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Product Policy and the Environment: The Example of Eco-labels

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**Product Policy and the Environment:
The Example of Eco-labels**

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0. Preface

This case study on "Eco-labels" is part of the second step of the project "Product policy in support of environmental policy" which is conducted with the financial support of the European Commission within its programme "Socio-Economic Environmental Research" (SEER). The entire project consists of four steps:

1. Inventory of environmentally oriented product policy instruments for each of the EU member states and for EU policy.
2. Case studies of selected instruments and policies with a significant environmental orientation.
3. An evaluation of selected product policy instruments with respect to their effectiveness in increasing the market share of environmentally oriented products and in decreasing the demand for environmentally harmful products.
4. The development of strategic proposals for the optimisation of product policy instruments, especially those that would encourage enterprises to develop relevant product development strategies.

The findings of the first step - inventory - have been published in:

- * an interim report summarising the country reports and containing the most important results (IÖW-Schriftenreihe 72/94),
- * twelve country reports describing the existing product policy in each of the former Member States of the European Union (IÖW-Schriftenreihe 72/94 - B, D, DK, E, F, GR, IRL, IT, LUX, NL, P, UK) and
- * a report describing the trends of product policy of the EU itself (IÖW-Schriftenreihe 72/94 - EU).

These reports are available at **Institut für ökologische Wirtschaftsforschung (IÖW), Giesebrechtstr. 13, D - 10629 Berlin.**

The instruments we have chosen for the in-depth-studies are eco-labels and public procurement, the product groups are paints/varnishes and batteries. For each case study, we will follow the historical development of the policy, and consider its effects and the evaluation of its effectiveness as far as this is possible on the basis of the knowledge available in the respective countries. Special emphasis is given to the fulfilment of objectives of a product-oriented environmental policy.

1. Reduction of hazardous substances contained in products and improvement of their composition.
2. Substitution of products/materials.
3. Collection and recycling.
4. Overall reduction of the use of products.

The findings of the second step - case studies - will be published in four reports within the publication series of IÖW (F. Rubik "eco-label", G. Scholl "batteries") and of IVM (F. Oosterhuis "paints/varnishes", N. van der Grijp "public procurement"). They are available at **Institut für ökologische Wirtschaftsforschung (IÖW), Giesebrechtstr. 13, D - 10629 Berlin** and **Instituut voor Milieuvraagstukken, Vrije Universiteit, De Boelelaan 1115, NL - 1081 HV Amsterdam** respectively.

The most decisive reasons behind the choice of eco-labels as one product group have been:

- * actual use of an instrument,
- * future expected use,
- * relevance for Southern Europe¹,
- * extent to which all stages in the life cycle play a role,
- * innovative and flexible character of an instrument,
- * our own personal assessment of (environmental) importance.

Furthermore, this case study draws special attention to selected Member States of the European Union. We have chosen Germany and Italy for a deeper investigation of the eco-labelling. We look at the eco-labels in some other countries, but in a less detailed way.

The German part of this case study and the review on eco-labels in other countries have been performed by IÖW in Heidelberg. The Italian part of the case study has been prepared by Duccio Bianchi and Anna Melone of Ambiente Italia in Milano.

I would like to thank everyone who contributed to this paper; especially my colleagues Gerd Scholl and Cornelia Weskamp, our very helpful draughtsman of figures Johannes Stauder and also Joop de Boer, Nicolien van der Grijp, Frans Oosterhuis from IVM.

This case study has the state as of end of December 1994.

Heidelberg, May 1995

¹ This criterion was of special interest for the Commission for the next project steps. Therefore, we list it here.

1. Introduction

1.1. Instruments

Eco-labels analysed in this report are an instrument of product-oriented environmental policy. A comprehensive set of instruments has been presented in our previous studies (cp. Oosterhuis/Rubik et al 1994)². A part of this set of instruments refers to information instruments, i.e., instruments which inform consumers and users about the environmental aspects of products. They can be subdivided into two different groups:

- 1) **Obligatory instruments:** These instruct suppliers to inform consumers and users about the environmental aspects of their products.
 - * **Compulsory labelling:** this instrument obliges the producer to provide customers of his product with concise information regarding the environmental characteristics of his products. This information may consist of signs and symbols, standardised phrases, etc..
 - * **Declaration of contents:** it refers to the producer's obligation to provide more detailed information on (or with) the product. This information may consist of an enumeration of the constituents, advisory notes for the use and disposal, etc..
- 2) **Voluntary information instruments:** These include all types of environmentally relevant product information which is not obligatory, but which may be subject to certain general rules and criteria, such as - inter alia -
 - * **Test reports:** both general tests including environmental criteria and specific environmental tests.
 - * **(Official) eco-labelling:** general, official environmental labels distinguishing relatively "clean" products within a product group.
 - * **Other voluntary labelling:** these schemes generally focus on a specific product group or on a specific environmental aspect. They are introduced either by private enterprises or other, non "official" associations.
 - * **Quality marks:** labels indicating that a product meets certain specifications. Generally, these relate to quality, performance and durability, but sometimes explicit environmental criteria are also included.
 - * **Trade marks:** these can be used to suggest environmentally benign properties of the product. In some countries, there are restrictions on the use of certain terms in trade marks.

² In addition to this report, 12 country reports and a report on the policy of the EU are available.

Therefore, official eco-labels are a voluntary information instrument.

Eco-labels are also a topic of the recent work of the International Organisation for Standardisation (ISO). In 1993, ISO founded a Technical Committee 207 which consists of different Subcommittees (SC). One of them (SC 3) deals with different forms of labelling. SC 3 proposes to differentiate among three types of voluntary labels³:

- * *Type I*: criteria-based certification programmes,
- * *Type II*: self-declaration claims,
- * *Type III*: quantified product information based upon independent verification using present indices.

However, all listed instruments do not come within these three categories. In particular obligatory labels, test reports and trade marks are not covered. Official eco-labels can be classified as type I labels.

1.2. Scope and method

This report focuses on official eco-labels. Eco-labelling started more than 15 years ago in Germany. After a standstill of 10 years, other countries followed Germany's example in the late 1980s. In the meantime, more than ten countries and the European Union itself created official eco-labels.

It was not possible for us to examine all of these programmes. We decided to concentrate on the German eco-label ("Blue Angel") and the introduction of the European eco-label, especially in Germany and Italy. Furthermore, we tried to collect information and "anecdotal events" on eco-labelling worldwide in order to gain more insight into its functioning and effectiveness. The recently discussed impacts of eco-labelling on international trade and developing countries have not been considered by us (see UNCTAD 1994a and 1994b).

Our research methods include interviews with different interest groups and key persons as well as analyses of the relevant literature.

Additionally, we selected two exemplary product groups for which the German eco-label is awarded: wallpaper and hair sprays. For both product groups we interviewed industrial associations and sent questionnaires to all German producers of these products, among them users and non-users of the Blue Angel.

³ This information derives from a working draft (ISO/TC207/SC3/WG1 No. 18) as of July, 1994.

1.3. Outline of the report

The report starts with a description of the important actors in the area of eco-labelling and relevant products/product groups. Basic elements are explained (*Chapter 2*). *Chapter 3* is dedicated to the development of eco-labelling in Germany, Italy and the European Union and the description of the actual status of eco-labelling and its application. Some hints to the situation in other countries are presented.

The evaluation and assessment of eco-labelling is introduced in *chapter 4*. First the current state of knowledge is discussed. Then the influence of eco-labels on two exemplary product groups (wallpapers and hair sprays) is examined. An evaluation of eco-labelling follows. The following evaluation criteria have been agreed:

- * (environmental) effectiveness,
- * (economic) efficiency,
- * flexibility,
- * acceptance,
- * side-effects.

Chapter 4 closes with the analysis of barriers and opportunities facing eco-labels.

Based on our findings some conclusions on eco-labels are drawn (*chapter 5*).

2. Framework

2.1. Introduction

This chapter presents an overview of the background of eco-labelling based on a quadrangle consisting of objectives (*section 2.2.*), actors (*section 2.3.*), product groups (*section 2.4.*). The last corner of this quadrangle is the instrument itself, i.e. the eco-label.

Besides that, we refer to the existing legal framework of eco-labelling (*section 2.5.*) and draw some first conclusions (*section 2.6.*).

2.2. Objectives

The basic idea of environmental labelling is that within a product group the environmental profiles of the individual products are different: there will be disparities among them. The main objective is to support environmentally more benign products by such a label.

The OECD (1991, p. 12f.) examined different labelling activities within the OECD countries and concluded that labelling accomplishes some objectives:

- improving the sales or image of an eco-labelled product,
- raising the awareness of consumers,
- providing accurate information,
- directing manufacturers to account for the environmental impact of their products, i.e. giving incentives to innovation,
- protecting the environment.

Similarly, the EPA (1993, p. 29) in its world-wide analysis of environmental labelling stated four main objectives:

- providing reliable information,
- raising the awareness of consumers,
- providing incentives to manufacturers,
- causing market changes that ultimately result in decreased environmental impacts from consumer products.

These different objectives are more or less relevant and similar for all (official) eco-labelling activities.

2.3. Relevant actors

Eco-labels are in general an instrument which should inform consumers about specific qualities of products. As a rule, informants are producers and importers. Other interested parties and organisations seldom inform by means of eco-labels. Therefore, the application of an eco-label is up to producers/traders. Eco-labels have to fulfil general and specific prescriptions, e.g. the advertisement rules. These rules are set - in general - by the state.

Another aspect of eco-labelling is the elaboration of the requirements and criteria. Often, this process is organised in a participatory way. That means, that different interest groups are involved.

In FIGURE 2.1. we present these two aspects: the elaboration of the criteria and the application of an eco-label. It shows that - from a general point of view - relevant actors are consumers, producers, environmental organisations and the state.

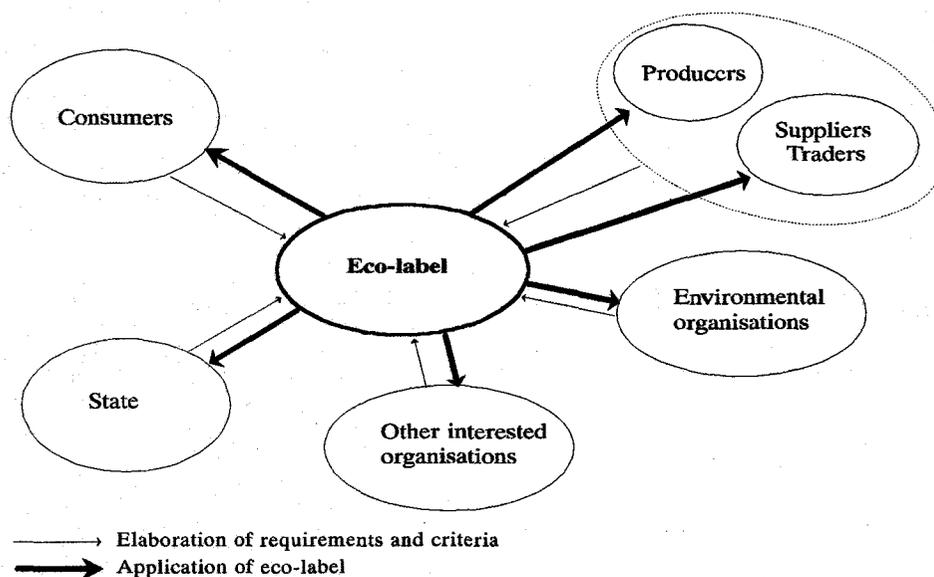


FIGURE 2.1: Eco-labels between the actors

The following sections describe from a more theoretical point of view the different actors and their interests and demands for eco-labels.

2.3.1. Consumers

2.3.2.1. Consumer behaviour

The central orientation of the neo-classic microeconomic theory is that of consumer sovereignty. Two basic assumptions underlie this model:

- a) consumers (as well as producers) have a complete information overview;

b) consumers maximise their benefits.

As a consequence, the market's allocation process would result in an optimal solution in which the marginal benefits of consumers and the marginal costs of producers would be equivalent.

A major drawback of this model is that the factors influencing the behaviour of consumers are not considered. In reality, markets do not show such perfectionism: one category of market imperfections results from the fact that the behaviour of consumers cannot meet the high standards of a "homo oeconomicus", they simplify their choices ("bounded rationality") because the resources of consumers are limited by financial, temporal, practical, social and psychological factors. Psychology and sociology have tried to analyse consumers' behaviour in more detail. For example, behaviourists have tried to consider factors influencing consumers' behaviour. However, it has to be mentioned that different schools exist and a consensus between them does not exist. Therefore, our interpretation is only one of various possibilities.

In the following we consider first different variables of information search, then used information sources. Based on these aspects we present the problem of assessment of the quality of a product and finish with the description of different decision-making purchasing processes.

Information search:

The variables of the consumers' search for information can be subdivided into three groups: cognitive, situational and motivational variables, see FIGURE 2.2. They influence the

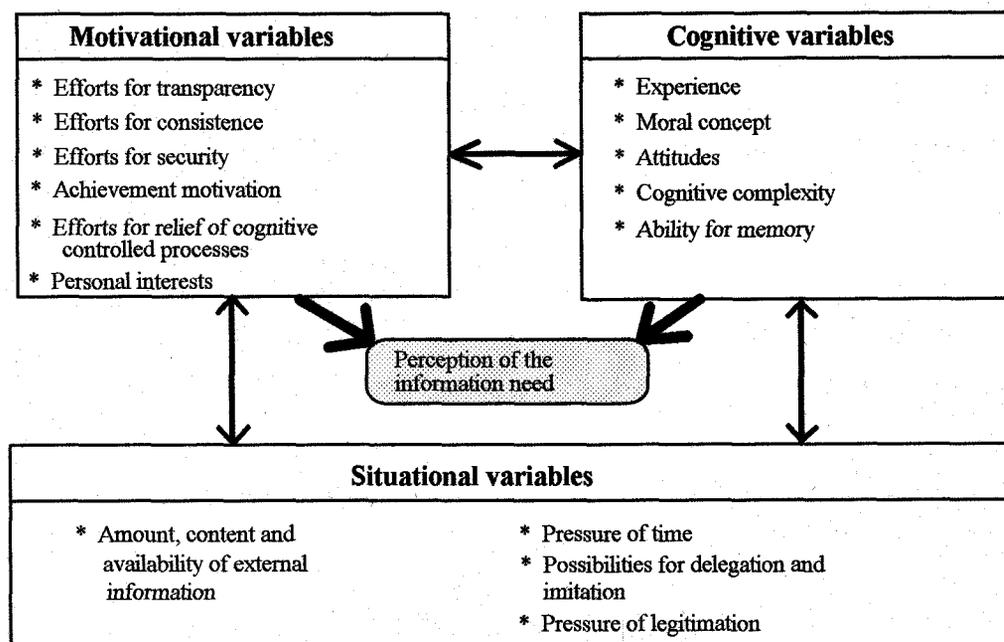


FIGURE 2.2: Variables of subjective demand for information at purchasing processes
(Source: Raffée/Silberer 1975, p. 37)

perception of the need to collect information and also the choice of the information sources to be used.

Information sources:

If consumers decide to collect information, external or internal sources might be used. Tölle (1983) proposed a classification of information sources which is reproduced in FIGURE 2.3: *external sources* are subdivided into independent/neutral ones and dependent/interests-oriented ones. Independent sources are personal (e.g., by family) and impersonal information (e.g., by consumer reports and independent labels). *Internal sources* are personal experiences, knowledge etc., i.e., the information used is provided by knowledge which is stored up in the long-term memory.

Beside the information sources, other factors influence consumers, e.g. the information given by salesmen and the presentation of products in the shops.

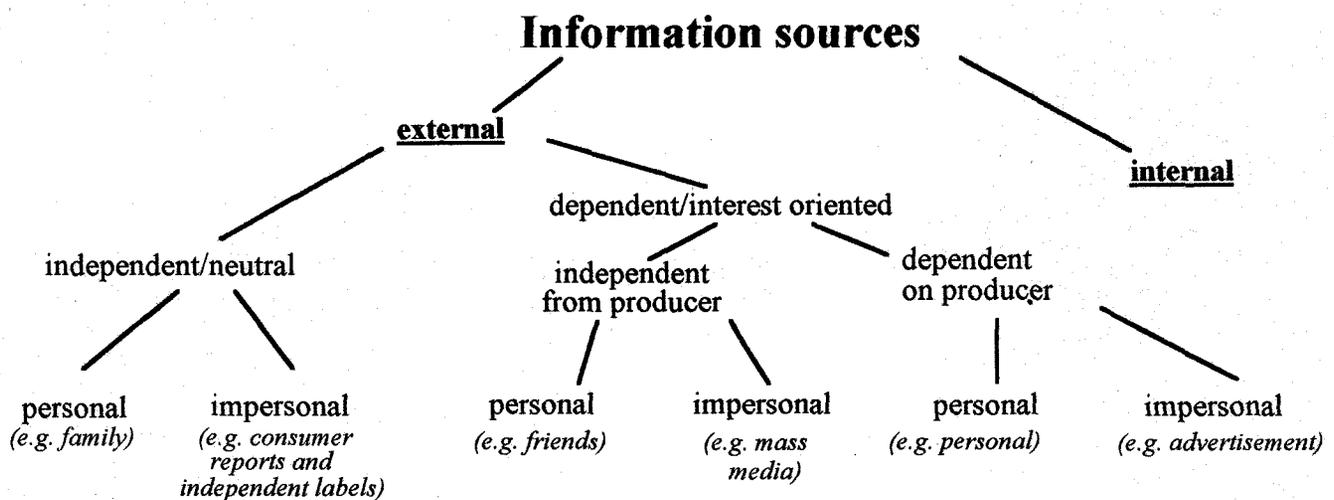


FIGURE 2.3: A proposal for a systematisation of consumer-oriented information sources
(Source: Tölle 1983, p. 92)

Assessment of the quality of a product:

To be able to determine the extent to which consumers can assess a product's quality, Nelson (1970) introduced a distinction between search and experience goods to which Darby/Karni (1973) added a third category, i.e. credence goods. *Search goods* are characterised by the fact that consumers can assess their quality before the purchase. In contrast, the quality of *experience goods* can hardly be ascertained by consumers before the first purchase because an assessment which could influence the repeated purchase requires experience, i.e. the use of products. *Credence goods* are completely unassessable by consumers.

The classification given above can be adapted to describe other qualities of products as well; quite often products bring together different aspects of quality. The classification is useful for our objective since the evaluation of the environmental quality and impacts of products is one - but, for our objective, important - aspect of this problem. The reason is that an ad-hoc-assessment of the environmental quality of products is often impossible. The environmental quality of a product is a type of credence quality about which consumers have to be informed in another way, for example information sheets and labels.

Decision types:

To what extent consumers make use of the various information sources described above depends on the type of decision making process. Recent consumer research distinguishes between four different types of behaviour (cp. Weinberg 1981):

- (a) ***Extensive decision-making purchasing processes:*** These purchases are very cognitive controlled and used for new, complex decision processes. External information sources are used. An evaluation of alternatives may occur. At the end a choice will be made. Examples are the purchases of cars or other durable products. Given the condition that no information asymmetry exists, this type fulfils to some extent the axiom of the consumer's "ideal" behaviour (i.e. the homo oeconomicus).
- (b) ***Limited decision-making purchasing processes:*** Consumers often have a certain knowledge of an evoked set of alternatives. The alternatives have already been evaluated, additional external sources are not further used. An example is the purchase of fruits in certain shops.
- (c) ***Habitual decision-making purchasing processes:*** These purchases take place quasi "automatically"; cognitive factors are almost unimportant. This type of decision-making process is typical for the repeated purchase of the same product (e.g., paper, light bulbs).
- (d) ***Impulsive decision-making purchasing processes:*** These purchases are nearly free from cognitive control and are mostly reactions to strong emotional incentives. Examples are spontaneous or frustration caused purchases.

TABLE 2.1. examines three major aspects of these four decision making processes: frequency, cognitive control and information search. Frequency describes how often such a decision process takes place. Cognitive control means the extent consumers reflect on the concrete decision. Information search refers to the accepted extent consumers look for additional information.

Decision type	Frequency	Cognitive control	Information search
Extensive decision-making process	low	high	high
Limited decision-making process	average	average	average
Habitual decision-making process	high	low	low
Impulsive decision-making process	average	low	low

TABLE 2.1: Characteristics of different decision types
(Source: own elaboration based on Kuhlmann 1990, p. 47)

The presence of the extensive decision-making process, which is the type characterised by the highest degree of cognitive control, in all decision processes is modest. The other three types are of much more relevance when trying to analyse the typical purchasing behaviour of consumers. They are characterised by a limited amount of time and processing capacity. Thus, the consumers face a dilemma: on the one hand, the amount of information which they can handle is restricted. On the other hand, an information overload exists. Kroeber-Riel (1990, p. 401) believes that consumers - confronted with this information overload - select useful information and prefer "information chunks".

To be more specific, the response of consumers is to consider merely *information chunks*, i.e., information which concentrates on certain aspects/criteria and which release consumers from the information overload. Information chunks could be

- * the image of a producer,
- * the brand name,
- * the price or
- * quality judgements and labels (including eco-labels).

Information chunks "condense" either a lot of information or try to use reidentifiable, known and well introduced information. They are necessary to simplify complex decision processes under the situation of an information overload.

Information chunks are used especially for purchasing decisions with a low degree of cognitive control. But also extensive decision-making processes might take them into account.

2.3.2.2. Labels and information chunks

Labels may be considered as information chunks. Our classification of obligatory and voluntary information instruments (see section 1.1.) presents an overview of the structure of different labels and declaration sheets. The instruments possess different characteristics:

- * *degree of voluntariness*: labels can be obligatory or voluntary.
- * *degree of independence*: labels can be drawn up - inter alia - by the producer of the product itself, by an industrial association, by NGO's or by the state.
- * *degree of information input*: labels can be based on a little or quite a lot of information and criteria.
- * *degree of information output*: labels can aggregate and condense the information input.

Considering some of these elements, it is possible to categorise information instruments in crosshairs.

FIGURE 2.4 describes the relation between information input and information output. The more "condensed" an information output is, the more a label complies with the characteristic of an information chunk.

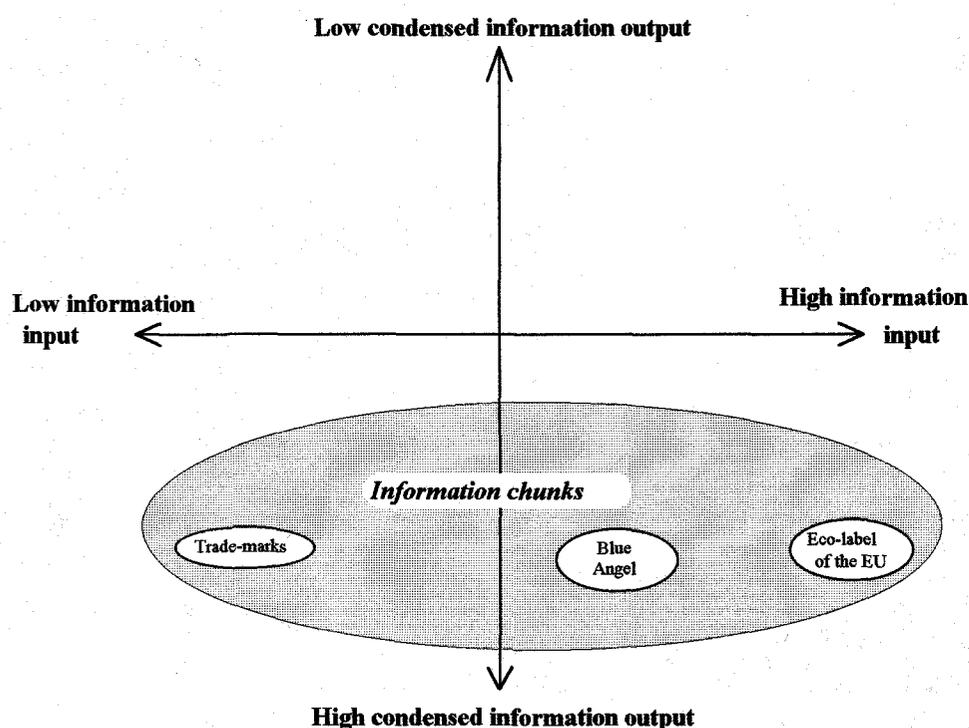


FIGURE 2.4: Relationship between the information input and output of different information instruments

As mentioned before, environmental aspects of products are often credence qualities which consumers cannot assess. They are dependent on the information received. Information can

come from different sources which can be classified according to their relation to the producer of the product. Generally, consumers try to minimise their risks and maximise their gains⁴. That means that the risk of receiving biased information will also be taken into account. Regarding labels which draw on data provided by manufacturers, the risk of incomplete or incorrect information is high⁵. Independent labels, on the other hand, are characterised by a high degree of reliability. In addition, a further aspect should be considered: the less information output a label contains the more expert's knowledge is necessary. This relationship could be described in another crosshair: FIGURE 2.5 presents the trade off between the dependency on experts and information complexity.

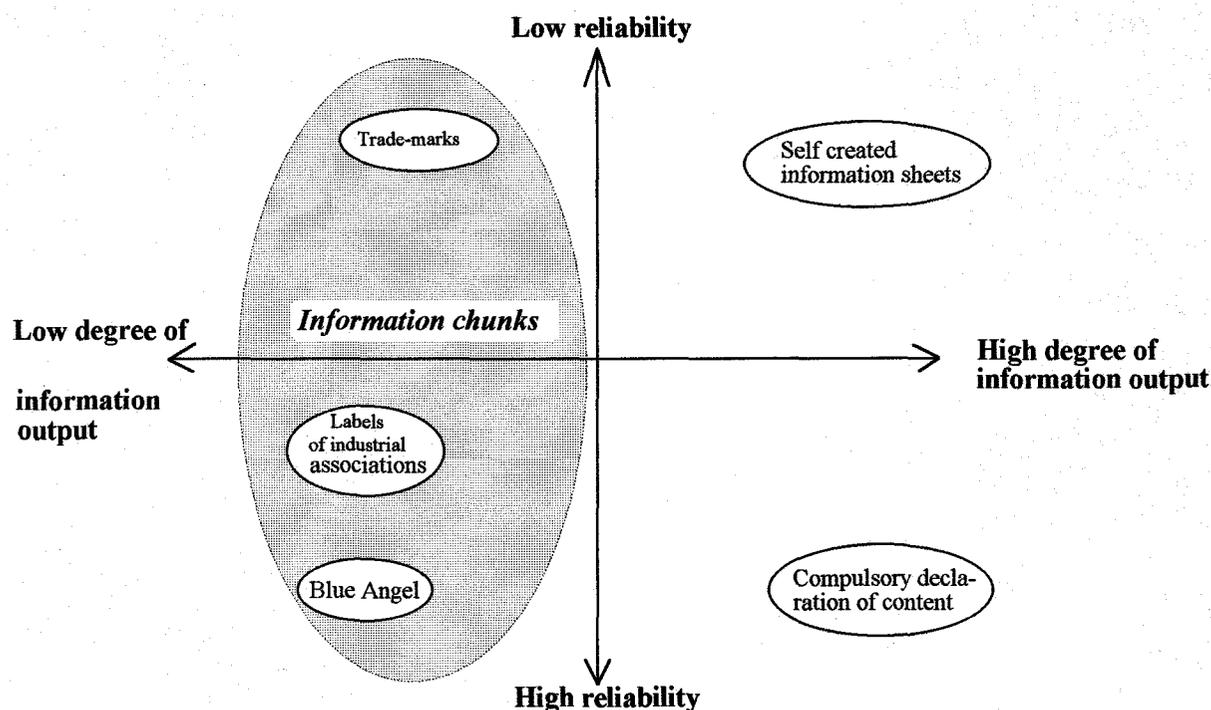


FIGURE 2.5: Relationship between information output and reliability of different information instruments

Information chunks can be depicted within both crosshairs (grey ellipsis in the FIGURES 2.4 and 2.5). Labels and other types of information instruments which have a high degree of information output do not fulfil the requirements of an information chunk. They are not regularly used for most of the purchasing processes except for the extensive ones. Labels which are usable as information chunks can have either a low or a high degree of information input and they can be more or less reliable.

⁴ That means that an optimum is attempted. Influencing factors are the losses due to the realisation of risks and gains. However, consumer behaviour will be influenced by risk-seeking and risk-averse preferences. We do not take this point into account within this case-study.

