

**An Evaluation of
Ecolabels, Standards & Certifications
in the Chemical Industry**

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ABSTRACT

In recent years, ecolabels, standards and certifications (ESCs) have been increasingly utilized to signal a product's environmental and socially responsible profile, both in the business-to-business and business-to-consumer spheres. The growing demand for this sustainability information from consumers, retailers, and governments has put pressure on the suppliers to provide qualitative and quantitative data on products' environmental footprint.

A multi-national chemical company and the University of Michigan School of Natural Resources team have collaborated to conduct this master's project, **An Evaluation of Ecolabels, Standards & Certifications in the Chemical Industry**. The purpose of this project is to provide a strategy for multinational chemical companies to better engage their customers in the marketplace in a way that supports the transfer of sustainability information throughout the value chain. The student team engaged with stakeholders in sustainability reporting, studied a number of ecolabel schemes, and developed a survey addressing members of the home and personal care industry to learn from their experience and priorities. Results of the survey indicate that home and personal care manufacturers expect to double the percentage of their products labeled with an ESC in the next five years. Manufacturers use ESCs on finished products to differentiate, and to increase market penetration and perception of product quality. The main barriers to this use of ESCs are the lack of accredited raw materials and supplier information. The R&D department is most often the agent pursuing ingredients labeled with an ESC and the most important decision-making factors influencing procurement are unsurprisingly, performance and price.

Suppliers of ingredients to home and personal care manufacturers can use valuable ESCs as a short-term measure to communicate the ingredient sustainability information, but given the ongoing development of the ESC marketplace, businesses throughout the value chain should continue to collaborate with stakeholders and watch for trends.

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We would like to thank everyone else who contributed to our project.

EXECUTIVE SUMMARY

A. PROJECT RELEVANCE

The purpose of this Masters Project, **An Evaluation of Ecolabels, Standards & Certifications in the Chemical Manufacturing Industry**, is to support a multinational chemical company and other suppliers similarly positioned in the value chain, in better understanding the emergence of ecolabels, standards and certifications (ESCs) in the marketplace. The project also sought to learn how ESCs impact the purchasing decisions of product manufacturers in the home and personal care sector.

In recent years, ESCs have been utilized to signal a product's environmental and, to a growing extent, socially responsible profile. ESCs are used as tools in business-to-business (B2B) and business-to-consumer (B2C) markets throughout the value chain through placement on ingredients and formulations that are sold from supplier to manufacturer as well as manufacturers' finished products. The number and variety of ESCs internationally has grown exponentially over the last few years. As of March of 2012, EcolabelIndex.com, an independent global directory of ecolabels and environmental certification schemes, is tracking 431 labels from 246 countries in over 25 industries. This overload of labels is causing great consumer and market confusion, leading to a reduction in impact and credibility for many ESCs.

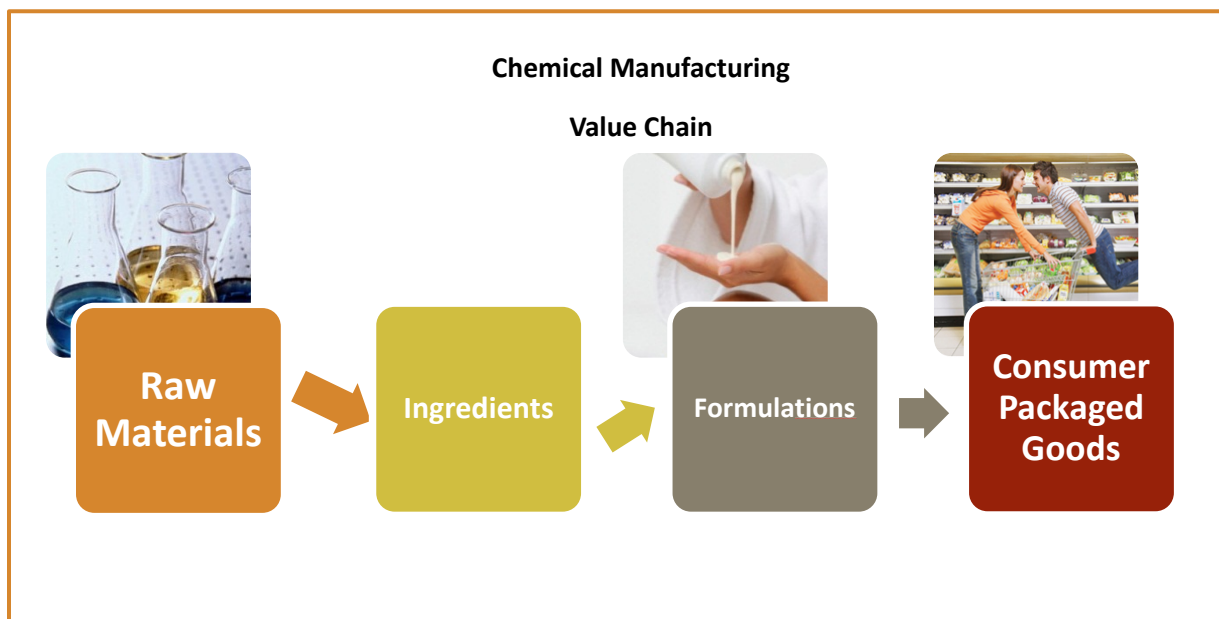


Figure ES-1. Chemical Manufacturing Value Chain

At the same time, sustainability information has become a valuable resource in the value chain as more consumers and retailers are requesting information on their products' environmental and social impacts. These sustainability information requests have moved their way up the value chain from consumer to retailer to distributor to manufacturer to raw ingredient supplier and have now become a regular part of doing business in many market segments. Responding to these information requests can be cumbersome and require a great deal of time and resources.

The purpose of this project is to collect data and market information on the evolving value, influence, and challenges surrounding ESCs and product sustainability communication throughout the chemical manufacturing value chain. The project will provide input into the sustainability, marketing, and customer engagement strategies for suppliers of ingredients and formulations to home and personal care manufacturers.

B. APPROACH

In order to gain a greater understanding of the ESC landscape, the University of Michigan team attended the Erb Institute's "Informing Green Markets" conference (specifically addressing the ESC landscape), the Green Products Roundtable meeting in Seattle, and conducted topic expert interviews. Current literature on the topic was reviewed, including research and white papers.

To gain greater knowledge about the impact of ESCs on the purchasing and marketing decision-making process of home and personal care manufacturers, the survey was sent to 2,696 individuals within the home care & personal care sector in Europe and North America, representing a variety of firm types, sizes, locations, and market segments. 184 responses were received, of which 95 respondents completed the survey in total.

Survey Design

Through the background research process, these five research themes emerged:

- 1. What are the drivers behind ESCs?**
- 2. What are the decision influencers?**
- 3. How active are manufacturers in ESCs?**
- 4. What are the current preferred ESCs?**
- 5. How can suppliers best communicate product or ingredient sustainability information to manufacturers?**

The survey consisted of 18 questions that attempted to answer these five research themes. It was designed to address the decision-making influences on both the **procurement of ingredients and formulations** for home and personal care separately from the **marketing of finished products**.

A number of demographic variables were tracked throughout the analysis, including geographic region, market segment, firm size, and firm type (see “Respondent Mapping” in Section I.C).

KEY SURVEY FINDINGS

Drivers Behind ESCs

The findings suggest that ESCs are decision-making tools used to satisfy a variety of goals:

New Product Development: The greatest percentage (53.2%) of decision-makers across all regions is within R&D. This suggests that manufacturers are pushing a large number of new products into the commercialization pipeline that they intend to qualify with an ESC in the future.

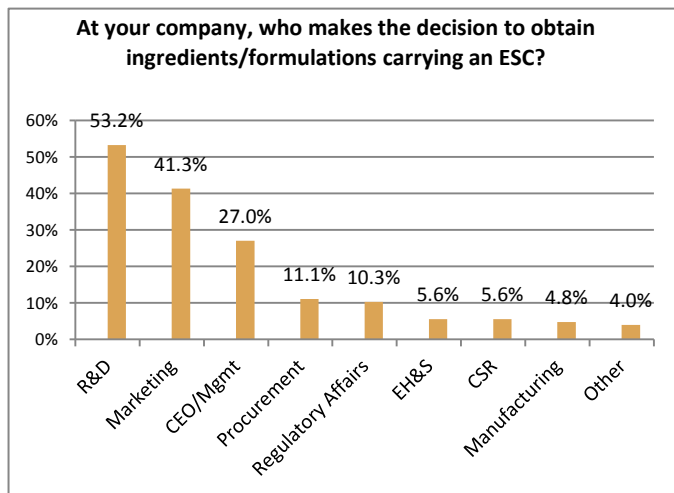


Figure ES-2. Decision-Makers for Ingredients

are seen as a strategic investment. This happens most often in small firms with less than 100 employees.

Marketing to Consumers: Procurement decision-making driven by the marketing department (41.3%) suggests that significant pull is coming from retail purchasers and end consumers. This occurs to a greater degree in larger firms and in Western European firms.

Corporate Strategy: CEO/Management driving these decisions suggests that ESCs

The Procurement and Corporate Social Responsibility (CSR) departments appear less likely to push for ESCs than other departments. In this sector, use of ESCs does not seem to be incorporated into firms’ green procurement goals or company-wide sustainability strategy.

Decision Influencers for Ingredient and Formulation Procurement

Not surprisingly, the two highest-ranking influencers of procurement decisions were **performance** and **price**. The options of “ESC on ingredient” and “sustainability info available”

were ranked much lower by most companies buying raw materials for home and personal care applications.

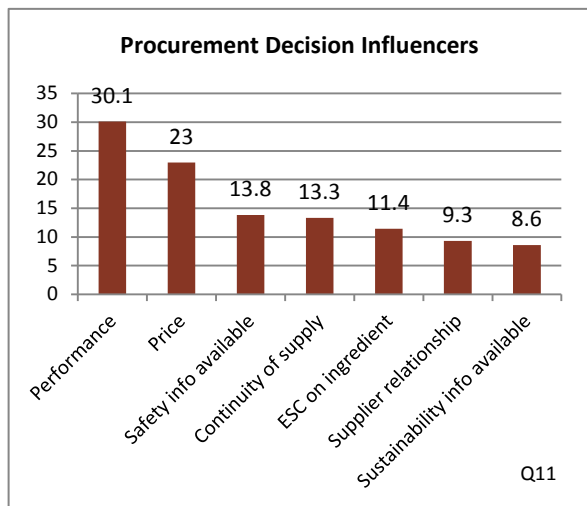


Figure ES-3. Procurement Decision Influencers

As R&D departments continue to develop more B2C products that will be labeled with ESCs, it is likely that the prioritization of ESCs in the procurement of these accredited ingredients will continue to rise. Suppliers **should consider investing in the accreditation of ingredients and formulations** while paying attention to impact on price.

Current ESC Preferences When Purchasing Ingredients and Formulations

In looking for trends within the procurement preferences for ESCs, the list of top preferred

ESCs overall, by region, and by market segment revealed:

- **Eco-cert** is preferred across market segments and geographic regions;
- There is no single standard upon which these ESCs are based; and
- ESC preferences often span market segments, including the broader home care and personal care categories.
- There are no consistent preferences for Type I, II, or III ESCs (See table below)

As defined by the International Standards Organization in ISO 14020 (ISO, 2012)

Type I	A multi-attribute label developed by a third party
Type II	A single-attribute label developed by the producer
Type III	An eco-label whose awarding is based on a full life-cycle assessment

The survey results also revealed the following relative to specific ESC *procurement* preferences:

- **CleanGredients**: CleanGredients is a non-profit database listing the environmental and human health attributes of cleaning product chemical ingredients. It is a preferred “label” for procuring ingredients. While 43.2% of all respondents were “Not Familiar,” North American respondents were much more familiar with it (not surprising considering it is sponsored by Design for the Environment, a label of the US-EPA);

- Design for the Environment: DfE was one of the most preferred ESCs in a number of market segments. North American and Asian respondents were more familiar with this label than others.
- Eco-cert: While based in Europe, Eco-cert enjoys significant recognition across all market segments and regions. This is also one of the few ESCs that rates *ingredients*. With the impending 2014 harmonization of this label into the new COSMOS standard, it will be interesting to see whether its recognition and value is brought to the new labeling scheme (See Appendix I, Section D for more information on harmonization of labels).
- Green Seal: While this label does not rank highly in any home or personal care market segment, it is well recognized in the North American and Asian markets.
- USDA Certified Biobased: It ranked among the top 3 ESCs for the following market segments: fabric & surface care, hair care, and skin care and was recognized globally despite being based in the United States.

Current Use of ESCs to Market Products

Table ES-1. Current Use of ESCs

Current use of ESCs	
Q7: What percentage of your product portfolio is currently labeled with an ESC?	16.1 %
Q8: What percentage of your company's sales is represented by products labeled with ESCs?	13.1 %

Products with ESCs represent a significant portion of the current product portfolio, but they may result in lower margins than the firm's average products.

Increased use of ESCs expected for all market segments

Respondents estimated that their firms would produce nearly **double the number of products labeled with an ESC in the next five years.**

Table ES-2. Expected Use of ESCs

Expected Use of Ecolabels	
Five years from now, what percentage of your company's products do you expect to be labeled with an ESC?	28.4 %

Considering that R&D is the top decision-maker in firms for purchasing ingredients and formulations with ESCs, and new product development can take as long as five years, this suggests that as some products mature and retreat from the marketplace, their replacements

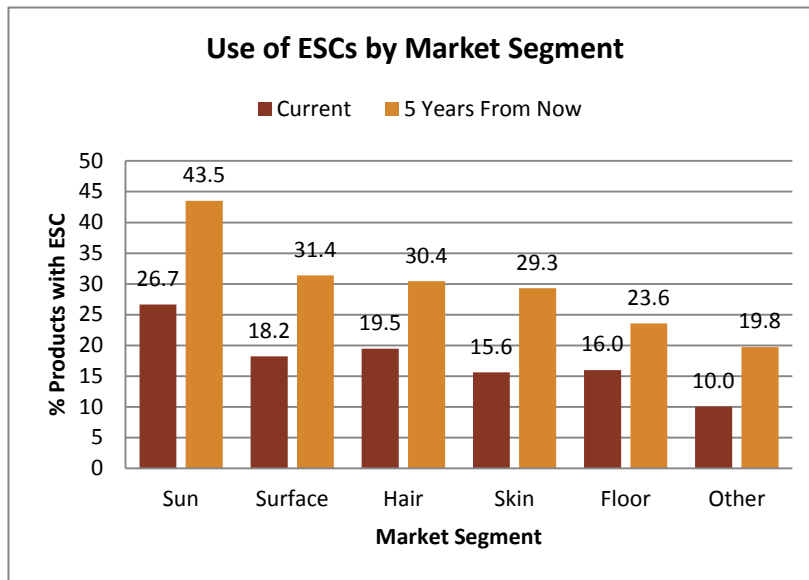


Figure ES-4. Use of ESCs by Market Segment

will be more likely to qualify for an ESC. TerraChoice's "Six Sins of Greenwashing" report showed that as "green" categories mature, the use of ESCs within that category increases as well (see Appendix I for Status and Trends of ESCs).

Figure ES-4 shows current and expected use of ESCs, organized by market segment and ranked according to expected percentage. Respondent replies indicate that the greatest *percentage growth* predicted in

ESCs over the next five years are within skin care, surface care and sun care, in that order.

Asia expects to increase use of ESCs more than Europe and North America

Respondents located in Asia expect to have a much greater percentage of their products carrying an ESC five years from now, compared with respondents in other regions. Interestingly, the survey was not intentionally distributed to companies based in Asia, as the scope of the survey was limited to Europe and North America. Subsequently, the small sample size (n=8) does not constitute a statistically significant sample.

However, this result corresponds to research done by the Natural Marketing Institute in 2011. NMI surveyed end consumers from around the world to learn the impact of ESCs on their purchasing decisions. While an average of 52% of respondents in developed countries indicated that an ESC would increase the likelihood that they would purchase a product, 82% of respondents in developing countries agreed, including 87% in China. **This level of willingness to change purchasing behavior will likely drive the significant increase in ESC product labeling in developing countries.**

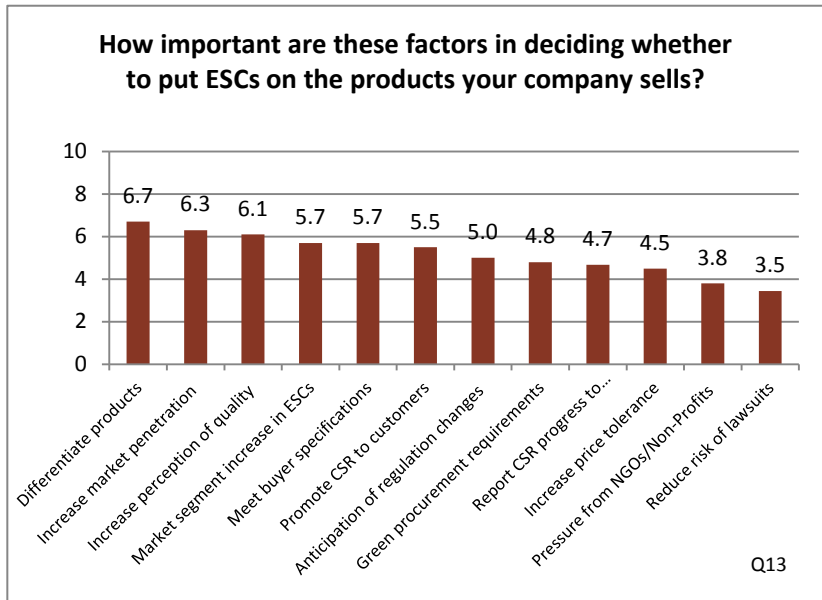


Figure ES-5. Marketing Influencers of ESCs

The three most important factors leading manufacturers to put ESCs on the products they sell were **all market driven, specifically to:**

- Differentiate products,
- Increase market penetration, and
- Increase the perception of product quality (see Figure ES-5).

Barriers to Acquiring ESCs for Products

The survey also asked respondents to rate the barriers to obtaining ESCs for products sold by their firms. The two highest ranking responses were: **“getting accredited raw materials”** and **“lack of supplier**

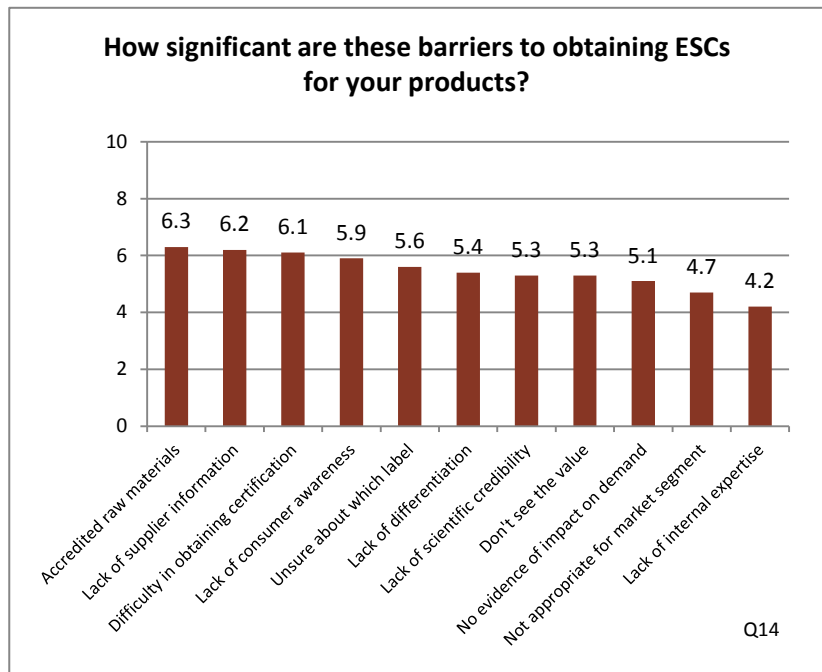


Figure ES-6. Barriers to Obtaining ESCs

information.”

Among the findings, there were a few noteworthy differences among respondent groups:

1. Respondents identified as **personal care manufacturers** ranked themselves as having **higher barriers** to implementing ESCs compared to manufacturers in the fabric & surface care segments (see Table ES-3). This corresponds with research pointing to the complexity of sustainability drivers for personal care products (see Appendix I, Section D).

2. Respondents’ **firm size** also impacted barriers for obtaining ESCs. In general, the data

Table ES-3. ESC Barriers by Business Sector

Barriers: Differentiation based on Respondent Type					
Respondent Market Segment	Difficulty in obtaining certification	Lack of consumer awareness	Unsure about which label	Not appropriate for market segment	Lack of internal expertise
Personal Care	6.5	6.3	6.1	5.0	4.8
Fabric & Surface Care	5.2	5.0	4.3	3.7	2.7
Overall Mean	6.1	5.9	5.6	4.7	4.2

showed that the larger the firm, the lower the barriers to obtaining ESCs. Small and mid-size firms may need more support on the development of their sustainable product portfolio.

Current ESC Preferences for Marketing Products

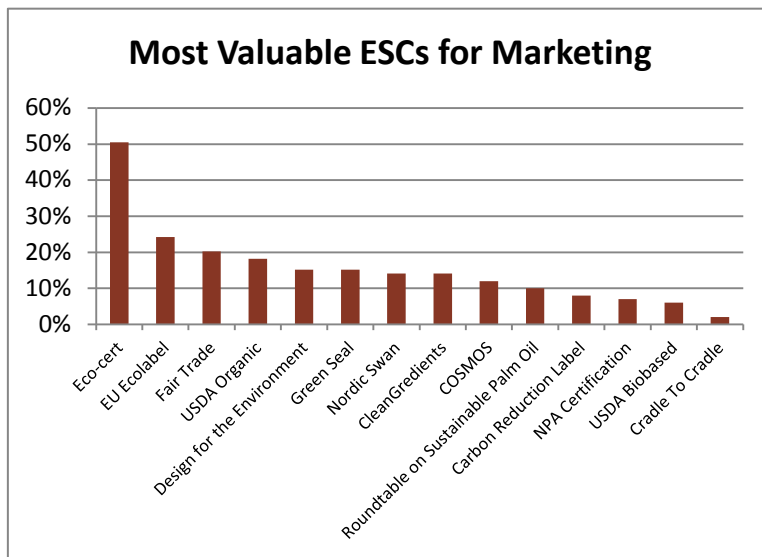


Figure ES-7. Most Valuable ESCs for Marketing

By far, **Eco-cert** was considered the **most valuable ESC** in the marketplace.

