoMark Committee for Product Certification” for certification and “The EcoMark Committee for Establishing Categories and Criteria” for establishing criteria. “EcoMark Steering Committee” plans and deliberates overall EcoMark activities. The Secretariat sets up a working group of experts and concerned persons for each product category under consideration. This group then establishes draft criteria using life-cycle analysis, which are publicised in EcoMark News for 60 days for public comment. The draft criteria are submitted, with the incorporated suggestions, to the Promotion Committee (composed of specialists in environmental conservation, administrative agencies, consumer groups, and relevant enterprises), which then approves or rejects the criteria.

Once award criteria have been set, confidential product applications are accepted. Manufacturers must supply relevant information to the Expert Committee (composing of experts in environmental impact assessment), but the Committee may request further testing by a third party. If a product is awarded a label, a two-year contract is signed with the JEA. While JEA does not directly monitor for misuse, it relies on other manufacturers, administrative organisations, and consumer organisations to inform it of possible instances of misuse.

As mentioned above, the Japanese EcoMark programme changed its methodology 5 years ago to incorporate life-cycle assessments, specifically a life-cycle matrix, which considers the environmental impacts within each stage of the product life cycle. This change was made as a response to draft labelling standards being developed by the International Organisation for Standardisation (ISO). In assessing products, the EcoMark utilises literature and other programmes’ life-cycle assessments, as well as independent testing and studies and information from participating producers. Additionally, the Japanese EcoMark programme may also adopt information about product criteria from other programmes, where applicable. Japan does not follow SETAC guidelines in their life-cycle analysis.

Once product selection by the EcoMark office and the Expert Committee is completed, the EcoMark Secretariat sets up *ad hoc* working groups for each product group to develop labelling criteria. Product selection is based on proposals from manufacturers as well as the use of a political process in consideration with the environmental impacts of the product. Product criteria, based on the life-cycle matrix approach and at each stage of the product’s life cycle, considers the following factors:

- extraction and processing of raw materials;
- manufacturing, transportation, and distribution of the product;
- the product uses;
- potential for reuse;
- potential for recycling; and
- emission of wastes, toxic substances, and harmful pollutants.

#### 4. Nordic Swan (The Nordic Council)

In 1989, the Nordic Council of Ministers introduced a voluntary and neutral seal-of-approval certification programme known as the Nordic Swan. Currently, Norway, Sweden, Finland, Iceland, and Denmark are participating in the programme. The programme was introduced in an attempt to unify the emerging eco-labelling programmes that were appearing throughout the Nordic countries. The Nordic programme is noteworthy because of its novel administrative structure. The Nordic Eco-labelling Board acts under the Nordic Council of Ministers and makes final programme-related decisions. The participating national organisations propose new product categories, assist the Board in establishing award criteria, grant licenses, and market the programme.

The Nordic environmental label is an “independent label, which guarantees a certain environmental standard. Only products which satisfy strict environmental requirements on the basis of objective assessments will be allowed to display the environmental label.” The label is intended to provide consumers with guidance in choosing products least hazardous to the environment, to stimulate manufacturers to develop products and processes that are better for the environment, and to use market forces as a complement to environmental legislation.

A self-assessment of the programme found that the “Nordic Eco-labelling system – the ‘Swan’ symbol – is a fairly successful one, commanding a high level of respect among consumers and producers. As of November 2001, criteria for 46 product categories had been established, and were under development for 13. To date, 1200 products have received the awards.

The Nordic Swan programme is administered in Norway, Sweden, Finland, Iceland, and Denmark by national boards, co-ordinated by the Nordic Eco-labelling Board, which in turn acts under the authority of the Nordic Council of Ministers. The programme’s agency in Norway is administered as a foundation, while the Swedish, Finnish, and Danish agencies are incorporated into their national standardisation organisations. The programme in Iceland is housed in the Ministry of Environment. The five programmes are very similar to ensure smooth operation and mutual recognition of activities among participating countries. Fees, structures, and processes are quite similar among the programmes.

The national Nordic eco-labelling organisations propose product groups, and, according to the General Agreement for Nordic Eco-labelling, a pilot study is conducted to assess “the 1) qualitative and quantitative environmental problems associated with the product, 2) scope available for environmental improvements, 3) information needed by consumers, 4) requirements of commerce and industry for eco-labelling in the field, 5) expected costs of the development of criteria, and 6) product and market analyses for the Nordic market.” The Nordic Eco-labelling Board makes the final decision on the selection of product groups, and determines which country will take the lead in developing the criteria.

The Eco-labelling Board usually appoints an expert group to work in an advisory capacity with the national organisations to develop the product criteria. The expert group is made up of representatives from the particular industry and consumer and environmental organisations and includes representatives from each of the Nordic countries. According to “Guidelines for Nordic Eco-labelling”, “Information concerning criteria established, the composition of expert groups, and the state of progress of current work shall be open to the public. The widest possible circle of interested parties should be heard in connection with all draft criteria.” The criteria are to take into account environmental factors throughout the product’s life, although the programme considers it impossible to evaluate the total influence of a product on the environment. In addition to environmental criteria, the Swan also has a general regulation stating that manufacturers must comply with domestic labour regulations, as well as quality and performance requirements.