⁵ Except in the case of misleading and punishable information.

Information economics tries to describe the decisive elements of consumers' information behaviour. A rational single consumer would compare the marginal costs of information seeking with the marginal benefits, trying to achieve an optimum. This involves first the information search and second the assessment of the benefits and costs of environmentally more benign behaviour. The advantages of an environmentally oriented consumption are, however, hardly internalisable or their value is not known. Therefore, the benefits are very difficult to consider. A consequence could be that consumers optimise their individual benefits and costs, missing the optimum.

Besides individual benefits being lower than social benefits, individual costs are higher in comparison to social costs if reliable information chunks are unavailable. Therefore, the provision of information by neutral agencies, e.g. governmental institutions, contributes to the achievement of a social optimum. Tietzel (1989, p. 62) pointed out that independent institutions financed by the state could present this important information and that this process would be more efficient than the search processes of the individual consumers. The reason is that such an institution has to do the job only once, whereas each consumer would have to do it for himself.

Conclusions:

- * Information chunks are necessary for most of the purchasing processes with the exception of extensive decision processes.
- * Eco-labels are one type of information chunk.
- * Different existing information instruments can be judged by the requirements of information chunks. Those instruments which contain a high degree of information output are not suitable as information chunks. Only labels which condense the information inputs to a low degree of information output like the German Blue Angel, the European eco-label or judgements of test reports are suitable.
- * From the viewpoint of information economics, official and independent labels and test reports are more efficient than individual information collection due to their lower costs.
- * Environmental impacts of products are credence qualities which should be examined and ascertained by independent organisations.

We conclude that official eco-labels like the German and the European eco-labels tend to fulfil these requirements.

2.3.2. Producers

Producers can be characterised by the process of construction and utilisation of services, goods and raw-materials according to the business management theory. Rational decision processes within private enterprises consider also the relationship between the producers and their external environment. When a producer acts and reacts as an environmentally oriented rational actor in the market, he must first take into account all factors which are relevant for the environment, and which determine his environmental and economical strategy (Hopfenbeck 1990, p. 125).

FIGURE 2.6 contains all relevant actors and environmental business-oriented factors which are important for the initial position of an enterprise. It must be added that this figure includes only factors which influence the enterprise. Feedbacks between the enterprise and its external environment are not contained.

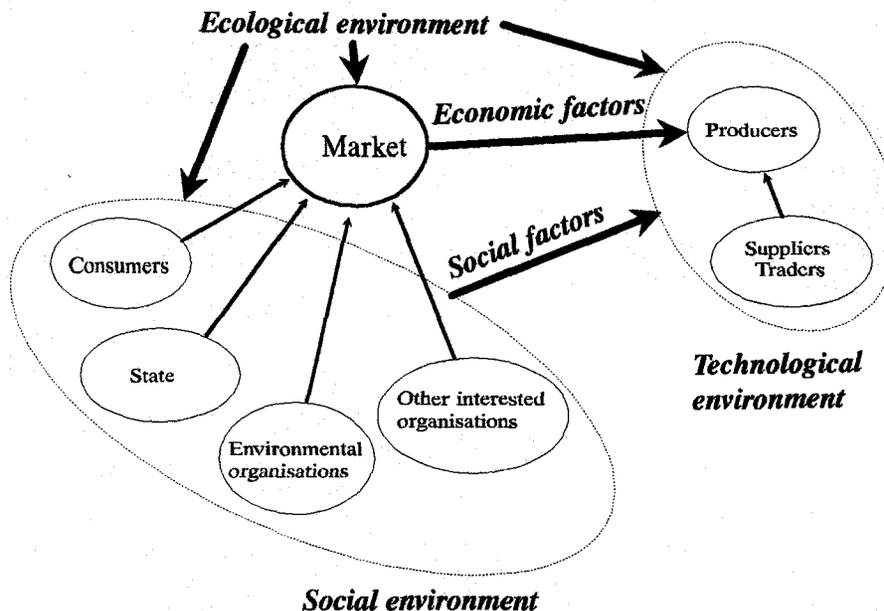


FIGURE 2.6: Factors influencing producers/suppliers

The economic relations of the producers are established by sales and purchases in the market (*economic factors*). The market itself is not an anonymous affair but one influenced by different actors, consumers, the state and the different interest organisations (e.g. environmental organisations). They influence via the market the decisions of enterprises. The *technological environment* can be characterised as the pressure to adapt to improved, environmentally less harmful products, production processes and to technological progress. The relationship to the ecosphere, the *ecological environment*, which was ignored as a business external

factor in internal company decisions for a long time, is formed by the consumption of raw-materials in the market and by the destruction of environmental systems by pollution⁶.

The *social factors* contain on the one hand, the relationship between producers/traders/suppliers and the state, and on the other hand the relationship between these parties and the whole society. The state determines the framework within which the producer acts. It influences the internal company decision making process by creating incentives for an environmentally oriented market economy. Furthermore, the society with the state, consumers and other interested organisations has great effects on the behaviour of the producers by changing basic value-structures. Examples are the changing of behaviour of consumers towards a more environmental oriented purchasing behaviour or the demand for more information with regard to environmental problems. Taking into account these factors, producers (but also suppliers and traders) are actors of public interest. Their decisions and behaviour should be based on transparency and openness to intensify the credibility of an environmentally oriented enterprise (Zahn 1992, p. 8).

There are other factors beside these external factors which influence the business decision making process, i.e. the *business internal factors*. The business philosophy as one example of an internal factor, takes the general objectives and values of an enterprise into account and therefore constitutes the basis for the strategic position. Internal factors should stimulate an enterprise to analyse its strengths and weaknesses. Environmental aspects can be in conflict with economic aspects and may constitute a problem in business decision making in the determination of the strategic position.

The dominant objective of a marketing business is the long-term profit-maximum relative to the cost-minimum. In addition to that, an environmental business policy is characterised by taking into account long-term business-success. Given this case, the objective of a long-term profit-maximum is influenced considerably by economic external, environmental restrictions (cp. Wicke 1992, p. 20f.).

In the determination of business objectives conflicts are often unavoidable. Economic and environmental objectives can contradict each other. For example, an increased cost of production are a result of environmental regulations. But, nevertheless, a harmony of objectives is also possible: e.g., increased returns by environmentally conscious behaving consumers.

There are two different basic strategic kinds of behaviour when the premise is presupposed that the profit maximum under the restriction of environmental oriented objectives is the most important business-objective: defensive contra offensive behaviour. The specific characteristics of those two alternatives are shown in TABLE 2.2.

⁶ At present, the availability of raw materials is still not a market problem; but nevertheless they are limited in the earth's crust and, will in the future influence the market considerably.

The *defensive* strategy is characterised by the appreciation of environmental oriented minimum demands as external restrictions in striving for the profit maximum. Such a business adapts to external environmental or social demands by physical changes in products and production-processes.

The *offensive* strategy, however, uses measures of environmental protection as a kind of positive strategy. An offensive business management meets not only legal requirements, but uses environmental protection to create environmentally less harmful products and production-processes, to gain new market-potential.

With a *defensive* strategy, only short-term success can be realised; whereas a business with an offensive strategy is in the position to protect long-term success, even if short term profit-losses have to be accepted (Wicke 1992, p. 658).

Strategic alternatives of adaptation	
Defensive behaviour	Offensive behaviour
(1) operation with conflicts	
• reactive	• proactive
• static	• dynamic
• wait-and-see attitude	• far-sighted attitude
• passive	• active
• restricted	• influencing
• compensating	• avoiding
• adapting	• innovative
• isolating	• integrated
• individual	• cooperative
• factual constraints	• independent conception
(2) effect on competition	
• acceptance	• arrangement
• relevant to present time	• forward looking
• crisis management	• management of chances

TABLE 2.2: Basic strategies of enterprises
(Source: Zahn 1992, p. 58)

Given the condition that real environmentally more benign products have been developed, the extent of the achievement of short-, middle- and long-term success is dependent on the com-

munication policy which a business uses. The objective of an environmentally oriented communication policy is to give reliable business and product information to potential consumers as part of marketing strategies and to build up a business identity linked with environmentally sound principles. If the communication policy is successful, the business will be in the position to achieve competitive advantages with environmentally less harmful products. But, the additional readiness of the consumer to pay for an environmentally less harmful product must be taken into account when the kind and the extent of a communication policy is chosen (Wendorf 1993, p. 65).

It has to be mentioned that an enterprise which uses an offensive strategy has advantages when contrasted with defensive enterprises. On the one hand, product innovation leads to unexpected cost savings, and, therefore, to increased profits, and on the other hand, enterprises have a greater potential demand if the limit of satisfaction of the consumer is taken into account. Nevertheless, offensive behaviour also has disadvantages such as additional investment costs, not balanced by immediate return on investment.

When a defensive strategy is used and the environment problem is well-known the physical product change is set off by an increased environmental sensitivity in the market. The offensive oriented management finds itself in the position of informing the consumers about the basic environment problem and its solution. This is important for the success of the policy because consumers must realise the supplementary profit they gain by buying the environmental less harmful product.

There are different possible communication policies to increase the credibility and the reputation of a business and its products (Wendorf 1993, p. 70ff.):

a) Improvement of product characteristics:

Producers can try to substitute credence qualities of products by experience qualities or at least improve the degree of experience qualities (see section 2.2.2.1.). This possibility is of little importance because the success is dependent on the perceptive faculty of the consumer and on the characteristics of the product. For example detergents can be classified as less harmful to the environment if they do not smell of chlorine.

b) Additional messages:

When the perceptive faculty is very low (which is very often the case), the market transparency of a product can be increased by additional messages. These can be used before the buy (through print media, radio and television), in the place of sale (through notices on the packaging) and/or after the sale (through declaration of contents).

c) Use of business internal or external environmental reputation:

The analysis of the product's quality can be carried out by test institutes. Industry own or dependent test institutes are confronted with restricted credibility.

The use of well reputed independent institutes - like quality controls by RAL within the scope of the eco-label or the "Stiftung Warentest"-, however, is often associated with a higher credibility in comparison to business-owned quality controls. The credibility is the higher, the more neutral the institute. Furthermore, there is the advantage of positive recognition of a uniform symbol, saving information costs if the symbol is frequently used. Information about the eco-label "Blue Angel" has not been sufficient so far in the opinion of the most relevant actors in the market (see Chapter 4).

An independent reputation is very important for enterprises which have not reached proper recognition in their own right. Enterprises, however, which are already credible in the public eye can trust their own reputation, with the advantage of lower advertising costs.

Because of the heterogeneous market, in which consumers have a different readiness to pay, the environmental communication policy must differentiate between target-groups and their quantity.

Conclusions:

- The objective of a offensive strategy is supposed to contribute to long-term success in a business.
- To achieve competitive advantage an environmentally oriented business must build up its reputation.
- This improvement in reputation is the more successful the more credible the chosen instrument is.
- Business external quality-controls like the eco-label possess a higher credibility in comparison to business internal controls. The success is dependent on the quality of information which the public gains by a successful communication policy.
- The quantity and quality of information given by an instrument depends on the type of product and on the segments of consumers addressed. Symbols like the eco-label provide condensed information, whereas quality analyses like the "Stiftung Warentest" include more information.
- A business independent reputation for a product is the more important the less own reputation an enterprise possesses.

However, an enterprise characterised by a high own reputation can to build up its product reputation on its general reputation by using proper internal instruments like internal quality-tests. The importance of an eco-label might decrease in such a context.

2.3.3. Retailers

Retailers play an important role in the market. They link producers with consumers: they pre-select products. They can pass or hinder eco-labelled products. They can be seen as "gatekeepers".

Figure 2.7 shows the environmental strategies of the retailers.

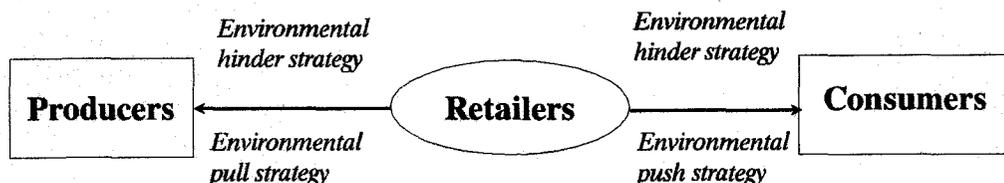


FIGURE 2.7: Retailers between producers and consumers
(Source: own elaboration based on Hopfenbeck 1993, p. 1103)

Environmental behaviour of retailers can be a supportive or a hindering strategy respecting eco-labelled products. A supportive strategy can be characterised by two relevant strategies:

- * The *environmental-push-strategy* is directed towards the producers. The retailers act as representatives of the consumers. They select producers on environmental criteria and therefore influence the producer in the way of production, of the structure of their range and of the declaration and labelling of their products.
- * On the other hand, retailers use *environmental-pull-strategies* directed to the demand side. This strategy contains an environmentally harmless supply policy. For example, retailers can consciously direct their supply to less harmful products and inform consumers about environmental aspects. Furthermore, they can direct their range towards less harmful products and discriminate simultaneously against environmentally harmful products.

Retailers can demand labels or declarations on the products. In this context, eco-labels can be used. Use is part of the retailer's business philosophy and part of its objectives. Eco-labels can also reduce the information costs confronting retailers. An eco-label as an information chunk is able to inform consumers quickly on the environmental performance of a product and can substitute for expensive face-to face information.

The most important objective of information, supply and redistribution policy is the creation and strengthening of an environmentally oriented business reputation for the enterprise.

2.4. Products and product groups

Existing eco-labels are limited to final products and are not awarded to intermediate products. The sellers of these products are not restricted to private consumers. Enterprises may be consumers and public procurement is important in this context. All consumers influence the market by their purchases.

Product groups can also be characterised according to their durability: short-life products and long-life products. Eco-labelling refers - at least so far - mostly to short-life products. These products are bought directly by consumers.

Most selected product groups and requirements are aimed at private consumers and are not intended primarily for other groups. As a rule, food and pharmaceutical products are excluded from the possible product groups for eco-labelling.

But consumers do not always purchase directly. Sometimes, they employ manual workers to carry out specific tasks for them, e.g., renewal of heating, ovens, buildings. In such cases, more durable products are involved. Consumers possess a restricted competence for their selection and therefore ask manual workers to carry-out this task. That means that also "professionals" can be involved in the selection of a specific product.

Eco-labels consider goods and have so far only very rarely been used for services (e.g. specific types of public transport tickets).

2.5. Legal framework

A specific legal framework for eco-labelling does not exist. However, the general framework for fair competition among enterprises also constitutes the framework for the criteria for official eco-labelling and the use of the label.

Recently, some German scientists proposed an environmental law which would combine the environmental prescriptions contained in many laws and decrees. As a part of this proposal, eco-labelling is mentioned. However, it is likely, that any such law would take 5-10 years of discussion before adoption'.

The use of the German eco-label has been the subject of court decisions on many occasions (cp. e.g., Lambsdorff 1993). As a result, enterprises act more prudently with respect to environmental claims.

2.6. Conclusions

Eco-labelling is a voluntary information instrument which uses disparities among different products in the same product group to support environmentally more benign products. It informs consumers on the environmental quality of a product. It is perceived by them as an information chunk which supports their purchasing processes.

Direct informants are producers and/or retailers. Between consumers and these informants "mediators" are placed, i.e. different involved interest groups and the state. Their cooperation and collaboration on the requirements of an eco-label contributes to its reliability and credibility.

Environmentally offensive behaviour by producers is supportive. In addition to that, retailers and traders are the gatekeeper of eco-labelled products. They can make use of their standing by pulling producers and pushing consumers.

3. Development of eco-labelling and actual status

3.1. Introduction

Within this chapter we present first (*section 3.2.*) the policy context of eco-labelling activities and its objectives. An overview on the actual status and application is given in *section 3.3.* Conclusions are drawn in *section 3.4.* The study focuses on the experiences of the German eco-label "Blue Angel" and the European eco-label. A specific emphasis is dedicated to Italy as a European Member State without an official eco-label. Besides that, a short overview of the state of eco-labelling world-wide is presented.

3.2. Policy context and objectives

3.2.1. Germany

a) History:

Official eco-labelling is an innovation created in Germany. In 1971, in the first German environmental policy programme, the principles of German environmental policy, still valid today, were formulated:

- * prevention principle,
- * polluter-pays-principle and
- * cooperation principle.

These principles offer guidance in the choice of policy instruments. This environmental policy programme mentioned the creation of an environmental quality label within the chapter "Participation of citizens". However, its realisation took some years. In 1974, the realisation of an eco-label was queried in a Parliamentary question. The government then had the incentive to start with its introduction⁷. Its answer to the question was that the introduction of an eco-label is in principle welcome and that the concrete examination of its practicability should be done in cooperation with RAL⁸. One year later, in 1975, the Ministry for the Interior⁹

⁷ An analysis of the history of the seventies is not easy because most actors were not able to present to us the necessary information. The former persons involved are now replaced by others. Therefore, the historical personal knowledge is nearly "lost". As an information source we used an article (NN 1978).

⁸ RAL (German Institute for Quality Assurance and Labelling) is responsible for the administration of quality marks and of the German eco-label. It is a private registered society.

commissioned the Federal Environmental Agency (UBA) to investigate the realisation of an eco-label and its criteria. This examination was done by RAL in cooperation with industry, consumer organisations, trade unions and the State. Several discussion rounds took place. After two years of consultation, an agreement on some detailed points was reached but, nevertheless, the representatives of the industry opposed the introduction of an eco-label. Their motives were primarily based on the association's policy. A general agreement was not possible.

Despite the results of this process, the governmental representatives believed that the introduction of an eco-label would make sense. This view was supported by the interest to stimulate consumers consciousness and behaviour and to support personal initiative and personal responsibility. Therefore, in February 1978, the conference of Ministers of the Federal government and of the Länder which were responsible for environmental policy decided to introduce an eco-label. Its conception (award of the label, creation of the label "Blue Angel" - see APPENDIX I) has been agreed. Some months later, in June 1978, the "Jury Umweltzeichen" (jury eco-label) was constituted and decided the criteria for the first five product groups.

Since its beginning use of the eco-label has become widespread. As well, the German label was a model for foreign eco-labelling programmes.

b) The goals of the eco-label:

The Blue-Angel programme has fixed eight goals (UBA 1990, p. 4f):

- the strengthening of environmental policy,
- to provide information for consumers,
- to provide a customer advisory service by retailers,
- the creation of promotion incentives,
- acceleration of technological change,
- establishment of an appropriate relationship between environmental quality, fitness for use and product safety,
- encouragement of adaptation to technical innovations and market situation,
- the reliability of advertisements using environmental aspects.

These objectives have not been modified since the start of the eco-label.

⁹ Until 1985, this ministry was responsible for environmental policy. After the nuclear disaster of Chernobyl the Chancellor created the Ministry for the Environment.

Our interviews with some representatives of different interest groups revealed that nearly all of the general objectives are supported by them. But some reservations exist:

- * *Industry* doubts the appropriateness of the objective to advice customers by the retailers.
- * *Environmental organisations* are more sceptical respecting the goal to strengthen environmental policy and to create promotion incentives. The motive for the second point is obvious: environmental organisations have not the task to promote products. The first point is tricky: environmental organisations often doubt the concept, the instrument and the effectiveness of the existing environmental policy. They criticise the contemporary concept of product-oriented environmental policy and have therefore reservations about the use of the eco-label within this set of instruments.
- * Also *consumer organisations* are a little bit sceptical if promotion incentives should be supported.
- * *Trade unions* doubt the ability of an eco-label to achieve customer advisory service by retailers and the adaptation to technical innovations and market situation.

c) Procedure and concept:

As mentioned, since the idea for an eco-label emerged different actors have been integrated in the policy process. Whereas industrial organisations were at the beginning sceptical and/or hesitating, other organisations supported the introduction of the label.

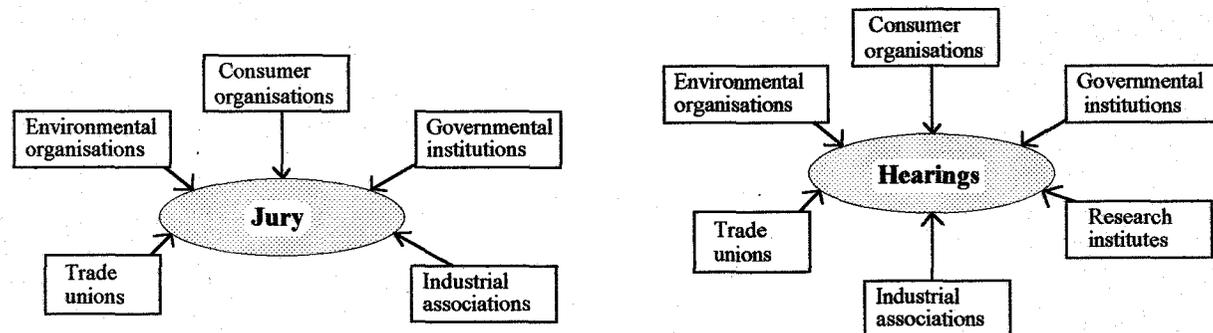


FIGURE 3.1: The composition of the Jury Umweltzeichen and of the hearings for the elaboration of criteria

Most of the relevant actors are now embedded in the process of the elaboration of the criteria of the label (see FIGURE 3.1): Industrial associations, environmental and consumer organisations, trade unions and the state join the "Jury Umweltzeichen".

The process itself consists of different steps (see FIGURE 3.2). The Jury decides to examine possibilities for an eco-label for a specific product group. The next step consists of expert

hearings with participants from different interest groups. Each interest group is allowed to appoint up to three representatives¹⁰. The hearings contribute to the preparation of a set of criteria. However, the final decision will be taken by the "Jury Umweltzeichen". If the criteria are accepted and announced, each producer can apply for the eco-label. If he fulfils the criteria he is allowed to use the eco-label (see FIGURE 3.3.).

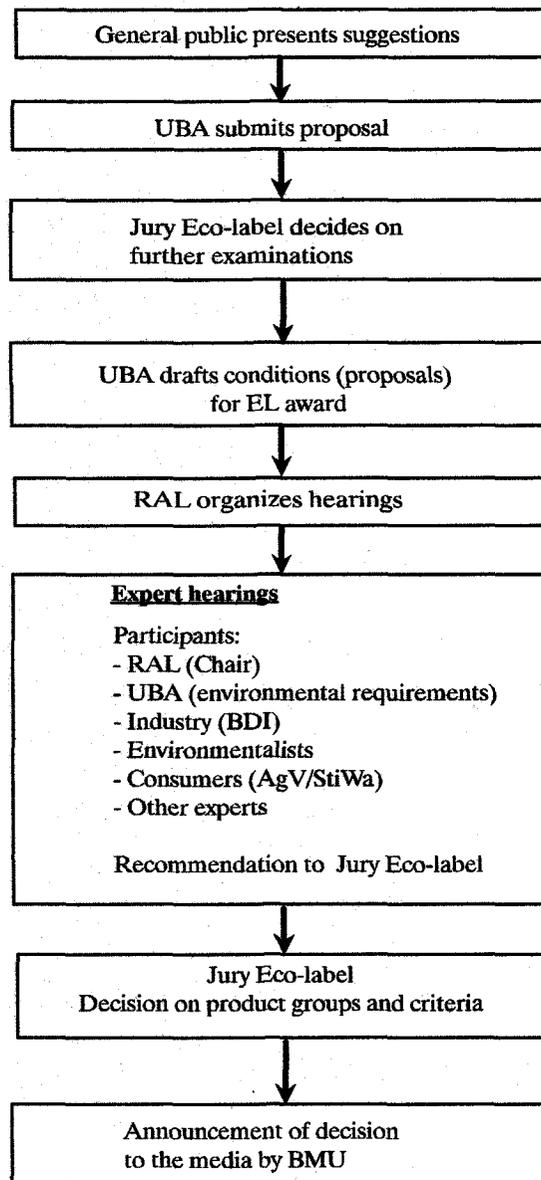
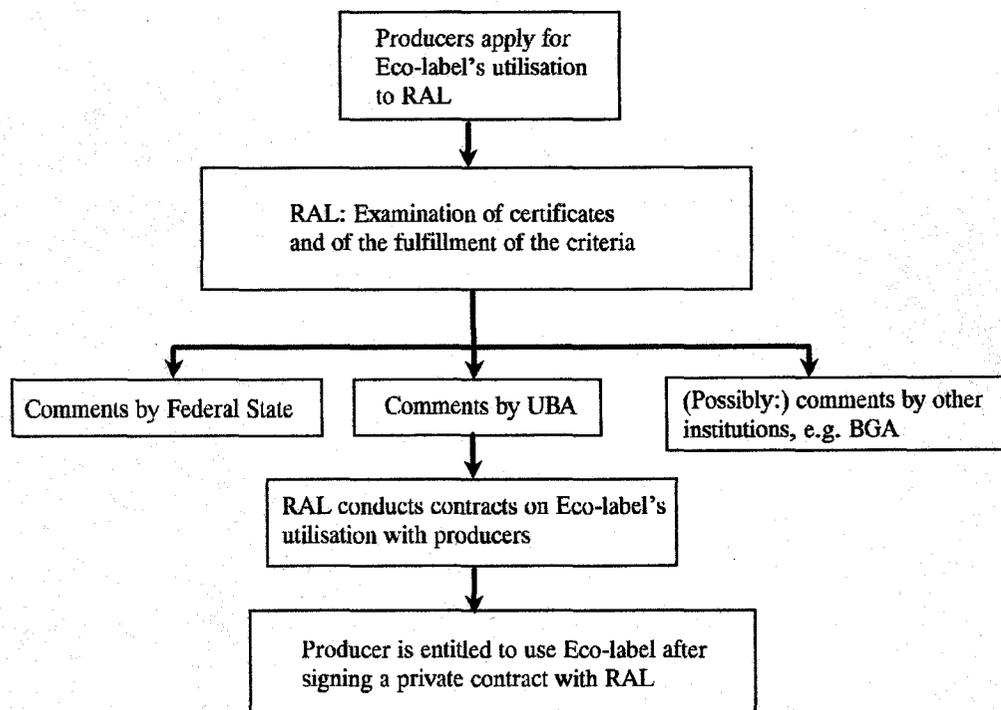


FIGURE 3.2: The elaboration process of an eco-label

¹⁰ In practise, however, environmental and consumer organisations are confronted with difficulties to use this possibility due to the restricted finances (representatives receive no fees) and due to the "restricted" circle of independent persons.



Explanation of abbreviations:

RAL	German Institute for Quality	UBA	Federal Environmental Agency
AgV	Consumers' Association	BMU	Federal Ministry for the Environment, Nature, Conservation and Nuclear Safety
BDI	Federation of German Industries Agency	BGA	Federal Health Agency
EL	Environmental Label		
StiWa	"Stiftung Wareatest Foundation"		

FIGURE 3.3: The application for the eco-label

d) Actors:

The consultative and cooperative procedure has contributed to the acceptance of the eco-label: no interest group is nowadays against the eco-label¹¹. Nevertheless, both the procedure of the development for the labelling requirements and the concept have been criticised since the start of the concept. In the following we list the most important criticisms by different actors with regard to the procedure and the criteria:

d.1) Procedure:

Industry and industrial organisations:

At the start of the eco-label the industry was quite sceptical of the benefits of the eco-label. However, in the meantime, representatives of the industry have participated in the Jury. In general, the industry now supports the eco-label. However, some sectors have some

¹¹ This statement is based on official declarations and our interviews. However, it is not conclusive that the "real" opinions differ from the declared official positions.

reservations, e.g. the electric and the car industries. The industry criticises that the "Jury Umweltzeichen" would sometimes fix criteria on a weak and ideological basis ignoring the results of the hearings and the proposals of the involved competent persons. However, the industry is not calling for modification of the composition of the Jury.

The eco-label is regarded as very well embedded in the philosophy of a market economy: it uses incentives and avoids government regulation.

Consumer organisations:

The procedure to fix criteria is generally accepted by the consumer organisations. Only some demands exist:

- Identification of prior product groups for which eco-labelling criteria will be awarded.
- Provision of finance for using scientific support for the "Jury Umweltzeichen".

