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An Assessment of the Food Companies Sustainability Policies through a Greenwashing Indicator

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ABSTRACT

There is an increasing interest in green marketing as a powerful tool to enhance the agrifood companies' reputation and competitiveness; this makes it necessary to provide tools, for the consumers and the other stakeholders in the food system, able to detect the presence of distorted or false information often defined as *greenwashing*. It is also important for the agrifood companies to be able to prevent their communication to be unintentionally perceived as *greenwashing*, thus fully exploiting the value added provided by an effective communication of their sustainability policies.

The goal of this paper is to provide a monitoring tool able to support the food companies definition of effective green marketing strategies, avoiding the risk of greenwashing; moreover supporting the other food system stakeholders' critical analysis of the sustainability communication coming from the food companies.

To this end a list of indicators coming from different organizations (Greenpeace, EnviroMedia Social Marketing and Oregon University, Terrachoice, Futerra) and authors (J.Grant, 2009) have been chosen and integrated in order to cover a broad range of sustainability dimensions and communication suggestions finalised to avoiding greenwashing in the agrifood sector.

The level of correctness and relevance of the companies communication as been assessed by measuring the number of actions described in the food companies' Sustainability Report, falling within the indicators belonging to the different categories of *green marketing* and *greenwashing*.

The indicators have been tested on a large Italian food company: Barilla, by considering its Sustainability Report for the year 2016.

The results showed that the sustainability actions related to possible greenwashing represent a relatively low share of the total action implemented by Barilla. Most interesting is the capacity of this analytical tool to encompass a broad range of dimensions related to the companies green marketing strategies evaluation; this allows also other stakeholders to more clearly analyse the capacity of a company to provide a clear honest and complete report on their sustainability activities.

Further studies should weigh the different green marketing and greenwashing indicators in order to appreciate their relevance in contributing to the overall level of correct communication.

A sample of representative food chain stakeholders should be involved in providing an expert evaluation.

Keywords: *green marketing; greenwashing index; food; sustainability report; communication*

1 Introduction

In these last decades the companies competitive strategies are gradually enhancing the role of attributes related to their (and their products) sustainability. This new paradigm found in the *green economy* a suitable tool orienting the company towards sustainability as a long-term objective. From 2008 24% of the total Italian companies in the industry and services sector invested in sustainable technologies to reduce their emissions, save energy and in general reduce their environmental impact. Between 2014 and 2015 the n. of companies investing in sustainable technologies increased by 36%. These investments, and the adoption of a more sustainability oriented strategy proved to be effective since the total turnover increased in 19,6% of the companies, which invested in sustainable technologies, while the share decreased to 13.4% in the companies who did not.

Sustainability related topics are particularly relevant in the food sector where an enormous amount of different scientific contributions, the pressure from media (The Guardian, 2016), NGOs (WWF, 2016; GreenPeace, 2016), investors (BEI, 2016) and other organizations (Slow Food, 2016) gave rise to initiatives oriented towards changing the food production, towards a more sustainable model based upon a *green economy* approach. This resulted in, among many other examples, an increase in organic food production and consumption (FiBL, 2016), the creation of a great number of sustainability certification schemes (ITC, 2016) and last but not least, different initiatives from the food industry for enhancing a sustainable agriculture model (SAI, 2016) sometimes within a collaborative multistakeholders framework like the Soy moratorium (ABIOVE, 2016).

One of the main problems for the companies entering the green economy is to increase their competitiveness by making clients and/or final costumers aware of the increase in their products' value.

This involves adopting a new communication strategy both within and outside the company.

Different strategies of *green marketing* have been developed following the different stakeholders' interest in increasing the companies (and their products') environmental, social, ethical and economic sustainability content

The green marketing approach involves the company DNA, thus it does not only involve the communication but also the company mission and it is characterised by two main strategies:

- i. Develop products that balance consumers' needs for quality, performance, affordability, and convenience with the lowest impact possible on the environment, and with due concern for social considerations, e.g., labor, and community.
- ii. Create demand for the resulting brands through credible, values-laden communications that offer practical benefits while empowering and engaging consumers in meaningful ways about important environmental and social issues. These communications represent value to consumers for what they provide functionally and what they represent, and often positively reinforce the manufacturer's track record for sustainability as well. (Ottman J., 2011, p. 43).

