

Environmental Labelling and Communication Design

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Abstract. *The environmental issue has been in discussion since the 1970s. The problem is global and complex and involves all areas of knowledge. That is also why a broad social acceptance has been slow, considering the urgency of the changes. Some of the measures that have been implemented by governmental and non-governmental entities are environmental standards and certifications. In the first case it is intended to enforce compliance while in the second case it is a company initiative. Designers, while thinking products and services, have responsibility and should correspond to today's demands by considering sustainable development in their professional practice. As intermediates of the design and production processes, they are also in a privileged situation to influence other actors in the production chain to adhere to standards and certifications while, simultaneously, propose graphic solutions that underline companies' efforts towards sustainability. Regarding these measures, aimed at an effective change in production and consumption, we intend to address environmental labelling, analyzing some of the most important European environmental labels in the area of paper. Then we focus on the one we consider to have the best social and economic potential, the EU Ecolabel. Part of the methodology is also the study of some significant cases of companies and products that have adopted this certification in the area of paper and cardboard. With this brief study we can see that these labels still cover a small scope, either regarding companies or society in general. Through this characterization and examples it is intended a contribution to a greater sensitization and awareness of communication designers, hoping that they can increasingly integrate and contribute on their professional practice, day to day, to effectively meet a sustainable development.*

Keywords. *Sustainable development, Environmental labelling, Paper and cardboard, Paper products, EU Ecolabel, Communication design.*

1 Context and the role of communication designers

In formal and practical terms, the implementation of environmental policies started only during the 1990s. United Nations (UN) have been playing a central role in these agenda, influencing states all over the world to change, starting with the Rio'92 conference and ending with the recently Paris Agreement. In order to materialize these changing proposals, the paradigm must be changed from conception, to production and disposal, considering the three pillars: environmental, social and economic. Design has, in this sense, a deep involvement. Nonetheless, only in 2015 the World Design Organization (WDO) updated its definition of the profession, including the commitment to the areas of sustainable development.

With this in mind, we should ask how communication designers can contribute to sustainable development, and adopt measures that aim at an effective change of production and consumption. Part of the answer is the knowledge and implementation of certifications in this area. This doesn't depend directly from designers, but

they are in a good position to influence all other actors of the production and consumption chain. Designers deal directly with clients and since, in many cases, environmentally friendly solutions have financial advantages, this is a good argument to put forward. As well from a marketing point of view, this option can be recognized by consumers and, again, rewarded financially. Also, designers are usually in close touch with printing plants and other producers, defining the best way of getting the best results, spending less time, while saving resources. Again, certifications can help to achieve those results, bringing benefits to all. Finally, through communication companies can reach to consumers, sensitising them to better practices and highlighting what they have been doing towards a better environment and a better society. And, of course, visual communication is crucial to do this.

Following this idea, and considering the work of communication design, and paper and cardboard as the main raw material, we will address here some of the certifications in the forests, paper and cardboard areas, as well as certifications regarding the conversion of products in these materials. Moreover, according to *Industria e Ambiente* (2017) magazine, paper-based products ac-

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count for more than 30% of the European Union's eco-labelled products on the market. Nonetheless, we couldn't find many quantitative data about the application of certifications. Even so, we will try to quantify, as much as possible, the implementation of these labels, focusing on EU Ecolabel. As we will see later, we find this example the best to deepen. Some cases of companies and products with the EU Ecolabel will be shortly presented in order to best illustrate and to show good practices already in use. Through this we would like to contribute to enrich and to sensitise designers for these issues and for the importance of continuing to disseminate environmental and social labels.

2 Environmental and social certifications

Considering that packaging is the major responsible for urban solid waste, we start by mentioning the legislation on packaging and packaging waste (DIRECTIVA 94/62/EC) because of its widely dissemination at the European Union (EU) and, despite the fact that there are still great contrasts between countries, still it has resulted in positive outcomes towards the proposed goals. On the other hand, the problems that we believe are more serious are at the origin of the materials and in their conception. So, some certifications can act as an incentive to improve the design of products and services.