The environmental protection requirements are set such that the market share of products that meet the criteria should not exceed one-third of the total Nordic market. In the past, though, there have been situations that made this goal difficult to reach. At one point, the trade association of

tissue paper manufacturers boycotted the Swan, and none of their member companies applied for it, even though they marketed their products' environmental qualities. Little was done on the part of the Swan programme to negotiate, although the story of the boycott was in the press, and after about a year boycott was broken by one of the member companies.

The final set of criteria is either accepted or rejected by the Eco-labelling Board, and all decisions must be unanimous. Approved criteria are widely available in English, and are available electronically on the countries' web-sites. Once approved by the Board, a product category and its criteria are valid in all of the Nordic Council countries. Product criteria are usually valid for three years, at which point they are reviewed, taking into consideration changes in production technology and new knowledge about material inputs. The Board has the ability to cancel or modify the criteria during this period if new information is discovered.

To receive the Nordic Swan, manufacturers from within a Nordic Council country send an application to the programme agency in their own country. Foreign manufacturers seeking an award apply to the country that developed the product category. Claims made by manufacturers are tested in independent laboratories, and manufacturers are required to perform and report the results of tests to ensure that all other requirements in the criteria are met for all labelled products. It is uncommon for products to fail because manufacturers have access to the criteria, before they submit their application. Once an award has been made to a product by one country, the license to use the label is valid in any of the other participating countries, although manufacturers must pay an additional fee in each country to register their product. Follow-up inspections of products and processes are conducted to verify compliance with the award criteria. All documents submitted by the manufacturer are confidential.

## 5. EcoMark (India)

As part of an effort to improve environmental quality and to increase environmental awareness among the industries and consumers, the Indian Parliament initiated a voluntary eco-labelling programme known as the EcoMark in February 1991. The EcoMark is a government operated seal-of-approval programme for environmentally preferable consumer products. The Ministry of Environment and Forests (MoEF), with the technical advice of the Central Pollution Control Board (CPCB), manages the programme. Unlike many other international eco-labelling programmes that are independent, India's EcoMark is tied with the BIS' (Bureau of Indian Standards) product quality standards. In order to be EcoMark certified, products must meet these product quality standards, as well as product-specific environmental criteria set by the EcoMark programme. In meeting EcoMark requirements, manufacturers will also have the BIS' quality standards label on their products.

The objectives of the EcoMark programme are fivefold: 1) to provide manufacturers and importers an incentive to reduce the adverse environmental impacts of their products; 2) to reward genuine initiatives by companies to reduce the adverse environmental impacts of their products; 3) to assist consumers in becoming environmentally responsible in their daily lives by providing them with information on environmental impacts that they can incorporate in their purchasing decisions; 4) to encourage citizens to purchase products that have fewer environmental impacts; and 5) to ultimately improve the quality of the environment and encourage sustainable management of resources.

The EcoMark label is seen as a "movement of consumers" and is therefore given exclusively to consumer products. Interestingly, even though sixteen product categories had been selected for the EcoMark, only one product, in the detergent product category, has been awarded the EcoMark. So far, there are no products available on the market with the eco-label; the manufacturer of the detergent product that had been awarded the EcoMark did not market the product with the eco-label.

Indian industries are not coming forward to get eco-certification of their products, though they are involved in the process of criteria development. Some attribute this to the costs involved in applying for the EcoMark and the numerous regulatory requirements manufacturers must meet before being awarded the eco-label. Other reasons may include industries' concerns about the EcoMark programme.

There are three committees involved with product category selection, criteria development, and award of the EcoMark. First, an inter-ministerial Steering Committee in the Ministry of Environment & Forests determines the product categories to which an EcoMark may be granted. The Committee is also in charge of promoting the labelling scheme to manufacturers and consumers. Once the Steering Committee has made proposals for product categories, a Technical Committee in the Central Pollution Control Board determines the specific product to be included under the EcoMark scheme.

The Technical Committee is the central committee for the EcoMark scheme and constitutes sub-committees for the development of EcoMark criteria for each proposed product category. The Technical Committee provides technical assistance and recommendations to the Steering Committee for finalising product categories, and is also in charge of developing product specific criteria, based on life-cycle assessments, wherever possible. Once criteria are finalised, the Bureau of Indian Standards and/or the Directorate of Marketing translates the product criteria into Indian Standards, assesses and certifies the products, and co-ordinates (via testing and contractual arrangements) with manufacturers wishing to use the EcoMark label on their products.

