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ENVIRONMENTAL LABELLING IN EUROPE: EUROPEAN AND NATIONAL TASKS*

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This paper considers environmental labelling (or ecolabelling for short) and, in particular, the European Union's (EU's) ecolabelling scheme. The procedure and problems of the ecolabelling scheme are described. Besides the EU scheme, many national private and governmental ecolabel schemes also exist in the member states, and this leads to competition among different ecolabelling schemes. It is argued that the disadvantages of such competition are outweighed by the advantages as competition between schemes helps, for example, to alleviate some of the inherent problems of ecolabelling. However, competition can only be beneficial if the competitive process is steered so that it serves consumer interests. To this end, additional institutions and rules should be established to avoid consumer confusion and to provide transparency and to make comparison between ecolabel schemes possible. Copyright © 1999 John Wiley & Sons, Ltd and ERP Environment.

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ECOLABELLING IN EUROPE

On the level of the European Union, the EU ecolabel award scheme, as laid down in Council Regulation 880/92/EEC, came into force in March 1992 and began its operation in 1993. Besides consumer guidance and producer incentives, the scheme aims finally to establish a common environmental labelling programme for all member states in order to obtain greater conformity with the creation of the single market in the EU.

Recently, besides the common EU ecolabel scheme, national ecolabel schemes operate in Austria ('Umweltzeichen Bäume'), Catalonia ('Medi Ambient'), Finland ('White Swan'), France ('NF-Environnement'), Germany ('Blauer Engel'), the Netherlands ('Stichting Milieurkeur'), Spain ('Aenor Medioambiental') and Sweden ('White Swan' and 'Bra Miliöval'). However, it is the initial aim of the regulation '. . . to create the conditions for ultimately establishing an effective single environmental label in the Community' (Council Regulation 880/92/EEC, preamble). However, the European Commission recognized the viability and success of the national ecolabel schemes and hence no longer intends a fast substitution of national schemes (European Commission, 1996). Thus, a remarkable situation of competition among the European and diverse national ecolabelling schemes already exists or may emerge in the near future. Competition between ecolabel schemes also stems from a large number of privately organized ecolabel schemes.

There are some arguments against competition and in favour of a unique, centralized ecolabel

scheme operating on the Community level. These arguments are rationales for a common EU environmental labelling scheme, especially if aspects of the internal market are concerned or advantages of mass production seem achievable. National ecolabel schemes are sometimes deemed to act as trade barriers. Explicit discrimination is not all that significant because nearly all schemes are voluntary and formally guarantee equal participation and access for domestic and foreign producers. Discrimination seems more implicit if schemes lack transparency and possibilities for foreign producers to participate in the development of labelling criteria. A common ecolabel scheme seems to be a solution but with the loss of the advantages of a decentralized approach and competition, which are elaborated below.

For producers, the obvious advantages of one Community-wide ecolabel are that they no longer need to apply for diverse national ecolabel schemes and pay several application fees once they are awarded with the common EU ecolabel. Thus, a common ecolabel scheme leads to the reduction of transaction costs. More important, product amendments must be adjusted to only one environmental criterion scheme and do not have to take account of different product requirements of diverse national schemes. A uniform European ecolabel hence seems to allow cost reductions and economies of scale for producers. These arguments furnish a reason for the harmonization of environmental labelling on a European level. However, it should be mentioned in this context that the last aspect of a single ecolabel scheme might entail a lowering of environmental product quality because the scope of environmental requirements decreases from multiple schemes to only one. A further advantage of a centralized approach is that the uniform ecolabel scheme provides the supply of a certain minimum level of product information to consumers, in particular in those countries which have yet to establish their own ecolabel schemes. Additionally, those member states benefit from the environmental effects of the common programme, such as waste reduction, without establishing a costly ecolabel programme as a whole. In general, improving the information supply on product, factor or capital markets ensures the functioning of the Common Market, and, therefore, a common scheme seems reasonable.

However, there are alternative measures with the same Common Market effects that ensure additionally the advantages from decentralized approaches and the coexistence of different ecolabel schemes described below. These measures include for example, providing guidelines and technical or financial support for the development of further informational schemes in the member states. Here the European Union can secure transparency, equal access and participation by issuing restrictive guidelines or by observing the practices of national schemes. Furthermore, to guarantee harmonization, the European Union can set minimum standards of environmental labelling practices and methods or can promote the application of the ecolabel procedure standards of the International Organization for Standardization (ISO) that have recently been developed.