Regarding forests, FSC – FOREST STEWARDSHIP COUNCIL certification (1993) promotes responsible management, safeguarding the economic, environmental and social functions of forest areas (Fig. 1). It is an independent, non-governmental, non-profit organization (NGO) created to promote responsible forest management worldwide. FSC certifications can be of three types: forest management, chain of custody and controlled timber standards.

Forest management certification ensures that forests are managed responsibly, in accordance with the principles and criteria of FSC certification. These forests can be natural or planted, public or private. The certification of forest management can be characterized by type of product: loggers or non-loggers such as oils, seeds and nuts. Chain of custody certification (CoC) ensures traceability, starting at the production of raw material from forests up until the final consumer. It is applied to producers who process raw material from certified forests. Controlled timber standards aim to support certified companies to avoid the use of timber considered unac-

ceptable in their FSC-mixed products. Certified companies can control their sources of uncertified wood, excluding those from socially and environmentally damaging forest activities.

PEFC – PROGRAM FOR THE ENDORSEMENT OF FOREST CERTIFICATION (1999) is a non-profit private based association that comprises two distinct levels: in the forest, with the verification of sustainable forest management and in the industry and trade of forest-based products, with the chain of responsibility certification, ensuring the traceability of certified raw material from its origin to the final consumer (Fig. 1).

PAPER PROFILE (approx. 2000) is an environmental product declaration for professional paper buyers (Fig. 1). This declaration allows paper buyers to make more conscious and well-informed product choices, presenting values on key environmental parameters in a uniform way for specific products. It is a voluntary environmental product declaration system developed and provided by leading paper producers.

RAINFOREST ALLIANCE CERTIFIED (1986) ensures that the products come from a farm or a forest that meets comprehensive standards to protect environment and promotes the rights and well-being of workers, their families and communities (Fig. 1). Among the products that have this seal, we highlight the role of a set of, among others, coffee, tea, chocolate, fruits, ready to drink beverages and juices, flowers, paper and fabrics.

For certifications concerning paper production and conversion, we cite the first eco-labeling system for converted paper products, PAPER BY NATURE (2008, BUREAU VERITAS GROUP) which takes into account the potential environmental impacts of products, including raw materials and conversion processes (Fig. 1). For raw materials, includes criteria for responsible forest management and paper production; for conversion processes of products such as envelopes, books or archival products, includes criteria such as: reduction of volatile organic compounds (VOCs), reduction and prevention of environmental and health risks related to hazardous substances or the use of paper and cardboard with low environmental impact.

The NORDIC ECOLABEL encompasses paper, pulp and printing, and was the first to certify paper in 1992 (Fig. 2). Certified tissue papers followed by paper envelopes in 1993. Subsequently it established the criteria for printing on paper. Today, there are Nordic Ecolabel criteria applied to printing and copying paper, printers/printings, envelopes, tissue paper (kitchen towels, toilet papers, tissues, napkins and hand towels), water-

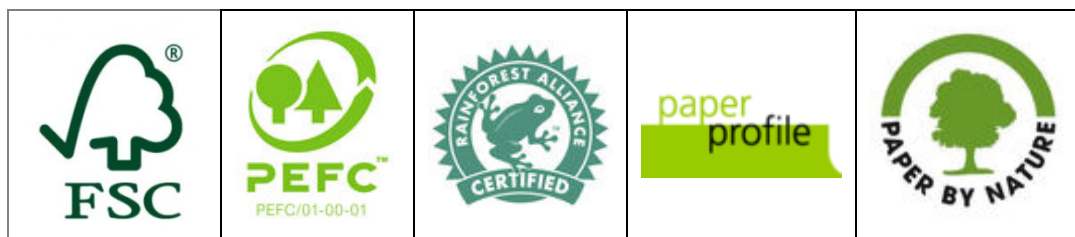


Figure 1. FSC and PEFC ensure that certified wood or paper products come from sustainably managed forests; The Rainforest Alliance includes not only food, but also textiles and paper; Paper Profile is an environmental declaration of paper producers; Paper by Nature includes raw materials and conversion.

proof paper and coffee filters. It is the official eco-label in Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) and is a type I label according to ISO 14024, meaning that there are a set of predetermined criteria for products and that an independent third party must evaluate products before an eco-label can be awarded.