Once specific products are selected for the EcoMark, product criteria are developed. In general, previous literature and other programmes' life-cycle assessments are used in conducting a simplified life-cycle assessment that examines products in terms of their main environmental impacts. These include: the product's potential for generating less pollution than other comparable products; whether the product is recycled, recyclable, or made from recycled materials or whether it is biodegradable;



and whether it makes significant contributions to saving non-renewable resources. Products are assessed specifically on their use, potential for reuse and recyclability, environmental impact during final disposal, and their ingredients or their materials restrictions.

Furthermore, certain general requirements have to be met in order to grant the EcoMark label. First, products must meet the Bureau of Indian Standard's product quality, safety, and performance standards. Second, manufacturers of the product must provide evidence that they are in compliance with India's Water, Air, and Environmental Protection Acts and, if applicable, with the Prevention of Food Adulteration Act of 1954 and the Drugs and Cosmetics Act of 1940. Third, the product must display a list of all the critical ingredients in descending order of quantity present. Fourth, the manufacturer may opt to display (on the packaging) the criteria upon which the EcoMark label is based. Fifth, instructions on the product's proper use, performance, and disposal may be shown on the product's packaging as well.

## 6. Green Label (Thailand)

The Thailand Business Council initiated the Thai Green Label Scheme for Sustainable Development in October 1993. The Thailand Environmental Institute (TEI) in association with the Ministry of Industry in August 1994 formally launched it. The scheme awards a seal of approval to products meeting its criteria, and is voluntary in nature.

The programme was developed with three objectives in mind:

- 1 to provide reliable information and guide customers in their product choices;
- 2 to create an opportunity for consumers to make environmentally conscious decisions and thus create a market incentive for manufacturers to supply environmentally sound products; and
- 3 to reduce environmental impacts that occur during manufacture, use, consumption and disposal of products.

Till December 2001, the programme has developed product criteria for 31 product groups and the Green Label has been awarded to 187 products.

The Thai Green Label is composed of several committees. The Thai Green Label Board is the overarching entity responsible for making all major decision, including deciding on basic strategies, selecting product groups for consideration, deciding on criteria, deciding on the structures and levels of fees, and deciding on supporting activities. The Ministry of Industry appoints its members.

The Board is supported by two groups: the Technical Sub-committee and the Secretariat (TEI) and the Thai Industrial Standards Institute(TISI). The Technical Subcommittee develops proposals including product criteria, test methods, and the requirements for applicants. A new subcommittee is established for each product category, composed of experts from relevant institutes, industry, and environmental groups. The Secretariat organises meetings and prepares materials to be discussed by the Board.

The general public presents proposals for product groups to the Secretariat, which are then submitted to the Board. Once the Board decides on the product categories, it sets up a technical subcommittee to work on the criteria. The Secretariat is then responsible for submitting the final proposal to the Board, which decides on the criteria and announces the decision to the public. The criteria are developed on the basis of a life-cycle review and are reviewed every two years. The draft criteria are made available to the general public upon request. The public can provide comments on the draft criteria. Responses and critiques to these comments are not published.

Once award criteria have been set, product applications are accepted. TEI examines applications to make sure that all criteria are met, and then passes them along to TISI for further investigation. Once criteria fulfilment has been determined, TEI registers the application and enters into a contract with the manufacturer. When choosing product categories, Green Label uses “life cycle considerations” which evaluate products based on their environmental impacts at each stage of the product’s life cycle. Additionally, a political process and stakeholder and legislative body votes are used to choose product categories. When product categories are selected, the product criteria are drafted.

Information for draft criteria is obtained from independent studies and testing, participating producers, and other programmes’ previous LCAs. In fact, Green Label maintains contact with eco-labelling programmes in Singapore, the EU, and Japan, and has adopted some of these programmes’ criteria in establishing its criteria. Criteria take into account product uses, potential for reuse, potential for recycling, ingredients, resource use, and wastes generated during final disposal.

## 7. Environmental Labelling (South Korea)

According to the South Korean Ministry of Environment (MOE), rapid industrialisation and urbanisation during the last three decades and South Korea's rapid economic growth may have contributed in deteriorating the country's environmental conditions. As a result, the Korean government established "Harmony between Environment and Development" as a main policy goal of the country, with emphasis on pollution prevention and resource management. To realise this policy, the Korean Ministry of Environment launched its eco-labelling certification programme, known as "Environmental Labelling," on June 1, 1992. Environmental Labelling is a voluntary programme that awards a seal of approval to environmentally preferable products. It is primarily intended to encourage companies to promote the design, production, marketing, and use of products that have reduced environmental impact, as well as to provide consumers with information to make environmentally sound purchasing decisions. As of December 2001, 79 product categories have been covered and awards have been made to 319 products.

The MOE and KELA (Korean Environmental Labelling Association) have been in charge of the programme, since then. The main role of the Ministry is to establish and amend the laws relevant to the Environmental Labelling programme, identifying possible product groups and basic criteria. MOE is responsible for informing the public of important factors concerning the programme (notification procedure).