Table 1 shows the differences between conventional marketing and green marketing according to Ottman.

Table 1) Differences between conventional marketing and green marketing

	Conventional marketing	Green marketing
Consumers	Consumers with lifestyles	People with lives
Products	"Cradle to grave" Products Globally sourced One size fits all	"Cradle to cradle" Services Locally sourced Regionally tailored
Marketing and communications	Product end-benefits Selling One-way communication Paid advertising	Values Educating and empowering Creating community Word of mouth
Corporate	Secretive Reactive Independent and autonomous Competitive Departmentalized Short term-oriented/ profit-maximizing	Transparent Proactive Interdependent/ allied with stakeholders Cooperative Holistic Long term-oriented/ triple bottom line

Source: Ottman J. 2011, p.46

Other authors' contributions can integrate the analysis of the differences between conventional and green marketing. John Grant, author of the essay "The Green Marketing Manifesto" (Grant J., 2009), explains that the word "green" does not mean only ecological or eco-friendly, but ethical too. It argues that today the market relations may not have as only objective the profit, but should also consider a creation of **value for society**. This concept should not be considered a naive utopian vision, since what Grant adds is that companies should embrace green-practices that produce value to them. They can realize **projects that are environmentally sustainable and profitable at the same time**, starting from **two key concepts**:

1. The general objective of marketing is to generate profits; any principle or practice that fails this goal is to be considered unsuccessful;
2. Green marketing means to embrace the environmental sustainability, not only to use it for strategic purposes. It is an operating principle to apply to the various actions that the company decides to undertake.

The following progressive levels of engagement can be supported by a green marketing strategy:

- i) inform (make consumer aware green products exist) , ii) involve (stimulate a specific action like buying a green product), iii) develop a new ecologic awareness (make the consumers understand what buying a green product entails), iv) create a new environmental culture (change the occasional green products purchase in a regular habit, as a consequence of the new awareness raised at step iii).

Figure 1 Green Marketing pie



Grant exposes possible practices in a **scheme** (see Fig.1) that shows various dimensions in which the company can decide to take action (**business, social, personal**) and company spheres (**communicate, collaborate, redefine the culture**), which each correspond to a shade of green. The **shade of green** indicates the degree of environmental respect and usefulness of the action realized or to realize (**green, greener, greenest**).

According to Grant it is logical to think that Green Marketing Pie can be used both to explain various areas of green marketing and as a **method scheme to make a good "green marketing"**. Companies could define clearly, and firstly, in which Green Marketing Pie' areas it is placed, what are the action to realize and what is their "level of green". Then, companies **can define how to communicate this "level of green"** in its actions of communication, according to the choice and analysis previously made. This method could be used in order to avoid exaggerations, false information or bad communication (for example, to show it "greenest" when in reality it is only "greener").

Adding to Grant's work, Balzaretto Erik e Gargiulo Benedetta (2009) introduce the role of consumers which become more involved in the companies production process, as Consum-actors (that is protagonists of the production process

through by more actively interacting with the companies sharing their visions, needs and opinions) or Consum-authors (where, thanks to the new communication technologies, e.g. social networks, can directly contribute to define the companies communication and send feedbacks in real time and available to the public). Furthermore, the necessity to adapt the communication to effectively reach the ethically oriented consumer, is stressed.

Fabio Iraldo e Michela Melis (2012) stressed the importance of the involvement in green networks/circuits and to adopt reliable certification schemes when implementing a green marketing strategy.

William McDonough e Michael Braungart, (2002) introduced the concept of “Cradle to Cradle” deeply related to the Green and Circular Economy approach.