In the remainder of this article we will elaborate that there could be stronger arguments that competition between co-existing ecolabel schemes can be advantageous, particularly in view of the fact that in most countries the development of procedures and methodologies of environmental labelling schemes is only just incipient. We present this with regard to the example of the problematic development of the EU's ecolabel scheme.

THE EU ECO-LABELLING SCHEME

Programme Description

The ecolabelling scheme of the EU is a voluntary, third-party ecolabelling scheme that provides information about the environmental superiority of awarded products by a single sign and at the point of sale. The environmental superiority of the products refers to the consideration of multiple environmental aspects of the product life cycle. These are, for example, different kinds of resource use, pollution or amounts of waste, for which environmental criteria are defined on the basis of environmental analysis. To identify and evaluate the most important environmental impacts, comprehensive analytical tools, such as life cycle assessment (LCA) or ecobalances, are used.

The development and administration of the European programme involves several institutions, in particular, the DG XI (Directorate General XI – Environment, Nuclear Safety and

Civil Protection of the European Commission), the competent national bodies (which are often the same institutions as designated for the national environmental labelling schemes), the Committee of Competent Bodies, the Consultation Forum composed of representatives of the major interest groups (industry, commerce, environment, consumers and trade unions), the Regulatory Committee, the European Council of Ministers and *ad hoc* working groups.

The first stage of the complex procedure and structure of the European programme is the development of environmental criteria, which starts with *product group selection*. Every interested party can make suggestions for new product groups to the competent bodies of the member states. Moreover, not only the competent bodies, but also the European Commission can propose a product category. Recently, the Commission has been frequently using this option to make the application of the ecolabel scheme consistent throughout the member states. After this, the European Commission organizes the *drafting of environmental criteria* by conducting the necessary investigations itself or assigning one member state as 'lead country' for one product group. For example, Germany was the lead country for the criterion development for laundry detergents, while the European Commission is responsible, for instance, for sanitary-cleaning products and detergents for dishwashers.

To ensure comparability and consistency in criterion development throughout the participating member states, the European Commission defines a certain procedure that comprises a feasibility study (estimation of the ecolabel feasibility, potential success or problems of realization), a market study (e.g., considering the nature of the relevant market), environmental inventory and environmental impact assessment in a life cycle assessment, the setting of criteria and the presentation of the draft criteria. The life cycle assessment is based on a comprehensive approach, the so-called 'cradle-to-grave' approach, the specification for which is laid down in the regulation.

The methodology of the life cycle assessment should be based on the 'Guidelines for the application of life cycle assessment in the EU Eco-Label Award Scheme' prepared by the 'Groupe des Sages' (European Commission, 1997). The research group attempts to develop the life cycle assessment guidelines compatible with the international life cycle assessment methodology, such as the approaches of the Society of Environmental Toxicology and Chemistry (SETAC) and the International Organization for Standardization (ISO). On some steps of criteria drafting, consultation takes place with the ad hoc working group composed of experts from the member states and representatives of all involved parties.

After the necessary hearings and consultations, the competent national body *submits the draft criteria* to the European Commission, which then presents them to the Consultation Forum. Within the Consultation Forum, national interest groups comment and make suggestions via their Community-level representatives or European associations. The Consultation Forum adopts a formal opinion after reaching a consensus among the interest groups. The European Commission's DG XI revises the drafts in internal consultations with the participation of other Commission Services, before presenting them to the Regulatory Committee. The latter consists of representatives of the member states and the European Commission, and votes by qualified majority on the draft decision. After the Regulatory Committee affirms the draft criteria, they are published in the Official Journal of the European Union. If no majority is obtained in the Regulatory Committee, the European Commission presents the draft criteria to the European Council of Ministers, which has the final decision.

The second stage of the EU ecolabelling scheme is the application. Producers and importers may apply for the European environmental label to the competent bodies of the member states by submitting documents as well as by providing all necessary test results and specifications stating the product's compliance with the ecolabel requirements. The competent bodies award the ecolabel on the basis of document verification. They have to inform the European Commission about ecolabel awards, and the European Commission in turn informs the other competent national bodies of the European Union. When the competent bodies of the other member states raise no objections, the applicant and the competent national body can sign a contract concerning the use of the logo. The application fee consists of a fixed amount and a royalty from

the turnover of the ecolabelled product. Each competent national body can individually adjust the level of fees.