In practice, the KELA selects the product groups, establishes and revises the basic criteria. The Selective Committee and the Criteria Committee within KELA play a decisive role in the selection of the product categories and preparation of the criteria. Once criteria are finalised and released to the public, manufacturers wishing to obtain the Environmental Labelling can apply to be certified. KELA is to certify the use of labelling, and to manage and inspect certified products. Specifically, a "Consultative Committee" within the KELA (who handles manufacturers' applications), is in charge of awarding the label to companies wishing to obtain certification for their products that meet the prescribed award criteria. Once the product fulfils the criteria, it is eligible to receive the Environmental Labelling.

The Environmental Labelling programme has found that, in practice, the significant data requirements of the life-cycle assessment approach typical for determining award criteria are difficult to meet. The Korean Environmental Labelling's approach to product certification is therefore based on defining the single most important environmental impact for each product category.

## 8. Green Mark (Taiwan)

The Green Mark Programme was launched in 1992 by Taiwan's Environmental Protection Administration as a voluntary and positive eco-labelling programme. The mission of the Green Mark is "to promote the concept of recycling, pollution reduction and resource conservation". The Environment and Development Foundation (EDF), a private institution, currently administers the programme.

The objectives of the Green Mark are to guide consumers in purchasing "green products" and to encourage manufacturers to design and produce them. The Green Mark expects to meet these goals through the following steps: selecting "environmentally benign" products to meet domestic demands; developing criteria; encouraging the public to consume Green Mark products, which will in turn stimulate their production; and participating in international activities such as ISO and GEN. As of November 2001, the Green Mark programme has developed criteria for 72 product categories and 1058 products have been awarded.

The effectiveness of the Green Mark logo in the marketplace is not clear. The logo is reported to be well known within the industrial sector, and many manufacturers are enthusiastic about applying for it. They would like to see the programme expand the number of product categories. Several non-profit environmental groups are unsatisfied with the Green Mark Logo's low visibility among consumers. The programme is accessible to all small and medium sized businesses, and although there is no programme to encourage their participation, half of the licensees are small or medium sized.

The Green Mark is overseen by Taiwan's EPA and managed by EDF. The programme is reviewed by the Review Committee, which has representation from the government, non-governmental organisations, academia and other stakeholders. Other groups involved in the process are the manufacturers who receive the Green Mark Logo, and stakeholders such as manufacturers' associations and consumer and environmental groups.

As the managers of the Green Mark programme, EDF is responsible for selecting product categories. To do so, it performs an annual survey of experts, industrial associations and NGOs. EDF also collects information on product criteria, criteria scope, the major environmental concerns, and sometimes test methods, from foreign eco-labelling programmes. Among the attributes considered during the review of proposed product categories are: threat to environmental quality; cannot be replaced by an existing "environmentally benign" product category (for example, mercury-containing batteries can be replaced by mercury-free batteries); have less environmental impact than similar products; and cannot have any adverse effects on health and safety of humans. In addition, there must be a sizeable number of domestic and foreign manufacturers.

EDF is also responsible for developing product criteria. The development process follows three guiding principles:

- 1 product criteria should take into consideration Taiwan's local environmental conditions by accounting for such problems as insufficient water and electricity supply, and a landfill shortage, by including Green Mark criteria for low water and/or electricity use, or products that produce less pollution;
- 2 20 to 30 percent of manufacturers must be able to meet the criteria with "reasonable" process modifications; and
- 3 comparison of criteria with other eco-labelling programmes.

To be considered for the Green Mark Logo, manufacturers must provide documentation about both the company in general, as well as the specific product. Importers can apply for the Green Mark Logo, if they can certify that they have had no significant environmental performance problems during the year prior to the application date. Documentation must include test reports completed by accredited laboratories on all quantifiable and measurable requirements in the criteria. Applicants

must also submit signed statements regarding other qualitative or non-measurable requirements, for example, certification that a particular chemical was not used in the product's formulation. EDF reviews the submitted documents from manufacturers, conducts an audit, samples and inspects the product, makes a recommendation for award, and monitors the use of Green Mark Logo. The Review Committee is responsible for awarding the Logo. The award is valid for two years, and the licensee may re-apply, following all requirements set forth in the guidelines. No licensee has ever failed upon renewal.

The Green Mark programme is beginning to incorporate the concept of life-cycle assessment (LCA) into its product criteria development. This approach differs from the early stages of Green Mark's product criteria development, where criteria were often simple and based on one attribute, such as a preference for cloth diapers because they reduced inputs into the solid waste stream.

# Questionnaire

1. Could you please provide us with the most recent data on the number of product categories and products awarded Eco-labels under your scheme.
2. We want the following information related to batteries, paper and washing machines.