In *Cradle to Cradle Design* (BRAUNGARTEN and MCDONOUGH 2002) was developed the “cradle to cradle” concept, based on a cyclical and sustainable model, replacing the cradle to grave concept, proposing that safe and healthy materials may return to the productive cycle (Fig. 2). Over the last decade, cradle to cradle design has steadily evolved from theory to practice. In the industrial world, a new concept of materials and material flows is being created.

Cradle to cradle materials circulate in closed loop cycles, providing nutrients for nature or industry. This model recognizes two metabolisms, within which materials flow as healthy nutrients: nutrient cycles of nature constitute the biological metabolism. Products designed with these nutrients, such as biodegradable packaging, are intended to be used and returned safely to the environment, feeding living systems. Technical metabolism is a closed system in which high-tech and valuable synthetic and mineral resources – technical nutrients – circulate in a perpetual cycle of production, recovery and remanufacturing. Ideally, all human systems that make up the technical metabolism are powered by the renewable energy of the sun. Cradle to Cradle certificate ensures that products have been produced to these specifications.

The EU ECOLABEL, was created in 1992, but established only in 2010 through REGULAMENTO (CE) n.º 66/2010 of the European Parliament and the European Council, is the only official eco-label which ensures that products have a reduced impact throughout their life cycles, taking into account criteria such as air pollution, water, raw material use, energy consumption, pesticide residues or heavy metals (Fig. 2).

According to the Ecolabel Regulation, point 3 of Article 6, it states that the eco-label criteria consider products life cycles: the most significant environmental impacts throughout the product life cycle, the substitution of hazardous substances by safer substances, reduced environmental impact due to the durability and reuse of products, the net environmental balance between benefits and environmental costs, ethical and social aspects, criteria for other eco-labels, in particular EN ISO 14024 Type I eco-label and the aim of reducing the number of animal tests.

The EU Ecolabel is a voluntary scheme, which means that producers, importers and retailers can choose to apply the label to their products. The life cycle of a product ranges from extraction or cultivation of raw materials, to manufacture and packaging, distribution, use and disposal or recycling. The Ecolabel is allocated to a number of products which are organized in groups: Cleaning up, Do-it-yourself, Furniture, Household appliances, Other household items, Personal care products, Coverings, Electronic equipment, Gardening, Lubricants, Textiles and footwear and Paper products.



Figure 2. The Nordic Ecolabel encompasses paper, cellulose and printing; Cradle to Cradle certifies the entire process and materials; and the EU Ecolabel considers the product life cycle.

Of all these labels, the EU Ecolabel, even though it may not be the most environmentally demanding, seems to us to be the most balanced, by combining the social dimension in greater depth. On the other hand, the comprehensiveness of products covered by this label is a reflection of a wider concern, and can also have a significantly greater impact, both in terms of production and consumption. Its origin also seems to make a difference, since it is a label that emanates from political wills and from a group of states. On the contrary, the remaining labels have their origins in private or non-governmental organizations and tend to focus on specific areas of production.

It is in this sense that we chose the EU Ecolabel to deepen our study in quantitative terms, even though we focus on paper products, the most important for communication designers.

3 EU Ecolabel analyses

According to our objectives, we will gird our analysis in the group of paper products of the EU Ecolabel Catalogue (EUROPEAN COMMISSION), composed of five subgroups: 1. Converted paper products, 2. Copying and graphic paper, 3. Newsprint paper, 4. Printed paper, 5. Tissue paper.