Environmental organisations:

The environmental organisations were and are sceptical of the eco-label. Their most stringent argument is that an eco-label should be part of a more complex set of instruments of environmental policy (see also below). The independence of the "Jury Umweltzeichen" is regarded as important, but it is also argued that it is only a "formal" independence because the environmental protection agency and the Ministry have a strong influence on the Jury. They have requested:

- Own finances for the Jury to prepare independent studies and to finance experts for the hearings.
- The setting of prior product groups for the labelling process.

Trade unions:

At the introduction of the eco-label, the trade unions were also sceptical about its benefits. But, they decided to support it by participating at the "Jury Umweltzeichen". In the meantime, its benefit is more accepted and it is a useful help for members of the trade unions in their role as consumers.

State:

The state and the environmental protection agency favour the eco-label because it does not prescribe a specific behaviour but supports the market economy to find its best solutions. The concrete procedure of the German eco-label is regarded as positive because it possesses a high reliability based on its independence and cooperation process.

d.2) Concept and criteria:

Industry and industrial organisations:

The industry has some proposals for the concept and the criteria of the eco-label:

- Consideration of influences of the eco-label on competition prescriptions.
- Consideration of the security and usability of labelled products.
- Stimulation of innovation in product development by not prescribing specific types of products for the eco-label¹².

Consumer organisations:

The German consumer organisations regard the Blue Angel as a useful and positive instrument for the labelling of more environmentally benign products. They favour to intensify its use. Some demands exist:

- Broader definition of the product group to reflect real consumer purchasing situations.
- Consideration of the potential benefit of a product. Products with dubious benefit should not be labelled.
- Continuous updating and improvement of criteria.
- Transparency of the criteria by adding an information sheet which presents an overview of the criteria.
- Orientation of criteria at technical possible environmental optimum instead of market shares.
- Integration of packaging in the set of criteria.
- Orientation of the criteria at the cradle-to grave approach of an LCA or product line analysis without enlarging the set of criteria too much.

Environmental organisations:

The environmental organisations claim:

- Fixing of criteria according to new technological possibilities.
- Consideration of the whole life-cycle of a product.
- Creation of an additional "negative" label, e.g. an environmental devil.

¹² Schermer (1993) illustrated this argument with the example of detergents: the German eco-label is awarded only for so-called "component-systems" detergents and not for all different types. He argues that, therefore the innovation process would be hindered because a specific way of fulfilling the criteria is labelled, others not. Instead of this way he favours flexible ways to fulfil the requirements by not prohibiting specific ways.

Trade unions:

The trade unions have some proposals for the improvement of the eco-label:

- Consideration of the product's whole life-cycle.
- The possibility of immediate termination of the contract for the use of the eco-label if new knowledge exist.

State:

The state and the environmental protection agency have so far not presented any improvements on the eco-label. They favour the continuous improvement of the eco-label by

- integration of information duties,
- integration of take-back demands for discarded products,
- differentiation between closed-loop and open-loop recycling and favouring the closing of loops,
- examination of a product's durability.

e) The eco-label within product policy:

An eco-label is only one instrument of the set of instruments of a product-oriented environmental policy (cp. Oosterhuis/Rubik et al. 1994). It's role within this policy is discussed controversially among the different actors. The basic idea of the Federal Government is to strengthen voluntary instruments. In this context the eco-label might play a role as a voluntary information instrument. Nevertheless, the Minister for the Environment, Töpfer (1990, p. 18) emphasised that "the environmental label is just **one** instrument of environmental policy. It ought not and must not be used as an excuse for the state to do nothing if the market is incapable of making necessary changes on its own".

Looking back, the eco-label may several times have led to avoidance and/or postponement of regulatory measures. Schafhausen¹³ (1994) listed some examples:

- * CFC-free aerosols have been labelled since 1978. Since 1991, CFC and halons have been prohibited.
- * asbestos-free floor coverings, brake facings and clutch linings have been labelled since 1980/82. Four years later they were prohibited.
- * the first eco-label was realised for returnable bottles (1978). The packaging ordinance (of 1991) prescribed more details for the packaging market.

¹³ He works at the Ministry for the Environment.

These examples are controversially evaluated. Whereas this postponement of other instruments is interpreted by some interest groups as a success, other interest groups believe that this was the wrong way.

Friege¹⁴ (1991) thinks that an eco-label is only one instrument of product-oriented environmental policy. It has to be integrated in a catalogue of different measures. Given the circumstances that other instruments could contribute less to a reduction of environmental burdens, then an eco-label would be in her opinion appropriate. Furthermore, Friege claims a stronger regulation of business'-own labels and advertisement to avoid confusion of consumers.

Grießhammer (1991, p. 11ff.) doubts that the eco-label has been successful in the past. The eco-label is only one of many possible product-political instruments. He points out that no systematical decision making process considers the use of the eco-label as the most successful instrument. It had been pointed out in the past that in some cases the eco-label was the wrong instrument to achieve an improvement of the environment, e.g. CFC-free sprays.

Industry favours the eco-label: the motive is that the use of other governmental instruments should be avoided. Structural arguments against the "traditional" command- and control policy dominate therefore.

The different opinions on the role of the eco-label within the product policy are often the result of different opinions about strengths, role and possibilities of product policy itself. That means that arguments in favour of or against an eco-label are quite often substitutes for other controversies which are based on different opinions on values and political programmes.

3.2.2. Italy

a) History:

The first public discussion in Italy on the concept of eco-labelling was at the beginning of the 90's and arose out of the first proposal for regulation by the European Community. Before that time, even the existence of environmentally oriented voluntary information instruments, for example the "Blue Angel" in Germany, was unknown to both the large numbers of consumers and the smaller community of environment experts. In 1991, the Minister for the Environment defined responsibility for the eco-label, assigning it to the department of the "Environment Impact Assessment and information to the citizens".

Until 1992, the discussion remained limited to environmental designers, the environmental impact experts, environmental economists and experts of some industrial sectors. In the

¹⁴ She is as a representative of an environmental organisation member of the "Jury Umweltzeichen".

beginning, it was proposed to follow the example of other European countries by adopting an own national eco-label.

However, at that time the idea was rejected by all parties to the discussion. The reasons for unanimous rejection were numerous and based on different concerns. The industries were concerned about a double labelling system that could have confused the consumers and the lengthy bureaucratic procedure in Italy. Environmental associations were concerned about the possibility of less strict environmental protection with the national system.

Nowadays this attitude has mellowed and there are industrial sectors today - according to some communication (Scialdoni 1994) - that would prefer a national eco-label system. This change of mind reflected the facts that:

- * the European Community has definitely approved the eco-label only for few products of some product groups (see section 3.3.3) and its decision making process takes quite a lot of time;
- * European regulation, resulting from international compromises, sometimes does not satisfy the needs of the Italian industry (for example the case of the paper) and does not reflect the priority of the national environment.

The Minister for the Environment has been against a national eco-label so far, but, because of the recent changes in the political orientation of the Italian Government, nothing can be said of what the future position could be. At a meeting of European Ministers for the Environment of October 1994, the Italian representative agreed to the resolution for speeding up works of the European Commission. This attitude on the opinion of people working in the ministry is seen as a positive first step.

b) Other labels:

In Italy there are no information instruments similar to the German "Blue Angel", but only trademarks which warrant the safety of some product, e.g. of electrical products (IMQ) or children's-toys. There is, traditionally, specific attention to trademarks in the agroindustry wherein consortia of producers warrant the original quality of the specific product by a trademark (e.g., the wine industry, Parmigiano Reggiano, Prosciutto San Daniele). More recently there are also associations which certify products coming from biological and biodynamic production systems. Recently, a law has been proposed for the univocal definition of "biological" and "biodynamic" products.

Apart from these exceptions, quality marks and certification, and, more specifically, the eco-label, are still unknown instruments to the majority of the industry and consumers. The definition of eco-labelling is still limited to the discussion among experts mainly in industrial

sectors wherein Italy has been delegated the task of defining a proposal for an European regulation for the eco-label.

c) Actors:

Industry:

The Italian industrial system is largely made up of small and medium sized enterprises (SME). The dominance of the market by very few multinational groups weakens the possibility of an independent business strategy by Italian industry. This structural characteristic causes the attitude of the industry towards the environmental issue and specifically the eco-label.

Small and medium sized enterprises have limited financial resources to invest in implementing environmental control systems. Even more difficult would be for them to introduce a business strategy based on the environmental issue. Yet, this financial weakness is translated in the opposite attitude and industry traditionally tried to escape the law rules and the environmental legislation based on the traditional Italian approach of "obligation, control and sanction". This policy was - according to all operator opinion - a failure.

The main reason for this failure of an environmental system of control lays in the poor co-operation and lack of reciprocal trust between the legislative body and the industries. In Italy the environmental regulations oscillate between a continuous delay of regulation itself (when the industrial lobbies are strong enough to impose it) to the imposition of limits and rules sometimes taken without even considering the national industry requirements and problems.

Then system of controlling these regulations is not effective as it is too bureaucratic and prone to corruption, as the recent scandals have clearly shown. Industry is extremely reluctant to accept environmental regulation which it perceives as cumbersome and overimposed by an inefficient and corrupt state bureaucracy. Besides that, the sanction and fine system never worked properly. The legislation imposed fines which were negligible for the industry when compared with the economic advantage obtained by evading the law.

The former Italian Government of 1994 seemed to be going in the direction of an intensification of deregulation. One of the first decisions taken by the this Government was to weaken the legal sanctions regulating the concentration limits of polluting agents in water wastes. However, recently some change in this attitude, extremely deleterious for the community, seems to have happened. Industry representatives who were against the control and sanction system, and favour voluntary agreement for better environmental performances, ask for a simplification of the law and for an environmental deregulation.

In the multinational companies, some interesting things started to happen. The Italian subsidiaries of big foreign corporations such as IBM, 3M, Hoechst, Bayer and G.E., which have to

follow the general philosophy and mission of their mother house, introduced care for the environment as one of the major issues. The Italian multinational companies like ENI, Olivetti and Fiat have to face more severe and coherent legislation in their foreign operations and were forced to cope with the environmental issue. This led them to see the care for the environment less and less as an expensive bore but to consider it a cost to be included in the production process that can generate a market opportunity by a marketing strategy taking global consumer needs into account. ENI, FIAT and IBM Italy are working on a system of auto-control for ecobalance and environmental auditing.

These pilot schemes, not well diffused by now, are however a strong starting point for the Italian small and medium industry which most likely will be forced to fall into line with the system, once it is established at the big corporations.

According to an emerging leader of Confindustria¹⁵ there is a diffused carelessness for environmental problems, for "these industries not only have difficulties in understanding why they should become "green industries" but quite often they do not have sufficient financial resources for supporting "green efforts" (Martinelli 1994, p. 56).

The industrial associations - which are the counterparts of the various Ministries and the representative subjects for the decision making process on the eco-label - have a natural tendency to defend the average condition of the industrial system. Even within the large corporations - moreover - there is still strong resistance to the environmental subjects and many of the Italian multinational corporation have the tendency to assume "a defensive attitude which prevents them from seeing the full extent of potential opportunities, e.g. new market for "green products" (Gilardoni 1993, p. 25).

The Italian industry was oscillating between an appreciation for an instrument of environmental management based on a voluntary basis, and between a deep concern that the eco-label could become an instrument for a commercial war and product wild repositioning. "L'Istituto per l'ambiente"¹⁶ is favourable to the introduction of the eco-label as an innovative tool for environmental management and for consumer and market information. To be completely effective, the eco-label has to be integrated into a company's total quality strategy. The procedure of auto certification should include the ecobalance of the products and processes and a repositioning of the product portfolio by new marketing strategies.

Confindustria's environmental department thinks that the eco-label is a useful tool to drive the market if it is applied to many products and the criteria are a good balance between environmental concerns and feasibility. The eco-label is seen as an instrument for consumer information. The life cycle of the product should be taken into account to a larger degree, require-

¹⁵ Confindustria is the Italian industrial association.

¹⁶ This institute is financially supported by Confindustria.

ments for obtaining the eco-label should be relaxed and the awarding procedure should be simplified. The system adopted by the EU is judged as too complex.

The defensive attitude has been reflected in the positions taken by Italian industry. In the working meeting on the eco-label, industry representatives defended some specific characteristics of the Italian industrial structure, for example, the request to include a separate classification for "No Frost" refrigerators or to limit the severity of some parameters on the detergent industry. For example UNIPRO, the cosmetic producers association, has a pessimistic view on the eco-label and argues that the eco-label should be a demagogic tool. With the exception of the ceramic tiles industry, the rest of Italian industry did not take a propulsive and proponent attitude remaining at the border of the discussion of this issue. Most probably because of the absence of a competent body wherein to debate and propose.

This attitude has caused a very low level of knowledge of the eco-label and a reluctance by the State to take the leadership in the European Community for the new category of products to be studied and regulated.

Government:

In 1994, Italy has had election with a drastic change in the composition of the politically responsible persons. The new Parliament reflected a completely new Government which has been constituted only few months ago. The new Minister for the Environment has not yet expressed an official position on this subject. All opinions which have been collected in the Government and State structures are personal opinions of those who had officially represented the Italian Government in these months to the European commissions and meetings.

As mentioned elsewhere in this report (see section 3.3.3.), there is no competent body in Italy for the eco-label. The participants in the working groups for the eco-label of refrigerators, ceramic tiles and packaging under the appointment given to Italy by the European Community are now participating in each European meeting on a temporary authorisation of the Minister, renewed at each meeting.

Environmental organisations:

The Italian environmental organisations were also not active in promoting the eco-label. This lack of interest can be explained by the low level of information and by the absence of a competent forum where this issue could have been discussed.

Additionally, there was also a cultural resistance to the issue. The concern expressed by some of the most well known members of the organisations was that "the economic point of view could overcome the environmental vision" (Amendola 1993, p.2). The WWF Italy, for example, is extremely critical of the eco-label calling it a "marketing tool which can increase

consumption (...) and that taken by itself it can have a negative influence on the environment" (WWF 1993, p.79). The basic concern is that the industry via the eco-label can substitute existing products with less polluting products without reducing the total level of consumption which is the major environmental objective.

The only environmental organisation supporting the eco-label instrument was the "Legambiente" (which was, according to the Minister of the Environment, the only green organisation to provide original contribution to the discussion [Marzocchi 1994, p.11]). The "Legambiente" is favourable to the diffusion of instruments which can increase the environmental management by industries and sees the eco-label as capable of increasing the competitiveness in the market place - a potential instrument to wake up Italian industry on the environmental issue.

Other organisations have discussed specific matters without taking a global position on the subject. For example, Greenpeace fought the decision to give the eco-label to refrigerators using a HCFC 134, because the gas still has a greenhouse effect.

Consumer organisations:

In Italy, consumer organisations are very few and not well diffused. As with environmental organisations consumer associations participated in the eco-label discussion only on specific issues.

Consumers:

The general opinion of Italian consumers can be analysed by an investigation made by statistical and social institutes (CENSIS 1992). According to this investigation, the "Environment degradation" is at fourth place (29.4 %) in a list of the most important problems in Italy. According to another statistical analysis made by EURISKO on a sample of 180,000 adult persons in 1992, "Environmental Pollution" is at third place (36%).

In the same CENSIS study there was an attempt to quantify the attitude of the population to the selection of eco-compatible products. Its results are contradictory. The report shows a good attitude to these choices by Italian consumers where sacrifice was marginal and the general knowledge of the damages to the environment widely known (53.1% were fully convinced and 25.9% were partially willing to limit the use of products with ozone killer gases), but only 35% of consumers will use detergents with lower environmental impact. Indifference of the interest to choices wherein benefits are of a general and more distant manner are even more dramatic (75% of the interviewees showed no interest in "Energy saving" house appliances for example).

According to the social researchers, availability of environmental quality products comes along with general quality, performances and price. Price is the key issue, as the majority of the Italian consumers see the environmental option as a personal sacrifice and do not tolerate a higher price for a sacrifice. According to the Textile and Finished Products Association consumers would pay up to 10% more for an environmentally friendly product.

Individual responsibility in the community is not well accepted in Italy. According to the GFK-Europanel study (Pavesi 1994), 75% of Italians think responsibility for environmental preservation lays with the Government and on industry rather than on individual's behaviour.

Other relevant findings of the above mentioned CENSIS study were:

- that environmental quality cannot be obtained with a decrease of the established and perceived general quality of the products;
- Italian consumers see their health preservation as a high priority;
- environmental regulations will directly and indirectly influence consumer selection;
- certification could be the link to a mass diffused environmental appreciation.

Trade Unions:

Trade Unions were not involved in Italian eco-label working groups. At the broad level in trade unions, an eco-label is quite unknown. Only people working in the environment department of a central union have some familiarity with this subject. They express a generic opinion in favour of the eco-label and a specific negative opinion because their role is not recognised. In fact, until now Unions were not represented in the body responsible for defining eco-label's criteria and application.

3.2.3. European Community¹⁷

a) History:

In 1988, the first initiatives to create an eco-label were taken. At this time, the focus was oriented towards waste problems. The Commission prepared a discussion paper which was presented to the "Waste Management Committee". Within this paper, a European environmental quality label was proposed. It should be introduced until the realisation of the Internal Market and as a voluntary instrument supplementing regulatory environmental policy. In 1989, the Commission ordered the Danish Technological Institute (DTI) to carry out a study. At the same time France and the United Kingdom also started to examine eco-labels. As a consequence, in September 1989, the European Council of Ministers for the Environment

¹⁷ This section is partly based on the studies of Hey/Brendle (1993) and Rubik/Empacher (1994).

asked the Commission to present a proposal for an EU-wide eco-label. As a result, the objectives of the DTI-study were modified. In 1990, DTI presented its report (DTI 1990).

In the following months, a national expert group on Environmental Labelling was founded and met three times. Representatives of consumer and environmental organisations participated at these meetings. On 11th February 1991, the Commission presented its first proposal for an eco-label Directive [COM (91) 37 fin.]. This proposal was rejected because of objections raised by various interest groups. The life-cycle approach did not contain any criteria for raw materials or the pre-production stage. The procedure for the award of the scheme would have involved the participation of six different committees and was considered to be far too complicated. Although it anticipated the establishment of a Jury composed of representatives of the various interest groups, a decision on the award would have remained with the Commission and only governmental authorities would have been allowed to participate in the decision-making process. Moreover, the proposal provided that only the best ten percent of a product group would be awarded the label and that the national eco-label schemes, having lost their justification, may have to be abolished after a four year period. Above all, consumer and environmental groups demanded greater participation in the process and greater consistency in the implementation of environmental criteria.

In March 1992, together with the Directive on the eco-labelling scheme, the Commission published guidelines for the definition of product groups and criteria. Experiences in Germany with the implementation of the Blue Angel scheme influenced these guidelines. The eco-label scheme adopted two different systems: the "Hurdle-System" (i. e. products have to fulfil certain conditions or may not pass certain limits) and besides that a sort of "Scoring-System"; in other words, the compensation for bad characteristics with especially favourable ones. Moreover, it did not require that an LCA had to be drawn up, but only be voluntary.

The Directive that was finally adopted on the eco-label award (92/880/EEC), included pre-production in the life-cycle assessment, simplified the award scheme by abolishing the Jury and left decision-making to competent bodies that should be independent and neutral. In addition, it provided that all products meeting the criteria would be awarded the label (see the symbol in APPENDIX II) and ensured that national labels would coexist with the Union label. However, the influence of interest groups was reduced to a simple consultative role.

In May 1993 a proposal to regulate fees (Directive 93/326/EEC) was adopted which fixed the rate for firms using the eco-label at 0.15 % of sale per year or a minimum of 500 ECU. Some months later, in September 1993, a decision on a standard contract was taken.

b) Goals:

In its 5th Environmental Action Programme (EAP) the Commission explained its main principles of consumer policy and the eco-label: "A comprehensive policy relating to consumer products will be important if market mechanisms are to help change human behaviour towards the environment. In particular, it is essential that enterprises become more conscious of the extent to which their products and packaging become waste, and that they accept responsibility for such waste. The proposed Community-wide eco-label should encourage industry to design and manufacture products which have reduced environmental impact. Policies should be developed in a way which will also serve to facilitate consumers in making informed choices on the basis of safety, quality, durability and general environmental implications. In this context the retail sector will have to take up its part of the responsibility" (EAP 1992, p. 27).

The objectives of the European eco-label are described in Art. 1 of the regulation as to encourage business to produce products which are as environmentally friendly as possible and to provide consumers with better information on the environmental impacts of the labelled products.

These objectives have not been doubted in the years since the coming into force of the regulation.

c) Procedure and concept:

The process of awarding an eco label is a complex one, because it involves the participation of a number of different committees, interest groups and Member States. It consists of two main steps: the elaboration of the criteria for a specific product group and the application/award of a label.

Proposals for the definition of criteria and product groups can be submitted by anyone to the "competent body" which has to do the preparatory work. The competent body is an institution which is appointed by each Member State. Its task is to consult the various interest groups on proposed criteria and to transfer the results to the Commission. The Commission, in turn, consults the Forum (made up of representatives of industry, commerce, consumer and environmental organisations at the Union level) and, once the comments have been received, submits a proposal to the Regulatory Committee (made up of representatives of Member States). If the Regulatory Committee agrees, the Commission adopts and publishes the proposals. If not, the decision on its adoption is transferred to the Council of Ministers.

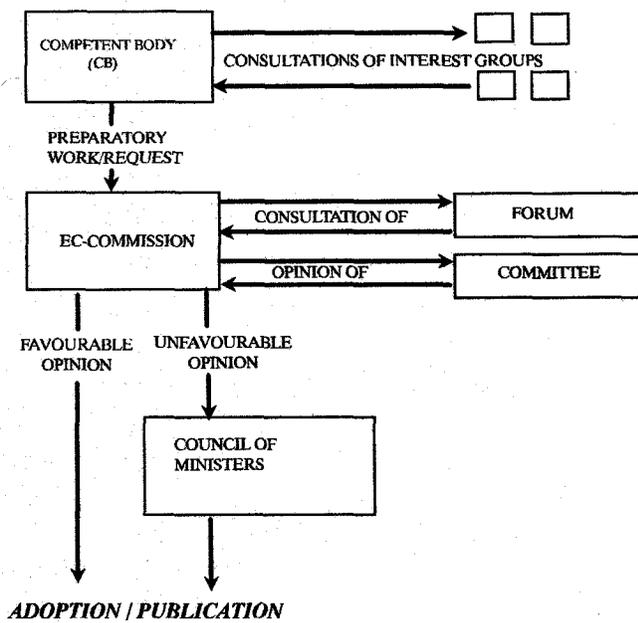


FIGURE 3.4: The elaboration process of the eco-labelling criteria
(Source: Commission information on eco-labelling)

In its recent published paper "Procedural guidelines", the Commission points to three principles: transparency, participation and consultation of the whole labelling process: "all parties must be given the opportunity to contribute to this process (*of establishing product groups and environmental criteria - t.a.*) and should be encouraged to do so" (European Commission 1994, p. 2).

Once the product group and the criteria have been defined, manufacturers or importers can apply to the competent national body for award of the label (see FIGURE 3.4). The competent body takes a decision on the basis of the established criteria and forwards it to the Commission which then consults the competent bodies of the remaining Member States. This procedure was considered necessary to ensure that the successful applicant receives community-wide recognition. Unless a negative opinion is received within 30 days, the applicant signs a contract with the competent body on the use of the eco-label for a specific period and on the fees to be paid by the applicant. Subsequently, the Commission arranges for the publication of this information in the Official Journal. In the case of objections that cannot be resolved informally within 45 days, the Commission submits the proposed awards to the Regulatory Committee. FIGURE 3.5 gives a simplified scheme of the award.

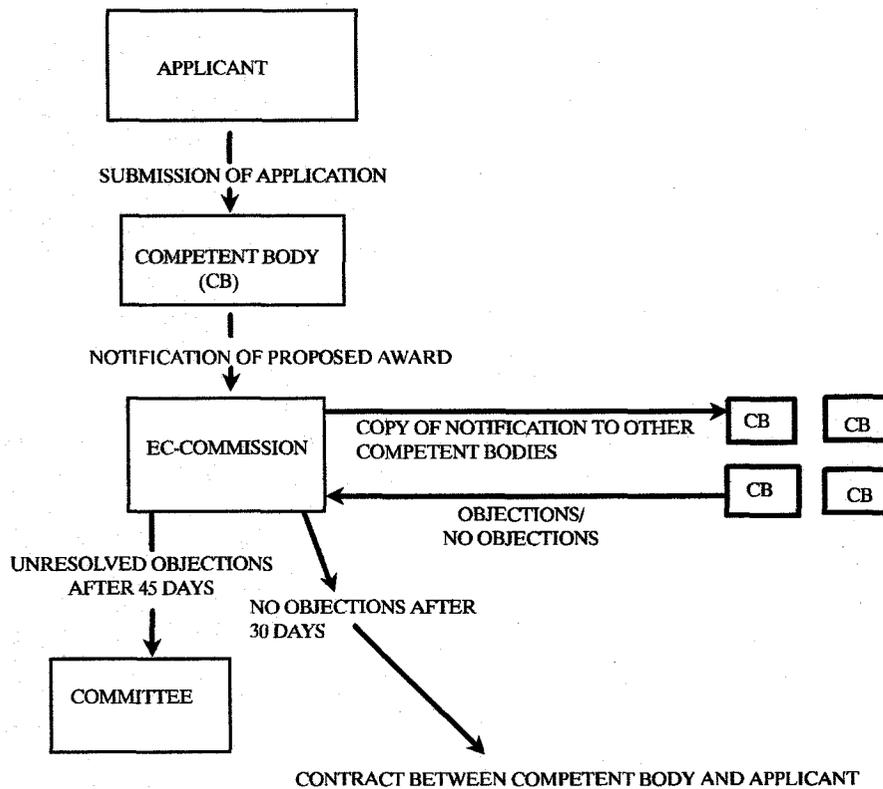


FIGURE 3.5: Applications for the eco-label
(Source: Commission information on eco-labelling)

The European eco-label coexists with other national eco-label schemes, such as the Blue Angel in Germany and the Label Vert in France, leaving Member States the option of defining stronger criteria for their award within national schemes (see Section 3.3.3).

d) Actors:

Actors in the whole process are on one side the national and European administrations. They constitute the competent bodies, the Committee and the Council of Ministers. On the other side, interested groups are involved in the process by their consultation. Interested groups are industry, trade unions, and environmental and consumer organisations (see FIGURE 3.6).

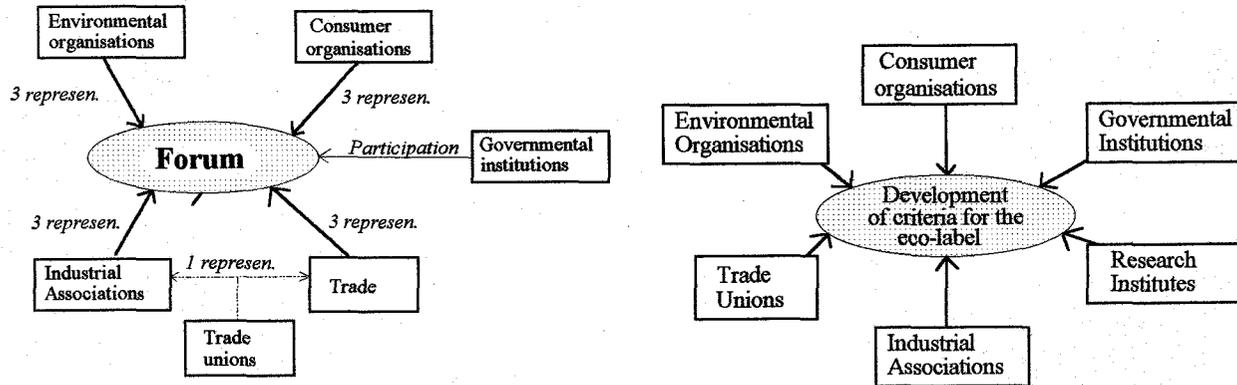


FIGURE 3.6: The composition of the Forum and of the hearings for the elaboration of criteria

UNICE (Union of Industrial and Employer's Confederation of Europe) presented its opinion some months ago (Kröger 1993). It is argued that UNICE participated from the very beginning in the discussion of the draft proposal and contributed to its improvements. As a concession, it accepted the participation of a representative of the trade unions at the Forum. Its reasons were the intention to avoid additional national eco-labels which might cause trade barriers within the Single Market and the strengthening of voluntary instruments. Generally, the industry claims that the eco-label should not disturb competition, fulfil a high degree of objectiveness and be practised in a reasonable way and time. UNICE regards as problems the controversial way of selecting product groups for the eco-label process, unsolved methodological LCA-problems and the formulation of the criteria (hurdle versus scoring system). UNICE refuses any type of a negative list. Furthermore, eco-labelled products should be on the market everywhere in the Union. Therefore, the qualifying levels of the criteria should be set so that about 25-30% of products of a specific product group should be able to receive the label. Due to the division of work among the Member States, UNICE also claimed that each Member State should involve not (only) the national industrial association but their European counterparts thereby avoiding one-sided proposals.