Taking into consideration these authors’ contribution the Ottman approach described at table 1 can be integrated as follows (see tale 2)

Table 2) Differences between conventional marketing and green marketing: integration to the Ottman scheme

	Conventional Marketing	Green Marketing
Consumers	Consumers with lifestyles	People with lives Consum-actors and Consum-authors (Balzaretti E., Gargiulo B, Fabris G. 2009)
Products	Cradle to grave	Cradle to cradle (McDonoughW. and Braungart, M. 2003)
	Products	Product/ Services/ Processes¹- Certification schemes (Iraldo F., Melis M., 2012)
	Globally sourced	Locally sourced
	One size fits it all	Regionally tailored
	Sell/satisfy needs (Kotler P. and Keller , 2011)	Sell/spread benefits, value added, create community (Grant J., 2007)
Marketing and communications	One-way communication	Creating community
	Selling	Educating, empowering and engaging (Grant J., 2007)
	Product end-benefits	Values
	Strategies and language speaking to the emotional sphere of the consumer and satisfy its needs (Kotler P. and Keller , 2011)	Strategies and language speaking to the emotional sphere of the actual or potentially ethically oriented consumer. (Balzaretti E., Gargiulo B., 2009)
	Paid Advertising	Involvement in green networks/circuits (Iraldo F., Melis, M., 2012) Word of mouth/ Social network (Balzaretti E., Gargiulo B., 2009)
Corporate	Secretive Competitive	Transparent/entire process involved (EMAS ISO 14001) Cooperative
	Reactive	Proactive
	Indipendent and autonomous	Interdependent/ allied with stakeholders
	Departmentalized	Holistic;
	Short term-oriented/ Profit-maximising	Long term-oriented/ /triple bottom line

¹ Green marketing involves also the valorization of a certification scheme (when actually adopted) linked to the entire production process as part of the company’s environmental policy (e.g. certifications ISO 14001 or EMAS. (ISPRAa2016, ISPRAb, 2016)

The popularity of “sustainability-related” characteristics for the consumers increases the risk of companies exploiting the competitive advantage of a distorted or false claim of “responsibility” or sustainability, defined as *greenwashing*. This not only generates disadvantages to the consumers, paying for a non-existing service, but also creates a distortion in the competitive arena where dishonest companies exploit the advantages in terms of higher prices or volumes sold without paying the costs often associated to effectively pursuing sustainable and responsible strategies. This can significantly slow down the diffusion of sustainable and responsible production practices both by damaging the reputation of the overall green economy idea, and rising barriers to entry for companies willing to pursue a genuine sustainable or “green” policy.

There is a strong interest in green marketing as a way to enhance the agrifood companies’ reputation and competitiveness (Belz, F.M. and Schmidt-Riediger, B. 2010). This makes it necessary to provide tools, for the consumers and the other stakeholders in the food system, able to detect the presence of distorted or false information often defined as *greenwashing*. It is also important for the agrifood companies to be able to prevent their communication to be unintentionally perceived as *greenwashing*, thus fully exploiting the value added provided by an effective communication of their sustainability policies.

To this end different institutions (Greenpeace, EnviroMedia Social Marketing and Oregon University, Terrachoice, Futerra, Assolombarda) provided useful indications in the form of guidelines, on what is green Marketing and/or how to avoid the risk of greenwashing, adding to the different authors previously quoted.

The following tables illustrate the main categories of indicators provided by these different institutions to assess the level of greenwashing involved in a company communication, plus some recommendations on how to avoid it.

Greenpeace

Greenpeace defined four greenwashing detection criteria: dirty company, ad bluster, political spin, it's the law, stupid!. They are described as follows:

“Dirty Business: touting an environmental program or product, while the corporation's product or core business is inherently polluting or unsustainable. For example, if a company brags about its boutique green R&D projects but the majority of spending and investment reinforces old, unsustainable, polluting practices.

Ad bluster”: using targeted advertising and public relations campaigns to exaggerate an environmental achievement in order to divert attention away from environmental problems or if it spends more money advertising an environmental achievement than actually doing it. For example, if a company were to do a million dollar ad campaign about a clean up that cost less.

“Political spin”: advertising or speaking about corporate "green" commitments while lobbying against pending or current environmental laws and regulations. For example, if advertising or public statements are used to emphasize corporate environmental responsibility in the midst of legislative pressure or legal action.

It's the law stupid!: advertising or branding a product with environmental achievements that are already required or mandated by existing laws. For example, if an industry or company has been forced to change a product, clean up its pollution or protect an endangered species, then uses PR campaigns to make such action look proactive or voluntary. “(Greenpeace, 2016).

