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ANALYTICAL STUDIES ON TRADE, ENVIRONMENT AND DEVELOPMENT

PROFITING FROM GREEN CONSUMERISM IN GERMANY

Opportunities for Developing Countries
in Three Sectors:
Leather and Footwear, Textiles and Clothing,
and Furniture



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EXECUTIVE SUMMARY

Although at a somewhat slower pace in recent years, “green consumerism” has been on the rise in Germany and is increasingly bearing upon markets of key export interest to developing countries. The present report reviews the consequences of this phenomenon in Germany for the export opportunities of developing countries in three sectors: textiles and clothing; leather and footwear; and timber and furniture. It aims at providing information for exporters in developing countries on the main manifestations of “green consumerism”, such as eco-labelling initiatives and environment-related standards and regulations, and suggests market-oriented strategies for suppliers in developing countries which may help them take advantage of “green consumerism”.

The report consists of six chapters. After a brief introductory chapter, chapter 2 analyses the greening of the demand side in Germany, and reviews the environmental awareness and purchasing behaviour of German consumers. It also analyses the willingness-to-pay more for environmentally preferable products in the three target sectors. Chapter 3 provides an overview of eco-labelling and environment-related standards and regulations in those sectors. Chapter 4 analyses the greening of the supply side in Germany. It describes the latest eco-trends in the three sectors and gives examples of the development of “green” markets and associated cost effects. It also analyses specific government support policies and autonomous initiatives of the private sector. Chapter 5 reviews promising export strategies for developing countries. Finally, chapter 6 sets out a number of general conclusions and possible follow-up activities. An appendix lists the addresses of relevant public and private authorities, organizations and associations in order to facilitate contacts between exporters and importers.

The report concludes that export-oriented firms in developing countries should be encouraged to pursue a pro-active strategy that not only relies on short-term exploitation of comparative cost advantages, but also attempts to narrow the technological gap between developed and developing countries. For this purpose, suppliers in developing countries should closely assess the existing and emerging environmental requirements of export markets and investigate, with the assistance of German partners, new technological opportunities. Since a central body for collection and distribution of relevant information does not exist in Germany, forms of continuous exchange of information and experts should be established with organizations, such as the Federal Environmental Agency (UBA), the Association for Technological Cooperation (GTZ), the German Standardization Institute (DIN) and central and regional chambers of commerce. Another way of intensifying cooperation could be the establishment of “company partnerships” between eco-pioneers in Germany and exporting firms

in developing countries through, for instance, company visits, exchange of personnel or regular on-line communication. Such partnerships could also be instrumental in the training of managers in cleaner production methods.

As a first practical step in the above direction, the report proposes intensive networking among producers, retailers, industrial associations, and government agencies of developed and developing countries which, in addition to providing a regular exchange of information and experience, identifies suitable ways of cooperation and alliances along the product chain, including marketing. With this objective, the report encourages the holding of sector-specific, bilateral workshops bringing together actors from a source developing country and from a target developed nation, based on a background paper like this study on Germany. Such workshops, with the participation of experts from government institutions, consumer organizations and the private sector, can review export opportunities and simultaneously take a first step towards the creation of specific partnerships among the actors involved.

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1. INTRODUCTION

“Green consumerism” is a growing phenomenon in Germany, although it is often restricted to “green” market niches and appears to address only a core group of “green” consumers. The emergence of “green consumerism” is the result of an environmental debate that started in the 1970s. During that period, environmental policy in Germany focused mainly on industrial production processes, such as energy supply, and on certain environmental media such as air pollution. In the late 1980s, discussions were supplemented by a more “holistic” view of products and their environmental impact over the entire life cycle, i.e. raw material extraction, manufacture, use and final disposal.

While responsibility for the improvement of environmental quality lay with the Government in the early stages, this principle later changed, moving towards concepts of “shared responsibility” in which not only the Government, but also firms as suppliers of goods and consumers as their users are considered. A well-known example of this kind of ecological product stewardship is the packaging ordinance introduced in 1991, which calls on the supply side to take back used product packaging. Beyond this reactive approach, some companies proactively started to improve the environmental quality of their products in order to achieve additional benefits in “green” market segments. These products include paints and varnishes with a low hazardous substances content, accounting for about 40% of the do-it-yourself segment, and eco-food, which has secured a market share of approximately 2% in Germany. The “greening” of producers and manufacturers is accompanied by a gradually increasing environmental awareness in the procurement departments of large retail companies, such as Otto, Hertie and Neckermann. The largest of them Quelle has achieved a turnover of almost DM1 billion (\$550 million) with ecologically improved products, which accounted for approximately 11% of its entire turnover in 1997/98 (Quelle, 1998).

As a side effect, eco-marketing became more and more demanding and its instruments more and more elaborate. Since the introduction of the “Blue Angel” scheme in 1978, ecolabels have played a prominent role in the marketing policy of “green” companies. They are regarded as a means of easily attracting the consumers’ attention in a market in which product differentiation had to be more sophisticated. It is estimated that there were about 1,000 different product labels in Germany in the mid-1990s. Although this figure might be too high, it is obvious that ecolabels are in vogue; but, paradoxically, German consumers are more and more confused about the eco-advantages conveyed by a label.

Apart from this, ecolabelling may have contributed to an informal eco-standard setting in some market segments what could be regarded as an effective trade barrier for foreign suppliers that do not meet these standards. This report analyses that issue. It is aimed at

- providing information for developing countries on the phenomenon and the potentials of “green consumerism” in Germany;
- providing a synopsis of ecolabelling initiatives within different prod-

uct groups and summarizing environment-related standards and regulations, focusing particularly on textiles, footwear, tropical timber and food; and

- suggesting some market-oriented strategies for foreign suppliers to help them take advantage of the phenomenon of “green consumerism”.

The study underlying this report has stressed the experiences and the opinions of practitioners, e.g. government, labelling authorities, producers’ and consumers’ associations, retailers, enterprises and environmental non-governmental organizations. It is mainly based on first hand information collected by means of interviews. Because of the use of this method, it has to be borne in mind that the results presented are themselves based on the author’s personal interpretations and cannot therefore be regarded as strong empirical evidence.

We have attempted to draw an almost complete picture of “green consumerism” in Germany, but because of the methodology chosen and time and financial constraints our “surveys” cannot always be regarded as strictly representative. However, fruitful insights are provided, and we hope that these can help exporting firms from developing countries to understand and profit from the increasing “greening” of the German market.¹

The report consists of six chapters.

After a brief introductory chapter, **chapter 2** describes the „greening“ of the demand side by discussing consumers’ environmental awareness and environmentally friendly purchasing behaviour, and by analysing the willingness to pay more for „cleaner“ and possibly more expensive products.

Chapter 3 provides an overview of different labelling activities in Germany and summarizes environment-related standards and regulations as well as recently observed trends regarding textiles and clothing, leather and footwear, and tropical timber and furniture.

The greening of the supply side is illustrated in **chapter 4**, which describes the latest eco-trends in the above-mentioned sectors and gives examples of the development of „green“ markets and associated cost effects.

Chapter 5 suggests possible strategies for foreign suppliers to enable them to cope with the „green“ challenges of the German market.

Chapter 6 sets out some general conclusions and possible follow-up activities.

In the **appendix** we have listed the addresses of relevant organizations, authorities, companies and the like in order to facilitate contacts and further cooperation.

This study is part of a project, entitled Environmental Factors and Trading Opportunities for Developing Countries, financed by the Government of Italy. The study is based on a background paper, prepared by the Ecological Economics Research Institute, Heidelberg Branch, Germany.

2. THE GREENING OF THE DEMAND SIDE IN GERMANY

2.1. Consumer awareness and consumer behaviour

After outlining environmental awareness and environmentally sound behaviour in Germany, we shall assess the potential role of ecolabels in the context of increasingly environmentally sound consumer behaviour.

Together with a description of environmental awareness and environmentally sound behaviour, this report highlights a number of preconditions for efficiency as regards the impact of ecolabels. Numerous results of inquiries are available in this field, whereas there is only very little empirically substantiated experience concerning the perception, consideration and impact of ecolabels.² In addition, in the product groups to be considered, ecolabels have been awarded only recently or not yet at all.

2.1.1. Environmental awareness in Germany

Several studies in recent years show a high level of environmental awareness in Germany. While it increased steadily during the 1980s, it is now stable at a high level (BMU, 1996, p.14). Between 70 and 80 per cent of the population consider themselves environmentally aware.³ Even if in a particular study other topics exceed the environment in importance, all studies confirm that environmental issues are always among the three most important socio-political problems (BMU, 1996, p. 7). According to experts, a decrease in environmental awareness can be considered unlikely.

2.1.2. Environmentally sound behaviour and willingness to pay

However, widespread environmental awareness is not always converted into environmentally sound behaviour. By means of different indicators, several studies show that only 20 to 31 per cent of the population act in an environmentally sound way.⁴

As far as the willingness to pay higher prices for greener products is concerned, data on this vary between 35 and 62 per cent for western Germany. In eastern Germany, the corresponding figures are between 17 and 38 per cent.⁵ Some studies sought to find out how much more consumers would pay for a more environmentally friendly product and concluded that 36 per cent of the all-German population would pay up to 5 per cent more, 12 per cent would pay 6-10 per cent more, and only 3 per cent would be ready to pay 11-15 per cent more (UBA 1994a, p. 103).

It becomes apparent that the willingness to pay additional prices in eastern Germany is less than in western Germany. This can be explained mainly by the relative differences in level of incomes and unemployment rate. In addition, the environmental discussion in eastern Germany is not as advanced as in western Germany for historical reasons.

Both in the western and eastern part of the country, this trend is equally downward. The European Union's regular Eurobarometer survey, for example, shows that between 1992 and 1995 the number of people willing to buy an environmentally friendly product if it was more expensive fell from 75 to 50 per cent (IIED, 1997, p.15). It must be assumed that this decline is due above all to the stagnating economy, decreasing spending power and increasing unemployment.

To summarize, around 5-15% of German consumers are „deep green“ and may pay a slightly higher price for environmentally sound goods. Another 50% will buy eco-products if it is made easy through clear labelling and if they are not more expensive than the alternatives. However, for around 40% of consumers the environmental friendliness of a product will never be a factor in their purchasing decision (IIED, 1997, p. 15).

Concerning the translation of environmental awareness into practical behaviour, there are obviously some obstacles in everyday life. Among other things, there may be a lack of information about alternative possibilities of behaviour as regards purchasing decisions, or other factors may be more influential than environmental awareness. Weskamp (1996, p. 14) mentions further barriers resulting in a renunciation of environmentally sound consumer behaviour:

- higher prices for comparable articles;
- less availability;
- lack of aesthetics;
- habits, and
- doubts about genuineness.

Moreover, many trade and producers' representatives emphasize that the environmental aspect plays only a secondary role in making a purchasing decision. After, for example, price, quality or personal taste, environmental tolerance is often mentioned only as a secondary factor providing an additional benefit. This additional benefit is often realized if the other factors match the consumers preferences (e.g. if green products are not more expensive). In many cases, however, other determinants are ranked higher than environmental soundness. Since the latter is not the main purchasing motivation in many cases, it is often overcompensated and not taken into consideration at all.

2.1.3. The relevance of ecolabels for environmentally conscious purchasing

Qualitative aspects

Ecolabels are a suitable instrument for indicating the environmental quality of a product to consumers. In particular, they reduce consumers' need to obtain information on the products' environmentally relevant qualities. The ecolabel's symbol signals a certain environmental quality and may be taken account of in making a purchasing decision in addition to the price. It is assumed that this increases sales of the labelled products or creates the potential for higher prices.

The effect described above will be less if many different ecolabels exist for the same category of products. Where there are a variety of labels, additional information is needed in order to enable evaluation of their actual qualitative meaning. This may easily lead to overloading consumers with information and raise doubts about the reliability of the information provided (compare Weskamp, 1966, p. 13.). Rubik and Weskamp (1995, p. 17) point out that the actual use of product labels depends on perception as well as on the reliability and reputation of a label. One must proceed from the assumption that every new ecolabel diminishes the reputation of existing ones, at least for a while. Consequently, the effect of individual ecolabels on purchasing decisions is restricted.

Empirical findings

The “Blue Angel” is Germany’s well-known and highly reliable ecolabel. In addition to this ecolabel, a multitude of ecolabels for different product groups have come into existence more recently (see chapter 3). According to consumer associations, this diversity and the divergent motives for awarding these ecolabels tend to confuse consumers. This makes it difficult to evaluate an individual statement. Many ecolabels still lack the necessary consumer confidence. Awarding institutions have not yet been able to create a good reputation and reliability. As a result of this lack of confidence, some ecolabels have hardly any influence on purchasing decisions.

The percentage of western German consumers taking notice of the “Blue Angel” ecolabel while shopping has decreased a little in recent years, falling from 62 per cent in 1993 to 59 per cent in 1994 and to 51 per cent two years later.⁶ This might be due to confusion among consumers caused by the introduction of several other ecolabels and a possible consequent reduction of the “Blue Angel’s” reliability (compare BMU, (1996, p. 25 f.). Assuming that “Blue Angel” products are more expensive, less purchasing power during the period examined could be another explanation.

Perspectives

The introduction of more and more ecolabels has triggered discussions among companies and consumers. The debate is about how ecological and social responsibility could be reflected more strongly in products, production and consumer behaviour. In this context, voluntary self-commitment beyond legal specifications and voluntary provision of product information as instruments of environmental policy have been broached to a greater extent than before. Thus, ecolabelling as a subject is increasingly finding a response.

Basically, there are two opposing positions. Representatives of the more free-market and liberal position trust that in a competitive process the „best“ ecolabels will emerge. They will prevail in the market and be accepted by all market participants as a reliable signal. Other ecolabels will disappear because they will no longer be heeded. Thus, the voluntary, market-based instrument of ecolabelling would contribute to an ecologization of the economy and consumption.

A central idea of the opposite position is that information and trust cannot be compared with other goods. Thus, market principles cannot be applied to ecolabels. A competition and selection process like the one described above will never take place. Rather, one has to proceed from the assumption that a flood of competing ecolabels will result in the destruction of the consumers' trust in these instruments. They will thus prove ineffectual. For this reason, the government should work towards a unification of ecolabels. State intervention would limit the number of labels, ensure the participation of important social groups and guarantee reliability.

As voluntary instruments are to the fore in German eco-politics at the moment, a restriction on the use of ecolabels is not to be expected.

On the basis of practical experience, it would seem that consumers are likely to be confused in the short run owing to the introduction of many different ecolabels. This involves the danger of information overload and the undermining of consumers' confidence in the meaning of ecolabels. In this case, they will be ever less ready to make their purchasing decisions on the basis of an ecolabel.

The medium-term development of the readiness to make purchasing decisions on the basis of ecolabels depends on consumers' confidence in ecolabels. Only if a good reputation and trustworthiness can successfully be created within the dynamic process of criteria development, control and certification will an ecolabel be accepted as a signal and as exercising an influence on purchasing decisions.

2.1.4. Ecolabelling and the selected product groups

Textiles and clothing

In purchasing decisions on textiles and clothing, the following factors play a specific role:

- Clothing has a social function. It is supposed to make a statement about the person wearing it, and this results in an individual style. In this context, fashion plays an important role with many people striving to follow up-to-date fashion trends. The matching of personal styles with fashion represents an important factor in purchasing decisions, and is presumably more influential than a marking by ecolabels.
- Clothing is bought only when it fits well. Another specific factor, presumably more important than environmental acceptability, is comfort.
- As clothing and certain textiles come into direct contact with human skin, they may cause irritation and impairments when there are residual traces of harmful substances. As such substances have frequently been suspected of being one of the causes of the increasing number of skin diseases and allergies, the safety of clothing as regards health has become more important. Ecolabels indicating that the products in

question are highly unlikely to be health hazards may therefore play a role in the purchasing decision of affected and sensitive persons. This applies all the more since the media have widely publicized this topic, i.e. textiles and clothing causing health problems, in recent years. Television, daily newspapers and professional journals have all taken it up repeatedly, focusing on textiles touching the skin (underwear, bed linen) as well as baby and children's wear. To what extent this has triggered a sensitization and a lasting effect on demand behaviour is difficult to tell. According to association representatives, negative media presentation of individual items or companies often leads to only temporary changes in purchasing behaviour. Consequently, there is not necessarily a change in the products offered for sale.

Since a purchasing decision regarding textiles and clothing is influenced by many factors, it is difficult to isolate and evaluate the potential effect of ecolabels.

Leather and footwear

In this field, factors similar to those for textiles and clothing apply. There are, however, a few special features:

- Because of the function of shoes, their fit presumably plays a crucial role in the purchasing decision. This applies particularly to people who are dependent on excellent footwear for orthopaedic reasons. This factor tends to relegate the effect of ecolabels to the background.
- Shoes have slightly less potential than clothing to injure health because they rarely come directly into contact with the skin. However, through sweat or rain, the residues of tanning agents, dyes and adhesives may reach the skin and be absorbed by it. Some of these residues may cause allergies, nervous lesions or even cancer (Bernard, 1996, p. 30 ff.). In this context, an ecolabel definitely has a chance of being heeded. However, the topic of shoes as a health hazard has not been covered by the media to the same extent as hazards due to textiles and clothing.

This points to a weaker position for ecolabels in the field of leather and shoes than in the field of clothing and textiles. The potential effect of ecolabels is even more difficult to assess here than with regard to textiles and clothing.

Tropical timber and furniture

The peculiarity of tropical timber lies in the fact that it is a resource from the rain forest fulfilling an important function within the global ecological balance. Destruction of the rain forest indubitably leads to damage to the global climate. In Germany, there has been increased sensitization regarding global environmental hazards in recent years. Until 1989 a lot of non-governmental environmental organizations exploited this environmental awareness and emotional accessibility in Germany during campaigns against the consumption of tropical timber. According to a Greenpeace representative, their central argument was that commercially available tropical timber

would often originate from destructive exploitation complying with no ecological criteria at all. Such exploitation would irretrievably destroy the rain forest as an important resource and leave behind ecologically worthless land. In addition, certain infrastructures have been created for the purpose of timber exploitation entailing settlement and use of rarely touched forest areas. As a consequence, the pressure put on the forest would be increased because of further human exploitation.

The negative media campaign against tropical timber caused many hardware and home improvement stores to voluntarily remove tropical timber to a great extent from their product range. In addition, the discontinuation of the use of tropical timber was adopted in many procurement directives of public municipal corporate bodies. The demand for tropical timber then dropped enormously, especially in some ultimate consumer areas (e.g. up to 80 per cent in the do-it-yourself-sector⁷). This happened particularly, where the use of tropical timber was visible, e.g. in case of construction material in the do-it-yourself-sector and in the case of windows (Brockmann et al., 1996, p. 164 f.).