The **trade unions** have no official opinion. However, their participation at the Forum was not explicitly intended. As an option, Council Regulation arranged that trade unions were allowed to participate within the representation of either industry or commerce. The German Jury protested against this proposal but without success. As mentioned, now the trade unions have one seat from industry. Industry is now represented by two representatives.

European environmental organisations are allowed to participate in the meetings of the Forum and of the ad-hoc working groups. They claimed a more comprehensive influence on the decision-making process in the early discussion about concept and procedure of the

European eco-label (cp. Hey et al. 1994). These claims have been rejected. Nevertheless, environmental organisations share the labelling-processes (most of the activities are initiated by the European Environmental Bureau - EEB).

However, the practical involvement is difficult because financial and personal restrictions exist. Therefore, German environmental organisations tried to present their financial demands for complete participation at all levels. In 1992, they ordered a study to examine the costs and benefits of their participation (Katalyse 1993). This study showed that a participation at all meetings would demand more than 300,000 ECU. Based on these arguments the environmental organisations claimed at least 35,000 ECU for participation at the most important meetings¹⁸. This demand had only modest success: the amount for the participation at the Forum was raised but the participation at the other types of meetings are normally not paid. As a consequence a financial asymmetry arose.

The practical work in the FORUM is very time consuming. Environmental and consumer organisations have, in reality, a relative weak position. At most meetings, industrial experts dominate according to their opinion. The German consumer organisation claimed that the Forum should be more independent and proposed an orientation similar to that of the German Blue Angel (see section 3.2.2.).

The association of **European consumer organisations** BEUC (Bureau Européen des Unions de Consommateurs) welcomes the introduction of the eco-label (Graham 1993). But, it claims that consumers need clear and objective information and, therefore, the eco-label should be "accompanied by rules to outlaw false and misleading environmental claims" (p. 1). Absolute and strict criteria are demanded and the label should initiate improvement of production processes. Graham claims also that the label should be a dynamic instrument and that it should be awarded for a restricted period.

Besides the interest of the different actors another level of actor-oriented problems exist. Currently, the active involvement of four of the Member States (especially Southern European countries) in the elaboration of criteria for specific product groups is missing (see section 3.3.3.). These countries participate at the meetings of the ad-hoc-working groups. But nevertheless, their contribution is very modest because they have only a very restricted personal and financial budget at their disposal. As a consequence, structural asymmetry could arise: some Member States are active and try to arrange product groups and criteria according their interests and the others boycott this process.

¹⁸ At this time, only 2,400 ECU have been paid for the participation.

e) The eco-label and product policy:

A relationship between the eco-label and other specific instruments of product-oriented environmental policy is not discernible. In its 5th Environmental Action programme (EAP 1992), the Commission hints at a relationship between the eco-label and other tasks: "The eco-label (...) will require to be developed within the short-to-medium term and combined with a more global approach to consumer safety and environmental protection" (EAP 1992, p. 69).

Environmental organisations ask that the eco-label is embedded in a more complex product policy by using a mixture of different instruments: under restriction they favour the eco-label.

The German consumer organisation AgV claimed that an eco-label should not be misused as an alibi to postpone other political decisions, e.g. a prohibition of some hazardous substances (AgV 1990, p. 2).

3.2.4. Other Member States of the European Union

National official eco-labels have been introduced in two other Member States: France and the Netherlands (see the symbols in APPENDIX III and IV).

The Netherlands:

A Dutch voluntary environmental certification system was developed on the recommendation of the Ministry of Housing, Physical Planning and Environment and the Ministry of Economic Affairs in April 1992. An independent body, the Stichting Milieukeur, is responsible for the eco-label, awards it to products, conducts an advertising campaign and monitors its use. It consists of representatives from government, consumers, manufacturers and environmental and retailer organisations. In response to a request from interest groups, a study by research institutes develops criteria which are appropriate as environmental standards. Then, in the *Panel of Experts*, a sub-group with representatives of the various interest organisations, these potential standards for specific product groups are discussed and the results are published in a "certification schedule". The objective of the organisation is to include consumers as a target group in environmental policy and to benefit environmental friendly behaviour. Therefore, standards are set which are based on the "cradle to grave"-focus of an LCA which are reviewed about every three years and which are oriented upon the "best available technology". In this way, only a limited number of products meet the requirements.

Oosterhuis et al (1994) mention that producers and importers have different opinions on the Dutch eco-label. "Some of them regard it as an attractive business opportunity; others think that a national label, separate from the EU label, does not make any sense. The branch organisation of refrigerator importers, for instance, strongly advises its members not to apply

for an eco-label. According to the Dutch Minister of Foreign Trade, the EU label should substitute the national label after some years. She thinks that in the long run, the parallel existence of both eco-labels is not preferable. The Dutch environmental organisations opposed the introduction of an eco-label initially, but are now co-operating within the Stichting Milieukeur. Nevertheless, they are still sceptical about the eco-label and prefer a general, obligatory labelling system for all products, which would inform the consumer on all environmental aspects of the product's life cycle. The consumer organisations prefer one general label with concise and comprehensive information for the consumer. Nevertheless, they think the eco-label is a step in the right direction, especially because performance criteria are included" (Oosterhuis et al. 1994, p. 87f.).

The *Dutch Confederation of Trade Unions* (FNV) in general welcomes eco-labelling. However, in its view prime importance should be given to influencing price patterns along with, for some products like cars, direct regulation. An advantage of price signals and product rules is, in their view, that they cannot be ignored by any normal consumer¹⁹. That means that eco-labelling should be embedded in a wider context of product policy instruments.

The *Dutch Industrial Association* (VNO) favours the inclusion of environmental aspects in "integral product information" which combines environmental criteria with other criteria. Environmental aspects should not be isolated from other relevant aspects of a product. Therefore, VNO does not favour the Dutch eco-label system because it highlights only one aspect, i.e. the environmental performance. VNO's general priority list encompasses 1) integral product information, 2) total quality certificates, 3) European eco-labelling and 4) national environmental label²⁰.

France:

"In 1989, reacting to the statements of various producers and distributors unduly promoting the benefits of green products, the Minister of Environment (Mr *B. Lalonde*) and the State Secretary for Consumption (Mrs *V. Neiertz*) asked for a change in their action. They first asked the *BVP*²¹ to establish a set of rules for advertisers (...) and then requested Mr *A. Brune* to write a report on the possibility of setting up a 'green' label (see *Brune* 1990). This report, completed in April 1990, asked for the setting up of a French label in order to counter the German eco-label at the European level. *AFNOR* was asked to oversee the administration and criteria development of the label. This association, along with the government, funded the entire operation. In January 1991, after several negotiations with a large panel of

¹⁹ Letter of the Federatie Nederlandse Vakbeweging (FNV), the Dutch association of trade unions, from March, 24.

²⁰ Letter of the Verbond van Nederlandse Ondernemingen (VNO), the Dutch Industrial Association, from April, 5 1994.

²¹ BVP is the Bureau de Vérification de la Publicité'.

representatives, *NF-Environnement* was registered as a mark (...)" (Audinet 1994, p. 66). "The first labelled products started being marketed in June 1992. The number of products which should have become eligible for application to the eco-label was supposed to reach a much higher level than it actually has. The procedure is lengthy and complex and limits the growth of the number of labelled products considerably. The required LCA for the certification of a product takes approximately a year to be completed. By October 1993, 19 firms saw one or several of their products (paints or varnishes) labelled" (Audinet 1994, p. 67).

Other Member States:

The other European Member States have not created an own national label but waited for the European label:

- * *Belgium*: The federal Departments of Environment and Economics have examined the possibility of an own eco-label, not related to the EU eco-label. The guiding principle for the adjudication of an eco-label would be "from the cradle to the grave". However, these initiatives have been cancelled. The objective is now to introduce the European eco-label.
- * *Denmark* considered participation in the Nordic eco-label but decided to join the EU-label.
- * The government of the *United Kingdom* presented a discussion paper in 1989. This paper proposed - in agreement with interest groups - to prefer a European label, to avoid confusion for consumers and difficulties for producers and traders.
- * The environmental department of *Ireland* considered an own labelling scheme unlikely. Now the use of EU eco-label is encouraged.
- * According to the Ministry of Environment, *Luxembourg* will create no national label in future beside the EU scheme.
- * In *Portugal* a modest discussion on the implementation of the EU eco-label has occurred.
- * At the moment, a working group of the Environmental Policy Head Office formed with all relevant actors is discussing the way in which the EU-label will be applied in *Spain*.
- * In *Greece* there exists no national eco-labelling programme. But the implementation of the European eco-label is approved.

3.2.5. Other states

Eco-labelling became popular in some other countries (see TABLE 3.1). However, it is not easy to ascertain which countries plan to create eco-labels and which of them have abandoned their plans. Studies of the OECD (1991), EPA (1993) and UNEP (1991) report examinations in a lot of other countries. But so far, no exhaustive overview is available ²².

Year of introduction	Countries	Name of the label
1978	Germany	Blue Angel
1988	Canada	Environmental Choice
1989	Japan	EcoMark
1991	Nordic Council (Norway, Sweden, Finland, Iceland)	White Swan
1991	Australia	Environmental Choice
1991	India	EcoMark
1991	Austria	Eco-label
1992	France	NF-Environnement
1992	Singapore	Green Label Singapore
1992	South-Corea	Cleaner and Greener
1992	Netherlands	Stichting Milieukeur
1992	European Union	European Flower
1992	New Zealand	Environmental Choice
1993	China	"Huan"
1993	Taiwan	Green Mark
1993	Croatia	Environmentally friendly

TABLE 3.1: Environmental labelling world-wide
(Sources: own research, Neitzel/Landmann 1994)

3.2.6. Comparison of objectives

As mentioned in Section 2.2. eco-labelling has some global objectives. Most of the explicitly formulated objectives of the different national labelling programmes are very similar, at least in the European countries (see TABLE 3.2). However, it is interesting to notice that objectives to stimulate product and process innovation and to influence public procurement differ among the

²² Recently, UNCTAD (1994a) presented an overview on eco-labelling activities and their trade implications. It was reported that some new initiatives are under consideration, namely in Brazil, Chile, Colombia, Poland and Thailand.

countries. Perhaps the dynamic potential of eco-labels is regarded as controversial in some countries.

Objectives	European Union				Other Euro- pean countries		Other countries				
	D	EU	F	NL	A	Nordic countries	J	C	India	Sing	Corea
Providing accurate information	•	•	•	•	•	•	•	•	•		n.a.
Raising consumer awareness	•			•	•	•	•	•	•	•	n.a.
Boosting the sales of labelled products	•	•	•	•	•	•		•			n.a.
Dynamic aspect: stimulating product and process innovation	•	•		•	•	•		•	•	•	n.a.
Influencing public procurement	•				•			•			n.a.
Protecting the environment	•	•	•	•		•	•	•	•		n.a.

Explanation

[•] applicable

[] not applicable

n.a. no information available

TABLE 3.2: Explicit objectives of national and transnational environmental labelling programmes world-wide

The objective of using eco-labelling within public procurement is regarded differently among the countries studied. Germany uses this instrument, but other European Member States do not combine environmental objectives with this instrument (see Oosterhuis et al. 1994, p. 70ff.). Therefore, eco-labelling is not used as an instrument for public procurement within these countries.

3.3. Actual status and application

3.3.1. Germany's Eco-label

The start of the eco-labelling programme was modest. Only some producers asked for the label. But the producers of waste paper products more or less boycotted the label. An exemption was the American paper company Scott Paper Co. which applied for the label and received it. As a consequence, the German paper industry ended its boycott and applied for the label.

The amount of approved product groups rose continuously over the years (see FIGURE 3.7). By the end of 1994, conditions for the award of the eco-label have been formulated for 70 product groups²³. The "Jury Umweltzeichen" has withdrawn 14 labels in the past. There were different motives: sometimes the label was not accepted by producers; sometimes the technical requirements for the label were no longer difficult to fulfil; sometimes it was recognised that an eco-label was no longer helpful for environmental policy. Besides that, the Jury modified the requirements in 1990 for 13 product groups, in 1991 for 11, in 1992 for 13, in 1993 for 18 and in 1994 for 22.

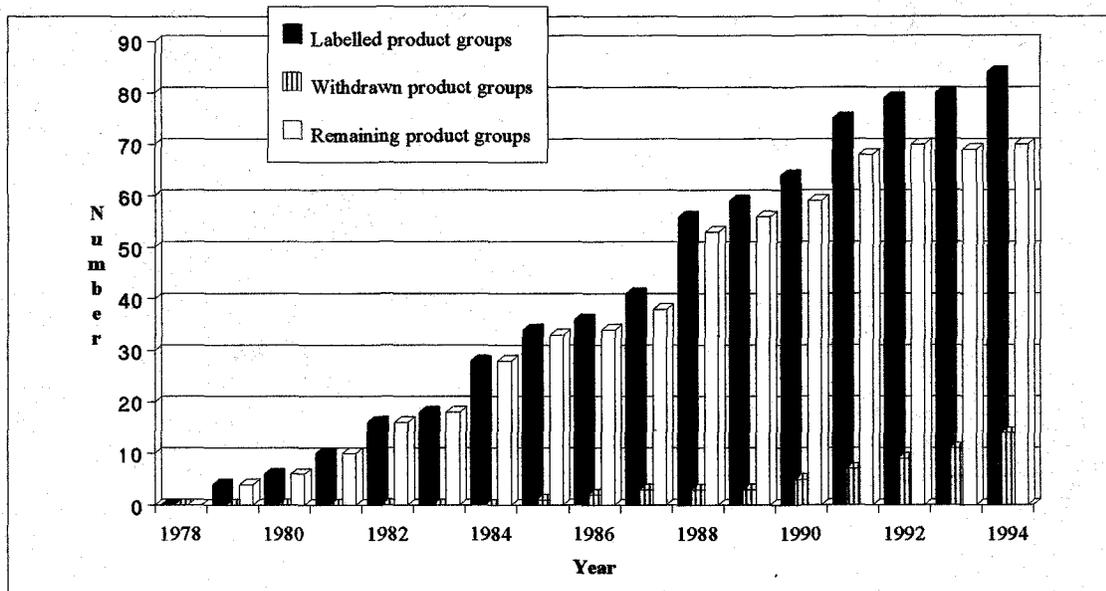


FIGURE 3.7: Development of product groups of Germany's Blue Angel programme
(Source: own elaboration based on UBA publications and written information of RAL)

In 1994, 31 additional product groups were under examination.

²³ Three times, a product group has been subdivided into two segments. We have counted such subdivided product groups as two different product groups.

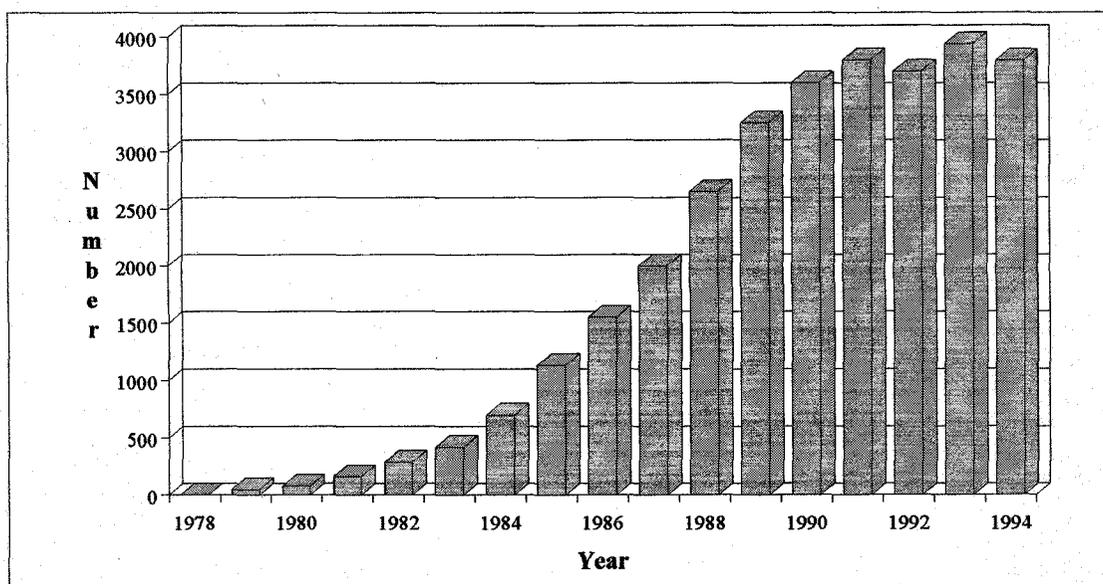


FIGURE 3.8: Development of the number of labelled products of Germany's Blue-Angel programme
(Source: UBA 1994, p. 7)

As of mid 1994, 3,796 products from 936 different enterprises are labelled. 1/7 of the enterprises and also 1/7 of the labelled products come from foreign countries. The most important country is France; Denmark, Italy, the Netherlands and the United Kingdom are next in order.

Product group	Number	Manu- facturers (absolute number)	Manu- facturers (relative number)	Products (absolute number)	Products (relative number)
Low pollutant coatings	UZ 12a	104	11.11%	1,173	30.90%
Recycled cardboard	UZ 56	69	7.37%	445	11.72%
Recycled paper	UZ 14	124	13.25%	436	11.49%
Sanitary crepe paper from recycled paper	UZ 5	29	3.10%	206	5.43%
Products made from recycled plastics	UZ 30a	72	7.69%	187	4.93%
Wallpaper and ingrain wall covering made from recycled paper	UZ 35	10	1.07%	137	3.61%
Low-noise construction machines	UZ 53	33	3.53%	123	3.24%
Returnable bottles	UZ 2	64	6.84%	114	3.00%
Rapidly biodegradable chain lubricants for power saws	UZ 48	17	1.82%	101	2.66%
Other		424	45.30%	874	23.02%
Sum:		936	100.00%	3,796	100.00%

TABLE 3.2: Statistics of selected product groups as of mid 1994
(Source: own elaboration based on UBA 1994)

The most important product groups of the eco-label are low pollutant coatings and the three different paper products. These together amount to 60% of all labelled products (see TABLE 3.2).

3.3.2. Italy

Italy has not created an own eco-label although recently a discussion about this topic has started. So far, Italy contributes to the development of the European eco-label by carrying out work for two product groups (see next Section).

Italian producers use the German eco-label. As of November 1994, 23 different enterprises received the label for nearly 100 products which they export to Germany. Italy possesses after France the second position of foreign users of the German eco-label. Most of the enterprises asked for the eco-labels for CFC-free and energy saving refrigerators and freezers (25), for products made from recycled plastics (18) and for low-noise construction machines (17).

3.3.3. The European Eco-label

The process for the achievement of the eco-label and its integration in the policy of each Member State was quite complicated and time-consuming. Several problems had to be solved:

(1) Foundation and settlement of the competent bodies:

Until November 1994, competent bodies in only nine Member States had been founded. Belgium, Ireland and Italy have so far only appointed contact points.

German situation:

In Germany, UBA together with RAL is the competent body. UBA is responsible for the development of the labelling criteria. RAL collects the applications for the European label and, together with UBA, assesses them.

Italian situation:

As at November 1994, Italy had not installed its competent body. The delay in its formation can be explained by:

- conflicts between the interests of different groups on composition;
- a conflict between the Ministry for the Environment and the Minister of the Industry on leadership;
- a bureaucratic delay.

The process for definition of the competent body started at the beginning of the 90's when between 1991 and 1992 the Minister for the Environment promoted a series of meetings with representatives of industry, retailers, consumer and environmental organisations to reach a common position on the nature of the organisation to be appointed with competence for the eco-label. However, the great differences in position among participants limited the number and practical results of these meetings. The industry in fact was willing to give eco-label responsibility to an already existing technical structure - as for example the national institute for the standard definition (UNI) - or to create a specific institute for the eco-label independent from the state and financed by the royalties on the eco-label assignment.

The environmental organisations on the other side proposed an eco-label Committee with an equal participation in all subjects. Leaving to a public organisation - as the ENEA²⁴ or the going-to-be "National Agency for the Environment" - the technical and scientific support.

The Minister for the Environment accepted the hypothesis of having an association of different users and groups of interest to manage the eco-label, given that global supervision of the association was with the Ministry. However, the parties were not reconcilable on the composition of the association, the specific responsibilities to be assigned to the association and finally on the crude consideration that a basic economic evaluation showed that the income of the eco-label royalties was not even covering the fixed cost of the association. Finally in July 1994, Decreto Legge (D.L.) No 216 established a competent body at the Minister for the Environment and assigned a financial support of 1 billion Lira (\cong 430,000 ECU) for 1993 and 2 billion Lira (\cong 860,000 ECU) for 1994.

The composition of the competent body - the core of the problem - was left to another specific D.M. ("Decreto Ministeriale")²⁵. In other words, the Ministries for the Environment, Health and Industry took some additional time to negotiate and try to find a compromise for their disagreements. At the end of 1993 the discussion on the composition of the competent body ended in a draft of D.M. which proposed:

- the foundation of a Committee for the eco-label in the Ministry of the Environment;
- the Committee included representatives of the three involved Ministries (Environment, Industry and Health) and of the four identified interest groups (industry, retailers, consumers and environmental associations);

²⁴ ENEA (Ente Nazionale Energie Ambiente) is the former Nuclear Energy Agency, now converted to a Research Institute on energy and environment.

²⁵ According to the Italian legislation the "Decreto Ministeriale (D.M.)" is a decree issued by the Government and effective from official publication in the Italian Bulletin (Gazzetta Ufficiale). All the D.M. before becoming operative have to be submitted in any case to the approval of a specific organisation, the Consiglio di Stato.

- the constitution of a technical secretary which will use ENEA's knowledge for research and UNIONCAMERE²⁶ as the interface structure with the industry's requirements.

However, the "Consiglio di Stato" did not approve the D.M. as the competent body for the eco-label. It objected to the participation in the eco-label committee by interest groups and the use of organisations which were outside the State structure. As a consequence of these objections by Consiglio di Stato, a new D.M. was organised wherein the Committee was composed only of representatives of the three Ministries and an external Forum of experts acting as consultants to the committee. The Technical Secretary became a ministerial organisation (Marzocchi 1994).

The elections of 1994 stopped the approval of the D.M. and the change of government orientation might lead to a complete revision of the proposal. In the meetings of the European Community the Italian representatives have a temporary responsibility renewed each time by the Minister.

(2) Relation between national eco-labels and the European label:

The European eco-label does not prohibit national labelling activities.

The German "Jury Umweltzeichen" does not plan to stop and/or to cancel the German activities. It favours a coexistence of both labels. Given the fact that a European and German label should exist the Jury plans to ask for more stringent national criteria. Besides that, it favours eco-labelling of new product groups only for such ones for which an European label is not underway.

German industry and enterprises are in general in favour of doing away with the German label. However, looking at the modest experiences of the European label they sometimes argue for continuance of the German Blue Angel. The reason is the fear that a weak European label could weaken the German eco-label. And - of course - competition arguments might influence this position.

Five years after the coming into force, i.e. 1997, an assessment of the experiences should take place. This might be an opportunity to influence national labelling activities, e.g. the German Blue Angel.

²⁶ UNIONCAMERE is the national Union of regional Chambers of Commerce.

(3) Establishment of procedural guidelines:

The task of the elaboration of criteria for selected product groups is divided among some Member States which are "lead countries" for specific product groups. The first experiences of the elaboration of criteria for different product groups showed that it is necessary to apply the general guidelines in a consistent manner.

Therefore, in January 1994, the Commission decided to elaborate procedural guidelines to secure this consistency aim. In the meantime, they are finished, and presented as an additional, not legally binding document (European Commission 1994). Its purposes are to define procedural steps, procedural requirements, definitions and time scale and costs.

(4) Framework of the methodological principles:

The elaboration of the criteria should be based on the results of a Life-Cycle-Assessment (LCA). Still, the methodology of an LCA is neither explained well nor generally accepted. It has to be shown that these methodological difficulties do not disturb the eco-labelling process. Therefore, in January 1994, the Commission appointed leading researchers to prepare a document containing a proposal for an LCA in the eco-label context.

So far, only first results of an interim report are available which do not yet provide concrete findings (Udo de Haes et al. 1994). It is expected that the main report will be available in 1995.

(5) Elaboration of criteria for product groups:

At the start of the eco-label, a lot of proposals on product groups for which labelling-criteria should be developed have been collected. They have been presented by Member States, interest groups and by the Commission itself. At a first meeting in 1992, representatives of the Member States considered the proposals and allocated them to the "lead countries". No criteria or other priorities have been set for this process.

Later on, the Commission produced such a list using some criteria (environmental impact, market and social impact, communication/technical criteria). Product groups have been ranked into four categories. However, this priority list is not accepted by all Member States. Currently, leading selection principles for further product groups are consumer-oriented application areas and environmentally relevant product groups.

The current state of the elaboration of criteria is presented in TABLE 3.3. In APPENDIX V, we present the state of the Italy's contribution to the elaboration of criteria.

Product group (Lead country)	Progress of working group	Catalogue of criteria
Washing machines (UK)	Completed	Adopted (Commission decision 93/430/EEC of 28 June 1993)
Dishwashers (UK)	Completed	Adopted (Commission decision 93/431/EEC of 28 June 1993)
Soil improvers (UK)	Completed	Adopted at 14 November 1994 (but not yet published)
Light bulbs (UK)	Completed	Exists; submitted to the Commission
Hair spray (UK)	Completed	Exists; submitted to the Commission
Deodorants, antitranspirants (UK)	In progress	Does not exist
Paper products as writing and photocopying paper (DK)	Completed	Exists partly
Toilet paper (DK)	Completed	Adopted at 14 November 1994 (but not yet published)
Kitchen rolls (DK)	Completed	Adopted at 14 November 1994 (but not yet published)
Textiles (DK)	In progress	Exists partly
Insulating materials (DK)	In progress	Exists partly
Paints and Varnishes (F)	In progress	Exists
Shampoo (F)	At the beginning	Does not exist
Batteries (F)	At the beginning	Does not exist
Packaging materials (I)	At the beginning	Does not exist
Refrigerators (I)	In progress	Does not exist
Ceramic tiles (I)	In progress	Does not exist
Laundry detergents (D)	In progress	Exists
Rinsing agents (D)	At the beginning	Does not exist
Household cleaning products (D)	In progress	Does not exist
Cat litters (NL)	In progress	Exists partly
Shoes (NL)	In progress	Exists partly
Mattresses (GR)	At the beginning	Does not exist
Touristic infrastructure (GR)	At the beginning	Does not exist
Cork products (S)	In progress	Does not exist

TABLE 3.3: State of elaboration of criteria for different product groups (December 1994)

TABLE 3.3 shows that eight Member States participate in elaboration of the criteria: Belgium, Ireland, Luxembourg and Portugal have - at least so far - not taken on responsibility for a specific product group. Greece and Spain have only just now started. Obviously the United Kingdom has contributed most to the European label. The criteria are adopted and declared for three of six of its product groups.

In June 1993, following the adoption by the Commission of environmental criteria for the first two product groups (washing machines and dishwashers; Commission Decisions 93/430 and 93/431/EEC), the eco-label scheme was launched. One year later, in November 1994, criteria

for three further product groups (soil improvers, kitchen rolls and toilet paper) have been adopted but they are still not yet published.

In its recent published position paper, the European Environmental Bureau (EEB) claims that "it will be necessary that criteria be adapted firstly to EU problems, e.g. too high energy consumption, and that we would regret very much if criteria would be changed by external influences in a sense that they do not serve their purpose any more (EEB 1994, p. 11).

(6) Applications for the European eco-label:

In November 1993, the first eco-labels were awarded to some washing machines produced by one enterprise in the United Kingdom. As at September 1994, no further products have been labelled.