## A) Batteries

- i) We know from the your website that eco-label is awarded to non-rechargeable batteries. We would like to know what leads to such criterion. (For example, Commitment to Basel convention on hazardous wastes, etc).
- ii) The round batteries eligible for eco-labelling are zinc-carbon and alkaline. Is there any other type?
- iii) The button cells eligible for eco-labelling are zinc-air and lithium. Is there any other type?
- iv) In your country, zinc-air batteries not containing more than XX mg/Ah are eligible for eco-label award, but in lithium batteries usage of mercury and cadmium is not allowed. Why is this so?

## B) Fine Paper

- i) In your country, recycled paper products designated for those fields in which they can replace products made of primary fibres, the minimum requirement on recycled content is XX percent on recycled paper and minimum YY percent for low-, medium-Kraft and special grade papers. Why is this so?
- ii) Could you let us know why it differs from the countries given below and what conditions lead to setting of this criterion?

(FYI: In Canada, the minimum requirement on recycled content is 50 percent recycled paper and minimum 10 percent consumer fibre. In Germany, minimum requirement on recycled content is 100 percent recycled paper and minimum 51 percent for low-, medium-Kraft and special grade papers. In India, the minimum requirement on recycled content is 60 percent from materials other than bamboo, hard woods, soft woods and reed; and 100 percent recycled waste paper for products sold as recycled paper. In Japan, minimum requirement on recycled content is 50 percent of recycled paper for printing paper, and 30 percent for recycled paper for office use. In Thailand, the minimum requirement on recycled content is 60 percent. In Nordic countries, there is no fibre input restriction, but the choice of pulp influences the permitted levels of emissions.)

## C) Washing Machines

- i) Do you have eco-labels for washing machines?
- ii) If yes, what is the consumption requirement for water and energy per washing cycle?
- iii) What conditions lead to setting of such criterion? In other words, why is the water and energy requirement different from the following countries?

(FYI: In Canada, the consumption requirement for water is 15 litres per kg of clothes and energy is 2.0 kWh per washing cycle. In Nordic countries, the consumption requirement of water is 32 litres per kg and for energy it is 0.35 kWh per kg. In Thailand, the consumption requirement of water is 35 litres per kg of wash load and for energy it is 0.04 kWh per kg of wash load.)

# CUTS' PUBLICATIONS

## TRADE, ECONOMICS AND ENVIRONMENT

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### STUDIES

#### 1. Policy Shift in Indian Economy

A survey on the public perceptions of the New Economic Policy in the states of Maharashtra, Rajasthan, Tamil Nadu and West Bengal in India conducted during June/July 1995 and recommendations to the government which were discussed at the above mentioned India-Nepal Training Seminar. (100pp, #9512, Rs.100/US\$25)

#### 2. Policy Shift in Nepal Economy

A survey on the public perceptions of New Economic Policy in Nepal conducted during June/July 1995 and recommendations to the government which were discussed at the above mentioned India-Nepal Training Seminar. (80pp, #9513, Rs.30/US\$15)

#### 3. Environmental Conditions in International Trade

A study on the impact on India's exports in the area of Textiles and Garments including Carpets, Leather and Leather Goods, Agricultural and Food Products including Tea and Packaging, for the Central Pollution Control Board, Ministry of Environment & Forests, Government of India. (39pp, #9508, Rs.200/US\$50)

#### 4. Costs on Consumers due to Non-Co-operation Among SAARC Countries

A study by noted scholars on the costs on consumers of the countries in South Asia due to economic non-co-operation among them. (#9605, Rs.50/US\$25)

#### 5. Tariff Escalation — A Tax on Sustainability

The study finds that the existence of escalating tariff structure, particularly in developed countries, results in "third-best" allocation of resources. It also harms both environment and development, and crucially the balance of trade. (Rs.100/US\$25, ISBN 81-87222-00-X)

#### 6. Trade, Labour, Global Competition and the Social Clause

The social clause issue has remained one of the most heated areas of international debate for a number of years. The study says that the quality of that debate has not met its volume and the real issues underlying the issue have rarely been analysed as a whole. It attempts to string the various debates together. (Rs.100/US\$25) ISBN 81-87222-01-8

#### 7. TRIPs, Biotechnology and Global Competition

The study shows, with some evidence, that the provisions in the TRIPs agreement concerning biotechnology are of great concern to the developing world. According to the new GATT agreement, all bio-technology products may be patented. Nearly 80 percent of all biotechnology patents are currently held by large multinationals. (Rs.100/US\$25, ISBN 81-87222-02-6)

#### 8. Eradicating Child Labour While Saving the Child

In the scenario of a growing interest in banning child labour this research report argues that trade restricting measures have every potential of eliminating the child itself. The report provides logical arguments and a case study for those groups who are against the use of trade bans for the solution of this social malaise. It also makes certain recommendations for the *effective* solution of the problem. (Rs.100/US\$25, ISBN 81-87222-23-9)