The German non-governmental environmental organizations support initiatives for awarding ecolabels for timber from sustainable forestry. They interpret such certification as the chance to create incentives for forestry oriented according to ecological criteria in all climatic zones. When there are reliable certifications for timber from sustainably managed forests, the non-governmental environmental organizations will recommend the exclusive purchase of timber and wooden products with corresponding ecolabels for the consumers.

The population's sensitivity to tropical timber indicates that a label for timber from sustainably managed forests entails increasing acceptance and therefore once again increasing utilization. Thus, a conversion to sustainable forestry could lead to increasing demand in correspondingly certified timber. This emerges from a study by Brockmann et al. (1996) on demand behaviour in Germany regarding tropical timber. Different scenarios show a potential rise in demand of 9 to 24 per cent (Brockmann et al., 1996, p. 168 f.). Moreover, Brockmann et al. (1996, p. 165 f.) assume that consumers would accept up to a 5% increase in price for certified tropical timber.

An argument against the effectiveness of a label is the lack of personal concern about destruction of rain forests. In the case of textiles and leather, health risks for one's own body may be entailed. However, neither the effects of a destructive exploitation nor of a sustained cultivation of the rain forest have been sensitive issues in Germany up to now (Brockmann et al., 1996, p. 164). Moreover, some representatives of the timber industry point out that the sensitivity of the German population to the use of tropical timber has decreased again after the zenith of campaigns and the development of alternative certifications. Thus, they do not believe that the initiatives for awarding ecolabels for timber from sustainable forestry, as far as tropical timber is concerned, are very significant.

2.2 A brief market survey of textiles, leather, and timber

Textiles and clothing

The textiles and clothing industry in Germany has undergone a mainly import-induced structural change that is reflected in a substantial reduction in real production figures and employment over recent decades. Together with the United States, Germany is among the largest importers of textiles and clothing in the world. Today, between 80 and 90% of German clothes consumption is accounted for by imports, preponderantly coming from developing countries (see Weskamp, 1996). Correspondingly, the trade balance showed an import surplus of DM 22.4 billion (\$14 billion) in 1996. In the clothing sector especially, import figures have risen by a factor of 11 over the last twenty years. In 1996, clothing to the value of about DM 22 billion (\$ 13.75 billion) was sold in Germany and the share of clothing-related expenditures per household was up to 5 per cent in the same year (BTE, 1998; SZBA, 1996).

In the literature a market share of 0.2% was reported for eco-textiles in Germany in 1993 (Hasselmann, 1996, p. 151 and p. 185 f.). During the last couple of years growth figures in the "green" market niche, especially mail order businesses, were up to 15 and 60% per year. It might therefore be the case that more and more consumers are searching for "cleaner" alternatives in the textile sector. However, this trend has occurred so far only in a very small market segment; the largest eco-retailer PANDA had some DM 100 million worth of business in one year, while the largest "conventional" retailer - QUELLE - had an annual turnover of about DM 7 billion, i.e. 70 times more. On the basis of this comparison, the „green“ market niche in the case of textiles and clothing may be estimated to account for 1 to 2 per cent of the entire textile market today.

Leather and footwear

The worldwide production of leather is approximately 500,000 tonnes a year, of which more than 50 per cent is processed by the footwear industry (Rosenkranz, 1996, p. 14). More than 60 per cent of worldwide shoe consumption is manufactured in South-East Asia (Ökoinvest, 55/1994, p.2). The footwear industry sells 400 million pairs of shoes in Germany each year, 80 per cent of which are imports from foreign countries (Ax, 1996; Ökotest, 10/1994). The annual turnover of the German market for footwear is about DM 17 billion (\$ 10.6 billion), of which DM 13 billion (\$ 8.1 billion) are sold through specialist shops (Ökoinvest, 55/1994, p.8).

Compared with the "greening" of the textiles market, the eco-dynamics in the leather and footwear sector in Germany are obviously less considerable. The focus is mainly on the toxicology of the final product, and environmental impacts in previous life cycle stages have so far received very little attention. The market share of leather certified mainly for its very small hazardous substances content is estimated at 1% to 3% in Germany (Rosenkranz, 1996, p. 21). The economic impacts of future eco-trends in this segment cannot be clearly anticipated.

Timber and furniture

German domestic consumption of timber is dominated by coniferous timber, 80% of which originates from German forests, while tropical timber plays a minor role, accounting for only 5% of domestic consumption. The volume of tropical timber imports increased up until 1992 despite boycotts, mainly owing to an increase in imports of furniture and furniture parts, building material and plywood. In 1993, however, tropical timber imports experienced a slight decline that is continuing and has even been growing: from 1995 to 1996 import figures dropped by approximately 35 per cent (1995: 433,236 m³; 1996: 276,482 m³). The main exporters of tropical timber to Germany are Cameroon, Congo, Ghana and Malaysia.⁸

A comparison of the volume of timber imports from tropical countries between 1989 and 1992, revealed that Germany imports considerably fewer logs and less sawn wood, but more veneers and plywood. The authors of a recently published study conclude that this may at least be partly ascribed to the anti-tropical timber campaigns in Germany, which caused a decrease in visible uses (sawn wood) and did not have a substantial impact on invisible uses of this timber (plywood).⁹

As far as final consumption of tropical timber is concerned, the industrial sector is the most important one. Tropical timber is preponderantly used as a building material, e.g. for doors, windows, wall elements and floors.¹⁰ Its utilization in the private sector, e.g. for wooden plates, furniture and household utensils, plays a minor role (Brockmann et al., 1996, p. 53 ff.).

Although the economic importance of tropical timber is inconsiderable in Germany, it may have an important role for producing and exporting countries. The German Rainforest Initiative (Initiative Tropenwald) estimates that, on average, 5 to 10 per cent of the entire workforce in countries of South-East Asia and Africa are employed in the wood processing sector. In countries such as Malaysia, Cameroon or Ghana, this figure may be as high as 15 per cent. Burma derives almost one-third of its entire export earnings in 1988 from exports of timber and timber products. The corresponding figures for Indonesia and Malaysia are approximately 14 and 12 per cent respectively.

There is a huge debate in Germany about the desirable criteria for timber from sustainably managed forests. So far, only very few eco-labelled timber products are available in Germany. However, in a recently published study on the potential of certified tropical timber different scenarios regarding possible consumer behaviour were analysed in a computational model. According to the study, the demand for certified tropical timber in Germany is expected to rise by 9 per cent to 24 per cent compared to the year 1993.¹¹

2.3 Price-related characteristics of “green products”

No comprehensive analysis of price differentials among eco- and non-eco-products and also among eco-products themselves has yet been carried out. Hence, the data provided below can merely help to illustrate this issue.

The assessment of price differences between “conventional” and “green” products was carried out by reviewing the catalogues of the three largest companies of “conventional” and “green” mail order companies in Germany. The price comparisons refer to selected textile and leather products. The company’s full product range was taken into account. Quality aspects could however not be considered further within the framework of this report.

Table 1

Price ranges for selected products in “conventional” and “green” mail order companies (in DM)

Product	Women’s sweat shirts	Women’s jeans	Women’s dresses	Men’s underwear	Men’s pyjamas
Conventional	20- 80	25-160	35-180	2-22	20- 70
Green	40-150	90-200	90-290	12-58	50-100
Difference among green products	275%	120%	220%	380%	100%
Product	Children’s T-shirts	Children’s tops	Bed linen	Men’s shoes	Women’s sandals
Conventional	4-50	15- 40	15-100	50-170	25-130
Green	20-70	40-150	50-160	130-300	120-230
Difference among green products	250%	275%	220%	130%	190%

Table 1 reveals that the prices charged by both “conventional” and “green” mail order companies may, *ceteris paribus*, vary considerably for one product and that price ranges might sometimes even overlap. The great differences among prices within one product category can be explained by diverging quality requirements, especially in the case of tops and underwear, as well as by suppliers’ profit-oriented price differentiation strategies in which environmental aspects appear to play a minor role or no role at all.

The overview provides a first illustration of price differentials. However, these results should be interpreted very carefully for methodological reasons. To obtain more reliable information, a much more sophisticated analysis must be conducted.

3. ECOLABELLING AND ECO-STANDARDS IN GERMANY

This chapter is divided into three sections. Section 3.1. describes labelling initiatives in Germany. Section 3.2. provides an overview of labelled products and their estimated distribution, and section 3.3. summarizes environment-related mandatory and voluntary measures for textiles and clothing, leather and footwear, and tropical timber and furniture.

3.1 Description of labelling initiatives

Ecolabelling schemes that are sponsored by governments and in which public authorities participate are described under the heading “official labels” (subsection 3.1.1.). For their part, environmental and other non-governmental organizations (NGOs) have started to run their own schemes in order to ensure independence, credibility and high standards (subsection 3.1.2.). Ecolabels have also been developed by different pluralistic actors, for example in cooperation between NGOs, international organizations, industrial associations and governments (subsection 3.1.3.). Less credibility due to less independence can often, but not always, be attributed to labels awarded through cooperation between industrial associations and some enterprises. Umbrella organisations sometimes face the problem of different eco-performances among members and therefore set criteria at an average low level (subsection 3.1.4.). Meanwhile, many companies label their products with their own eco-mark in order to improve sales figures on “green” markets; some examples are given in subsection 3.1.5. Finally, the role of “green” public procurement and its relationship to ecolabelling is dealt with briefly (subsection 3.1.6.).

3.1.1. Official labels

The “*Blauer Engel*” (Blue Angel), which was established in 1978, is the oldest and most important official label in Germany. It is awarded by the RAL (an old acronym for Institute of Quality Assurance and Labeling - Institut für Gütesicherung und -kennzeichnung) in cooperation with the Federal Environmental Agency (Umweltbundesamt -- UBA).

The “Blue Angel” is available for many kinds of industrial and consumer goods. Only pharmaceuticals and food are excluded from the labelling scheme. The label appears on products that are less polluting than comparable products with regard to the most relevant environmental aspects. Although it is aimed at taking the whole lifecycle into consideration, in practice this is rarely the case. Mostly, only one aspect of the product is evaluated. The symbol gives information about the aspect which has been assessed (e.g. “made of 100 per cent recycled paper” or “low hazardous substances content”). The criteria are easy to examine and go beyond the environmental standards set by law.

The development of labelling-criteria works as follows: proposals are collected and assessed through UBA; the “Jury Ecolabel” (an independent group of representatives of science, industry and environmentalists) chooses those proposals that merit more detailed assessment; UBA drafts condi-

“Blauer Engel”

(“BLUE ANGEL”)

(several product groups)

RAL
 Institut für Gütesicherung und
 -kennzeichnung e.V.
 Siegburger Str. 39
 D-53757 Sankt Augustin
 Germany
 Phone: +49-224-1605-0
 Fax: +49-2241-1605-11

tions for ecolabel award (with the help of external consultants); expert hearings are organized by RAL; the “Jury Ecolabel” decides on the criteria; and, finally, the decision is announced to the public by the Federal Environmental Ministry (BMU).

The application process may take some time - on average, three months - and is divided into several steps. Interested firms submit their application to RAL, which examines certificates relating to fulfilment of criteria (in cooperation with UBA). If the application is accepted, the producer signs a private contract with RAL on the use of the “Blue Angel”. Costs involved are an application fee of DM 300 plus an annual fee calculated on the basis of the turnover of the labelled product (from DM 350 to almost DM 4,000 DM), plus 20 per cent of the annual fee for a “promotion fund”.

The validity of the label is limited to three years. Today, the label is affixed to almost 4,100 products in 76 different product groups, of which paints and varnishes, recycled cardboard and low-noise construction machines are the most important in terms of the number of applicants. Criteria are currently being elaborated for several product groups such as coffee machines, TV sets, and products made from jute and rattan.

Firms from abroad can also apply for the “Blue Angel” in the same way as German firms. At the moment, 11 per cent of all labelled products and 14 per cent of all applicants are from other countries.

The “*Euro-Flower*”, which was introduced by “Council regulation (EEC) Now 880/92 of 23 March 1992 on a Community Ecolabel Award Scheme”, is awarded by the European Commission via the authorized institution within the European Union member States (in Germany this is RAL).

The EU Ecolabel Award Scheme was set up to label products that have a reduced environmental impact compared with other products in the same product group. With the exception of food, drinks and pharmaceuticals, no consumer goods are excluded. The award of the label to individual products is based on the definition of the relevant product groups and the related environmental criteria. These definitions are prepared on a gradual basis. In most cases, the criteria are stricter than the standards set by law. Although emphasis is placed on the assessment of the whole life cycle, such assessment is hardly carried out in practice.

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.¹² Its task is to consult the various interest groups on proposed criteria and to transmit the results to the Commission. The Commission, in turn, consults the Forum (made up of representatives of industry, commerce, consumer and environmental organizations at the Union level) and, once comments have been received, submits a proposal to the Regulatory Committee (made up of representatives of EU member States). If the Regulatory Committee agrees, the Commission adopts and publishes the proposals; if not, the decision on their adoption is transferred to the Council of Ministers.

“Euro-Flower”

(several product groups)

RAL
Institut für Gütesicherung und
-kennzeichnung e.V.
Siegburger Str. 39
D-53757 Sankt Augustin
Germany
Phone: +49-224-1605-0
Fax: +49-2241-1605-11

Manufacturers should make their applications to the “Competent Body” in the EU member States. If a “Competent Body” intends to approve an application, it must notify the European Commission of its intention. All other “Competent Bodies” are also notified. If no objection is raised within 30 days, the award of the label will proceed. If any objections are raised, they have to be resolved at Union level.

The label can be used across the EU. Its validity is combined with the period of validity of the environmental criteria for the relevant product group. Generally, this period is three years from the date of adoption of the criteria. The end of this period also indicates the termination of the validity of the label. The amount of application fees was laid down in Directive 93/326/EEC. Firms using the ecolabel have to pay an application fee of about ECU 500 and, additionally, 0.15 per cent of annual turnover or a minimum of ECU 500.

At the present time, the label is available for washing machines (no applicant), floor polish (no applicant), toilet paper (2 applicants), kitchen towels (2 applicants), paints and varnishes (13 applicants), laundry detergents (no applicant), light bulbs (no applicant), T-shirts and bed linen (no applicant), copying paper (no applicant), and refrigerators and freezers (no applicant). A large number of additional product groups are currently under consideration, e.g. footwear, insulation material and batteries.

The “*European Energy Label*” can be granted for washing machines, dryers and dishwashers, and also for refrigerators and freezers. It was introduced by EC Framework Directive 92/75/EEC. The label will be obligatory for the German market when the Directive has been incorporated into national law, i.e. when the “Energieverbrauchskennzeichnungsgesetz” (ENVKG) (Energy Consumption Labelling Act) has been approved. Approval is expected not later than the end of 1997.

The basic idea of the European Energy Label is to make different products of the same product group comparable, mainly in terms of their energy consumption. The label for washing machines, for instance, gives information on the manufacturer, the energy efficiency according to categories “A” to “G”¹³, the energy consumption for a 60°C cotton cycle, the washing and spin-drying performance, the capacity, water consumption, and noise emissions during washing and spinning.

The “*White Swan*”, the official ecolabel of the Nordic countries (Sweden, Norway, Finland and Iceland), is governed by the Swedish Standards Institution (SIS). It covers all products which are the least polluting of their kind. The requirements concern production, use and disposal. The Nordic Coordinating Group for Environmental Labelling takes decisions on eligible product groups and determines the final ecological criteria. The criteria are developed nationally by appointed expert groups. They are valid for a maximum period of three years and may then be changed for one-year periods.

The “White Swan” can be granted to products from Norway, Sweden, Finland, and Iceland, but also to products from foreign suppliers. Applica-

“European Energy Label“

(household appliances)

Bundesministerium für Wirtschaft
Referat III B 5
Villemomblerstrasse 76
D-53123 Bonn
Phone: +49-228-6153538
Fax: +49-228-6152186

“White Swan“

(several products)

SIS Environmental Labelling
Swedish Standards Institution
P.O. Box 32955
S-103 66 Stockholm
Sweden
Phone: +46-8-6135327
Fax: +46-8-2130770

tions are preferably submitted to the agency that has prepared the criteria for the product group in question. They have to be accompanied by technical documentation, test reports, measurement results etc. Approval of a product is valid in all four countries. Each ecolabelling agency has the right to carry out repeated checks.

The label is available for 43 product groups, e.g. fine paper for copying and printing (66 applicants), car maintenance products (49 applicants), processed fine paper products (32 applicants), textile detergents (21 applicants), and wooden furniture and fittings (5 applicants). Criteria for, among other products, concrete, folders and ring binders, forestry and sawmill products, heat pumps, windows, wood-fired furnaces, boats and tyres are currently being developed.

The label of the “*Stiftung Warentest*” is not an ecolabel in the true sense, but rather a kind of certification regarding the outcome of a comparative product test carried out by the Foundation. It can be granted for various products and services, e.g. household appliances, food, textiles, and toys.

When the label was created in 1964 the criteria did not even contain ecological aspects. The environmental effect of the products was not considered until the mid-1980s and is still only one aspect among many others, such as safety, functionality, technical quality, utility value and price-performance-ratio. Although the criteria often go beyond the standards set by law, they cover only single ecological aspects (e.g. packaging or energy consumption).

The products are assessed on a scale from “very good” (++) to “very bad” (--). The tests which provide the information for this judgement are conducted by independent institutes. The Foundation itself verifies whether the label is used correctly in companies’ marketing strategies.

The validity of the label is unlimited as regards duration, but is restricted to Germany. About 90 product tests are carried out each year. “TEST”, the magazine that publishes the results of the “*Stiftung Warentest*” monitored goods, is sold more than 800,000 times per month.

The “*Ecoproof*” label was created and is awarded by the TÜV Rheinland Sicherheit und Umweltschutz GmbH (Technical Monitoring Association, Rhinland Branch, Security and Environmental Protection Service).

The label is for textiles, especially textiles made from cotton. The products have to meet certain criteria throughout their entire life cycle. The criteria are aimed not only at an improvement in the ecological situation, but also at the abolition of child labour and a reduction of negative effects on human health. The raw materials have to be grown by integrated ecological methods. With regard to the processing phase, various chemicals and polluting production processes are excluded. The use of carcinogenic dyes, flame retardants, biocides and chlorine-based bleaching is prohibited. Moreover, only biodegradable tensides are allowed. With respect to

“*Stiftung Warentest*”

(“WARENTEST
FOUNDATION”)

(several product groups)

Stiftung Warentest
Lützowplatz 11-13
P.O. Box 30 41 41
D - 10785 Berlin
Germany
Phone: +49-30-2631-0
Fax: +49-30-2631-429

“*Ecoproof*”

(textiles/clothes)

*TÜV Rheinland Sicherheit und
Umweltschutz GmbH*
Am Grauen Stein
D - 51105 Köln
Germany
Phone: +49-221-806-2958
Fax: +49-221-806-2882

packaging and transport, attention is paid to reusability and avoidance of transportation by planes. Requirements regarding the working conditions have been developed in accordance with the principles of the International Labour Organization. In addition, consideration is given to whether an environmental management system consistent with the EC Eco-Audit Regulation has been established. The final product has to comply with limits for soluble heavy metals, pesticides, chlorified phenols, formaldehyde, and glyoxal. The limit values for textiles for children are more stringent.