Eco-cert has proven itself to be the most robust label globally of all ESCs included on the survey, both in the B2B market, for the procurement of ingredients and formulations, and in the B2C market, for the marketing of products to end consumers.

North America places a lower premium on the value of Eco-cert’s marketing power, ranking **Design**

for the Environment (DfE), Green Seal, and Nordic Swan/Roundtable on Sustainable Palm Oil (RSPO) (tied) as the top four choices.

When looking at most preferred ESCs by market segment, there were some expected differences. While **Eco-cert earned the top rating**, the following labels shifted significantly depending on their audience:

- **EU Ecolabel**, overall the number two choice for marketing products, was valued most by the market segments of fabric & surface care and floor care.
- **NPA Certification**, a label that barely appeared on the overall preference list, was overwhelmingly

chosen as the second most preferred label in sun care, demonstrating its niche value for this market segment.

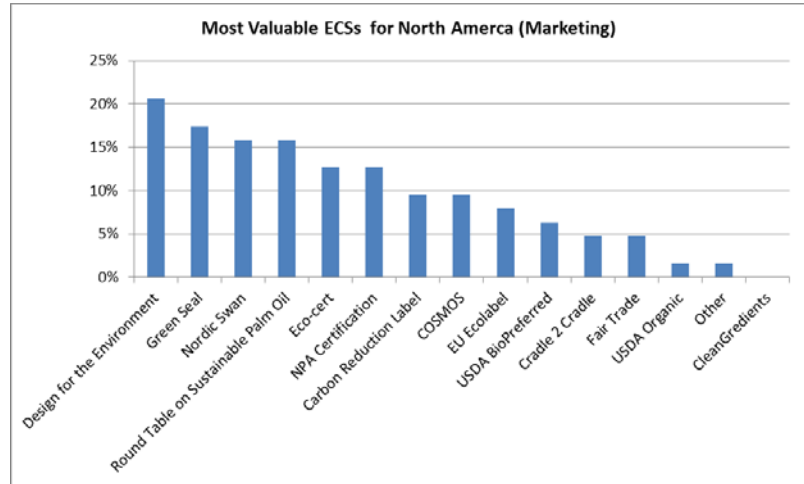


Figure ES-8. Most Valuable ESCs for Marketing In North America

Among the labels ranked in the “**least valuable ESCs for marketing**” among home and personal care respondents, Cradle To Cradle, ranked first with Nordic Ecolabel coming in second. Both labels are **Type III life cycle assessment** certifications, which suggests that home and personal care manufacturers do not yet find marketing value in this type of certification.

C. RECOMMENDATIONS

Assessment of the current landscape of ESCs and survey findings informed the following recommendations. The recommendations are provided in two sections: 1) the context of information sharing in the current landscape and 2) long-term, strategically oriented initiatives. These recommendations are offered from the value chain perspective of a supplier of ingredients and formulations in home and personal care products.

GUIDELINES FOR COMMUNICATING PRODUCT SUSTAINABILITY THROUGHOUT THE HOME AND PERSONAL CARE VALUE CHAIN

Information Sharing in the Current Landscape

In order to effectively communicate their products' sustainability, manufacturers will continue to require and subsequently request this information from suppliers. By increasing the accessibility of this information to manufacturers, suppliers will improve service and, in the long run, decrease the time and resources necessary to address these requests. The results of the ESC survey revealed that the most significant barriers to obtaining an ESC for home and personal care products were sourcing "accredited raw materials" and the provision "supplier information."

The findings suggest that different approaches are appropriate when interacting with a supplier's customer (manufacturer), depending on their demographics:

- Large firms (over 5,000) already have the resources and R&D departments required to attain ESCs. They desire greater access to information about the sustainability profile of ingredients and formulations.
 - Suppliers frequently use product safety data sheets to share health, safety and environmental information with manufacturers. **Integrating expanded sustainability information into already existing infrastructure helps to prevent further confusion.**
- For small and mid-size firms in the personal care sector, the barriers to obtaining ESCs are not minimal.
 - Suppliers would benefit from **launching a pilot program directed at small and mid-size personal manufacturing firms to educate them on ESC programs' application processes and give them the supplier information they need.**

Additionally, the findings suggest at least two ways in which a supplier can leverage ESCs to improve information sharing with its manufacturers:

- Because Eco-cert is the most valued ESC for personal care manufacturers in the EU, in all market segments, and is able to certify both ingredients and finished products:
 - Suppliers should accredit the top 10% of ingredients and formulations that commonly receive either ESC or information requests in the EU with Eco-cert.
- Because Design for the Environment is the most valued ESC for home and personal care manufacturers in North America, in all market segments, and CleanGredients is the ingredient “feeder” for Design for the Environment label on finished products:
 - Suppliers can use the CleanGredients verification for their home care ingredients and formulations to enable manufacturers to apply for the Design for the Environment standard for their cleaning products. Suppliers can submit to CleanGredients the top 10 % of ingredients and formulations that receive either ESC or sustainability information requests in North America.
- Regardless, suppliers should annually gauge the return-on-investment in time and resources saved via use of certification versus information sharing.

The disadvantage of global suppliers depending upon ESCs to communicate sustainability information to manufacturers is that each ESC has its own audience and generally provides only some of the information necessary to meet manufacturers’ needs. Many ESCs are only recognized regionally, and currently there are no clear “winning” global ESCs that will exist beyond 2014 (due to harmonization of Eco-cert into COSMOS). By depending on ESCs, global suppliers will likely require multiple ESCs in various markets and regions in order to meet the informational needs of manufacturers.

When deciding whether or not to apply for an ESC, consider:

- 1) The **costs and benefits of providing detailed product information** to manufacturers via established company information sharing vehicles, such as product safety data sheets.
- 2) Using a **multi-layered approach that also leverages ESCs as informational shortcuts** for the most frequently requested ingredients and formulations and depends on product data sheets more generally for all ingredients and formulations.
- 3) Carefully **tracking the results** to gauge which efforts are worth further investment and launching into additional market segments and/or regions.

Information Sharing in an Evolving Landscape

Survey findings suggest that ESCs will remain in the supplier landscape for at least the next five to ten years. However, that landscape continues to develop in emerging markets and shift in mature markets. Industry experts are unsure of the future impacts and influences of ecolabeling schemes, as are the businesses that use ESCs. In order for suppliers to be leaders in sustainable business, it is integral that they continue to engage the ESC environment proactively, collaborating with other stakeholders, watching for trends, and adapting to this changing business environment.

Partner and Collaborate

When asked how suppliers should deal with sustainability information requests, Dr. Anastasia O'Rourke said, "Companies would be wise to collaborate with stakeholders on common platforms to make this happen and to reduce market-wide confusion around the proliferation of ecolabels, standards, and green claims." Because of the great deal of uncertainty, there is an opportunity for companies to influence how this universe shakes out.

Work with ESC Programs and Reviewing Bodies

Each of these ESCs goes through a periodic review of its criteria through a consultation process. Therefore, suppliers should take advantage of these windows of opportunity to develop relationships with these ESC organizations, helping to inform the conversation around their criteria.

Develop Timeline of Consensus-based ESC Reviews

Suppliers should develop a timeline of all relevant ESC reviews, and then develop a strategy based on institutional knowledge as well as this report's findings. Increased industry involvement during the development of ESC criteria and standards will also help contribute to the relevance and achievability of future ESCs.

Work with Influential Organizations

In addition to contributing during the ESC consultations, suppliers are able to remain engaged with other key stakeholders such as:

- **Green Products Roundtable (TBD New Entity)**
- **Sustainability Consortium**
- **ISEAL Alliance**
- **Global Ecolabelling Network**
- **International Green Purchasing Network**

Watch for Trends

Identify and Follow ESC Trend-setting Events

To ensure that suppliers stay on top of ESC trends, they should track several emerging initiatives that have the potential to influence the direction of ESCs in the medium to long-term:

Executive Order 13514

In 2009, President Obama signed into law Executive Order 13514, which committed federal agencies to ensure that 95% of new procurement contracts are environmentally preferable. A General Services Administration Section 13 Working Group on Standards and Ecolabeling is charged with developing guidelines around the use of ESCs in green procurement.

U.S. Federal Trade Commission Green Guide Revisions

The U.S. Federal Trade Commission Green Guides provide general guidelines for companies making environmental claims. The Guides were first released in 1992 and then updated in 1996, and 1998 and is currently pending revisions.

EC Proposal on Bio-based Products

The European Commission has issued several standardization mandates that it hopes will improve labeling and certification and ensure the quality of consumer information in the bio-based products sector.

COSMOS Standard

The COSMOS standard is the first major model of label harmonization. Its success will have implications for other potentially harmonized ESCs and the landscape as a whole.

Pursue Adaptability

Conduct Annual Review of ESCs within Specific Market Segments/Regions

The ESC marketplace is currently in a transitional phase. Until it becomes more predictable, suppliers should remain nimble in this environment by avoiding the development of complicated infrastructure or resource-heavy programs. Best practice would include regular reviews of ESC trends at the business division level, focusing on the local and business-specific trends and challenges.

Engage in Further Research

Research Emerging Markets, Different Market Sectors, and B2B/B2C

Companies interested in conducting further research can use the framework presented in this report to better understand the evolving ESC marketplace and its impact in the value chain. Potential areas of interest may include: emerging markets, different sectors, the relationship between the B2B and B2C use of ESCs (procurement vs. marketing).

Establish and Foster Credibility

Achieve Credibility through Transparency and Independence

Based on a review of current literature on ESCs and interviews with ESC experts in the field, one recommendation became apparent: any businesses' efforts to improve and communicate its sustainability efforts must be credible to customers and stakeholders.

Patrin Watanatada, former Director at SustainAbility and author of "Signed, Sealed... Delivered?" emphasized the necessity of credibility in the form of 3rd party certification. In a recent interview, she stated, "it's really key to be transparent, no matter what, about the criteria and the way that the label is assessed."

The commonly accepted delineators for credibility of ESCs include:

- Transparency
- Independence (3rd party verification)
- Consensus or stakeholder-based
- Life-cycle based (when relevant)
- Consistent with ISO 14024

D. CONCLUSION

Ecolabels, standards & certifications are used by business managers throughout the home and personal care manufacturing value chain, and more confidently within home care. ESCs and other green marketing claims are used as a way of communicating sustainability information within the B2B and B2C arena. Suppliers in home and personal care should take advantage of manufacturers' preference for Eco-cert (EU) and Design for the Environment (NA), by certifying ingredients with Eco-cert and CleanGredients in those regions, respectively. Further research should address the value of ESCs in emerging markets as well as the extent of raw information on product attributes required that would allow a larger manufacturer pursue ESCs on its own products to not rely on ESCs on ingredients as informational shortcuts. NGOs, government organizations and industry representatives are approaching the ESC arena strategically and developing best practices on credibility, independence, range of attributes, etc., that will soon become more widely accepted. The ESCs that follow these guidelines will continue to serve as decision-making tools throughout the value chain and those that don't will fade from the marketplace. Ongoing collaboration in the development of useful tools in product sustainability communication, in the next five to ten years, will shift the focus of managers from navigating the web of ESCs to investing wholly in improving product performance and sustainability.

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I. ASSESSMENT OF ESC INFLUENCE ON VALUE CHAIN

A. PROJECT OBJECTIVES

Phase 1: Research Design, April – July 2011

The evaluation of ESCs provided an opportunity to evaluate emerging market research trends that will better inform the general understanding of ESCs. Market research highlighted the existing body of knowledge, which includes the information and datasets from leading government bodies, NGOs, ESC entities or other civic organizations focusing on ESCs. The trend analysis was driven by the input from the businesses.

Key Deliverables

- Gain general understanding of businesses
- Document the market segments most heavily influenced by ESCs
- Conduct secondary research on the existing body of ESCs relevant to products/product lines
- Note any general trends for ESCs related to each business and/or among the various businesses

Phase 2: Survey, August 2011 – April 2012

This assessment highlights how the ESCs relevant to chemical manufacturers are currently used and how they impact purchasing decisions of manufacturers and their customers downstream the value chain. Understanding the rationale behind purchasing decisions, challenges, observations and behaviors of individuals within the home and personal care sector will help suppliers understand the overall impact of ESCs on the value chain.

Key Deliverables

- Identify the products/product lines most heavily influenced by ESCs
- List the various leading government bodies, NGOs, ESC entities or other civic organizations relevant to the development ESCs (see Appendix III for list)
- Develop a survey to assess purchasing decisions, challenges, observations and behaviors of individuals in the home and personal care sector (see Appendix V for survey instrument)
- Create and/or augment the survey with other ESC stakeholders to assess the purpose, objectives and desired objectives of those developing ESCs (see Appendix IV for interview notes and transcripts)
- Conduct primary research to complete the survey
- Analyze the results of the survey to note any general trends, expectation gaps, etc.

B. SURVEY DESIGN

The knowledge gained will allow a supplier of ingredients/formulations for home and personal care manufacturers to better prioritize resources and to proactively approach decision-making on the use of ESCs on current products as well as improve responses to customer information requests. Additionally, these findings support efforts of companies upstream the value chain to develop strategic advantages in areas of product design, communication, and marketing.

In the survey, the five research themes perceived to be dependent variables were measured by 18 questions. Because this assessment investigated the use of ESCs throughout the home and personal care manufacturing value chain, the survey was designed to address the decision-making influences on the procurement of ingredients for home and personal care separately from the marketing of finished products. In order to achieve this delineation, survey questions were framed in order to investigate marketing and procurement decisions separately (Chambliss, 2003).

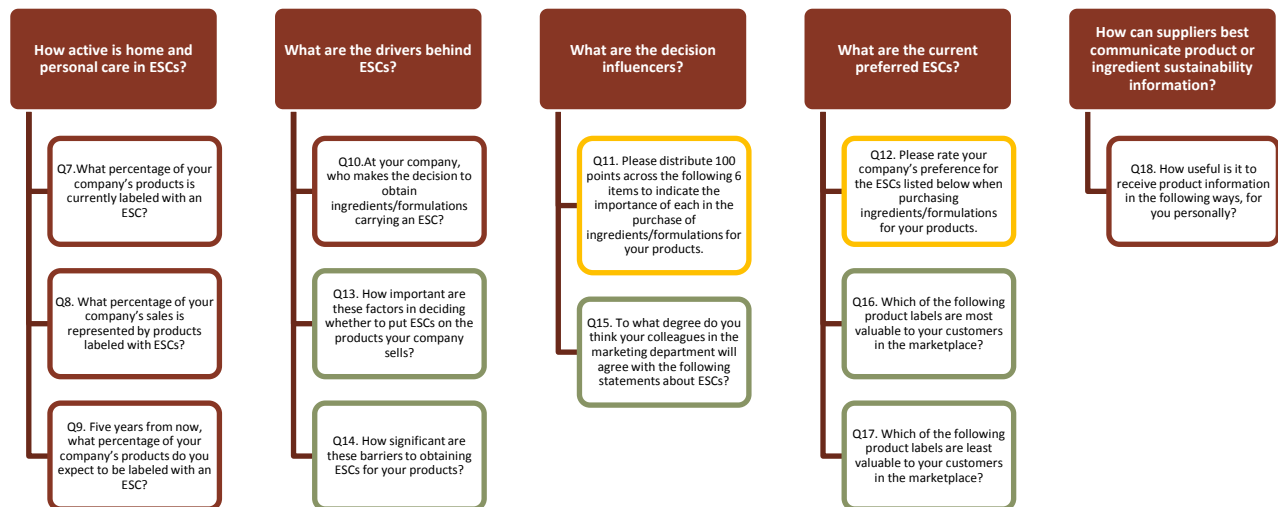


Figure 1. Survey Questions Design. Structure of the survey Note that marketing related questions are colored in green, procurement related questions are colored in orange, while general questions are in red.

The survey was distributed to 2,696 individuals within the home & personal care sector in North America and Europe. Individuals received emailed invitations to take part in the survey and were given two weeks in which to answer. See Appendix II, Section A for further details regarding survey development and implementation and Appendix V for the survey itself.

Demographic information for each respondent was tracked in order to better understand how these variables were related to the answers given.

C. RESPONDENT MAPPING

The survey was sent to 2696 individuals within the home care & personal care sector in Europe and North America. 95 respondents completed the survey, with an additional 89 respondents partially completing the survey. The completed interview response rate was 3.52%. Table 1 shows frequency distributions of respondents with respect to the independent variables.

After performing a contingency analysis of all independent variables, there appears to be a slight correlation between respondents working in the R&D department and geographic location. No bias occurs within other dimensions. Though the response rate is low, the sample is relatively balanced over most of the independent variables. Therefore, despite the minimal selection bias, the sample is considered valid.

Table 1. Respondent Categories.

Variables	Frequency	Percentage
Geography		
Europe – Eastern	10	6.3 %
Europe – Western	51	31.9 %
North America	62	38.8 %
Other	37	23.1 %
Firm Type		
Manufacturer of personal care products	73	44.8 %
Manufacturer of home care products	33	20.2 %
Ingredients supplier	32	19.6 %
Consulting firm	7	4.3 %
Independent consultant	3	1.8 %
Other	15	9.2 %
Firm Size (Number of Employees)		
Less than 100	66	40.7 %
100-999	32	19.8 %
1,000-5,000	20	12.3 %
More than 5,000	44	27.2 %
Market Segment		
Hair Care	26	16.6 %
Skin Care	55	35.0 %
Sun Care	7	4.5 %
Floor Care	5	3.2 %
Fabric and surface care	37	23.6 %
Other	27	17.2 %
Department		
CEO/Management	22	12.9 %
Product Stewardship/EH&S	12	7.1 %
Marketing	22	12.9 %
Corporate Social Responsibility (CSR)/Sustainability	7	4.1 %
Regulatory Affairs	17	10.0 %
Procurement	12	7.1 %
R&D	95	55.9 %
Manufacturing	23	13.5 %
Other	19	11.2 %

D. DISCUSSION OF FINDINGS

USING ESCS FOR BUYING INGREDIENTS AND FORMULATIONS

One of the research questions addressed in the survey is:

What Are the Drivers Behind ESCs?

The survey utilizes a number of questions in an attempt to tease out the reasons why companies engage in ecolabeling schemes. With the proliferation of ESCs, green consumerism, ecolabeling, and green product claims, understanding these drivers on an industry level, regional level, and market segment level can inform a supplier of ingredients and formulations for home and personal care manufacturers' strategy in the sustainability arena. By first asking who is making the decision to purchase ingredients and formulations that carry an ESC, the survey identifies the department that drives the pursuit of ESCs within a home and personal care manufacturer's (manufacturer) product lines. As key decision-makers are identified within the manufacturers, better understanding is gained about how companies access the benefits of ESCs.

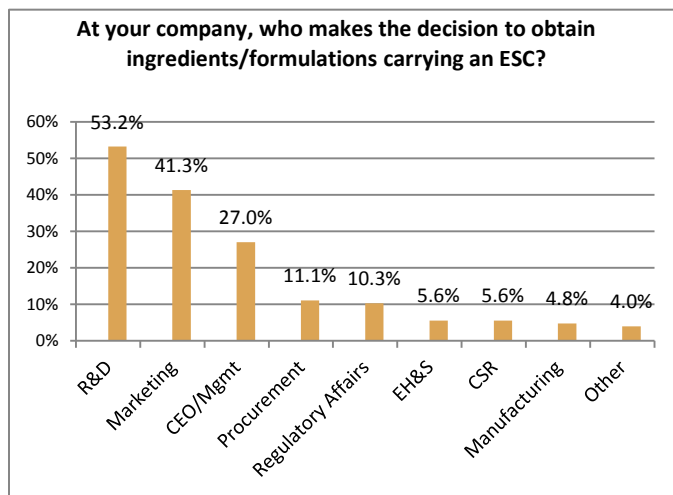


Figure 2. Procurement ESC Decision-Maker

When asked to identify the department(s) at their company responsible for making the decision to purchase ingredients and formulations carrying an ESC, respondents overwhelmingly chose one of three categories: R&D, Marketing, and CEO/Management. The decision-makers were represented much less significantly in the Procurement, Regulatory Affairs, Environmental Health & Safety (EH&S), Corporate Social Responsibility (CSR), and Manufacturing departments.

Considering that the respondent map showed that there was a higher than average proportion of respondents from R&D departments (in Western Europe), the data was reanalyzed, removing respondents who work in R&D. A second analysis of responses from members of all other departments showed that the percentages and rankings remained consistent, supporting the conclusion that these decisions are predominantly made by R&D, Marketing, and CEO/Management.

ESCs are tools that decision-makers use to satisfy a goal. Our results suggest that:

1. The greatest percentage of decision-makers is within R&D. R&D is the department within the manufacturer's company that suppliers are often already engaging. Suppliers would benefit from working closely with R&D departments to identify those ingredients and formulations that are ESC compatible. Because R&D is the driver for new product development, the high percentage of decision-makers suggests that manufacturers are pushing a large number of new products in the pipeline that they intend to qualify with an ESC.
2. Marketing drives existing product sales, so decision-making driven by the marketing department suggests a pull coming from retailers and end consumers. When the CEO/Management is driving these decisions, this suggests that manufacturers are utilizing ESCs as a strategic investment, a way to position in the marketplace, and/or a competitive advantage.
3. Procurement and CSR are less likely to push for ESCs than other departments. This suggests that there are differences in how the various departments value and use ESCs. Particularly, procurement is not using ESCs to select ingredients even though ESCs are used elsewhere as an easy and credible way to select products. Later findings will discuss the priorities for procurement and how that relates to ESCs.

Differences Based on Firm Type and Region

There were differences in how respondents answered this question depending on the type of firm and the region where they worked. The data showed:

- Manufacturing firms are more likely to use its R&D department to make ESC purchasing decisions than other types of firms. This makes sense given the nature of manufacturing companies and their role in the development of new products.
- Marketing departments are more likely to consider ESCs when making purchasing decisions in larger firms (over 5,000). This suggests that ESCs are more marketing oriented in firms that have a wider product portfolio and greater opportunity to differentiate their brands.
- Marketing departments are also more likely to consider ESCs when making purchasing decisions in Western European firms. When considering that Western Europe has a wider and more mature "green" marketplace than North America, this seems to confirm the consumer "pull" of ESC products in Western Europe.
- CEO/Management is also more likely to consider ESCs when making purchasing decisions at a higher than average proportion at the smallest firms (less than 100), accounting for 40% of small firm decision-makers. This suggests that ESC decisions are more strategy driven in smaller firms.

These subtle differences can advise the efforts of the sales and R&D departments within

upstream suppliers.