Obviously, the introduction phase of the eco-label is quite slow. The German experiences were the same: at the beginning a lot of fundamental work for the procedure has to be done and the different involved actors have to be convinced (see Section 3.3.1.). But we think that the European situation is more complicate because a majority of Member States has to agree.

(7) Unsolved problems:

The first experiences with the European eco-label show that a lot of questions and difficult aspects are still unsolved:

- * *Market shares:* eco-labels should be awarded to encourage the innovation of environmentally more benign products. The fixing of the criteria has to take into account the technological possibilities. Therefore, a proportion of products within one product group should be able to qualify for an eco-label. This quota is controversial. The criteria for the first two decided product groups set a quota of 10% of all machines available on the EU-market. The industry claims 25-30% which would allow more products to obtain an eco-label.

The "philosophy" of the European eco-label is to label an important share of existing products within the same product group²⁷.

- * *Function of LCA's:* A part of the development process of the criteria is dedicated to the elaboration of an LCA. The role of the LCA and the requirements for its precision are not clear.
- * *Control of application:* The more criteria refer to the production steps of a product, the more complicated would be the test if the applicant fulfils the claimed criteria²⁸.

²⁷ In contrast to that, the "philosophy" of the German Blue Angel scheme is to fix very stringent criteria more or less ignoring the actual market situation.

²⁸ This is the main reason why the German eco-label refers to the use and disposal stages of a product.

- * *Criteria-principles:* Currently, the elaboration of criteria uses different methods: In the UK the approach chosen was similar to the Blue Angel-programme: a list of criteria have been fixed which are all "hurdles", each of which have to be fulfilled.

Another approach is the method presented by Denmark: criteria have been developed which have been added together using utility benefit analysis as a methodological tool. A minimum amount of points will be fixed to receive an eco-label. That means that unfulfilled criteria might be compensated with overfulfilled criteria ("Scoring-system").

- * *Positive/negative lists:* Another still unsolved problem whether the point if the criteria should contain any type of a positive and/or negative list, i.e. requirements for the use and/or prohibition of any specific substances in a product.

These problems are discussed among the Member States and the competent bodies. Clarifying these points the Commission decided to elaborate "Policy principles". At the moment, they are not yet accepted by Member States. Nevertheless, it cannot be expected that the "Policy Principles" solve all mentioned problematic points. Instead of this, we expect, that different possibilities will be fixed, to be decided upon at a later time. Therefore, further discussions have to be expected.

The Netherlands:

The Netherlands is the lead country for the development of European label criteria on shoes and cat-litter. The work has commenced but has not yet been completed. The most important aspect often taken into account is the use of recycled products. Specific aims for cat-litter is the compostability and the reduction of dust emission. Shoes, however, are examined on their recyclability. Proposals with eco-balance and basic criteria are at issue.

France:

France is developing the environmental criteria for paints and varnishes, for batteries and accumulators and for shampoos. The work concerning the European eco-label is monitored by the same partners as those concerned with the French eco-label. The main objectives are the reduction of emissions and sewage loads. Concerning batteries and accumulators, the reduction of heavy metals is also important. The proposal on eco-balances and basic criteria for paints and varnishes is at issue and will be debated in the commission in the next month. The work for batteries, accumulators and shampoos is still in it's early stages.

3.3.4. Eco-labelling in other countries

The application of an eco-label world-wide is very difficult to ascertain. We present in TABLE 3.4 a preliminary overview of the number of labelled product groups and products. Quite often the elaboration and application of the concept of eco-labelling started just recently and, therefore, its results are quite modest. We expect nevertheless that eco-labelling will become more important.

Countries	Labelled product groups	Labelled products
Australia	n.a.	n.a.
Austria	21	19
Canada	34	700
China	n.a.	n.a.
European Union	2	some
France	2	n.a.
Germany	70	3,800
India	16	4
Japan	55	2,500
The Netherlands	12	26
New Zealand	14	n.a.
Nordic Council (Norway, Sweden, Finland, Iceland)	18	200
Singapore	23	n.a.
South-Corea	21	n.a.
Taiwan	n.a.	n.a.

TABLE 3.4: List of labelled product groups and products (state: 1993/94)
(Source: own elaboration based on different sources)

3.4. Conclusions

Eco-labelling is used in quite a lot of countries world-wide. Nevertheless, it is in most countries in its infancy, with the exception of Germany, Japan and Canada. Eco-labels are used as a market-compatible instrument and supported more or less by all relevant interest groups. Nevertheless, its function and role within environmental policy in general and within product-oriented environmental policy is controversial among interest groups: whereas some support the instrument with the intention of avoiding stricter and more rigid instruments, others try to embed eco-labelling in such a context. Due to the different objectives a real understanding is quite difficult.

4. Evaluation and assessment

This Chapter presents our evaluation and assessment of official eco-labelling. First, the criteria chosen are listed (*section 4.1.*). Then we discuss the current state of research (*section 4.2.*). Based on these preliminaries, we examine two exemplary product groups under the official German and European eco-labels (*section 4.3.*). Identified barriers and opportunities are analysed in *section 4.4.*

4.1. Introduction

The main criteria we have chosen for the evaluation and assessment of eco-labelling are listed in TABLE 4.1. Each criterion is briefly explained and subdivided into several sub-criteria if necessary. These subcriteria try to describe the main criteria by some supporting hints. The chosen criteria are the same as in the other case-studies we carry out in our whole project on product policy.

Main-criteria	Explanation	Sub-criteria
* Environmental effectiveness	Reduction of negative environmental impacts	* degree of goal accomplishment * rate of goal accomplishment * change in acceptance * change in consumer consciousness/behaviour * change in producer consciousness/behaviour
* Economic efficiency	Relation between the degree of the realisation of environmental goals and the ensuing costs	* information costs * implementation costs * administrative costs
* Acceptance	Attitude of major economic and social groups towards the instrument	
* Flexibility	Extent to which an instrument can be adjusted to new circumstances	
* Side-effects on competing and/or alternative product groups	Influence the respective measure exerts on other products than the one it is directly intended to deal with	

TABLE 4.1: Evaluation criteria for eco-labelling

4.2. Current state of research

Official eco-labels were introduced for the first time in Germany in 1978. For more than 10 years, no other country followed this example. Starting in the late eighties, a lot of countries created own eco-label schemes (see TABLE 3.1). But so far, an evaluation of the eco-label is quite difficult. With the exception of the German Blue Angel scheme, all other schemes are very new and not so well introduced in contrast with the German scheme. However, as the German scheme stagnated after its introduction for some years on a modest level (see FIGURES 3.7 and 3.8). It seems as if a reasonable evaluation should be based on a scheme existing for a few years, i.e. the Blue Angel scheme.

Several overview studies on eco-labelling exist: Abt Associates (1994), BMU/UBA (1990), EPA (1993), Jha et al. (1993), Neitzel/Landmann (1994), OECD (1991) and UNEP (1991).

In the spring of 1991, the OECD carried out a first overview in labelling activities and concluded "to date there have been no studies of labelling programmes that quantify the effect of environmental labels on product sales or the subsequent environmental impact" (OECD 1991, p. 28). Based on its work, the OECD concluded that "the greening of products is not happening because of environmental labels. Nonetheless, there is evidence that the label can make an important contribution. In particular, the label can effectively stimulate consumer concern about particular products, and encourage manufacturers to move toward a more comprehensive environmental assessment of their products (...)" (OECD 1991, p. 30).

Also EPA (1993) presented an overview and tried to look for experiences and an evaluation. Concerning *environmental effectiveness* the EPA mentions that "aside from a few anecdotal examples there is very little information in this area" (1993, p. 29) and "(...) there are no known studies on ECPs that address changes in the market or benefits to the environment due to ECP certification" (EPA 1993, p. 30)²⁹. This statement has been confirmed by Mattoo/Singh (1994, p. 63): "We are aware of no study that quantifies the effect of environmental labels on product sales or the environment". Also UNCTAD (1994a, p. 16) describes the situation that "there is little data available to show what market shares have been captured by environmentally-friendly products; firms are reluctant for competitive reasons to disclose such figures, and they are not collected systematically by any agency. Nor is there a clear idea of how many producers have actually changed production processes to meet eco-labelling criteria, and how such a switch might have actually affected the environment".

Most of the experiences refer to the German eco-label. Perhaps a little bit surprisingly but: an official evaluation of the scheme does not exist so far. Also a report delivered by ENDS (1989)

²⁹ ECP is an abbreviation for Environmental Certification Programmes and used in the EPA-report as a title for different information instruments.

wrote that "there appears to be no published study on the impact of the Blue Angel programme on particular sectors or brands, or on changes in consumer attitudes or market trends" (ENDS 1989, p. 19). Therefore, this study carried out some in-depth examinations on paints, papers, aerosols and batteries. Its most important findings are:

- * *Batteries*: a major environmental or economic impact could not be realised.
- * *Aerosols*: the different enterprises had no uniform opinion of the eco-label. Whereas some producers thought that it's criteria were unsatisfactory and had not applied for it, others preferred the eco-label.
- * *Paints*: the report concluded that the overall result of the eco-label had increased in the Do-it-yourself segment and not considerably in the professional segment. Besides that, the eco-label has pushed the market to change the composition of paints by new formulations.
- * *Paper products*: this product group is, according to the report, an example of a success story by expanding demand of bulk and individual consumers. Especially in this sector, the enterprises which ENDS (1989) interviewed pointed to the important influence of the environmental movement and discussions in Germany. But also conflicts were mentioned by one enterprise: it argued that its other paper products made of virgin pulp would have been regarded as inferior.

ENDS concluded that consumers and producers are not homogenous groups but have to be divided into different segments, each of them with their own priorities and - therefore acting in different ways concerning their purchases of eco-labelled products.

Experiences of the label are always based on anecdotal examples. Generalisation has not been proved. Examples:

- * *Paints and varnishes*: this label is the most often used label (see TABLE 3.2). It is used by nearly all producers but the market is segmented into two areas: paints/varnishes bought by private households (market share: 1/3) and by handicraft (market share 2/3). Whereas the share of low-pollutant products, allowed to be labelled by the Blue Angel increased in the segment of private households from 1% (1980) to 50% (1989) the share in the other segment (which is - respecting to the sales - more important) stagnated at 20% (cp. Neitzel 1992 and information by the industrial association). This result confirms the results of ENDS (1989).
- * *Recycled paper*: Schafhausen (1994, p. 11) mentions that the market share of recycled paper products has increased over some years and this might have been supported by the eco-label.
- * *Building machines, copy machines*: According to Schafhausen (1994) the Blue Angel has been successful in these product groups.

* *Detergents*: the market share of the eco-labelled products rose from 2% to 8%.

Beside these examples it is mentioned that the Blue Angel has contributed to technological improvements, e.g. of heaters and other equipment.

Schafhausen (1994, p. 12) lists also some failures of the eco-label: products made from waste plastics and soil improvers of compost for peat substitution do not apply for the eco-label.

However, an analysis of the barriers and opportunities for the eco-label has not been presented.

Comparable examinations - or at least anecdotes - from other countries are not known with one exception: Jha et al (1993, p. 25) report that the biggest Norwegian fine paper trader increased the share of the products bearing the eco-label sold in Norway from 5% to 50% within one year.

Mattoo/Singh (1994) considered the effects of eco-labelling on market demand and supply. Their - theoretically based - investigation concludes that "labelling will lead to a reduction in market demand for the product produced by environmentally-unfriendly methods if, and only if, the quantity demanded by potentially concerned consumers at the undifferentiated market price is greater than the quantity supplied at this price by environmentally-friendly producers". They propose, therefore, to analyse the market situation before introducing an eco-label, avoiding counter productive effects. As a consequence, the requirements should not be fixed exogeneously, but endogenously, i.e. based on the market.

Another possibility is to look for the *knowledge* of the existence of the eco-label. Some surveys (e.g. in Germany, Canada) asked consumers about their knowledge of private and official eco-labels. In principle, they are known by about 40% of consumers (Jha et al. 1993, p. 21), but not always understood. A Canadian survey asked enterprises for the influence of the Canadian eco-label on the sales: 62% said that there was no influence; 33% that an influence existed. However, its amount was not clear. Besides that, consumers were asked for their willingness-to-pay more money for eco-labelled products: Whereas in 1990, 81% answered as willing to pay more money for eco-labelled products, the rate decreased to 57% in 1993 (Environmental Monitor 1993, p. 14).

In Germany, the eco-label is widely known. According to a survey, it was known by 78.9% of interviewed persons in 1987. Other surveys in the years 1989 and 1991 showed that 91.3% and 91.1% knew that the Blue Angel is allowed to be used only after an acceptance of specific requirements. Nevertheless, another result of this survey was that 75.2% (1989) and 75.4% (1991) believed that also other labels were based on specific requirements (cp. 75.4% (1991) believed that other labels were also based on specific requirements (cp. Neitzel 1991, p. 302 and G&I 1991). A new survey of 1993 (ipos 1993) brought the result that 62% of the

interviewees of the old Länder and 48% of the new Länder said that the "Blue Angel" is a symbol for knowing if a product is environmentally benign or not.

Another study was carried out by Christensen (1987). Her survey based on 80 persons was not representative but instructive. Most of her interviewees (91%) knew the Blue Angel. 86% said that the eco-label would make their purchases easier. Christensen asked also for advantages and disadvantages. 65% explained that the buying of eco-labelled products would cost more than non-labelled products. If these products have better or worse qualities was judged controversially among the interviewees. Unambiguously positive was the opinion that the use of eco-labelled products would stimulate positive social reactions by other, non involved persons. But also the personal emotional attitude would be influenced positively. Altogether, Christensen concluded that there might be a trade-off between the strengthening of social-emotional aspects and the weakening of financial/functional aspects.

The Canadian Environmental Choice organisation which is in charge of the Canadian eco-label carried out a survey in 1992 on its awareness and recognition by consumers. About 42% of Canadian consumers said they were aware of it. However, a study of market changes or environmental benefits was not undertaken (EPA 1993, p. 30). Another study had a similar result: whereas in 1990, only 19% of Canadians were able to identify the Canadian eco-label, the figure was up to 51% three years later (Abt Asso. 1994, p. 20).

The *change in producer consciousness/behaviour* as a result of eco-labelling has been investigated in several projects which, however, looked for environmental management and its realisation within the marketing-mix.

Some years ago, the German Federal Environmental Agency carried out a survey of producers. 35,9 % of the respondents aimed to inform on environmental aspects of their products by using - inter alia - the German eco-label.

Meffert/Ostmeier (1990) examined the use of different marketing instruments and among them the eco-label by interviewing about 200 German enterprises. They examined different marketing measures. Within the area "product policy", 19.8% of the enterprises interviewed claimed that they used the "Blue Angel" and 10.7% own labels³⁰. Based on the examination of Meffert/Ostmeier, Kirchgeorg divides enterprises into four segments and showed that the Blue Angel is used more intensively by environmentally-oriented innovative and by environmentally-oriented selective enterprises³¹, than by other enterprises (1990, p. 150).

³⁰ Several answers were possible. Therefore the sum of the different marketing measures were more than 100%.

³¹ Kirchgeorg (1990, p. 144ff.) defines as *environmentally-oriented innovative enterprises* as ones which pursue internally and externally, an environmental strategy and which react neither by retreat nor by resistance to environmental requirements. *Environmentally-oriented selective enterprises* also pursue

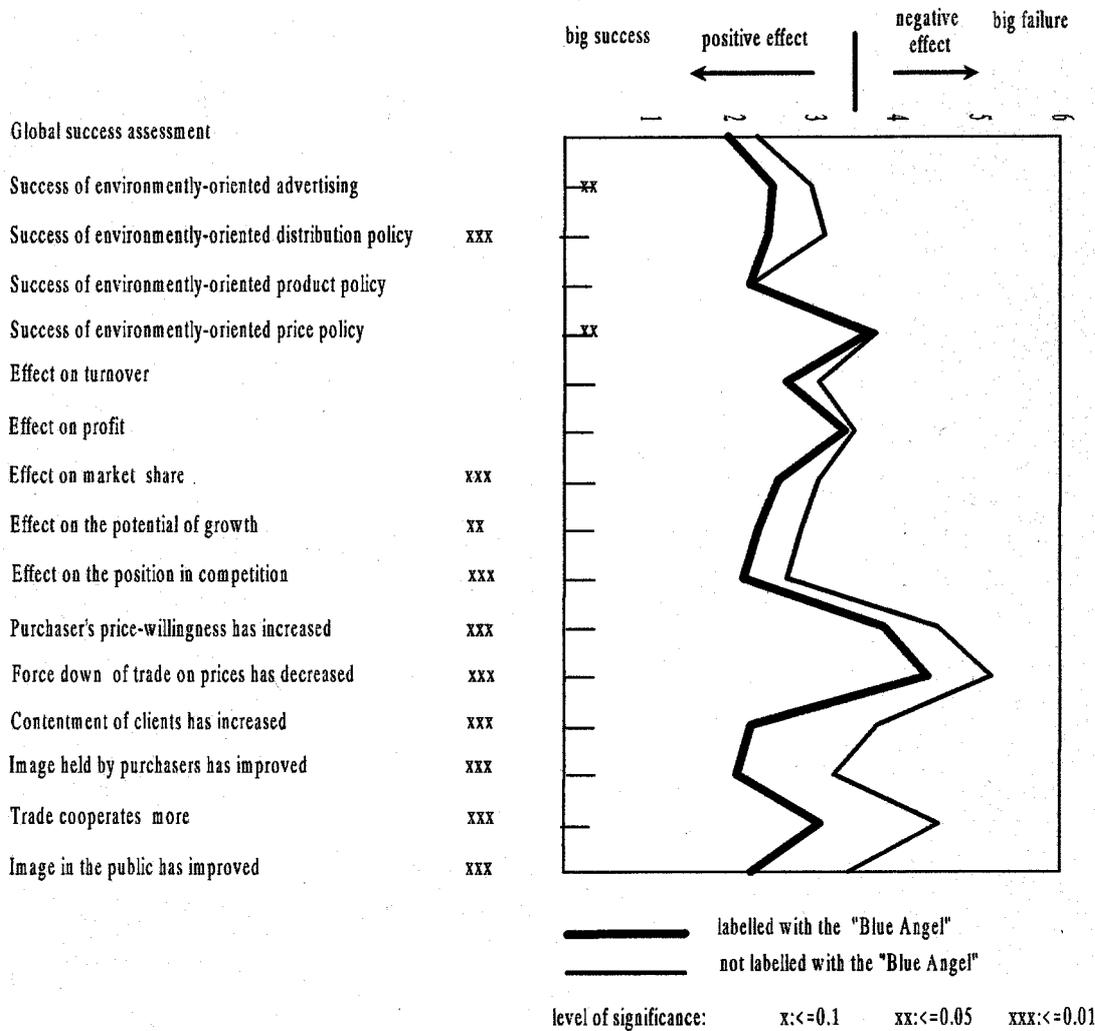


FIGURE 4.1: The influence of the use of the Blue Angel with respect to the success of environmentally oriented sales measures (Source: Meffert/Ostmeier 1990, p. 145)

Advertisements which include environmental claims have quite often been used (54.8%). The influence of the use of the Blue Angel with respect to different success indicators of a marketing measure (e.g., turnover, market share) was examined. Enterprises which use the Blue Angel were compared with enterprises which do not use it (see FIGURE 4.1). Meffert/Ostmeier concluded that the success of environmentally-oriented sales measures has been affected if the eco-label has been used. Especially improved were the image held by purchasers, the cooperation with the retailers and the public image. In contrast to the eco-label, the success of own labels was modest.

internally and externally an environmental strategy, but react, however, by retreat or by resistance to environmental requirements.

All in all, the recently published study of Abt Associates (1994) (which looked for determinants of the effectiveness of eco-labelling) concluded that "given the existing (mostly indirect) evidence, many environmental labelling programs appear to be enjoying a limited measure of success in achieving their stated goals; such as increasing consumer awareness of labeling initiatives and increasing sales of certain types of certified products" (p. 31).

As mentioned earlier, the eco-label is in general *accepted* by all interest groups. However, its use within the set of instruments of a product policy is more controversial (see section 3.2.).

The *costs* of eco-labelling schemes consist of direct costs, i.e. label fees for the producers using it and the programme costs, and of indirect costs, namely adaptation of production processes.

Label fees rise with higher annual sales of a product.

The programme costs are those connected with the elaboration of criteria i.e. of costs for the staff, for the interest groups involved and for the administration. OECD (1991, p. 24ff.) noted that within the Canadian programme 19 staff members were involved. The German Blue Angel scheme occupies 12-15 person-years in the governmental institutions and in RAL according to ENDS (1989).

Jha et al. (1993, p. 11) report that in the French eco-labelling programme, the elaboration of criteria for one single product group costs about 1.3 Mio FF (\cong 200,000 ECU).

At elaboration of the European label representatives of each Member State participate. The process is quite complicated and took - at least in the past - some months/years, with several meetings. At the German Federal Environmental Agency one person deals with this. We suppose that the costs for the European label are much higher than for national labelling programmes.

Besides that, costs for the different interests involved arise. Industry pays its own costs of participation and involvement of representatives at the German "Jury Umweltzeichen" and the European "Forum". Other groups, like consumer and environmental organisations, receive a modest subsidy for travelling costs but get no fee for their preparation and participation.

It is argued that profits from the elaboration of the requirements are received by producers which should, therefore, also go to pay their representatives. However, a structural asymmetry exists. Other non commercial interest groups do not receive such fees and may not be able to prepare well for meetings. That means that their reasonable participation would require fees and contribute to higher costs of the eco-labelling programme. An estimation of such a demand has been presented in the context of the European label but not accepted.

Specific information on indirect costs for the adaptation of production to the requirements of eco-labelling is not available. But nevertheless, such costs could arise and might be considerable. Producers in developing countries might have special problems of adapting to high costs and their restricted finances (cp. UNCTAD 1994b, p. 14).

4.3. Exemplary product groups

Within this section, we discuss the eco-label using two different product groups as examples. These two product groups have been selected according to the following criteria:

- * we should select both an example for a durable product and one for a non-durable product;
- * the eco-label of the selected product groups should have been created some years ago because our objective is to study the development of the label;
- * we should take into account a product group which has a connection to Southern European Member States, i.e. we have to consider a product group for which the European eco-label is under consideration/preparation;
- * the selected product groups should be instructive and not just represent "symbolic" environmental behaviour;
- * we should exclude product groups which refer to specialised market segments.

Based on these considerations we decided to select wallpaper and hair spray:

- * For the product group of *hair spray* a draft for an European eco-label is underway. Therefore, the discussion in and reactions of the Italian economy might be studied. Besides that, Germany created at the start of its eco-label programme a label for this product group (and changed the requirements several times).
- * The German eco-label of the product group of *wallpaper was* introduced several years ago. Wallpapers are no symbol for a specific environmental behaviour, and so market reactions can be interpreted as "normal" behaviour, which is instructive to study.

We can attempt to categorise according to the different decision types, as presented in section 2.3.1.. We interpret wallpapers as an example of a limited decision-making process with a medium involvement of the consumers. Regularly, the use of external information sources is very limited. The classification of hair sprays is, however, more complicated. We suppose that depending on the individual consumer, they might be regarded as examples of the limited or habitual decision-making process.

4.3.1. Wallpapers

4.3.1.1. Introduction

This section is subdivided into a view on the whole market (*section 4.3.1.2.*) and into a view on the eco-label and its impact (*section 4.3.1.3.*) based on our findings. Some preliminary conclusions grounded on the examined product group will be drawn.

We also apply the general objectives of environmental policy to wallpapers:

1. Reduction of hazardous substances contained in wallpapers and improvement of the composition of wallpapers.
2. Substitution of products/materials.
3. Collection and recycling.
4. Overall reduction of the use of wallpaper.

Our findings refer to these four objectives. It has to be mentioned that the last objective is oriented towards a general reduction of production and consumption of materials and energy and is not an explicit objective of eco-labelling.

Our research is based on interviews with experts and representatives of interest groups and on a questionnaire which was sent to producers and some traders. Besides that, we analysed the discussion in specialist publications and journals.

4.3.1.2. The wallpaper market

The wallpaper market in total is a stagnating market. It has staggered between 100 and 125 Mio reels since the beginning of the eighties. Germany's reunification caused an increase in production because East Germany's production is now included in the statistics of the Federal Statistical Office. FIGURE 4.2 indicates the development of the market since 1982. The monetary value stagnated: prices decreased and therefore the value of the production remained nearly unchanged.

The market for wallpapers is subdivided into different segments and includes the following products:

- (1) wallpapers made of paper,
- (2) wallpapers coated with plastics, e.g. polyethylene or polyvinyl chloride (PVC),
- (3) other wallpapers, e.g. made of textile,
- (4) woodchip paper.

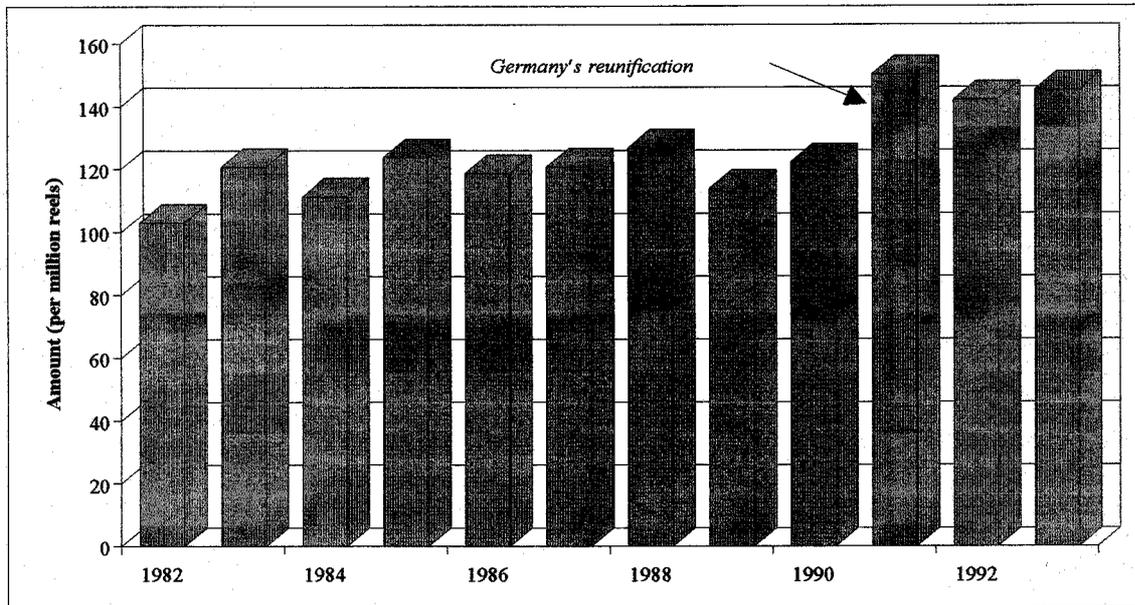


FIGURE 4.2: Development of German production of wall papers (except of woodchip paper) from 1982 until 1993 (per million reels)
 (Source: own examination based on figures of the Federal Statistical Agency FS 4, row 3.1, several years)

Whereas the first three types of wallpapers are included in the production statistics of the Federal Statistical Agency, the last one (woodchip paper) is not assigned to the statistics. Unfortunately, it is not possible to get any official statistical information on woodchip paper. It is estimated that about 35 Mio reels of woodchip paper are produced. This would mean that it's share of all wallpaper according to the above presented definition is 20%. The industrial association in charge of wallpaper, ("Bundesverband Tapeten"), regards woodchip paper as per definition not to be a wallpaper, but a specific type of paper. But, nevertheless, it is used as a type of wallpaper. Therefore, we regard it as as much wallpaper as the three other types.

Looking at the first three types, a modest relative change took place: the rate of wallpapers made of paper decreased slowly whereas the rate of wallpapers coated with plastics increased. Nowadays the plastic-coated wallpapers are more important.

In 1987, about 100 Mio. reels were consumed, 80% came from domestic production, 20% were imports. The wallpaper market has an export surplus: in 1990 for example, 33 Mio reels were exported and 11 imported (cp. Kunkel 1991, p. 36f.). Two years later, 50 Mio reels were exported and 20 imported. That means that about 30% of production was exported, most to other European countries.

In Germany, about 30 producers participate in the market. Most of them are members of the industrial association. Only small producers might not be members. A lot of the producers have all of the first three types of wallpapers in their production programmes. The German market

for woodchip papers is dominated by one producer. Only one small producer is its competitor. Other producers are abroad. This dominant producer sells his woodchip paper in two ways: by direct delivery to traders and by selling it to other producers and retailers who place their own brand name and logo on it.