TÜV Rheinland approves label applications. All information collected throughout the life cycle of the product is documented in a "commodity passport". Labelled products are regularly monitored. The label is valid as long as these tests yield positive results. Although the label has been available since 1994, it has not been granted to any product.

The label "*SG Schadstoffgeprüft*" was introduced and is awarded by the "TÜV Rheinland Sicherheit und Umweltschutz GmbH" (Technical Monitoring Association, Rhinland Branch, Security and Environmental Protection Service).

The intention is to give the user the guarantee that the final product meets specific criteria regarding certain dangerous substances. The label is currently available for leather and skins. For these products limits are set for various substances, e.g. dyes, chromium, PCP and other chlorified phenols, formaldehyde, pesticides and soluble heavy metals. Products for children are subject to stricter criteria. The limits for some substances are more stringent than the limits prescribed under German law. Only the effects on human health are considered. Ecological aspects are ignored. Moreover, the criteria relate only to the final product and not to the whole manufacturing process.

Before a product is labelled, the TÜV, or one of the two associated institutes, checks whether it fulfils the criteria. Products are eligible for the SG label only when they comply with all the limits set for each of the components on the list of dangerous substances. The labelled products are examined regularly, at least once a year, in spot checks.

Applicants for the label have to pay an annual fee of ECU 470.

The validity of the label is confined to Germany and lasts one year. The label has been available since 1994, and since that time 50 companies have had products tested so far.

The "*Wollsiegel*", which is awarded in Germany by the Wollsiegel-Verband e.V., is not an ecolabel in the true sense; rather, it is a voluntary quality mark indicating that the labelled textile is made of "pure new wool".

The label is granted for clothing, and also for domestic textiles and carpets. Labelling criteria refer not only to the material composition of the specific product, but also to, for example, washing performance. The label does not obligatorily include information on the country of origin. However, labelling must not suggest that the textile is manufactured in a country different from its country of origin.

"SG Schadstoff- geprüft"

("TESTED FOR HAZARDOUS SUBSTANCES")

(leather)

*TÜV Rheinland Sicherheit und
Umweltschutz GmbH
Am Grauen Stein
D - 51105 Köln
Germany
Phone: +49-221-806-2958
Fax: +49-221-806-2882*

"Wollsiegel"

("MADE OF PURE NEW WOOL")

(textiles/clothes)

*Wollsiegel -Verband e.V.
Hohenzollern Str. 11
D - 40211 Düsseldorf
Germany
Phone: +49-211-16050
Fax: +49-211-1605208*

Applicants for the label sign a contract with Wollsiegel-Verband e.V. which obliges them to comply with the criteria. Licensees have to submit a list of all eligible products, including written confirmation that their suppliers are also certified according to the “Wollsiegel” guidelines. All products are tested by Wollsiegel-Verband e.V. before being granted the label. These tests are supplemented by inspections and spot checks of the licensees twice a year and by anonymous inspections in retail shops and mail order companies.

The “Wollsiegel” is registered in 120 countries all over the world, and more than 20,000 licences have been granted to firms in 65 countries. About 500 million products are labelled worldwide every year.

The “*Umweltpunkt Sachsen*” is awarded to food that is biologically grown and mainly comes from Saxony. The label is administered by Gää e.V. - Vereinigung ökologischer Landbau (Association of Ecological Farming).

The criteria underlying the award of the label are identical to those of the Arbeitsgemeinschaft ökologischer Landbau (AGÖL) (Working Party on Ecological Farming -- see section 3.1.4. below), i.e. applicants (producers) have to be members of AGÖL. Furthermore, at least 75 per cent of ingredients have to come from Saxony.

3.1.2. Labels developed by NGOs

The “*Panda*” label was developed by the World Wide Fund for Nature (WWF). In Germany it is awarded by the Panda Fördergesellschaft für Umwelt GmbH. (Panda Society for Environmental Preservation).

The Panda label is not an environmental label in the true sense; rather, it is a result of the cooperation between the WWF and industry. This cooperation is aimed at supporting less-polluting production patterns and achieving a change of attitude towards the environment.

The label is mainly granted for consumer goods, e.g. books, shoes, and food. The products have to be relatively less polluting and must meet special requirements in the following areas: effects on human health, resource-use, pollution of water, soil and atmosphere, biodegradability, product quality, longevity and establishment of closed material loops. Whether the manufacturer aims at developing an ecologically optimized alternative to existing products is also taken into account. Although the criteria are rather general and therefore require a great deal of verification, they are applied to the entire life cycle of the products.

The WWF determines through an internal assessment whether the product under consideration is relatively less damaging for the environment than other products. The basis for the comparison is the best available and practicable technology on the market. The label is valid throughout Europe.

“*FairWertung*” was founded in Germany in 1994 by five non-profit organizations and is dedicated to the development of environmentally and socially sound concepts for the reuse and recycling of old clothes and old

“Umweltpunkt Sachsen” (“ECO POINT SAXONY”)

(food)

Gää e.V.
Vereinigung ökologischer Landbau
Plauenscher Ring 40
D - 01187 Dresden
Germany
Phone: +49-351-4012389
Fax: +49-351-4012389

“WWF Panda”

(several product groups)

Panda Fördergesellschaft für
Umwelt GmbH
Hedderichstr. 110
D - 60591 Frankfurt a.M.
Germany
Phone: +49-69-605003-72
Fax: +49-69-605003-66

“FairWertung” (“FAIR VALUATION”)

(textiles/clothes)

Dachverband FairWertung e.V.
Hüttmannstr. 52
D - 45143 Essen
Germany
Phone +49-201-621067
Fax +49-201-626671

“Naturland”
 (“NATURE LAND”)

(timber)

Naturland-Verband
 Kleinhadener Weg 1
 D - 82166 Gräfelfing
 Germany
 Phone: +49-89-545071
 Fax: +49-89-855974

“Eco Timber”

(timber)

Eco Timber
 Waldgut Ettental
 D - 66386 St. Ingbert
 Germany
 Phone: +49-6894-966147
 Fax: +49-6894-966148

“EKO-Seal”

(food)

SKAL
 P.O. Box 384
 NL-8000 AJ Zwolle
 The Netherlands
 Phone: +31-38-4226866
 Fax: +31-38-4213063

shoes, as well as to the prevention of the uncontrolled export of textiles to developing countries that is damaging domestic markets.

“FairWertung” awards a label to non-profit collectors of old clothes that work in accordance with the guidelines. To date, there are more than 20 licensees and another 30 interested organizations.

The objectives of “FairWertung” include:

- the increased collection of old clothes, sorting and re-se, and a consequent reduction of household waste;
- the commitment of licensees not to endanger jobs in developing countries;
- the donation of 5% of collected old clothes for emergency and foreign aid.

The environmental NGOs BUND, Greenpeace, Naturland, Robin Wood and WWF have jointly developed a concept aimed at the protection of forests in Central Europe. It is marketed under the “*Naturland*” logo.

Under this concept the use of plant-protective agents, liming, clear-cutting, and single-crop cultivation is not allowed. A total of 10% of the certified forest has to remain unchanged as a reference area, and the rest is managed in a sustainable manner. Both areas are compared regularly in order to analyse the effects of different cultivation methods.

The five associations plan to cooperate with the Forest Stewardship Council (FSC) and to take part in the development of the FSC criteria for Germany.

The Naturschutzbund Deutschland (NABU) (Nature Preservation Union) has developed criteria for another label, which has been awarded by “*Eco Timber*” since April 1996.

This label is granted on the basis of a number of criteria. The number of trees felled must not exceed the number of trees that can grow again. New trees are allowed to be planted only for certain reasons, e.g. to increase the biodiversity of the forest. Moreover, single-crop cultivation, clear-cutting, and the use of chemicals are prohibited. Dead wood partly remains in the forests in order to provide feed and shelter for birds, bats, and other animals. In addition to NABU criteria, “Eco Timber” respects the social and legal aspects of the FSC label.

As of 1996, two enterprises with altogether 600 hectares of forest had been certified. Another dozen companies have applied for certification.

The “*EKO-Seal*” label is awarded by SKAL, which is an inspection and monitoring organization for organic cultivation, accredited by the Dutch and German Government.

SKAL performs inspections based on the one hand on EEC Regulation 2092/91, which deals with the organic production of plants and forests, and, on the other hand, on standards drawn up by SKAL itself. These standards cover, for example, animal production, processing of textile products,

essential oils and soap. SKAL is a holder of the officially registered EKO quality symbol. This symbol is granted for products meeting standards set for organic production methods. It provides the consumer with a guarantee of a natural and environmentally sound product.

The procedure for SKAL certification involves a standard series of steps. First, the company applies in writing for SKAL inspection and provides SKAL with basic data about itself. The data will be assessed by the Chief Inspector of SKAL's International Department. If the relevant criteria are met, the company will be offered a contract. On the basis of the data provided, an inspection programme will be established and a cost estimate made for the first year. After receipt of the first down payment of the inspection fee, the first inspection visit will be planned and carried out. Finally, the contract is concluded for an unlimited period and an inspection will be performed at least once a year.

Companies in the SKAL inspection programme are entitled to use the EKO quality symbol on the packaging of certified products.

Under the EKO quality label, an importer in the European Union can only continue to import from a country outside the EU with official authorization obtained in his own country. To obtain such authorization, the importer must provide information on the production rules, inspection system and production unit. This system was established in EEC Regulation 2083/92. Where production has been inspected by SKAL, the latter can help the importer in the EU to obtain the necessary import authorisation. This will facilitate access to the European market for products from outside the EU.

3.1.3. Labels developed by different stakeholders

The **“Rugmark”** label was developed on the initiative of the Indo-German Export Promotion Project (IGEP). It is awarded by the Rugmark Foundation, an association of various stakeholders, including members of the Indian carpet industry, Indian NGOs and international organizations (IGEP and UNICEF). In Germany, a body called **“Werkstatt Ökonomie”** (Workshop Economics) is responsible for the administration of the label.

The main objectives of **“Rugmark”** are to reduce child labour and to establish minimum social standards in the carpet manufacturing sector. Since the focus is on social criteria, ecological aspects are not considered. The criteria prescribe, for example, that children under 14 years must not be employed in carpet production. Exceptions can be made for family enterprises, but only for their own children, if school attendance can be secured. Moreover, the label stipulates that the minimum wages of the respective country be paid.

Furthermore, the criteria oblige both the exporter and the importer to pay 1 per cent of the export and import value into a fund controlled by UNICEF. The money is used to finance developing projects.

Although the criteria do not go beyond the standards set by law, they imply an improvement of the everyday situation, because very often regulation is not enforced.

“Rugmark”

(carpets)

Rugmark Foundation
Administrative Office
2, Nyaya Marg, Chankyapuri
New Delhi - 110021
India

“Werkstatt Ökonomie”
Obere Seegasse 18
D - 69124 Heidelberg
Germany
Phone: +49-6221-720296
Fax: +49-6221-781183

“Forest Stewardship Council“

(timber)

FSC
Forest Stewardship Council
Avenida Hidalgo 502
68000 Oaxacam
Mexico
Phone: +52-951-46905
Fax: +52-951-62110

“Spiel Gut“ (“SOUND TOY”)

(toys)

Arbeitsausschuß Kinderspiel
und Spielzeug e.V.
Heimstr. 13
D - 89073 Ulm
Germany
Phone: +49-731-65653
Fax: +49-731-65628

Compliance with the criteria is verified through on-site investigations. The manufacturers and exporters awarded the Rugmark label have to agree that their enterprises be checked by “Rugmark” inspectors without prior notice. The employment of children is monitored by the NGOs.

Although the validity of the label is essentially unlimited, it can be withdrawn if the criteria are infringed. The label has been granted in Germany since 1995. A total of 100 Indian exporters have already had their products labelled.

The World Wide Fund for Nature (WWF) promotes the labelling initiative of the *Forest Stewardship Council* (FSC).

The eco-seal granted by the FSC indicates that the timber stems from sustainably managed forestry. The criteria have emerged from a cooperative effort between representatives of the wood industry, environmental associations and certification bodies. Timber from rain forests is accepted only if the biodiversity remains unchanged and the forest can regenerate. Timber from plantations can be labelled only if no rain forests have recently been eroded for the plantation. Certified forestry companies have to comply with domestic law and respect the rights of indigenous peoples.

Controls are not carried out by FSC itself, as it only appoints and monitors the certifying institutes. So far, only two organizations - from the United Kingdom and the United States - have the right to certify forestry companies.

Although the focus of the FSC seal is on tropical forests, the requirements are valid for any other forest as well. Because of different social structures and environmental conditions, special criteria are set for each country. This process is continuing. In April 1996, 21 enterprises were certified covering an area of 55,000 km² in Indonesia, Malaysia, Costa Rica, the United Kingdom and Poland.

In 1954, educationalists, psychologists, doctors, technicians, design and electronics experts, ecologists and parents founded the “Arbeitsausschuß Kinderspiel und Spielzeug e.V.” (Working Party for Games and Toys).

The “*Spiel Gut*” label indicates that a toy has been tested in accordance with the following criteria: play value, material, workmanship, durability, safety, child-adequate size, quantity and design, quality of user instructions, suitability for different age groups etc. Environmental aspects are also considered. For instance, detailed controls on pollutants such as cadmium, PVC and softeners are conducted.

Manufacturers can directly ask the “*Spiel Gut*” working party to examine their products. The applicants are asked to send the toys for testing and these are assessed in practical setting, i.e. kindergartens and families. The results and experiences are set out in a report. The toys are also examined by experts. On the basis of the information received, the “*spiel gut*” working party decides on the awarding of the label. The labelled products are the subject of regular spot checks.

The validity of the label is not limited with respect to time, but it is almost entirely restricted to Germany. The “Spiel Gut” working party recommends about 250 different products a year. All in all, the label can currently be found on 1,700 toys.

TransFair e.V. was founded as an umbrella organization for all marketing activities promoting the ideals of fair trade with developing countries.

This label does not explicitly take environmental aspects into account. The main focus is on the social situation of the people working in agriculture in developing countries. When the label was introduced in 1993, it was available only for coffee, but it can now also be granted for tea, cocoa and honey.

In case of coffee, for instance, every importer/roaster can apply for a licence to use the TransFair mark. Eligible products have to fulfill different conditions. Certified coffee has to be purchased directly from organisations of small coffee farmers at a fixed minimum price. When, in addition, the coffee is grown ecologically, a price premium is granted. If prices on the world market increase, the minimum price is adjusted. Tea must be bought exclusively from plantations that adhere to the standards set by national law and/or tariff agreements. As in the case of coffee, a minimum price is fixed, which is higher when the tea is grown ecologically.

It is difficult to monitor the fulfilment of the criteria. In the case of coffee, for example, producers, traders and roasters have to inform TransFair about their transactions every three months. The data provided are checked by independent consultants once a year. Additional spot checks by TransFair itself are possible.

The label is awarded for an unlimited period of time. At the moment it is valid in Germany, Italy, Luxembourg, Austria, Japan and Canada. The application fee for the TransFair coffee label is about ECU 0.12 ECU per kilogram of raw coffee. A consumer survey revealed that some 30 per cent of consumers in Germany know the TransFair label. Labelled coffee and tea have a market share of 4 and 3 per cent respectively.

3.1.4. Labels developed by industrial associations and groups of enterprises

The *Arbeitskreis Naturtextil* is an association of ecologically oriented textile manufacturers, established in 1991. Its members are mostly from Germany, but also from Switzerland.

Membership of this association presupposes that all steps in the production process are optimized in environmental terms. Specific criteria have been developed for the different stages. For example, only natural fibres are accepted as raw materials. The fibres have to meet a pesticide limit of 0.1 mg/kg, although they can be grown conventionally. During the processing of the fibres, the use of formaldehyde, glyoxal, heavy metals, phenols or other hazardous chemical substances is not permitted. Moreover, the materials have to remain unbleached. Optic brighteners, biocides and

“TransFair” (food)

TransFair e.V.
Remigiusstr. 21
D - 50937 Köln
Germany
Phone: +49-221-425871
Fax: +49-221-410178

“Arbeitskreis Naturtextil” (“WORKING PARTY ON NATURAL TEXTILES”)

(textiles/clothing)

Arbeitskreis Naturtextil
c/o RA Ludwig und
Partner
Hausmannstr. 1
D - 70188 Stuttgart,
Germany
Phone: +49-711-232752
Fax: +49-711-232755

**“DIP approved --
trade’N’aid”**
(textiles/clothes)

DIP
Double Income Projects
Forchstrasse 40
CH - 8032 Zürich
Switzerland

“eco-tex”
(textiles/clothes)

eco-tex
Lindenstraße 19
D - 50674 Köln
Germany
Phone: +49-221-219207
Fax: +49-221-234245

antimicrobials must not be used either. With respect to colouring, allergy-producing dyes, toxic dyes, dyes containing heavy metals and azo dyes are prohibited. The final product has to meet limits for soluble heavy metals, pesticides and its pH value.

Compliance with criteria is checked by an independent environmental laboratory in spot checks. All members have to ensure - in a legally binding way - that they meet the requirements.

So far, only members of the association are entitled to use the label, which shows the logo of the association, for marketing purposes. However, an independent eco-mark for textiles has recently been created for which both members and non-members can apply.

The “*DIP*” label is awarded by the Swiss Foundation Double Income Projects. It ensures that the labelled textile is produced in a socially and environmentally sound way in “low-income” countries.

As far as ecological criteria are concerned, the “Öko-Tex Standard 100” serves as the basis of awarding the label (see below). However, applicants have to meet social criteria as well, such as reduction of child labour, promotion of occupational health, advancement of women and support of education.

The requirements of the label are developed in cooperation with industry and with other organizations. Compliance with the criteria is verified by independent institutions.

The “*eco-tex*” Consortium, established in 1991, is an association of 130 companies in the textile sector. It is an independent body which provides assistance in the development of ecologically optimized fabrics and garments.

One of the most important objectives of the Consortium is to identify environmentally friendly products through official certification. The criteria that have been set relate to the production process as well as to the final product. In the manufacturing process the use of various chemicals, such as chlorified substances, biocides, flame retardants and carcinogenic or allergy-producing dyes, is not permitted. The final product has to comply with limit values for formaldehydes, heavy metals and pesticides, and should be recyclable. The requirements set by the Consortium are more stringent than the standards set by law.

