



LUND UNIVERSITY

Indicators for Ecolabelling : Opportunities for GEN Members to demonstrate and benchmark advancements in performance and effects

Thidell, Åke; Leire, Charlotte; Lindhqvist, Thomas

2015

[Link to publication](#)

Citation for published version (APA):

Thidell, Å., Leire, C., & Lindhqvist, T. (2015). *Indicators for Ecolabelling : Opportunities for GEN Members to demonstrate and benchmark advancements in performance and effects*. [Publisher information missing].

Total number of authors:

3

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Indicators for Ecolabelling

Opportunities for GEN Members to
demonstrate and benchmark
advancements in performance and effects

Report prepared for the
Global Ecolabelling Network (GEN)

Åke Thidell
Charlotte Leire
Thomas Lindhqvist





iiiiee

THE INTERNATIONAL INSTITUTE FOR
INDUSTRIAL ENVIRONMENTAL ECONOMICS

ISBN: 978-91-87357-16-9

© IIIIEE & GEN, 2015



Acknowledgements

The authors are grateful to the contacted staff members of the contributing ecolabelling schemes for their positive responses and their efforts in searching for data and answering our questionnaires. Many thanks should also be directed to Mr. Björn-Erik Lönn for his input, time and patience with this project. A special recognition is also given to Mr. Mingxing Sun, guest researcher at the IIIEE, who with great enthusiasm helped us to go through documentation in Chinese.

Photos: Lars Hansson (pp. 8:1, 8:2, 9:1), Jessika Luth Richter (pp. 13, 14), Charlotte Leire (pp. 22, 32, 36), Thomas and Nina Lindhqvist (remaining photos).

Layout: Thomas Lindhqvist



Table of content

| | | |
|-----|---|----|
| 1 | Introduction | 1 |
| 2 | Purpose | 3 |
| 2.1 | Focus of the study | 3 |
| 2.2 | Method | 3 |
| 3 | Effectiveness and efficiency of ecolabelling | 5 |
| 3.1 | Discussions on the success of ecolabelling | 5 |
| 3.2 | Studies measuring the impacts of ecolabelling | 6 |
| 3.3 | Case: China Environmental Labelling | 7 |
| 4 | Direct and indirect effects from ecolabelling | 10 |
| 5 | Performance-related information provided by four ecolabelling schemes | 13 |
| 5.1 | Environmental Choice New Zealand | 13 |
| 5.2 | Thai Green Label | 15 |
| 5.3 | The Blue Angel | 16 |
| 5.4 | Korean Ecolabel | 16 |
| 6 | Use of indicators in four ecolabelling schemes | 18 |
| 6.1 | Environmental benefits/potential environmental benefits | 18 |
| 6.2 | Environmental objectives for ecolabelling criteria development | 19 |
| 6.3 | Product groups and criteria documents | 20 |
| 6.4 | Licences and products/services on the market | 21 |
| 6.5 | Sales and employees of licensed products and services | 22 |
| 6.6 | Market diffusion of the ecolabel | 22 |
| 6.7 | Producers | 23 |
| 6.8 | Consumer recognition and trust in the ecolabel | 24 |
| 6.9 | Professional purchasers | 25 |
| 7 | General impressions from the information collection | 26 |
| 7.1 | Capturing the dynamics of the ecolabelling scheme | 26 |
| 7.2 | Possibilities ahead | 27 |
| 7.3 | Using information for comparisons | 28 |
| 8 | Conclusions | 29 |
| 8.1 | Indicator design and data availability | 29 |
| 8.2 | Motivation-related limitations | 29 |
| 8.3 | Potentials and costs for ecolabelling | 30 |



| | | |
|-----|---|----|
| 9 | Proposal for proxy indicators for ecolabelling | 32 |
| 9.1 | Scope of the scheme | 32 |
| 9.2 | Number of licences and products on the market | 33 |
| 9.3 | Consumers' and professional purchasers' recognition and trust | 34 |
| 9.4 | Market penetration | 35 |
| 9.5 | Estimations of environmental benefits | 36 |
| | References | 38 |

Table of figures

| | | |
|-----------|---|----|
| Figure 1: | The schematic cause-effect chain of intervention of an ecolabelling scheme. | 11 |
| Figure 2: | Danes' knowledge/recognition about the Nordic Swan and EU Ecolabel. | 27 |

Table of tables

| | | |
|----------|---|----|
| Table 1: | Environmental benefits of the China Environmental Labelling Program in 2013 | 9 |
| Table 2: | Proxy indicators useful to assess the performance of ecolabelling schemes | 12 |







1 Introduction

There is an increasing agreement that current patterns of consumption and production are unsustainable. In line with the complexity of the challenges our civilisation faces, environmental work is taking place targeting many angles and issues of modern society. Products and services are key perspectives when targeting consumption patterns. A product (or a service) can be seen as the unit that carries the environmental impacts from cradle to grave, and the product chain involves those actors who can make environmental improvements and affect the use and disposal of the product. Primary challenges for products, in design, production, consumption and disposal, include: to increase efficiency in energy and water use; to reduce waste; to stimulate the life cycle economy; to decrease externalisation of costs; and to inform and educate the consumers.

Ecolabelling, here used synonymously for ISO Type 1 ecolabels, has emerged as an instrument to reduce the environmental impacts throughout the life cycle: in design, production, consumption and disposal of products. It is worth mentioning that already Agenda 21 (Chapter 4, Paragraph 21) stated that governments, in cooperation with industry and other relevant groups should encourage ecolabelling as a way to encourage more environmentally friendly consumption patterns. Ecolabelling theory claims that the ecolabel offers manufacturers the possibilities to improve sales or images of a product, gives incentives to reduce the environmental impacts of products, and increases consumer awareness of environmental issues, and hence, shifts the market to products and services with reduced environmental impacts.

A number of studies have highlighted the positive environmental benefits of ecolabelling. An early attempt reported significant reductions of organic solvents in paint and emissions from burners from the German Blue Angel (Hirsbak et al., 1990). KEITI concluded that in the Republic of Korea, where ecolabels play a central role in the public procurement practices, the public procurement of green products from 2005 to 2010 has helped reduce emissions by almost 3 million tonnes of greenhouse gases (Moon, 2012). Another example is the Swedish Good Environmental Choice label that conducted a thorough evaluation of the environmental effects of the label on laundry detergents and found both a substantial reduction of some targeted surfactants and that major manufacturers had modified their recipes to comply with the ecolabelling criteria for the Swedish market (Wilske, 1999). Other studies have voiced hesitation about the environmental benefits of ecolabelling and instead pointed out, among other issues, the negative trade effects (Morris, 1997; Korteland, 2007).

To what extent ecolabelling can contribute to sustainable development remains a subject for continuous debate. The need for finding approaches of influencing our ways of production and consumption has, however, led to continued interest in ecolabelling and similar soft instruments, as these have good chances of being accepted by the political decision-makers and are only requiring low investments. This implementation feasibility supports ecolabelling, but the popularity of the instrument also means that various societal actors want to get information on the effects. There is, consequently, a continued need to evaluate the effects that ecolabelling have on the environmental impacts of products and services on the market, for instance, in terms of possible market shifts (Frey et al., 1998), but more generally there is a quest for methods to systematically assess the effects (Rubik et al., 2008).

Many studies have struggled with the task of finding ways of evaluating the environmental impacts of ecolabelling. To find methods to fairly and objectively evaluate the environmental effects of policy interventions has been a challenge for what concerns most policy instruments and ecolabelling is no exception. Because it is difficult to attribute identified changes in environmental impacts specifically to ecolabelling, many studies have pointed to the possibility of evaluating the performance of ecolabelling by looking at how they have affected the market, that is, to use market effects as proxies for environmental effects.

It should also be noted that it can be of interest to compare ecolabelling schemes in order to better understand how such schemes are designed in an optimal way. That is, besides looking at what we could call the absolute effects of ecolabelling, it is also of interest to explore the relative effects of different implementations of ecolabelling. However, when discussing and debating the virtues and weaknesses of ecolabelling, it is not always clear how data is generated (scoping etc.), how comparable definitions are, and how data is used. This means that there is an uncertainty considering the possibilities to deliver standardised and comparable indicators for environmental benefits of ecolabelling, and, moreover, to aggregate available indicator information for ecolabelling schemes.

It would, without doubt, be advantageous to give solid accounts with quantified data on positive environmental effects, that is, on the desired final outcome of ecolabelling. This would politically justify the resources spent on and by the schemes. As stated above, such hard data is, however, difficult to generate. The difficulties relate both to poor relevant data and the possibility to attribute effects to the ecolabel specifically.





2 Purpose

2.1 Focus of the study

This study intends to address the described quest for methods and tools to evaluate the effects of ecolabelling on the market, and discuss the opportunities and barriers for environmental performance indicators for ecolabelling schemes. In order to do so, a set of questions to guide the study were formulated:

- What does literature offer when it comes to ecolabelling performance?
- What are ecolabelling schemes focusing on when reporting on their own performance?
- Which indicators are common to many or all ecolabelling organisations?
- Which indicators can be useful in comparing performance of ecolabelling schemes?

When looking at indicators, this study focuses on the possibility to use *proxy indicators* that measure important aspects necessary for delivering the desired result. Proxy indicators can be used to indicate the fulfilment of goals/objectives when they can be considered to capture the essence of the goals/objectives or together provide a reasonable picture of the effectiveness of the intervention. They are of interest in cases when the desired final outcome of a policy intervention is difficult or not cost-effective to measure. Such indicators, when well selected, are expected to give an indicative picture of the impacts based on intermediary outputs and outcomes. It could also be expressed as the proxy indicators reflect performance of the system that is supposed to deliver the desired final outcome.