The next research question addressed by the survey is:

What Are the Procurement Decision Influencers?

This question was designed to gain greater understanding of the overall landscape in procurement (purchasing) decisions, putting ESCs in context with other purchasing influencers, understanding why manufacturers choose to purchase products with ESCs, and what is driving this demand.

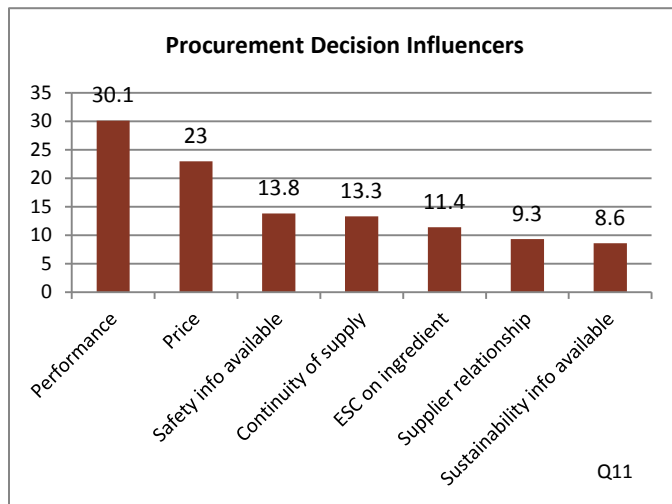


Figure 3. Procurement Decision Influencers

Respondents were asked to distribute 100 points across seven factors in order to rank their relative importance. The two highest-ranking influencing factors on procurement decisions were **performance and price**. The options of “ESC on ingredient” and “sustainability info available” were ranked much lower by most companies buying raw materials for home and personal care applications.

These rankings were reiterated in some respondent comments:

- “If the price will increase when [ingredients] have ESCs, please re-consider.”
- “It's all good but certified raw materials usually mean higher prices. We must raise our prices to compensate. Customers do not want price increases.”

The only regional difference in responses to this question was in regard to “continuity of supply,” where North American respondents scored this option significantly higher than its counterparts in other regions.

However, there were a number of outliers on this question. Several respondents ranked “ESC on ingredients” as their top priority, higher than price or performance, while two respondents in the floor care segment used their entire 100 points toward either “Price” or “Performance.” Suppliers should be aware that these outliers exist and if they are able to identify these particular manufacturers, suppliers can meet the needs of these customers.

We noted a number of comments from respondents in regard to price and ESCs. Respondents expressed concern that certification of raw materials would lead to an increase in prices. **“It's all**

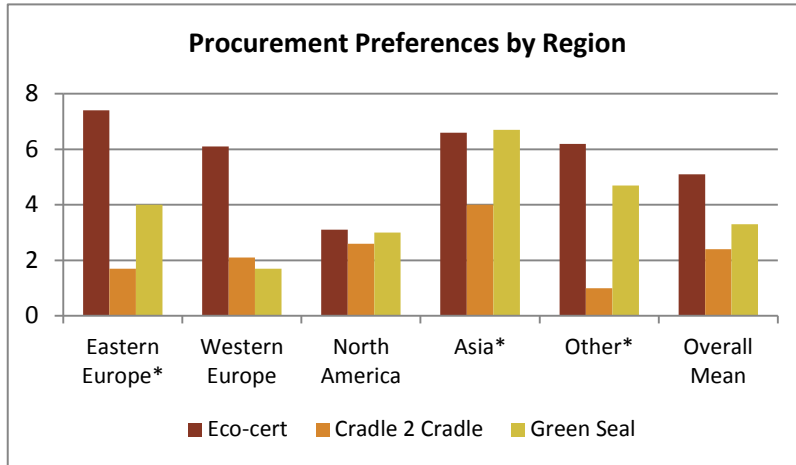


Figure 4. Procurement ESC Preference by Region

(manufacturers) preferences for ESCs on ingredients and formulations they were purchasing from suppliers and products they were marketing to their customers to demonstrate the differences in how ESCs communicate in these separate transactions. Figure 5 shows the average rating for respondents' preferences for particular ESCs when procuring ingredients and formulations. While offering a general understanding of the preference landscape, this table does not display some of the specific nuances of demographic preferences, including region, market segment, and department within the company.

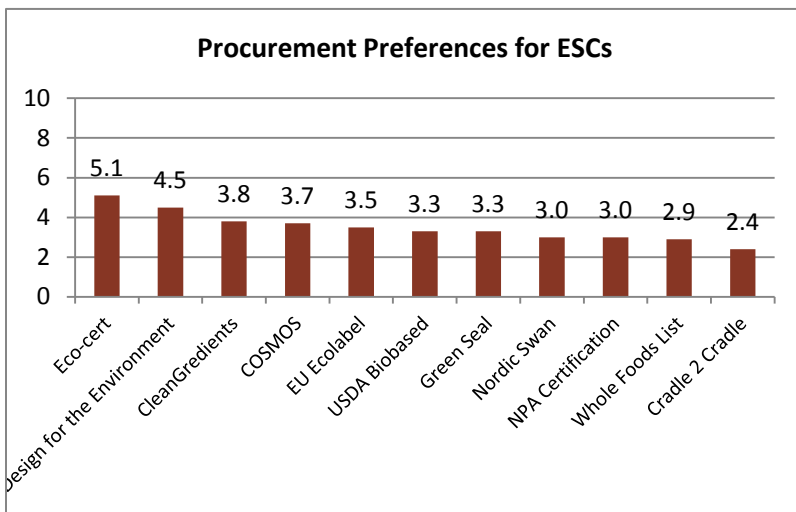


Figure 5. Procurement Preference for ESCs

both North America and Asia.* Note also that North America and Asia have very similar preferences, a pattern which is repeated a number of times in the findings.

When looking at each market segment's preferred ESCs when purchasing ingredients and formulations, survey results again point to an overall preference for Eco-cert. However, among

good but certified raw materials usually mean higher prices. We must raise our prices to compensate. Customers do not want price increases," (Respondent 1394).

ESC Preferences for Purchasing Ingredients and Formulations

The survey was designed to

tease out the differences between respondents'

While Eco-cert was the most preferred ESC for use on ingredients and formulations within the home and personal care segment, both in general and also by region, other labels shifted in importance depending upon the geographic region. For example, while Green Seal had a comparatively low preference rating in Western Europe, it rated on a par with Eco-cert in

the follow-up labels, there were some variances due to market segment. For example, DfE and CleanGredients ranked very high in the fabric & surface care segment, as these labels work together to provide information to manufacturers and consumers specifically about chemicals in cleaning products.

In looking for trends within the procurement preferences for ESCs, the list of top preferred ESCs overall, by region, and by market segment revealed a few interesting findings:

- Eco-cert is preferred overall across market segments and geographic regions;
- There are no consistent preferences for Type I, II, or III ESCs (see Glossary);
- There is no single standard upon which these ESCs are based; and
- ESC preferences often span market segments, including the broader home care and personal care categories.

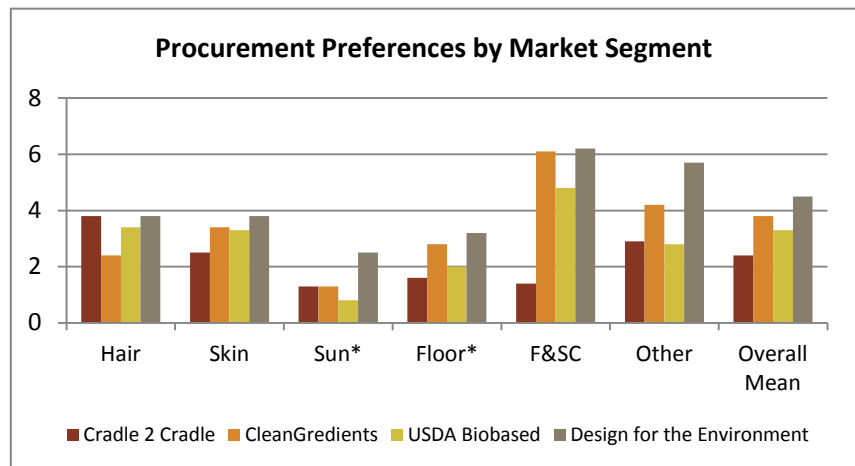


Figure 6. Procurement ESC Preference by Market Segment

Drilling down even further into the findings for each of these ESCs, the survey results revealed the following specific demographic information:

- **CleanGredients:** It ranks among the **Top 3 Overall** preferred ESCs for procurement, and it is preferred by home care slightly more than personal care (which makes sense given that it covers cleaning ingredients). This is also one of the few ESCs that rates *ingredients*. While 43.2% of respondents said they were “Not Familiar” with this label, North American respondents were much more familiar with this resource than the other regions (not surprising considering it is a non-profit project that is sponsored by Design for the Environment, a label of the US-EPA);
- **Design for the Environment:** DfE was one of the **Top 3 Overall ESCs** and **Top Choice in a number of market segment categories**, and also rated lowest among all the labels in the “Very Low Preference” category. North American and Asian* respondents were much more familiar with this label than those in other regions, however members of the *R&D* departments were generally *unfamiliar* with this particular label.

- **Eco-cert:** Eco-cert enjoys significant recognition across all market segments and all regions, rating lowest in the “Not Familiar” category. This is also one of the few ESCs that rates *ingredients*. With the impending 2014 harmonization of this label into the new COSMOS standard, it will be interesting to see whether its recognition and value is brought to the new labeling scheme. See Appendix I, Section D for more details on label harmonization.
- **Green Seal:** While this label does not rank among the top 3 choices in any home or personal care market segment, this label is highly recognized in the North American and Asian* markets and still relatively unknown in Western Europe and among members of the R&D department.
- **USDA Certified Biobased:** This label is recognized globally even though it is an ESC based in the United States. It ranked among the **Top 3 ESCs** for the following market segments: fabric & surface care, hair care, and skin care.

Table 2. ESC Information Table

ESC Name	Regional Preference	Preferred in Market Segment	Attributes	Standard	Certifies Ingredients?	Recognized by other ESCs
CleanGredients	All	Fabric & Surface Care*, Skin Care, <i>Floor Care</i>	Ingredients pre-screened against Design for the Environment criteria		Yes	Design for the Environment, EcoLogo, Green Seal
Design for the Environment	All	Fabric & Surface Care*, Hair Care*, Skin Care*, <i>Sun Care*, Floor Care*</i>	Evaluates products based on US-EPA's chemical knowledge		No	CleanGredients
Eco-cert	All*	Overall*	Standards for organic & natural ingredients and products		Yes	
Green Seal	N America, <i>Asia*</i>	(not among top 3)	Life cycle analysis, continuous improvement	ISO 14020/14024	No	Design for the Environment, EcoLogo
USDA Certified Biobased	(not among top 3)	Fabric & Surface Care, Hair Care, Skin Care	Product contains verified amount of renewable biological ingredients	ASTM D6868	No	
Bold = Top 3 Overall <i>Italic</i> = may be skewed due to small sample size * = Top Choice in Category						

Overall, the survey results point to **Eco-cert** as having the most robust support among respondents when making ingredient and formulation **procurement decisions**. However, with the impending absorption of this label into the new COSMOS standard, further consideration should be paid as to the short and long-term benefits of certifying home and personal care ingredients and formulations with Eco-cert versus COSMOS or another ESC that has the potential to take over Eco-cert’s position of popularity among respondents.

USING ESCS FOR MARKETING PRODUCTS

The next research question addressed in the survey was:

How Active are Manufacturers in ESCs?

In order to get an understanding of the current use of ESCs in the home and personal care business, respondents were asked to answer two questions:

1. What percentage of your company’s products is currently labeled with an ESC?
2. What percentage of your company's sales is represented by products labeled with ESCs?

The resulting estimate-based data offers insight into the current use of ESCs and their revenue impacts within respondents’ firms:

Table 3. Current Use of ESCs

Current use of ESCs	
Q7: What percentage of your company’s products is currently labeled with an ESC?	16.1 %
Q8: What percentage of your company's sales is represented by products labeled with ESCs?	13.1 %

These findings suggest that products with ESCs represent a significant portion of the current product selection, and that the products carrying ESCs may generally represent lower margin products than the firm’s average.

Increased use of ESCs expected for all market segments

When asked to project in five years what percentage of their firm’s products would carry an ESC, respondents estimated their firms would nearly double their usage, increasing from 16.1% to 28.4% overall.

Table 4. Expected Use of ESCs

Expected Use of ESCs	
Five years from now, what percentage of your company's products do you expect to be labeled with an ESC?	28.4 %

Considering that R&D represents the top decision-maker in firms for purchasing ingredients and formulations with ESCs, and new product development can take as long as five years, this percentage increase points to the scenario that as some products mature and retreat from the marketplace, new products replacing them will be more likely to qualify for an ESC. TerraChoice’s Six Sins of Greenwashing report r points to the fact that, as “green” categories mature, the use of ESCs within that category increases as well, (See Appendix I, Section B for Status of and Trends in ESCs). Based on this study, as “green” product categories continue to mature over the next five years, the expected use of ESCs within those categories is likely to increase as well.

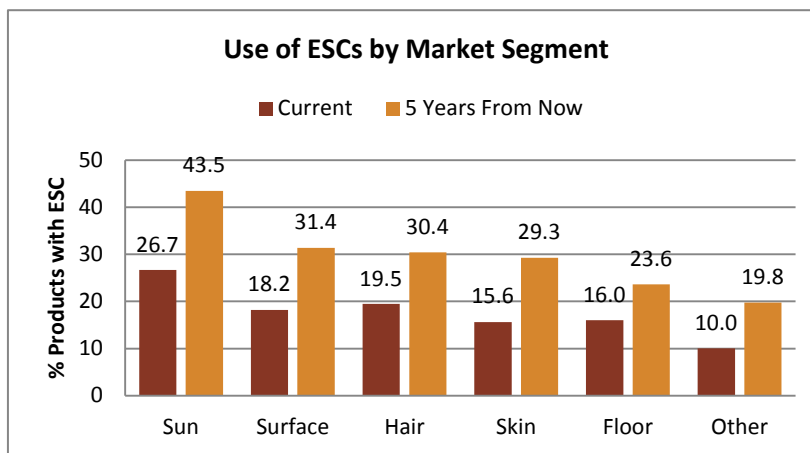


Figure 7. Use of ESCs by Market Segment

Figure 7 shows current and expected use of ESCs of respondents, organized by market segment and ranked according to expected percentage. Respondent replies indicate the greatest *percentage growth* predicted in ESCs over the next five years are within skin care, surface care and sun care, in that order. In addition, respondents in sun care anticipate achieving the

labeling of **close to 50%** of their products.

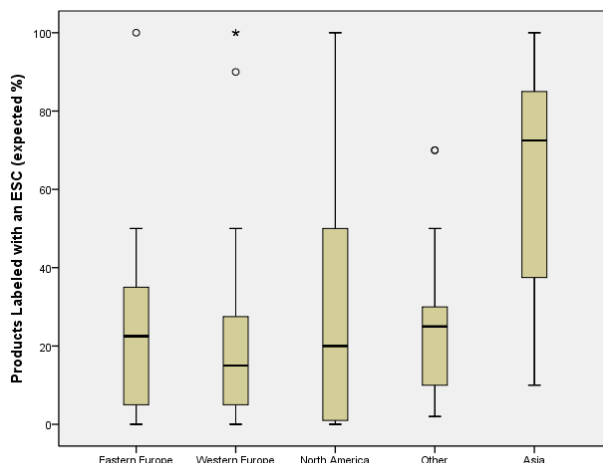


Figure 8. Expected Use of ESCs by Region

Asia expects to increase use of ESCs more than Europe and North America

Results also show that the percentage of products labeled with an ESC is affected by the respondents’ region. Respondents located in Asia expect to have a significantly greater percentage of their products carrying an ESC five years from now,

compared with respondents situated in the other regions (see Figure 8). Interestingly, the survey was not intentionally distributed to companies based in Asia, as the scope of the survey was limited to Europe and North America. Subsequently, the small sample size (n=5) does not constitute a statistically significant sample.

However, the results correspond to research done by the Natural Marketing Institute in 2011. NMI surveyed end consumers from around the world to learn the impact of ESCs on their purchasing decisions. While an average of 52% of respondents in developed countries indicated that an ESC would increase the likelihood that they would purchase a product, 82% of respondents in developing countries agreed, including 87% in China. This level of willingness to change purchasing behavior will likely drive the significant increase in ESC product labeling in developing countries.

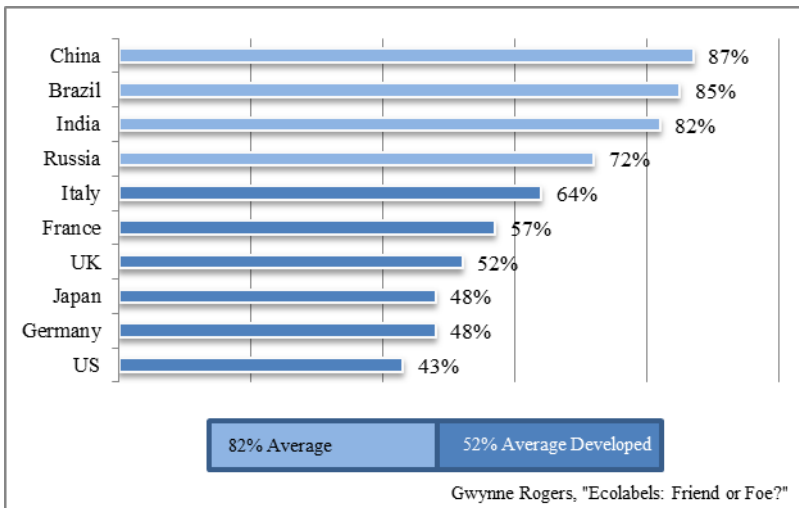


Figure 9. Gwynne Rogers, "Ecolabels: Friend or Foe?"

This study also points to the growing confusion and skepticism of consumers in developed countries about the validity and value of ESCs. With 431 labels currently in the marketplace (as of March, 2012), it is difficult for consumers in the US and EU to know which what each label means and whether or not to adjust their purchases based on them.

In their 2011 paper, "Label Confusion," Harbaugh, Maxwell, and Roussillon showed that consumers are easily confused by a saturated ecolabel market. Additionally, though their purpose is to bring clarity to a product's social or environmental footprint, the labels themselves often result in further uncertainty on the part of the consumer (Harbaugh, 2011) (For further discussion, see Appendix I, Section B).

An open question in the marketplace and sustainable products community is, "What is the future of ecolabels? Will they continue to increase in number; will they be replaced by regulation; will they go away?" Although the data does not explicitly answer all of these questions, the findings suggest that manufacturers within the home and personal care sector see ESCs as a credible communicator of environmental attributes, both to end consumers and to their own departments making procurement decisions. With the current marketplace, trends,

and legislative atmosphere, ESCs are likely to continue as communicators of product sustainability.

Barriers to Acquiring ESCs for Products

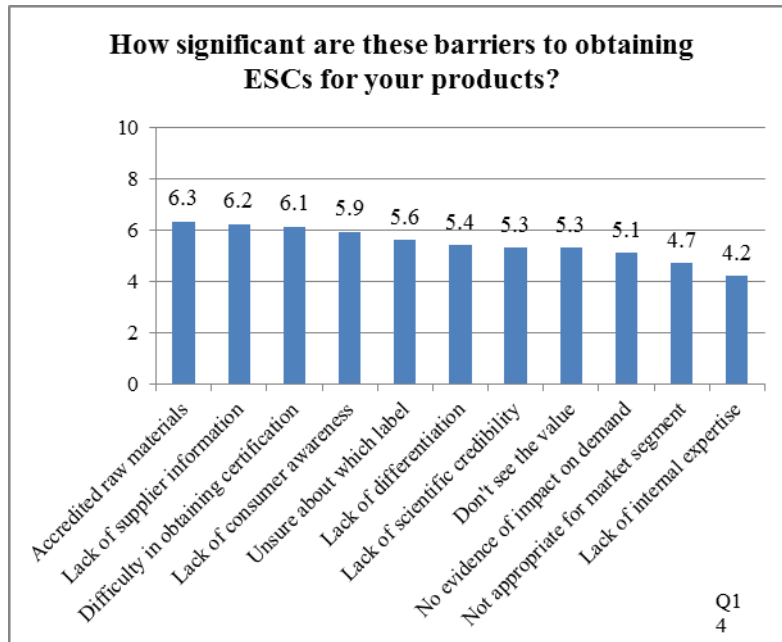


Figure 10. Barriers to Obtaining ESCs

The survey also asked respondents to rate the barriers to obtaining ESCs for products sold by their firms. The two highest ranking responses were as follows: **“getting accredited raw materials”** and **“lack of supplier information.”** These responses encourage both putting ESCs on ingredients and formulations and the provision of relevant documentation to support ESC accreditation of home and personal care products.

Respondent comments echoed this dichotomy between wanting actual labeled ingredients and wanting product information. One respondent wrote, “relative to the ingredients themselves, use of ecolabels is not all that important as long as the technical information is provided that supports the intent behind the ecolabel.” Another added, “we would value efforts by [our chemical manufacturing supplier] to increase ingredient transparency, to reduce the customer future reliance on ecolabels.” On the other hand, several respondents asked that suppliers use ESCs as a way to provide ingredient information: “Please certify all of your current and future natural products with the major cosmetic standards such as NaTrue, Ecocert, BDIH and Cosmos. That makes our work in developing certified natural cosmetics much easier.”

When combined with the answers from Question 11, “Procurement Decision Influencers” (see Figure 3. Procurement Decision Influencers), these findings offer some perspective on the overall priorities of firms today when purchasing ingredients and formulations. The procurement department continues to place “price” and “performance” at the top of its purchasing priority list. “ESC on ingredient” ranks fifth, while “sustainability info available” ranks seventh.

However, considering that today R&D is the significant driver in the decision to purchase ingredients and formulations with ESCs, one can infer that R&D is utilizing these ESCs on

suppliers products as a signal that the ingredient can be used in the formulation of new products that manufacturers intend to qualify for an ESC in the future.

As R&D continues to develop more products using ingredients and formulations labeled with ESCs, and as these new products move into mass production, it is likely that the prioritization of ESCs in the procurement of these ingredients and formulations will continue to rise as they become required ingredients to these new commercial products, or that “price” and “performance” will continue to drive the procurement decision as ingredients and formulations with ESCs become more standard. **This suggests that suppliers should invest in the accreditation of ingredients and formulations to ensure that they are included in this new product development.**

Among the findings, there were a few noteworthy differences among respondent groups:

3. Respondents identified as **personal care manufacturers** ranked themselves as having **significantly higher barriers** to implementing ESCs on these five factors compared to manufacturers in the fabric & surface care segments (see Table 5. ESC Barriers by Business Sector).