Problems and Revision of the European Ecolabel Scheme

The original regulation requires a revision of the Community Ecolabel Programme after an operation period of five years. The European Commission, therefore, published a proposal for a revised environmental labelling scheme in December 1996 (European Commission, 1996). With the revision of the programme, the Commission attempted to take account of diverse procedural and methodological problems that have emerged during the application since 1993 (for critical reviews of the EU scheme see also Mitchell, 1995; Potter and Hinnels, 1994; Erskine and Collins, 1996).

The current situation of the ecolabelling scheme reflects the typical pattern of development for ecolabel schemes. In the beginning, both consumers and producers show only reluctant willingness to accept the ecolabel scheme. The lack of publicity, the absence of environmental criteria for most product groups and the lack of operational experience could be partly responsible for the cautious attitude of producers and the low recognition by consumers. Consequently, after three years of operation, the ecolabel was awarded to no more than 24 products in 12 product categories. However, an exponential use of ecolabel schemes presents itself in cases where ecolabel schemes enhance their popularity and become means for producers' competition strategies. Recently the European ecolabel has been gaining considerable ground. In April 1999, the number of awards had increased to 236 products in 15 product groups. With the proposed revision of the regulation, the European Commission intends to streamline and simplify the ecolabel procedure in order to broaden the application of the EU ecolabel still further.

During programme operation, the need for greater consistency of different operation modes of the ecolabel scheme in the member states was recognized as one of the necessary amendments. The solution requires procedural and methodological guidelines from the European Commission, such as a handbook for the selection of environmental criteria, the methods of life cycle assessment, the consultation of interest groups, transparency etc. Other improvements of the scheme include proposals for a flexible validity period of environmental criteria, a ceiling of annual fees and the streamlining of the ecolabelling procedures, especially the complex criterion setting process. To this end, the establishment of a privately organized European Ecolabelling Organisation (EEO) was proposed. This organization is intended to operate as a co-ordinating network between the competent national bodies.

In principle, the EU ecolabelling scheme had the advantage of being based on the experience of several environmental labelling schemes already operating in different member states. To avoid being accused of conducting myopic environmental impact investigations, which was the case with some older ecolabel schemes, the regulation imposes a comprehensive life cycle assessment approach for the criterion-setting procedure. Nevertheless, this complex methodology gave rise to a time-consuming and inflexible ecolabelling procedure, a possible impediment for the further diffusion of the EU ecolabel.

The methodological obstacles of the life cycle assessment emerged during the operating phase of the EU ecolabelling scheme (Mitchell, 1995). In practice, the objective of the so-called 'cradle-to-grave' approach, the comprehensive life cycle approach, turns out to be unachievable. Moreover, the realization of the concept of 'product with a reduced environmental impact during its entire life cycle' (laid down in the regulation) fails due to non-existing methodology. However, these problems are taken into consideration in the revision of the regulation. No solution has as yet been found for the trade-off problem between streamlined and more applicable procedures on the one hand and the assurance of the content and credibility of the ecolabel with a sufficient number of environmental criteria on the other. The revision therefore seeks to establish criteria for selected key environmental aspects of the product's life cycle, which must be derived with advanced procedures and methodologies (Loprieno, 1997).

The EU ecolabelling scheme is sometimes accused of acting like a barrier to international free trade. Examples are the ecolabel criteria for kitchen rolls, toilet paper and copying paper. The

relevant environmental criteria address the production phase of the paper products. They concern several emissions, energy and resource use during the production process and require sustainable forest management. In particular, the criteria for copying paper consider the use of recycled paper. Foreign producers deem the production-related requirements as trade barriers. For example, Canadian and Brazilian paper and pulp producers complain about the recycled content requirements because their products have a high virgin paper content (Staffin, 1996; OECD, 1997). To avoid possible adverse trade effects the revision of the methods must also take into account the developments of international ecolabelling standards, such as those directly concerning environmental labelling (e.g., ISO 14020, ISO 14024) and those concerning the life cycle assessment procedures (i.e. ISO 14040, ISO 14041, ISO 14042, ISO 14043, ISO 14048, ISO 14049). Additionally, the revision emphasizes procedural amendments to achieve greater transparency for foreign manufacturers.