An environmental discussion on wallpapers exists only for specific aspects. PVC as plastic used for a lot of different applications is a controversial topic in Germany. Environmental organisations want production to stop and substitution by other materials to occur. For the most important application areas [i.e. profiles (incl. window frames), pipes/fittings, hard films] substitution proposals have been presented. But the discussion has not yet touched wallpapers to a high degree³². Wallpapers consume less than 7%³³ of all PVC-production. Only some accusations against the use of PVC have been formulated (cp. Brathun 1991, p. 8). Nevertheless, the industry published a brochure "Wallpaper and the environment". The industrial association carries out consumer polls. The last one (1989) revealed that only 12% of consumers took into account environmental aspects of wallpapers.

The actors in the wallpaper market are restricted to producers as suppliers, trade/retailers and governmental institutions which arrange the restrictions. A communication between consumers and manual workers as demanders on the one side and producers on the other side seems not to exist. This impression has been confirmed in our interviews carried.

4.3.1.3. The eco-label and the wallpapers

The eco-label for wallpapers was introduced in 1985. Until June 1994, it applied only to woodchip papers and wallpapers based on paper. Some months ago, the "Jury Umweltzeichen" modified the definition of the product group by including plastic-based wallpapers. The eco-label for wallpapers is, therefore, split up into two different groups:

- * one group for paper-based wallpapers and woodchip papers (UZ No. 35a);
- * another one for plastic-based wallpapers but without PVC (UZ No. 35b).

But so far, this extension of the eco-labelling scheme does not influence the market because the existing contracts and requirements of the UZ No. 35a have been valid until the end of 1994. In 1995, producers can apply for the new UZ No. 35b and/or the modified UZ No. 35a.

³² In November 1994, the Verbraucherinitiative ("Consumer initiative"), a consumer organisation, presented a proposal for an environmental label for retailers. One of its criteria is that retailers who ask for such a label should not sell wallpapers containing PVC.

³³ This figure refers to coatings which include wallpapers and textiles (tents, tablecloths).

Beside the eco-label another label exist: the quality mark administrated by the German Institute for Quality Assurance and Labelling (RAL). The quality community³⁴ "Wallpaper" was founded in spring 1990. Its foundation was a reaction to the former discussion about formaldehyde in wallpapers and PVC (in general). Quality and test requirements for wallpapers were published in 1991. The quality requirements refer to

- * wallpapers made of paper, vinyl and plastics according to norm EN 233,
- * wallpapers made of textiles according to norm EN 266.

That means that except for woodchip paper all of the other different types of wallpaper are allowed to ask for the quality mark.

If all requirements are fulfilled, a producer is authorised to label its product with the quality mark (see APPENDIX VI). According to information presented to us by the industrial association nearly all producers are members of the quality community and allowed to use the quality mark. But only producers of wallpapers which fulfil EN 233 and EN 266 can apply for this quality mark. Producers of woodchip papers, however, are not allowed to use this label because woodchip paper has to be varnished over. Therefore, producers of woodchip paper can apply only for the eco-label.

Comparing the eco-label and the quality mark (see TABLE 4.2) one recognises that the requirements of the eco-labels UZ No. 35a and 35b are stricter than the ones for the quality mark.

Some years ago, the "Bundesverband Biologisch verträglicher Bauprodukte" (Federal Association for Biologically Compatible Building Materials) created an own certification label. Its objective was to support producer product declaration and the drawing up of LCA. However, only 4 to 5 enterprises used this label. Even they recognised that the requirements were not strong enough and did not support their environmental claims. Other organisations like the "Institut für Baubiologie Rosenheim" (IBR: Institute for biologically compatible building in Rosenheim) offer similar examinations of the quality of products and award labels like "Empfohlen vom IBR" (Recommended by IBR) (see APPENDIX VII), but their seriousness is doubted by the industry.

³⁴ A quality community consists of producers within a specific product group. It defines the objectives and conditions that must be fulfilled to obtain a quality mark. These must be approved by RAL.

Requirements:	UZ No. 35a (paper-based wallpaper and woodchip paper)	UZ No. 35b (wallpaper using other materials)	RAL quality mark
(1) requirements for the fulfilment of DIN EN 71 part 3 "Security of children toys"	yes	yes	yes
(2) maximum content of formaldehyde	0.05 ppm	0.05 ppm	0.05 ppm
(3) share of wastepaper	60%	60%	no requirement
(4) prohibition of substances under GefStoffVO ³⁵	yes	yes	no requirement
(5) technical requirements according to DIN EN 233	<i>not applicable</i>	yes	yes
(6) maximum content of PCB	2 ppm	2 ppm	no requirement
(7) requirements for wallpapers with PVC	<i>not applicable</i>	- no specific requirements	- no use of CFC for specifies foams, - maximum content of vinyl chloride, - prohibition of the use of some stabilisators, - use of heavy volatile softeners
(8) no use of chlorine in the treatment of wastepaper	yes	yes	no requirement
(9) others	no requirement	the coating is not allowed to contain heavy metals (chlorine is allowed) and halogenous compounds	prohibition of chlorinated solvents compounds
(10) use of specific colours	yes	yes	no requirement
(11) use of specific wood	yes	yes	no requirement
(12) specific relation between materials	<i>not applicable</i>	yes	no requirement
(13) prohibition of the use of specific substances	no requirement	yes	no requirement

TABLE 4.2: Comparison of requirements for the eco-label and quality mark for wallpapers

As described above, the Federal Statistical Office does not take into account different characteristics of the wallpapers. That means that a splitting up into two groups (user of an eco-label and non-user) was not possible. A detailed macroeconomic view on the development

³⁵ The GefStoffVO (Hazardous Substances Decree) is based on the Chemical Act and regulates production and use of hazardous substances.

of this market is also not possible. Therefore, we have to limit ourselves to the use of "sub-criteria" as listed in TABLE 4.1 if we want to evaluate eco-labels based on empirical findings.

A first impression of the importance of the eco-label might be gained by analysing the development of its users and of the labelled products. TABLE 4.3 presents the results of our analysis. It shows that the number of users and of labelled products has increased since the introduction of this label. According to this criterion the eco-label has been successful. But an analysis of the market share is non-existent.

Year	Number of applicants	Number of labelled products
1986	4	12
1987	4	13
1988	8	25
1989	15	54
1990*	n.a.	n.a.
1991	29	67
1992*	32	95
1993	30	96
1994	51	149

* = change of requirements
n.a. = not available

TABLE 4.3: Statistics on labelled wallpapers and on applicants

The requirements for awarding of the eco-label have been modified and tightened several times. This happened in 1990 and 1992. In TABLE 4.4 we present the development of requirements. It proves that criteria are primarily tightened by expanding new criteria and not by changing existing criteria.

A more detailed look at the 149 labelled wallpapers reveals that 122 are woodchip papers and only 27 wallpapers made of paper. That means that 82% of the labelled wallpapers were woodchip papers - at least in 1994. A reason for this might be that woodchip papers can not be labelled by the quality mark and therefore producers who want to label their products are restricted to using the eco-label. As a consequence, it can be said that the eco-label for wallpapers is restricted to woodchip papers. It is estimated that nearly all produced and consumed woodchip papers are labelled with the Blue Angel.

RAL	1985	1990	1992	1994
UZ No. 35 a ¹	(1) minimum rates of wastepaper: * 60% wallpapers based on paper, * 80% woodchip; (2) no substances which have to be labelled according GefStoffVO should be contained	additionally: (3) at least 51% (paper-based wallpapers) or 30 % (woodchip) of low, medium and craft-containing waste paper types	additionally: (4) no halogenated bleaching chemicals or EDTA are allowed to be contained; (5) the requirements of DIN EN 71 part 3 "Security of children toys" have to be fulfilled	additionally: (6) maximum content of formaldehyde, PCB and Glyoxal (7) no carcinogen, mutagen and teratogen substances are allowed (8) prohibition of chlorine (9) only wood of sustainable managed forests is allowed (10) prohibition of heavy metals in dyes
UZ No. 35 b ²	The eco-label has not yet existed !			(1) at least 60% of a wallpaper must be based on wastepaper (2) additionally to the criteria of 35 a is in force: (3) the compound of paper must be bigger than the second compound like synthetic materials (4) prohibition of heavy metals and halogenous compounds in the second compound

¹: wallpapers and woodchips with wastepaper.

²: wallpapers with wastepaper coated by other substances like synthetics.

TABLE 4.4: Development of requirements for the eco-label wallpapers

All in all, nearly two thirds of the firms which are allowed to use the eco-label are retailers.

Summarising this information, one sees that the market for wallpapers is subdivided into three segments:

- * *plastic-based wallpapers*: the eco-label for this market segment has just now been introduced and has not yet influenced the market.
- * *woodchip paper*: nearly all products are labelled with the Blue Angel.
- * *paper-based wallpapers*: only a few products are labelled with the Blue Angel. It is, however, not possible to ascertain the rate of labelled products in relation to all products.

A real analysis of substitution for wallpapers would have to examine more closely the market segments of paper-based wallpapers and woodchip paper for examining the changes in the composition of the products and substitution processes. However, valid statistical information is not available.

Therefore, we sent a questionnaire to nearly all producers and retailers of wallpapers and to all users of the eco-label. We received 25% of the questionnaires back, but not all were completed. Many retailers failed to answer and so we sought more information in interviews. Consequently, the rate of usable questionnaires was 10% (see TABLE 4.4). The information gained will be presented in this section. Obviously, it is not certain that it is representative. But tendencies become clear.

Number of producers addressed		Number of answers		No answer possible		Return stroke (absolute figure)		Return stroke (relative figure)	
all	applicants for the label	all	applicants for the label	all	applicants for the label	all	applicants for the label	all	applicants for the label
48	28	5	3	7	5	12	8	25%	29%

TABLE 4.5: Statistics on our survey

Motives for the application of the eco-label are competitive advantage, its use as a marketing tool and contribution toward environmental protection. The labelling is often embedded in an environmental guideline and business philosophy claiming to dedicate more efforts to environmental affairs. The existence of such a guideline supports activities in different production areas and tries to secure the activities by labelling activities. Retailers apply for the eco-label because of the environmental guidelines of their business philosophy and use the eco-labels as a marketing tool.

Conversely the *motives for not applying* for the eco-label are financial restrictions and the fear that within the same enterprise a competition between the labelled wallpaper and the other wallpapers (especially PVC-based wallpapers) would be stimulated. Another motive was that the effects of the wallpapers produced would be of little environmental relevance. One enterprise which was allowed to use the label does not use it any more because, from its point of view, the demand (for its product) does not exist any more.

We asked enterprises for their assessment of the *familiarity* of consumers and retailers with the label. Their opinion was that consumers are, to a medium degree, familiar with the label and that retailers possess a familiarity between good and medium (i.e. a little bit higher than that of consumers). Retailers agreed with this position.

The *acceptance* of the eco-label by the producers is slightly different. Retailers and business accept the eco-label to a nearly medium degree. The interviewed producers think that consumers accept the eco-label to a higher degree. Retailers believe that consumers accept the eco-label to a high degree. The answering enterprises estimate that the acceptance among the state is high and among environmental and consumer organisations very high.

Incentives for *changes in producer behaviour* revealed differing opinions. Producers which have not applied for the eco-label answer in the negative for incentives for their own products. However, one producer and applicant of the eco-label believes that the label contributed to the

step-by-step substitution of PVC-based wallpapers. Both say product innovations and partial improvements of product's composition have been stimulated. Retailers claim that their purchasing targets wallpapers which use the RAL-quality mark or the eco-label.

An influence of the eco-label on *turnover* was quite difficult to check. One producer assumes that such an influence does not exist. Another producer believes that the turnover has been positively influenced. However, the figures given are insufficient to verify this opinion. Also traders are not able to fix changes of turnover in labelled products.

The *goal achievement* of the eco-label, in the opinion of the producers interviewed, is estimated as follows:

- strengthening of environmental policy: partly realised,
- information for consumers: more than partly realised,
- customer advisory service by retailers: less than partly realised,
- creation of promotion incentives: less than partly realised,
- acceleration of technological change: partly realised,
- appropriate relation between environmental quality, fitness for use and product safety: less than partly realised,
- adaptation to technical innovations and market situation: between partly realised and not realised,
- reliability of advertisements using environmental aspects: between partly realised and not realised.

On the average, producers judge the degree of goal achievement as modest.

Based on this information any *reduction of environmental impact* is not possible to assess. However, we asked producers if - according to their opinion - they know of any positive effect on the environment caused by the introduction of the eco-label. Their answers were negative, i.e. they do not know any example. We have interpreted these answers carefully: our impression is that their focus is restricted to their own enterprises and not to the whole life-cycle of the wallpaper. But the criteria for the eco-label consider the waste stage, i.e. the "grave" of paper and contribute herewith to a reduction of waste. The interviewees probably neglected this aspect.

The environmental requirements of the eco-label are controversial: some producers fear that the criterion "use of waste paper" would reduce the quality of the wallpaper. One producer argued that an increased use of waste paper would require a greater use of formaldehyde

which would cause other negative environmental impacts. Therefore, this enterprise did not ask for the label.

Another aspect for judgement of the eco-label in this application area is the question of its *economic efficiency*. Producers told us that changes caused by the application criteria would have become necessary. Technological modifications and innovations have been stimulated. As a consequence, costs rose and contributed to a reduced efficiency.

As mentioned above, the product groups for which the eco-label is awarded compete with plastic-based wallpapers. Direct *side-effects* of the eco-label (substitutions) are not remarkable, at least from a macroeconomic point of view. One producer reduced its production of PVC-based wallpapers and expanded the production of paper-based wallpapers. However, it is not clear if and how the eco-labelling contributed to this development.

Besides that, indirect effects might exist. As already mentioned, the industry created the quality mark which refers to environmental and health criteria. The creation of the quality mark may have been stimulated by the eco-label with the objective to justify the environmental and health benignity of all labelled wallpapers.

The eco-label is limited to paper-based wallpapers and woodchip papers. Wallpapers containing other substances are not allowed to ask for the label. Except for the one mentioned example, no other reactions are known.

Nearly all producers of paper or plastic based wallpaper use the quality mark: it is estimated that about 80% of wallpapers are allowed to use it. This mark is a competitor to the eco-label. A reason for the high market share of the quality mark is, of course, that in comparison with the eco-label the quality mark is oriented to wallpapers made of paper and other substances like synthetics whose market share is about 80%. All producers answering our questionnaire claimed to use it, at least for trade information. One producer argued that this mark is, however, not appropriate to support consumers because it does not inform that PVC-based wallpapers are also allowed to use it. This producer called for a more stringent qualification. Retailers pointed out that they take the quality mark into account and frequently choose only products labelled with this mark when they assemble their product range. This is another reason for the high market share of the quality-mark.

The general *acceptance* of the eco-label seems to be quite high: in a former study on the general evaluation of instruments (Rubik 1994, p. 127) no interest group rejected this instrument. The enterprises who responded to our actual survey are sceptical about the future for the eco-label for wallpapers. Some believe that both the RAL quality mark and eco-label are appropriate labels. But it has also been said that public better informed about the content of the eco-label, could support the eco-label.

This change might influence the market in the future: some producers argued that with the new eco-label UZ No. 35b, producers of wallpaper containing plastics would ask for it and that, therefore, real competition would be stimulated. Some producers plan to put PVC-free wallpaper on the market. This process might be supported by the decision to expand the eco-label for wallpapers.

4.3.1.4. Conclusions

An explicit and direct evaluation of the eco-label using the example of wallpaper has not been carried out so far. Our analysis confirmed this statement. We have analysed the effects of the eco-label using some "sub-criteria". Illustrated by FIGURE 4.3 our findings are:

- Most of the existing eco-labels are used by woodchip papers. One producer is dominating the German market. For this market segment (share: about 20%) the eco-label is almost 100% used.
- The composition of woodchip paper changed because of the requirements of the eco-label. The dominant producer changed the composition of its products and received the eco-label for them.
- Retailers play an important role in the wallpaper market. A great acceptance of the quality mark could be seen because most retailers restrict their range to wallpapers with the requirement of the quality mark. They are also among the applicants of the eco-label.
- However, general consideration of the eco-label is quite small because the eco-label was restricted to woodchip papers and wallpapers made of wastepaper so far which had a small market share. Other more important market segments for consumers are not labelled.
- The environmental discussion has not yet touched wallpapers. Only 12% of all consumers of wallpapers take environmental aspects into account. This situation could be changed if the discussion on the use of - e.g. PVC - would touch wallpapers. That is a hint for the importance of environmental awareness and the contribution of environmental discussions.
- Looking at the other three market segments, a considerable trend to substitute products/materials cannot be found.
- The restricted definition of the product group of eco-labelled wallpapers influences the demand for the eco-label. The narrower an eco-labelled product group is defined, the less substitution and innovation processes will be stimulated.

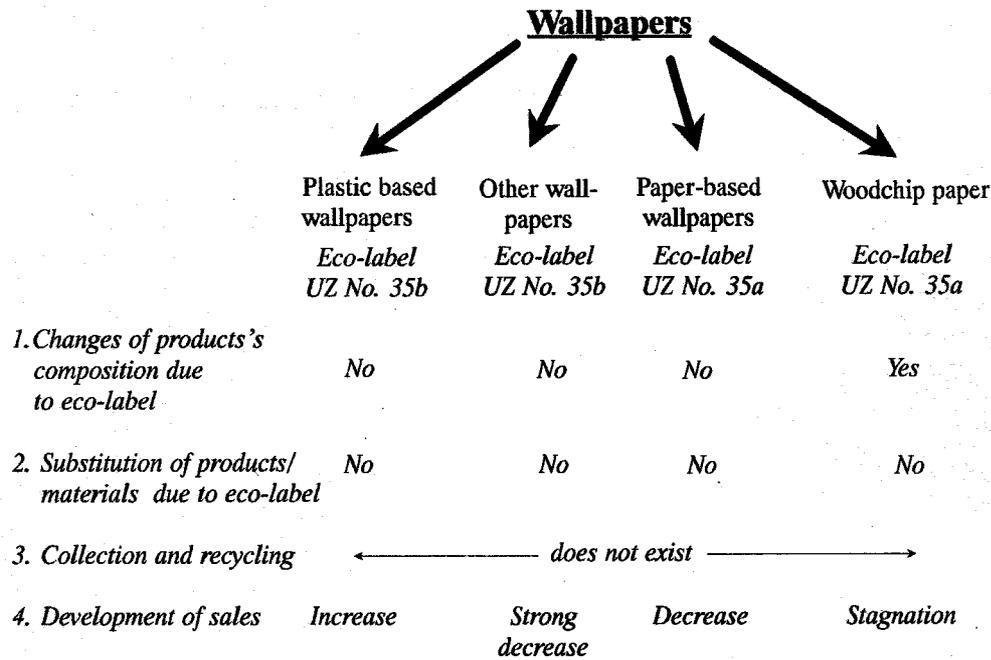


FIGURE 4.3: Résumé of some findings

- A collection and recycling of wallpapers is not discussed and/or proposed. It is argued that it is not reasonable, either economically or environmentally.
- An overall reduction of the use of wallpapers did not take place.

4.3.2. Hair sprays

4.3.2.1. Introduction

In contrast to the previous example, both a German and an initiative for a European eco-label for the product group hair spray exist. Whereas the German Blue Angel for hair sprays was introduced in 1978 as one of the first Blue Angel eco-labelled product groups, the European eco-label for hair sprays has been under preparation for some years.

The German eco-label was originally directed to all sprays not containing CFC as a propellant. Therefore, a lot of different product groups were covered: cosmetics (with the product groups: hair sprays, deodorants and shaving products), cleaning sprays and furniture sprays. Some years later, the requirements were changed and the eco-label was restricted to hair sprays, deodorants and shaving products. The planned European eco-label, however, is restricted to hair sprays³⁶.

³⁶ A European eco-label for deodorants is also under preparation, but due to the problems with hair sprays requirements at the moment have not been elaborated.

In contrast to wallpapers, this exemplary analysis takes into account not only the German situation but also the Italian situation, because the realisation and introduction of a European eco-label for hair sprays would touch the other national markets of the EU Member States. We selected Italy as an example for future developments of the European eco-label and for a comparison between different countries.

This section is subdivided according to these two eco-labels first into a section dedicated to the German Blue Angel (*section 4.3.2.2.*) and second into a section dedicated to the European eco-label and its introduction using the example of Italy (*section 4.3.2.3.*). As with wallpapers, general trends and developments are described within each section, followed by an evaluation of the eco-label.

We also try to apply the general objectives of environmental policy to hair sprays and related product groups: i.e.

1. Reduction of hazardous substances contained in hair sprays and improvement of the composition of hair sprays.
2. Substitution of products/materials.
3. Collection and recycling.
4. Overall reduction of the use of hair sprays.

Obviously, the third objective has to be modified within this context: a collection and recycling of hair sprays, deodorants and shaving products is unimaginable because the use of these products for personal hygiene purposes causes their consumption. Only the packaging could be collected and recycled/reused.

The research on this product group is based on interviews with experts and representatives of interest groups (see APPENDIX IX) and on a questionnaire which was sent to producers and some traders. Besides that, we analysed the discussion in specialist publications and journals.

4.3.2.2. The German Blue Angel for toilet requisites

The German Blue Angel is, at the moment, valid for three different application areas: hair sprays, deodorants and shaving products. Our findings refer to these three different product groups.

4.3.2.2.1. The German market

The general development of the market was dominated by the discussion of the environmental harm of aerosols in the past. Aerosols are cans of aluminium or tin-plate and spray the agent

through propellants and a valve-system. In our study, aerosols emerge as hair spray cans, deo sprays and shaving foams and gels.

Since the middle of the seventies, aerosols have been criticised because of the ozone depletion potential of CFC. Aerosols indeed have grown about 8% yearly between 1981 and 1987, but in 1988 the aerosol industry suffered a production backlash of about 11.5% in comparison to the year before. Market displacements happened in the market of hair care and deodorant because a lot of mechanical pump dispensers were introduced in these markets as substitutes to aerosols.

The industrial association of aerosol producers reacted with the development of a uniform ozone symbol for aerosols which use more ozone harmless propellants in comparison to CFC ("does not deplete the ozone layer - without CFC" - see APPENDIX VIII). Alternative propellants are n-pentane, dimethylether and hydrocarbons like propane, butane and isobutane which have an ozone depletion potential of zero and a smaller rate of degradability in the atmosphere in comparison with CFC. Because of this voluntary action the use of CFC in aerosols decreased from 53,000t per year to 1,486t per year in Germany between 1976 and 1989. Since the beginning of the nineties all aerosols have been produced without CFC due to the Montreal agreement of 1987.

The discussion on the substitution of CFC by other substances is now replaced by another discussion on the share of volatile organic compounds (VOC), photochemical ozone creating potential (POCP) and also - sometimes - on the waste aspect of packaging.

In the following we look in more detail at the three different application areas of the German Blue Angel:

a) Hair sprays:

The production of hair sprays fluctuated in the last twenty years between 25,000 tons in the early eighties and 43,000 tons in the mid seventies and recent years (see FIGURE 4.4). The recent rise can be explained by the statistical consequences of Germany's reunification.

The market for hair sprays is subdivided into different segments and includes two different products:

- (1) "traditional" hair sprays using aerosols (inter alia: i-butane, propane, n-pentane, dimethylether, ethanol) and
- (2) hair sprays using pump dispensers.

The environmental discussion on aerosols touched hair sprays considerably. The market stagnated and new products came on the market: hair sprays using pump dispensers. However,

a real breakthrough has not occurred: in 1992, pump dispensers had a modest market share of 11%. In 1994, their market share amounted to only 8.5%. The rest of the market fell to aerosols. It is expected that the number of hair sprays with aerosols will increase and systems using pump dispensers decrease.

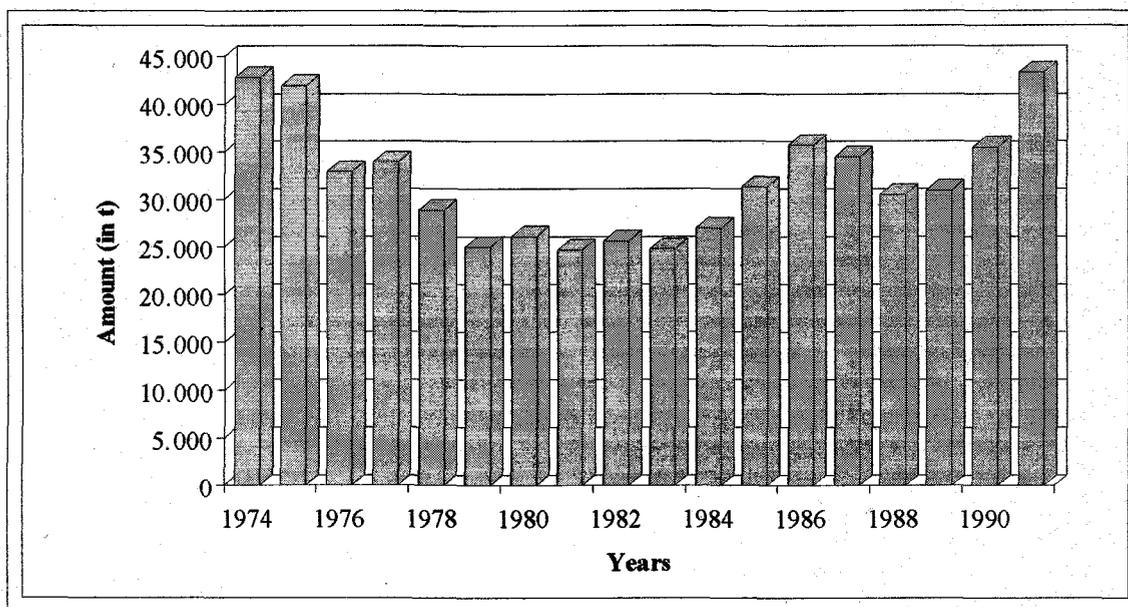


FIGURE 4.4: The production of hair sprays in Germany from 1974 until 1991 (in tons)
(Source: own elaboration based on figures of Statistical Federal Office)

Almost 75% of the total hair spray production of 44,000 t was exported in 1990. Only 1,800 t were imported.

b) Shaving products:

These increased continuously from the seventies. From 1,900 tons in 1974 to 6,400 tons in 1991. The market consists of four product types:

- (1) foams,
- (2) gels,
- (3) creams and
- (4) soaps

of which gels and foams are aerosols.

The development of relative demand shares in Germany is presented in TABLE 4.6.

Product type:	1992*	1993*	1994*
Foams	60.1	56.8	60.9
Gel	7.7	12.6	10.9
Creμες	28.3	27.2	25.0
Soaps	3.9	3.4	3.2
SUM:	100	100	100

*: first half of a year

TABLE 4.6: Relative consumption shares of different shaving products
(Source: Information of GfK)

In the shaving market a product-change took place at the beginning of the eighties. Sales of shaving soaps and -cremes increased in the early eighties, whereas those of shaving foams declined. But, in the last decade shaving foams trebled their market share. In 1994 their share amounts to about 60%. With the successful introduction of shaving gels in the middle of the eighties, aerosols represent the biggest contingent in this market also with around 70% of market share. After a staggering development in the middle of the eighties, the production of soaps and creams doubled between 1988 and 1991. Creams represent (with 25%) a bigger contingent in 1994; whereas soaps have only 3% of the market. Their total market share has declined continuously since 1991.

In the shaving sector, exports of 1.6 Mio t and imports of 1.56 Mio t largely compensated each other.

c) Deodorants:

Unfortunately, the figures for the production of deodorants are presented only on an ad-valorem basis. It shows that the production increased continuously in the last two decades. Different products are offered as deodorants:

- (1) aerosols,
- (2) rollers,
- (3) pump dispensers and
- (4) sticks.

The relative demand (cp. Tab. 4.7) shows all different kinds of this product group of deodorants.

Product form	Germany (west)
Aerosols	41%
Rollers	25%
Pump dispensers	18.4%
Sticks	11.4%
Creme	4.2%
SUM	100%

TABLE 4.7: Relative consumption shares of different deodorants
(Source: Twardawa 1993, p. 238)

The alternatives to aerosols secured a growth in market share of 20% in 1981. The share for aerosol use declined from 82% in 1980 to 41% in 1993 in West Germany. Pump dispensers and rollers had a market share of respectively 43%. The little market share of sticks and creams amounted to 15% over the last three years.