In addition, well-selected proxy indicators could form a foundation for benchmarking between ecolabelling schemes in order to seek improvements and experience sharing. Such indicators, though not standardised, are used, more or less systematically, by a number of ecolabelling schemes. This study aims to identify such indicators together with supplementing information.


2.2 Method

The study was primarily conducted through a review of documents available online, academic literature, and a questionnaire survey among the selected schemes. Moreover, telephone and e-mail interviews were conducted to further discuss the possibilities and needs to develop and apply indicators.

In short we can say that we concentrated the work on finding performance-related information by exploring the information

available on the respective websites, and supplemented this by examining external studies. This information was used to discuss what aspects could be useful for evaluations and comparisons among ecolabelling schemes. The information gathering has been carried out in several steps and has been updated by exploring the websites of the ecolabelling schemes in focus up to March and April 2015.





3 Effectiveness and efficiency of ecolabelling

3.1 Discussions on the success of ecolabelling

From the early days of ecolabelling, literature has discussed the different approaches to evaluate the performance of ecolabelling, albeit in limited scope. For example, a study from 1994 looked at the determinants of effectiveness for environmental certification and labelling (US EPA, 1994). In 2004, a study on the potentials of the EU Flower used three different scenarios. It assumed a 5%, 20% and 50% market penetration of ecolabelled products and substitution of “average” products and calculated according to the most important environmental criteria and environmental parameters such as energy and CO₂ emissions savings, and reduction of material, water and hazardous substances. It concluded that considerable environmental benefits could be attained if market penetration would increase as assumed (Cadman & Dooley, 2004). Another study from 2004 examined whether the European ecolabel was ahead, in line or behind current (environmental and health) legislation in order to estimate its environmental effectiveness (Locret & de Roo, 2004). In 2005, UNEP conducted a study on the environmental and trade-related effects of ecolabelling, reviewing five well-known ecolabelling programmes to identify challenges for policy integration from a sustainable development point of view (UNEP, 2005). In 2008, a study examined the state, successes, potentials and experiences of ecolabelling within businesses (Rubik et al., 2008). Delft University published a report in 2007 on the desirability of ecolabels from an environmental and poverty perspective in which a general framework of proxy indicators is developed and tested against two existing ecolabels (Korteland, 2007). The same year a study from Australia discussed, among other ecolabelling issues, success indicators for a range of international ecolabels (Horne, 2007).

Among these publications, the topic of the effectiveness of ecolabelling has been comprehensively discussed in the book from 2005 called “The Future of Ecolabelling”, edited by Rubik and Frankl. This book discusses whether ecolabels are an effective tool to foster the development, production, sale and use of sustainable products and what factors contribute to the development of successful schemes. It also looked at whether the EU Flower can be considered a success, or if national ecolabels such as the German Blue Angel and the Nordic White Swan are more effective. The book was based on the findings generated in the DEEP project (commissioned by European Commission). The project was carried out by a consortium

of research institutions from four European countries (Germany, Norway, Italy and Spain) with the lead of IÖW Germany. They looked at experiences with environmental product information systems (EPIS) in each respective country. To allow for comparison, the case studies carried out were based on three specific product groups: tissue paper (non-recoverable consumer goods), washing machines (energy-consuming durable products), and tourist accommodation (complex services). The project compared and contrasted experiences in selected products groups, each with their own specific challenges. The DEEP project attempted to respond to a number of key questions with regard to ecolabelling: Are environmental product information systems an effective tool to promote more sustainable production and consumption patterns? What factors contribute to the success or failure of such information systems?

3.2 Studies measuring the impacts of ecolabelling

Alongside the theoretical discussions, attempts to measure the actual success of ecolabelling have been made on the market. These studies have been conducted by a range of different organisations and not always by the ecolabelling organisations themselves.

An OECD (1997) study mentioned that the German Blue Angel reported an increase in market share for ecolabelled paints from 1% in 1981 to 60% in 1995 in the do-it-yourself sector and 20% in the handicraft sector. An assessment for the Nordic Swan, as reported by Rubik and Frankl (2005), estimated the market shares for several product groups in the Nordic countries: printing paper, laundry detergents and all-purpose cleaners.

In many cases, the studied effect on the market has been measured in terms of consumer awareness and familiarity of ecolabels. For instance, the EVER project, commissioned by the European Commission, looked at the level of awareness of the different established national ecolabels in European countries (EVER, 2005). There, a survey by the European Consumer Organisation (BEUC) looked at whether consumers know of and know where to find products with the EU ecolabel. Moreover, it reported on other studies concerning consumers' familiarity with ecolabels and on their knowledge and views/opinions of ecolabelled products, as well as, their perceptions of the role of ecolabels (EVER, 2005). A chapter in the book "The Future of Ecolabelling" compared four different countries (Germany, Norway, Italy and Spain) in terms of which ecolabels are best known among consumers (Stø & Strandbakken in Rubik & Frankl, 2005). Rubik et al. (2008) used the term "qualified" knowledge as deeper insights about ecolabels. That report also examined the so called "spontaneous awareness" compared to the "qualified knowledge", and further whether consumers confuse different ecolabels.





Our review of nine different studies on performance of ecolabelling (US EPA (1994), Cadman & Dolley (2004), Locret & de Roo (2004), UNEP (2005), Horne (2007), Korteland (2007), Rubik et al. (2008), Potts & Brennan (2011), and Seifert & Comas (2012)) shows that the market impact aspects consumer awareness and consumers' perceptions of certain ecolabelling schemes were the most commonly focussed areas. Such data is considered both reliable and easy to measure via consumer surveys. Market shares were assessed in a few studies, but the necessary information to make such an assessment is judged as more difficult and expensive to acquire, as compared to consumer awareness data. Two studies, which called for data on how ecolabels change consumer behaviour, also conclude that it will be difficult to attribute the change in behaviour to the label per se, as there could be a number of other reasons for such changes in behaviour.

The review also considered market impact indicators and could conclude that the literature points to that perception data is easier to acquire and more reliable than behaviour change data. In line with this, findings from the review pointed to that producer' perceptions of ecolabels are more commonly monitored than producers' changes in behaviour, with reported difficulties to obtain reliable data.

It was also noted that literature frequently states the desirability of monitoring the environmental impacts of ecolabels, whether real or estimated. But none of the studies is reported to have been able to present a reliable full set of data about the actual environmental impacts from ecolabels. From the review, it was finally concluded that proxy indicators are quite common, including the stringency or quality of the ecolabelling criteria.

A study by Leire and Thidell (2004) provided an extensive review of studies on the market diffusion of environmental product information, and looked specifically into the *recognition*, *understanding*, and *use*, respectively. Also the notions of *trust* and *confidence*, as well as the concept of a consumer's *ability to locate* the ecolabelled products, as noted earlier, have been deemed valid research angles to examine the market diffusion of ecolabelling.

In summary, there are several studies focusing on consumers as a way to measure the impact of ecolabelling on the market. Is consumer awareness an adequate measure? Other aspects, such as, knowledge, search for environmental information, and attitudes towards the reliability of this information, can also be important factors for the market performance of ecolabels and ecolabelled products.

3.3 Case: China Environmental Labelling

Towards the end of the project period, we came across information on analysis of environmental benefits from China Environmental

Labelling Programme in People's Republic of China. This information was kindly compiled and translated from Chinese by Mr. Mingxing Sun, visiting PhD candidate at IIIEE.

The China Environmental Labelling Programme¹, which joined GEN in 2008, reported that it by the end of 2013 covered 91 categories of products through 96 effective technical standards including 9 low-carbon standards for different product groups. It was also reported that almost 2 000 enterprises were licensed and that there were more than 30 000 different ecolabelled products on the market worth CNY 100 billion (EUR 14 billion) output value.² It was mentioned that 84 of the standards attracted very little attention.

In 2014, the Chinese Ministry of Environmental Protection (2014) commissioned and evaluation of environmental benefits from China Environmental Labelling. For the evaluation, they selected 47 of the standards.³ Out of those, company data for the analysis existed for 33 product groups which finally became the scope of the evaluation. Questionnaires were distributed to 1 867 producers and the reported response rate was 60%. Two methods were used for data processing in the evaluation:

- Different value method: pollutant emission reduction is the difference in environmental performance between a reference product and the standard values given in the requirements of the ecolabel multiplied with number of products sold. The values for the reference product were derived from national standards or industry average. This calculation was carried out for selected environmental parameters related to the individual product groups.
- Direct conversion method: Resources saved is calculated as amount of recycled material per product multiplied with number of sold products. This calculation was carried out per recycled material and product group or simply number of recycled units (products).

The report by Ministry of Environmental Protection (2014) also provides the background and the actual calculations. These methods correspond to an approach presented in Backman et al. (1995).

¹ <http://www.greencouncil.org/eng/greenlabel/china.asp>

² China Environmental Labelling – CEL. Information leaflet. Available at: http://search.standardsmap.org/assets/media/ChinaEnvironmentalLabeling/English/AtAGlance_EN.pdf However, other sources, for instance Ministry of Environmental Protection (2014), give different numbers.