#### 9. Non-trade Concerns in the WTO Agreement on Agriculture

This research report written by Dr. Biswajit Dhar and Dr. Sachin Chaturvedi of the Research and Information System for the Non-aligned and Other Developing Countries, New Delhi, provides a detailed analysis of non-trade concerns, covering the various dimensions indicated by the Agreement on Agriculture of the World Trade Organisation. (Rs.50/US\$10, ISBN 81-87222-30-1)

#### 10. Liberalisation and Poverty: Is There a Virtuous Circle?

This is the report of a project: "Conditions Necessary for the Liberalisation of Trade and Investment to Reduce Poverty", which was carried out by the Consumer Unity & Trust Society in association with the Indira Gandhi Institute for Development Research, Mumbai; the Sustainable Development Policy Institute, Islamabad, Pakistan; and the Centre for Policy Dialogue, Dhaka, Bangladesh, with the support of the Department for International Development, Government of the UK. (Rs.100/US\$25, ISBN 81-87222-29-8)

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Advocates of strong international protection for patents argue that developing countries would gain from increased flows of trade, investment and technology transfer. The paper questions this view by examining both the functioning of patents in developing economies in the past and current structural trends in the world economy in these areas. The historical research revealed no positive links between a strong patent regime and FDI and technology transfer. Current trends are largely limited to exchanges amongst the industrialised countries and to some extent, the newly industrialising countries. While increased North/South trade flows are expected, negative consequences are possible.

(Rs.100/US\$25, ISBN 81-87222-36-0)

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This report shows particularities about the subject that distinguished the TRIPs (Trade Related Aspects of Intellectual Property Rights) negotiations from other agreements that make up the Uruguay Round results. It also analyses the way in which the TRIPs Agreement was actually negotiated and handled.

The research findings draw lessons from what actually happened and suggest how policy processes can be reformed and reorganised to address the negotiating requirements in dealing with such issues in the future.

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This report examines the role of provisions for technology and financial transfer as well as capacity building as an alternative to trade measures for improving compliance and enforcement. It acquires specific significance in the light of the fact that the WTO members for the first time, in the trade body's history, agreed to negotiate on environmental issues at the Fourth Ministerial Conference of the WTO at Doha.

This study also examines pros and cons of Carrots and Sticks approaches, and analyses incorporation of these approaches in three major MEAs, the Montreal Protocol, The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Basel Convention, to find out which approach has been more successful in ensuring enforcement and compliance.

(Rs. 100/US\$25, ISBN 81-87222-58-1)

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As both tariffs and other traditional trade barriers are being progressively lowered, there are growing concerns about the fact that new technical non-tariff

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This research report intends to increase awareness in the North about the ground-level situation in poor and developing countries. At the same time, it makes some useful suggestions on how the concerns of LDCs can be addressed best within the multilateral framework. The suggestions are equally applicable to the developing countries. (Rs. 100/US\$10, ISBN 81-87222-69-7)

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Since the early 1990s, globally there has been a proliferation of corporate codes of conduct and an increased emphasis on corporate responsibility. The idea is that companies voluntarily adopt codes of conduct to fulfil their social obligations and although these companies are responsible only for a fraction of the total labour force, they set the standards that can potentially lead to an overall improvement in the working conditions of labour.

Given this background, this paper examines how the failure of 1980s codes, regulated by international bodies, resulted in the proliferation of corporate codes of conduct and an increased emphasis on corporate social responsibility.

This paper further tries to explore whether voluntary codes of conduct can ensure workers' rights in a developing country like India.

(Rs.100/US\$25, ISBN 81-87222-76-X)

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South Asian Countries have the highest rates of child labour practices in the world. As a result of the advocacy by powerful political lobbying groups supported by Europe and the US, the trade sanction approach to encounter the issue of child labour has gained influence, since the nineties.

These sanctions were exercised to alleviate the problem of child labour by US policy-makers and also by some countries in the EU. But, the question arises – have the trade sanctions imposed by these countries in any way helped eliminate this problem? This research report of CUTS Centre for International Trade, Economics & Environment tries to address this question.

It has explored the impact of these trade sanctions and finds that these sanctions resulted in the contradiction of the basic objective, i.e., elimination of child labour.

Besides highlighting the causes of child labour, the report makes some very useful recommendations on how the issue of child labour can be addressed best at the domestic as well as international level. (Rs.100/US\$25, ISBN 81-87222-82-4)



### **17. TRIPs and Public Health: *Ways Forward for South Asia***

Trade Related Aspects of Intellectual Property Rights — or TRIPs — has always been one of the most contentious issues in the WTO.

This research document tries to find an answer to one specific question: what genuine choices do policymakers in South Asian developing nations now have, more so after the linkage between the trade regime and pharmaceuticals? Starting with a brief overview of the key features of the corporate model of pharmaceuticals, the paper provides some insight into the challenges faced by the governments in South Asian countries. The aim is to anchor the present discussion of public health and the impact of TRIPs in the socio-cultural environment of this region.