Table 5. ESC Barriers by Business Sector

Barriers: Differentiation based on Business Sector					
Business Sector	Difficulty in obtaining certification	Lack of consumer awareness	Unsure about which label	Not appropriate for market segment	Lack of internal expertise
Personal Care	6.5	6.3	6.1	5.0	4.8
Fabric & Surface Care	5.2	5.0	4.3	3.7	2.7
Overall Mean	6.1	5.9	5.6	4.7	4.2

4. Respondents’ **firm size** also impacted barriers for obtaining ESCs. In general, the data showed that the larger the firm, the lower the barriers to obtaining ESCs. Mid-size and small firms ranked “not appropriate for market segment” more often than did large firms. Mid-size firms also found that “lack of consumer awareness” was a significantly higher barrier for them than the mean. This may be due to the fact that larger firms have a wider portfolio of products, so ESCs may fit more easily into their niche offering. Smaller firms, having fewer products, may choose not to pursue these niche markets.* Small and mid-size firms may need more support in partnering on the development of their sustainable product portfolio.

When planning the strategy for partnering with customers of home and personal care firms, utilizing these demographic differentiators can lead to great benefits between supplier and

manufacturer. Question 13 asked respondents to rate the relative importance of a variety of drivers influencing the decision manufacturers make *put ESCs on the products they sell*. The three highest ranking factors were **all market driven: to differentiate products, to increase market penetration, and to increase the perception of product quality** (see Figure 11).

These answers were **congruent across all independent variables**, including firm type and size, geographic region, and market segment. This finding suggests that, when deciding whether or not to place an ESC on a product (or to create a product that can qualify for an ESC), how the ESC will aid in the marketing of the product is the top consideration.

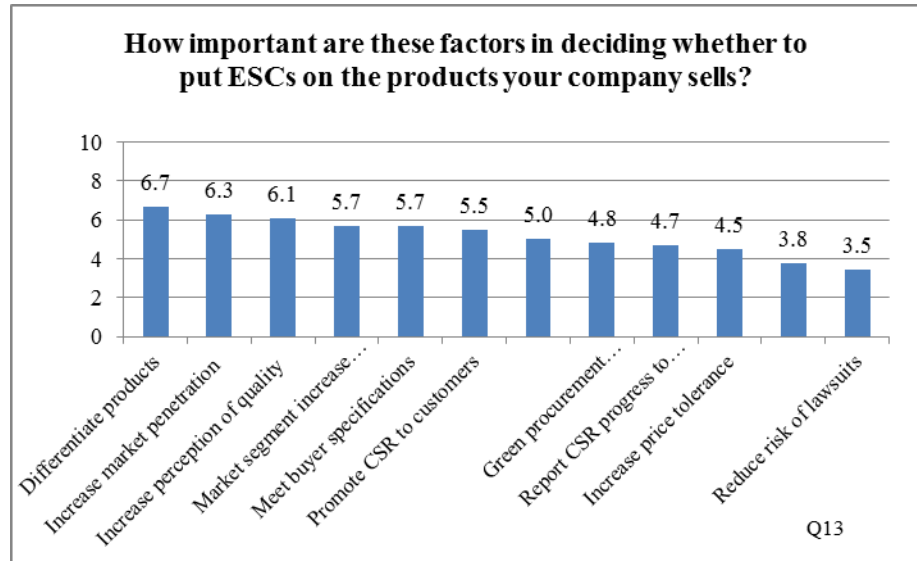


Figure 11. Marketing Influencers of ESCs

While R&D may be the most significant decision-maker in purchasing ingredients and formulations, marketing is the most significant decision-maker in selling products. This holds true for the decisions around ESCs as well.

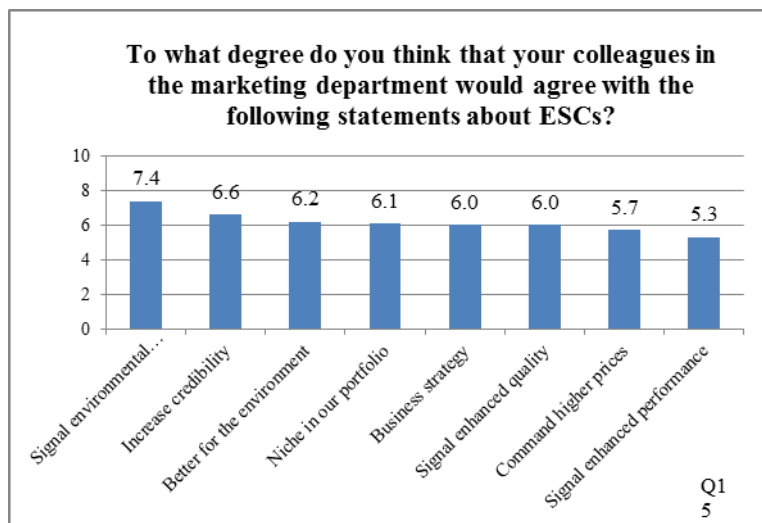


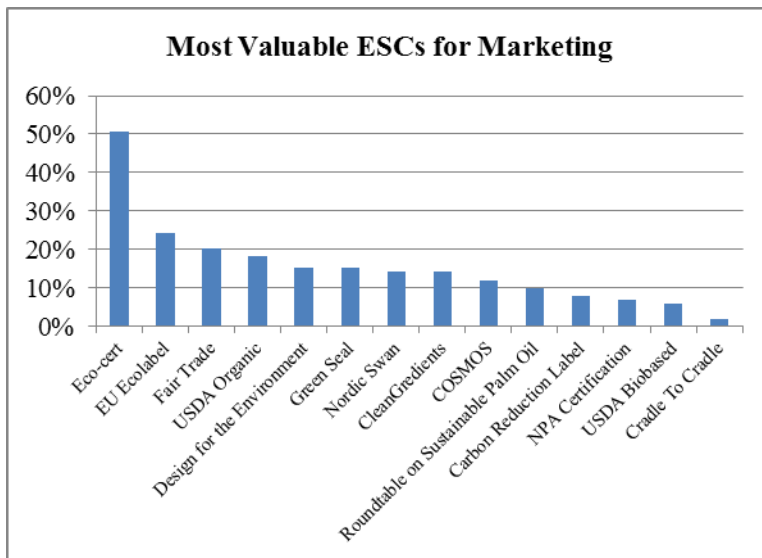
Figure 12. ESC Influences from Marketing Perspective

Question 15 asked respondents to take on a marketing perspective, even if they did not work in marketing (see Figure 12). The findings for this question suggest that using ESCs is an accepted way to communicate to product purchasers. The top choice, **“signal environmental concern,”** gives purchasers information about the business creating the product, presumably positive information, boosting the brand equity of the company. The second choice, **“increase credibility,”** also gives

the purchaser the information that they can trust that this product really is “green” and that the company is serious about its sustainability efforts.

There was only one region which answered this question differently than the rest: North America’s ratings for influencers on marketing decisions were lower than all of the other regions. This may point to a generally lower priority placed on using ESCs for marketing to consumers in North America. In spite of this lower rating, North American firms continue to use and intend to increase their use of ESCs in the marketplace.

ESC Preferences for Marketing Products



The survey was designed to tease out the differences between respondents’ preferences for ESCs on ingredients and formulations they were **purchasing from suppliers** and products they were **marketing to their customers** to demonstrate the differences in how ESCs communicate in these separate transactions.

What are your preferences for ESCs to put on your firms’ products?

Figure 13. Most Valuable ESCs for Marketing

Respondents were asked to select the three ESCs that they thought were the most valuable and three that were the least valuable when marketing products to their customers. Figure 13 shows the results for the percentage of total respondents that picked a particular ESC as most valuable while Figure 14 shows percentage of respondents that view a particular ESC as least valuable.

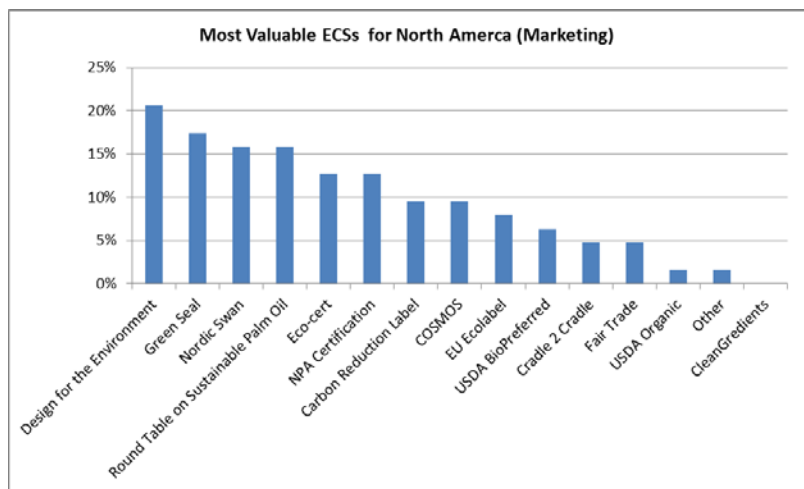


Figure 14. Most Valuable ESCs for Marketing in North America

By far, **Eco-cert** was considered the **most valuable** ESC to aim

toward customers in the marketplace. **Eco-cert has proven itself to be the most robust label globally of all those surveyed, both for the procurement of ingredients and formulations, and for the marketing of products to customers.**

North America places a lower premium on the value of Eco-cert’s marketing power, ranking **Design for the Environment (DfE), Green Seal, and Nordic Swan/Roundtable on Sustainable Palm Oil (RSPO)** (tied) as the top four choices. Eco-cert comes in fifth. DfE is an ecolabel developed by the US-EPA to help consumers, businesses, and institutional buyers to find and certify cleaning products that are safer for the environment. This program works in conjunction with CleanGredients, “an online database of cleaning product ingredient chemicals, providing verified information about the environmental and human health attributes of listed ingredients” (<http://www.cleangredients.org/home>). Green Seal is another North American ecolabel that certifies a wider variety of products and services, including a number of cleaning product categories. Nordic Ecolabel (“The Swan”) is a Type III life cycle assessment certification, while Roundtable on Sustainable Palm Oil (RSPO) is a pass/fail certification of farms and ingredients including certified sustainably produced palm oil.

When looking at most preferred ESCs by market segment, there were some expected differences. While Eco-cert earned the top rating among all the market segments, the following labels shifted significantly depending on their audience:

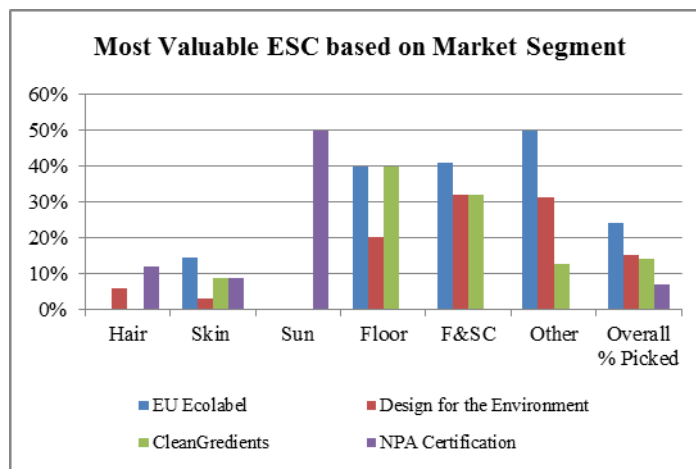


Figure 15. Most Valuable ESCs for Marketing by Market Segment

- **EU Ecolabel**, overall the number two choice for marketing products was valued most by the market segments of fabric & surface care and floor care.
- **NPA Certification**, a label that barely appeared on the overall preference list, was overwhelmingly chosen as the second most preferred label in sun care, demonstrating its niche value for this market segment.

Among the labels ranked in the “least valuable ESCs for marketing” among home and personal care respondents, Cradle To Cradle ranked first with Nordic Ecolabel coming in a close second. Both of these labels are **Type III life cycle assessment** certifications, leading to the inference that home and personal care market segments generally do not find value in this type of certification, particularly when marketing to customers.



Figure 16. Least Valuable ESCs for Marketing

II. RECOMMENDATIONS

Guidelines for Communicating Product Sustainability throughout the Home & Personal Care Value Chain

Assessment of the current landscape of ESCs and survey findings informed the following recommendations. The recommendations are provided in two sections: 1) the context of information sharing in the current landscape and 2) long-term, strategically oriented initiatives. These recommendations are offered from the perspective of a supplier of ingredients and formulations in home and personal care products.

Supplier Information Sharing In the Current Landscape

The results of the ESC survey revealed that the most significant barriers to obtaining an ESC for home and personal care products were sourcing “accredited raw materials” and the provision “supplier information.” In order to effectively communicate their own products’ sustainability, manufacturers will continue to require this information from suppliers. By increasing the accessibility of this information to manufacturers, suppliers will improve service and, in the long run, decrease the time and resources necessary to answer these requests. The findings suggest that different approaches are appropriate for manufacturers, depending on their demographics:

- For large firms (over 5,000) including supplier’s strategic partners, these companies already have the resources and R&D departments to attain ESCs. They do not need to use ESCs as informational shortcuts, rather they need greater access to information about the sustainability profile of ingredients and formulations.
 - Suppliers frequently use safety data sheets to share health, safety and environmental information with its manufacturers. **Integrating expanded sustainability information into already existing infrastructure helps to prevent further confusion.**
 - The survey findings showed that “product literature”

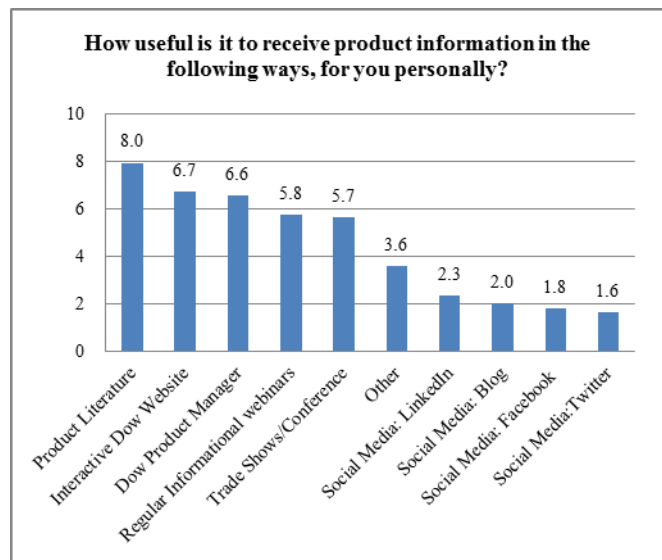


Figure 17. Preferred Mode of Communication

was the most preferred option for home and personal care manufacturers to receive sustainability information from suppliers (see Figure 17).

- For small and mid-size firms in the personal care sector, the barriers to obtaining ESCs are greater than for other firms. There's an opportunity for suppliers to inform manufacturers of the use and benefits of market segment relevant ESCs.
 - Suppliers would benefit from **launching a pilot program to educate small and mid-size personal manufacturing firms on the process applying for ESC programs and give them the supplier information they need to apply for ESCs.** Suppliers should pay attention to customer satisfaction, increased use of ESCs and new product development and then based on the results, consider expanding the program to a broader range of firms.
 - The survey findings showed that talking to a product manager was one of the top three preferred options for home and personal care manufacturers to receive sustainability information from suppliers (see Figure 17).

Additionally, the findings suggest at least two ways in which a supplier can leverage ESCs to improve information sharing with its manufacturers:

- Because Eco-cert is the most valued ESC for personal care manufacturers in the EU, in all market segments, and its ability to certify both ingredients and finished products:
 - Suppliers can evaluate the effectiveness of this approach by submitting the top 10% of ingredients and formulations that receive either ESC or sustainability information requests in the EU and annually gauging the return-on-investment in time and resources saved.
- Because Design for the Environment is the most valued ESC for home and personal care manufacturers in North America, in all market segments, and CleanGredients is the ingredient "feeder" for Design for the Environment label on products:
 - Suppliers can use the CleanGredients resource for their cleaning product ingredients and formulations to enable customers to apply for the Design for the Environment standard for their finished products. Suppliers can evaluate the effectiveness of this approach by submitting the top 10 % of ingredients and formulations that receive either ESC or sustainability information requests in North America and annually gauging the return-on-investment in time and resources saved.

The disadvantage of global suppliers depending upon ESCs to communicate sustainability

information to manufacturers is that each ESC has its own audience and generally provides only some of the information necessary to meet manufacturers' needs. Most ESCs are only recognized regionally, and currently there are no clear "winning" global ESCs that will exist beyond 2014 (due to harmonization of Eco-cert into COSMOS). By depending on ESCs, global suppliers will likely require multiple ESCs in various markets and regions in order to meet the informational needs of its manufacturers.

Suppliers should avoid developing redundant programs or self-labeling. Gwynne Rogers of the Natural Marketing Institute stated, "Whenever possible, leverage existing seals and programs so consumers do not have to become familiar with an entirely new system (and you don't have to single-handedly raise awareness)" (2012). Dr. Anastasia O'Rourke of EcolabelIndex.com believes that, "however [a supplier] decides to do this, it is key that they integrate the new information to their existing platforms," (Personal communication, September 23, 2011). Integrating expanded sustainability information into selected safety data sheets would allow suppliers to build on its existing product infrastructure and help to prevent further confusion.

When deciding whether or not to apply for an ESC, consider:

- 1) The **costs and benefits of providing detailed product information** to manufacturers via established company information sharing vehicles, such as safety data sheets.
- 2) A **multi-layered approach also utilizes ESCs as informational shortcuts** for the most frequently requested ingredients and formulations and product data sheets more generally for all ingredients and formulations.
- 3) Carefully **track the results** to gauge which efforts are worth further investment and launching into additional market segments and/or regions. Soliciting continued feedback from manufacturers also informs suppliers in weighing the costs and benefits of each initiative over time.

Supplier Information Sharing In an Evolving Landscape

The landscape of ecolabels, standards and certifications is still developing in emerging markets and the future is still uncertain in mature markets. Industry experts are unsure of the future impact and influence of ecolabeling schemes, as are chemical manufacturers. In order for multinational chemical companies to be positioned as leaders in sustainable business, it is integral that they continue to engage the ESC environment proactively, collaborating with other stakeholders, watching for trends, and adapting to this changing business environment.

Partner and Collaborate

When asked how suppliers should deal with sustainability information requests, Dr. Anastasia

O'Rourke said, "Companies would be wise to collaborate with stakeholders on common platforms to make this happen and to reduce market-wide confusion around the proliferation of ecolabels, standards and green claims." Because of the great deal of uncertainty, there is an opportunity for companies to influence how this universe shakes out.

This was reiterated by Margaret Whittaker in her 2009 white paper, "Eco-labels: Environmental Marketing in the Beauty Industry," when she said, "the introduction of more eco-labels without any apparent harmonization could introduce an increased element of confusion and mistrust. Until greater harmonization is achieved, the best approach for marketers is to select the eco-label to which they and their target consumer group are most comfortable." This means working with the ESCs that best fit suppliers' target markets and developing ways to better provide the kind of information needed for certification of their customers' products.

Work with ESC Programs and Reviewing Bodies

For example, many of the most credible labels and standards are developed using a consensus-based approach (see Appendix VI for a list of ESCs). Each of these ESCs goes through a periodic review of its criteria through a consultation process. Therefore, **suppliers should take advantage of these windows of opportunity to develop relationships with these ESC organizations**, helping to inform the conversation around their criteria.

Develop Timeline of Consensus-based ESC Reviews

Suppliers should develop a timeline of all relevant ESC reviews, and then develop a strategy based on its institutional knowledge as well as this report's findings. Developing and maintaining a voice in this ESC review process will not only offer companies the opportunity to influence the conversation, but also provide insights into the upcoming trends and topics of concern in the sustainability community, giving suppliers more information regarding opportunities to innovate. Increased industry involvement during the development of ESC criteria and standards will also help contribute to the relevance and achievability of future ESCs.

Work with Influential Organizations

In addition to contributing during the ESC consultations, suppliers are able to remain engaged with other key stakeholders such as:

- **Green Products Roundtable (TBD New Entity)**
- **Sustainability Consortium**
- **ISEAL Alliance**
- **Global Ecolabelling Network**
- **International Green Purchasing Network**

See Appendix III for more information on these organizations.

Watch for Trends

Identify and Follow ESC Trend-setting Events

In order to ensure that global suppliers have an intimate and deep understanding of ESC trends it should be informed of several emerging initiatives, since they may have the potential to influence the content and direction of ecolabels in the short to medium-term.

Executive Order 13514

In October 2009, President Obama signed into law, Executive Order 13514, a section of which committed federal agencies to ensure that 95% of new procurement contracts are environmentally preferable. This EO resulted in the development of a General Services Administration Section 13 Working Group on Standards and Ecolabeling that is charged with developing, “guidelines that federal buyers can use to select appropriate environmental standards and ecolabels for use in the federal procurement process,” (U.S. General Services Administration, 2012). The working group engaged stakeholders during the fall of 2011 and is expected to share its conclusions for public comment. The culmination of that process is likely to have an influence on how businesses and NGOs evaluate and pursue ESCs.

U.S. Federal Trade Commission Green Guide Revisions

The U.S. Federal Trade Commission Green Guides provide general guidelines for companies making environmental claims. The Guides were first released in 1992 and then updated in 1996, and 1998 and is currently pending revisions. Throughout the revision process there are several public comment periods, (Federal Trade Commission, 2012). Companies should participate in the public comment period to influence the outcome and/or use the period to get a pulse of community opinion.

EC Proposal on Bio-based Products

The European Commission’s Lead Market Initiative supports the bio-based products sector through regulation, public procurements, and standardization. The European Commission has issued several standardization mandates to CEN that they hope will improve labeling and certification and ensure the quality and consumer information on the new products (European Committee for Standardization, 2012).

COSMOS Standard

As discussed in Appendix A, Section D, the COSMOS standard is the first major example of label harmonization. As the future of ecolabels is uncertain, the success of COSMOS will have implications for other potentially harmonized ESCs and the landscape as a whole.