³ The remaining standards were excluded for reasons like: difficulties in quantification (due to standards restricting substances according to RoHS and REACH, and restrictions of hazardous substances affecting human health), or they were of no/low relevance (restricting CFC which basically was achieved).



The reported environmental benefits of the China Environmental Labelling Programme for 2013 were reported for selected environmental parameters (see Table 1).

Table 1: Environmental benefits of the China Environmental Labelling Program in 2013

| Environmental category | Environmental parameter | Reduced amount [tonne] |
|------------------------|--|------------------------|
| Air pollution | VOCs | 195 000 |
| | NO _x | 130 000 |
| | SO ₂ | 27 000 |
| | CO ₂ | 8 590 000 |
| | CO | 482 000 |
| | HC | 37 300 |
| Water pollution | Phosphate(PO _x ^y) | 61 600 |
| Hazardous waste | Hg | 10 |
| Resources saving | Water | 227 000 000 |
| | Plastics | 120 000 |
| | Industrial waste | 3 500 000 |
| | Paper pulp | 8 200 000 |
| | Toner cartridge | 3 000 000 units |
| Energy saving | Electricity | 50 TWh |

The breakdown of energy savings to different product groups shows a wide spread of the contributions, where web servers alone stand for 73%, printers, fax machines, and similar stand for 10% and solar heating systems stand for 9%. The remaining product groups together contribute with 8%.

However, while processing the given background information, it was concluded, that there is a need for better explanations of the real meaning of the data and better transparency to judge data quality.

4 Direct and indirect effects from ecolabelling

It has been empirically proven to be difficult to directly capture the reduced environmental impact and to have quantitative data to support it. Instead, environmental benefits are most commonly examined through the lens of market diffusion, and using a range of indicators to get a comprehensive picture.

As Rubik et al. (2008) point out, the more ecolabelled products are sold and bought by consumers, the more they can substitute for environmentally less benign products. Therefore, consumer awareness can be seen as a useful indicator for the success of ecolabelling. The authors conclude that the most reliable data exists on consumer awareness of ecolabels.

Another important indicator of successful market penetration is the market share of ecolabelled products in relation to all other products sold that belong to the same group (Rubik & Frankl, 2005). The market share is influenced by the consumer acceptance of the ecolabels. This factor will to some extent determine the success (FAO, 2001). Availability of a wide supply of ecolabelled products is also an important factor (FAO, 2001). Also other parameters have been suggested, such in the case for the EU Ecolabel: the absolute number of licences and the absolute number of applicants (US EPA, 1994).

Furthermore, with time it has become increasingly evident that ecolabelling plays not only one but many roles in the work to green the markets. This makes the task to measure its environmental benefits even more challenging. Besides the direct effects there are also indirect effects caused by secondary uses of information generated by the ecolabelling scheme, and some spin-off effects. The indirect environmental benefits and effects mean the environmentally positive impacts induced by ecolabelling schemes on its surroundings in policy, business and society. This includes, for example, ecolabelling criteria playing a role as informal “standards”, and ecolabelling multi-stakeholder approach as initiator for co-operative action (EVER, 2005).

It was mentioned above that the direct environmental benefits are rarely measured in quantitative terms and this can be related both to insufficient methods and lacking data availability. Despite the scarcity of indicators for measurements on indirect effect, the train of causes and effects has been fairly well explored, in particular in comparison to the knowledge on how comparable relations influence actors and cause indirect effects.





The logical flow of successful growth and market impact of an ecolabelling scheme can be summarised as a cause-effect chain of interventions (Thidell, 2009). A higher number of criteria documents and demand for ecolabelled products can generate a higher interest among producers to apply for licences and ecolabel their products. When the requirements in the ecolabelling criteria are sufficiently stringent and the scheme attracts producers and consumers, it will encourage environmental product modifications and innovation, and thus contribute to reduced environmental stress from a given level of consumption. The cause-effect chain is illustrated in Figure 1 below.

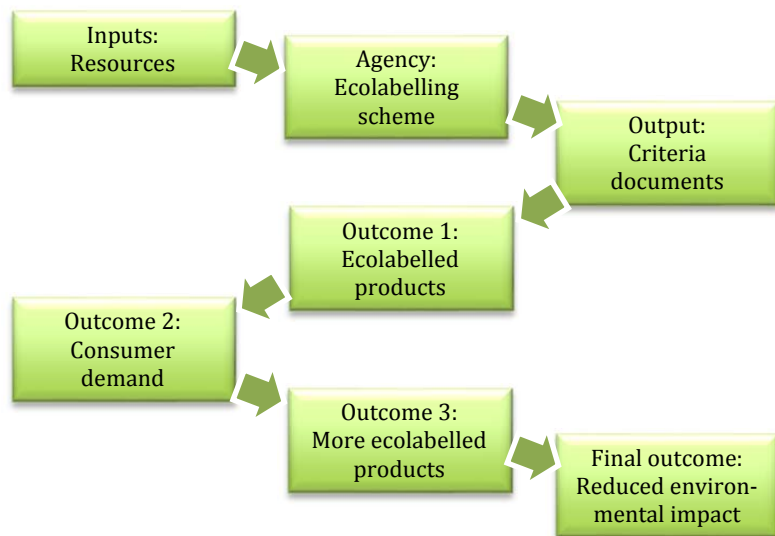


Figure 1: *The schematic cause-effect chain of intervention of an ecolabelling scheme.*

Along this chain, proxy indicators can be used to measure the success. These can capture the interim evaluation of how the ecolabel functions, such as development of criteria documents, their use, consumers' perception and knowledge of the system, etc. The overall idea is that if these indicators show positive results, it also means that the ecolabelling system would have a positive environmental impact on the market.

Table 2 lists the main set of indicators and their associated aspects and qualities that are relevant in the discussion on the performance of ecolabelling schemes.

Some methodological reasons for the lack of data have been suggested to be, for instance, data availability and reliability (Korteland, 2007). Gathering data is a complex task and faces challenges in that economic data often is confidential. Also, understanding causation of data and effects is a daunting task because the effects of ecolabelling might be intangible or long term in nature. There are therefore also difficulties in isolating the effects

of ecolabelling from other economic, environmental and social factors and policies. Moreover, it can be inappropriate to generalise outcomes as ecolabelling schemes are likely to differ in design.

Table 2: *Proxy indicators useful to assess the performance of ecolabelling schemes*

| Proxy indicator | Aspect/quality |
|---|--|
| Number of product group criteria. | Range of labelled products and opportunities for dissemination of information on environmentally benign products. |
| Number of product groups without issued licences. | Market attraction (lack of perceived industry benefits from adapting to the ecolabel), unrealistic level of requirements, weak capacity to identify relevant product groups. |
| Number of product groups with licences, the total number of licences issued. | Market attraction. Ability to respond to or to induce market needs. |
| Consumer recognition and knowledge about the ecolabel, confidence in the ecolabelling scheme. | Conditions for impact, trust and credibility. |
| Measured or estimated (insignificant, modest, medium, significant) market shares. | Potential to cause impacts. |
| Trends in the foregoing indicators. | Dynamics and direction of the scheme's attractiveness. |
| Judgement of the product group relevance and criteria requirement levels based on stakeholder consultation and coverage of the ecolabelling scheme in the media debate or from desktop assessment. | Potential to deliver environmental benefits. Trust and credibility in the scheme. |
| Estimated differences in performance for selected environmental parameters between average and ecolabelled products in individual product groups times estimated number of ecolabelled products sold in each product group. | Order of magnitude of (potential) direct environmental benefits for the selected parameters for each product group. |





5 Performance-related information provided by four ecolabelling schemes

5.1 Environmental Choice New Zealand

Environmental Choice New Zealand ecolabelling scheme (ECNZ) was established in 1989. The turn-over of the scheme was in 2011 NZD 1.0 million (approx. EUR 600 000). The New Zealand Ecolabelling Trust currently has 18 mutual recognition arrangements with other schemes.

The ECNZ scheme is directed by a number of objectives including to:⁴

- Improve the quality of the environment by encouraging more sustainable processes through the design, production, marketing, and use of products that have a reduced environmental impact during their entire life cycle;
- Offer a credible national and/or regional (e.g. Australasian) programme for environmental labelling;
- Work towards compliance with recognised international programmes and principles;
- Foster and develop international relationships with relevant recognised international networks and other ecolabelling programmes/initiatives;
- Establish mutual recognition agreements with other similar programmes;
- Work towards the harmonisation of national and/or international product specifications;
- Provide a clear, credible and independent guide to help eco-friendly consumers and businesses identify products and services that are less harmful to the environment;
- Provide a market incentive to manufacturers, suppliers and retailers of environmentally preferable products and services;
- Encourage manufacturers, suppliers and retailers to develop products and processes that are in compliance with published green product specifications;
- Promote responsible procurement policies by central and local government, other organisations and business; and
- Establish and maintain strategic relationships with government, business and non-government organisations which have common environmental and product performance interests.

The ECNZ outlines a number of public good benefits derived from ecolabelling, including to promote economic efficiency, reduce consumer information costs, crowd out “green wash” claims, validate products in competitive trading environments, increase

ECNZ homepage

http://www.environmentalchoice.org.nz/about_ecnz/index.htm

environmental awareness, reduce impacts of consumption, and enhance key environmental strategies.⁵

In its annual report from 2013/2014, ECNZ explains that the scheme champions mainly in the business-to-business and business-to-government contexts and that this was tested in a follow-up (2-year interval) survey (conducted by Colmar Brunton). It also highlights that an unprecedented number of specification (criteria) updates and revisions had been carried out during the year.