An export surplus was achieved in the market for deodorants in 1990: 5.3 Mio t were exported and 3 Mio t imported by a total production amount of 9.7 Mio t.

Due to a concentration phase in the middle of the eighties, the global toiletries market is dominated by some multinational enterprises. Only ten enterprises (e.g., L'Oreal, Procter & Gamble, Unilever) transact 70% of global cosmetic business. Beside these multis, the German market is split up among some medium size enterprises, almost all of which are members of the "Industrial association for toilet requisites and detergents".

As said before, an environmental discussion has existed in the toiletries market for a long time. The main theme in this discussion has been the environmental harm of aerosols. The majority of the industry and traders point out that aerosols are more usable, better in quality and environmentally less harmful. This was also revealed in our interviews and investigation. They argue that aerosol containers can be better sorted and recycled, that they are cheaper in production in comparison to pump dispensers and that pump dispensers are more environmentally harmful due to the synthetic packaging. Furthermore, they think that aerosols are preferred by consumers.

Consumer and environmental organisations do not share this opinion and support a renunciation of the use of aerosols. Aerosols are not sold in refillable packaging and therefore lead to a higher amount of waste. Furthermore, they reply that the alternatives propane and butane which have substituted for CFC are connected with global warming potential and the greenhouse effect. In addition to this, a study by "Stiftung Verbraucherinstitut" (Foundation of

the consumer Institute) about consumer behaviour revealed that most consumers would take a renunciation of comfort and higher prices into account in buying alternative products (test 4/88, p.84).

4.3.2.3.1. The German eco-label for hair sprays, deodorants and shaving products

The German eco-label was introduced in 1979. In the beginning, it referred to all aerosol products which did not contain CFC and whose compounds were not flammable and noxious ("Environmentally benign, sprays without CFC"). Therefore, a maximum content of solvents was required. Beside shaving products, hair sprays and deosprays, this group included, among others, furniture sprays.

After a lot of criticism and the prohibition of CFC in aerosols by the Federal Government, in 1990, the requirements were modified and the product group restricted. According to the new definition, only three product groups (hair sprays, deodorants and shaving foams) belong to the eco-labelled product group. The new requirements which are still in force refer only to non-aerosols products like deo sticks, deo rollers, pump sprays without propellants and their refill packaging ("Eco-label because without propellants"). Further criteria are

- * no use of carcinogenic substances according to MAC-list,
- * no use of toxic, harmful, corrosive or irritant substances according to Annex VI of GefStoffVO,
- * no use of water damaging substances,
- * declaration on used packaging material and
- * products using pump dispensers shall be offered in refillable systems³⁷.

According to a statement of a private research institute (Gesellschaft für Konsumforschung - GfK 1994) alternative products without propellants have not reached the market position expected at the beginning of their introduction. Unfortunately, the Federal Statistical Office does not take into account different types of aerosols. In addition to that, data about the number of producers which use the label and the number of non-users is missing. Therefore, we have to base our study on the use of "sub-criteria" which gave us an impression of the development and the importance of the eco-label.

A trend of the importance might be gained by a statistic about the number of applicants and the number of labelled products. TABLE 4.8 shows our results based on publications of the RAL. It shows that since the introduction of new requirements in 1990 the number of users and of

³⁷ This requirement is not obligatory; only an objective.

labelled products declined radically. No shaving products and only two deodorants, are labelled. Furthermore, the number of labelled hair sprays decreased.

Year	Number of applicants	Number of labelled products	Labelled hair sprays	Labelled deodorants	Labelled shaving products	Other labelled products
1979	5	7	2	2	0	3
1982	25	43	4	7	2	30
1983	27	55	6	7	3	39
1986	28	45	n.a.	n.a.	n.a.	n.a.
1987	26	64	n.a.	n.a.	n.a.	n.a.
1988	37	99	55	14	6	24
1989	35	114	70	12	6	28
1990*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1991	7	18	16	2	0	*
1992	7	18	16	2	0	*
1993	6	15	13	2	0	*

*: change of requirements and restriction of the product group

n.a. = not available

TABLE 4.8: Statistics on labelled hair sprays, deodorants and shaving products and on applicants

(Sources: own elaboration based on information on the eco-label)

The reason for this development can be found in the results of our questionnaire sent to nearly all producers of labelled and unlabelled hair sprays, deodorants and shaving foams and soaps. We received 21% of the questionnaires back. But we could use only 13% of the received questionnaires because the remainder were incomplete (see TABLE 4.9).

Number of producers addressed		Number of answers		No answer possible		Return stroke (absolute figure)		Return stroke (relative figure)	
all	applicants for the label	all	applicants for the label	all	applicants for the label	all	applicants for the label	all	applicants for the label
72	7	9	0	6	0	15	0	21%	0%

TABLE 4.9: Statistics on our own survey

Due to the poor return of questionnaires, we gained further information by telephone interviews of producers who did not send back the questionnaire. The evaluation of the questionnaire is presented in the following section. Although it may not be totally representative, general trends become clear.

Motives for the application for the eco-label are (according to the producers) competitive advantage, its contribution towards environmental protection and its use as a marketing tool. Two producers who can label their products stated that they do not use it because they produce other products with no application for the label, but which are, - in their view - per-se environmentally harmless. Such products would be discriminated by eco-labelled products.

However, *motives for not applying* for the eco-label are that the criteria are too weak, that the enterprise is unable to fulfil the criteria and/or that the eco-label does not possess any economic incentive. In addition to that, one enterprise does not accept the eco-label, another fears the discrimination of its non labelled products and one answered that the environmental harms of its products can hardly be assessed.

A lot of these enterprises still use the ozone symbol of the aerosol association instead to underline the environmental relevance of their products. These labels could only be applied to aerosols.

The enterprises were asked for their assessment of the *familiarity* of consumers and retailers with the label. Most enterprises consider the familiarity by consumers as of medium to high degree. The familiarity of the retailers was assessed controversially. Assessments from low and medium to a high degree were stated.

In addition to that, the *acceptance* of the eco-label by the different actors was assessed by producers. In the assessment of the acceptance by retailers they come to the conclusion that it is of a medium to high degree. In their view, consumers, however, accept the eco-label to a medium degree. The producers disagreed with the assessment of the acceptance by environmental and consumer organisations. They considered the acceptance to a medium, high or very high degree. In the economy, the label is accepted to a middle to low degree, whereas the state accepts it to a medium to high degree.

Almost all of the questioned producers think that the eco-label has not contributed to a *change in producer behaviour*. Improvements of the product range and incentives for innovations cannot be attributed to the eco-label. The improved environmentally more harmless range of products is rather embedded in an environmental guideline and business philosophy. However, one producer and applicant of the eco-label stated that the eco-label contributed to the creation of recyclable plastic packaging.

The interviewed producers were asked about the *goal achievement* of the eco-label. In the following, the results of the assessments are presented:

- strengthening of environmental policy: not realised,
- information for consumers: less than partly realised,
- customer advisory service by retailers: less than partly realised,
- creation of promotion incentives: partly realised,
- acceleration of technological change: between partly realised and not realised,
- appropriate relationship between environmental quality, fitness for use and product safety: not realised,
- adaptation to technical innovations and market situation: not realised,
- reliability of advertisements using environmental aspects: between partly realised and not realised.

Altogether, producers think that - at least the eco-label for hair sprays, deodorants and shaving products - has missed nearly all of its goals.

Most interviewees answered in the negative to the question concerning whether *reduction of environmental impacts* was known to the producers. In their opinion, reduction in environmental impact is a result of environmental discussion and of governmental instruments (like prohibition of CFC) and of a business philosophy which takes environmental aspects into account. Only some interviewed enterprises stated that the eco-label leads to a reduction of solvents in paints and varnishes, to an increased use of waste paper and to a reduction of CFC in aerosols.

The importance of the eco-label might be seen in the *economic efficiency* of the label. Most producers assess its efficiency as low. A possible reason for this is given by one enterprise which underlines that the service and the price of a product is of greater interest than an eco-label, i.e. that the economic benefits due to the eco-label are regarded as quite modest. Only one enterprise regards the marketing characteristic of the eco-label as of high economic efficiency.

As has already been mentioned, aerosols and their alternative products like sticks, rollers, pump dispensers, soaps and creams have been in competition with each other since the beginning of the environmental discussion. From a macroeconomic point of view, *direct side-effects* are not significant. There are no remarkable substitutions in the direction of non-aerosols. One enterprise and user of the eco-label which produces pump dispensers only now, underlines that this production shift was not a result of the eco-label. It rather claims that the global environmental discussion triggered this shift.

The current requirements of the eco-label for non-aerosols are valid until 1995. At that time a revision could take place, but is not required.

It is significant that the majority of the enterprises which do not use the eco-label at present argue in favour of development of the eco-label and the criteria for the future. Development is seen as greater consideration of the use of an LCA in the award of the label. Users of the eco-label disagreed on the future of the eco-label. Some argued that the inflation of labels is questionable, others were of the opinion that the requirements have to be tightened for the future. It must be mentioned that a more critical view of future development was taken by producers who do not use the eco-label because of discrimination against other products.

4.3.2.3. The European eco-label of hair sprays and its discussion

4.3.2.3.1. The introduction of the European eco-label

The European eco-label has been defined for hair sprays as a single product group. This product-group includes two types of dispensers: aerosols and hand pumps. Lead country for the development of criteria was the United Kingdom. Its competent body, the UK Ecolabelling Board, proposed criteria in 1993 based on a study by a consultant, Chem Systems (UK Ecolabelling Board 1993).

Based on interviews with different interest groups Chem Systems identified five individual concerns connected to hair sprays (Chem Systems 1992, p. III-3): CFC- emissions, HCFC- emissions, packaging waste, emission of other propellants and exposure to methylene chloride. The following criteria have been developed and proposed:

- limitation of the VOC content per equivalent pump litres (EPL)³⁸ to 0.72 kg per EPL,
- exclusion of compounds with a photochemical oxidation potential greater than that of n-heptane,
- complete exclusion of ozone depletors,
- complete exclusion of global warming agents,
- limitation of the global warming potential of the formulation to 20 kg equivalent CO₂ per EPL.

Besides that, the weight of the dispenser is limited to values which depend upon the main packaging material. Comparing these proposed criteria with the requirements of the Blue Angel (see section 4.3.2.3.1.), one recognises that the main difference is the restriction of the German product group to aerosol-free products. The other criteria of the Blue Angel are

³⁸ Chem systems defined a functional unit for hair sprays and called it "equivalent pump litre" (EPL). This functional unit should allow comparison of hair sprays using aerosols and hand pumps.

specialities. In contrast to the Blue Angel, the proposed European eco-label takes into account different systems and tries to arrange limits for the use of some damaging substances.

However, this proposal was not accepted by COLIPA³⁹. COLIPA (1993) argued that the eco-label should be based more on scientific criteria and those which will really contribute to the protection of the environment. The representatives of the industry presented (in cooperation with some experts) a counter-proposal. It's main proposals for modification of the criteria are listed below:

- The functional unit, the EPL, has no valid scientific basis. Instead, it is proposed not to differentiate between the two types of hair sprays in the definition of the EPL.
- A limit of VOC content of 87.5% weight/weight is easier for calculation and control.
- A ban on using HFC 152A as a global warming agent does not improve the environment because of the negligible contribution of hair sprays to global warming.
- The proposed criteria on the limited use of aluminium and tinplate cans based on the total weight of dispenser values are impossible for aerosols to comply with using the EPL-concept. This is viewed as not realistic. Current aerosol regulations and related constraints should be taken into account.

This proposal refuses the functional unit concept Chem Systems proposed and tries to distinguish between both types of hair sprays. It was connected with the threat by COLIPA to recommend to members and the whole industry "neither to invest, nor to participate, in the scheme, at least for hair sprays" (COLIPA 1993, p. 2).

This controversy is still not solved. At the moment, the elaboration of criteria has stopped.

4.3.2.3.2. Italy and the eco-label for hair sprays

a) The Italian hair spray market:

Multinational companies (e.g. Procter & Gamble and Unilever) control 90% of the Italian cosmetics market. The hair spray segment is no exception and the hair sprays most diffused in the market are imported (the most well known trademarks are: L'Oréal, Wella, Schwarzkopf, Garnier) or made in Italy by small companies producing the hair sprays which are then marketed with the original trademark of the foreign companies. These are companies specialising in the final bottling and canning of the product. They take the original formulation supplied by their customers and act as a final production unit. They have no influence on the marketing and business decisions of their buyers.

³⁹ COLIPA is the international union of the cosmetics industry.

The Italian production has a very limited market share: UNIPRO⁴⁰ estimate a share of less than 10% of the hair spray market.

Hair care product	1988	1989	1990	1991	1992	1993
Shampoo	413	446	480	531	557	590
Gel	85	91	97	105	106	104
Lotion	86	79	78	87	88	60
Dye	71	82	90	102	118	145
Hair spray	205	235	266	302	312	306
Balm	65	78	97	110	112	120
Setting lotion	20	21	23	24	23	21
Foam	45	55	67	85	97	103
Total	990	1,087	1,198	1,346	1,413	1,499

Table 4.10: Italian hair care market trend 1988-1993 (retail price, in billion Lira, including VAT)
(Source: own elaboration based on Unipro)

The market for hair sprays has decreasing importance. At the moment, new products like foam and gel for hair care are more popular with young people (under 30 years old). Excluding hair salons, (which represent a particular market segment), hair spray in the consumer market is normally purchased by people over 30. In 1993, the hair spray market was, according to UNIPRO, 306 billion Lira (\cong 130 Mio. ECU). Hair spray is the most important product after shampoo, representing 21% of the global market for hair care products. TABLE 4.10 gives hair care market trends for the last six years.

b) The eco-label and the hair sprays in Italy:

The number of opinions collected is limited due to the modest number of Italian operating companies. Moreover, there is difficulty expressing a relevant opinion on the hair spray eco-label because, in general, the eco-label is not yet fully applied in the Italian context. Therefore, we examine in general the Italian cosmetic industry with some reference to the hair spray segment.

Cosmetic products in Italy and in Europe do not indicate ingredients. Manufacturers of cosmetic formulations, as for any other industrial formulations, are obliged to notify the list of all chemical substances present but, to protect industrial secrets, totally based on the formulation recipes, they do not specify in which product they use each chemical neither the

⁴⁰ UNIPRO is the Italian National Association of the Cosmetics Manufacturers.

composition of the final products. Even alternative production and distribution circuits, (e.g. the health and nature shops) with consumers more sensitive to environmental and personal health problems, do not always have a complete and fully informative labelling of their products. Due to the ever growing attention to "natural products", promotion of personal care products is very often based on the marketing leverage of "natural ingredients". This general perception is based on the misconception that natural ingredients could be more healthy than synthetic chemicals even if only an extremely limited percentage of the product (sometimes less than 0.5 %) is not synthetically produced.

Limited is the knowledge and the discussion on the real impact on the environment of the use of different ingredients. Also, discussion on regulation of listing of ingredients on the cosmetic product label is still at an early stage⁴¹.

The cosmetics industry does not have quality labelling because its marketing policy is based on specific product image and is not influenced by price. The product is purchased on an expectation hard to verify, for which a higher price is accepted, hoping to obtain a greater, not always tangible, benefit, i.e. the service to which the product delivers is regarded as a kind of a credence good (see section 2.3.1.).

Within personal care, a different consumer approach is registered for the purchase of everyday-usage products as toothpaste and toiletries. There is a greater price consciousness and attention to effective quality by the consumer.

Industry:

In the Italian health care industry, we generally found a non-favourable attitude to a European eco-label for hair sprays. The UNIPRO judges the eco-label as not suitable for cosmetic products for which the only purchasing motivation should be functionality and safety. UNIPRO thinks that an eco-label has to be used for more polluting products and processes as a driving force to develop systems and products more compatible with the environment. Some experts interviewed in the cosmetic industry feared that an eco-label may prevent innovation in the industry or are convinced that a serious eco-labelling could be awarded to chemical products.

The only Italian producer of hair sprays is Mirato Nuova. Its products are sold in the market under the brand names "Lacca Splendor" and "Malizia". Other producers are still producing for third parties or as a branch of an international brand. The marketing people responsible of Mirato Nuova did not express any particular opinion on eco-labelling: "we stay at window

⁴¹ Some difficulties have arisen already in terminology definition. For example, a basic ingredient in cosmetic formulations is "castor oil". In Italian "castoro" means "beaver" and listing "castor oil" (olio di ricino) among ingredients would raise in the Italian consumer's mind the idea of the mass killing of wild animals. Listing as a major ingredient of a very expensive cosmetic "olio di ricino", an extremely cheap and non exotic component, would not exactly be beneficial for the product image and price.

expecting what will go on". But even the responsible person of the lead company in the hair care Italian market, has not taken the eco-label into account until now; not only due to the international division of the group, but also due to the fact that a debate on eco-labelling for hair sprays is still in its infancy.

An extremely clear example of the industry approach to environmental problems involved the case of aerosol composition. CFC's, because of their non flammability, stability, inertness and reasonable price were the most common propellant for aerosol and, therefore, hair spray until the Montreal protocol of 1987. Before the protocol, no industry changed propellant or came back to pump systems, and the use of environmental topics in marketing competition was assumed to be unprofitable. After the protocol was approval, the use of CFC for aerosol disappeared almost overnight. The industry came back to the hydrocarbon flammable propellants or mechanical pumps and started mass advertising of products not containing the "Ozone killer gases". New and safer technologies are now available. For instance, one year ago Johnson Wax introduced new products for house care; a new system which uses compressed air as a propellant. It is not flammable and the change also permitted a reduction of 1/3 of VOC in product formulation.

Consumer organisations:

The Italian consumer associations devote the majority of their efforts and attention to informing consumers on the price/quality ratio of the different products and on the content of the products. With regard to hair spray, the only issue on which there has been a diffused information campaign with a great consciousness by consumers is "Ozone killer gases". However, the efforts came too late because CFC use as propellant in aerosol disappeared almost immediately and replacement by nitrogen, hydrocarbon or other solutions took place immediately.

The "Movimento dei consumatori" (Italian consumer organisation) supports the introduction of European eco-label because it is regarded as a source of effective information. The eco-label is also seen as a possible stimulus to improving the environmental performance of industry (reduction of raw material and energy consumption and reduction of waste production). There is some scepticism on the possible market effects of the eco-label. The only concern is related to a possible increase in price of eco-labelled products and disappointment over timing on the application of the European directive judged to be too long.

Environmental associations:

The environmental magazine "Eco" regards the eco-label as an incentive to the larger diffusion of "Clean products". They think that an eco-label will increase information density and credibility of . They are in favour of taking the life cycle of a product into account to a larger

degree and against a relaxing of requirements for obtaining the eco-label. Complaints are expressed on the length of the approval process under the European Directive. The opinion is that the eco-label could increase the introduction of innovative products and start a positive emulation in the industry in the direction of greater environmentally conscious company policy.

WWF criticise the lack of rules on advertising. To avoid confusion between consumers, for example, between products of the same line some with eco-label and some without, rules for communication and advertising should be revised. They also propose that "natural resource consumption" should be included in all criteria lists. Finally, to avoid consumer misunderstandings, an eco-label should not be awarded to any disposable product.

Legambiente looks with interest at the eco-label. An eco-label is seen as a chance to increase people's awareness on environmental issues and to promote responsible behaviour in consumers. They worry that negotiation on criteria and standard could find agreement on issues of poor meaning.

Government:

Hair sprays have a very modest importance in the Italian industrial structure so that the formulation of criteria for their eco-labelling is not a first priority for the Government. For example, a Minister of the new government is quoted as saying: "there it will be three thousand years before the greenhouse effect can really influence our life, we shall be dead by that time. Therefore why should we be unhappy for that foolishness" (La Repubblica July 26, 1994). People working at the Ministry for Environment became less pessimistic after the recent agreement by the Italian Minister for the Environment to reconfirm the task of the European Commission on the eco-label.

Conclusions:

The lack of a competent body responsible for directing the eco-label in Italy delays use of this instrument versus other European Member States and means it is not well known to a wide public. There is among operators a generic favourable opinion and, willingness to adopt the eco-label, which gives specific results in some limited areas.

However, because of the mutual distrust between different operators called on to agree on the subject and because of the low priority given to it by the Italian Government, this the favourable attitude does not lead to an effective and coherent eco-label national policy and strategy.

4.3.2.3.3. Germany and the European eco-label

Due to the existence of a German eco-label, there is no real discussion on the European eco-label. Most of the SME-producers of hair sprays do not know of the plan to introduce a European eco-label for hair sprays. The producers who do know the plan doubt its positive effects. Only one producer favours it and would ask for the eco-label after its introduction.

4.3.2.4. Conclusions

An explicit and direct evaluation of the eco-label and its consequences fails. We have analysed the experiences with the Blue Angel in the German case, and in the Italian case, the expectations regarding the European eco-label. Illustrated by FIGURE 4.4 our findings are:

- the discussion on sprays and its components was quite controversial. Whereas at the beginning of the eighties, a lot of scepticism existed and producers did not change the composition of their products due to the eco-label, some years later - after the "acceptance" of the ozone layer damage - producers reacted and changed the mixture of the sprays by substituting other aerosols for CFC. However, this change was not motivated by the eco-label and its criteria but by the general discussion on CFC's.

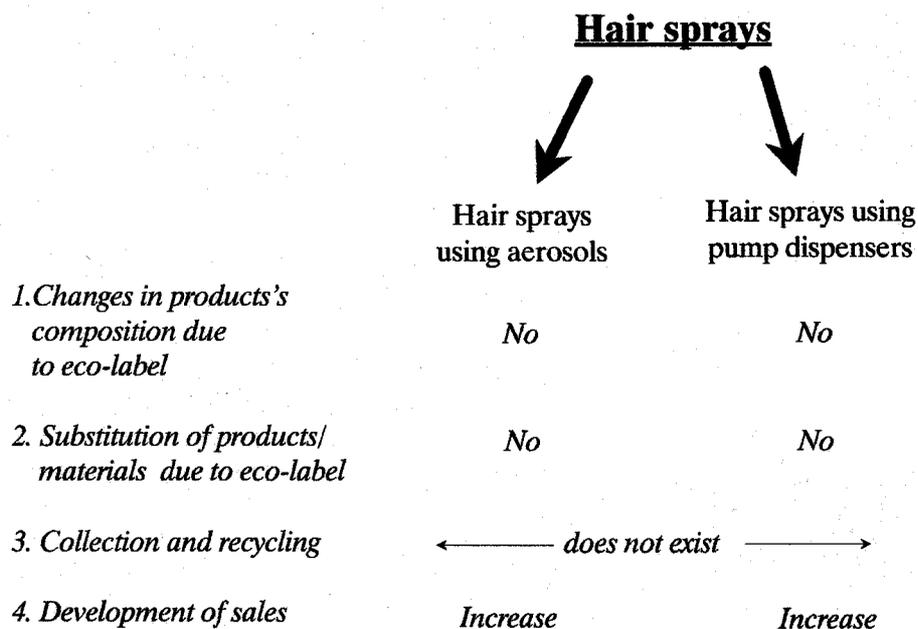


FIGURE 4.4: Résumé of some findings

- a substitution of aerosol based sprays by hand pump sprays occurred on a modest level. However, a continuation of this tendency is not secure. It might be suggested that the eco-label contributed to this development.

- the eco-label is scarcely regarded as a decision support instrument for purchasing processes by consumers.
- the absolute amount of production of hair sprays increased in recent years. There is no tendency to "avoid" this product.
- substitutes for aerosols are discussed controversially: water as a propellant is regarded as bad in relation to its function. Producers and consumers have some reservations over hand-pump sprays.

4.3.3. Other product groups

As already mentioned, the German eco-label is awarded to 70 product groups. Besides the current knowledge presented in section 4.2, we are able to present some additional information on tyres/remoulds.

Since 1978, the eco-label has been awarded to remoulds. This label is the second label created. It can be used for remoulds for heavy goods vehicles as well as those for cars.

In 1994, most of the awarded labels were used for remoulds for cars. That means that this label is oriented towards private consumers and not towards public and/or business procurement.

Year	Number of applicants	Number of labelled products
1986	14	n.a.
1987	15	n.a.
1988	15	n.a.
1989	14	n.a.
1990	n.a.	n.a.
1991	16	16
1992	18	18
1993	6	6

n.a. = not available

TABLE 4.11: Statistics on labelled tyres and remoulds
(Sources: own elaboration based on information on the eco-label)

The tyre market itself is segmented into two or three subsegments: tyres for cars, tyres for heavy goods vehicles and tyres for light goods vehicles. Altogether, about 90-100,000t remoulds were sold in 1990 (Schmidt/Reinke 1992). This amount has stagnated (cp. Sinn et al 1979, p. 23). The % share fluctuates for different market segments: The quota for remoulds for

cars is about 12%, for light goods vehicles 20% and for heavy goods vehicles 48% (Schmid/Reinke 1992, p. 661). Whereas the quota for goods vehicles has remained nearly constant during recent years, the quota of remoulds for cars have been reduced continuously.

Schwenke (1992) explains this development by missing and insufficient information of consumers on quality, environmental advantages and availability of remoulds. He asks for an improvement in business marketing and incentives by public procurement.

Based on this information, we conclude that the eco-label has not influenced the behaviour of producers and consumers.

4.4. Evaluation

Coming back to our five criteria (see TABLE 4.1) for the evaluation of instruments our findings are based both on our own research on two exemplary product groups and on the temporary state of discussion.

Environmental effectiveness:

The relevance of the criterion environmental effectiveness is supported by all of our interviewees. It's performance by sub-criteria is viewed a little bit more critically but it is not rejected.

Both of our examples can be viewed according to the fulfilment of the official objectives of the Blue Angel: the producers of wallpapers think that the objectives have been fulfilled to a modest degree, the producers of hair sprays, however, believe that they have not been fulfilled.

Other sub-criteria like knowledge and consciousness of the eco-label are better accomplished. The Blue Angel is very well known by consumers. Also other actors know it. In contrast to that, the European eco-label is scarcely known (better known in Germany than in Italy).

The reported "success stories" of eco-labelling programmes are at least at this moment more anecdotal events and it is not appropriate to generalise.

It has also to be mentioned that the discussion on the elaboration of an eco-label for a specific product group also possesses a kind of signal function and can contribute to improve environmental effectiveness.

Economic efficiency:

The consideration of this criterion was supported by nearly all of our interviewees. However, it is quite difficult to judge.

The results for both exemplary product groups do not contribute in an obvious way to its analysis. The producers deny any economic advantages and believe that the influence of an eco-label is quite modest. According to theoretical considerations an accepted label - and an official eco-label is accepted by most of the interest groups - could reduce information search and transaction costs of consumers and contribute to a reduction of information costs of consumers.

Beside consumers, retailers might also have reduced information costs by the use of an accepted eco-label: the necessity to inform consumers on some environmental aspects might be substituted by the use of the eco-label.

The gains of producers are still not well examined. Only some anecdotal information is available. According to some hints from previous studies, producers of eco-labelled products increased their sales. But it is not secure that this was the most efficient way. The study Meffert/Ostmeier (1990) carried out mentions that eco-labelled products had some positive influence. However, one must be careful about generalisation.

The implementation and administrative costs of eco-labels are modest against an increased turnover. They consist of label fees and costs for the elaboration, administration and supervision of the programme. Whereas the fees are connected to the annual sales of a labelled product, the programme costs might be more expensive. However, a reasonable cost-benefit-analysis which judges the different effects of a programme in relation to other measures and instruments does not exist.

International labelling schemes like the European eco-label are more expensive due to the involvement of different countries, needing more time and resources for elaboration. National scheme are cheaper in contrast.

Acceptance:

The application of this criterion is supported by all of our interviewees. The real acceptance of eco-labelling differs - at least at the moment - between Germany and Italy.

In Germany, the eco-label is generally accepted among the various interest groups. Nevertheless, its concept, its elaboration process and some agreed specific requirements for some product groups are discussed controversially between them.

The acceptance of the specific eco-labels varies: the producers of wallpapers accept the eco-label for wallpapers to a medium degree whereas the producers of hair sprays accept the label for hair sprays, deodorants and shaving foams only to a low degree. This indicates a trade-off between the general acceptability of the label among the industrial umbrella organisations and

the different industrial organisations and enterprises which constitute them. This statement might also be valid for other interest groups.