The label is granted to members of the “*eco-tex*” Consortium only. However, membership of the Consortium is open to all manufacturers and retailers. When applying for the certificate, audits are necessary in order to verify that the applicant’s product complies with the “*eco-tex*” requirements. These audits include questionnaires on the production process. An additional local audit is prepared only at the applicant’s request (often for advisory purposes). The collected data are then assessed by “*eco-tex*” experts. The label is not automatically awarded if the tests have yielded a positive result; but rather, it is awarded after inquiries.

Membership of the “eco-tex” Consortium costs ECU 1,575 for producing and ECU 2,630 for non-producing companies. Retailers have to pay ECU 5,260 for membership. There are additional costs for the auditing of the production site (ECU 945 per day, plus travel and subsistence costs) and the certification of the product group (ECU 455).

The “eco-tex” certificate has been available since 1992. In 1993 300 products were certified. Validity is restricted to one year, but the label can be used worldwide.

The “*Öko-Tex Standard 100*” is awarded by the International Union on Research and Testing in the Area of Ecological Textiles (Internationale Gemeinschaft für Forschung und Prüfung auf dem Gebiet der Textilökologie) via its member institutes. The Union disposes of 12 textile institutes in 12 European countries. The German institute is the Forschungsinstitut Hohenstein (Hohenstein Research Institute).

The “Öko-Tex” label, which replaced the MUT (Markenzeichen umweltschonender Textilien -- label for environmentally-benign textiles) and MST (Markenzeichen schadstoffgeprüfter Textilien -- label for textiles tested for hazardous substances) labels, has been introduced to mark textile products which have a good environmental performance in terms of their hazardous substances content.

The products have to meet the limits set, e.g., for formaldehyde, heavy metals, pesticides and pentachlorophenol. Biocides, flame retardants, and carcinogenic or allergy-producing dyes must not be used. In addition, an odour test is carried out. Although the criteria go partly beyond the standards set by law, they refer only to the final product. The rest of the life cycle, and especially the production and processing of the fibres, are not considered. Moreover, the label can be awarded for products made of synthetic materials.

The label applicant contacts one of the institutes and receives a questionnaire (in German, French or English) on the composition of the product. Immediately after returning the completed questionnaire, the producer sends the textile product in question to the test laboratory so that researchers can check whether the claims made in the questionnaire are correct. Additionally, spot checks are carried out in the producer’s plants. The test institute is required to produce a final report within three weeks. The certificate can then be issued. Should the product not comply with the criteria, the report will indicate how it needs to be improved if it is to become eligible for a later test to obtain the label.

Applicants have to pay an application fee of between ECU 440 and 680 and have to bear the costs of testing of their products (between ECU 260 and 2600).

The label was created in Germany in 1994 and is valid worldwide, but only for one year. So far 600-700 companies have taken the opportunity to have their products labelled (about 1,400 products).

“Öko-Tex Standard 100”

(textiles/clothes)

Forschungsinstitut Hohenstein
Schloß Hohenstein
D - 74357 Bönningheim
Germany
Phone: +49-7143-271-0
Fax: +49-7143-271-51

“Gut-Teppich Siegel”

(“GOOD CARPET SEAL”)

(carpets)

GUT
Geimeinschaft umweltfreundlicher
Teppichboden e.V.
Hergelsbendenstr. 49
D - 52080 Aachen
Germany
Phone: +49-241-9679-01
Fax: +49-241-9679-222

“Holz aus nachhaltiger Forstwirtschaft - Gewachsen in Deutschlands Wäldern”

(“TIMBER FROM SUSTAIN-
ABLE CULTIVATION --
GROWN IN GERMAN
FORESTS”)

(timber)

Deutscher Forstwirtschaftsrat e.V.
Münstereifeler Straße 19
D - 53359 Rheinbach
Germany
Phone: +49-2226-2350
Fax: +49-2226-5792

“Arbeitsgemeinschaft ökologischer Landbau”

(“WORKING PARTY ON
ECOLOGICAL FARMING”)

(food)

AGÖL
Arbeitsgemeinschaft Ökologischer
Landbau
Brandschneise 1
D - 64295 Darmstadt
Germany
Phone: +49-6155-2081
Fax: +49-6155-2083

Carpets accorded the “*GUT-Teppich Siegel*” are produced in an environmentally sound way and have been tested for several hazardous substances. The body awarding the label is the GUT - Gemeinschaft umweltfreundlicher Teppichboden (Community Environmentally Friendly Carpets), an association of carpet manufacturers and testing institutes in several European countries.

As far as production is concerned, waste and effluent management and air-pollution prevention have to be performed using the best available technology. With regard to the final product, the label sets limit values for the emission of, e.g., toluol and volatile organic compounds (VOCs), and prohibits any traces of, e.g., pesticides, formaldehyde and pentachlorophenol (PCP).

Each product is tested. Tests are supplemented by annual spot checks of retailers and production plants. The validity of the “GUT Teppich Siegel” is limited to two years. It was introduced in 1991 and is available worldwide.

The Deutscher Forstwirtschaftsrat e.V., the German forestry umbrella organization of different forest owners and trade unions, has developed its own timber label “*Holz aus nachhaltiger Forstwirtschaft - Gewachsen in Deutschlands Wäldern*”.

In Germany, sustainable forest management, in the narrow sense, is already prescribed by law, i.e. cut-down forests have to be restocked. Accordingly, the label does not specify any additional criteria, such as protection of biodiversity. It can be understood, however, as an indication that shows that the certified timber does not come from tropical rain forests.

Eight German ecological cultivation associations formed an umbrella organization “*Arbeitsgemeinschaft ökologischer Landbau (AGÖL)*” in 1988. Its members are Demeter, Bioland, Biokreis e.V, Naturland, ANOG, ECO VIN, GÄA and Ökosiegel.

All the members have their own eco-logos. However, each member has to meet the minimum standards set up by AGÖL. The general principles prescribe that plants must be grown in accordance with the standards of the EC regulation on ecological cultivation (91/2092/EEC). This prohibits, for example, the use of chemical/synthetic plant protection agents. Additionally, no gene-manipulated seeds and growing crops are allowed, crop rotation has to be balanced and diversified, and mainly organic fertilizers from individual farms should be employed. With respect to animal breeding, animals must be kept in a way suitable for them and in accordance with ecological conditions. The use of synthetic-organic feed additives (e.g. antibiotics) and imported fodder is generally prohibited. Fodder should come from AGÖL member farms. Regulations for further processing have also been formulated. The guidelines of individual members are in part more stringent than the general standard of AGÖL.

Spot checks are carried out at least once a year. The validity of the label has no time limit, but is restricted to Germany.

The last stage of the German Verpackungsverordnung (Packaging Ordinance) came into force on 1 January 1993. From that day onwards, trade and industry have had to take back their packaging materials in order to reuse or recycle them.¹⁴

The Ordinance includes all kinds of packaging. Sales packaging plays a special role, however, because it is packaging which the consumer needs in order to transport the product and which is therefore brought into households. This means that it has to be collected and separated before it can be re-used or recycled.

A number of concerned companies founded the "DSD - Duales System Deutschland GmbH" (Dual System Germany Ltd.), which organizes the collection, separation and reusing or recycling of packaging. The DSD's activities cover all packaging marked with a "Green Dot" - *Der grüne Punkt*. The exclusive rights to the "Green Dot" therefore lie with the DSD. To be allowed to use the "Green Dot" on the packaging of products, companies have to pay fees that are related to the kind and volume of packaging waste. In return, they receive the guarantee that all packaging marked with a "Green Dot" will be collected and processed. The contract which is signed between the companies and DSD includes packaging quality requirements, i.e. maximum avoidance of polystyrene and compound packaging, no-use of PVC and toxic printing ink, and clear marking of plastics.

For consumers the "Green Dot" shows that the packaging fulfils specific criteria and will be taken back, separated and reused or recycled. However, it should be noted that recycling capacities, especially for plastics, are rather limited at the present time.

The Packaging Ordinance also applies to imported goods. That means that all companies - German or foreign - which deposit their packaging waste on the German market, are subject to the German system of recovering packaging waste. A wholesaler, importer or manufacturer, that does not use the "Green Dot" and cannot demonstrate that he runs his own effective system for waste collection and processing, is not conforming with the requirements of the Packaging Ordinance and faces certain sanctions, such as the payment of mandatory disposal fees on packaging.

3.1.5. Labels created by individual firms

The "*Neckermann Umweltprädikat*" label is used by the mail order firm Neckermann Versand AG to mark its environmentally sound products. It indicates that the product is less polluting than other products with the same function. Neckermann has developed specific criteria for the various product groups it offers. In the field of textiles, for example, water- and energy-saving processing methods are required, as well as the use of less polluting dyes. With respect to furniture, it is required, *inter alia*, that upholstered furniture be delivered in reusable packaging. Labelled carpets are natural products made of coconut fibre and sisal, which have been tested for substances such as formaldehyde, PCP and pesticides. In principle, the entire life cycle of the product is considered, but in practice only single aspects are taken into account.

"Der grüne Punkt" ("GREEN DOT")

(packaging)

DSD
Duales System Deutschland GmbH
Frankfurter Str. 720-726
D - 51145 Köln
Germany
Phone: +49-2203-937-0
Fax: +49-2203-937-190

"Neckermann Umweltprädikat" ("ECO-LABEL OF NECKERMANN")

(several product groups)

Neckermann Versand AG
Hanauer Landstr. 360-400
D - 60368 Frankfurt a.M.
Germany
Phone: +49-69-404-01
Fax: +49-69-404-235

**“Umweltbewußt
Einkaufen”**

(“ENVIRONMENTALLY
CONSCIOUS
PURCHASING”)

(several product groups)

Karstadt
Theodor Althoff-Strasse 2
D - 45133 Essen
Germany
Phone: +49-201-7271
Fax: +49-201-7275216

“Empfohlen vom IBR”
(“RECOMMENDED BY
IBR)

(several product groups)

IBR GmbH
Heilig-Geist-Strasse 54
D - 83022 Rosenheim
Germany
Phone: +49-8031-17091
Fax: +49-8031-37546

**“Umweltbaum,
future collection,
hautfreundlich-
schadstoffgeprüft”**

(“ECO TREE,
FUTURE COLLECTION,
NON IRRITANT TO THE
SKIN -- TESTED FOR
HAZARDOUS SUB-
STANCES”)

(several product groups,
textiles/clothes,
textiles/clothes)

OTTO Versand
Umweltkoordination
D - 22172 Hamburg
Germany
Phone: +49-40-6461-
8430
Fax: +49-40-64618571

The entire control and awarding process is in the hands of the Neckermann environmental department. Product tests are partly conducted by Neckermann itself, and partly rely on the information provided by suppliers.

Neckermann started its labelling initiative in 1992, and so far the label has been granted for 70 products.

“*Umweltbewußt Einkaufen*“ is a company seal of KARSTADT, a large German department store. It is granted to “greener” products in its own range, e.g. detergents, footwear, electrical devices and stationery.

“Greener“ products are, for example, those bearing the “Blue Angel” label, those with a lower solvent content (e.g. paints), those made from recycled paper (e.g. wallpaper) and those consuming less energy (e.g. washing machines and refrigerators) and those with low noise emissions (e.g. vacuum cleaners).

The label “*Empfohlen vom IBR*“ is awarded for products such as carpets, furniture, insulation material, and timber products, that meet specific ecological and health requirements. It is awarded by the Institut für Baubiologie Rosenheim (IBR) (Biological Construction Institute in Rosenheim) a private testing institute.

In general, account is taken of environmental aspects throughout the entire life cycle, i.e., from manufacturing to use and final disposal. Limit values are specified for heavy metals, formaldehyde, biozides, and radioactivity in end products. Furthermore, there are guidelines regarding electric and magnetic radiation, heat performance and steam permeability.

Manufacturers submit their application to the IBR. After tests by independent laboratories a committee decides on the award of the label. Licensees are entitled to use the label for a period of two years. Since 1992 about 30 products from 20 manufacturers in Germany, Austria and Switzerland have been awarded the label.

The three environmental labels -- “*Umweltbaum*“, “*future collection*“ and “*hautfreundlich-schadstoffgeprüft*“ - are individual labels of the large German mail order company OTTO.

The “Umweltbaum” (eco tree) is used for the labelling of, e.g., energy- and water-saving appliances in the company’s product range. The specific eco-advantage is indicated on the label.

“Future collection” indicates the high environmental quality of textiles made from natural fibres. These products are manufactured in an environmentally sound way, are chlorine-free bleached and without colour brightener. Moreover, antimicrobial and flame retardants are not used.

All textiles in “future collection” also have to meet the criteria of the “*hautfreundlich-schadstoffgeprüft*” (non irritant to the skin -- tested for hazardous substances) label, which stresses health risks (skin diseases) caused by hazardous substances. Products bearing this label are tested for

formaldehyde, heavy metals, pesticides and pentachlorophenol, and register a pH value that is non irritant to the skin.

QUELLE, Germany's largest mail order company, has developed its own label for the eco-textiles in its range: *"Hautfreundlich, weil schadstoffgeprüft"* (non irritant to the skin, because tested for hazardous substances).

The label's ecological requirements mainly refer to the final product, which has to meet criteria for pesticides, heavy metal and PCP residues. Moreover, it needs to have a pH-value that is kind to the skin, all metal accessories have to be nickel-free and it has to fulfil standards regarding colour genuineness.

Some of the labelled textiles even take aspects of environmentally sound finishing into account, such as chlorine-free bleaching, and non-use of formaldehyde, glyoxal and synthetic resin.

"It's one world" is a label of Klaus Steilmann GmbH & Co.KG., a textile manufacturing company.

The label guarantees that the product has been manufactured with due consideration for environmental aspects. With the advice of an independent environmental institute (the Environmental Protection Encouragement Agency - EPEA - Hamburg) various requirements have been developed for the different textiles produced by Steilmann. They encompass the use of cotton that is grown ecologically, picked without using defoliants, and unbleached. The cotton used for jeans is still grown conventionally, but it is tested for chemical residues. While the use of dyes and water is reduced, formaldehydes, brighteners and synthetic rubber are totally prohibited. Jeans are dyed with synthetic indigo which is free from chlorine and heavy metals. For knitwear, only heavy-metal-free dyes are allowed, and the cotton used for bed-linen, underwear and bathing wear remains completely undyed. The rivets and buttons used for jeans are not galvanized and do not contain any nickel. Moreover, the products should be biodegradable.

Fulfilment of the criteria is verified by EPEA. Suppliers have to provide information about the dyes and auxiliaries they use. Moreover, they must sign a declaration confirming that the sample they have submitted is identical to the material they are going to supply.

Steilmann began to mark environmentally friendly products in 1993. The label is mainly restricted to the German market.

The *"Green Cotton"* label is used by the textile manufacturer Novotex for its own products. It indicates the company's general ecological orientation.

"Green Cotton" guarantees that ecological aspects have been taken into account from growing to manufacturing. The criteria regarding raw materials require that 10% of the cotton comes from controlled biological cultivation and that the cotton is picked manually without the use of defoliants. No residue of pesticides must be found in the cotton yarn. During

"Hautfreundlich, weil schadstoffgeprüft"

("NON IRRITANT TO THE SKIN, BECAUSE TESTED FOR HAZARDOUS SUBSTANCES")

(textiles/clothes)

QUELLE Schickedanz AG & Co.
Kommunikation/
Unternehmensbeziehungen
Postfach 4000
D - 90717 Fürth
Germany
Phone: +49-911-14-23459
Fax: +49-911-14-24361

"It's one world"

(textiles/clothes)

Klaus Steilmann GmbH & Co.KG
Feldstr. 4
D - 44867 Bochum
Germany
Phone: +49-2327-940-0
Fax: +49-2327-940-550

"Green Cotton"

(textiles/clothes)

Novotex
Ellehammervej 8
7430 Ikast
Denmark
Phone: +45-971-54411
Fax: +45-97-251014

“Nature Calling”

(textiles/clothes)

Hennes & Mauritz GmbH
 Grosse Bleichen 30
 D - 20354 Hamburg
 Germany
 Phone: +49-40-3509550
 Fax: +49-40-352795

“Greenline”

(carpets)

Donau Tufting Teppichboden
 Vertrieb GmbH & Co. KG
 Keltenstrasse 2
 D - 85095 Denkendorf
 Germany
 Phone: +49-8466-1601
 Fax: +49-8466-1600

“Naturkind”

(“NATURE’S CHILD”)

(food)

Tengelmann
 Wissollstrasse 5-43
 D - 45478 Mülheim an
 der Ruhr
 Germany
 Phone: +49-208-5806-0
 Fax: +49-208-5806-763

manufacturing, measures have to be taken to reduce noise, dust, waste, and energy consumption. No heavy metal containing dyes are allowed, the colouring has to take place in closed machines. Neither chlorine-based bleaching agents nor chemical treating or cleaning are allowed. The waste water is cleaned in a company-owned sewage treatment plant.

Cotton growing is controlled by independent institutes. Novotex has marked its products since 1993 and the label is used in the German and Danish markets.

“*Nature Calling*” is an individual company label of Hennes & Mauritz, a large textile retail chain.

The label indicates that the textile product in question is made from 100% percent natural fibres, that the cotton is grown with a reduced amount of chemicals and that no defoliants are used. As regards dyeing and finishing, bleaching is forbidden and dyes have to be water-soluble, degradable and metal-free. Moreover, the use of chlorine, nickel, chromium, PCP, formaldehyde and benzidine is prohibited.

“*Greenline*” is the logo of a carpet collection of Donau Tufting, a German manufacturer of carpets made from natural materials and tested for hazardous substances.

“*Greenline*” carpets have to fulfil a broad set of environmental criteria, e.g. use of pure unbleached new wool without any moth protection, vegetable dyeing, use of unvulcanized natural latex without chemical additives, and compostability.

Compliance with the criteria is verified by frequent checks on raw materials and by the measurement of hazardous substances through independent institutes. The results are documented and put at customers’ disposal.

“*Naturkind*” is a brand of the German retail chain Tengelmann that encompasses food products (e.g. milk, eggs, bread, cheese, fruits and vegetables) produced in line with the requirements in EEC Regulation 2092/91 on organic production of plants and with the guidelines of the International Federation of Organic Agriculture Movement (IFOAM) on animal production.

The standards of the “*Naturkind*” label cover, for instance, the use of organic fertilizer and organically grown fodder, the non-use of synthetic dyestuffs and flavours, and the use of recyclable packaging. The suppliers of organically produced food products are frequently the subject of spot checks by independent authorities, and of quality controls by Tengelmann itself. The brand was introduced in 1992.

3.1.6. “Green” public procurement

In the last couple of years public procurement as a means of generating markets for “greener” products has gained more and more attention. In the Netherlands it was explicitly introduced as an environmental policy instrument in the National Environmental Policy Plan in 1990 (Oosterhuis et al., 1996, p. 127). Another example is that of the Danish Environmental Protection Agency which has called on all public authorities and enterprises to establish plans and describe action to be taken with regard to “green” procurement (EU Magazin 12/1995, p. 36). Meanwhile, the issue of environmentally benign public procurement has gained international attention. For example, the OECD has held a conference and a workshop on “Greener Public Purchasing“, and the EU recently installed a European Green Purchasing Network for the exchange of experience and information at a European level (see OECD, 1997).