Converted paper products meet criteria that ensure products are recyclable and minimize chemicals emissions to air and water. In this subgroup we find only 2 companies in 2 countries with this certification. In France, produced by Hamelin (Elba and Oxford brands) there are office and school materials, such as archival folders, notebooks and notepads, among others; in Belgium, Elep-Koverto produces envelopes.

Copying and graphic paper products meet criteria that ensure low air and water pollution during production, restricted hazardous substances and use of certified fibres from a sustainable forest. Here we find a much larger number of products and countries with this label, as we can see in Table 1.

Newsprint paper have the following criteria: low air and water pollution, use of certified fibres and/or use of recovered fibres and restricted hazardous substances. Regarding raw materials, they can be manufactured from recovered pulp and paper. A minimum of 70% of the total amount of fibres used for newsprint shall be recovered fibres. In addition, any virgin fibre must come from certified forests in valid sustainable forest management systems such as PEFC, FSC or equivalent.

Table 1. List of subcategories of products of the Paper Product group, with the EU Ecolabel, by country. Source: Authors and EU Ecolabel Product Catalogue (2016).

Converted Paper Products		Newsprint Paper		Tissue Paper	
Prod.	Country	Prod.	Country	Prod.	Country
47	Belgium	6	Finland	1253	Italy
19	France	1	Spain	415	Netherlands
Copying and Graphic Paper		Printed Paper		332	France
Prod.	Country	Prod.	Country	255	Spain
420	Finland	13	Austria	85	Germany
235	Sweden	13	Czech Rep.	83	Lithuania
134	Austria	6	Denmark	77	Belgium
32	Poland	6	Germany	52	Poland
22	Italy	5	Estonia	19	Portugal
22	Portugal	5	Poland	13	United K.
15	Germany	5	Slovakia	8	Bulgaria
7	Spain	4	Finland	6	Sweden
5	Slovenia	1	Italy	5	Austria
1	United K.	1	Romania	5	Denmark
1	France	1	Netherlands	5	Slovenia
1	Norway	1	Norway	3	Slovakia

Printed paper products meet criteria that ensure the use of recycled printed paper, use of paper with low environmental impact and limited emissions of chemicals to the air and water, both from paper production and the printing process. This subgroup shall cover printed paper products consisting of at least 90% by mass of paper, cardboard or paper substrates, except for books, catalogues, notepads, booklets and forms, which may use, at least, 80% of paper mass, cardboard or paper substrates. There are considered to be an integral part of the printed paper product parts, such inserts, covers and any other printed paper part of the final product. (REGULAMENTO (CE), 2012/481/UE, Art.1)

Tissue paper products meet the criteria for reducing atmospheric emissions of sulphur and greenhouse gases during production, reducing water pollution during production by reducing emissions of chlorine compounds and organic waste, reducing energy consumption during production, and use of recycled or virgin fibres from sustainably managed forests. In this subgroup we find the largest number of certified products.

Data was collected on the European Commission's EU Ecolabel website. The production amount is not supplied but only the number of products. At the time data was collected, at the end of 2016, it was organized by the number of products produced, and a list of countries in which they were distributed. Meanwhile, we noticed a different way of counting the number of certified products: it results from the multiplication of the produced product by the number of countries where it is distributed. We follow the way data was previously accounted.

3.1 Results

Even without more detailed data we can see a reality away from certification for the case of *Converted paper products*, with only two countries having this certification in products that are used regularly in our daily life, in schools and offices, adding 66 products in this category.

For the category of *Copying and graphic paper* we find a greater diversity of countries, 12, and also a much greater number of products – 895 products, of which almost half of them come from Finland.

In the category of *Newsprint paper*, we find only two countries with certifications. Although the consumption of this papers is decreasing, still represents 7.2% of total European paper and cardboard production (CEPI, 2016). According to legislation [REGULAMENTO (CE), 2012/448 / UE) it is considered that the production of newsprint consumes a significant amount of energy, wood and chemicals, and can also cause environmental damage or present environmental risks related to the use of natural resources. With that in mind specific criteria have been created for this kind of paper by EU Ecolabel. Despite these considerations we found only seven products, distributed by three companies, within this category.