EnviroMedia Social Marketing e University of Oregon

EnviroMedia Social Marketing in collaboration with the University of Oregon implemented in 2007 the “Greenwashing Index Scoring Criteria” and a tool made available on the web (www.greenwashingindex.com) allowing the users to assess the amount of greenwashing involved in the ads claiming to be *green*. The score is based upon answering the questions reported at table 3.

Table 3) Greenwashing Index - Scoring Criteria

Criteria	Related questions
The ad misleads with words	Do you believe the ad misleads the viewer/reader about the company's/product's environmental impact through the things it says? Does it seem the words are trying to make you believe there is a green practice when there isn't? Focus on the words only — what do you think the ad is saying?

The ad misleads with visuals and/or graphics.	Do you think the advertiser has used green or natural images in a way designed to make you think the product/company is more environmentally friendly than it really is?
The ad makes a green claim that is vague or seemingly unprovable?	Does the ad claim environmental benefits without sufficiently identifying for you what they are? Has the advertiser provided a source for claims or for more information? Are the claims related to the company/product?
The ad overstates or exaggerates how green the product/company/service actually is.	Do you believe the advertiser is overstating how green the product/company actually is? Are the green claims made by the ad believable? Do you think it's possible for the product/company to do the things depicted/stated?
The ad leaves out or masks important information, making the green claim sound better than it is.	Do you think the ad exists to divert attention from something else the company does? Do you believe the relevant collateral consequences of the product/service are considered in the ad? Does it seem to you something is missing from the ad?

Source: www.greenwashingindex.com

The user can provide a progressive greenwashing score to the advert, ranging from 1 to 5 where 1= authentic message and 5= false message. An average index is calculated on the base of the different scores provided by the users.

Terrachoice

Terrachoice, is a US sustainable marketing agency, which in 2009 defined seven indicators of greenwashing also named the seven sins of greenwashing. The aim is to provide the companies, as well as the consumers and other stakeholders, a tool to reduce greenwashing and support a sustainable innovation.

Table 4) The seven sins of greenwashing according to Terrachoice

Seven sins of greenwashing	Description
Avoid the Sin of the Hidden Trade-Off	<ul style="list-style-type: none"> a) Start with an honest understanding of all of the environmental impacts of your product across its entire lifecycle. b) Emphasize specific messages (particularly when you know your audiences care about those issues) but don't use single issues to distract attention from other impacts. c) Don't make claims about a single environmental impact or benefit, without knowing how your product performs in terms of its other impacts, and without sharing that information with your customers. d) Pursue continual improvement of your environmental footprint (across the entire lifecycle), and encourage your customers to join you on that journey.
Avoid the Sin of No Proof.	<ul style="list-style-type: none"> a) Understand and confirm the scientific case behind each green marketing claim b) Make evidence readily available, or rely on third-party certifications whose standards are publically available.
Avoid the Sin of Vagueness.	<ul style="list-style-type: none"> a) Use language that resonates with your customers, as long as that language is truthful. b) Don't use vague names and terms (e.g. 'environmentally-friendly') without providing precise explanations of your meaning

Avoid the Sin of Worshiping False Labels	a) If third-party endorsement of your claims is important: get it, don't fake it. b) Favor eco-labels that are themselves accredited, and that address the entire lifecycle of the products
Avoid the Sin of Irrelevance	a) Don't claim CFC-free, unless it is a legitimate point of competitive differentiation. b) Don't claim any environmental benefit that is shared by all or most of your competitors.
Avoid the Sin of the Lesser of Two Evils.	a) Help each customer find the product that is right for them, based on their needs and wants. b) Don't try to make a customer feel 'green' about a choice that is harmful or unnecessary.
7) Avoid the Sin of Fibbing.	a) Tell the truth. Always. b) Always tell the truth.

Source: Terrachoice, 2009. p.13

Futerra

The UK marketing agency Futerra also in 2009, defined a guideline, the ten signs of greenwashing, intended to provide, similarly to Terrachoice, a guide supporting the companies' avoidance of *greenwashing*.