Another serious criticism concerns the 'pass–fail' nature of the EU ecolabelling scheme (see Potter and Hinnels, 1994, for example). First, there are no further incentives for environmental innovations once manufacturers have passed the environmental criterion hurdle. Second, there are obstacles of defining uniform environmental criteria for the whole European Community because the regulation ignores different production technologies, market structures, environmental practices and different levels of consumer environmental awareness in the member states. To achieve more flexibility for the recognition of particular circumstances in the member states, a graded ecolabel is taken into account by the revision. Environmental scores, expressed by various numbers of 'European Flower' signs, will be attributed to the selected key environmental aspect of the considered product. The visible degree of valuation should assure the credibility of the ecolabel. In addition, the EU ecolabel will provide generic information on qualitative environmental criteria.

Further Problems

Even a streamlined approach of criterion development leaves many problems that can threaten the credibility of the scheme. These shortcomings start at the product group selection stage when products that are often not perfect functional substitutes are compared or products with multiple uses are assigned to only one product group. Furthermore, there are no uncontroversial criteria for the limitation of the LCA analysis ranging to previous and subsequent stages of the product life cycle (for the problems of LCA see Udo de Haes, 1993, for example). Thus, the definition of the boundaries of LCA analysis seems arbitrary. Additionally, even the streamlined LCA approach is characterized by complexity resulting from the great amount of data required. Databases and software are proposed as a solution for these complexity and availability problems. However, databases are sometimes not applicable to specific product situations. Problems regarding the environmental impact assessment step of LCA stem from the problematic environmental evaluation with insufficient environmental knowledge, for example about the cause-and-effect relationships between the pollutants and final environmental damage.

These methodological problems cause a dilemma. On the one hand, the fact that the comprehensive analysis approach is unachievable obviously necessitates methodological simplifications to keep the ecolabel programme feasible. On the other hand, the reduction of methodological accuracy makes the ecolabelling results vulnerable to criticism and decreases their credibility. Furthermore, methodological and procedural uncertainties offer discretionary power to the competent bodies. Additionally, decisions within an unstable methodological framework can be channelled in favour of special interests, i.e. it creates opportunities for manipulation by interest groups.

Another problem is that the single sign of an ecolabel (even with some additional information) may conceal other information necessary for evaluating environmental product quality (Wynne, 1994). Comprehensiveness via transparency is only achieved if consumers are informed about the methods of aggregation and evaluation, underlying assumptions, methodological reductions, data failures and decisions etc operating behind the single ecolabel sign. Only if consumers are endowed with this information they can evaluate the quality of the ecolabel scheme and the ecolabelled products.

Regarding long-term environmental and economic impacts, the environmental improvements of ecolabelling schemes largely depend on the ability of ecolabels to provide appropriate incentives for product innovations. Product-related environmental advancements can be made in many ways. The feasible set of measures encompasses, for example, an increase in the lifetime of a product, input substitutions (e.g., less toxic materials), redesign and reformulation of products. All measures aim to reduce the use of ecological resources or diminish the quantity and damage of emissions. Environmental labels in general, and the EU ecolabelling scheme in particular, reflect only a part of the whole range of product improvements because of the limited environmental criteria which they take into account. In particular, when environmental labelling schemes focus on a single criterion (e.g., recyclability), possible environmental advancements made in respect of other environmental attributes of the product remain unrewarded. Thus, environmental labelling schemes may not only channel investments in research and development towards just those products which are considered by the ecolabel scheme (Hale, 1996; Morris, 1997), but also attract improvement measures only for product attributes which are encompassed by the environmental criterion scheme. A further significant problem is that the environmental improvement effects of ecolabelling may be uncertain or even adverse if the environmental improvements per unit, created by the redesign and reconstruction of the product, are neutralized by an increase in the amount of products sold and hence by a larger total magnitude of environmental damage.

BENEFITS FROM A PARALLEL DEVELOPMENT

In contrast to the advantages of a common EU ecolabelling scheme, there are also considerable benefits from a coexistence and competition among different private and governmental ecolabel schemes, which result mainly from the explorative and innovative functions of competition (for a discussion of institutional competition see Kerber and Vanberg, 1995; Woolcock, 1996). In economics, it is generally agreed that competition enhances efficiency and market results, leads to the production of knowledge and restrains power. In the context of ecolabelling, competition between different schemes, which are either on the EU or the national level and either governmentally or privately administered, can have similar advantages. However, the emergence of competition requires the recognition and acceptance of different ecolabelling schemes by producers, sellers and consumers. This is most likely if the number of ecolabel schemes is small. Furthermore, we can assume that the economic actors have the cognitive abilities to recognize to some extent the differences among particular ecolabel schemes.