Pursue Adaptability

Conduct Annual Review of ESCs within Specific Market Segments/Regions

The ESC marketplace is currently in a transitional phase. Until things become more consistent, suppliers should remain nimble in this environment by avoiding the development of complicated infrastructure or resource-heavy programs, avoiding entrenchment and inability to adapt to changing conditions. **Best practice would include regular reviews of ESC trends at the business division level, focusing on the local and business-specific trends and challenges.**

Engage in Further Research

Research Emerging Markets, Different Market Sectors, and B2B/B2C

Companies interested in conducting further research can use the framework presented in this report, to better understand the evolving ESC marketplace and its impact in the value chain. Potential areas of interest may include: emerging markets, different market sectors, the relationship between B2B and B2C use of ESCs (procurement vs. marketing).

Establish and Foster Credibility

Achieve Credibility through Transparency and Independence

Based on a review of current literature on ESCs and interviews with ESC experts in the field, one recommendation became apparent: **any businesses' efforts to improve and communicate its sustainability efforts must be credible to its customers and stakeholders.** In addition to being transparent as an organization, businesses should choose labels that operate transparently.

Patrin Watanatada, former Executive Director at SustainAbility and author of "Signed, Sealed... Delivered?" emphasized the necessity of credibility in the form of 3rd part certification. In a recent interview, she stated, "having that independence backing behind it is just critical from a credibility perspective and one would think also from a content perspective that just having that additional perspective will make it more robust." She went on to say, "It's really key to be transparent, no matter what, about the criteria and the way that the label is assessed," (Personal communication, September 27, 2011).

Credibility stems from several factors:

- Transparency
- Independence (3rd party verification)
- Consensus or stakeholder-based
- Life-cycle based (when relevant)
- Consistent with ISO 14024

APPENDIX I. PROJECT CONTEXT

A. INTRODUCTION TO ECOLABELS, STANDARDS & CERTIFICATIONS

Ecolabel, Standards and Certifications (ESCs) are voluntary tools used to communicate the environmental and/or social information of a product. The primary function of these schemes is to help commercial (business-to-business) and end consumers (business-to-consumer), and other stakeholders to understand the environmental and/or social attributes of a product in support of environmentally preferable purchasing decisions. A longer-term objective, acknowledged in more established ecolabel schemes, is to foster the design, use, and consumption of more sustainable products. An “ecolabel” refers to the actual symbol or logo (often displayed on a product’s outer packaging) that indicates a product has met specified environmental or social criteria. Some examples of common ecolabels are the European Union’s “Flower”, and the “Swan” for the Nordic Ecolabel. A “standard” is the environmental or social criteria that a product is evaluated against to determine if it qualifies to carry the ecolabel, such as, the Nordic Ecolabelling of floor care products document, M1 Emission Classification of Building Materials, USDA Organic Label, or the Carbon Reduction Label. Finally, “certification” is defined as the process by which a product is evaluated by a verifying organization that confirms that the product meets the criteria of an ecolabel and/or standard. Examples include: the Danish Standards Foundation’s Nordic ecolabeling scheme, Cradle To Cradle™, Environmental Product Declarations (EPDs), LEED, and Green Seal.

The basic purpose of an ecolabel is to convey that the product has been subjected to an evaluation against specific criteria e.g. biodegradability, percentage recycled material, etc and meets the requirements to allow for label placement on the product. This is intended to create demand for more sustainable products by influencing (or affirming) performance improvements upstream and purchasing decisions downstream (Watanatada, 2011a).

ESCs should not be confused with the ISO standards. ISO (International Organization for Standardization) is the leading developer of International Standards in the world (ISO, 2012). The ISO 14000 series is a set of voluntary guidelines for environmental labels and standards.

- **ISO 14020** provides guidance on the principles that should be applied to all environmental labeling programs with an emphasis on credible information.
- **ISO 14024** provides guidelines that third-party labeling programs should follow when developing environmental criteria for a particular product (The ISO 14000 Information Zone, 2012).

Additionally, ISO has developed a categorization of ESCs.

As defined by the International Standards Organization in ISO 14020 (ISO, 2012)

Type I	A multi-attribute label developed by a third party
Type II	A single-attribute label developed by the producer
Type III	An eco-label whose awarding is based on a full life-cycle assessment

A number of ESCs utilize ISO and other recognized standards in creating their own guidelines for certification. However, ESCs use these as a foundation, in addition to their own standard-setting process. ESCs can set their standards based on open and consensus-based forums, allowing public and industry comment on a regularly scheduled or as-needed basis. Some ESCs have closed standard-setting forums, keeping information regarding their standards and how they are determined within the organization.

B. STATUS AND TRENDS IN ESCS

In 1978, the Blue Angel certification, the world's first ecolabel, was launched in Germany. As of March of 2012, there were 431 different ecolabel schemes in 246 countries and 25 industry sectors being tracked on the ESC resource site, EcolabelIndex.com. The increasingly strong presence of green claims and ecolabels in the marketplace has led to both increased consumer awareness of the environmental impacts of products as well as consumer confusion and distrust of those same claims. This reduces the ability of ESCs to provide marketing differentiation opportunities (Watanatada, 2011a).

According to the 2010 Global Ecolabel Monitor report, "The ecolabel and eco-certification landscape is currently fragmented and often confusing to institutional buyers as well as individual consumers. Marketplace confusion has grown and continues to grow due to competing claims on what makes a product 'green,' especially when there are two or more competing schemes for the same sector or product." In the 2011 paper, "Label Confusion," Harbaugh, Maxwell, and Roussillon showed that consumers are easily confused by a saturated ecolabel market. Additionally, though their purpose is to bring clarity to a product's social or environmental footprint, the labels themselves often result in further uncertainty on the part of the consumer.

There is also a gap in the research on the positive or negative environmental and social impacts from the implementation of ecolabels. In 2009, the World Resource Institute (WRI) and Big Room Inc. conducted a survey in which they asked ecolabel providers if they 1) tracked the market share of their ecolabels, and 2) were able to correlate any environmental or social benefits from the implementation of the label. They found that, most providers (about 75%) have not tracked the market share of the items wearing the label (Global Ecolabel Monitor, 2010).

ISEAL Alliance, the global alliance for environmental and social standards systems, is completing a major strategic review of how voluntary standards should evolve in order to scale their impact. In 2010, WWF published a review of multi-stakeholder initiatives, "Certifications and roundtables: do they work?" The conclusions of that report pointed to the need for more evidence and operational improvements. There seems to be an increasing desire to understand and quantify the positive impacts of ecolabels, and efforts to do so are promising. According to the WRI/Big Room study, 67% of ecolabel issuers stated, "they have either studied or plan to study the impacts of their ecolabel programs in terms of environmental and/or social benefits achieved." Among the recommendations of that report is the need for future research looking into the depth of those impact studies, the methodologies employed, and the actual results achieved (Global Ecolabel Monitor, 2010).

Although the evidence of ESC impacts is uncertain, ESCs are often used as both a communication and decision-making tool within the business-to-business (B2B) arena. Deloitte's research department published a report in 2011 that found that companies' decisions to pursue eco-labels were driven due to pressures from throughout than value chain rather than because of consumer pressure.. Many companies have institutional green procurement policies wherein they require their suppliers to complete sustainability scorecards, identify any ESCs and often provide a slew of information about its products sustainability profile (Watanatada, 2011b). B2B companies also use ESCs as informational shortcuts and a method of communication with customers. Dr. Anastasia O'Rourke stated that she sees, "the most active growth in interest in ecolabels in B2B transactions, rather than with consumers," (Stroud, 2011). Yet the executives interviewed in Deloitte's report generally thought that the marketplace would begin to have a greater focus on business-to-consumer (B2C) labels, because of increasing environmental proficiency of consumer. This growing demand throughout the value chain emphasizes the need for a credible exchange of information between suppliers and their customers (Lyon & Dautremont-Smith, 2010).

Industry experts have also weighed in on the qualities that make an ecolabel successful and agree that credibility is key. In its 2010 report, TerraChoice argued that, "in our view, best-in-class environmental standards and certifications are those that are consistent with ISO 14024. These programs are transparent, life-cycle based, leadership-focused, and third-party verified." Industry expert PatrinWatanatada, former director at SustainAbility, explained that in order for a label to be respected, it must be third-party verified (Personal communication, September 27, 2011). Michelle Radecki, former Vice-President and General Counsel for the American Cleaning Institute, agrees and says that a label has to be as independent as possible and transparent in their criteria and labeling process to be legitimate (Personal communication, September 27, 2011). Dr. Anastasia O'Rourke, Co-Founder of Big Room, Inc. and EcolabelIndex.com, believes that recognition by governments, NGOs, and other stakeholders is also very important (Personal communication, September 23, 2011).

Some ESC programs are adapting to the competitive environment by partnering with other schemes and agreeing to mutual recognition of those ESCs. This allows the labels to be useful in several regions and applicable to a broader scope of products (Personal communication, September 23, 2011). In an interview, Dr. O'Rourke further explained that in the future, more recognizable and better-known labels are likely to become even stronger than they currently are and smaller ones will either go away or harmonize (2011).

To summarize, ESCs are useful for:

- Establishing a sustainability baseline for products on a single or in multiple attributes
- Communicating and increasing awareness of the sustainability profile of products to B2B consumers and end consumers
- Reducing the environmental impact of a product throughout the value chain
- Raising expectations around product sustainability

Government Regulation and Ecolabels, Standards & Certifications

As there are no clear guidelines as of yet to identify what the ESC landscape will look like five to ten years from now, government regulations will likely have an impact in as far as they are able to provide a set of criteria for those ESCs that are acceptable and those that are not.

As EPA's Introduction to Eco-Labels and Standards website reports, "along with this changing marketplace has come increasing concern regarding "greenwashing" and uncertainty about which environmental claims related to standards and labels can be trusted." To address this concern, The U.S. Federal Trade Commission Green Guides provide general guidelines for companies making environmental claims. Because "green" product claims are relatively recent phenomena, the Guides have undergone several revisions and are currently pending review (2012). Also in the U.S., in October 2009, President Obama signed into law Executive Order 13514, which committed federal agencies to ensure that 95% of new procurement contracts are environmentally preferable. This resulted in the creation of a GSA Section 13 Working Group on Standards and Ecolabeling that is developing, "guidelines that federal buyers can use to select appropriate environmental standards and ecolabels for use in the federal procurement process," (Executive Order 13514, 2012)

Within the EU, the European Commission's Lead Market Initiative supports the bio-based products sector through regulation, public procurements, and standardization. The European Commission has issued several standardization mandates to CEN that they hope will improve labeling and certification and ensure the quality and consumer information on the new products (European Committee for Standardization, 2012)

C. STATUS AND TRENDS IN GREEN PRODUCT MARKETING AND SALES

Although B2B is a significant driver of ecolabeling, the influence and pull of the consumer is continuing to grow as well. According to environmental think tank SustainAbility, “it’s firmly established that we expect global companies to know the ‘where’ and ‘how’ of their raw materials and production. And, increasingly, consumers choose purchases based on these factors” (Watanatada, 2011b). The use of ESCs as a green marketing tool is more common within more mature industries. In its 2010 Six Sins of Greenwashing report, TerraChoice found that, “There is considerably more use of legitimate certification in the more mature “green” categories.”

Green Consumers represent a significant and growing portion of the general population in the United States as well as the EU. Green Consumers, those who purchase environmentally friendly products, fit into several categories, from those that always or almost always buy green products (Super Greens), to those that regularly (True Greens) or sometimes do (Light Greens) and those that never do (Never Greens) (*Green Marketing - US, 2011*).

Found in substantial numbers across all demographic groups, green consumers are most represented in the 18-34 age range and high-income households (*Green Marketing - US, 2011*). Until the recession of 2008, the number of Super Greens and True Greens in the US population was growing rapidly, but during 2008 and 2009, the segment size stated flat. Now, survey results suggest that the green marketplace in the U.S. is beginning to grow again, although at a slower pace than before (*Green Marketing - US, 2011*). In the UK in 2010, consumers spent about £46.8 bn on ethical products and services, up 9% from 2009 (The Co-Operative Bank, 2010).

Another recent survey asked consumers if they would be willing to pay a premium for green products in categories that generally cost less than \$10. The results were that, “even [though] \$1 is a substantial price premium for most of these products ... about half of respondents are willing to pay a premium of \$1 or higher for greener products in most categories.” In some cases this is even higher, with 53% of US consumers answering that they are willing to pay a premium for a greener television (*Green Living – US, 2011*).

Consumers also want more information about the companies producing their products, the ingredients and in some specific product categories receive assurances that the ingredients were sustainably and ethically sourced. In the UK, 44% of consumers responded that they want more information on what companies are doing to be green, and 70% are not confident in their ability to identify which companies are environmentally responsible (Greenwise Staff, 2010).

Another indicator for the future of the green marketplace is the historically low level of respondents classifying themselves as Never Greens (8%) (*Green Marketing - US, 2011*). The green marketplace has become a part of life for the majority of Americans. As the economy

starts to recover, this broad adoption bodes well for the future of this marketplace, also cited as one of “The Top 10 Trends in CSR for 2012” by *Forbes* (Mohin, 2012).

Despite the stagnation of green purchasing due to the economic recession, the number of green marketing product claims increased by 38% between 2009 and 2010 (*Green Marketing - US*, 2011).

Market Drivers

Mintel’s 2011 US Green Marketing report showed that although the percentage of surveyed consumers willing to pay premiums for green products in general fell from 39% in 2007-08 to 30% in 2009-10. Over the same period companies continued to invest in environmental management and sustainability initiatives of their own operations and value chain. Companies are going green despite consumers’ decreased willingness to pay for this attribute due to the additional benefits of these efforts: improved resource efficiency and cost savings, investor activism, and risk management (*Green Marketing - US*, 2011). It seems likely that businesses will continue to invest in developing more sustainable products that have these other benefits, even though they may not choose to market them to consumers as such. In this way, the B2B business is driving the green product marketplace more than the B2C market. This is illustrated in many organic wine producers’ choice to not include any label on their organic wines, because consumers don’t think that it tastes as good as conventional wine, even though it often rates higher (Alder, 2010).

Improved Efficiency & Cost Reduction

Improved efficiency and cost reduction are frequently cited drivers of green and/or sustainable corporate action. The following are examples of improved efficiency and cost reductions through corporate green initiatives, including creatively looking to operations and energy production as sources of savings:

- Kraft Foods has cut its waste by 30% in 2011 from 2005 levels, recycled or reused 90% of its waste, and has nine facilities in the US and Canada that send no waste to landfills.
- Chrysler is using paint solids from two of its US assembly plants to generate electricity.
- As of December 2010, more than half of GM’s plants were sending no waste to landfills, with 97% of the waste from these sites being recycled or reused, and 3% incinerated to generate energy (*Green Marketing - US*, 2011).
- Since 1990, The Dow Chemical Company has reduced its greenhouse gas emissions by 20% and its energy intensity by 38%. Between 1990 and 2009, total cost savings due to reduced emissions were over \$9.2 billion (The Dow Chemical Company, 2010).

Investor Activism

Corporate environmental responsibility can be driven by investors in two ways:

- Investors and analysts may reward companies seen as sustainability leaders with increased confidence, which can lead to higher share prices.
- Stockholders can pressure management directly.

Stockholder pressure has increased in 2010 in spite the challenging economic environment. According to the February

2012 Ceres report, “Proxy Power: Shareholder Successes on Climate, Energy & Sustainability,” 230 shareholder resolutions related to green issues over the last three years sought greater disclosure and action on risks related to climate change and energy. Of those, 110 were withdrawn after their demands were met with action or commitments.

In regard to rewarding companies seen as green leaders, Mintel’s research found that 72% of respondents prefer financial service providers that invest in green companies, and 49% are interested in investing directly in green companies because they are good investments (*Green Marketing – US, 2011*).

Risk Management

From a risk management perspective, even when green practices do not pay for themselves in the short run, they may still be sound investments. The US Securities and Exchange Commission (SEC) has recognized that potential risks from climate change and related regulation to companies are significant enough that companies must assess and report them to shareholders (2010). Risks related to corporate environmental practices fall into a number of categories:

- **Direct environmental threats**— including water shortages, natural disasters—can be mitigated by good environmental management, while poor practices can add to them.
- **Fluctuations in the prices of energy and other commodities** – can be mitigated through renewable and alternative energy development, and innovation at all levels.

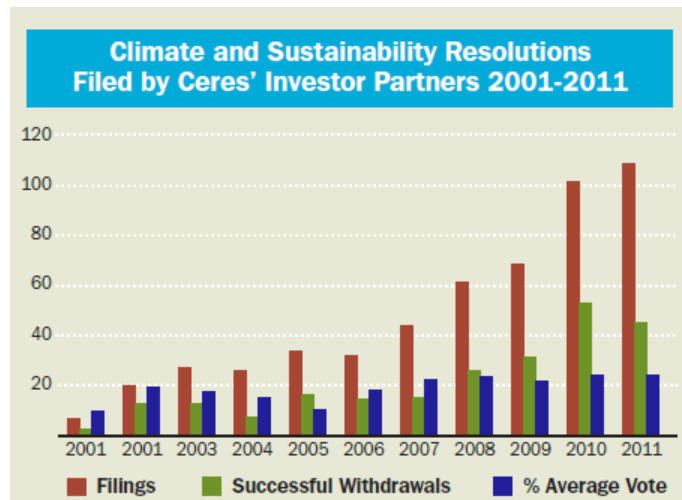


Figure 18. Climate and Sustainability Resolutions

- **Risks from new environmental regulations** – new rules developed from the US-EPA laws, EU environmental legislation, and the potential for a future market for carbon trading – all point to the value of proactive corporate governance.
- **Environmental disasters** - oil spills and toxic leaks – may be rare, but the negative impacts in the forms of direct costs, liability, and public relations, can be enormous.
- **Threat to corporate brand image** - can be damaged if consumers come to see the company as disingenuous, comparatively less green than their competitors, or clearly lacking an environmental perspective. (*Green Marketing – US, 2011*).

According to a Mintel 2011 report, for “companies in industries viewed as environmentally damaging (such as oil, coal, and chemicals), risk management is the most important part of green marketing. No matter how much effort is put into green branding, one bad accident or spill can damage a brand for decades, so companies operating in these areas are well-advised to focus on safety and mitigation of environmental risks as their first step in green marketing,” (*Green Marketing – US, 2011*).

Effective green brands leverage their core strengths, as seen in the following examples:

- General Electric - turned its reputation for innovation into the “ecomagination” brand, firmly establishing the company as a leading green brand in the US
- Johnson & Johnson – associated the company and its products with green by focusing on its reputation for health, safety, and purity. You may wish to re-think suggestion his based on the published quality issues experience by J&J over the past 48 months
- Clorox – leveraged its core competency and reputation for cleaning products in its successful launch of the “Green Works” line. How much do they sell versus the normal brands?

The best green marketing evolves from green innovation that fits within a company’s core business model and builds around those practices. Overreaching green claims or claims that conflicts with brand perceptions are likely to generate backlash (*Green Marketing – US, 2011*). This aligns with the need for companies to pursue credible ESCs for their products if they choose to put a label on it.

D. HOME AND PERSONAL CARE INDUSTRY

Introduction to the Industry

Home and personal care manufacturers fit within a few closely related industries. The **soap and cleaning compound** manufacturing industry, with revenues of \$54.7 billion, is expected to grow at a rate of 2.8% annually to reach \$62.7 billion in revenues by 2017. Consumers' environmental preferences and health concerns have led the industry to change the formulations of its products. Environmental regulation is expected to ramp up in the US and follow in Europe's footsteps, increasing manufacturers' operating costs. That, along with increasing competition with retailers' private brands, will reduce pricing margins. Due to market saturation and declining margins, manufacturers will increasingly look to emerging markets and new product developments for growth opportunities (Amari, 2012a).

The **cosmetic and beauty products** manufacturing industry, with revenues of \$53.7 billion, is expected to grow at a rate of 3.1% annually to reach \$62.5 billion in revenues by 2016. Globalization of the industry is also expected to continue as emerging markets continue to develop. Consumer interest in purchasing naturally derived, organic and reduced packaging products will continue to influence new product development (Panteva, 2011).

Home Care & Personal Care Sustainability Drivers

Manufacturers in the home care categories continue to define green in several ways. Green products can represent those that use natural-based ingredients, those with ecolabels, or those that offer a cost-saving measure through reduced packaging/transportation.

Home Care Sustainability

The focus of sustainability in cleaning formulations is to make improvements in the environmental profile of the product where the greatest environmental impacts occur: during the consumer use phase. In the case of laundry and dishwashing this is largely due to the need to heat large quantities of water for use along with the product (Saouter & Van Hoof, 2002).

Energy Use: The leading brand owners in laundry, which represents about 50% of the total household cleaner market (Branna, 2007) have developed cold water laundry products. The technologies within these laundry detergents enable soiled clothes to be washed effectively at temperatures < 40°C thus avoiding the need to heat large volumes of hot water.

Compaction: laundry products that are more concentrated result in less packaging materials and fewer greenhouse gas emissions due to the reduced transportation and storage requirements.

There are also some basic environmental and human wellness requirements expected from

cleaning products; these formulations come into direct contact with users, as such, cleaning products must be non-toxic and non-irritant. Additionally, when the soil is removed from the fabric or hard surface, the soil as well as the product is then discharged down the drain and often released back into the environment. Products presenting a lower risk from human wellness and aquatic toxicity perspectives are regarded as more sustainable. This perception is also reflected in the main ESC criteria associated with cleaning formulations.

The manufacture of raw materials is the second biggest user of energy in the manufacturing life-cycle of laundry detergent (Saouter & Van Hoof, 2002). Additionally, due to fluctuations in petroleum prices, there is a growing desire to source raw materials for home care products and packaging from renewable resources, which deliver the same performance as traditional technologies and which are non-food sources (Barnett, 2010).

Personal Care Sustainability

The focus of sustainability efforts in the personal care sector is largely dominated by the nature of the ingredients rather than environmental impacts during the consumer use phase. According to a Kline & Company 2011 study, sustainability, “has been driving the active ingredients market for over a decade,” and the natural personal care products market has seen double-digit growth since 2006 (Matic, 2011). “Naturalness” is one of the leading demand drivers in personal care, as consumers seek out products they can trust from recognized and perceived natural sources. This trend has migrated from the food industry and is closely tied to consumers’ concerns about their own health and the health of the planet (Green Living – US, 2011). In parallel, concerns about petroleum reserves are driving manufacturers of personal products to explore ingredients that can be obtained from plant-based sources, which may also offer additional functional or perceived benefits such as sensorial or moisturizing attributes (Matic, 2011; Blake, 2011). Another way this trend is illustrated in the market is through organic claims:

Organic – The renewable alternative to synthetic chemicals as raw material for personal care products is agricultural. Consumers perceive organic products to be the environmentally preferable version of agricultural outputs and as a result seek out the organic label on personal care products (Blake, 2011).