The interviewed enterprises also think that the eco-label is to a higher degree accepted by the public, the state and different interest groups.

The interviewed representatives of interest groups believe that consumers, environmental and consumer organisations and the state accept the Blue Angel to a high degree, i.e. among them a general "climate" of acceptance exist. But the same interviewees think that the acceptance by retailers is lower (the answers fluctuate between high and low). Therefore, retailers may be viewed as one bottleneck for the use and success of eco-labels.

The Italian interest groups are much more sceptical. Some reject an eco-label, others accept it, whereas some producers ignore it. In general, Italian public discussion is only just beginning. A growing interest exists, but social actors have uncertain opinions on this topic.

Flexibility:

The application of this criterion is supported by nearly all of our interviewees. Its judgement depends on the concrete concept (elaboration process, technical requirements) of an eco-label.

The requirements of the German and the European eco-label are fixed for three years (except in extraordinary events). Within this period the criteria cannot be modified. Afterwards their modification is possible.

Besides this aspect, it is argued that the formulation of the product groups is too narrow: whereas some specific types within the fixed product group are allowed for the eco-label, others are excluded. Therefore producers lose some flexibility for optimisation of products.

Side effects:

Side effects on competing and/or alternative product groups depend on the formulation of the eco-labelled product group. The more narrow a product group is fixed within an eco-labelling scheme the higher are the consequences for other products/product groups, e.g. the former definition of the product group wallpaper referred only to woodchip paper and paper-based wallpaper and not to the three other segments.

Our research differentiated between side effects within one enterprise and between products of other enterprises: producers often fear that the use of the eco-label would "weaken" their other products if they are not labelled because they would appear as environmentally more harmful. This is used as an argument not to use the eco-label. Looking more on the macroeconomic aspects eco-labels could have an influence by substituting specific products by less harmful

ones within the same product group. However, our examples showed that such a substitution did not exist, at least for the examined examples.

Nevertheless, the discussion on eco-labels and their use has other side effects on competition policy and on other labels. Producers sometimes take "preventive" action by creating own labels or by improving their environmental marketing claims.

A specific Italian discussion on this subject was not perceived.

Main-criteria	Germany	Italy
* Environmental effectiveness	<ul style="list-style-type: none"> - only some anecdotal events - official objectives in the case of wallpapers partly fulfilled, in the case of hair sprays scarcely - high degree of knowledge of the Blue Angel by consumers 	no information available
* Economic efficiency	<ul style="list-style-type: none"> - no exhaustive analysis available - the implementation and administration of the Blue Angel require some persons per year, the European label will cause higher costs due to its internationality. - label fees correspond to sales and are modest. - reduction of information search costs - reduction of transaction costs 	no information available
* Acceptance	<ul style="list-style-type: none"> - the instrument is accepted in general by interest groups with a criticism of some procedural points and some specific requirements. - enterprises are quite more sceptical regarding eco-labels they could apply for. 	<ul style="list-style-type: none"> - a public discussion on this instrument is not existing - the different interest groups are very sceptical. Some reject it, other accept it, producers still ignore it.
* Flexibility	<ul style="list-style-type: none"> - restricted flexibility 	no information available
* Side-effects on competing and/or alternative product groups	<ul style="list-style-type: none"> - producers fear that labelled products could "harm" their not labelled products. - a substitution between different products within the same application area was not ascertainable 	no information available

TABLE 4.12: Evaluation characteristics of eco-labelling in Germany and Italy

In TABLE 4.12 we compare the different evaluation criteria with regard to their state in Germany and Italy. Whereas for Germany a - cautious - evaluation is possible, the Italian situation is hard to judge: the introduction of the European eco-label is only just beginning and knowledge on its impact in Italy is quite modest among the different actors.

4.5. Barriers and opportunities

Based on our research, we are now able to summarise our findings. What are the most important barriers to a more intensive use of an eco-label and for its success (meaning: high market shares of eco-labelled products and substitution of non-labelled products)? We subdivide the barriers into six categories which correspond with important aspects of the instruments' setting:

Awareness barriers:

- Consumers often lack environmental awareness or their willingness to act by purchasing eco-labelled products is limited.
- Consumers perceive eco-labelled products mainly as "green" products and fear sometimes that they are buying products with a minor quality.

Information barriers:

- Consumers often do not know the eco-label and/or often do not know an eco-labelled product of one product-group.
- Consumers and producers are often not well informed on the correct meaning of an eco-label.
- The information costs (including, especially, time for the information search) in ascertaining potential additional environmental benefits are sometimes too high to be taken into account because of the multitude of official or business-owned eco-labels.
- Producers and retailers do not know the label, its criteria or how to obtain it.
- Missing continuous environmental education of consumers and promotion of the eco-label
- The public information on the eco-label programme is modest.
- Consumers have quite often not the time to look for eco-labelled products. Especially for habitualised and impulsive purchases, the time used for information is very restricted. That means that the orientation towards an eco-label is connected to the information need of consumers and their involvement.

Economic barriers:

- SME's have a limited marketing budget and fear the additional costs of an eco-label
- Especially bigger enterprises believe that an eco-label would disturb market competition by harmonising the "outfit" of products of the same group produced by different producers.
- Fear of competition between labelled and non-labelled products of one producer.
- Lack of positive examples as incentive for using the eco-label.
- Eco-labels are perceived as barriers to international trade

Legal barriers:

- Modest restriction of environmentally less reliable advertisement claims, with the consequence that an eco-label might be less attractive.
- Missing concrete prescription for public procurement to buy eco-labelled products⁴².

Organisational barriers:

- SME's have not the time to inform themselves on the complicated field of different label types.
- SMEs, in particular, have no promoter and/or initiator of the application for an eco-label.
- The procedure of application for an eco-label takes too much time.

Technical barriers:

- Some producers claim that the technical requirements are too strong and therefore nearly impossible to fulfil (or too expensive).
- Other manufacturers state that the requirements are not sharp enough and do not take all environmental aspects into account.
- Sometimes eco-labelled products are not available on the market.
- Bad positioning of eco-labelled products in shops.
- The selection of eco-labelled product groups often does not consider important consumption areas within private households.

Other barriers:

- The influence of an eco-label on innovation processes is quite modest. Sometimes, it is also feared that eco-labels would hinder incentives for innovation processes because they prescribe detailed technical solutions.

⁴² See for more information our other case-study carried out within this project (Van der Grijp 1995).

Barriers	Importance in	
	Germany	Italy
<i>Awareness barriers:</i>		
* Lack of environmental awareness or willingness to buy labelled products	●●●	●●●
* Perception of eco-labelled products as products with minor quality	●	●●
<i>Information barriers:</i>		
* Lack of knowledge of eco-label or eco-labelled products	●●●	●●●
* Lack of knowledge on correct meaning of eco-label by consumers	●	●●●
* Additional time for information search on environmental benefits	●	●●
* Missing knowledge on eco-label and on its procedure by producers	●●	●●
* Missing consumer education and public promotion of eco-label	●●	●●●
* Modest public information on eco-label	●	●●
* Insufficient fulfillment of information needs of consumers	●●●	●●
<i>Economic barriers:</i>		
* Additional costs (especially for SMEs)	●	●●
* Disturbance of competition between eco-labelled products of different producers by harmonising the "outfit"	●●●	?
* Fear of competition between labelled and not labelled products of the same producer	●●●	●●●
* Lack of positive examples of successfully eco-labelled products as incentives	●	●●
* Barrier to international trade	●	●●●
<i>Legal barriers:</i>		
* Less reliable environmental advertisement claims still allowed	●	●●
* Missing prescriptions for public procurement	●●	●●
<i>Organisational barriers:</i>		
* Time restriction of SME for information on eco-label	●●	?
* Missing promotion of application procedures for SME	●	?
* Additional time for application for an eco-label	●	●●●
<i>Technical barriers:</i>		
* Difficulty to fulfill requirements	●	?
* Difficulty of "weak" and "lax" requirements	●	?
* Restricted availability of eco-labelled products on the market	●	●●●
* Bad positioning of eco-labelled products in shops	●●	?
* Insufficient selection of eco-labelled product groups	●●●	●●●
<i>Other barriers:</i>		
* Modest influence on innovation processes	●●	●

Explanation:

- [●●●] high importance
 [●●] medium importance
 [●] minor importance
 ? no judgement possible

Table 4.13: Synopsis of barriers to eco-labelling

These different barriers are sometimes contradictory and not all of them point towards the same direction. They are not relevant for all product groups: rather they have been noticed by

us during our general research and interviews and during our analysis of the two examples. Table 4.13 summarises the barriers and tries to evaluate their importance.

What are now positive factors, in the sense of opportunities?

Obviously, some identified barriers could be reduced by specific measures, inter alia a better marketing of retailers and producers. Besides these more practical proposals, the elaboration and use of an official eco-labelling programme could support product-oriented environmental policy by arranging market incentives for a credible environmental marketing of products. As presented in Chapter 2, the environmental quality of a product has the character of a credence quality which can not be recognised by individual consumers. Therefore, it has to be reported by labels, signals, information sheets or other instruments.

These instruments themselves also have to be credible. Consumers' interest organisations do not trust industrial labels because they fear that only some positive aspects are listed, avoiding negative properties. As a consequence, they prefer independent labelling programmes in which different interest groups participate. Such a programme should be embedded into a more consensus-oriented environmental policy based on a pluralistic structure. But an eco-label alone does not create a reasonable product policy.

The objectives connected with an eco-label vary among the interest groups. The active support of the eco-label as an instrument could be improved by a better indication of the connected objectives. This is valid for two aspects: in a more general direction indicating its environmental orientation within the set of instruments of a product policy and in a case-specific direction for each elaborated requirements within one specific product group.

An eco-label is an instrument which completes the set of instruments of environmental policy. It can be used to stimulate innovations and improvement of products. It is an instrument which is "in vogue" because of the tendency and demand to weaken regulatory instruments and to strengthen voluntary instruments.

5. Conclusions

The strengthening of environmental policy is characterised by the trend to modify the choice of instruments. Regulatory instruments do not have a high preference any more - at least officially: the political actors and most of the different other actors prefer now more flexible instruments which contribute to deregulation and "lean" administration. Proactive behaviour⁴³ should be supported. Information instruments are among the preferred instruments. Therefore, eco-labelling might be interpreted as an instrument which is favoured within this context. Our analysis revealed that official eco-labelling is - at least - in general accepted. No interest group argues against it.

A point of discussion and conflict is the role which eco-labelling should possess within the framework of a product-oriented environmental policy. Whereas environmental and consumer organisations argue in favour of a consistent product policy using a mixture of instruments, industry and its organisation see eco-labelling as an instrument which supports their intention to deregulate. This disharmony of objectives and interests influences every debate on eco-labelling.

In the following, we present some conclusions with regard to the different involved actors.

Producers:

Producers have a quite modest interest in eco-labels and their use at the moment. In-depth-studies of this aspect are still missing. Environmental consciousness of producers consists of more elements than the use of eco-labels for marketing purposes. Producers who orient themselves towards an environmental philosophy and guidelines for their management, regard eco-labelling as an important instrument which completes their company internal set of instruments: the more instruments of environmentally conscious behaviour used by an enterprise, the more receptive it is in the eco-label. Or, in other words: offensive environmental strategy uses eco-labelling schemes. That means that an important determinant of a successful eco-label is its embedment into an offensive environmental business strategy.

Quite often enterprises produce different products within a specific product group. At the moment, the definition of most eco-labelled product groups is very restricted. The existing German eco-label for wallpapers, for example, excluded two important product segments, i.e. PVC wallpapers and textile wallpapers until the end of 1994. The eco-label for washing powder is also limited to a specific type, i.e., the modular one. These examples could be continued. As a consequence, the innovation incentive within an enterprise in the sense of a

⁴³ Proactive behaviour means that enterprises act before governmental decrees etc. exist and try to act as "self regulators" (cp. Zundel 1994).

substitution of eco-labelled by not labelled products within one product group is not stimulated. Therefore, from its point of view such an enterprise has to do the splits: using environmental arguments in favour of one product without damaging the environmental acceptance of the other products. These splits are well pronounced for enterprises in which the environmental consciousness is not very well established. That means that another determinant for a successful eco-label is a wide definition of a product group which allows producers to adapt to the new situation. However, a widening may negatively influence its effectiveness - because too many products could receive an eco-label.

It has not yet been examined which type of enterprise uses the label: SME or big enterprises? An eco-label may support innovative products and/or innovative producers which try to come on the market by reducing market barriers. Therefore, we suppose that it could be an instrument supporting SME by offering new market opportunities (at the moment there are different barriers for its use by SME's). Environmentally benign market niches become more attractive and can be covered by innovative producers and products. However, the necessity to fulfil certain requirements of an eco-label can be interpreted as a market barrier.

But nevertheless, an eco-label could also influence imports from foreign producers: in this context, it is discussed that eco-labels would disturb international trade by creating new market barriers.

It was also reported that producers prefer instruments of which the "design" and arranging is calculable for some years. They need time to adapt to the requirements and fear discontinuities. This demand conflicts with the demand of consumer and environmental organisations which prefer an instrument which is flexible and dynamic (that could be interpreted as discontinuous). A "compromise" might be a predictable tightening of the requirements within a longer period of about five to seven years. This proposal was also supported by interviewed enterprises within the two exemplary product groups, especially enterprises which do not yet use the eco-label.

Retailers/trade:

Retailers and the trade in general are the "gatekeeper" acting between producers and consumers. They are able to support eco-labelled products by pushing producers and by pulling consumers - if they are willing to do so. At the moment, trade is often regarded as an important bottleneck for supporting eco-labelled products. This impression was confirmed by our interviews and research.

Trade, and especially retailers, still have an information deficit on the meaning of the eco-label and its dissociation from other voluntary and industrial oriented labels. Specific campaigns directed to them are lacking.

In some Member States, especially Germany, some big traders recently began environmentally-oriented cooperation with environmental organisations (cp. Dittmann 1994) or tried to check their range of products with regard to their environmental aspects. It is not known if the eco-label was used in this context as a decision tool.

Recently, it was proposed to introduce another eco-label for German retailers (cp. imug 1994). This is a hint as to retailers as one important "bottleneck" of an eco-label. But it also illustrates the increasing efforts to improve their environmental performance.

Consumers:

The consumers are not a homogeneous group. A first important distinction is the one between private consumers, enterprises as purchasers and manual workers. Their decision processes and decisive criteria might be quite different. Our research showed that the eco-label is oriented towards individual consumers and might also help public purchasers for their procurement. However, the professional market (e.g., painters) is not a main target group of the eco-label. Consequently, an important share of the market is not influenced by the eco-label.

Considering individual consumers, the environmental impact of a product is only one of different decisive criteria. Other aspects are the price, the design, technical requirements etc. Up now, consumers have often either had to accept quality losses by eco-labelled products or to possess high environmental preferences.

Other interest groups:

The influence of the Green movement and environmental organisations is important. ENDS (1989, p. 21) emphasised in its study that these organisations have had an important influence on behaviour of the public and governmental policy. Forcing them to improve their policy in total. Products also came into focus. And environmental labelling was - and is - an important instrument within this context.

This impression might be confirmed by looking at the German and Italian experiences. Whereas in Italy, the enthusiasm for an eco-label is quite restricted, the label is well introduced in Germany. The use of official and private labels is quite more intensive in Germany than in Italy. That means that a social discussion on environmental topics may support environmental behaviour of the different actors and contribute to the awareness of an eco-label and its use.

State/Government:

The state has always initiated and influenced decisively the development of an eco-label scheme. It supports the elaboration of the requirements by finances and personal resources. Otherwise, there would be no real committee which would be able to assemble the different interest groups.

Abt Ass. (1994) concludes that eco-labels could "translate" official political objectives into the product world by indicating which standards are acceptable and which products are favoured and which not. This statement is - at least officially - not accurate, but members of e.g. the German "Jury Umweltzeichen" reported that the state and its institutions would influence considerably the real practice of eco-label committees and thereby the range of eligible products.

The state as an important purchaser of products is able to stimulate the demand for eco-labelled products by integrating specific criteria in its public procurement. A cost reduction would be stimulated, supporting the demand of private households for eco-labelled products.

Consequences for the eco-labelling/recommendations:

Based on our findings and conclusions, we present some proposals for the improvement of the eco-labelling programme:

- Widening of the definition within one specific product group by considering different types of products.
- Elaboration of priorities for the consideration of product groups. Durable products (e.g. furniture) and products with high production should be considered. That means that different decision types of purchasing processes should be taken into account.
- Screening of the different consumer and/or product segments of a market (i.e. analysis of the different consumed products for the same need/application area). Comparison between demand side and supply side by avoiding supply exceeding demand (because otherwise unexpected and counterproductive effects could arise).
- Improvement of the information policy towards consumers, e.g., by education campaigns.
- Indication of the organisation which awards an eco-label on the label itself.
- Continuous, but calculable intensification of the requirements instead of very strict requirements at the introduction of an eco-label (dynamisation of criteria)⁴⁴.

⁴⁴ This dynamisation is confronted with a trade-off: each tightening of the requirements will reduce the number of products which are allowed to use an eco-label.

- Widening of the requirements of the eco-label by information duties of producers (e.g., instructions for use and disposal).
- Improvement of the exchange of information between eco-labelling countries⁴⁵.
- Review of the objectives of the eco-labelling programme and if necessary updating them.
- Examination of an affiliation of eco-labels with other initiatives (e.g., tax rates of Value-Added-Tax, public procurement, fiscal incentives for SME's producing eco-labelled products).
- Considering more stages of the life-cycle of a product at the elaboration of the requirements. The concept of an LCA has to be improved to be adapted to such purposes.
- Connecting eco-labels for products with services: more functional aspects of the intended use of a product should be considered (e.g., service of painting).
- Specific attention of eco-labelled products at consumer tests of independent test institutions (e.g. the German "Stiftung Warentest") in order to provide some evidence that eco-labelled products are able to meet certain quality standards.

These different proposals can contribute to an improvement of the environmental effectiveness of an eco-label. However, it has to be remembered that an eco-label has to be embedded into the set of instruments within an environmentally oriented product policy.

⁴⁵ Pedersen (1991, p. 7) listed some proposals based on an information exchange among practitioners: decision on mutual criteria and basic standards, decision on clear information and publishing policy, standardisation of inspection procedures, share of inspection reports, standardisation of certification procedures, mutual recognition of certification and establishment of an international accreditation and/or labelling system. Recently UNCTAD (1994b) reported that during a recent meeting of twelve eco-label programmes a Global Eco-Label Network (GEN) has been created with the objective of information exchange and enhancement of cooperation.

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Abbreviations

Abbreviation	English name	Original name
AFNOR	-	Association française de normalisation
AgV	Association of consumers	Arbeitsgemeinschaft der Verbraucher (Germany)
BDI	Federation of German Industries	Bundesverband der deutschen Industrie
BEUC	European Association of Consumer Organisations	Bureau Européen des Unions de Consommateurs
BGA	Federal Health Agency	Bundesgesundheitsamt
BMU	Ministry for the Environment	Bundesumweltministerium
BVP	-	Bureau de Vérification de la Publicité
CENSIS	Centre for social studies	Centro Studi Investimenti Sociali
CFC	Chlorofluorcarbon	-
CO ₂	Carbondioxide	-
COLIPA	European Association for the cosmetics industry	-
D.L.	Legislative decree	Decreto legge
D.M.	Ministerial decree	Decreto ministeriale
DIN	German Standardization Institute	Deutsches Institut für Normung
EAP	Environmental Action Programme	-
ECP	Environmental Certification Programmes	-
ECU	European Currency Unit	-
EDTA	Ethylenediamintetra	-
EEB	European Environmental Bureau	-
EN	European Norm	-
ENEA	National Nuclear Agency	Ente Nazionale Energie Alternative
ENI	National Company for Oil and Gas	Ente Nazionale Idrocarburi
EPA	Environmental Protection Agency (USA)	-

Abbreviation	English name	Original name
EPL	Equivalent pump litres	-
EU	European Union	-
FNV	Dutch Confederation of Trade Unions	Federatie Nederlandse Vakbeweging
GefStoffVO	Hazardous Substance Decree	Gefahrenstoff-Verordnung
GEN	Global Eco-Label Network	-
IBR	Institute for biological construction Rosenheim	Institut für Baubiologie Rosenheim
IÖW	Institute for ecological economic research	Institut für ökologische Wirtschaftsforschung
ISO	International Organisation for Standardisation	-
LCA	Life-Cycle Assessment	-
MAC	Maximum tolerated concentration at work places	Maximale Arbeitsplatzkonzentration
NGO	Non-Governmental Organisations	-
OECD	Organisation for Economic Cooperation and Development	-
PCB	Polychlorobiphenyle	Polychlorierte Biphenyle
POCP	Photochemcial ozone creating potential	Photochemisches Ozonbildungspotential
PPM	parts per million	-
PVC	Polyvinylchloride	-
RAL	German Institute for Quality Assurance and Labelling	Deutsches Institut für Gütesicherung und Kennzeichnung
SC	Standardisation Comittee	-
SME	Small and medium enterprises	-

Abbreviation	English name	Original name
StiWa	Foundation for testing consumer goods	Stiftung Warentest
TC	Technical Committee	-
UBA	Federal Environmental Agency (Germany)	Umweltbundesamt
UNCTAD	United Nations Conference on Trade and Development	-
UNEP	United Nations Environment Programme	-
UNI	(Italian) National Institute for Standardisation	Ente Nazionale Italiano di Unificazione
UNICE	Union of Industrial and Employer's Confederations of Europe	-
UNION-CAMERE	National Union of regional Chambers of Commerce	-
UNIPRO	Cosmetics producers organisation (Italy)	-
UZ	Eco-label (Blue Angel)	Umweltzeichen
VAT	Value-Added-Tax	Mehrwertsteuer
VNO	Dutch Industrial Association	Verbond van Nederlandse Ondernemingen
VOC	Volatile organic compounds	-
WG	Working Group	-
WWF	World Wildlife Funds	-

APPENDIXES

APPENDIX I: The symbol of the German Blue Angel



APPENDIX II: The symbol of the European eco-label



APPENDIX III: The symbol of the French eco-label



APPENDIX IV: The symbol of the Dutch eco-label



APPENDIX V: The state of the realisation of Italy's contribution to the development of the European eco-label

At European level, Italy has the responsibility for preparing a proposal for the eco-label for packaging, refrigerators and ceramic tiles. The working groups are composed of members from the Ministry for the Environment, of the organisation which shall become the National Agency for the Environment, of the producers association, and, only for packaging, academics. Other actors are occasionally invited to hearings.

a) Packaging:

The preliminary study was concluded in 1992. The major issues raised by the debate followed can be listed as follows:

- there was strong opposition to the possibility of awarding the eco-label to packaging as a group of products.
- there was a tendency to award the eco-label to packaging independently from content;
- the packaging plus the content would require an LCA, for which packaging could be eco-labelled only if containing a product which could be eco-labelled as well. Foodstuff and pharmaceutical products have to be excluded;
- criteria for types of packaging related to specific products can be developed;
- the packaging characteristics become the major criterion for eco-labelling.

As a consequence of this preliminary study, the research on packaging continued in two directions, also defined in relation to the contributions and guidelines of the other European Members and by the different Groups of interest:

- * to set the criteria which packaging have to meet to be environmentally compatible. These criteria can be divided into two groups :
 - general criteria, i.e. valid for all the categories of products;
 - specific criteria, i.e. to be set up case by case for each specific group of products.
- to analyse the different categories of packaging, dividing them in subcategories, to define an LCA for each sub category and to set the criteria for awarding of the eco-label for the packaging category by category independently from the packed product.

Based on these considerations a new report was then presented in June 1993, containing the method for choice of the right package to be used and the criteria relating to types of packaging with products in the process to be awarded by the eco-label.

The method takes into consideration three parameters:

- the relative weight (W) of the packaging (expressed as weight of the package/system functional unit)
- the recycling factor (RF) expressed as the content of recycled material used in the packaging production;
- re-use efficiency (RE) calculated by multiplying the rate of packaging recovery by the value of the energy saving factor (EF) obtained by the recycling. This energy factor (EF) is equal to the energy needed to manufacture a new packaging without the use of the recycled material. Data on the energy consumption for different types of packaging are listed by BUWAL (1991).

These 3 parameters define the "Characteristic factor of the packaging" (CF) as follows:

$$CF = \frac{W}{RF \cdot RE}$$

By comparing different values of CF for different systems of packaging in each group of product the lowest value of CF gives the packaging environmental compatibility for the product going to be eco-labelled.

There is a simplified formula using only the relative weight W and the recycling factor (RF) which is also proposed in the working group. However no official decision has been taken for the eco-label of the packaging, nor for the definition of a standard method for the evaluation on how to better environmentally package different groups of products.

* **Refrigerators:**

Italy has also been designated as the leading country for the eco-label for refrigerators. The preliminary study and report has been carried out by the Minister for the Environment, ENEA (the National Institute for Alternative Energies), and ANIE (National Association of Electric and Electronic Appliance Manufacturers).

The first proposal came out in 1993 and was subjected to a number of critical comments for which it was revised. In March 1994, a second version was presented for discussion and contribution of the different Members of the European Community.

The working group on the refrigeration eco-label identifies 12 classes of household cooling appliances. This classification differs from the European classification listed in the Directive 94/2/EEC which is about the energy labelling of refrigerators and freezers. In particular, the working group proposes four different classes of "no-frost" refrigerators; whilst the European Directive does not consider "no-frost" refrigerators as a separate category.

The working group proposes an energetic threshold for the awarding of the eco-label. This energetic value is based on the electric consumption for the equivalent volume of the refrigerator. The threshold value of energy consumption to obtain the eco-label is greater than that obtainable by the best technology but lower than the average value for the models presently on the market.

The working group proposal also excludes from the eco-label scheme the appliances using blowing and refrigerating fluids with an Ozone Depletion Potential (ODP) greater than zero.

The comments on this proposal were as follows:

- many countries have requested a harmonization between the European Directive of Energy Labelling and the eco-label scheme (in which the increase of the number of the appliance categories to 12 to include the "No-frost" appliances was rejected by some countries). However, the working group was arguing the "No-frost" appliances should be considered separately, because they are particularly appropriate for operation in climatic zones characterized by high temperatures and high humidity level.
- some countries proposed to set the energetic threshold limit for the eco-label to the value corresponding to the energy consumption of the classes A and B of the EEC directive 94/2 but the working group refused this position as less than 20% of the refrigerators on the market could have been eco-labelled⁴⁶.
- other countries wanted to include a Global Warming Potential (GWP) coefficient equal to zero (along with the ODP = 0, already included in the proposal of the working group as a criterion for awarding the eco-label). This request, supported by the Greenpeace association, was in real terms excluding the usage of HCFC 134, one of the former substitutes for CFC awarding of the eco-label the technologies based on the use of hydrocarbons.

This objection was also rejected by the working group as the use of hydrocarbons increases the Volatile Organic Compound (VOC) release with an increase of the potential formation of photochemical ozone, and, according to the working group, "the contribution to the VOC emission due to all the discarded appliances in one year in the European community if all operated by hydrocarbons would have the same magnitude that the contribution to the CO₂ (GWP) emission due to the release of the HCFC in the same condition" (ENEA 1992).

Ceramic floor and wall tiles:

Italy has also started a preliminary study on the eco-label for ceramic tiles. The working group made a very preliminary report in 1993 and a second revised proposal in March 1994. This

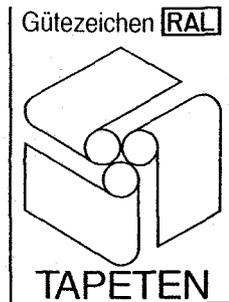
⁴⁶ As mentioned earlier, the qualifying levels are controversial. Therefore, a uniform level is still missing.

study has been carried out by the Ministry for the environment, ENEA and ASSOPIASTRELLE (the association of Italian tiles producers).

The initial study was criticized as totally based on Italian technology, but 50% of European ceramic tiles are produced in Italy. The second report (March 1994) proposed the following criteria for awarding tiles an eco-label :

- energy consumption in the production process
- gaseous emission of the production cycle
- water consumption and water waste
- recycling rate of the production sludge.

APPENDIX VI: Quality mark for wallpapers



APPENDIX VII: IBR-label



APPENDIX VIII: CFC-label



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