For the *Printed Paper* category we find a total of 61 companies, in 12 countries. In this case are listed printing plants, which produce graphic artefacts such as brochures, books, reports, notebooks, notepads, leaflets, calendars, magazines and newsletters, among others. Note that, in this case, if an editor requires a book to have the EU Ecolabel, he should look for a certified printing plant to produce it.

Finally, the category of *Tissue paper*, with 2616 products, in 16 countries, is the one with most variety of products, being led by Italy with almost half the number of products.

Figure 3 shows a comparison of the number of Eco-labelled products in all five categories.

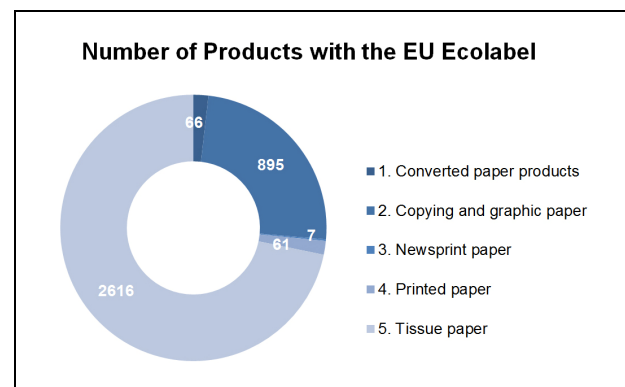


Figure 3. Quantity of EU Ecolabel paper products by categories. Source: Authors and EU Ecolabel Product Catalogue (2016).

4 Case studies

In order to have a better idea of some of the possibilities and advantages of the implementation of the EU Ecolabel, we will highlight a few cases of companies and products, one for each category of this certification. Most cases are Portuguese or can be found in our country. Especially in the Portuguese cases, good examples of national and abroad successful sales, we have been noting also a growing interest of consumers for these environmentally friendly solutions, a fact that goes along with a marketing strategy of those companies supported on environmental and social values.

Case 1. Converted Paper Products

Hamelin, from France, is a leading supplier in the office and school market producing notebooks, notepads, journals, files, folders, dividers, among other office supplies. It has two brands, Elba and Oxford, which are among the strongest in the European market.

Among Oxford products we highlight two school notebooks (certified by Paper by Nature and by EU Ecolabel) that have a greater distribution in other European countries. The company has pan-European manufacturing, adopts certifications to limit the impact that its products have on the environment in all its manufacturing facilities.



Oxford, spiral or double-wire notebook.

Produced in Poland. Distributed in 21 EU countries: Germany, Austria, Belgium, Bulgaria, Cyprus, Denmark, Slovenia, Spain, Finland, France, Greece, Holland, Hungary, Ireland, Italy, Luxembourg, Norway, Poland, Portugal, Sweden and United Kingdom.



Stapled notebook.

Produced in Finland. Distributed in 20 EU countries: Austria, Belgium, Bulgaria, Denmark, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Sweden and United Kingdom.

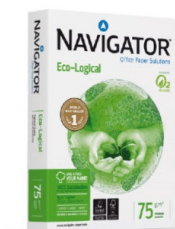
(HAMELIN, 2017 and EU Ecolabel Product Catalogue, 2016.)

Case 2. Copying and Graphic paper

Navigator, a Portuguese pulp and paper industry, which holds FSC and PEFC certificates. The company has implemented control and traceability processes for the fibrous material used in the production of paper products, thus complying with the normative guidelines for labelling, relevant for the fulfilment of the requirements of the EU Ecolabel.

Over the last decade (2005/2015), the reinforcement in the supply of certified wood allowed the company to evolve

from 0% to 44% in sales of office paper and for the printing industry with the environmental seal FSC, PEFC or EU Ecolabel. The company maintained its adherence to Paper Profile in the biennium 2014-15.