Additional sustainability issues include persistence and/or toxicity of ingredients when discharged down the drain, energy consumption during the manufacturing process, animal cruelty, fair labor, as well as energy consumption during the use phase (heating water) (Blake, 2011; EcoLogo, 2009).

Below are some examples of ESCs and their connection to sustainability drivers within home and personal care.

Table 6. ESC examples in Home & Personal Care

Name	E, S, or C?	HPC Product Category	Sustainability Themes
Eco-cert	S	Personal Care and Home Care	Natural and organic ingredients, reduced petrochemicals, naturally derived
Design for the Environment	C	Cleaning Products	Resource efficiency, waste reduction

Home Care & Personal Care – Ecolabel Trends

Within the home and personal care sectors, the major emerging trend in the ecolabel marketplace is label harmonization. These trends are emerging in parallel to the increased attention given to environmental and social sustainability by the home and personal care sectors. Ecolabels are one of the ways in which a company can illustrate its social/environmental credibility and performance in home & personal care.

The higher demand for ESCs on ingredients and for information on their products is partly due to the fact that the Home & Personal Care industry is much more consumer-facing than other businesses. The market share of natural and organic products is currently minimal relative to the rest of the sector. Despite that, industry representatives anticipate that the segment will outpace the growth of the sector as a whole (Edles, 2008). TerraChoice’s Six Sins of Greenwashing 2010 report studied the claims of 605 cleaning chemistry products and 120 tissue products and found that combined, the products made over 2,000 “green” claims. Of those products studied, 32% had some sort of ESC (most commonly EcoLogo and Green Seal) vs. 19.8% among all product categories.

Label Harmonization

- There are indications that personal care product categories are moving towards label harmonization. Label harmonization occurs when multiple ecolabels are collapsed into one ecolabel.
- To date, the best example of label harmonization is COSMOS, which was developed in Europe through the partnership of five standard setting organizations. Founding members BDIH (Germany), Ecocert & COSMEBIO (France), ICEA (Italy), and Soil Association (UK) agreed to create a combined standard for cosmetic production. COSMOS launched in January 2010, offering an advantage over its competitors in that it provides a market for products within those that were already been certified by founding organizations. While the COSMOS standard is phased in, the founding organizations’ standards will be recognized as equivalent. However by December 2014,

the founding organizations' ecolabels will be phased out and replaced by COSMOS.

- In an industry dominated by global brands, key differentiators will be a global presence. In the particularly ecolabel saturated markets of Europe and the US, one result of label harmonization seems to be an increased level of competition between the remaining, unincorporated labels, leaving their futures less promising (such as NaTrue, Green Seal and NSF who have recently developed competing standards to COSMOS).

ESCs as a B2B Tool

- In a Q&A follow-up to a Sustainable Industries webinar on ecolabels, Dr. Anastasia O'Rourke wrote, "Companies are also requiring that their suppliers also meet various ecolabels or other green standards in order to improve the environmental performance of their own products, back up their green claims and to reduce risks in their supply chains. We are tracking many of these labels and standards through [Ecolabel Index](#), and you can also look at labeling programs such as Greenseal and Ecologo, where many of their standards are for B2B products, such as industrial cleaning supplies," (Stroud, 2011).

Regional Trends

There is some regionalization and, particularly, nationalization of ecolabels in the Home & Personal Care business such as the EU Ecolabel, Nordic Ecolabel, "Swan," the NPA National Standard, etc.

Europe has the most robust market for ecolabels in the cosmetics and personal care sector, but has also had the greatest variety of ecolabels (see Appendix VI for ESC Table). Organic Monitor reported that, "As more regional and international certification programs for natural and organic personal care products develop, global markets have become increasingly 'divided' by certification type," (Nutritional Outlook, 2011).

The ecolabel market in both Asia Pacific and Latin America continues to emerge and is likely to adopt internationally accepted standards, taking advantage of best practices developed in other regions. Government is also playing a significant role in those regions. In South America, Brazil has developed a national organic food standard that the government hopes to also roll out for cosmetics (Nutritional Outlook, 2011).

E. VALUE CHAIN CHALLENGES OF THE CHEMICAL INDUSTRY

Chemical Manufacturing Industry

The **petrochemical manufacturing** industry produces chemicals derived from petroleum products and natural gas. These raw materials and the formulations derived from them are the foundation for many other products that include consumer goods, automotive components, and other goods which are subsequently formulated and sold back into the chemical manufacturing industry downstream, such as the soap and cleaning compound manufacturing industry. The industry is mature, highly dependent on its raw materials, and forecasted to experience volatility as a result of shifting raw material prices in the next several years. Despite that, by 2017, industry revenues are projected to grow to \$96.5 billion by 2017 (Amari, 2012b).

The **organic chemical manufacturing** industry manufactures the basic organic chemicals including industrial gases, synthetic dyes and pigments. This mature industry has revenues of \$125 billion and a projected 5.5% growth to \$163.4 billion by 2017 (Amari, 2012c). Similar to the petrochemical industry, the organic chemical industry is vulnerable to pricing of raw materials, despite overall growth in consumer demand. The industries' products serve as raw materials for downstream manufacturers and as the recession forced those downstream manufacturers to decrease production, this negatively impacted industry revenues. As the global economy improves and consumer demand increases, the chemical manufacturing industry forecasts growth in the next 5 years.

The **plastic and resin manufacturing** industry manufactures resins, polymers and synthetic rubber is a \$94.4 billion mature industry (Gotaas, 2011). Its raw materials are products from the chemical manufacturing industry, and it is sensitive to the price shifts within the chemical industry as well as the costs of raw materials including crude oil and natural gas. Despite a volatile period during the recent recession, revenue has steadily increased with projected growth of 3.1% annually and is projected to reach \$110.1 billion in 2016 (Gotaas, 2011).

The **adhesive manufacturing** industry produces chemical formulations and raw materials for adhesives, glues and caulking compounds. The \$9.9 billion industry is mature and has expected growth of 2.4% annually to reach \$11.1 billion in 2016 (Gotaas, 2011). Similar to the plastic and resin manufacturing industry, its raw materials are products from chemical manufacturing, and it is sensitive to the price shifts within the chemical industry as well as to demand from the construction, aircraft and parts, and automotive manufacturing industries. 3M Company is the biggest player in the industry with a 19.5% market share and The Dow Chemical Company follows with 15.4% market share, (Gotaas, 2011).

Chemical Manufacturing Industry - Value Chain

Chemical manufacturers produce basic plastics, chemicals and as hydrocarbons. Companies are increasingly producing more performance based and market-driven goods such as those used in electronics, specialty materials, and coatings. The chemicals and formulated products developed by chemical manufacturers use petroleum-based raw materials to produce ingredients for their customers' downstream products.

A simplified version of a multinational chemical manufacturer's (supplier), position in the value chain is illustrated below and illustrates the flow from raw material to finished goods. In some cases, suppliers also sell direct to consumer and the value chain is actually much more complex than what is shown.

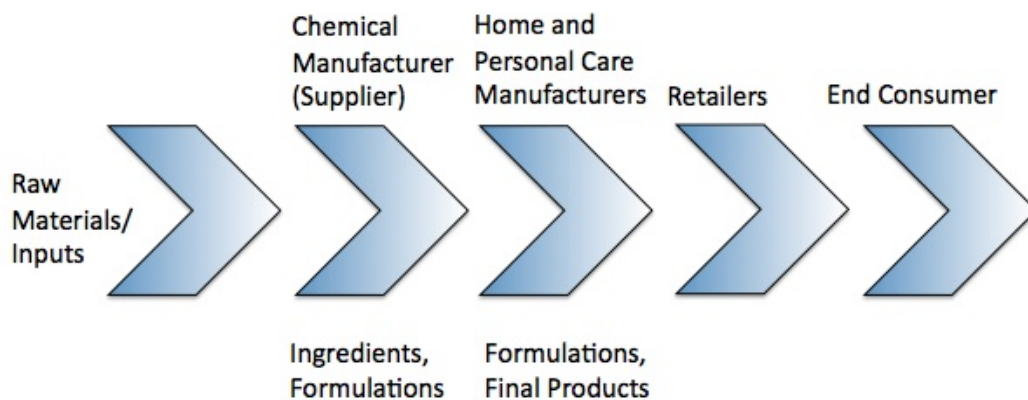


Figure 19. Value Chain

Sustainability Information and the Value Chain

In recent years, a growing number of retailers have begun to require product sustainability information from their distributors before purchasing their products. These distributors then require sustainability information from their upstream suppliers until these requests eventually reach the chemical manufacturing company. Sustainability information requests often include asking suppliers for data associated with such factors as greenhouse gas emissions, energy and water use, and packaging materials.

The Game Changer: Walmart

Walmart is the world's largest corporation by revenue, and 18th on the Forbes Global 2000 list of the world's largest public corporations ("The World's Biggest Public Companies," 2011). Their influence is felt in many industries in nearly every country in the world, whether hosting

Walmart's storefronts, supplying Walmart's distributors, or both. When Walmart says jump, global markets typically ask, "how high?"

Walmart began a journey of greening its supply chain and operations in 2004, following an experiment in reducing its packaging. The success of that experiment led to Walmart's fully supported initiative to green its operations on all possible levels, including packaging, which alone saves Walmart \$3.4 billion per year (Humes, 2011). Walmart has moved into more innovative ways to reduce waste at every step in their operation, including their supply chain.

Walmart launched its Sustainability Product Index in July of 2009, with significant impacts on their entire global supply chain. Implemented with the goal of saving money at all levels in the supply chain, and ultimately for Walmart's customers, these initiatives also provide the added benefit of global GHG emission reduction. Walmart has since set the 2015 goal of reducing the GHG emissions within its supply chain by 20m tons (*Walmart announces goal...*, 2010).

In order to achieve that goal, Walmart has requested that all interested suppliers fill out their "15 Questions for Suppliers." If they choose not to participate, Walmart has signaled that these suppliers will become "less relevant" to them, presumably downgrading their status as a supplier to Walmart. In order to complete this questionnaire, suppliers from all over the world are now looking into not only their own environmental and social footprint, but also those of their own suppliers.

The impact on an upstream supplier has been dramatic.

- Sustainability information requests consistently arrive from manufacturers, the upstream supplier's customer base, each asking for information on water use, energy use, GHG emissions, etc.
- Requests frequently arrive in different formats, creating the necessity for suppliers to provide individualized attention in order to maintain the quality of these customer relationships.
- Requests may also ask for the specific environmental footprint of any of a suppliers products and the supplier may need to consult with a variety of internal subject matter experts in order to answer these questions.
- Compounding the ability to respond quickly is that some of the requested information may be proprietary.

Chemical Manufacturing and ESCs - Challenges & Opportunities

The identification of the most relevant ecolabel programs would result in a cost to a

multinational chemical company's impacted businesses in both time and resources required to identify the appropriate label, standard or certification, research & development, criteria determination and potential testing. The relatively recent influx of hundreds of ecolabels into a wide variety of markets has created marketplace confusion for the consumer, the retailer, and companies further up on the supply chain. Businesses routinely receive inquiries from customers for information on ecolabels, standards and certifications, and other environmental or sustainable attributes of its products. It has been difficult for chemical manufacturers to determine within which label programs it should invest.

Chemical suppliers also receive additional inquiries from customers that seek to put ecolabels on their own products and requests for detailed product sustainability information from their raw material or ingredients suppliers for the customer's downstream products.

This project attempts to delve beyond the accumulated academic and professional research presented above. Through a thorough literature review, primary research, and analytical analysis, the project provides clarity to the value and implementation of ESCs that will return the most value to the chemical companies.

APPENDIX II. HOME AND PERSONAL CARE SURVEY

A. SURVEY AND INFORMATION COLLECTION DESIGN

The purpose of the primary research for this project is to support an multinational chemical company in gaining a more detailed understanding of the importance of ecolabels, standards and certifications (ESCs) throughout the value chain and to assess their influence and impact on the purchasing decisions of its customers. As a key component of the project, a survey was designed and aimed at individuals within the home and personal care sectors. The aim of the survey was to identify and prioritize the influencing factors involved in companies' selection of an ESC and to gain a better understanding of current and future ecolabel programs, of interest to home and personal care manufacturers. The ESC survey was launched using survey software on March 27, 2012. The electronic survey was forwarded to individuals in North American and Europe. In order to maximize the response rate, the survey was translated into three languages. Individuals were prompted for response on March 6 and the survey concluded on March 13, 2012.

With the goal of getting up to speed in ESCs and sustainability measurement, the University of Michigan team members individually attended several working conferences in the month of June, including:

- "Informing Green Markets 2011" presented by the Erb Institute in Ann Arbor, MI
- Green Products Roundtable (GPR) Plenary Meeting in Tacoma, WA
- Global Reporting Initiative (GRI) Certification Training in New York, NY

These conferences gave the University of Michigan team an opportunity to rapidly get up to speed, and informed the team of the complex, dynamic and uneven environment of ESCs.

Interviews were conducted in September with Michelle Radecki, Consultant American Cleaning Institute; Patrin Watanatada, Director of SustainAbility; and Dr. Anastasia O'Rourke, co-founder of Big Room, Inc., Ecolabelindex.com, and co-chair of the Green Products Roundtable. The purpose of these conversations was to further the team's understanding of current trends and challenges of ESCs in the marketplace and inform the survey questions (See Appendix IV).

Once an initial draft of the survey was developed, valuable input was provided in consultation with faculty and staff at the University of Michigan's Ross School of Business and Center for Statistical Consultation and Research (CSCAR).

Research Questions

Based on the information gathered throughout the initial research phase of the project, the team identified five unresolved research questions that it would design the survey to address:

1. **What are the drivers behind ESCs?**
2. **What are the decision influencers?**
3. **How active are manufacturers in ESCs?**
4. **What are the current preferred ESCs?**
5. **How can suppliers best communicate product or ingredient sustainability information to manufacturers?**

The knowledge gained may enable chemical manufacturers to better prioritize resources and to proactively approach decision-making on the use of ESCs on current products as well as improve responses to customer information requests.

Survey Design

In the survey, the five research themes perceived to be dependent variables were measured by 18 questions. Survey questions measuring the addressing the same research question were phrased differently in order to investigate opinions on marketing and procurement decisions separately (Chambliss, 2003).

The survey includes diverse question forms in order to get a combination of numerical, scaled, and texted answers (see survey in Appendix V). In order to increase the likelihood of responses from European respondents, the survey was translated into French, German, and Spanish.

Sample

Comprehensive lists were developed to conduct this survey. The survey was then launched in both North America and Europe and in four languages, on February 27, 2012, to 2696 individuals.

Respondent Categorization

Based on the variation among respondents included in the survey invitation, respondents were categorized using the following factors: geography, firm type, market segment and respondent's department. By conceptualizing each factor as an Independent Variable (IV), survey data could be categorized and correlated among diverse types of companies.

Survey Launch Timeline

List developed	Dec 21, 2011
English survey prototype text approved	Jan 16, 2012
English survey prototype online link tested and approved	Jan 18 – 30, 2012
English survey prototype translated into German, French, and Spanish	Jan 30 – Feb 24, 2012
Survey launched on two continents in four languages	Feb 27, 2012
Mid-survey prompt sent to non-respondents	Mar 6, 2012
Survey closed and data collected	Mar 15 – Mar 21
Data analyzed	Mar 14, 201

Results Analysis

Results of each answer option (Dependent Variable) from all respondents were summarized and compared based on each respondent attribute (Independent Variable). Statistical software IBM® SPSS Professional and JMP® 9 were utilized for the analysis by the UM team.

Respondent Mapping

The survey was sent to 2696 individuals in the home & personal care sectors. 95 respondents completed the survey, with an additional 89 respondents partially completing the survey. The completed interview response rate was 3.52%, which is a typical response rate. The following table shows frequency distributions of respondents with respect to the independent variables:

After performing a contingency analysis of all independent variables, there appears to be a slight correlation between respondents working in the R&D department and geographic location. No bias occurs within other dimensions. Though the response rate is low, the sample is relatively balanced over most of the independent variables. Therefore, despite the minimal selection bias, the sample is considered valid.

B. LESSONS LEARNED (Future Research Considerations)

Increase Response Rate

To increase response rate, more concise surveys may be needed. Generally, self-administered surveys should not exceed 100 questions, (SPSS, 1995). Consultants in The University of Michigan Center for Statistical Consultation and Research also suggested that the complexity of the survey may discourage potential respondents who would then quit the survey. As the data analysis shows similarity of results of some questions, grouping up related options would help cut the length of the survey. In the meantime, each question should be no longer than 25 words.

The following techniques are found useful in improving response rate:

- Have an important or influential person in the field sign the invitation letter to give the survey more purpose or legitimacy.
- Wait about six weeks to start analysis and send out a few reminders while the survey is out in the field.
- Include aesthetic perspective into consideration; make sure the presentation of the survey is clean and easy-to-understand, (SPSS, 1995)

Increase Reliability

- Refine respondent category, pay attention to Asian region
- In this study, there's unbalanced representation of different departments (large amount of R&D individuals). Given the fact that departments where respondents work affect their opinions, it is suggested to send out survey to specific departments.
- Include multiple research methods such as follow-up interviews about interesting responses or outliers or a series of short surveys.

C. RESPONDENT COMMENTS

“What final thoughts would you like to contribute about ecolabels, standards or certifications (ESCs)?”

Respondent	Comments
536	Due to the fact that there is no one harmonized system in place, it is very difficult to establish credibility of eco labels
108	I believe everyone would benefit if there were standards across the board instead of a different set of requirements/restrictions for each label. It's hard to be sure what is a fad and what will stay in circulation and become a "household" standard. It's difficult to get some of these certifications so funding the work it entails to get them is only rewarded if the certification remains present.
1442	It's all good but certified raw materials usually mean higher prices. We must raise our prices to compensate. Customers do not want price increases.
325	Many companies are going in the direction to differentiate, but there are no common standards and the cost is too much for entry and compliance. We have chosen a different direction based on performance.
1567	Still not popular in Eastern Europe as much as expected
124	There is a bewildering choice of labeling for the consumer and until this is reduced into cohesive national/international standards that are communicated effectively to the consumer then the higher price of these products will not be seen as justifiable. The current trend we are seeing is away from organic/bio products to products where the claim is more recognizable to the consumer, such as fair trade.
2212	There are so many bodies, which is not easy to assimilate even for a person who study them hardly. Things should be more simple
1394	If the price will increase when have ESCs, please re-consider.
1509	Educating the public to recognize the message behind the ecolabels will create an uncompromising demand that in turn will lead the industry in the direction. Too may ecolabels are very confusing.
1011	Suppliers need to be more active in educating the public.
960	Socialization the ESCs to the customers.
1118	Need assistance with FDA,
2030	need more details and availability of materials with certs around here
2129	Need suppliers to be responsible for the ingredients and giving knowledge on use of these items. Manufacturers need to rely on suppliers to have these qualities. Consumers do not need to rely on certifications of materials...they expect manufacturers to use best-knowledge and be able to react to new information.
2515	Relative to the ingredients themselves use of ecolabels is not all that important as long as the technical information is provided that supports the intent behind the ecolabel. For example, on USDA Biopreferred as long as the individual ingredient was run in the exact standardized test required by USDA Biopreffered i really am indifferent to whether [redacted] has gone all the way to obtain the symbol as

	ultimately i would need to qualify my finished product anyways.
2596	For each segment concentrate on eco means definitely reduce the Global warming and safe the world
1403	I believe and support in Eco label certification.
1884	NICE INITIATIVE OF [redacted] TO INFORM BUSINESS PARTICIPANTS IN ORDER TO HAVE MORE TOOLS TO GROWTH UP AND TO MOTIVATE CUSTOMER'S.
1223	[Redacted] is a key strategic partner. We would value efforts by [redacted] to increase ingredient transparency, to reduce the customer future reliance on ecolabels. In addition, we are looking for ingredients that are cost effective, biodegradable and some customers want renewable compositions.
995	Keep working
2533	An environment-friendly approach with providing hygiene assurance.
2556	Please certify all of your current and future natural products with the major cosmetic Standards such as NaTrue, Ecocert, BDIH and Cosmos. That makes our work in developing certified natural cosmetics much easier. Thank you
2224	The green chemistry is growing in Personal Care. The market size is huge. For any green product, an associated green label will support its promotion.
192	The social media method of information dispersion is interesting but I don't think I've ever seen it done well.
1611	Only 2 product lines have an interest and that is only 10% of our business.
2015	Difficult to respond since we are an ingredient supplier and would not be the one to certify to the various standards. Thus, I had to list "Do not Know" on some responses.
1919	Europeans more interested in these than those of us in the NA.
446	For us as a supplier of raw materials many of the questions were not directly applicable. ESCs are more affecting formulators and their customers. For us as a supplier SCs are becoming more important, e.g. life cycle analysis of raw materials
840	As an aerosol industry consultant my development efforts are customer driven. It is their decision as to which certifications to pursue. Unfortunately the aerosol industry is having a difficult time gaining eco acceptance. DfE is a main driver for acceptance but their position on aerosols is a detriment to the industry. Classic gov't left hand - right hand situation is FIFRA acceptance of some ingredients while rejection by their DfE counterparts.
2194	It can make our product portfolio rely on market trend and customer's requirement in the near future.
2415	Die Eignung der Zertifizierungen für den Massmarket bleibt fragwürdig.
994	Je pense fortement que les labels seront appeler a disparaitre le prix sera toujours au yeux du consommateur la chose la plus importante.

2327	Les labels montrent une volonté de l'Entreprise de fournir à ses consommateurs des produits de qualités qui sont respectueux de l'environnement et des populations
1465	Nous avons commercialisé pendant deux ans des Gels douche et des savons liquides pour les mains labellisés COSMEBIO et certifiés Ecocert. Malheureusement l'impact prix sur le produit fini était très fort pour le consommateur et le succès n'a pas été au rendez-vous, d'où l'arrêt de ces références Ecocertifiées.
478	SPERO IN UNA UNIFORMITA' DI INTENTI. TROPPI ENTI CERTIFICATORI CON RICHIESTE A VOLTE MOLTO DIVERSE PER UN FINE UNICO. NON E' IMPORTANTE ADERIRE AD UN ASSOCIAZIONE MA AVERE GARANZIE DI SOSTENIBILITA' DAI NOSTRI FORNITORI. SAREBBE TUTTO PIU' SEMPLICE E LINEARE

Respondent	Comments Translated to English
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2415	The suitability of the certifications for the mass market remains questionable.
478	I hope that there will be an uniformity of objectives. There are a lot of Certificator Entities with different requirements for the obtaining of the same result. It is not important subscribe to an association but to have guarantees of sustainability from our suppliers. In this case all would be easier and more linear.