In terms of growth of the label, ECNZ reports on the following numbers⁶:

- financial results;
- fees received for licences (without any increases to the scale of fees);
- ecolabelled products per head of population;
- number of published criteria;
- number of updated and revised criteria documents;
- new applicants;
- expanding licensees;
- number of operating and proposed licences (89 in 2013-2014);
- growth in licensees (15 during 2012-2013);
- estimated total financial turnover of licensees is in excess of NZD 2 billion;
- public trust in the label (from survey by Colmar Brunton);
- success of promotional activity (as measured by continued consumer trust);
- financial outcomes in line with overall economic activity; and
- business plan has been followed.

Moreover, ECNZ compares itself with other labels such as FSC, CarboNZero and Energy Star in terms of, for instance, ecolabelled products per head of population, “stronger environmental guarantee”, “stringency” and “trustworthiness”. Also “consumer influence” is tested against the FairTrade label and is measured by consumer perceptions on the following statements: good quality, recyclable, tested, better choice for New Zealanders, biodegradable, trustworthy, reduced carbon footprint or pollution, and government backed.⁷

Finally, in terms of consumers, ECNZ claims, based on the Colmar Brunton report from 2014, that consumers perceive the ECNZ ecolabel to be more trustworthy, stringent, government endorsed and strong in their environmental guarantee compared to other ecolabels. It was concluded that six out of ten who recognise the ecolabel, are more likely to buy the product over others.

⁵ ECNZ www.environmentalchoice.org.nz/about_ecnz/eco_labelling/index.htm

⁶ ECNZ Annual Report 2013/14 <http://www.flipsnack.com/FA69B9F569B/ecnz-annual-report-2014.html>

⁷ Ibid.





5.2 Thai Green Label

The Green Label is an environmental certification awarded to specific products that are shown to have minimum negative impact on the environment, in comparison with other products serving the same function. The Thai Green Label Scheme applies to products and services, not including food, drinks, and pharmaceuticals.

The Thai Green Label Scheme was initiated by the Thailand Business Council for Sustainable Development (TBCSD) and formally launched in August 1994 by The Thailand Environment Institute (TEI) in association with the Ministry of Industry. It operates in consultation with the Federal Environmental Agency of Germany. The Thai Green Label is open to both domestic and foreign suppliers. In Thailand, the ecolabelling scheme supports public procurement and vice versa (Role of the Thai Green Label in Environmental Management, Presentation, 2009).

The Thai Green Label Scheme, implemented by TEI, has signed bilateral mutual recognition agreements with six ecolabelling programmes in six different countries: Taiwan, Japan, Korea, New Zealand, Australia and China.⁸

In 2011, TEI had 130 employees in total, of whom a few work with the Thai Green Label and the turnover for the labelling programme was THB 2.5 million (approx. EUR 60 000).⁹

In May 2013, the scheme had criteria for 73 product groups, whereof 21 with issued licences. The number of products (models) on the market was 564 from 61 companies.¹⁰ One licence can cover several models under the same trade mark.

The scheme is developed to promote the concept of resource conservation, pollution reduction, and waste management. The purposes of awarding the green label are:¹¹

- To provide reliable information and guide customers in their choice of products;
- To create an opportunity for consumers to make an environmentally conscious decision, thus creating market incentives for manufacturers to develop and supply more environmentally sound products; and
- To reduce environmental impacts that may occur during manufacturing, utilisation, consumption and disposal of products.

⁸ Thai Environment Institute
<http://www.tei.or.th/greenlabel/mra.html>

⁹ Personal communication with Dr. Bunyagidj

¹⁰ List of Thai Green Label, Update 31 May 2013 <http://www.tei.or.th/GreenLabel/Eng%20PDF/2013-05-Name-GL-eng.pdf>
Thai Green Label, Objectives
<http://www.tei.or.th/GreenLabel/aboutobjectives.html>

5.3 The Blue Angel

The Blue Angel was established by the German government in 1978 and is awarded by an independent Jury to products that are environmentally friendlier than others serving the same use.

The Blue Angel is managed by four entities:

- 1) The Environmental Label Jury is an independent decision-making body composed of representatives from environmental and consumer associations, trade unions, industry, trade, crafts, local authorities, science, media, churches and federal states.
- 2) The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety that has the ownership of the label.
- 3) The Federal Environment Agency with its “Ecolabelling, Eco-declaration and Eco-procurement” department acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Award Criteria for the Blue Angel.
- 4) RAL GmbH, which is the label-awarding agency.

The shared responsibility makes it difficult to specify a turnover of the scheme. At the Environmental Agency (Umweltbundesamt), six people are directly working with the ecolabel, but they receive input from other departments. Therefore, the capacity behind the six people is significant. RAL has income of fees of licences and has also six people employed for both the Blue Angel and for EU Ecolabel.

Each label specifies that the product or service focuses on one of four different environmental protection goals: health, climate and energy, water, and resources. The most important criterion to award the Blue Angel ecolabel is an energy consumption that is markedly lower than that of conventional products. Moreover, labelled products should also fulfil high standards of occupational health and safety and fitness for use for the consumers.


The Blue Angel has no specific guidelines to decide the scope and description of product categories, but defines the product groups on a case-by-case basis after consultation with the producers and the Ökoinstitut that is doing the background research.

5.4 Korean Ecolabel

The Korean Ecolabel was established in 1992. In 2011, the organisation had 36 employees in Environmental Standard Management Office and Ecolabel Certification Office, and 27 employees in the Eco-products Promotion Office and the Green Lifestyle Spreadability Office. The turnover in 2011 was about KRW 3 160 million (approx. EUR 2 million).¹²

¹² Personal communication with Ms. Ju-Young





The Korea Eco-Products Institute carries out operations related to improvement in environmental performance of products by setting up the ecolabelling criteria, building an evaluation system, environmental information to the public, etc.

Currently (2015) the scheme has listed criteria documents for 153 product groups.

Since 2005, according to the Act on the Promotion of the Purchase of Environment-Friendly Products¹³, ecolabelled products are target products that public agencies are obligated to purchase. Korea aims for mutual recognition with other schemes and governmental purchasing should give same preference to the foreign ecolabelled products imported through MRA (law of 29th May 2003).

¹³ See:
www.eiskorea.org/04_Policy/01_Law.asp?schMenuCode=MC100&schtTabCode=&strIdx=899&schtCom=&schtSearch=&intPage=1

6 Use of indicators in four ecolabelling schemes

The information provided in this chapter is mainly based on communication with the individual ecolabelling schemes, but also supplemented with information from websites and communication materials.

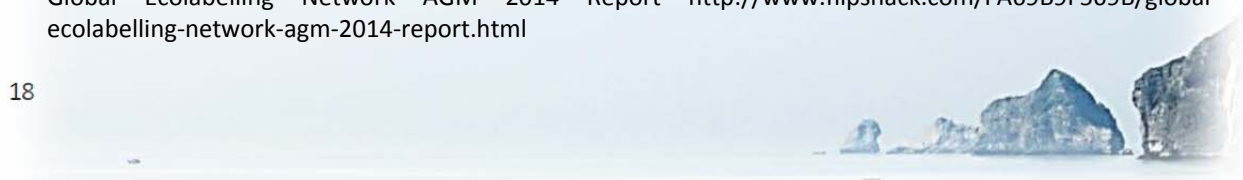
6.1 Environmental benefits/potential environmental benefits

This section concerns information on work with measuring the environmental benefits of the ecolabelling schemes. Representatives from the schemes were asked for own and known such investigations. It seems like environmental benefits often are considered as the difference between ecolabelled and conventional products. Even if this does not provide the best picture of actual gains, this measure may give an indication of the stringency of the criteria requirements.

| Scheme | Indicator | Comment/information |
|----------------------------------|---|---|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> No | |
| Thai Green Label | <ul style="list-style-type: none"> Upcoming? | <ul style="list-style-type: none"> Conducted LCA-based comparisons between products meeting the Green Label requirements and general products for 20 product groups in 2007.¹⁴ No results from the study found. Ongoing study (started March 2012) on ecolabelled products (Thai Green Label). Sales reports from the private sectors, LCAs and life cycle costs are used for the evaluation of environmental impacts. In addition, a study on policy and evaluation of impact, efficiency and effectiveness of Thailand's Government Green Public Procurement (GPP) to the country's environment has been initiated by the National Metal and Materials Technology Center (MTEC). |
| The Blue Angel | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> Have tried to estimate energy-saving potentials. Have no information on environmental benefits. Did not quantify in the past. Claims it to be methodically difficult. Assessed in 2011 the effects of energy efficiency of ecolabelled products compared to conventional and have rough indications on how big the energy efficiency is, how much energy can be saved if only ecolabelled products were used in all households in Germany. The Ökoinstitut shows that 100 top products (household appliances) with 30-40 per cent higher efficiency could equal ten power plants. However, this is only a potential and cannot be realised in practice. Timescale would be 2020 – it means changing all the technical equipment in the households (from internal paper in German). |
| Korean Ecolabel | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> They have investigated economic and environmental benefits since 2007¹⁵ but the information is not open to the public. |

¹⁴ Role of the Thai Green Label Scheme in Thailand's Environmental Management, GEN-AGM 2009 Kobe, Japan http://www.globalecolabelling.net/docs/japan2009/09kobejapan_1-2_thailand.pdf