Table 5) Ten signs of greenwashing

Signs of greenwashing	Description
1. Fluffy Language	Words or terms with no clear meaning e.g. eco-friendly
2. Green products vs. dirty company	Such as efficient light bulbs in a factory which pollutes rivers
3. Suggestive pictures	Green images that indicate a (unjustified) green impact
4. Irrelevant claims	Emphasising one tiny green attribute when everything else is un-green
5. Best in class?	Declaring you are slightly greener than the rest, even if the rest are pretty terrible
6. Just not credible	Greening a dangerous product doesn't make it safe (e.g. Eco-friendly cigarettes)
7. Gobbledygook	Jargon and information that only a scientist could check or understand
8. Imaginary friends	A label that looks like third party endorsement except it's made up
9. No proof	It could be right, but where's the evidence?
10. Out-right lying	Totally fabricated claims or data

Source: Futerra. p.3

The same guideline include six steps to stamp out greenwashing, specifically addressed to companies, derived by the British Gas experience.

Table 6) Six steps that can be taken by companies, agencies and the public to stamp out greenwashing.

Steps	Description
Know thyself	Before even starting to think about a green marketing campaign: work out if you're green or not. Pick the products or services you wish to promote on green grounds with care, and beware of your company's overall reputation in the area.
Be green by design, not luck	The easiest products and services to promote responsibly are those specifically designed to be green or re-designed to be so, not those where you have searched for a green aspect. 'Green by design' products are likely to have undergone a full 'life-cycle analysis' of the impact of their source materials, through manufacture and distribution, impacts of use and finally how they affect the environment once ready to be disposed of.

Check and check again	Search out both internal and external experts and ask their opinion before embarking on green promotions.
Choose your friends wisely	Don't be tempted by easy options or half-hearted initiatives. The big labels are hard to reach and that's exactly why they are trusted.
Remember words can hurt you	Some terms like 'organic' now have legal definitions and others (such as Fairtrade) are copyrighted. If you like the following terms, take care to justify what you mean by them, and if in doubt, contact the ASA's free Copy Advice Service.
Greenwash health check	Although your campaign might be rigorous in its claims, don't forget that greenwash can pop up across your communications, from advertising, via CEO speeches or PR, to your product packaging. It's a good idea to health-check all channels for greenwash infestation.

Source: Futerra, *The greenwash guide, the two minutes version*, pp.28-30.

Assolombarda

Assolombarda, located in Milan, is the largest local association of the Italian Entrepreneurial Association (Confindustria). Among other services Assolombarda provides its associated firms assistance, advice and practical handbooks on many management and strategy aspects. Assolombarda produced guidelines on how to valorize sustainable products and services and avoid the risk of greenwashing.

Table 7: Greenwashing: the most frequent cases

Absence of information	It does not provide information (data or specific characteristics), in support of the statement through advertising or product packaging. If information exists, there should be no hesitation or fears to communicate it. In this case, the difficulty could relate rather <i>how</i> to effectively communicate the information, through the use of language, style and channels appropriate.
Feature irrelevant	It emphasizes a single feature of the advertised product, considering it sufficient to classify it "green", but completely ignoring other important aspects.
Inconsistency commitment	It promotes "green" initiatives that are not placed in the context of a vision and a total commitment in environmental protection (e.g.: compensation of CO2 emissions with a reforestation project related to a single event, with the claim that the initiative does become "green" that brand or that product).
Fake brands and certifications ("Imaginary Friend's Syndrome")	It provides data and presenting information as "certificates", but which do not involve the intervention of an independent third part, which guarantees procedures and truthfulness (e.g.: affixing, on product packaging, of a "fake" brand or eco-label, that does not correspond to a real certification process).
Self-congratulation (1)	It communicates, as the essence of the message, the "goodness" and the company's generosity in supporting and/or financing environmental projects (also with uncertain or dubious relevance)
Self-congratulation (2)	It communicates a specific type of product as "more green", compared to competitors, in a production context where, in general, the environmental performance of the products are notoriously poor.
Visual suggestions or use of terms	It uses deliberately words, expressions or "striking images", evoking an environmental sensitivity that does not correspond to reality, that is "paint of green" a simple commercial communication.
Abuse of technical language ("The Green Nerd Syndrome")	It uses data, information and complex technical language in order to making it difficult for the consumer, that can't understand and/or verify their reliability

Source: Assolombarda, pp.19-20

These approaches partially overlap, but also cover different areas where greenwashing can be found. Building an integrated framework for the assessment of suggestions to avoid greenwashing could contribute to harmonize and broaden the set of indicators involved.