APPENDIX III. ONLINE TOOLS, WORKING GROUPS AND COLLABORATIONS

A. Third Party Certifiers

NSF International - <http://www.nsf.org/index.asp>

NSF International is a nonprofit organization that both develops public health and environmental standards and certifications for materials and products across sectors, as well as audits and educates others about public health and risk management. They are a standards developer as well as a 3rd party assessor.

BASF SE - <http://www.basf.com/group/corporate/en/sustainability/eco-efficiency-analysis/index>

BASF SE is the largest chemical company in the world. It has developed the Eco-Efficiency Analysis, a mechanism for comparing the eco-efficiency of products and processes. It is aimed at customers at multiple points on the supply chain including end consumers, purchasers and retailers.

GreenGuard Environmental Institute - <http://www.greenguard.org/en/index.aspx>

GreenGuard Environmental Institute is an independent 3rd party certifier and standard development program of products and materials that result in low chemical emissions. Their primary issue is the improvement of indoor air quality and their activities work to promote the promotion of products and materials in that area.

Green Seal - <http://www.greenseal.org/Home.aspx>

Green Seal is a nonprofit 3rd party certifier and standard developer that primarily operates in the US Green Seal has certifications on thousands of products including many in both the cleaning products and cosmetics/personal care categories. Their standards are ANSI-accredited and were informed by ISO and GEN requirements. They are funded by grants and other funding sources.

B. Organizations Promoting or Enhancing ESCs

Global Ecolabelling Network (GEN) - <http://www.globalecolabelling.net/> - The GEN is a nonprofit that was founded in 1994 as an association of 3rd party ecolabel programs. Its mission is to improve, promote and develop global ecolabel programs. The mission of the GEN is to: serve its members, other ecolabel programs, other stakeholders, and the public by improving, promoting and developing the ecolabeling of products, the credibility of ecolabel programs worldwide, and the availability of information regarding ecolabel standards from around the world.

Green Products Roundtable - <http://www.keystone.org/spp/environment/Green-Products-Roundtable> - The Green Products Roundtable is collaboration of manufacturers, retailers, purchasers, distributors, ecolabelers, academicians and nonprofits that are interested in driving forward the green products marketplace. Its mission is to assist its participants and other stakeholders by improving clarity in the green products marketplace.

ISEAL Alliance - <http://www.isealalliance.org/> - The ISEAL Alliance is a global association that works with ecolabeling and environmental and social standard setting programs in order to improve their effectiveness and impact. They have developed Codes of Good Practice for standard setting. The Alliance is a membership organization of sector leaders.

Sustainability Consortium - <http://www.sustainabilityconsortium.org/> - The Sustainability Consortium is an organization of global stakeholders including major corporations that are interested in working together to improve life-cycle product sustainability with a strong emphasis on science. The Consortium supports scientific research, standards development, informational tools and more. The Sustainability Consortium is jointly administered by Arizona State University and the University of Arkansas.

American National Standards Institute (ANSI) - www.ansi.org - ANSI is a nonprofit engaged in accrediting programs that assess conformance to standards – including programs such as the ISO 9000 (quality) and ISO 14000 (environmental) management systems. ANSI can accredit organizations that put certifications on products (like Green Seal).

US Green Building Council (USGBC) - <http://www.usgbc.org/Default.aspx> - USGBC is a nonprofit trade organization sustainability at all levels of building including design, materials, and operation. USGBC is currently made up of over 20,000 membership organizations. Leadership in Energy and Environmental Design (LEED) is USGBC's green building certification program. LEED is has been implemented in buildings across the globe, in some 7,000+ projects. The LEED International Roundtable is made up of GBCs from around the world and was created to promote global consistency in green building as well as provide regional support to projects.

C. Organizations Rating Ecolabels, Standards & Certifications

Greener Choices - <http://www.greenerchoices.org/eco-labels/> - This ecolabel rating website is created and maintained by Consumer Reports. It utilizes information provided by certifying organizations to rate the reliability of ecolabel claims based on statistics such as 3rd party certification, scientific claims, transparency, and consensus-based standard formation. Its focus is on the categories of food, household products, personal care, and wood products.

National Resources Defense Council - <http://www.nrdc.org/living/labels/default.asp> - NRDC's Smarter Living Label Lookup currently rates over 200 labels. The guide is meant to provide

recommendations to consumers on which labels and standards they can trust and provides a rating on a scale of 0 to 4 leaves.

World Resources Institute - <http://www.wri.org/publication/global-ecolabel-monitor> - In July of 2010, WRI partnered with Big Room, Inc. (creators of Ecolabel Index) to publish the 2010 Global Ecolabel Monitor. The report synthesized a comprehensive survey of the performance and organization of ecolabels.

D. Ecolabel & Green Products Indices

Ecolabel Index - <http://www.ecolabelindex.com/> - Ecolabel Index was created in 2007 and has the largest global database of searchable ecolabels. The Index is searchable by sector, region and name. Each label's entry provides information on its purpose, management, product breadth, transparency, monitoring, and much more.

EcoSpecifier - <http://www.ecospecifier.com.au/> - EcoSpecifier is based out of Australia and provides green building consulting services in addition to a green products searchable database.

SELECT Eco-Label Manager Database - <https://select-ecolabels.basf.com/Applications/EcoLabelManager.nsf> - BASF's database for ecolabel information provided for their customers and stakeholders. Permission required to access.

Ekobai.com - <http://www.ekobai.com/> - Ekobai is a B2B online platform and service that allows buyers to identify suppliers that excel on social and environmental issues.

European Eco-label Catalogue - <http://www.eco-label.com/default.htm> - This index lists the products, services, and companies awarded the EU Ecolabel.

CleanGredients- <http://www.cleangredients.org/> - CleanGredients is an online database of cleaning product ingredient chemicals, providing verified information about the environmental and human health attributes of listed ingredients.

Responsible Purchasing Network - <http://www.responsiblepurchasing.org/> - RPN is an international network of buyers dedicated to socially responsible and environmentally sustainable purchasing.

US Environmental Protection Agency's Greener Products Portal Navigator – www.epa.gov/greenerproducts - The portal lists the products using EPA's ecolabels and standards.

APPENDIX IV. INTERVIEWS

Interview with Dr. Anastasia O'Rourke, Founder, Big Room Inc, www.ecolabelindex.com and Co-Chair of the Green Products Roundtable.

Conducted over phone on 9/23/2011 by Kara Davidson and Sarah Barjum

Notes from Interview (not recorded)

KD: If you had the chance to talk to a bunch of purchasers who are being pressured to include ecolabels, standards or certifications in their decision making process, what would you be curious to ask them?

AO: The questions I would ask would be: What information they want in order to meet requirements? How are they assessing the credibility of the ecolabel or standard? What ecolabels are they considering? How are they applying their information to make their decision? How are they classifying their products? And finally – what is the source of the pressure to include the ecolabels and standards?

KD: What trends would you want to look for when asking these questions?

AO: One trend is to look for labels that have mutual recognition or efforts towards making their systems more interoperable. Are they cooperating with each other? Can the standard be used in several different countries? In general the trend will be towards convergence around a smaller group of higher quality labels that will grow larger in terms of market share. The smaller programs will likely continue to exist but will remain very small.

KD: What do you think are the key factors that indicate whether or not a certain label or standard is going to last or trend upwards?

AO: How well recognized they are by governments, NGOs, institutional purchasers and to a lesser extent, consumers. How well run they are, how they market their services: looking at how the organization is run is very important. What resources do they have, how well do they execute?

KD: We are trying to flesh out some options for customers on how to interact [redacted] ... around requests for ecolabels and the like. What are some ways you have seen other companies deal with these requests so that we can include them in the survey?

AO: Have not seen details but some companies have a pre-selected list of products that have met standards. Good quality IT infrastructure is important here, as well as resourcing the ongoing maintenance of data as the ecolabels and the products certified change. ... [I]t is key

that they integrate the new information to their existing platforms. People will not look too hard for information or go somewhere else/to a different site to find it. Companies would be wise to collaborate with stakeholders on common platforms to make this happen and to reduce market-wide confusion around the proliferation of ecolabels, standards and green claims.

Interview with Patrin Watanatada, Director, SustainAbility

Conducted over phone on 9/27/2011 by Kara Davidson

Transcript:

**Recording begins*

KD: Are you still there?

PW: I am still here.

KD: Okay, perfect. Thank you. So, I'll just get right into it. I'm Kara Davidson. I am a graduate student at the University of Michigan's School of Natural Resources and Ross School of Business and I'm working with a team of 3 other students on a Master's Project. We've been partnered with [a multinational chemical company] since April and we're working with them to develop a decision-making framework that will help them evaluate ecolabels, standards and certifications.

PW: Sorry, I just had a question.

KD: Yep?

PW: Is that for their internal use?

KD: Yes, and then after we do develop that framework, we will be discussing with them, and then also based on the survey results, if we want to create something that can also be shared externally.

PW: Great, great. Okay.

KD: So, the survey that we're going to send out is going to be sent out to [redacted]. And through the survey, what we're trying to find out about [a multinational chemical company]'s customers are, how are they making their purchasing decisions, why are they using ecolabels and requesting ecolabels, what are their current challenges in regards to making those requests from [a multinational chemical company], and how does [a multinational chemical company]'s use of ecolabels impact their purchasing behaviors.

PW: Great.

KD: And then when I say ecolabels, I do mean the larger umbrella of environmental product standards and certifications.

PW: Yep.

KD: Okay, so before I get into the specific questions that we have for you, do you have any questions for me or in regard to the project?

PW: No. Not at this time.

KD: Okay, great. So I will just get started then, out of respect for your time. If you had the opportunity to talk to a bunch of [a multinational chemical company] customers or other large companies that are being pressured to include ecolabels, standards or certifications in their decision making process in regards to either Home and Personal Care or Building Solutions, what would you be curious to ask them?

PW: Would you mind repeating the question? I think I got it, but I'm not 100% sure.

KD: Repeating question [redacted]

PW: Right, okay. Let me think. This was building and household care?

KD: Or just in general, if you want to think of it generally.

PW: Let me just think. I'm trying to angle that question around the way that we've been thinking about it. I guess, I would want to know what is their driving force behind using ecolabels and certifications? So, it sounds like the question you're asking is that they're being pressured to do it, but I'd be curious to know whether they have other drivers as well and who is doing the pressure? For example, is it coming from the market? Is it from their end users or is it from their customers or are they doing it from a reputational perspective or are they trying to secure their supply and do they see certification as the best way to go about that?

KD: Okay, great. That was exactly what we were looking for.

PW: Okay, great.

KD: Are there particular trends that you would be interested in looking for in this type of survey?

PW: Well, I would be interested in seeing the kind of overall landscape of the different types of tools that businesses are using. So, you had mentioned yes, ecolabel third-party certification, but also how does that interface with other tools that companies use to influence and assess and to communicate sustainability performance? So, stuff like product score cards, umbrella schemes. There's just a really huge universe out there. One of the things that we're trying to

look at with the project we're doing here, Signed, Sealed...Delivered, but I don't think we're going to be taking a really robust look at the landscape because our emphasis has been more on understanding the way in which businesses use ecolabels and the value and challenges that they perceive in doing so. So we haven't taken much of an overview of the landscape as I'd like to see and I think that would be tremendously valuable for a lot of people. I've heard that the Green Products Roundtable is working on this.

KD: Yeah.

PW: Sorry?

KD: I just said, yeah.

Right, so I think that alone and understanding what kinds of synergies can you see in between the different ones and where should business be doing their own thing and where should they be going with a more standardized cross business or cross sector tools would be a good thing to know.

KD: Right, right. Good. And then, what do you think are the key factors that indicate whether or not a certain label or standard is going to be successful?

PW: Well, definitely it would need to be respected. I think third party is really important. That's what we've been finding as well is that having that independence backing behind it is just critical from a credibility perspective and one would think also from a content perspective that just having that additional perspective will make it more robust. And that obviously applies to the third party ones versus things that are maybe internally used like a product score card. I think, definitely, it's really key to be transparent no matter what about the criteria and the way that the label is assessed. I think it's very important for the ecolabel to be able to innovate over time so things change and a standard is just kind of one assessment at a fixed point in time of what's known about that particular topic and new science happens over time and also a lot of new standards at least behind some of the more multi-stakeholder initiatives are also quite politically determined. There's definitely that element to that as I'm sure you've been hearing and discovering, so it's just such a big topic. There really is no one right answer to what is sustainability or even what is even all of the subtopics under sustainability. So just, I think it's really important to be transparent about the criteria so that at least other people can go in and also make an assessment or maybe advice on doing things differently or whatever, but yeah, transparency is really key.

KD: Great, thank you. And then, lastly, and you touched on this a little bit earlier, but, we are trying to flesh out some options that we could provide to the customers in the survey on how they might interact with [a multinational chemical company] around requests for ecolabels or other environmental product information. You mentioned a score card, but what are some ways

you have seen other companies deal with requests like these and have you noticed any that have been more successful or there was a positive response to?

PW: Uh, that is a great question. I have not looked into that question as much. We have been pretty focused on the 3rd party tools and so the ones that are primarily consumer-facing rather than looking at the internal tools that companies use to get information from their suppliers or customers. So, I think that's a great question and I don't really, I don't know what the answer is, but I would have thought that there needs to be some element of...What I can say from the things that I've heard is that there just has to be a way to make it as easy possible for the person giving out the request to comply. So whether it's based on, you're drawing on a third-party benchmark in asking the question or you're using a standard set of metrics or you're maybe sharing a score card with other people. That would be really important, so the industry that I know the best in terms of businesses asking their suppliers for information would be the apparel industry. And then there, as you know, there's a lot of sharing of audit information going on there. And then I think the other thing that I would say, although without having too much to back it up would be that it would be good to ask the suppliers for information that is useful to them to collect. So there's kind of that aspect of yes, it's a data gathering process for us, but this is information that you should know anyway or that you should want to know anyway in order to be able to manage your business better.

KD: Right, right. Okay, great. Um, so that was my last question. We would love to follow up with you later. Would you mind if we contacted you again in the next couple months for some follow-up questions?

PW: Sure. Is your project running all year?

KD: Well, the survey's going to be done this month and then we're going to be developing the framework for the next 2 months and then writing the report in the winter, so for the next 6 months at least.

PW: Great.

KD: Yeah. So thank you so much for your time and we'll be in touch and appreciate you're taking the time.

PW: Yep, you're very welcome and I'm happy to have you contact me again if you need anything. Is there anything that comes out of this that you would be able to share?

KD: We're really hoping to, but we're just going to be looking at the survey results with [a multinational chemical company] in November and December and kind of deciding exactly where we want to go with it and at that point, you know, everybody on the project would really love to do that it just depends on if it's possible with timing.

PW: Sure, yeah, that makes sense. All right. Great.

KD: Okay, thank you so much. Have a great rest of your day.

PW: Thank you, you too. Bye.

KD: Bye.

**End of Recording*

Interview with Michelle Radecki, Independent Consultant

Conducted over phone on 9-27-2011 by Kara Davidson

Transcript:

**Recording begins*

KD: Hi Michelle, I think I got knocked off for a second.

MR: Oh, okay. It did say, I heard the message that said, this call is being recorded.

KD: Okay, okay, perfect. All right then, I'll just get straight to the questions. The first is: If you had the opportunity to talk to a bunch of [a multinational chemical company] customers or other large companies who are being pressured to include ecolabels, standards or certifications in their decision making process in regards to their Home and Personal Care Products, what would you be curious to ask them?

MR: Umm, I would be curious as to who is applying that pressure? What kind of groups they are hearing from? I would also be interested in what criteria they're basing their decisions on and what criteria back up those ecolabels? Um, I'll leave it at that for now and see what else you've got.

KD: Okay, great, thanks. The next question: What trends would you be interested in looking for in a survey like this?

MR: I guess I'd be curious as to whether the trend is to continue to move in the direction of an increasing number of ecolabels. There seem to be a lot of those already in the marketplace. In the work I've been doing with ACI, we decided to steer clear of creating another logo to use with sustainable products because we felt that the market was really saturated. So, I'd be interested to see whether companies are still heading in that direction, using these ecolabels and how they're consumers are responding, whether they're seeing kind of some saturation in the marketplace.

KD: Okay, great, thank you. Next question: What do you think are the key factors that indicate whether or not a certain label or standard is going to succeed or gain traction?

MR: I think there has to be some degree of independence for an ecolabel to have any degree of credibility in the NGO community today. I know that there are a lot of industry groups that have eco-type labels out there, a lot of companies have their own programs. And I'm just not sure whether those programs are very persuasive with some of the NGO community. With consumers, if they see an ecolabel on a product, that might be a different story.

KD: Right, right. Okay, great. And then, lastly: We are trying to flesh out some options that we can develop for how customers might interact with [a multinational chemical company] around requests for ecolabels. You know, whether it's having data sheets on each product that [a multinational chemical company] has or having a website interface. What are some ways you have seen other companies deal with these requests and have they been successful?

MR: Well, let's see, that's a good question. I haven't been involved in too much of the business to business work, because I work with a trade association. So, I haven't necessarily seen how that relationship has worked with other companies. But I do know that a number of formulator companies have checklists of what they want to see from their suppliers and they are very specific in a lot of cases. I think it would be helpful for a supplier company to work directly with their main customers to see whether they have these kind of checklists.

KD: Right, right. Well that was the last question. We would love to call you back in the next phase or so. Would you mind if we contact you in the next couple of months with any follow up questions?

MR: Sure, that'd be great.

KD: Great. And is there anything else that you feel is important before we hang up in terms of what should be included on the survey or just in our research?

MR: Um, well, I know that we keep hearing, at the Trade Association, we keep hearing from our companies - don't try to recreate the wheel. ACI was working on, we are working, on a Sustainability Charter. We're really trying to look at everything that's out there and be as consistent as possible to make things efficient for our companies and also to develop a very credible program. We're looking at government programs. We're looking at other industry groups in the same sector. So, I think, as you're moving forward with your work, it will be important to be sure that you're kind of looking at and considering all of the other programs that are out there and I do, I have this matrix that we put together and [a multinational chemical company] may even have this...we had a consultant do, put together this really detailed matrix of all of the existing sustainability programs that may touch our industry and there were a lot of them. That was helpful to us, I know, in moving forward with our program.

KD: Okay, great. Wonderful. Thank you so much for your time, Michelle.

MR: All right, thanks. Good luck.

KD: All right, thank you. Have a great rest of your day.

MR: You too.

** End of recording*

APPENDIX V. ESC SURVEY

ECOLABELS, STANDARDS AND CERTIFICATIONS

Please select the language you would like to take this survey.

English French

German Italian

Welcome to the ecolabel, standards and certifications (ESCs) survey! First, a brief description of terms that will be used within the survey . . .

Descriptions

Ecolabels, Standards and Certifications (ESCs) are intended to help consumers, businesses or other stakeholders understand the social and/or environmental attributes of a particular product or ingredient/formulation. In a nutshell, ESCs: Span a wide range of issues, industry sectors, product types and geographic regions Are developed and are distributed by nonprofits, governments, standard-setting organizations, third-party companies and industry associations Have varying degrees of criteria that need to be met Ecolabel: The symbol or logo (often on product packaging) that indicates a product has met or exceeded specified environmental or social criteria. Example: EU Ecolabel "Flower", Nordic Ecolabel "Swan" Standard: A standard is the environmental or social criteria that a product is evaluated against to determine if it qualifies for an ecolabel. Example: EU Ecolabel, Eco-cert, USDA Organic Label, USDA BioPreferred Certification: Certification is the process by which a product is evaluated by a verifying organization that confirms that the product meets the criteria of an ecolabel or standard. Example: Cradle To Cradle, Design for the Environment, Green Seal, Nordic Ecolabel, USDA Organic, USDA BioPreferred

ESCs

Note: Throughout the survey, Ecolabel, Standards and Certifications will be referred to as ESCs.

Section 1: General Information

1. Next, please provide a little background on your company . . . In which of the following departments do you work?

Select all that apply.

CEO/Management

- Product Stewardship/EH&S
- Marketing
- Corporate Social Responsibility (CSR)/Sustainability
- Regulatory Affairs
- Procurement
- R&D
- Manufacturing
- Other (please specify)_____

2. Which of the following best describes your employer?

- Manufacturer of personal care products
- Manufacturer of home care products
- Ingredients supplier
- Consulting firm
- Independent consultant
- Other (please specify)_____

3. Approximately how many people are employed by your company?

- Less than 100
- 100-999
- 1,000-5,000
- More than 5,000

4. In what geographic region are you located?

- Europe - Eastern
- Europe - Western

- North America
- Other (please specify) _____

5. For which market segment(s) does your company purchase consumer products chemical ingredients?

Choose all that apply.

- Hair Care
- Skin Care
- Sun Care
- Floor Care
- Fabric and surface care
- Other (please specify) _____

6. Which market segment represents the greatest percentage of your total consumer-product chemical-ingredient purchases?

- Hair Care
- Skin Care
- Sun Care
- Floor Care
- Fabric and surface care
- Other (please specify)

Section 2: General Information

7. What percentage of your company's products is currently labeled with an ESC?

Please do not enter percentage sign.

Enter percentage _____

8. What percentage of your company's sales is represented by products labeled with ESCs?

Please do not enter percentage sign.

Enter percentage _____

9. Five years from now, what percentage of your company's products do you expect to be labeled with an ESC?

Please do not enter percentage sign.

Enter percentage _____

Section 3: Decision-making Influences

The next section is about procuring ingredients and/or formulations for your products . . .

10. At your company, who makes the decision to obtain ingredients/formulations carrying an ESC?

Select all that apply.

- CEO/Management
- Product Stewardship/EH&S
- Marketing
- Corporate social responsibility (CSR)/Sustainability
- Regulatory Affairs
- Procurement
- R&D
- Manufacturing
- Other (please specify) _____

11. Please distribute 100 points across the following 7 items to indicate the importance of each in the purchase of ingredients/formulations for your purchased most products. The more points that are assigned to a single item, the more important it is.

Points for any one item may range from 0 to 100. However, the total number of points for all items combined must equal 100.