Navigator office paper, produced in Portugal, is a bestselling premium paper in the world, with consumers in more than 110 countries. Distributed in 25 EU countries: Austria, Belgium, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, United Kingdom. Distributed in 21 non-EU countries: Albania, Armenia, Belarus, Georgia, Montenegro, Russian Federation, San Marino, Serbia, Switzerland and Ukraine.

The Navigator paper brand was ranked 1st by the Brand Equity Index, at a European level, as the most recognized, best-selling, with the highest fidelity index and the highest quality perception rating. According to the company, forest certification is also a decisive factor in this achievement; and, according to consumers, certification is the main criterion in assessing the environmental performance of office paper.

(THE NAVIGATOR COMPANY, 2017 and EU Ecolabel Product Catalogue, 2016.)

Case 3. Newsprint Paper

UPM Kymmene Corporation, a Finland based company, has four types of certified newsprint papers. The criteria for awarding the EU Ecolabel for Newsprint were agreed in June 2012.

UPM paper is the company's high performance platform. They also produce papers for magazines and fine papers. UPM is concerned with the efficiency of its plant's resources and processes, using less water and energy to ensure that its role meets the most demanding sustainability requirements.



UPM News EF, 40 - 48,8 g/m², newsprint

Produced in Finland and distributed worldwide.

(UPM, 2017 and EU Ecolabel Product Catalogue 2016.)

Case 4. Printed Paper Products

Gugler, an Austrian printing plant, certified since 2010, ensures the use of less energy and raw materials and less waste. It has flexible certifications, such as GreenPrint (whose CO₂ printing emissions are compensated), FSC, PEFC, an Austrian eco label, as well as the EU Ecolabel as a minimum requirement for eco-friendly printing products. Gugler, is the first company in the world to implement, in 2011, the Cradle to Cradle certification for printing products, whose materials are seen as nutrients that circulate in permanent circuits, so that no waste is produced. Printing at the highest ecological level, it uses exclusively substances that can be recycled back into the biological cycle.



Several products such as brochures, books, reports, notebooks, notepads, leaflets, calendars, magazines, newsletters and promotional products.

Distributed in 8 European countries: Austria, France, Germany, Italy, Holland, Spain and Switzerland.

(GUGLER, 2017 and EU Ecolabel Product Catalogue, 2016.)

Case 5. Tissue Paper

Renova, Papel do Almonda mill, is a Portuguese company, and a brand of big consumer products. Innovative in tissue products, worldwide recognized, values the relationship with the consumer. Among others, produces ranges of toilet paper, napkins, kitchen rolls or tissues, among others. It has the EMAS Environmental Statement and the EU Ecolabel certificate in one of its product ranges.

Tissue paper Renovagreen

Produced in Portugal and distributed only in Portugal. Table napkins and handkerchiefs using 100% recycled fibers enriched with a lotion containing grape extracts from organic farming.



(RENOVA, 2017 and EU Ecolabel Product Catalogue, 2016.)

5 Final Considerations

Having in mind the importance of measures that can effectively contribute to sustainable development and the prospective of a change in design and production of many objects that surround us, the results obtained from this small inquiry show that we still have a lot of work to do. Firstly, we highlight the importance of disseminating the good practices of these companies, producing certified products, especially with the EU Ecolabel, which we consider to be more comprehensive and applicable than other certifications, along with Cradle to Cradle, for its regeneration capacity.

It should be noted that the authors were surprised by some of the cases and examples found in the EU. Gugler printing plant is an exemplary case. Other products, also of great consumption, like tissue products and school notebooks are examples to emphasize because of their range spectrum. Also graphic and copying papers examples are worthy of note.