In Germany, overall public demand for “green products” is estimated at approximately 13% of GDP. The “greening” of public purchasing has not yet been stipulated by law, but meanwhile “neither household- nor award-related regulation stands in the way of an environmentally more sound procurement” (UBA, 1993, p. 18 f.). However, the main bottleneck remains the lack of continuous information on “clean” products and services. Ecolabelling, in principle, is capable of closing this gap and is therefore used by countries such as Japan and Canada as the guiding tool for purchasing decisions. In Germany, on the other hand, purchasers are advised to incorporate existing ecolabelling guidelines into their purchasing decision.

The German Federal Environmental Agency (UBA) published a manual for environmentally friendly procurement in 1989, the latest edition of which was issued in 1993. This manual contains a chapter on the “Blue Angel”, which states that all government decrees on environmental protection in public procurement allow for the use of ecolabelling guidelines as the basis for the award of public contracts (UBA, 1993, p. 46). If a “Blue Angel” exists for the product or service under consideration the public authorities are advised to select it (UBA, 1993, p. 48). Examples are low-emission oil-fired heaters, low-solvent paints, copiers and printers, recycled paper and products made from recycled rubber. Empirical evidence on the actual impact of the “Blue Angel” on public procurement in Germany is not available.

Trade issues arise at the interface between “greener“ public purchasing and procurement rules. First, purchasing officers might favour, for example, domestic products because of their perceived better environmental qualities (e.g. recycled paper content). Secondly, foreign interests might be insufficiently considered in the decision-making process of the ecolabelling guidelines underlying the procurement process. Thirdly, the existence of process-related certification schemes, such as EMAS and ISO 14001, might be required by the purchasing entity. However, the OECD concludes in a recently published report on trade issues in the greening of public purchasing that “the growing *practice* by public authorities of purchasing greener goods should not encounter serious obstacles“ (OECD, 1998, p. 20).

3.2. Overview of labelled products

Table 2 provides an overview of all ecolabels presented in the preceding sections. They are listed with the products for which they can be awarded.

Table 2
Overview of Eco-labels

Label	Product groups	Life cycle orientation	Estimated market penetration	Estimated trend	
Blue Angel	several	partial	medium - high	↑	
Euro-Flower	several	full	small	↑	
White Swan	several	full	medium	↑	
Stiftung Warentest	several	single issue	medium - high	↔	
WWF Panda	several	partial	small	↔	
Neckermann Umweltprädikat	several	partial	small	↑	
Umweltbewußt Einkaufen (KARSTADT)	several	single issue	small	↑	
Umweltbaum (OTTO)	several	single issue	small	↑	
Empfohlen vom IBR	several	full	small	?	
Ecoproof	textiles/clothes	full	small	?	
Wollsiegel	textiles/clothes	single issue	high	↔	
FairWertung	textiles/clothes	single issue	small	?	
Arbeitskreis Naturtextil	textiles/clothes	full	small	↑	
DIP approved- trade'N'aid	textiles/clothes	single issue	?	?	
eco-tex	textiles/clothes	partial	small	?	
Öko-Tex Standard 100	textiles/clothes	single issue	medium	↑	
future collection, hautfreundlich-schadstoffgeprüft (OTTO)	textiles/clothes	partial	small - medium	↑	
It's one world (STEILMANN)	textiles/clothes	full	small	↔	
Green Cotton (NOVOTEX)	textiles/clothes	full	small - medium	↑	
Hautfreundlich, weil schadstoff-geprüft (Quelle)	textiles/clothes	single issue	small - medium	↑	
Nature Calling (Hennes & Mauritz)	textiles/clothes	partial	small	↓	
Rugmark	carpets	single issue	small	↑	
GUT-Teppich Siegel	carpets	partial	?	?	
Greenline (Donau Tufting)	carpets	full	small	↔	
SG - Schadstoff-geprüft	leather/skins	single issue	small	↔	
Naturland	timber	partial	small	?	
Eco Timber	timber	partial	?	?	
Forest Stewardship Council	timber	partial	?	?	
HOLZ aus nachhaltiger Forstwirtschaft...	timber	single issue	?	?	
Umweltpunkt Sachsen	food	full	small	?	
EKO-Seal	food	partial	small	?	
TransFair	food	partial	small	↑	
Arbeitsgemeinschaft ökologischer Landbau	food	full	small	↑	
Naturkind (TENGELMANN)	food	partial	small	↑	
European Energy Label	household appliances	single issue	?	?	
Spiel Gut	toys	partial	medium	↔	
Der grüne Punkt	packaging	single issue	high	↔	
?	no statement possible				
↑	increasing market penetration	↔	unchanged market share	↓	decreasing market penetration

The life cycle orientation can be “single issue” (e.g. energy consumption), “partial” (several aspects) or “full”, the latter indicating that the “greening” of the product tries to cover the entire life cycle. Furthermore, an attempt is made to give at least an indication of the actual and future spread of each label. The assessment of market penetration and the expected trend is not based on broad empirical evidence, but rather on a qualitative estimate derived from experience and knowledge in the field.

3.3. Standards and general regulation of textiles and clothing, leather and footwear, and timber and furniture

Each section below starts with a brief synopsis of the ecological relevance of the sector under consideration. Environmentally relevant mandatory measures, i.e. bans, obligatory labelling etc., are then briefly described. Thereafter, non-binding product standards (norms) and other voluntary standards, such as official ecolabels, are summarized, and this is followed by a synopsis of other voluntary action taken and trends recently observed in the sector in question.

3.3.1. Standards and regulations on textiles and clothing in Germany

The ecological problems related to the “textile chain” cannot be discussed here in detail.¹⁵ As an example of these problems, we will briefly touch on the role and impact of *azo dyes* that are used in textile finishing, which appears to be the major process stage in terms of negative environmental impacts. The finishing of 1 kilogram of textiles consumes 100 litres of water¹⁶ and 70 per cent of textile auxiliaries and 20 per cent of textile dyestuffs enter the waste water during the finishing process (Enquete Kommission (1994), p. 154).

About 70% of the 2,000 dyestuffs available on the German market are azo dyes, about 150 of which have carcinogenic properties. Azo-dyes based on benzidine that have been identified as a cause of bladder cancer in employees of dyestuff plants have been prohibited in Germany (Strütt-Bringmann, 1994, p. 73). However, recent studies have revealed that azo dyes that can be cleaved to carcinogenic amines are sometimes used in imported clothes and garments (Enquete Kommission, 1994, p. 156).

3.3.1.1. Regulation

Regulation of textiles and clothing in Germany is embedded in a European and international framework of rules and guidelines concerning international trade issues (General Agreement on Tariffs and Trade, and World Trade Organization), occupational health (conventions of the International Labour Organization) and consumer, health and environmental protection (e.g. the Food and Agriculture Organization’s Codex on Pesticides and the Textile Labelling Act) (Enquete Kommission, 1994, p. 173 ff.). This framework determines the scope for national activities, such as the imposition of import duties, formulation of product standards and prescriptions on mandatory labelling. However, since the main focus of the study is the ecologi-

cal features of garments imported into and sold in Germany, the following review will be confined to the relevant and most important national regulations.

Textilkennzeichnungsgesetz (TKG) (Textile Labelling Act)

The TKG stipulates that textile products may not be put on the German market unless they bear a label describing the kind and percentage of raw materials used (Rubik/Weskamp, 1996, p. 41). The label has to be affixed by the textile producer or clothing manufacturer and is checked by factory inspectorates.

Lebensmittel- und Bedarfsgegenständegesetz (LMBG) (Foodstuffs and Essential Commodities Act)

Under section 30 of the LMBG it is prohibited to manufacture or treat goods in a way that during proper use they are able to damage health due to their composition, especially through toxicologically relevant substances or through pollution.

The Essential Commodities Ordinance, which is based on the LMBG, forbids, for instance, the use of certain flame retardants and prescribes the labelling of certain nickel-containing products (Enquete Kommission, 1994, p. 180). Moreover, under the fourth amendment to the Essential Commodities Ordinance, which came into force on 1 October 1996, use of azo dyes that can be cleaved to carcinogenic amines is prohibited in textile and leather clothing (Platzek, 1996). The regulation and interim arrangement are as follows (Test 4/97, p. 9):

- Remaining stocks may be sold on the German market until the end of 1998;
- Manufacture and import are prohibited as from April 1996 (for textiles) and April 1998 (for leather products).

Chemikaliengesetz (Chemicals Act) and Gefahrstoffverordnung (Hazardous Substances Ordinance)

The Chemicals Act permits the regulation of chemical substances by means of specific ordinances. It contains detailed requirements on registration, approval and labelling of new chemical substances. Since it came into force, more than 1,000 new substances have been admitted, 16% of which can be assigned to the textile sector (155 dyestuffs and 13 textile additives) (Enquete Kommission, 1994, p. 181).

The Hazardous Substances Ordinance prescribes, for example, the obligatory labelling of formaldehyde if its content exceeds 1,500 mg/kg. Furthermore, the placing on the market and use of PCP is totally prohibited³, as well as the use of asbestos yarns in protective clothing.

3.3.1.2. Standards

This section summarizes the criteria underlying the European ecolabel for T-shirts and bed linen, and briefly touches on the critical discussion on

textiles in Germany. Since there is no “Blue Angel” label for this product group in Germany, the “Euro Flower” is the only official ecolabel that will in principle be available for the German market.

The European ecolabel for T-shirts and bed linen

In May 1996 the European Union adopted criteria for the product group bed linen and T-shirts.¹⁸

A “cradle to grave” assessment showed that the main environmental parameters “relate to pesticide residues in cotton yarn, VOC emissions and use of antimony in polyester production, use of detergents, bleaching agents, dyes and pigments during wet processing, and VOCs and formaldehyde in the final printing and finishing of bed linen and T-shirts.”¹⁹ The resulting set of criteria is subdivided into ecological and fitness-for-use criteria. The latter refer to mechanical and physical properties and colour fastness of the textile products, while ecological criteria are formulated for the different stages of the life cycle, i.e. pertaining to raw materials, weaving, wet processing, pre-treatment washing, softening, bleaching, dyeing and finishing. Examples are summarized in box 1.

Although acknowledging that the European ecolabel for bed linen and T-shirts is “a first step in the right direction”, a number of German environmental organizations, suppliers of eco-clothes and consumer associations, which are organized within the Working Party on Cotton and coordinated by the Pesticides Action Network (PAN), have criticized the label because it does not take into account the “disastrous environmental conditions in cotton producing countries and also the conditions of those working in cotton production and fabric finishing.”(ICU, No. 5+6/1996, p. 11). They argue that:

- The cotton raw material should come exclusively from “controlled biological cultivation” under EC Regulation 2029/91/EEC on organic agriculture; and that
- Industrial health and safety standards of the International Labour Organization should be considered along the entire textile chain (ICU, No. 5+6/1996, p. 12).

BOX 1

Exemplary criteria of the European eco-label for bed linen and T-shirts

- Cotton yarn must not have residues of any pesticide-containing substances mentioned in the Annex to Directive 79/117/EEC as last amended by Directive 91/188/EEC.
- Pentachlorophenol (PCP) must not be utilized during the life cycle of the product before use.
- There must be no use of certain detergents, fabric softeners and complexing agents (e.g. alkylphenol-ethoxylates, APEO, nitrilotriacetic acid, NTA, and ethylene diamine tetra acetate, EDTA).
- AOX emissions in the mixed bleaching effluent must be less than 40 mg/functional units.
- The level of ionic metal impurities for dyestuffs must not exceed certain values (arsenic - 50 ppm; cadmium - 20 ppm; chromium - 100 ppm; mercury - 4 ppm; nickel - 200 ppm; lead - 100 ppm; antimony - 50 ppm; tin - 250 ppm; zinc - 1500 ppm).
- The levels of ionic metal impurities for pigments must not exceed certain values (arsenic - 250 ppm; cadmium - 50 ppm; chromium - 100 ppm; mercury - 25 ppm; lead - 100 ppm; antimony - 250 ppm; zinc - 1000 ppm).
- Dyes which can release or be cleaved to carcinogenic aromatic amines must not be used.
- Carriers containing chlorine or other halogens must not be used.
- The amount of free and partly hydrolysable formaldehyde in the final fabric must not exceed 30 ppm in baby products and 75 ppm in other products.

3.3.1.3. Other voluntary activities and observable trends

During the last couple of years the environmental debate in Germany has paid much attention to textiles and clothing as a product group. Environmental and consumer organizations have been in the forefront of the discussion, but even the German Parliament, the “Bundestag” is also involved through its *Enquete Commission on the Protection of Humanity and the Environment*. This body has done comprehensive research on the material flows linked with the textile chain. In its final report it formulates a number of recommendations, including the following:

- development of international minimum standards on “good cultivation practice for natural fibres” and “good finishing practices”;
- establishment of a clearing-house designed to develop an ecological classification of finishes (textile auxiliaries, dyestuffs) at national and EU level;
- examination of whether the economic players in the textile chain should be obliged to introduce accompanying documents for their products;
- general improvement of consumer information and transparency through labelling (amendment of the EU directive on textile labelling, EU ecolabel for textiles) (Enquete Kommission, 1995, p. 24 ff.).

As long ago as 1992, the German Federal Health Agency (Bundesgesundheitsamt - BGA), recently renamed into Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin (BgVV) (Federal Institute for Health Protection of consumers and Veterinary Medicine) installed a *Working Party on Textiles* to consider the health and environmental aspects of chemical substances used in textile production. The Working Party will issue “principles on toxicological test methods for dyestuffs and auxiliary agents for clothing textiles“. These principles will represent the starting point of a programme against which German producers of auxiliaries and dyestuffs intend to check their products with regard to their impact on health (Platzek, 1996).

The German Consumer Association (Verbraucher Initiative), which is vocal in the environmental debate on textiles and clothing, has even called for the introduction of a *Textile Act* that would provide for the following:

- obligatory approval procedures for all chemicals used in textile production;
- prohibition of textile chemicals that are harmful to health (e.g. not only carcinogenic dyes, but also dyes that are suspected of causing cancer);
- limit values for certain substances (e.g. 100 ppm for formaldehyde);
- more thorough textile control;
- informative and meaningful labelling (description of materials composition and appropriate care/handling of textiles) (Strütt-Bringmann, 1994, p. 143 ff.).

3.3.2. Standards and regulations for leather and footwear in Germany

Ecological problems linked with footwear are mainly caused by the processing of leather.²⁰ The production and manufacture of leather can lead to considerable ecological problems. These include air and water pollution (through organic substances, chrome salts and ammonia), unpleasant odours, and the release and disposal of toxic wastes (e.g. contaminated sewage sludge). Moreover, consumer protection issues have focused on the use of PCP in some leather products (leather-covered furniture and leather clothing) (Scholz, 1993, p. 40 f.). Additionally, health damage can be caused by the use of formaldehyde and carcinogenic dyes (azo and benzidine dyes) (Scholz/Wiemann, 1993, p. 20).

3.3.2.1. Regulation

The regulation of leather, especially footwear, is at least partly similar to that for textiles and clothing in Germany.

Most important in the case of leather products is the German ban on the manufacture, use and marketing of *PCP*, imposed in 1989 under the Hazardous Substances Ordinance. This ban allows for a limit value of 5 mg/kg only for imported products. In the EU the limit value for products containing PCP is much higher, i.e. 1,000 mg/kg.

This ban has resulted in an almost complete phasing out of biozide in the German market. A product test of women's shoes in 1994, for example, did not find any traces of PCP in the footwear examined (Ökotest, 10/1994), and another assessment of different low-price leather products (e.g. trousers, jackets, and gloves) produced the same result (Rosenkranz, 1996, p. 16).

The Hazardous Substances Ordinance also stipulates that a *formaldehyde* content above 1,500 mg/kg must be indicated on a product.

Since 1 April 1996, it has been forbidden to produce and import shoes manufactured with dangerous *azo dyes* for and to the German market (Essential Commodities Ordinance).²¹

The European directive on mandatory *labelling of shoes* (94/11/EEC) was incorporated into German law by the fourth amendment to the Essential Commodities Act in July 1995. It stipulates that the labelling of shoes marketed in Germany must describe the material used (leather, coated leather, natural and synthetic textiles, others) for the following shoe components: upper material, lining and leather insole, and running sole.

3.3.2.2. Standards

In Germany there is no "Blue Angel" for footwear. A European ecolabel is in preparation and will probably be available for the German market in the near future. The recently proposed ecological criteria refer *inter alia* to:

- the total energy content of the non-renewable resources used;

- maximum content of toxic heavy metals (e.g. mercury, chromium IV and cadmium);
- the total use of VOCs (Stichting Milieukeur, 1996).

In the Netherlands, manufacturers and importers of footwear can apply for the „Milieukeur“, the official Dutch environmental label. In principle, the label might also appear on the German market one day. In order to give an idea of how environmental criteria for footwear could be like, the

Dutch standards of the Milieukeur are summarised in box 2 (PEM, 1994, p. 144).

In addition to the above-mentioned labelling initiatives that explicitly refer to footwear and do not yet apply to the German market, guidelines have been specified in Germany in certain labelling schemes (e.g.

“Öko-tex Standard 100”) or in recommendations coming from tanning schools (“Leder umweltgerecht hergestellt - schadstoff-geprüft”) (leather produced in an environmentally sound way and tested for hazardous substances) or mail order businesses (“Schadstoff-geprüftes Leder”) (leather tested for hazardous substances). They are summarized in table 3.

BOX 2

Exemplary criteria of the Dutch ecolabel for footwear

- A total of 90% of the weight must be composed of the following materials: leather, rubber, synthetic materials and cotton (cork and wood are permitted if they account for more than 3% of the weight);
- Footwear includes shoes for normal use, sandals, dancing shoes, sport shoes and protective footwear;
- Requirements concern, *inter alia.*, the raw materials (energy content, listed colouring agents, additives), the synthetic upper and lining materials (VOC emissions), production (regulation for glues), and the leather insole (e.g. removable substances and hydrolysis resistance).