¹⁵ Global Ecolabelling Network AGM 2014 Report <http://www.flipsnack.com/FA69B9F569B/global-ecolabelling-network-agm-2014-report.html>



6.2 Environmental objectives for ecolabelling criteria development

In order to analyse potential environmental effects and to compare criteria and product groups, information on objectives and approaches for criteria development was collected. That kind of data is not used for qualitative indicators per se, but serves as information on comparability.

| Scheme | Indicator | Comment/information |
|----------------------------------|--|---|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> They do not specify environmental objectives | <ul style="list-style-type: none"> The scheme does not specify environmental objectives when developing requirements for products/services in the individual criteria documents. However, the criteria and supporting explanatory information have been prepared specifically for the New Zealand Ecolabelling Trust as part of the ECNZ Programme's life cycle approach and its principles and procedures. Criteria are prepared based on an overview level life cycle assessment, information from specifications for similar products from other GEN-member labelling programmes, relevant information from other ECNZ specifications, publicly available information, and information provided by current licensees. Criteria are scoped to address environmental issues across the entire life cycle of the products. Comparisons between of the ECNZ criteria and those of other schemes for 14 product or service groups are made available on their website.¹⁶ |
| Thai Green Label | <ul style="list-style-type: none"> They do not specify environmental objectives | <ul style="list-style-type: none"> They don't specify environmental objectives when developing requirements for products/services in the individual criteria documents. However, they use "life cycle consideration" following the principle of ISO 14024. Some of the criteria documents in English specify prioritised environmental aspects for the product groups. However, these practices vary between different criteria documents. |
| The Blue Angel | <ul style="list-style-type: none"> They do not specify environmental objectives | <ul style="list-style-type: none"> Criteria development from sustainability studies based on life cycle thinking. Looking for market situation, life cycle, etc. from that study, they derive the most important impact. It is not a life cycle assessment. Four prioritised impact categories: <ul style="list-style-type: none"> Climate and energy; Health and environment; Water; and Resources. Also including occupational health and safety and fitness to use. |
| Korean Ecolabel | <ul style="list-style-type: none"> They specify environmental objectives. | <ul style="list-style-type: none"> They develop standards after evaluating environmental loads, which occur throughout entire procedure of product manufacture. For example, a reason for certifying computers is "power saving, low-noise and eco-friendly design". The reasons for certification are specified. Environmental aspects follow life cycle screening. |

¹⁶ See http://www.environmentalchoice.org.nz/specifications/international_comparison/index.htm

6.3 Product groups and criteria documents

This section relates to definitions of product groups, including certain environmental objectives, function or characteristics, and identification of environmental aspects.

| Scheme | Indicator | Comment/information |
|----------------------------------|--|--|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> Information available | <ul style="list-style-type: none"> The scheme provides 37 environmental criteria documents. The product group definition is given in the criteria documents. There are product groups without any licence. |
| Thai Green Label | <ul style="list-style-type: none"> They have recorded the number of products, models and companies – those are certified monthly Have back-records making it possible to derive similar information for a situation three years ago. | <ul style="list-style-type: none"> 73 product groups 555 products/models 81 companies as licence-holders At least one licence-holder for 25 product group. Two product groups (paints and paper) have 13 licence-holders. |
| The Blue Angel | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> Complete list of criteria documents online Currently 125 product groups 6 are represented with 2 different generations of the same product group (with different licence-holders and registered products) 3 are announced to merge with a fourth product group 1 050 licences for 11 700 products |
| Korean Ecolabel | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> Complete list of criteria documents online 153 criteria documents About 8000 licences If several product groups are covered under a single criteria document depends on the characteristics of the products described by the existing document. For example, “flooring materials for interior decoration” are composed of synthetic resins, wood, synthetic rubber or inorganic substances. However, “decorative leather” has more narrow scope, since it mainly refers to artificial leather used for walls, ceilings, and furniture. Product categories are mainly defined according to the national standards, and a standard document specifies the definition. Some products define product categories according to environmental characteristics. Such examples include synthetic resin products, rubber products and wood plastic products. These products require to certain levels use of recycled materials. |



6.4 Licences and products/services on the market

This section deals with licences and products on the market and how they are defined. These aspects are often used by individual ecolabelling schemes in order to present themselves and their outreach.

| Scheme | Indicator | Comment/information |
|----------------------------------|--|---|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> Have back-records, but it takes some efforts to retrieve it. | <ul style="list-style-type: none"> Each producer has one licence per product group. There are time series of numbers of licences in the annual report (2013/2014), but the numbers are not explained and difficult to interpret. It currently (2015) has about 1400 products that are registered and countable from the website. There are some product groups/criteria documents without any licensed products. A website claim states 2000+ products. |
| Thai Green Label | <ul style="list-style-type: none"> They have back-records making it possible to derive similar information for a situation three years ago. | <ul style="list-style-type: none"> They have recorded the number of products, models and companies that are certified monthly 61 companies as licence-holders 564 products/models (in 21 product categories) Most of the product groups have a handful of licence-holders while three product groups (paints, copy machines and paper) have substantially more. |
| The Blue Angel | <ul style="list-style-type: none"> No back-records. However, newsletters and information material publish numbers that could be arranged in series. | <ul style="list-style-type: none"> One licence could be valid for several models, but depends on how different the models are from each other. 12 000 products from 1 500 producers RAL¹⁷ knows exact number of products or licences on the market. Several product groups without any licences. |
| Korean Ecolabel | <ul style="list-style-type: none"> Back-records are possible; all documents used in review processes are scanned and stored. | <ul style="list-style-type: none"> Derived products share same components, use and performance, but have different product names due to changes in design, colour and sale shop. For any other cases, a licence is registered for each product or service. The number of licences, products and producers depend on the criteria. There are some product groups/criteria documents without any licensed products in the scheme. Certified products and derived products are registered as a single licence. |

¹⁷ RAL GmbH is the label-awarding agency in Germany



6.5 Sales and employees of licensed products and services

In this section we collect information on total sales of ecolabelled products within each product group. The sums make up a turnover, but also indicate how sensitive a scheme may be on individual product groups and producers.

| Scheme | Indicator? | Comment/information |
|----------------------------------|--|--|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> The licence fees are based on turnover of licensed products across different sales bands – as there is a limit on the maximum fee it is almost impossible to establish the real turnover. |
| Thai Green Label | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> They do not measure turnover/sales of ecolabelled products covered by each licence. |
| The Blue Angel | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> The information is with the producers and confidential. The Blue Angel stated interest in getting access to such information. |
| Korean Ecolabel | <ul style="list-style-type: none"> To some extent | <ul style="list-style-type: none"> They estimate the turnover/sales of ecolabelled products covered by each licence from revenue amount of products when they set the Ecolabel usage fee. No data on actual sales of ecolabelled products in monetary terms They have data on actual sales in terms of number of products. The licence-holders in the service sector have about 2 400 employees. |

6.6 Market diffusion of the ecolabel

The section deals with measures of the market volume of ecolabelled products (which together with difference in environmental performance makes up an important factor for environmental benefits from ecolabelling). The size is preferably measured as share of market of the specific product groups.

| Scheme | Indicator | Comment/information |
|----------------------------------|--|--|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> Don't have the data, but individual licensees may well have it. |
| Thai Green Label | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> MTEC may have data of some product groups after the study that was just initiated. |
| The Blue Angel | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> They don't have this information. It is possible that private market research companies, such as GFK, has the information, however, that is expensive to obtain. |
| Korean Ecolabel | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> No data available |



6.7 Producers

In this section we ask about information and studies on awareness, recognition and attractiveness among producers and service providers in general within product groups subject to ecolabelling.

| Scheme | Indicator | Comment/information |
|----------------------------------|--|--|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> They do not measure this. They have only anecdotal information on producers use and benefits from using the ecolabel. |
| Thai Green Label | <ul style="list-style-type: none"> To some extent | <ul style="list-style-type: none"> They have information on the ratio of the number of Green Labelled products and total products produced, and the domestic sales and export sales amount of Green Labelled products. 73.3% of surveyed producers aware of ecolabel. During 2007-2011, there were about 36.7 to 57.9% of surveyed producers informed that the sales value of their Green Labelled products was increased. |
| The Blue Angel | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> No such information. |
| Korean Ecolabel | <ul style="list-style-type: none"> To some extent | <ul style="list-style-type: none"> Survey conducted in 2009. They surveyed 187 certified enterprises in 2009. 55.3% of the respondents answered that they obtained a certificate to supply their products to public agencies, whereas 18.9% obtained it for product awareness enhancement, and 12.6% obtained it for improvement of corporate image. In response to the question "Was your product revenue amount affected by the acquisition of Ecolabel?", 52.5% answered that obtaining the Ecolabel resulted in revenue increase. Trust and knowledge of what the label stands for were not surveyed. 40.9% answered that production cost increased because of Ecolabel certification commission. No data on producers use and benefits from using the ecolabel |



6.8 Consumer recognition and trust in the ecolabel

This section deals with consumer investigations on their perceptions of the ecolabelling schemes and how such studies are conducted. It is often other organisations than the ecolabelling schemes that conduct and provide the information.