First, competition among ecolabelling schemes may increase their quality if ecolabel schemes competitively try to represent the particular environmental superiority of their awarded products and, thus, strengthen their environmental criteria and awarding scheme. Different programme suppliers may compete on credibility. In our context, competitive national ecolabel schemes can, for example, permanently reflect on the credibility of the EU ecolabel programme if they can prove the better quality of their criterion schemes. The better quality of environmental criterion schemes is a broader set of environmental criteria considering more products' environmental aspects and having more stringent environmental threshold values.

The quality of environmental criterion schemes is mostly determined by the process of consensus-finding among the involved parties, including several special interest groups. Within the EU ecolabelling scheme a great number of different interest groups from all member states must be involved in the democratic procedures of criterion development. It is likely that the different national interest groups have diverging or sometimes opposing interests, opinions and evaluations regarding the issues which are considered in criterion development (see Erskine and Collins, 1996). As a result, since consensus may often be found only at the lowest common denominator, the quality of the EU scheme may be lower in comparison to the national ones.

It can also be argued that competition among schemes is a measure to reduce the risk of failures which are caused by the capture of the programme by particular interest groups or by bureaucratic capture in which the administrating

body protects its own interests at the expense of consumers. Here the co-existence of several ecolabel schemes can have 'disciplining effects'.

Second, competition among ecolabel schemes provides opportunities of choice for both producers and consumers. According to their environmental preferences and willingness to pay for different environmental qualities of products, consumers can choose between different stringent ecolabelling schemes and their awarded products. Consumer welfare will be enhanced to the extent that greater variety of ecolabelled products increases consumer utility (see also Sun and Pelkmans, 1993). We can assume this for a limited number of credible and well known ecolabel schemes.

Competition is also a means of preventing 'lock-in' effects. In the context of environmental labelling, 'lock-in' effects describe the possible path dependence if the ecolabel scheme establishes and confirms product requirements that may favour inferior technologies (Morris, 1997). Ecolabelling criteria and standards may induce specific technologies and investments, for example, if they explicitly require certain production methods or if certain criteria can be met only by the application of specified technologies. The applying firms will still follow a specific technology path whether superior technological alternatives exist or not. The product variety may be reduced as well because it is limited by the possibilities afforded by the chosen technology. Labelling competition prevents the development of a situation in which only one or just a very few technologies are favoured by one programme and prevents a possible reduction in product variety because different ecolabel schemes promote different product and technology alternatives. Producers can apply for those ecolabel schemes, which correspond to their environmental protection capabilities and their preferences for certain market niches.

Considering these arguments about competition, we can also suppose that a decentralized structure of environmental labelling schemes with competition among schemes can create and spread a larger amount of knowledge than a centralized one without competition (see also Kerber and Vanberg, 1995; Woolcock, 1996). Here, competition also generates a process of experimentation and learning about the successful running of different ecolabelling schemes. In the current situation, in which the prerequisites for successful environmental labelling are not fully explored, the innovation and learning process conducted by competitive, decentralized schemes seems more helpful than only one centralized approach. The trial-and-error process of competition as an 'explorative device' (Hayek, 1968) to find successful institutional arrangements (see also Siebert and Koop, 1990), in which diverse schemes use, for example, new criterion schemes, new environmental analysis methods or new labelling statements, helps to find out which scheme design best satisfies consumer interests and capabilities. It is one of the great advantages of competition that incentives for experimentation and exploration are built into the competitive process. Ecolabel schemes, which differ in their quality, for example, by changing the scheme of environmental criteria, may realize changes in their credibility. This process of production of knowledge initiated by competition is beneficial in view of the mainly beginning phase of most ecolabel schemes.