Table 3

Voluntary guidelines for leather products in Germany

	“Öko-tex Standard 100”	“SG-schadstoff-geprüft”	“Öko-Info Leder”	“Leder umweltgerecht hergestellt - schadstoffgeprüft”	“Schadstoff-geprüftes Leder”
Aromatic amines	not permitted	not permitted	max. 30 mg/kg	not permitted	max. 30 mg/kg
Chlorophenoles except for PCP	no specifications	1.0 mg/kg	no specification	no specifications	1.0 mg/kg
PCP	0.5 mg/kg	1.0 mg/kg	<5.0 mg/kg	<5.0 mg/kg	1.0 mg/kg
Chromium extractable	2.0 mg/kg	no specifications	less than 20	no specifications	no specifications
Chromium (VI)	not permitted	not permitted	not permitted	not permitted	not permitted
Lead	1.0 mg/kg	0.8 mg/kg	1.0 mg/kg	no specifications	0.8 mg/kg

Source: Rosenkranz, 1996

3.3.2.3. Other voluntary activities and observable trends

Recently, a working party of 16 German footwear producers was founded which has commissioned a research institute (Prüf- und Forschungsinstitut für die Schuhherstellung, PFI) to prepare a list of harm-

ful and harmless dyes. With these positive and “black” lists they intend to give guidance to their suppliers in leather exporting countries.

3.3.3. Standards and regulations for timber and furniture in Germany

Exploitation of tropical rain forests has been an important issue in the environmental debate in Germany for quite some time. A study carried out by the Institut für Weltwirtschaft in Kiel on behalf of the German branch of Greenpeace found out that the major cause of exploitation is agriculture (about 90%), followed by forestry (about 6%) and industry (about 4%).¹ It should be borne in mind, however, that the commercial use of rainforests through forestry often serves to open the way for further agricultural use (shifting cultivation and expansion of cash crops) (Scholz, 1993, p. 49). The major ecological consequences of this destruction are (Scholz, 1993, p. 49 f.):

- reduction of biodiversity;
- emission of anthropogenic carbon dioxide through burning of forests, thus contributing to the greenhouse effect;
- soil erosion.

3.3.3.1. Regulations

There are no legally binding regulations on the use of tropical timber on the German market. The regulation in force mainly pertains to the use of certain chemical substances in derived timber products and furniture.

Under the Hazardous Waste Ordinance, each square metre of derived timber products may not release more than 0.1 ppm of *formaldehyde* per cubic metre of enclosed space.

3.3.3.2. Standards

On the basis of the above-mentioned legally binding maximum value of 0.1 ppm of formaldehyde, DIN (Deutsches Institut für Normung - German Institute for Standardization) norms have been specified for chipboards, plywood and fibreboard (DIN EN 300, 312-1, 622-1, 1084).

The DIN norm on performance requirements for *wood preservatives* (DIN 68800, DIN EN 460) sets out those cases in which use of certain chemical wood preservatives is not necessary. Furthermore, this norm stipulates that wood conservation must not be performed unless necessary.

Another voluntary measure relating to either timber and timber products or products used for timber processing is the introduction of a “Blue Angel” for low-emissions derived timber boards, low-formaldehyde timber products and low-solvent paints. An overview of these voluntary standards is provided in boxes 3-5.

Box 3

Exemplary criteria of the German eco-label for low-emissions derived timber boards (RAL-UZ-76) (1 applicant)

- Not more than 0.05 ppm of formaldehyde may be released;
- The timber boards may not have wood preservatives added;
- Timber boards with phenole-containing binders may not exceed an emissions concentration of 14 g/m³.

With regard to *formaldehyde* emissions, the maximum admissible concentration is fixed at 0.05 ppm, which is half the limit prescribed by law.

Box 4

Exemplary criteria of the German eco-label for low-formaldehyde timber products (RAL-UZ 38) (37 applicants, 4 from abroad, exclusively Scandinavia)

- The raw materials, i.e. before coating, may not emit more than 0.1 ppm of formaldehyde;
- The products may not emit more than 0.05 ppm of formaldehyde.

Most applicants have been awarded the “Blue Angel” for paints (as of August 1996 there were 205, 18 of which are from abroad). For low-formaldehyde timber products there are 37 applicants, 4 of which are from abroad, mainly from Scandinavia, and for low-emission derived tim-

ber boards there is only one German applicant.

The official *Austrian ecolabel* that is comparable to the German “Blue Angel” is available for timber, timber materials and timber products.²³ The

main criteria underlying this labelling scheme are:

Box 5

Exemplary criteria of the German eco-label for low-solvent paints (RAL-UZ 12a) (205 applicants, 18 from abroad)

- Paints should not make use of substances that are subject to mandatory labelling under the Hazardous Substances Ordinance (if those substances are used, they have to remain 50 per cent below the limit values of the Ordinance);
- Paints may not use substances that cause or promote cancer, are harmful to foetuses, modify the genotype or possibly cause other chronic damage;
- The content of free formaldehyde may not exceed 10 mg/kg;
- Paints may not contain pigments containing lead, cadmium, and chromates;
- The content of VOCs is restricted.

- avoidance of formaldehyde;
- use of environmentally friendly paints and varnishes;
- non-use of plastic coatings;
- exclusion of carcinogenic and toxic substances;
- use of raw materials originating from sustainable forest exploitation.

3.3.3.3. Other voluntary activities and observable trends

In 1989, more than 70 NGOs called for a comprehensive boycott of the use of tropical timber and tropical timber products in Germany. As a result, about 3,000 German municipalities passed resolutions calling for tropical timber not to be used in public buildings and institutions (UBA, 1993, p. 198). A manual on sustainable procurement of office furniture published by the Bundesverband für Umweltberatung (Federal Union of Environmental Advice) in 1996 recommends that tropical timber not be used, since the debates on “sustainable forestry” have not yet agreed upon the most relevant criteria (BfUb, 1996, p. 3).

Environmental and consumer organizations have entered into discussions on certification of tropical timber, as indicated by the labelling initiatives summarized in section 2.1. A broader synopsis of the latest trends was given in section 3.1.4, and another one is provided in section 4.1.4. The main result of these discussions is that a general boycott of tropical timber is no longer regarded as meaningful. Rather, the German Federal Environmental Agency advises municipalities to prove the necessity of their boycott, and makes the following recommendations:

- discontinuation of use of tropical timber covered by the Washington Convention on Species Conservation (e.g. rosewood and jacaranda);
- use of tropical timber with labelling of its origin;
- procurement of environmentally sound tropical timber products, i.e. products from sustainable forest management (e.g. teak products from Java or tropical rattan products).

Trade activities relating to certified or at least certifiable timber are slowly increasing in Germany. One example is “Circle Dance”, which is a cooperative association trading exclusively in timber and half-finished timber products from sustainably managed forests. A total of 3 per cent of the trade value is paid for global reforestry. All goods have accompanying documents indicating their origin, quality and finishing.

3.4. The potential role of the ISO 14000 series

The ISO 14000 series on environmental management schemes is an environment-related information instrument that refers mainly to the company and its organization. It does not explicitly prescribe product-oriented standards, such as the exclusion of certain dangerous substances. Environmental management systems *can* additionally include requirements that relate to the product and its eco-profile, but this is not compulsory. Therefore, these certification schemes are not normally applied in product marketing.

There is only one example in Germany of a combination of product- and production-related ecological standards. The “Ecoproof” label for textiles awarded by the TÜV Rheinland (see section 3.1.1) prescribes, for instance, that the raw materials have to be cultivated by integrated ecological methods, and also takes into consideration whether an environmental management system consistent with the EC Eco-Audit Regulation has been introduced.

Apart from the question of whether process standards such as ISO 14000 are able to integrate product-related requirements or vice versa, environmental management systems may serve as a signal on the market, in the sense that companies following eco-strategies might increasingly seek cooperation with enterprises that also operate according to an accepted eco-standard. A retail shop, for example, might choose only textile suppliers that meet the ISO 14000 standard. However, this is not yet practiced in Germany and it is rather difficult to predict the future developments in this regard.

Research is currently being carried out in Germany, funded by the Federal Environmental Agency, which attempts to highlight the actual and future role of products within environmental management systems. Preliminary results are not yet available, however.

4. THE “GREENING” OF THE SUPPLY-SIDE IN GERMANY

4.1. Suppliers’ attitude towards environmental problems and “green consumerism”

4.1.1. Preliminary remarks

The view of the supply side is not unanimous: companies’ opinions about how to tackle environmental challenges vary considerably. Correspondingly, progress in the “greening” of products and processes differs.

Quantitative statements regarding the ratio of environmentally active to environmentally passive enterprises cannot be made. There is no general agreement on a methodology for measuring environment-related activities and their impact, and we can therefore only provide some qualitative assessments of ongoing trends. Moreover, we confine ourselves to domestic companies, i.e. producers, manufacturers and retailers based in Germany.²⁴

Generally speaking, there is scarcely a firm in Germany that does not realize that consumers expect it to contribute to environmentally more sound ways of production and consumption. This responsibility is accepted by a large percentage of enterprises. According to expert opinions, the average environmental standard in German industry has increased during the last couple of years, and this trend is expected to continue because of more comprehensive and more effective regulation and increasing voluntary action. This may bring about a dynamic process in which eco-innovators are being followed by an increased number of eco-imitators.

Interviews with representatives from industrial and trade associations have revealed that environmental awareness exists beyond the “green” market niche. However, many entrepreneurs are sceptical about the economic benefits of a more proactive attitude. Investing in the “greening” of products and processes is often regarded as risky and many firms are therefore quite reluctant to do so. A consequent and widespread willingness to shift towards environmentally more preferable production patterns is not observable. Therefore, the supply of “cleaner” products will probably turn out to be moderate in the short term.

The discussions on ecolabelling, eco-auditing and environmental management systems, however, have once again urged many firms to pay heed to their environmental responsibility. This could lead to an increase in the supply of eco-products in the medium term.

During the last couple of years concepts of “*ecological retail shops*” have been developed in Germany. Such shops would be similar to “conventional” retailers. However, all the products of eco-retailers are bound to meet higher environmental standards. These concepts aim at making the supply of environmentally friendly products and services easier and also at attracting customers beyond the “green” market niche.

These concepts have so far been discussed in several workshops. Feasibility studies are supported by research institutes and environmental NGOs.

Although this is only a beginning, it may be concluded that the willingness to try such projects and invest in such approaches has considerably increased.

Ecolabels: A typology of applicants

Voluntary certification by means of an ecolabel in order to emphasize the relative environmental soundness of products could be a way of incorporating environment-related aspects into marketing. However, many firms are still quite reserved about the application of this instrument for consumer information. This is often due to conflicting interests arising during discussions on the introduction of ecolabelling.

In the following typology different interest groups are described and their motivation for the application of ecolabelling is summarized. Positions and typical characteristics might be described in an exaggerated fashion; they might not always completely mirror reality and might sometimes even overlap. However, they should be regarded as appropriate points of reference and not as final judgements.

.. ***“Profit maximizers“***

Market segments of eco-products still show increasing growth figures. Many firms seek the possibility of entering these markets with the support of ecolabels, expecting economic benefits.

.. ***“Safeguards“***

Ecolabels granted by industrial associations can improve the reputation of the entire branch. This kind of certification strengthens the competitiveness of German industry compared with that of foreign competitors.

.. ***“Step-by-step-optimizers“***

The “greening” of manufacturing processes and products is sought in parts of the product range. These steps are “rewarded” by an ecolabel to improve the products’ sale potential. Further improvements will follow step by step.

.. ***“Eco-pioneers“***

Some suppliers in “green” market niches are attempting to optimize their full range of products - throughout the entire life cycle - in environmental terms. In cooperation with other actors along the product chain the greatest possible environmental soundness is being sought. In this case, ecolabels are interesting only if they refer to the best available technology and allow for a clear-cut differentiation in relation to the “conventional” market.

Each interest group has different priorities with regard to the creation and application of an ecolabel. In table 4 we try to assess typical attitudes towards the objectives of ecolabelling, the scope of the label and the level of criteria.

Although “profit maximizers” act for individual company-related motives and “safeguards” on the basis of branch-related interests, the table shows that they coincide as regard their attitude to labelling. Both groups think that ecolabels should be applied on a large scale, that they should

Table 4
Typology of labelling applicants

	Sope of label		Assessment		Environmental Requirements		
	Small	Large	Cradle to grave	Only final product	Low	Medium	High
Proft maximixers		.		.	.		
Safeguards		.		.	.		
Step-by-step optimizers	.		.			.	
Eco-pioneers	.		.				.

establish criteria mainly for the final product and that the requirements for certification should not be too high. On the other hand, “step-by-step-opti-mizers” and “eco-pioneers” prefer labels that are granted only to a few leaders, and intend to assess the environmental impacts throughout

the entire lifecycle of the product under consideration. Accordingly, criteria should be set at a relatively high level, particularly in the opinion of the “eco-pioneers”.

Eco labels: The view of practitioners

There is so far no agreement on the essential characteristics of an ecolabel (e.g. underlying criteria, scope, certification body). Therefore, the “messages” communicated by today’s labels vary considerably. Since there is no binding regulation on how to design ecolabels, the current situation can be described as “anything goes”. The individual approaches of different ecolabelling schemes and the lack of research into their impact prevent conclusions from being drawn about actual status.

Our interviews with representatives of industrial and trade associations and selected enterprises showed that sometimes ecolabelling is completely rejected. There are two main reasons for this:

⊖ Fear of negative spill-over

Since, to begin with, only a minority of products within the same product group will qualify for an ecolabel, the retail sector in particular fears that the non-labelled products in its range might therefore be discriminated against. According to this perception, the application of ecolabels will be taken into consideration only if the labels can be granted to the majority of their range of products. There is opposition to a comparative assessment of products as is stipulated, for example, by “Euro Flower” and the “Blue Angel”. Other instruments are preferred for the achievement of ecological improvements, such as the integration of eco-guidelines into procurement.

⊖ No impact due to a variety of labels

In the meantime, the plethora of ecolabels in certain market segments confuses many consumers. Hence, many supply-side representatives cur-

rently doubt the effectiveness of ecolabelling in influencing purchasing behaviour. Some of them conclude that ecolabels in general are not a suitable means of product marketing.

General conclusions

The status of ecolabelling is not clear at the moment. The varying interests of different actors have led to a great number of labels with low reliability. If an ecolabel is actually used for marketing purposes, it is dependent on the reputation and acceptance of the label, and also on the number of similar ecolabels. For the product groups considered here (textiles and clothing, leather/footwear, timber/timber products), however, there is so far no eco-mark with a very high reputation. Therefore, many environmentally-oriented firms in these sectors have worked on other marketing strategies. In the case of textiles, for example, large mail order companies have issued their own ecolabels. Suppliers in the “green” market niche have done without the use of an environmental label so far, because of their positive company image.

Moreover, it is possible that some companies might “free-ride” by creating their own labels with low-level criteria. Without really improving their products they could also benefit from the environmental awareness of consumers in certain market segments. In this case, the credibility of all labels in the sector might be diminished and consumers’ information overload and loss of confidence might increase. Ecolabelling would thus be unable to achieve environmental improvements since it could no longer credibly claim that it stands for environmental progress.

4.1.2. The textiles and clothing sector

We will first discuss the “green” market niche and its development, before analysing the more “conventional” retail trade. The focus is on clothing, because many textile labels refer to the health impact of hazardous substances in clothes and mainly address final consumers.

The “green” market niche

In the case of textiles and clothing the “green” market niche is dominated by mail order companies. They can be regarded as “eco-pioneers” some of which have been doing business for more than 20 years. All their textile products are optimized in environmental terms “from cradle to grave”. Since their early days they have urged their suppliers to meet high environmental standards, and they have committed themselves to providing their customers with a credible eco-business. They rely on the high level of confidence they have gained through their philosophy over the course of time. With their brands they stand for high quality and environmentally sound products. They are able to ask for higher prices on the market.

Although the established eco-standards might sometimes differ among the retailers in the “green” market niche, all of them surpass those of most textile labels. Hence, the retailers are not very interested in this kind of ecolabelling. They have so far benefited from their good reputation which

they intend to ensure through careful monitoring and control of hazardous substances, the quality of the products and direct contacts with suppliers. This leads in terms of reputation and experience guarantees a strong market

position as regards environmentally sensitive consumers. During the last couple of years, growth in this market segment has been between 15 and 60 per cent annually. This suggests that more and more consumers are searching for "cleaner" alternatives in the textile sector.

However, this trend has been confined to a very small market niche so far: The largest eco-retailer "Panda" has an annual sales volume of some DM100 millions. By way of comparison, the largest "conventional" retailer "Quelle" has annual sales of about DM7 billion,

i.e. seventy times as much. On the basis of this comparison one can estimate the "green" market niche in case of textiles and clothing to account for some one to two per cent of the entire textile market.

The "conventional" retail trade

In textiles and clothing the "conventional" trade can be divided into mail order firms, specialist shops and department stores. In each of these distribution channels there is a different way of facing the environmental challenge.

Box 6

WASCHBÄR mail order business

WASCHBÄR, a mail order business that sells about 5,000 different eco-products, was started in 1987. According to its owner, an "eco-niche" no longer exists. "We address every consumer who asks the question: What impact do the products have on my health and the environment?" About one-third of the range are eco-textiles. Other important ranges are household products and cosmetics. The catalogue contains a comprehensive declaration regarding substances and auxiliaries used in the eco-textiles' manufacturing process. Moreover, WASCHBÄR offers consumer and environmental advice to its customers. Requirements for environmentally friendly clothes have been developed by the enterprise itself and are monitored by independent institutes. The suppliers have to describe the life cycle of the product in detailed accompanying documents. Thanks to this philosophy, WASCHBÄR has half a million customers. Net turnover, which was 8 million DM in 1990, rose to DM 25 million in 1993 and DM 44 million in 1995. Company representatives expect a period of consolidation in the near future.

Box 7

PANDA mail order business

PANDA, another "green" mail order business, was started in 1974. Particularly during the last 10 years it has become one of the most important eco-retailers. Almost half of its catalogue is devoted to textiles and clothing. It has about 800,000 customers. Its annual turnover totals DM 100 million. It has been growing at about 15 per cent per year, mainly owing to increasing sales of clothing and footwear. Approximately DM 3 million is paid annually to the World Wildlife Fund for Nature (WWF).

Among *mail order firms*, there appears to be a general willingness to use environmental labels in catalogues. Suppliers of eco-textiles can provide information on the environmental qualities of their products, and ecolabels can be explained in detail separately. Catalogues offer the possibility of studying the goods in one's own time and of comparing them. This makes consideration of ecolabels during the purchasing decision easier.

Large mail order firms tend to create their own labels with their own environmental standards and their own monitoring system. Existing ecolabels, such as the "Öko-Tex Standard 100", are taken into account as far as possible and the credibility of this certification is accepted. However, because the firm-related requirements often exceed those laid down by "external" labels, individual monitoring mechanisms remain necessary. These big companies are sometimes not afraid of applying different labels for one product group at the same time.

Table 5 provides an overview of environmental activities in the textile sector of three large representatives of the “conventional” German mail order business.