| Scheme | Indicator | Comment/information |
|----------------------------------|---|---|
| Environmental Choice New Zealand | <ul style="list-style-type: none"> Upcoming? | <ul style="list-style-type: none"> Carrying out some awareness research [n=1000] |
| Thai Green Label | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> A market survey was conducted during September-December 2011. A questionnaire was used as the tool for collecting data from individual consumers. Total numbers of 455 people were sampled from Bangkok and adjacent provinces. 78.6 % of the sampled people were aware of Green Labelled products and about 67% of the sample knew what the Green Label stands for. Awareness, recognition, knowledge or trust is measured once a year. |
| The Blue Angel | <ul style="list-style-type: none"> As part of a larger study | <ul style="list-style-type: none"> Surveys by the Federal Environmental Agency show the great brand awareness of the Blue Angel with 79 percent, but slightly decreasing in recent years. |
| Korean Ecolabel | <ul style="list-style-type: none"> Yes | <ul style="list-style-type: none"> According to a survey conducted in 2010, 39.3% answered that they were aware of the Ecolabel system ("Fully aware" + "Roughly aware"), whereas 60.7% answered that they did not know. ("I don't know but I have seen Ecolabel." + "I don't know at all"). [Proportion of respondents who were aware of the Ecolabel system increased by 8.8% compared to 2007 (30.5%).] Simple recognition of the Ecolabel system ("Aware of Ecolabel" + "I have seen Ecolabel.") was found to be 63.6%. [About 1.0% increase from 2007 (62.6%)] 62.6% recognised the Ecolabel products as products that discharge less environmental pollutants, whereas 44.3% recognised them as products with lesser substances hazardous to health, and 34.1% recognised as products with high energy efficiency. (Multiple answers were allowed) 60.4% answered that the Ecolabel system contributes ("Contribute actively" + "Contribute to a certain degree") to improve consumers' reliability on eco-friendly products. Surveyed 1000 ordinary people (over 19 years old) throughout the nation for one month inquiring consumers' awareness of eco-friendly products. No earlier surveys were done. It will now be done once per two or three years. They evaluate "knowledge" and "trust" of your ecolabel based on consumers' awareness of Ecolabel and Ecolabel system. (Comparison with other systems, etc.) |



6.9 Professional purchasers

In the last section, the intention was to gather information and design indicators that better could explain to what extent ecolabelling is used in green professional procurement and how professional purchasers perceive the ecolabelling schemes in a parallel approach as to private consumers.

| Scheme | Indicator | Comment/information |
|----------------------------------|--|---|
| Environmental Choice New Zealand | <ul style="list-style-type: none">• No | |
| Thai Green Label | <ul style="list-style-type: none">• No | |
| The Blue Angel | <ul style="list-style-type: none">• No | <ul style="list-style-type: none">• The Ministry is also the agency overseeing GPP. The problem there is the lack of information about GPP, only small picture about how GPP is conducted in a PWC study from 2010. |
| Korean Ecolabel | <ul style="list-style-type: none">• No | |

7 General impressions from the information collection

It has been proven that information gathering and processing for establishing indicators takes longer time than expected in terms of total time span needed. Some of the selected key parameters are also absent or not reported at all in the inquiry answers from the participating schemes. If this is a failure of our questionnaire, or if it simply signifies that such data is missing is often not clear. When such data is missing, it would be useful to find out why it is not considered valuable and justified for the ecolabelling organisations to gather it. Furthermore it would be interesting to note the cases when some indicators are considered realistic and useful for some ecolabelling organisations and considered unrealistic for others. We have, however, in this project not been able to follow up these questions.

All schemes provide information on their websites whereof some can be processed and further used as background for indicators and performance-based information. Moreover, there are sometimes claims that are not supported with transparent background data. The initial suspicion that not much information is available on direct environmental effects from individual ecolabelling schemes has proven to be correct.

7.1 Capturing the dynamics of the ecolabelling scheme

Displaying information such as indicators on performance is sometimes considered problematic also due to the fact that numbers constantly change and get outdated. It should be acknowledged that collecting and updating information could be both time consuming and resource demanding. In a few cases, at least some such information has been met in the form of time series. The opportunities for collecting past information on performance has been considered, but it has not been possible in this study. An observation is that data is collected, sometimes occasionally, sometimes in structured manners, but rarely displayed over time.

We argue that changes in the exposed indicators, trends, are equally interesting and valuable as the given numbers since such information is relevant for the documentation of the dynamics of how the performance of the schemes and their outcomes has changed as over time.

As an example, in Figure 2 the Danish branch of the Nordic Swan gives account for such trends concerning Danish consumers'



knowledge about the Nordic Swan and EU Ecolabel between 2004 and 2013.¹⁸

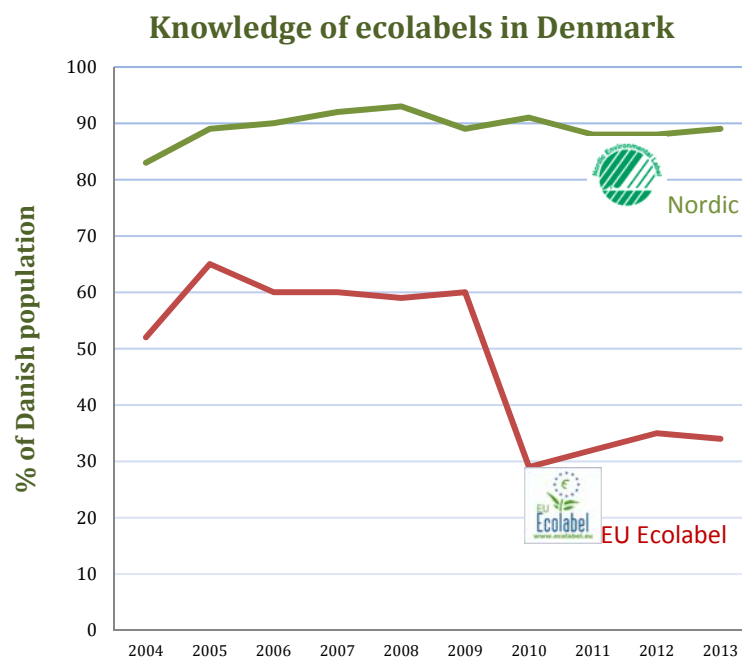


Figure 2: Danes' knowledge/recognition about the Nordic Swan and EU Ecolabel.

Source: Ecolabelling Denmark

It is likely that keeping track of historical data and exposing changes could be eased by set routines on what defined data that should be collected at certain time intervals with structured methods for measurements. That would, in addition, safeguard certain data quality.

7.2 Possibilities ahead

It appears like it is possible to generate proxy indicators for individual schemes. In many cases they could also be designed to be reasonably standardised, however, it is questionable to what extent they will be comparable based upon presently recorded information. Systematic and transparent data accounts for selected parameters would help constructing such information.

One aspect that should be further investigated is methods used and accuracy in given measurements. This is of higher priority in case the information should be used for comparisons and benchmarking. The questionnaire method has not generated sufficient information on these issues. For instance, the product group definitions will need to be compared for selected product groups through criteria analysis that reveals what the combination of general product group

¹⁸ Ecolabelling Denmark <http://ecolabel.dk/da/blomsten-og-svanen/kendskab-til-maerkerne>

definition implies and limitations introduced through criteria requirements. Such analysis will also have to be done for sub-product groups covered by the criteria documents. Likewise, the information on licences, producers and products on the market would benefit from additional clarifications from the participating schemes.

In the past, most research on market diffusion (i.e. mainly consumer awareness) has been conducted by external research institutions, unrelated to the ecolabelling scheme in question. Only very few studies have been found that have been commissioned by the ecolabelling organisations themselves. However, it is possible to discern a change among the pilot ecolabelling organisations to request and gather information on the performance of their labels. For instance, the German Blue Angel has commissioned annual studies for a series of years focusing on consumer recognition and the results are published by the German Environmental Protection Agency.¹⁹

7.3 Using information for comparisons

The study builds on the compilation of scheme-specific indicators. There are yet no standardised methods for measurements. Consequently, for the sake of making comparisons, we need to both assure that different measurements are reasonably alike and what aspects that are interesting to compare.

There is a need to deepen the abovementioned understanding of the definitions of licences and products on the market. One of the interesting parameters to analyse for comparisons is market shares of ecolabelled products in given product groups since that can give valuable insights on how to approach the market actors. As stated in previous studies, this information can be difficult to compile in the first place. This challenge is also reflected by the interviewees from the ecolabelling schemes, who even went so far as to claim that it is basically impossible due to confidentiality. Thus, there is a need to find other paths for obtaining such information since little is measured and known.

One possible way to compare ecolabelling schemes may be to first make pilot studies for a few different schemes and for a limited number of parameters and indicators to achieve pictures on similarities and differences on data quality and availability. Such studies may also serve as benchmarks for further analysis of successful facilitation factors. It should be noted that structured comparisons have not, according to our knowledge, been tried so far.

¹⁹ Jana Rückert-John, Inka Bormann, René John, "Umweltbewusstsein in Deutschland 2012: Ergebnisse einer repräsentativen Bevölkerungsumfrage", Repräsentativumfrage zu Umweltbewusstsein und Umweltverhalten im Jahr 2012, Berlin 2013.





8 Conclusions

Today the market displays a great number of ecolabels. Nonetheless, we still have limited knowledge about the actual environmental benefits they provide. It is difficult to make objective comparisons, partly because there is no independent body of data on the performance of ecolabelling and partly because there are no agreed-upon indicators. In the absence of “reporting standards” for ecolabelling, GEN could play an important role in guiding the reporting practice among member schemes and encourage monitoring according to such a practice.