Performance	_____
Availability of product safety information	_____
Availability of sustainability information	_____
An ecolabel, standard or certification on the ingredient/formulation	_____
Continuity of supply	_____
Relationship with supplier	_____
Price	_____

12. Please rate your company's preference for the ESCs listed below when purchasing ingredients/formulations for your purchased most products:

	Very Low Preference 0	1	2	3	4	5	6	7	8	9	Very High Preference 10	Don't Know/Not Familiar
Eco-cert	?	?	?	?	?	?	?	?	?	?	?	?
EU Ecolabel	?	?	?	?	?	?	?	?	?	?	?	?
Cradle To Cradle	?	?	?	?	?	?	?	?	?	?	?	?
Green Seal	?	?	?	?	?	?	?	?	?	?	?	?
CleanGredients	?	?	?	?	?	?	?	?	?	?	?	?
COSMOS	?	?	?	?	?	?	?	?	?	?	?	?
USDA BioPreferred	?	?	?	?	?	?	?	?	?	?	?	?
Design for the Environment	?	?	?	?	?	?	?	?	?	?	?	?
Natural Products Association Certification	?	?	?	?	?	?	?	?	?	?	?	?
Whole Foods' list of unacceptable ingredients	?	?	?	?	?	?	?	?	?	?	?	?
Nordic Swan	?	?	?	?	?	?	?	?	?	?	?	?

Section 4: Marketing Products

Command higher prices from customers	?	?	?	?	?	?	?	?	?	?	?	?	?
Increase credibility with customers	?	?	?	?	?	?	?	?	?	?	?	?	?
Signal enhanced performance to customers	?	?	?	?	?	?	?	?	?	?	?	?	?
Signal enhanced quality to customers	?	?	?	?	?	?	?	?	?	?	?	?	?
Signal we care about the environment	?	?	?	?	?	?	?	?	?	?	?	?	?

16. Which of the following product labels are most valuable to your customers in the marketplace?

Select up to 3.

- EU Ecolabel (Flower) (EU_ECOLABEL)
- Eco-cert (ECO_CERT)
- Nordic Swan (NORDICSWAN)
- Cradle To Cradle (CRADLE2CRADLE)
- Green Seal (GREENSEAL)
- Design for the Environment (DESIGNFORENVIRON)
- CleanGredients (CLEANGREDIENTS)
- COSMOS (COSMOS)
- USDA BioPreferred (BIOPREFERRED)
- Carbon Reduction Label (CARBONREDUCT)
- Roundtable on Sustainable Palm Oil (ROUNDTABLE)
- Fair Trade (FAIRTRADE)
- Natural Product Association Certification (NPA)

Product literature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade Shows/Conferences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interactive [multinational chemical company] website	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular informational sessions/webinars from [multinational chemical company]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Media: Twitter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Media: Facebook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Media: LinkedIn Discussion Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Media: Blog	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

What final thoughts would you like to contribute about ecolabels, standards or certifications (ESCs)?

Thank you for completing the survey. Your input is greatly appreciated.

APPENDIX VI. ESC TABLES

ESCs - Home and Personal Care - North America

Name	Countries	Website	Party Verification	Type of Organization	Certification or Standard	Measures	Year Established	Type I - Yes/no, Type II - Tiered, Type III - LCA	Consensus-Based	Requires specific metrics	Regional Differences	Recognizes Other Labels	Recognized by Other Labels	Who cares about it?
BASF Eco-Efficiency	US, Germany, AU	http://www.basf.com	3rd	Private	C, CL, CPC	C, CL, CPC	2002	Unknown	No	Yes	Yes	No	No	IC, R
Blue Angel	US, EU, UK, JA	http://www.bla.de	3rd	Govt	S	CL	1978	1	Yes	Yes	No	N/A	N/A	GP, IC, R
Carbon Reduction Label	NA, UK, France	http://www.carbonreduction.com	3rd	Other	S	CL, CPC	2007	1	Yes	Yes	No	No	No	GP, IC
CarbonFree Certified	NA, Brazil, AU	www.carbonfree.com	3rd	Non-profit	C	CL, CPC	2007	1	Yes	Yes	Yes	No	No	IC, R
CleanGredients	Global	http://www.cleangredients.com	3rd	Non-profit	Le Data	CL	2006	NA	NA	NA	NA	for the Environment, Ec	CP, GP, R	
Certified Wildlife Friendly	US, Africa, NE	http://www.cwf.com	2nd	Non-profit	S	CPC	2007	1	Yes	No	Yes	No	No	IC
Cradle to Cradle	US, France, G	http://www.cradletogether.com	2nd	Private	S	CL, CPC	2005	2	No	Yes	No	No	Green-e Energy, CP, GP, IC, R	
Design for the Environment	NA, Australia	http://www.dfe.com	3rd	Govt	C	CL	1997	1	No	Yes	No	CleanGredient	GreenSeal, CP, GP, IC, R	
EcoLogo	NA, UK	http://www.ecologo.com	3rd	Hybrid/Social	C	CL, CPC	1988	1	Yes	Yes	No	choice New Zealand, Green Seal,	CP, GP, IC	
Fair For Life	US, Virgin Island	http://www.fairforlife.com	2nd	Private	C	CPC	2006	1	Yes	Yes	No	Fair Trade in Organic Star	CP	
Fair Trade	Australia, AUS	http://www.fairtrade.com	3rd	Non-profit	C, S	CPC	1997	1	Yes	Yes	No	Max Havelaar	DE-BY, Whole, CP, GP, IC, R	
Green Good Housekeeping Seal	US	http://www.gghs.com	2nd	Private	S	CL, CPC	2009	1	Yes	Yes	No	No	No	IC
Green Seal	US	http://www.green-seal.com	2nd	Non-Profit	C	CL, CPC	1989	1	Yes	Yes	Yes	Choice-Australia	Environment, CP, GP, IC, R	
Green Tick	US, Australia	http://www.greentick.com	3rd	Private	S	CL, CPC	2001	1	Yes	Yes	No	No	No	CP, GP, IC, R
GreenGuard	NA, SA, EU, A	http://www.greenguard.com	3rd	Non-Profit	C	CL	2001	1	Yes	Yes	No	No	Product Certification	CP, GP, IC, R
Greenlist - SC Johnson	NA	http://www.greenlist.com	1st	Private	S	CL	2001	2	Yes	Yes	No	No	No	IC
Leaping Bunny	NA, EU, UK	http://www.leapingbunny.com	3rd	Non-profit	S	CL, CPC	1998	1	No	Yes	No	Y: ?	Y: ?	IC
NaTrue	US, EU	http://www.natrue.com	3rd	Non-profit	C	CPC	2007	3	Unknown/known	Unknown	No	No	No	CP, GP, IC, R
NPA Natural Standard	US	http://www.naturalstandard.com	3rd	Industry	C	CL, CPC	2010	1	Yes	Yes	No	No	No	R
NSF 305	US	http://www.nsf.org	3rd	Private	S	CPC	2009	1	Yes	Yes	No	Y: NaTrue	Y: NaTrue	CP, GP, IC
Roundtable for Sustainable Palm Oil	Brazil, Canada	http://www.rso.com	3rd	Non-profit	C	CL, CPC	2007	1	Yes	No	No	No	No	CP, GP, IC
SCS Recycled Content	NA, Argentina	http://www.scsrecycled.com	3rd	Private	C	CL, CPC	1990	1	Yes	Yes	Yes	not known	Greener Prod	CP, GP, IC, R
SMArT	US	http://www.smart.com	3rd	Non-Profit	S	CL, CPC	2002	2	Yes	Yes	No	No	Green-e Energy	CP, GP, IC, R
USDA Certified Organic	US	http://www.usda.gov	3rd	Govt	C	CL	2010	1	Yes	No	No	No	No	CP, GP, IC
USDA Certified BioBased	US	http://www.usda.gov	3rd	Govt	C	CL	2010	1	Yes	No	No	No	No	CP, GP, IC

Cl = Cleaning Products
 CPC = Cosmetics / Personal Care
 CP = corporate purchasers (excluding retail)
 GP = government purchasers
 IC = individual consumers
 R = retailers

ESCs - Home and Personal Care - Europe

Name	Countries	Website	Party Verification	Type of Organization	Certification or Standard	Measures	Year Established	Type I - Yes/no, Type II - Tiered, Type III - LCA	Consensus-Based	Requires specific metrics and data	Regional Differences	Recognizes Other Labels	Recognized by Other Labels	Who cares about it?	
AISE Charter for Sustainable Cleaning	EU	http://www	3rd	Non-profit	C	CL, CPC	2005	3	Yes	Yes	No	Unknown	Unknown	CP, IC, R	
BASF Eco-Efficiency	Germany, US	http://www	3rd	Private	C	CL, CPC	2002	Unknown	No	Yes	Yes	No	No	IC, R	
BDIH Certified Natural Cosmetics	Germany	http://www	3rd	Non-Profit	C	CPC	1996	1	No	No	No	EU organic	Unknown	IC, R	
Blue Angel	EU, UK, US,	http://www	3rd	Govt	S	CL	1978	1	Yes	Yes	No	N/A	No	GP, IC, R	
Carbon Reduction Label	UK, France,	http://www	3rd	Other	S	CL, CPC	2007	1	Yes	Yes	No	No	No	GP, IC	
CleanGredients	Global	http://www	3rd	Non-profit	ine Data	CL	2006	NA	NA	NA	NA	Design for th	Design for th	CP, GP, R	
Climatop	Switzerland	http://clim	3rd	Non-Profit	S	CL, CPC	2008	1	No	Yes	Yes	GreenTag	No	CP, IC, R	
Cosmetics Organic and Natural Standard/ COSMOS	EU mainly, b	http://www	3rd	Non-profit	S	CPC	2011		Yes	Yes	No	No - replace	Yes: BDIH, E	CP, GP, IC, R	
Cradle to Cradle	France, Gerri	http://www	2nd	Private	C	CL, CPC	2005	2	No	Yes	No	No	Green-e Ene	CP, GP, IC, R	
Environmental Product Declaration (EPD)	Belgium, Gre	http://www	3rd	Govt	C	CL, CPC	1995	3	No	No	No	Unknown	Unknown	CP, GP, IC, R	
EU Ecolabel	EU	http://www	3rd	Govt	S	CL	1992	1	Yes	Yes	No	Hungarian E	Green Mark	CP, GP, IC, R	
Ecoert	EU mainly, b	http://www	3rd	Non-profit	S	CPC	1991	Unknown	Unknown	Unknown	Unknown	COSMOS	COSMOS	CP, GP, IC, R	
Fair Trade	Australia, Au	http://www	3rd	Non-profit	C, S	CPC	1997	1	Yes	Yes	No	Max Havela	HAND IN HA	CP, GP, IC, R	
GreenGuard	EU, Asia, Afr	http://www	3rd	Non-Profit	C	CL	2001	1	Yes	Yes	No	No	Greener Pro	CP, GP, IC, R	
Leaping Bunny	EU, UK, NA	http://www	1st	Non-profit	S	CL, CPC	1998	1	No	Yes	No	Y: ?	Y: ?	IC	
Na True	EU, US	http://www	3rd	Non-profit	C	CPC	2007	3	Unknown	Unknown	Unknown	No	No	CP, GP, IC, R	
Nordic Ecolabel or "Swan"	Denmark, Fil	http://www	3rd	Non-profit	C	CL, CPC	1989	1	Yes	Yes	No	EU Ecolabel	OkoControl	CP, GP, IC, R	
Roundtable for Sustainable Palm Oil	Brazil, Canad	http://www	3rd	Non-profit	C	CL, CPC	2007	1	Yes	No	No	No	No	CP, GP, IC	
Soil Organic Association	UK	http://www	3rd	Non-profit	C	CPC	1973	1	Yes	Yes	No	No	Biokreis, EU	No	IC

CP = corporate purchasers (excluding retail)
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 IC = individual consumers
 R = retailers

CL = Cleaning Products
 CPC = Cosmetics / Personal Care

ESCs - Home and Personal Care - Latin America

Name	Countries	Website	Party Verification	Type of Organization	Certification or Standard	Measures	Year Established	Type I - yes/no, Type II - tiered, Type III - LCA	Consensus-Based	Requires specific metrics and data	Regional Differences	Recognizes Other Labels	Recognized by Other Labels	Who cares about it?
ABNT Ecolabel	Brazil	http://www	3rd	Non-profit	S	CPC	1993	1	No	Yes	No	No	No	IC
BASF Eco-Efficiency	Brazil, US, Gé	http://www	3rd	Private	C	CL, CPC	2002	Unknown	No	Yes	Yes	No	No	IC, R
CarbonFree Certified	Brazil, Austral	www.carbonfree.org	3rd	Non-profit	C	CL, CPC	2007	1	Yes	Yes	Yes	No	No	IC, R
CleanCredents	Global	http://www	3rd	Non-profit	Line Database	CL	2006	NA	NA	NA	NA	for the Environment, Ec	for the Environment, Ec	CP, GP, R
Fair Trade	Australia, Au	http://www	3rd	Non-profit	C, S	CPC	1997	1	Yes	Yes	No	Max Havelaar	Max Havelaar	CP, GP, IC, R
GreenGuard	SA, Asia, NA,	http://www	3rd	Non-Profit	C	CL	2001	1	Yes	Yes	No	USDA Organic	USDA Organic	CP, GP, IC, R
Oregon Tiith	Chile, Costa	http://tiith	2nd	Non-profit	S	CPC	1982	1	Yes	Yes	Yes	No	No	IC, R
Roundtable for Sustainable Palm Oil	Brazil, Canad	http://www	3rd	Non-profit	C	CL, CPC	2007	1	Yes	No	No	No	No	CP, GP, IC
SCS Recycled Content	Argentina, Bl	http://www	3rd	Private	C	CL, CPC	1990	1	Yes	Yes	Yes	Unknown	Unknown	CP, GP, IC, R
Terracycle	Argentina, Bl	http://www	2nd	Private	S	CL, CPC	2005	1	No	No	No	No	No	IC, R

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 IC = individual consumers
 R = retailers

CL = Cleaning Products
 CPC = Cosmetics / Personal Care

ESCs - Home and Personal Care - Asia

Name	Countries	Website	Party Verification	Type of Organization	Certification or Standard	Measures	Year Established	Type I - Yes/no, Type II - Tiered, Type III - LCA	Consensus-Based	Requires specific metrics and data	Regional Differences	Recognizes Other Labels	Recognized by Other Labels	Who cares about it?
Blue Angel	Japan, Korea	http://www	3rd	Govt	S	CL, CPC	1978	1	Yes	Yes	No	N/A	No	GP, IC, R
Carbon Reduction Label	Korea, NA, U	http://www	3rd	Other	S	CL, CPC	2007	1	Yes	Yes	No	No	No	GP, IC
Certified Wildlife Friendly	Cambodia	http://www	2nd	Non-profit	S	CPC	2007	1	Yes	No	Yes	No	No	IC
China Environmental Labeling	China	http://www	3rd	Govt	S	CL, CPC	1993	1	No	No	No	Environmental	Good Environmental	GP, IC
CleanGredients	Global	http://www	3rd	Non-profit	Data	CL	2006	NA	NA	NA	NA	Environmental	Good Environmental	GP, IC
Design for the Environment	Japan, NA, A	http://www	2nd	Govt	C	CL	1987	1	No	Yes	No	No	No	CP, GP, IC, R
EcoMark: India	India	http://www	3rd	Govt	C	CL, CPC	1991	3	No	No	No	Unknown	Unknown	IC, R
Environmental Mark	Japan	http://www	2nd	Non-profit	S	CL	1989	1	No	No	No	Environmental	Environmental	IC
Environmental Product Declaration (EPD)	Korea	http://www	3rd	Unknown	C	CL, CPC	1992	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	IC
Fair Trade	Taiwan, Belg	http://www	3rd	Govt	C	CL, CPC	1995	3	No	No	No	Unknown	Unknown	CP, GP, IC, R
Green Choice: Philippines	Australia, A	http://www	3rd	Non-profit	C, S	CPC	1997	1	Yes	Yes	No	No	Max Havelaar	CP, GP, IC, R
Green Label: Thailand	Philippines	http://www	3rd	Non-profit	S	CL	2002	1	No	Yes	No	No	DE-BY, Whole	CP, GP, IC, R
Green Seal	Thailand	http://www	3rd	Non-profit	S	CL, CPC	1994	1	Yes	Yes	No	Environmental	Environmental	CP, GP, IC, R
GreenGuard	Korea, Indon	http://www	2nd	Non-profit	C	CL, CPC	1989	1	Yes	Yes	Yes	Environmental	Environmental	CP, GP, IC, R
Hong Kong Ecolabel	Asia, NA, SA	http://www	3rd	Non-profit	C	CL	2001	1	Yes	Yes	No	No	Greener Product	CP, GP, IC, R
Hong Kong Green Label	Hong Kong	http://www	varies	Non-profit	C	CL	1995	1	No	Yes	No	No	No	GP, IC, R
Korean Ecolabel	Hong Kong	http://www	3rd	Non-profit	S	CL	2000	1	Yes	Yes	Yes	No	No	CP, GP, IC, R
SCS Recycled Content	Korea	http://www	Unknown	Govt	S	CL, CPC	1992	win	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Singapore Green Label Scheme (SGLS)	China, Korea	http://www	3rd	Private	C	CL, CPC	1990	1	Yes	Yes	Yes	Unknown	Greener Product	CP, GP, IC, R
	Singapore, A	http://www	2nd	Non-profit	S	CL	1995	1	Yes	Yes	No	Yes	Yes	CP, GP, IC, R

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ESCs - Home and Personal Care - Oceania

Name	Countries	Website	Party Verification	Type of Organization	Certification or Standard	Measures	Year Established	Type I - Yes/no, Type II - Tiered, Type III - LCA	Consensus-Based	Requires specific metrics and data	Recognizes Other Labels	Recognized by Other Labels	Who cares about it?
Australian Certified Organic	US, Germany, NA, Brazil, AU	http://www.b	3rd	Non-profit	S	CPC	2002	1	No	Yes	No	No	IC, R
CarbonFree Certified	NA, Brazil, AU	http://www.c	3rd	Non-profit	C	CL, CPC	2007	1	Yes	Yes	No	No	IC, R
Carbon Reduction Label	UK, France, G	http://www.c	3rd	Other	S	CL, CPC	2007	1	Yes	Yes	No	No	GP, IC
China Environmental Labeling	China	http://www.s	3rd	Govt	S	CL, CPC	1993	1	No	No	No	No	GP, IC
CleanGredients	Global	http://www.c	3rd	Non-profit	ine Data	CL	2006	NA	NA	NA	Yes	Yes	GP, IC
Environmental Choice New Zealand	Asia, NA, SA	http://www.g	3rd	Non-profit	S	CL, CPC	1990	1	Yes	Yes	Yes	Yes	GP, GP, IC, R
Fair Trade	Australia, Aus	http://www.f	3rd	Non-profit	C, S	CPC	1997	1	Yes	Yes	No	Max Havala	GP, GP, IC, R
Green Tick	China, Korea	http://www.s	3rd	Private	S	CL, CPC	2001	1	Yes	Yes	No	Product Certif	GP, GP, IC, R

CP = corporate purchasers (excluding retail)

GP = government purchasers

IC = individual consumers

R = retailers

CL = Cleaning Products

CPC = Cosmetics / Personal Care

GLOSSARY

“Business to Business (B2B)” - A sales transaction between businesses, such as between a supplier and manufacturer or between manufacturer and retailer.

“Business to Consumer (B2C)” – The sale of a product by a retailer to an end-user.

“Certification” – The process by which a product is evaluated by a verifying organization that confirms that the product meets the criteria of an ecolabel and / or standard. Ex. The Danish Standards Foundation’s Nordic ecolabelling scheme in Denmark, Cradle To Cradle™, Environmental Product Declarations (EPDs), LEED, and Green Seal.

“Ecolabel” – The actual symbol or logo that indicates a product has met specified environmental or social criteria. Ex. European Union’s Eco- Flower , and Nordic Swan.

“Manufacturer” – In this report, the use of manufacturer refers to the company that buys ingredients and formulations from a supplier to produce goods to sell to a retailer.

“Standard” - The environmental or social criteria that a product is evaluated against to determine if it qualifies to carry the ecolabel. Ex. Nordic Ecolabelling of floor care products document, M1 Emission Classification of Building Materials, USDA Organic Label, or the Carbon Reduction Label.

“Supplier”- In this report, the use of supplier refers to the companies that sell ingredients and formulations to manufacturers.

“Value Chain”- The chain of activity a product has to pass through.

“Type I ESC”- A multi-attribute label developed by a third party, defined by the International Organization for Standardization in ISO 14020 series of environmental standards.

“Type II ESC”- A single-attribute label developed by the producer, defined by the International Organization for Standardization in ISO 14020 series of environmental standards.

“Type III ESC”- An eco-label whose awarding is based on a full life-cycle assessment, defined by the International Organization for Standardization in ISO 14020 series of environmental standards. (International Institute for Sustainable Development, 2012)

ACRONYMS

B&C	Building and Construction
B2B	Business to Business
B2C	Business to Consumer
BDIH (Germany)	Association of Industries and Trading Firms for pharmaceuticals, health care products, food supplements and personal hygiene products
BP	British Petroleum
CEN	European Committee for Standardization
COSMEBIO (France)	Professional Association for Natural, Ecological and Organic cosmetics
COSMOS	Cosmetics Organic Standard
CSCAR	Center for Statistical Consultation and Research
CSR	Corporate Social Responsibility
DfE	Design for the Environment
ECHA	European Chemical Agency
EH&S	Environmental Health and Safety
EO	Executive Order
EPA	Environmental Protection Agency
EPD	Environmental Product Declaration
EPDs	Environmental Product Declarations
ESCs	Ecolabels, Standards, and Certifications
EU	European Union
F&SC	Fabric and Surface Care
FTC	Federal Trade Commission
GE	General Electric
GEN	Global Ecolabelling Network
GHG	Green House Gas
GM	Genetically Modified
GPR	Green Product Roundtable
GRI	Global Reporting Initiative
ICEA (Italy)	Institute for Ethics and Environmental Certification
ISEAL Alliance	International Social and Environmental Accreditation and Labeling
ISO	International Organization for Standardization
LCA	Life Cycle Analysis
LEED	Leadership in Energy and Environmental Design
NA	North America
NGO	Non-governmental Organization
NSF	National Science Foundation
R&D	Research and Development
RSPO	Roundtable on Sustainable Palm Oil

SEC	The United States' Securities and Exchange Commission
UK	United Kingdom
UM	University of Michigan
USDA	United States Department of Agriculture
USGBC	United States Green Building Council
WRI	World Resource Institute
WWF	World Wildlife Fund

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