Specialist shops for textiles and clothing tend to refuse labelling of their goods. Consumer confusion through an unequivocal marking of products is thus avoided. There is some willingness, however, to accept eco-

Table 5

Eco-comparison of mainstream mail order business in Germany

	QUELLE	OTTO	NECKERMANN
Turnover in DM	7.2 bln. 1994/1995	7 bln. 1994	3.3 bln. 1994
Eco-labels	“Hautfreundlich, weil schadstoffgeprüft eco-collection based on own criteria, Steilmann’s “It’s one world”, and “Green Cotton” environmental advantages explicitly depicted	“Hautfreundlich-schadstoffgeprüft” “future-collection” based on own criteria and “Green Cotton” environmental advantages explicitly depicted turnover in eco-textiles of about DM250 million	“Öko-TEX Standard 100” eco-collection “Wonderful World” based on own criteria environmental advantages explicitly depicted “Umweltprädikat”: several eco-advantages “Umwelt-button: one eco-advantage
Mentioning of the eco-collection	13 of 315 pages of catalogue on women’s clothing	14 of 351 pages of catalogue on women’s clothing	14 of 361 pages of catalogue on women’s clothing
Share of eco-labelled products in the clothing range	about 5%	10% in general 40% of children’s wear	about 5-6%
Eco-checklists for suppliers	questionnaire based on Öko-TEX Standard 100	list of substances prohibited in Germany; specific requirements for textiles, leather, accessories and furniture	checklist with eco-requirements for products and processes; questionnaire for suppliers (together with KARSTADT and HERTIE for 10 ranges)
Sensitization of suppliers	seminars at head office	eco-workshops at suppliers world-wide, and at the head office	direct contacts worldwide
Future focus areas of environmental activities	project-oriented extension of eco-textiles (e.g. “hemp collection”, “pure new wool”) development of eco-requirements for suppliers	eco-optimization of textiles extension of textiles tested on hazardous substances to more than 50% in 2000 establishment of an eco-information system	integration of eco-controlling into accountancy integration of eco-requirements into “electronic product passport” gradual switch to “clean” production processes

Source: Compiled from *Ökologische Briefe*, No. 17, 1996, p. 13 f. and environmental reports of companies.

labelling of clothes that touch the skin, such as underwear, bed linen and baby and children's clothes.

Department stores apparently refuse the ecolabelling of their products in order to avoid customer confusion. Environmental responsibility is taken by further integrating environmental principles into procurement (e.g. related to "Öko-Tex Standard 100" or other environmental labels). This leads to a gradual "greening" of the entire range of products and, moreover, shows that ecolabelling might be a cause of this trend.

Box 8

HENNEZ & MAURITZ

HENNES & MAURITZ, a large Swedish chain of clothing shops all over Europe, indicates in its brochure "Eco Cotton" that environmental success along the entire textile chain takes a long time: "We know where the problems are. We know a lot about possible solutions. In cooperation with the WWF we dedicate ourselves to this development throughout the whole world for a very long period of time".

With the introduction of the labels "Eco Cotton" and "Nature Calling" two individual eco-collections have been created that at least partly indicate substantial steps towards the "greening" of production processes. Since demand was moderate, the number of eco-textiles was restricted to children's and baby clothing. Due to company information "Eco Cotton" is no longer part of the product range any more and "Nature Calling" is available only for small stocks of baby clothes. The future of these labels is currently under discussion.

their "green" procurement principles. However, it appears to be quite difficult to ensure access to the mass market if the requirements of the "Öko-Tex Standard 100" are not met.

According to the Bundesverband des Deutschen Textil-einzelhandels (Federal Association of Retailers in the Textile Sector in Germany), the "Öko-Tex Standard 100" might meanwhile serve as a kind of informal standard for many large department stores. At the same time, it points out that only a few stores have such a strong market position that they are able to impose

Apart from the retail trade, individual *textile and clothing companies* have developed and started to supply their own eco-collections. However, economic success often failed to materialize. According to these companies, the retail trade in particular was very reluctant to order their collections. This had various

Box 9

C & A

The large retail chain C & A increasingly requests its suppliers of underwear, pyjamas and bed linen to obtain "Öko-Tex Standard 100" certification. When the certification is granted, the award is publicized in the shops.

ous consequences on the suppliers' side.

Experience in the textiles and clothing sector should be analysed carefully. No general conclusions can be drawn yet. This is partly due to the fact

Box 10

ESPRIT collection

ESPRIT introduced its "Ecollection" in 1992, which was regarded a very innovative approach to "green" clothes. Not only ecological aspects, but also social aspects were considered from "cradle to grave". Because of its high prices, however, the "Ecollection" did not sell well. Particularly in its early days, it was difficult to take account of fashion aspects.. The "natural" origin was apparent. Since this was not accepted by regular customers, ESPRIT discontinued the "Ecollection" in 1995.

that environmental management and marketing are quite a new phenomenon in this area. Reasons for the low acceptance of eco-collections might be conflicting fashion trends, insufficient presentation and marketing or higher prices. Calculated on the basis of several estimates, the market share of eco-textiles - labelled or unlabelled - was about 0.2 per cent in 1993

(Hasselmann, 1996, p. 151 and p. 185 f.). Greater demand for eco-clothes will be possible if they better meet the expectations of broader customer groups in the future. On the suppliers' side, there are the following impediments to a further "greening" of textiles and clothing (Hummel, Scheidewind, 1996):

- high investment costs;
- lack of supplier know-how;
- uncertainties about available quantities and qualities, and prices of premanufactured goods;
- insufficiently informed consumers;
- uncertainties with regard to the development of demand;
- extremely few advantages for differentiation in the market.

There are some calls for concentration on mass markets as a successful eco-strategy. Only strategic alliances among several actors are capable of coping with the high costs of coordination, the need to transfer know-how and to generate reliable data, the establishment of standardized certification and monitoring mechanisms, and the need for better consumer information. The main objectives of these alliances should be to keep the eco-extra costs as low as possible at all stages of textile manufacture and to reduce the economic risk through guaranteed purchase of large quantities.

Box 11

STEILMANN: "It's one world"

"It's one world" of STEILMANN sets high environmental standards (See Section 3.1.5). Research and development costs accounted for DM 3.5 million up to 1994. However, in the same year the "It's one world"-collection accounted for only 0.5 per cent of the company's entire production. It did not sell as expected, on the one hand owing to communication problems (only a very small group of consumers is knowledgeable about environmental problems along the textile chain) and on the other hand because retailers were quite reluctant (the only exception was QUELLE). In spite of its moderate success, STEILMANN will continue to offer the "It's one world"-collection. Experience here will be applied to the gradual "greening" of the rest of the product range.

4.1.3. The leather and footwear sector

In this section the emphasis is on footwear.²⁵

In many respects the discussion on leather and footwear is similar to the discussion on textiles and clothing, although there are fewer environmental labels in this product group. With regard to health risks through residuals of hazardous substances, footwear receives much less attention than textiles, because shoes do not usually come into direct contact with the skin. The hazard is considered less great and the public debate is not as advanced as in the textiles and clothing sector.

The *eco-retailers* of the "green" mail order business normally also offer shoes. They also strive for an environmental optimization according to their own standards. Above all, they try to get their suppliers to substitute vegetable-based tanning methods for chromium tanning.

The "*conventional*" retail trade also supplies shoes. In the mail order business there is, as in the textile sector, some willingness to consider ecolabels. However, in the mail order business, footwear hardly plays any role compared with textiles and clothing.

The large *department stores* refuse, as in the case of textiles and clothing, the use of ecolabels for their range of products. In some instances, ecolabels are considered in the procurement directives. Large stores, for example, have linked these to the “SG-Schadstoffgeprüft” label. Suppliers have to adopt to the relevant requirements in order to continue doing business.

Box 12

PANDA and OTTO -- Shoes

PANDA prefers working with manufacturers that carry out leather tanning on a vegetable base. With only a few exceptions, the use of chromium salts without chromium VI is prohibited. The production method is clearly described in the catalogue so as to enable the consumer to make a choice regarding the ecological impact of the manufacturing process.

OTTO offers some shoes bearing the WWF Panda label. In accordance with the requirements; their chrome tanning was environmentally sound, they were tested for hazardous substances, accessories made from natural materials were not used nor was any nickel used.

Specialist shops for footwear are generally very sceptical about ecolabels, and ecolabelling is hardly encountered in such shops. Sometimes ecolabels have had an impact on purchasing. According to information from a testing institute, much more footwear is

tested than labelled. This seems to indicate the gradually increasing importance of environment-related standards, but also the still very restricted application of eco-marks. The reason for increasing testing of footwear might be the fear of further governmental regulation in this area. Proper information about the environmental impact of production may lead to step-by-step innovations, reducing the possible costs of adoption of new eco-standards, and thus may provide a competitive advantage in the future.

Box 13

Criteria for existing labels

According to an association of leather producers in Germany, criteria for the existing labels are sometimes too high. The testing of compliance with these criteria often touches areas that were not originally linked with leather production. This represents an attempt to achieve publicity, because emphasis is placed on “popular” hazardous substances. However, this gives rise to unnecessary costs for certification. Besides, one cannot rule out, that this approach is sometimes the result of profit-oriented strategies of certification bodies. This example suggests that some “suppliers” of ecolabels do not have a good reputation on the market which might be a reason for the unwillingness to co-operate.

However, neither the ecolabels that can be granted for footwear in Germany nor the general environmental awareness appear so far to support the increased use of ecolabels in this sector.

The importance of ecolabels for leather products is generally considered to be fairly slight. Although only a few labels are available at the present time, there is great uncertainty about the usefulness of applying these instruments for marketing purposes. The number of certified goods is very small so far. Incentives for the application of ecolabels do not exist. One reason might be that suitability for use, price and quality are even more vital for footwear than for textiles. Ecological aspects have not yet been considered to any great extent.

4.1.4. The tropical timber and furniture sector

Important areas of application of tropical timber in Germany are windows, doors, boat building, furniture and use in the do-it-yourself sector (see also section 2.2.). Tropical timber is often used because it is weather-proof, water-repellent and durable. Another reason is its often relatively low price (UBA, 1993, p. 202).

The anti-tropical timber campaigns initiated by environmental NGOs have led to a substantial decrease in demand for tropical timber in some sectors in Germany. Suppliers have been unable to ensure that the products they offer do not result from exploitative forestry. One way to counteract their bad image with the public was to remove tropical timber from their range. Hardware and home improvement stores in particular reacted this way and tried to regain their good reputation through improved public relations. More than 3,000 German municipalities stopped buying tropical timber. The boycotts particularly affected consumer end-products, such as windows and materials for the do-it-yourself market (Brockmann et al., 1996, p. 73 ff. and 127 ff).

According to association representatives, public pressure has substantially ceased, the most important determining factor for the purchase of timber being its price.

Tropical timber no longer plays a role in the furniture sector. This is also due to current fashion trends towards the use of light-coloured timber from domestic forests.

In the manufacture of windows, tropical timber has increasingly been replaced by aluminium and PVC in recent years. However, these materials have recently also been criticized by environmentalists. Production of aluminium is very energy-intensive and PVC causes environmental problems during production and disposal. Tropical timber could therefore regain market shares in this area, assuming that it is re-evaluated on the basis of a credible ecolabel indicating that it originates from sustainable forestry and that it is competitive with domestic timber.

Restoration of the status of timber in general is the background to several initiatives on certification of timber from sustainable forestry in northern regions. If these labels are capable of credibly indicating the sustainable cultivation of raw-material timber, the latter can be marketed more aggressively in its competition with other materials. An additional price advantage could be derived from higher taxation of energy (Brockmann et al., 1996, p. 141).

At the present time, the only domestic products certified with the “eco-timber” label in Germany are garden furniture. Since agreement on the relevant criteria for sustained management of rain forests has not yet been achieved, there is currently no certified tropical timber on the German market. The “Initiative Tropenwald” (Initiative Tropical Rain Forest) is engaged in establishing a monitoring mechanism in Germany which is to ensure the separation of certified timber along the entire production chain. The “eco-timber” and “Naturland-labels” (see section 3.1.2) can also be awarded for tropical timber.

Industry and trade are sceptical about certification with an ecolabel. Representatives from the furniture industry think that at present, because of the insignificance of tropical timber for the manufacture of furniture, ecolabels would not be noticed and could therefore have no impact at all. According to a representative of the German Timber Industry Association,

the impact of ecolabelling on the purchasing decision is seen as very limited. The question thus arises whether certification is beneficial at all for suppliers. It is doubted that extra costs for testing and monitoring can be passed on to the final consumer. Moreover, the timber trade is afraid of confusing consumers with a variety of labels (not only “pure” ecolabels, but also statements regarding the origin of the timber) and expects ecolabelling to exert hardly any influence at all.

4.2. More examples for the development of “green” markets

In this section we will give some more examples illustrating the development of “green” markets, focussing particularly on textiles and clothing, leather and footwear, and tropical timber. We will then draw preliminary conclusions.

Box 14

COOP: “Naturaline”

The Swiss retailer COOP remarketed its eco-underwear collection “Naturaline” in 1995. Until then it had been sold in an ecological market niche. With its relaunching most of COOP’s underwear range was replaced by the environmentally optimized “Naturaline”, although consumers are barely aware of this. They still find the same product with the same colour and the same price on the shelves. Eco-extra costs may have been kept as low as possible through the production of large quantities (economies of scale) and initial obstacles may have been overcome by close cooperation along the textile chain. COOP has succeeded in building up ecological know-how in the chain, achieving certainty about quantities, qualities and prices, and in creating incentives for increasing ecological efforts by the actors involved through the attainment of reliable sales figures. Thus, COOP was the first and only retailer that successfully switched over to eco-products for an entire range (Hummel and Schneidewind, 1996).

With regard to *specific requirements for purchasing*, large retail shops have increasingly developed requirements that have become binding principles for purchasing products. Checklists, accompanying documents, or safety data sheets provide detailed information about materials used in production. Certain substances are excluded by “black lists”. In the medium term, the turnover of suppliers

that do not meet these new requirements can be expected to decline.

If all the examples given in sections 4.1 and 4.2 are taken into consideration, it is possible to see some “proactive” reaction to the phenomenon of “green consumerism” not only in the “green” market niche. Several enterprises have taken first steps towards “green production” and have partly been successful with this new orientation. However, all companies have faced typical

problems, such as suppliers’ lack of know-how, higher costs of cleaner production, and more intricate marketing of greener products. The German “green” market is developing for the time

Box 15

NOVOTEX: “Green Cotton”

For the Danish company NOVOTEX its pioneer role in environmentally sound textile production is paying off. Its “Green Cotton” goods meet a high ecological standard and are available in large quantities. Novotex products are the only ones that are sold not only in the “green” market niche (e.g. PANDA, HESS, WASCHBÄR), but also in “conventional” market segments (e.g. QUELLE, OTTO).

being and stable indicators to assess failures and successes are hard to find. The “Greening” of production still implies taking a certain risk, but also provides the chance to achieve prime-mover benefits of eco-pioneering. In conclusion, it is clear that green production is not yet a mass-market phenomenon.

4.3. Examples of cost and price effects of “green” production

In this section we deal with cost effects, in so far as exemplary and reliable data are available. The issue of price differences among “green” products and between “green” and “conventional” products has already been discussed in section 3.2.

There are only a few case studies on additional costs incurred by switching from normal production and products to cleaner processes and products, and these are summarized below. In general, the empirical basis for this issue is very narrow.

Textiles and Clothing

The retailer considered here started to develop an environmental strategy for eco-textiles in the mass market in 1994. Within this framework a “cradle to grave” approach was followed. The eco-extra costs incurred as a result of this new approach have been analysed and are summarized in table 6.

Table 6

Eco-extra costs (example: men’s underwear in Switzerland, in Swiss francs and percent)

Phase	Costs (conventional)	Eco-extra-costs (absolute)	Eco-extra-costs (percentage)	Total costs
Knitting	1.48	0.09	6.1	1.57
(a) Dyeing	0.28	0.02	7.1	0.30
(b) Bleaching	0.20	0.00	0.0	0.20
Manufacturing	1.80	0.33	18.3	2.13
Packing	0.50	0.20	60.0	0.70
Total	4.06 (dyed)	0.64 (dyed)	15.8 (dyed)	4.70 (dyed)
	3.98 (bleached)	0.62 (bleached)	15.5 (bleached)	0.62 (bleached)

Source: Hummel, 1996

“There are eco-extra-costs in all steps of production. The eco-extra-costs of knitting include the higher prices for Bio-cotton. The higher costs for better dyeing from the ecological point of view are the result of special dyestuff and machines, needed to reach higher ecological standards. The higher costs for an ecological manufacturing result mainly from an increase of labour and from ecological friendly accessories which have to be produced specially. In this special case, there were also higher costs for ecologically friendly packaging. But these costs were mainly the result of problems in the first phase of changing the package material. They are certainly not typical“ (Hummel, 1996, p. 8). If packaging is left out of consideration, the percentage of eco-extra costs is about 12 per cent. The “green“ underwear was about 15 or 12 per cent respectively more expensive than its “conventional” alternative. This is a very important aspect, bearing in mind that the price of this product is usually the most decisive factor in the mass market.

According to expert opinion, and in contrast to the above example, the changes in the textile manufacturing process needed to comply with the “Öko-Tex Standard 100“ may be undertaken without continuing eco-extra costs.

Furthermore, experts pointed out that usually only 1 to 3% of annual turnover needs to be invested in a workable and credible quality assurance system.

Leather and shoes

Experts from leather laboratories have reported that the number of leather products tested is greater than the number of actually certified products. They explain this discrepancy in terms of the reluctance of several retailers to actively market greener leather products. In their opinion this constitutes a greater obstacle to a more widespread use of ecolabels than do certification costs.

Empirical data were not available for this sector.

Tropical timber and furniture

On the basis of the findings of Brockmann et al. (1996), the additional costs of sustainable forest management in the case of tropical timber are estimated at DM 5 per m³ of roundwood. This implies a long-term increase in production costs of 10 per cent and in relation to the average German import unit value equals an increase of 0.8 per cent.

The costs of the certification scheme are estimated to be relatively low - approximately DM 2.40 per cubic metre of roundwood equivalent. Compared with the average German import price of tropical timber at all processing stages, this equals only 0.4 per cent. Thus, the costs of certification might have much less impact on the market than, for example, the fluctuation of the exchange rate for the United States dollar (Brockmann et al., 1996, p. 164).

More empirical data were not available for this sector.

It can be concluded from these few examples that:

- Cleaner products and production incur extra costs, at least in the short term, for switching to new processes; and
- There is no clear evidence with regard to whether eco-extra costs can be shifted to the final consumer in mass markets.

5. PROMISING MARKET STRATEGIES FOR DEVELOPING COUNTRIES

Developing countries face the challenge of how to cope with the emerging and continuing trends of “green consumerism“ in Germany, if they do not want to lose market share in an important export market. We suggest below some market-oriented strategies which could help foreign suppliers take advantage of “green consumerism”. First, we will make some general

recommendations, and then suggest a number of product-specific approaches. It is not possible in the framework of this study to set out comprehensive and highly detailed export strategies for different developing countries and different product groups. Rather, the following sections are aimed at providing some preliminary ideas that require further analysis and action.