8.1 Indicator design and data availability

We realised that all requested data and information is not readily available and small organisations may often lack resources to extract and provide it from the materials they have already collected or through new studies. However, not being readily available does not necessarily mean unavailable. The data may be hidden for methodological or other reasons. Thus, there is reason to investigate if, and what, information can be obtained through other channels. The current gaps in the tables presented in Chapter 6 might still be possible to fill in for historic data and more so in the future. If there is a desire to conduct regular and standardised indicator studies in the future, there is a task to define what information that ecolabelling schemes should be recommended to gather and maintain for making these studies possible. It appears like lots of information could be collected and displayed rather conveniently by the schemes if the task to do so is defined in the first place. The challenge appears to be to find a reasonable structure for systematic data recording and transparent display, as well as, to demonstrate the relevance of the information.

So far, the schemes contributing to this study have similar structures in information provision, but a clear weakness is the use of different definitions of the terms. An indicator system will not be perfect in the sense that all input values would be collected in identical manners with the same precision. It appears more reasonable to build from existing information flows, but systematise the bookkeeping and structure the displays for regular updates in time series (rather than spending resources in digging up historical data). Most likely, that would by time provide sufficiently good indicator information that can be used for further analysis and conclusions on the state and development of individual ecolabelling schemes.

8.2 Motivation-related limitations

The analyses that should be possible through indicator studies must be useful and sufficiently valuable both for the individual ecolabelling scheme and the ecolabelling community as a whole. There should,

among others, be one tool that gives market information to help convince producers to apply for licences. But do the schemes themselves see the benefits of tracking information necessary for indicator studies over time? Which type of performance information can be used to convince more producers to apply for a licence? One ecolabelling scheme stated that they see a general problem with measuring success since the picture is valid for only a short time. Admittedly, however, the information would be good for the internal processes and it could probably pay off if such information manages to convince producers to seek more licences. It is a learning process on how to interpret changes in these indicators and what factors that influence these changes. In a nutshell, what is considered a positive indication might be re-evaluated and some of these indicators may need to be broken down in new, or even considered pointless and be discarded. Only after some time of continual evaluation of the indicator sets will the true usefulness be established.

One ecolabelling scheme stated: “this field is a very open field, and there is little quantified information yet”. However, the organisation does not plan to collect this information in the future. We will in Chapter 9 attempt to give some recommendations how the results that were derived from the project can be used for outlining a set of indicators to assess the ecolabelling schemes.


8.3 Potentials and costs for ecolabelling

Before presenting our proposal for indicators to assess the ecolabelling, it is important to remember the overall potentials for ecolabelling when it comes to influencing environmental impacts and the inherent limitations this instrument has. Ecolabelling could, as any other policy instrument, be criticised for not solving all environmental problems and, for not significantly impacting some important environmental and sustainability challenges. Such criticism is, however, for ecolabelling, as well as for other instruments, of little interest. No serious proponent of ecolabelling would claim that ecolabelling is a panacea.

Other disputed issues around ecolabelling are whether ecolabels really demand high environmental standards, or if it is possible to, for instance, obtain an ecolabel even when you do not fulfil legal standards or answer to demands of other types of ecolabels. When such examples have been put forward, they seem, however, to be related to something like outdated criteria documents that are not in actual use, even if they formally are valid. It may be wise for ecolabelling schemes to be more attentive to these situations and discontinue or update such documents in order to avoid being criticised and misunderstood by less informed people.

What is more interesting is whether ecolabelling is an efficient instrument, that is, are the resources spent on ecolabelling used in a good way. While the lack of available measures of the true effects of





ecolabelling makes it impossible to fully quantify the benefits, it is clear that the costs are quite limited. Most ecolabelling schemes attain public funding to some degree, even if licence fees from producers and other sources of funding appear to be the most important financial income. As can be seen from the four systems studied, the exact costs for administrating the ecolabel are not always known, but all evidence points to that they are quite limited. There is also a cost for companies to adjust to the ecolabelling requirements and to use the ecolabel. These costs, however, could be said to be covered by benefits the companies acquire by joining the system, as the instrument is voluntary for businesses. This is fully in line with the idea of ecolabelling as it offers a communication tool the licence-holders apparently find it worthwhile to pay for. It is therefore reasonable to conclude that ecolabelling is a cost-effective policy instrument. Moreover, it should be acknowledged that the indirect benefits are significant, while the challenges to find any realistic approaches for systematic evaluations of indirect environmental benefits are overwhelming.

Ecolabelling does not directly address the level of consumption, neither necessarily all the most prioritised environmental problems of our societies. Ecolabelling helps consumers and clients to choose the most environmentally preferable products or services when choosing between different alternatives. Since ecolabelling is a market-based policy instrument, the market situation, as well as, differences in environmental performances between products in the product groups set conditions for which products that actually are suitable for the instrument, and thus also the extent of what possible direct environmental benefits that could be gained. In many cases, the choice has been made to rely on other policy instruments. Among such instruments are also other types of ecolabels than the ISO Type 1, which is the topic of this study. In other cases, the ecolabels are one of several instruments that have been bundled together to address a challenge.

9 Proposal for proxy indicators for ecolabelling

In this chapter we have made an attempt to identify a set of proxy indicators that we, based on the study, consider to be useful for the ecolabelling, as well as, feasible to produce by the ecolabelling schemes. In order to structure and make use of information in general (not only for realistic and useful comparisons of schemes), there would be a need of defining and standardising some of the terms and concepts used as measures for indicators. Thus, we strongly suggest that GEN takes an international lead in such a process. An important aspect is to give accounts for the time series (how the indicators change over time) pointing at trends of these indicators.

The five (areas for) proxy indicators we propose are addressing the following aspects:

- Scope of the scheme;
- Number of licences and products on the market;
- Consumers' and professional purchasers' recognition and trust;
- Market penetration; and
- Estimations of environmental benefits.

The indicators could as such signal the effect of the scheme. However, proxies for potential environmental gains could be considered as supplement. This includes, among others, a solid notion of the stringency of the requirements of the product criteria. However, some drawbacks will also be discussed below.

9.1 Scope of the scheme

The number of product groups (categories) that are covered by criteria is part of the scope of a scheme since it conveys the range of products that actually may, at any given time, carry the ecolabel – the potential spread of ecolabelled products. Yet, criteria documents often open up for several kinds of products²⁰ which make counting and comparing the number of criteria documents less relevant.

A step could be to make a generic list of more narrowly defined product groups. The approach could be to make a gross list of sub-product groups covered under each criteria document of the different GEN members. In the comparison, each scheme ticks off or adds sub-products groups included in its criteria documents. Such a

²⁰ The definition in ISO 14024, *Product category: group of products which have equivalent function*, is obviously not stringent enough to serve as working definition.





list would, besides making comparisons possible, also be useful information for producers and in processes for mutual recognition, as well as, useful for other schemes looking for opportunities to include new product groups.

Recommended indicator #1:

The number of sub-product groups that are covered by the scheme.

In order to make the indicator useful and apt for benchmarking, GEN needs to establish a generic list of product groups and sub-product groups.

When the number of sub-product groups covered is a large and growing number, it is a positive indicator.

9.2 Number of licences and products on the market

The number of issued licences, as well as, number of ecolabelled products on the market indicate market attraction and are obviously commonly given as indicators by many schemes. There is need to clarify both concepts: does a producer need several licences for similar products or does the licence give the producer the right to label several products under the same criteria document (given the products meet the requirements of the criteria) regardless the products are manufactured at different sites or marketed under different brand-names?

In parallel, it appears like there are different views on how to count products on the market: how different should varieties of a product be to be considered as separate products? This could be as simple as different sizes of packages or different colours, but also a fundamentally similar design modified as different models to fit applications (for instance for toner cartridges). Most likely, standardisation must be set for individual product groups based on overarching principles.

The indicators could be given for individual product groups (criteria), as well as, aggregated information for an ecolabelling scheme. The first would show for what market segments ecolabelling is strongest, what criteria documents that actually are used or which have no issued licences. In a way, such indicators could also show to what extent the ecolabelling scheme is dependent on specific product groups for its financial turnover.

Recommended indicator #2:
The number of licences that are valid for the scheme.

In order to make this indicator useful for comparisons, GEN could promote common rules on how to define what constitutes a licence – preferably built on precise rules for various product groups based on the common principles.

High and growing numbers of both number of licences and different products on the market are positive and should be followed over revision cycles of the individual criteria.

9.3 Consumers' and professional purchasers' recognition and trust

All ecolabelling schemes are dependent on consumers who are aware of ecolabelling and know and trust the scheme. Many schemes do conduct different kinds of consumer surveys on recognition of the label, what it means and stands for. In addition, some schemes include questions concerning to what extent consumers put trust in the label. Details in the survey methods may vary, as well as, intervals between the surveys, but often it is possible to get trend lines for individual schemes. Even if the methods vary between ecolabelling schemes, these figures tend to give a reasonably good and comparable picture of the situation.

Thus, we suggest GEN to promote its member organisations to conduct such studies on a regular basis and give advice on suitable methods.

Recommended indicator #3a:
Percentage of the consumers (lower age limit to be defined) that recognise the ecolabel, know its meaning and put trust in the scheme.

If this indicator should be fully useful for benchmarking it may need more clear definition of how the question should be asked etc.

High recognition, knowledge and trust of the individual scheme is positive.