(Rs.100/US\$25, ISBN 81-87222-83-2)

### **18. Bridging the Differences: *Analyses of Five Issues of the WTO Agenda***

This book is a product of the project, EU-India Network on Trade and Development (EINTAD), launched about a year back at Brussels. CUTS and University of Sussex are the lead partners in this project, implemented with financial support from the European Commission (EC). The CUTS-Sussex University study has been jointly edited by Prof. L. Alan Winters of the University of Sussex and Pradeep S. Mehta, Secretary-General of CUTS, India.

The five issues discussed in the book are Investment, Competition Policy, Anti-dumping, Textiles & Clothing, and Movement of Natural Persons. Each of these papers has been co-authored by eminent researchers from Europe and India.

(Rs.350/US\$50, ISBN 81-87222-92-1)

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This research report is a sincere attempt to fathom the relevance of SPS and TBT Agreements, their necessity in the present global economic scenario and, of course, the development of case law related to the Agreements, along with a brief description of the impact of this case law on developing countries.

(Rs.100/US\$25, ISBN 81-87222-68-9)

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### **22. Trade-Labour Debate: *The State of Affairs***

The purpose of the study is not to rehearse the never-ending story on the pros and cons of the trade-labour linkage. It not only seeks to assess the current and possible future direction of the debate from the developing countries’ perspective. It is hoped that this approach will provide developing countries with concrete policy suggestions in terms of the way Forward.

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**26. WTO Agreement on Rules Of Origin: Implications for South Asia**

The importance of rules of origin (RoO) has grown significantly over the years. RoO can be divided into two categories: non-preferential and preferential.

The paper tries to critically examine the WTO proposal on the harmonised rules of origin. The study has looked at its implications on South Asian countries, especially India. Further, in view of the contentious nature of the RoO pertaining to textiles, and the big stakes involved for South Asia, the study places special emphasis on textiles and clothing.

(#0422, Rs. 100/US\$25, ISBN 81-8257-038-7)

**27. WTO Agreement on Agriculture and South Asian Countries**

Agriculture, in all its manifestations, has always been a sensitive and emotional issue for all countries, but it is more so for the poor countries of the South.

This paper looks into various commonalities in the economic situation of South Asian countries, their sensitivity attached to agriculture, and above all, a common approach to globalisation. In view of these realities, the paper tries to explore a common agenda that South Asian countries can follow during future negotiations on the WTO Agreement on Agriculture. Now the Doha Round of trade negotiations has entered into a crucial phase after the July developments. The “July Package” has resulted in agreement over the framework for establishing modalities in agriculture. In light of this, there cannot be a more opportune time for publishing this paper.

(#0423, Rs. 100/US\$25, ISBN 81-8257-040-9)

**28. Agreement on SAFTA: Is It Win-Win for All SAARC Countries?**

One of the major objectives of this study is to sensitise various stakeholders (state as well as non-state actors) on the need for better regional cooperation, as it has been proved that such cooperation gives huge peace dividends. It provides a good account of existing trade between SAARC countries and highlights lessons learnt from the efforts so far made for better intra-regional trade within South Asia. It also discusses possible

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(#0424, Rs. 100/US\$25, ISBN 81-8257-042-5)

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This paper tries to bring to the fore some practical political, economic and operational issues from the point of view of South Asian countries in particular and which may arise as a result of future multilateral agreement on trade facilitation. It throws light on some of the major policy issues and recommends approaches that would fit with the interests and priorities of South Asian countries. One of the major issues the paper tries to emphasise upon is that the problems of improving customs administration in the region are only a small part of a much greater problem relating to border management and domestic tax and revenue enforcement issues.

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**30. Movement of Natural Persons: A Case Study of South Asian Countries**

The study looks at the case of South Asian countries, which have got huge potential to increase their export of services through Mode 4. It focuses mainly on four countries – Bangladesh, India, Pakistan and Sri Lanka. However, there are several constraints that South Asian countries face in exporting their services under Mode 4 to developed countries.

It focuses on the significance of Mode 4 for South Asia, the kinds of barriers faced by these countries in supplying services through Mode 4, and how the GATS negotiations can be used to advance their export interests under this particular mode of service supply. Besides, the study also highlights the role of complementary domestic policy reforms and measures, which are equally important for harnessing benefits if trade under Mode 4 is liberalised.

(#0427, Rs. 100/US\$25, ISBN 81-8257-044-1)

**31. Enhancing Collective Export Competitiveness on Textiles and Clothing**

The paper tries to underline the importance of enhancing collective export competitiveness of South Asian countries. It makes a strong case for enhancing collective competitiveness through cooperation rather than competition. Still, there is a need to promote healthy competition among firms within the region, and countries, for continuous improvement of efficiency and expertise.

The study also recommends the necessity of having an effective institutional arrangement for making such cooperation meaningful and successful. Over and above, the cooperation on textiles and clothing could be a good beginning to fulfil our long-term objective of enhanced cooperation on economic, trade and investment under the auspices of South Asia Free Trade Agreement (SAFTA).