5.1. General recommendations

In the main, export-oriented firms in developing countries should be advised to follow a *proactive strategy* that does not rely on short-term exploitation of comparative cost advantages, but rather tries to narrow the technological gap between developed and developing countries. Such a strategy seems to be promising, bearing in mind:

- the high level of environmental awareness in Germany;
- the environmentally sound behaviour of at least a core group of “deep green” consumers that are willing to pay more for eco-products; and
- the plethora of ecological product labels and environment-related standards.

As far as the German market is concerned, ecolabelling parameters such as voluntary product information, the exclusion of certain problematic substances and self-commitment beyond legal requirements are increasingly becoming an integral part of product quality development and are thus no longer regarded as a distinctive variable. Hence, cooperation, consultation and exchange of information between supplier and marketing agent on current eco-trends in the market are more important than ever before.

For this purpose, foreign suppliers should closely *assess the existing and emerging environmental requirements* of the export market and investigate new technological opportunities. Unfortunately, a central body for the collection and distribution of information on eco-standards and recent environment-driven technological trends has not yet been established in Germany.²⁶ Hence, *cooperation*, in the form of a continuous supply of information or an exchange of experts, with the assistance of organizations such as the Federal Environmental Agency (UBA), the Association for Technological Cooperation (GTZ), the German Standardization Institute (DIN) or the national chambers of commerce should be sought.

Another means of intensifying cooperation could be the establishment of “*company partnerships*” between eco-pioneers in Germany and exporting firms in developing countries through, for instance, company visits, exchange of personnel or on-line communication. However, reservations about a potential loss of competitive advantages and incurring additional costs set limits on such partnerships.

Furthermore, proactive exporting firms should dedicate research and development capacities to *the training of managers in “cleaner” production*. In this context, it might be worth ascertaining whether certificates on quality management system, such as ISO 9000, should be supplemented by a certified *environmental management system*, according to the European Eco-Audit Regulation, ISO 14001 or the British Standard BS 7750. Moreo-

ver, the establishment of an eco-management system, including environmental reporting and eco-balances, could help give a credible signal to importers regarding a firm's ecological commitment.

5.2. Market strategies for textiles and clothing

Textiles and clothing as a product group are covered by many different ecolabels with different underlying criteria. While most labels mainly focus on hazardous substances, such as formaldehyde, certain azo dyes or pesticide residues, there are more far-reaching approaches, which call for, for example, the establishment of an eco-management system ("eco-tex") or the use of biologically grown cotton ("AKN quality seal").

Although it is assumed that this trend will continue into the near future, the way in which the discussion on eco-textiles in Germany will eventually develop cannot be predicted. For the time being, it appears that public interest is not that great and eco-clothes are no longer that "fashionable". However, ecological market niches are still expanding - on a small scale, especially through mail order firms - and even traditional suppliers of clothes and textiles, such as QUELLE, OTTO, and NECKERMANN, have introduced eco-products into their ranges. Moreover, NECKERMANN, KARSTADT and HERTIE have established common eco-purchasing lists and some of them offer information workshops for their suppliers.

Export-oriented industries in the textiles and clothing sector should therefore:

- Observe new emerging standards in the import market and assess their individual need for technological adaptation at an early stage (e.g. replacement of dangerous substances, such as certain azo dyes, or substitution of entire production technologies, such as vegetable dyeing);
- Assess the environmental soundness of their products at least against the guidelines of "Ökotex Standard 100", which is gradually becoming an informal standard and a kind of access ticket to large mail order businesses in Germany (this especially concerns suppliers of baby/children's clothing, underwear, bed linen, towels, socks and stockings);
- Assess the environmental soundness of their production processes (this will lead to improvements in the environmental performance of the final product as well), although the widespread integration of manufacture-related requirements into ecolabelling schemes will take some years;
- Meet the new challenges with domestically produced eco-products (e.g. clothing from natural fibres);
- Seek an extension of national testing facilities;
- Improve the effectiveness of the national monitoring system for environmental requirements in order to build up a credible reputation among their importers;
- Depending on their main target group - either the "deep green" or the „light green“ consumer - establish close cooperation with German importers within the high environmental standards market niche (e.g.

“Arbeitskreis Naturtextil - AKN”) (Working Group on Natural Textiles) or in traditional market segments (e.g. NECKERMANN), and

- In general, attempt in the long term to establish ecological substance management along the entire textile chain.

5.3. Market strategies for leather and footwear

The German leather and footwear sector is „greening“ more slowly than the textiles sector. So far, discussion in this sector has been largely restricted to human health aspects (e.g. carcinogenic azo dyes and PCP). Environmental aspects, e.g. the replacement of chromium by vegetable tanning, have not yet attracted much attention.

The ecolabelling of footwear is not widespread. The only official label “SG-schadstoffgeprüft“ is confined to the testing of hazardous substances. Neither environmental and health impacts during manufacturing nor the use of substances such as PVC have been considered so far. However, the planned introduction of a European ecolabel and the existence of the Dutch “Milieukeur” for footwear, the establishment of a “black list” for dyestuffs in footwear manufacture, and calls by consumer associations to prescribe, for example, limit values for the use of PCP substitutes, such as tetrachlorophenole and 2-phenylphenole in leather products, indicate that the “greening” of this product group will presumably continue.

Exporting industries in the footwear sector should therefore:

- Observe new emerging standards in the import market and assess their individual need for technological adaptation at an early stage;
- Assess the environmental soundness of their products against the guidelines of the “SG-schadstoffgeprüft” label, which could most probably become an informal standard;
- Seek an extension of national testing facilities; and
- Improve the effectiveness of the national monitoring system for environmental standards in order to build up a credible reputation among their importers.

5.4. Market strategies for tropical timber and furniture

Discussions on how to deal with tropical timber and tropical timber products on the German market are continuing. Boycotts of timber from rain forest exploitation initiated by environmental NGOs in Germany at the beginning of the 1990s have had a considerable effect. Many municipalities, for example, have stopped buying tropical timber. In the meantime, however, some of the NGOs have changed their minds and are now supporting the establishment of certification schemes (e.g. “Naturland” and “Eco Timber”). Ecolabelling of timber from sustainably managed forests might therefore have more relevance in the medium term.

Export-oriented firms in the tropical timber sector should therefore:

- Actively support the development of credible certification schemes through cooperation with the Forest Stewardship Council (FSC) on the

establishment of criteria for certification and a suitable monitoring system;

- Establish clear distinctions between tropical timber from sustainable and non-sustainable sources;
- Seek strategic alliances with “green” importers and their associations, e.g. Bundesverband ökologischer Einrichtungshäuser (Association of Ecological Furnishing Houses); and
- Companies start building up their own regional and national markets.

6. OUTLOOK

6.1. General conclusions

In the preceding chapters, we summarized the causes and effects of “green consumerism” in Germany with a special focus on textiles and clothes, leather and footwear, and tropical timber products. It was shown that the “cleaning” of products and production methods is not a temporary phenomenon, but rather an ongoing trend that differs widely according to the sector under consideration. Also it was indicated that during the last few years some stagnation has been observed. More and more “green consumerism” consists of a core group of “deep green” consumers that are prepared to pay higher prices for environmentally sound goods. The “greening” of production and consumption patterns in Germany is continuing, but at a slower pace than a few years ago.

However, the observed consolidation in “green” markets contrasts with the buoyant sales on fair-trade markets in Europe, predominantly in the food sector, that are currently growing by 10 to 20 per cent a year. This trend is even more astonishing when it is remembered, for example, that “TransFair” coffee exhibited growth rates of 2.2 per cent in 1996 while the turnover of the whole coffee industry in Germany declined by 4 per cent. “Green consumerism” is therefore increasingly supplemented by “fair consumerism”, and thus faces the challenge of sustainable consumption in its environmental and social dimension.

Provided that some key obstacles such as insufficient access to information, lack of technical capacity and weak business partnerships can be overcome, exporting firms from developing countries can profit from these trends. A huge body of analytical work has been done in order to describe the chances and risks of sustainable production and consumption from a business perspective. Surprisingly, the needs and problems particularly of small and medium-sized companies in the developing world that might arise during this transformation process have not yet been addressed in great detail. In order to help those companies overcome impediments in their export markets, efforts should be made to establish proactive partnerships along the product chains. This sector-oriented partnership approach requires the creation of new trading relationships between producers in developing countries and their clients, citizen groups and Government agencies.

6.2. Recommendations for follow-up activities

Creating and strengthening partnerships in the market place between developing producing countries, their customers, retailers, environmental and development organizations and government agencies is a promising road towards sustainable trade relationships. Export-oriented sectors from developing countries should be enabled to anticipate trends in environmental regulation and to identify growing and shrinking export markets very early. Therefore:

- Adequate *information* on environmental and fair-trade issues regarding export markets is needed (frequently updated, target-group-oriented and easily accessible, e.g. via the internet); and
- Intensive *networking* among producers, retailers, industrial associations, and government agencies should be developed, which in addition to providing a regular exchange of information and experience, identifies suitable ways of co-operation and alliances along the product chain, including marketing.²⁷

A first practical step in the above direction would be the holding of *sector-specific, bilateral workshops* involving a source developing country and a target developed nation. Such workshops, bringing together experts from Government institutions and the private sector in an OECD country and representatives of exporting firms, industry associations and government representatives from selected developing countries, should profit from a background paper covering issues such as:

- the size and dynamics of the (sustainable) target market;
- the relevant environmental regulation in the target market;
- government support policies; and
- the opportunities and requirements for, and forms of, new proactive partnerships.

This twin approach of reviewing export opportunities and simultaneously developing specific partnerships among the actors involved through bilateral meetings is regarded as a very promising way of translating concepts into action. It would seem pertinent to devote part of such a workshop's discussion to specific ways of promoting the export of environmentally preferable products of small and medium-sized enterprises.



APPENDIX

1. General addresses

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH	German Association for Technical Co-operation	P.O. Box 5189 D-65726 Eschborn Phone: +49-61-96793169 Fax: +49-61-96797414
Umweltbundesamt (UBA)	Federal Environmental Agency	Bismarckplatz 1 D- 41993 Berlin Phone: +49-30-23245711 Fax: +49-30-2315638
United Nations Environment Programme (UNEP)		P.O. Box 30552 Nairobi, Kenya Phone: +254-2-230800/ 520600 Fax: +254-2-520711
United Nations Environment Programme (UNEP) Industry and Environment Office		Tour Mirabeau 39-43, quai André Citroën F-75739 Paris CEDEX Phone: +33-1-40-588850 Fax: +33-1-40-588850
United Nations Environment Programme (UNEP) Geneva Executive Centre		16, avenue Jean Trembley CH-1209 Chatelaine/GE Phone: +41-22-9799111 Fax: +41-22-7973420
United Nations Conference on Trade and Development (UNCTAD) Trade, Environment and Development Section Division on International Trade in Goods and Services, and Commodities		Palais des Nations E-Building CH-1211 Geneva 10 Phone: +41-22-9171234 Fax: +41-22-9170247
United Nations Development Programme (UNDP) Environment and Natural Resources Unit		One United Nations Plaza New York N.Y. 10017, USA Phone: +1-212-9065000 Fax: +1-212-9066947
International Trade Centre (ITC) UNCTAD/GATT		54-56, rue de Montrillant CH-1211 Geneva 10 Phone: +41-22-7300111 Fax: +41-22-7334439

Commission of the European Communities		DG-XI-C-6 Rue de la Loi 200 B-1049 Brussels Phone: +32-2-2990324 Fax: +32-2-2955684
International Organization for Standardization (ISO)		P.O. Box 56 CH-1211 Geneva Phone: +41-22-7490111 Fax: +41-22-7333430
Deutsches Institut für Normung (DIN)	German Institute for the Development of National Standards and the Adoption of International Standards	P.O. Box 1107 D-1000 Berlin 30 Phone: +49-30-26011 Fax: +49-30-26011231
Hauptgemeinschaft des Einzelhandels HDE e.V.	German Retail Association	Postfach 250425 D- 0520 Köln Phone:+49-221-93655-02 Fax: +49-221-93655-909

2. Relevant addresses in the area of textiles and clothing

C & A	Large textile and clothing retailer	Hauptverwaltung Bleichstr. 20 D- 0211 Düsseldorf Phone: +49-211-166-0 Fax: +49-211-166-2730
CO OP	Large Swiss retailer	Tiersteiner Allee 12 CH- 4002 Basel Phone: +41-61-336-6666 Fax: +41-61-336-6040
Bundesverband Bekleidungsindustrie e.V.	Federal Association of the Clothing Industry	Mevissenstr. 15 Postfach 10 09 55 D-50449 Köln Phone: +49-221-7744-0 Fax: +49-221-7744-118
Außenhandelsvereinigung des deutschen Einzelhandels (AVE)	Foreign Trade Association of German Retailers	Mauritiussteinweg 1 D-50676 Köln Phone: +49-221-921834-0 Fax: +49-221-921834-6
Panda-Versandhandel GmbH	“Green” mail order firm	Postfach 0622 D-76260 Ettlingen Phone: +49-7243-323242 Fax: +49-7243-518103
Waschbär Umwelt Produkte Versand GmbH	“Green” mail order firm	Hochdorf Abrichstr. 4 D-79108 Freiburg Phone: +49-761-130600 Fax: +49-761-1306150
Forschungsinstitut Hohenstein	One of 14 international Öko-Tex Institutes	Schloß Hohenstein D-74357 Bönningheim Phone: +49-7143-2710 Fax: +49-7143-27151

3. Relevant addresses in the area of leather and footwear

Verband der deutschen Lederindustrie e.V.	German Association of the Leather Industry	Fuchstanzstr.61 D-60489 Frankfurt Phone: +49-69-97843141 Fax: +49-69-78800009
Bundesverband des deutschen Schuh-einzelhandels	Federal Association of German Footware Retailers	Sachsenring 69 D-50677 Köln Phone: +49-221-3270-51 Fax: +49-221-3270-58
Prüf- und Forschungs-institut für die Schuh-herstellung (PFI)	Testing Institute for Leather Products	Hans-Sachs-Strasse 2 D-66955 Pirmasens Phone: +49-6331-74016 Fax: +49-6331-74507

4. Relevant addresses in the area of tropical timber and furniture

Verband der deutschen Holzwerkstoff Industrie (VHI) e.V.	Association of the German Timber Industry	Wilhelmstr. 25 D-35392 Gießen Phone: +49-641-97547-0 Fax: +49-641-97547-99
Bundesverband der deutschen Bau- und Heimwerkermärkte	Federal Association of German Hardware and Home Improvement Stores	Gotharallee 2 D-50969 Köln Phone: +49-221-93655840 Fax: +49-221-93655849
Verein deutscher Holzeinfuhrhäuser (VDH)	Association of German Timber Importers	Heimbuder Str. 22 D-20148 Hamburg Phone: +49-40-4146020 Fax: +49-40-41460220
Bundesverband des deutschen Möbel- und Einrichtungsfachhandels e.V. (BVDM)	Federal Association of German Furniture Shops	Frangenheimstr. 6 D-50931 Köln Phone: +49-221-403142 Fax: +49-221-4009396
Initiative Tropenwald	Initiative Rainforest	Am Köllnischen Park 2 D-10179 Berlin Phone: +49-30-2790132 Fax: +49-30-2793728



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NOTES

- 1 A very helpful publication that does not cover the German situation in detail but provides valuable information for other European countries as well is the "Eco Trade Manual" (see chapter 8).
- 2 Compare, for instance, the research recommendations in Rubik/Weskamp (1996), p. 202.
- 3 UBA (1994a), p. 3 f., UBA (1994b), p. 3.
- 4 Compare, for example, UBA (1994b), p.3, and Die Sternbibliothek (1995), p. 24 f.
- 5 See IPOS (1993), p. 76 and IPOS (1994), p. 82 as well as Jahrbuch der Absatz und Verbrauchsforschung 3/1995, S.258 and BMU (1996), p. 26.
- 6 Compare IPOS (1993), p. 76, IPOS (1994), p. 82, BMU (1996), p. 26.
- 7 According to a spokesman of the association of many hardware and home improvement stores.
- 8 Brockmann et al. (1996), p.47 ff., VDH (1998).
- 9 Ibid., p.101 f..
- 10 In 1984, 5 per cent of the mouldings and 23 per cent of the sawnwood consumed within the building sector were tropical timber (Brockmann et al. 1996, p.56).
- 11 Brockmann et al. (1996), see also section 2.1.4.
- 12 The competent body is an institution which is appointed by each EU Member State.
- 13 An "A" classification means, for example, that energy consumption is less than 0.19 kWh per kg of laundry (standard programme, cotton, 60° C) and a "G" consumption is more than 0.39 kWh.
- 14 At the time being, the amendment of the Packaging Ordinance is underway.
- 15 A summary of the weak spots can be found in Scholz (1993) and a more comprehensive overview is provided in: Enquete-Kommission (1994).
- 16 Westering (1993) in Strütt-Bringmann (1994).
- 17 In Germany, the maximum value for import products is 5mg/kg.
- 18 These have been published in the *Official Journal of the European Communities*, N° L 116 of 11 May 1996.
- 19 *Commission information on ecolabelling*, issue No 14, June 1996.
- 20 However, it has to be remembered that shoes produced for today's mass markets often consist of a mixture of different (plastic) materials.
- 21 The products concerned could have been placed on the German market until 31 December 1998 (see section 2.3.1.1 above).
- 22 Cited by itw.
- 23 The former Austrian Tropical Timber Labelling Law 1992, that prescribed mandatory labelling of all tropical timber and tropical timber products placed on the Austrian market, was repealed a year later and replaced by the Federal Law for the Creation of a Quality Mark for Timber and Timber Products from Sustainable Exploitation. This was the impetus for the voluntary label (Sucharipa-Behrmann 1994).
- 24 Case studies of successful eco-innovators from developing countries are to be found in: International Institute for Environment and Development (1997).
- 25 This can be justified by the fact that at least half of the leather produced worldwide is used for the manufacture of footwear (see section 2.2).
- 26 The Nordic countries have established the computerized database "GreenBuss", directly accessible on the World Wide Web, which contains information on "green consumerism" and eco-products relevant for those countries (<http://www.kommanet.nl/>).
- 27 A recent study of the Swedish International Development Authority (SIDA), entitled Trade, Environment and Development Co-operation, which reviews ways in which Sweden and the EU via trade and aid policies can support developing nations in the manufacture and export of environmentally preferable products that promote environmental and economic development, comes to similar conclusions. The report pro-

poses the following measures to encourage the transition to sustainable production and facilitate exports to Sweden and the EU of environment friendly products:

- support for the development of an infra-structure for the certification of, and transition to, environmentally friendly production;
- support for sector co-operation between developed and developing countries;
- export promoting initiatives; and
- the EU should accept the existing international criteria for organic products (IFOAM).

The report can be downloaded from www.sida.se/ter.