Ecolabelling has a well-established role in green public procurement policy, not the least in several Asian countries where the roles have





been more formalised. Ecolabelling schemes are moreover gradually promoting their services among professional purchasers from the private sector. Thus, professional purchasers are an important group to reach. A further step, as a parallel to consumer surveys, though not yet reported among the examined ecolabelling schemes or in literature, would be to make similar surveys among professional purchasers both in public and private sectors. There is though probably a need to develop suitable methods, which could be a task for GEN.

Recommended indicator #3b:

Recognition and trust of the ecolabel among professional purchasers.

As such studies are not known, there are good opportunities for GEN to find common approaches that would facilitate benchmarking.

9.4 Market penetration

The market share of ecolabelled products is an aspect that tells something about both attractiveness and could indicate environmental benefits. A high market share indicates high attractiveness, which is positive. However, an ecolabelling scheme should, at least initially and after revisions, generally aim for targeting the best products of a product group. High market shares could therefore indicate slack requirements and thus insignificant environmental benefits and a need for criteria revision. The indicator of market penetration could therefore give different signals. The interpretation depends on the situation. Moreover, market penetration should be considered for the individual product group and could be difficult or expensive to measure, but market surveys should, according to ISO 14024, be conducted in the feasibility study.

Estimations of market shares should thus be possible to do in order of, for instance, less than one per cent, 1 to 5 per cent, 5 to 15 per cent, 15 to 40 per cent, 40 to 80 per cent, and more than 80 per cent, or within any other given intervals with systematic approaches. The most interesting information comes from tracking changes over time, both during the valid time for a given criteria document and over criteria revision cycles. An ecolabelling scheme should have a fair picture of sold ecolabelled products from the licence fees producers pay. Yet, the uncertainties in the method – estimation of the total market for the product – makes detailed comparisons between schemes difficult. However, the indicator could still provide useful information for comparisons on orders of magnitude and changes over time. Thus, it could be a task for GEN to further investigate and

analyse methods and the reliability of the methods to build market share indicators based on comparing sale of ecolabelled products from fees and estimated market size. Ultimately, it should also be possible to make estimations on number of products sold and not only the monetary value of the products in cases of substantial differences in price between product alternatives.

In some cases and for some product groups, central business organisations do build statistics on sales of specific products and make that information available commercially. It could be an easy and often more reliable source of information. Some drawbacks are that such information does not always exist and it is expensive to obtain when it does exist. It is reasonable to believe that this kind of more detailed and reliable information will develop and become more readily available. Thus, opportunities for building market penetration indicators from such sources should continuously be evaluated.

Many ecolabelling schemes report the number of producers that are licenced under the scheme. This could be interpreted as an indication of attractiveness or market penetration. However, it could be questionable if comparing numbers is fruitful since both market shares and nature of their potentials to contribute to environmental benefits are quite different. Moreover, there are uncertainties regarding the definition of producer and, as a result, how to count them. Consequently, we have left that indicator out.


**Recommended indicator #4:
Market shares of ecolabelled products.**

In order to make this indicator useful for comparisons, GEN is recommended to identify product groups which would be most interesting for international benchmarking and share experiences on how to estimate market shares, without necessarily looking for all schemes to use the same approaches as considerable national differences could be expected and the choice of method would best be done on the national level.

9.5 Estimations of environmental benefits

It has repeatedly been acknowledged that it is hard to measure environmental benefits from ecolabelling. There are some attempts both in the literature and among individual schemes. These estimates are mostly derived from assessments of differences in performance between a thought “average” product of the product group as reference point and a product corresponding to the requirements in



The background of the page is a photograph of a calm lake with a forested shoreline. The water is still, reflecting the sky and the surrounding greenery. The trees on the left are in the foreground, their leaves slightly out of focus. The sky is a pale, clear blue. The overall mood is peaceful and natural.

the environmental criteria combined with number of sold ecolabelled products. There are obvious drawbacks of these methods, including:

- The sold ecolabelled products could meet the requirements without having being changed – that is, no improvements were gained. This is reasonably the case for some products as the criteria are mostly designed so that the best products can meet them.
- It is often hard to identify the performance levels of the thought bulk product (the “average” product that acts as reference point).
- The most significant environmental aspects should be used for comparisons, but sometimes there is a need to go for what is possible for practical reasons.
- Changes of product design and improvements could be difficult to attribute to the ecolabel.
- Abovementioned difficulties of estimating market shares.
- The methods do not consider indirect benefits from ecolabelling.

However, systematically conducted such estimations could indicate order of magnitude of environmental benefits over time. As a next step, we suggest that GEN takes the lead in developing and critically analysing structured methods for making estimations of environmental benefits in individual product groups. We recommend a process where selected individual product groups are targeted before any attempts are made to find aggregated indicators for combined product groups or entire ecolabelling schemes.

**Recommended indicator #5:
Estimations of environmental benefits.**

GEN is recommended to critically analyse structured methods for such estimations in individual products groups.

References

Agenda 21. (1992). United Nations Conference on Environment & Development Rio de Janeiro, Brazil, 3 to 14 June 1992.

Backman, M., Lindhqvist, T. & Thidell, Å. (1995). The Nordic white swan: Issues concerning some key problems in environmental labelling. In E. Stø, *Sustainable consumption* (447-477). SIFO working report no 2-1995.

Cadman, J. & Dolley, P. (2004). *The direct and indirect benefits of the European Ecolabel*. AEA Technology, Report commissioned by DG Environment EU Commission.

Ministry of Environmental Protection. (2014). 中国环境标志产品环境绩效评估报告 [Evaluation report of environmental performance of China environmental labelling on products]. Department of science, technology and standards. [In Chinese] Available at:
<https://www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCIQFjAAahUKEwjB7dSBwqPHAhUkw3IKHU59Alk&url=http%3A%2F%2Fwww.sepacec.com%2Fztbd%2Fzghjbzesznzt%2Fgzdc%2F201408%2FP020140821491387132694.docx&ei=EDjLVcGIDKSGywPO-oHICw&usg=AFQjCNG5anX5GuPomSLI2TKm9ELSiPz6BQ>

EVER. (2005). *Evaluation of EMAS and Eco-label for their Revision. Report 1: Options and recommendations for the revision process*. 26.12.2005 Part B: The EU Eco-label.

FAO. (2001). *Product Certification and Ecolabelling for Fisheries Sustainability*. FAO Fisheries Technical Paper 422. Rome: FAO.

Frey et al. (1998). *Project for the Promotion and the Diffusion of the EU Eco-Label in Italy and the Benelux*. Final Report.

Hirsbak, S., Nielsen, B. & Lindhqvist, T. (1990). Eco-products. Proposal for an European Community Environmental Label Annexes. Report prepared for the Commission of the European Communities. Department of Environmental Technology, Danish Technological Institute.

Horne, R. (2007). *The roles of PELS for sound Life Cycle management of Product Environmental impacts*. Melbourne: Centre for Design, RMIT.

Korteland, M. (2007). *Eco-labelling to be or not to be? Desirability of eco-labels from an environmental and poverty perspective*. CE-report 07.7479.17. Delft, Netherlands: CE Delft.

Leire, C. & Thidell, Å. (2004). *Consumer perceptions, Understanding and Use of Product related environmental information – A literature*





review of the Nordic knowledge base. TemaNord 2004:539. Nordic Council of Ministers.

Locret, M.P. & de Roo, C. (2004). *The EU Eco-label – less hazardous chemicals in everyday consumer products*. The European Consumers' Organisation, BEUC/X/010/2004.

Moon, S. (2011). *Korean Green Consumption and Production Policy for Transition into a Green Economy*. Korean Environmental Industry & technology Institute (KEITI). Presentation. Available at: http://www.neaspec.org/sites/default/files/Promotion%20Policy%20for%20Accelerating%20Eco-labeling%20Scheme_Moon%20Seoung%20Sik.pdf.

Morris, J. (1997). *Green goods? Consumers, product labels and the environment*. IEA Studies on the environment, No. 8. IEA.

OECD. (1997). *Eco-labelling: Actual effects of selected programmes*. Paris: OECD.

Potts, T. & Brennan, R. (2011). *Sustainable Seafood and Eco-Labelling (No. 270-211)*. Scotland: Scottish Association for Marine Science.

Rubik, F. & Frankl, P. (2005). *The Future of Eco-labelling: Making Environmental Product Information Systems Effective*. London: Greenleaf.

Rubik, F., Scheer, D. & Iraldo, F. (2008). Eco-labelling and product development: potentials and experiences. *International Journal of Product Development*, 6, 3-4, 393-419.

Seifert, R. W. & Comas, J. M. (2012). *Have ecolabels had their day? Tomorrow's Challenges*. IMD.

Thidell, Å. (2009). *Influences, effects and changes from interventions by eco-labelling schemes. What a Swan can do?* IIIIE Dissertations 2009:6. Lund: IIIIE, Lund University.

UNEP. (2005). *The trade and environmental effects of ecolabels: assessment and response*. Paris: UNEP.

US EPA. (1994). *Determinants of effectiveness for environmental certification and labeling programs*. EPA 742-R-94-001. Washington DC: Abt Associates Inc.

Wilske, Å. (1999). *Miljöutvärdering av Bra Miljöval för hushållskemikalier [Environmental evaluation of the Good Environmental Choice for household cleaning products]*. Report for the Swedish Society for Nature Conservation (SSNC), March 1999. Gothenburg: Scandiakonsult Sverige AB.







LUND
UNIVERSITY

IIIEE – The International Institute for Industrial Environmental Economics
Lund University, PO Box 196, SE-222 00 Lund, Sweden, www.iiiee.lu.se