We have seen the appearance of certifications in the last thirty years, in response to the demand for changes in production. From the 1990's until today, at least the seven cited certifications have been created in the EU. Yet, despite some good examples and initiatives, we do not have quantitative and comparative elements between certified and non-certified products and, therefore, we cannot confirm the exact state of the art regarding the real extent of certifications. We have a clear notion that it is still difficult to find certified products, at least in

Portugal. At supermarkets, the presence of non-certified products is still undoubtedly the rule.

We also consider that disclosure does not come more insistently and directly to the consumer. While producers have benefits in producing with certifications, general consumers are not yet aware of this benefit, and if they have, they also have a higher cost. In this context the responsibility of designers redoubles. In addition to designing products with certifications, they should also, jointly with other responsible actors, such as governments and companies, promote greater disclosure of the respective certifications.

References

- BRAUNGARTEN, M.; MCDONOUGH W. *Cradle to Cradle. Criar e reciclar ilimitadamente*, São Paulo, Gustavo Gilli, 2014.
- BUREAU VERITAS GROUP. Accessed in January 4, 2017. Available at: http://www.bureauveritas.com/services+sheet/paper-by-nature_14358.
- DIRECTIVA 94/62/CE do Parlamento Europeu do Conselho de 20 de Dezembro de 1994, relativa a embalagens e resíduos de embalagens (JO L 365 de 31.12.1994, p. 10) in 1994L0062 – PT – 20.04.2009 – 004.001– 1.
- EUROPEAN COMMISSION, *EU Ecolabel Product Catalogue*. Accessed in December, 2016, January and February, 2017. Available at: <http://ec.europa.eu/ecat/>.
- FSC – FOREST STEWARDSHIP COUNCIL. Accessed in January 15, 2016. Available at: <https://ic.fsc.org/trademark-support.42.htm>.
- GUGLER. Accessed in January 22, 2017. Available at: www.gugler.at/home.html.
- HAMELIN. Accessed in January 10, 2017. Available at: www.hamelinbrands.com.
- INDUSTRIA E AMBIENTE, *Revista de Informação Técnica e Científica*, 24 janeiro 2017.
- NORDIC ECOLABEL. Accessed in January 16, 2016. Available at: <http://www.nordic-ecolabel.org/>.
- PAPER PROFILE. Accessed in January 15, 2016. Available at: <http://www.paperprofile.com/>.
- PEFC – PROGRAM FOR THE ENDORSEMENT OF FOREST CERTIFICATION, Accessed in January 15, 2016. Available at: <https://www.pefc.org/>.
- RAINFOREST ALLIANCE CERTIFIED. Accessed in January 15, 2016. Available at: <http://www.rainforest-alliance.org/>.
- REGULAMENTO (CE) n.º 66/2010 do Parlamento Europeu e do Conselho, de 25 de novembro de 2009, relativo a um sistema de rótulo ecológico da UE.
- REGULAMENTO (CE) n.º 66/2010. DECISÃO DA COMISSÃO de 12 de julho de 2012 que estabelece os critérios ecológicos para a atribuição do rótulo ecológico da UE ao papel de jornal [notificada com o número C(2012) 4693] (Texto relevante para efeitos do EEE) (2012/448/UE).
- REGULAMENTO (CE) n.º 66/2010. DECISÃO DA COMISSÃO de 16 de agosto de 2012 que estabelece os critérios ecológicos para a atribuição do rótulo ecológico da UE ao papel impresso [notificada com o número

C(2012) 5364/ (Texto relevante para efeitos do EEE)
(2012/481/UE)

RENOVA. Accessed in January 23, 2017. Available at:
www.myrenova.com/pt.

THE NAVIGATOR COMPANY, *Relatório de Sustentabilidade* 2014-15.

THE NAVIGATOR COMPANY. Accessed in January 30, 2017. Available at: www.thenavigatorcompany.com.

UPM. Accessed in January 18, 2017. Available at:
www.upm.com/pages/default.aspx.

WDO – World Design Organization, Accessed in January, 21 2017. Available at: <http://wdo.org/about/definition/>.