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## DISCUSSION PAPERS

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A much appreciated paper written by Pradeep S Mehta and presented at the GATT Symposium on Trade, Environment & Sustainable Development, Geneva, 10-11 June, 1994 which highlights the inconsistencies in the contentious debates around trade and environment. (10pp, #9406, Rs 30/US\$5)
- 2. Ratchetting Market Access**  
Bipul Chatterjee and Raghav Narsalay analyse the impact of the GATT Agreements on developing countries. The analyses takes stock of what has happened at the WTO until now, and flags issues for comments. (#9810, Rs.100/US\$25)
- 3. Domestically Prohibited Goods, Trade in Toxic Waste and Technology Transfer: Issues and Developments**  
This study by CUTS Centre for International Trade, Economics & Environment attempts to highlight concerns about the industrialised countries exporting domestically prohibited goods (DPGs) and technologies to the developing countries that are not capable of disposing off these substances safely, and protecting their people from health and environmental hazards. (ISBN 81-87222-40-9)

## EVENT REPORTS

- 1. Challenges in Implementing a Competition Policy and Law: An Agenda for Action**  
This report is an outcome of the symposium held in Geneva on "Competition Policy and Consumer Interest in the Global Economy" on 12-13 October, 2001. The one-and-a-half-day event was organised by CUTS and supported by the International Development Research Centre (IDRC), Canada. The symposium was addressed by international experts and practitioners representing different stakeholder groups viz. consumer organisations, NGOs, media, academia, etc. and the audience comprised of participants from all over the world, including representatives of Geneva trade missions, UNCTAD, WTO, EC, etc. This publication will assist people in understanding the domestic as well as international challenges in respect of competition law and policy. (48pp, #0202, Rs.100/US\$25)
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## MONOGRAPHS

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This monograph is about the World Trade Organisation (WTO) which has become the tool for globalisation. This monograph is an attempt to inform the layperson about the WTO in a simple question-answer format. It is the first in our series of monographs covering WTO-related issues and their implications for India. Its aim is to create an informed society through better public knowledge, and thus enhance transparency and accountability in the system of economic governance. (36pp, #0213, Rs.50/US\$10)

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As a befitting reply to the overwhelming response to our earlier three monographs, we decided to come out with a monograph on *WTO Agreement on Agriculture* in a simple Q&A format. This is the fourth one in our series of monographs on *Globalisation and India – Myths and Realities*, started in September 2001.

This monograph of CUTS Centre for International Trade, Economics & Environment (CUTS-CITEE) is meant to inform people on the basics of the WTO Agreement on Agriculture and its likely impact on India. (48pp, #0314, Rs.50/US\$10)

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#### **13. ABC of TRIPs**

This booklet intends to explain in a simple language, the Trade-Related Intellectual Property Rights Agreement (TRIPs), which came along with the WTO in 1995. TRIPs deals with patents, copyrights, trademarks, GIs, etc. and continues to be one of the most controversial issues in the international trading system. The agreement makes the protection of IPRs a fundamental part of the WTO. This monograph gives a brief history of the agreement and addresses important issues such as life patenting, traditional knowledge and transfer of technology among others.

(38pp, Rs. 50/US\$10, #0407 ISBN 81-8257-026-3)

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This paper discusses and concludes the issues, in broad terms, that India struggles with trade policy making, essentially because domestic and international thinking on development and economic growth is seriously out of alignment, and that there are few immediate prospects of this changing, for a variety of entirely domestic political reasons. (#0415, Rs. 100/US\$10, ISBN 81-8257-031-X)

#### **15. ABC of GATS**

The aim of the GATS agreement is to gradually remove barriers to trade in services and open up services to international competition. This monograph is an attempt to educate the reader with the basic issues concerning trade in services, as under GATS. The aim of this monograph is to explain in simple language the structure and implications of the GATS agreement, especially for developing countries.

(#0416, Rs. 50/US\$10, ISBN 81-8257-032-8)

#### **16. WTO Agreement on Textiles and Clothing – Frequently Asked Questions**

This monograph attempts to address some of the basic questions and concerns relating to the textiles and clothing. The aim is to equip the reader to understand the fundamentals of and underlying issues pertaining to trade in textiles and clothing.

(#0419, Rs. 50/US\$10, ISBN 81-8257-035-2)

## GUIDES

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### Economiquity

A quarterly newsletter of the CUTS Centre for International Trade, Economics & Environment for private circulation among interested persons/networks. Contributions are welcome: Rs.100/US\$20 p.a.

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Pursuing economic equity and social justice within and across borders by  
persuading governments and empowering people

### Goals

Enable and empower  
representatives of the civil society,  
from developing countries in  
particular, to articulate and  
advocate on the relevant issues at  
the appropriate fora.

Create a questioning  
society through empowerment  
of civil society representatives  
thus ensuring transparency  
and accountability in the  
system.

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