Besides the benefits from a competitive ecolabel situation, there are some arguments in favour of a decentralized approach to ecolabelling which result from the discussion of environmental federalism (see Karl and Ranné, 1997, for example). Environmental criteria of ecolabel schemes may be best defined with the full consideration of the specific national environmental situation (e.g., environmental potentials, natural assimilative capacity), typical market conditions and structure, special environmental infrastructure and environmental awareness and preferences of consumers (e.g., depending on income levels, cultural differences, population density) of each member state. However, common EU environmental criteria, developed by one national competent body for all Union countries, cannot take account of all these specific national characteristics and hence ('average') environmental criteria are too high or low in comparison with the conditions of the member states. Instead, national schemes of environmental criteria are defined in view of these specific national conditions and fit better, in particular, to the environmental preferences of the citizens and environmental capabilities of producers of each member state. We can also suppose that the administrating bodies of

the ecolabel schemes are better endowed with knowledge about the specific business and legal conditions of each country.

Like competitive processes on markets for private goods that only provide favourable results within certain constrains, the rivalry among different institutions can only work in the desirable direction if constrained by a set of 'competition rules' (see Kerber and Vanberg, 1995, for example). In the context of environmental labelling, the desirable direction of the competitive process is to serve the interest of consumers. Therefore, only those competition rules and other additional institutions are desirable that steer the explorative potential of the competitive process in the direction of consumer interest and capabilities to ensure transparency, comprehensiveness and comparability of different ecolabel schemes. In particular, competition among ecolabelling schemes can only be fruitful if consumers understand the differences between the schemes, especially the different quality of the specific environmental criterion schemes.

However, the parallel existence of different ecolabelling schemes may cause consumer confusion and, hence, discourage consumers from shifting their demand to environmentally superior products awarded an ecolabel. The situation requires considerable efforts of information collection and processing by consumers to recognize the scope of defined criteria and the severity of the environmental threshold values each programme possesses for the many considered product groups. Therefore, consumers can only judge with difficulty the quality of particular ecolabels. Additional institutions, such as research and test institutes, governmental monitoring etc, seem necessary. They can support consumer decision making with regard to different ecolabelling schemes and therefore they can suit the limited ability of the consumer to process all the available information. The tasks of these institutions may consist in the monitoring, observation and comparison of the activities, procedures, decisions and requirements of co-existing ecolabelling schemes and in the evaluation of their respective qualities.

Rules and other institutional measures can also be established to enforce competition, especially if they provide aid to build up the credibility of new ecolabel schemes. Such measures can include, for example, standards of environmental labelling practices and methods, which have recently been worked out by the International Organization for Standardization (ISO). Ecolabel schemes that can testify that their practices are in accordance with the ISO standards may gain some advantages in credibility. Rules, standards or other institutional measures that lead to a greater transparency of the underlying ecolabelling methods and procedures can prevent competition among ecolabel schemes from resulting in a so-called 'race to the bottom', in which ecolabel schemes undercut their competitors with a greater laxity of requirements.

With the visibility of the quality of different ecolabel schemes, producers have a possibility to present their environmentally superior product quality in a relatively reliable way. Product innovators could then separate themselves by choosing the appropriate ecolabel programme. Additionally, governmental or private observation of ecolabel schemes can be an aid to prevent from fraudulent practices and possible collusion between ecolabel schemes. It seems necessary that the results of the observations be released to the public. Once more, the decisive role of transparency becomes obvious.

CONCLUSIONS

To sum up, the advantages of competition among ecolabel schemes could outweigh the disadvantages. This is particularly relevant where the starting phase of most ecolabelling schemes is characterized by procedural and methodological uncertainties that could be ameliorated by the co-existence and parallel development of ecolabel schemes. Considering the problems of environmental labelling in general and the European ecolabel programme in particular, we can suggest that establishing and fostering competition among ecolabel schemes could reduce some of those problems. Besides the other relative advantages of a competitive situation mentioned above, the co-existence of diverse ecolabel schemes offers multiple ways to create sufficient knowledge about the factors that lead to successful ecolabelling. Different operating ecolabel schemes provides, for example, different underlying LCA methodologies, different rewarding and scores schemes, some different methods of detailed

presentation or aggregation of product information or a greater variety of environmental criterion schemes. Consumers and producers can select the most credible and suitable ones. Thus, the competitive and selective approach of co-existing schemes helps to find successful institutional arrangements for ecolabelling relating to the solution of credibility problems. However, the prerequisite for gaining the relative merits of competition is that consumers and producers can differentiate and select among ecolabel schemes. To this end, some additional institutional measures should be established. In particular, these institutions should avoid consumer confusion and provide transparency, and make comparison between ecolabel schemes possible or easier.

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