Aim of the paper

The goal of this paper is to provide an integrated framework supporting the food companies' greenwashing monitoring and consequently the definition of effective green marketing strategies and supporting the food system stakeholders' critical analysis and contribution to a more effective sustainability strategy in the food sector.

2 Materials and methods

2.1 The greenwashing/green marketing indicators choice

To this end the list of indicators coming from different organizations (Greenpeace, EnviroMedia Social Marketing and Oregon University, Terrachoice, Futerra) and the authors previously described, have been considered. The different approaches have been analysed in order to find out possible differences or overlapping in the indicators. When feasible, different indicators can be integrated in one consistent framework, while other overlapping indicators can be grouped in one comprehensive class. This will increase the range of greenwashing avoiding suggestions in the agrifood sector.

The definition of an integrated greenwashing assessment framework will then involve a list of recommendations to the company suggesting the different areas to be monitored, and which aspects should be taken into consideration, when implementing its sustainability and green-marketing strategies. Both direct (greenwashing avoidance) and indirect (what is green marketing) literature suggestions on how to detect greenwashing have been considered. The level of compliance of the companies communication to avoiding greenwashing has been assessed by listing the actions described in a food company's Sustainability Report, falling within the different categories of *green marketing* and *greenwashing*. The framework has been tested on a large Italian food company: Barilla, by considering its Sustainability Report for the year 2016. A final score resulted by comparing the sums of green marketing and greenwashing related communication actions for each indicator (indicators relevance) and the number of categories of greenwashing avoidance are involved in each action (actions relevance).

3 Results

3.1 How to avoid Greenwashing: proposal for a new monitoring framework

Scheme 1 and Table 8 report the proposal for a new monitoring framework for greenwashing avoidance based upon a synthesis of the most widespread approaches previously illustrated. The different indicators have been compared to find out differences, overlapping and possibility for integrating or better specifying some of the items listed (see scheme 1). These principles have then been adopted to monitor a food company green marketing strategy.

Scheme 1) Building an integrated framework for green washing/green marketing assessment

Analyse the entire product's lifecycle	The content should be verifiable and complete	The language should be understandable and non-misleading	Adopt green marketing only when communicating sustainable activities which are effective, meaningful and voluntary	Do not use misleading "green" images	Choose reliable third parties certifications	Involve/engage
<p>Avoid the sin of the Hidden trade-Off</p> <p>Avoid the sin of NoProof</p> <p>Green products vs. dirty company</p> <p>Be green by design, not by luck</p> <p>Check and check again</p> <p>Know thyself</p> <p>Absence of information</p>	<p>Greenwash health check</p> <p>Avoid the sin of NoProof</p> <p>No proof</p> <p>The ad leaves out or masks important information, making the green claim sound better than it is</p>	<p>Avoid the sin of Fibbing</p> <p>Just not credible</p> <p>Remember words can hurt you</p> <p>Out-right lying</p> <p>Avoid the sin of Worshipping False Labels</p> <p>Avoid the sin of Vagueness</p> <p>Fluffy language</p> <p>Gobbledygook</p> <p>The ad misleads with words</p> <p>Visual suggestions or use of terms</p> <p>Abuse of technical language</p> <p>AdBuster</p>	<p>Avoid the sin of the Lesser of two evils</p> <p>Best in class?</p> <p>The ad overstates or exaggerates how green the product/company/service actually is</p> <p>Irrelevant claims</p> <p>Avoid the sin of Irrelevance</p> <p>Feature irrelevant</p> <p>Inconsistent commitment</p> <p>Self-congratulation</p> <p>Dirty Business</p> <p>It's the law Stupid</p>	<p>Suggestive pictures</p> <p>The ad misleads with visuals and/or graphics</p> <p>Visual suggestions or use of terms</p>	<p>Choose your friends wisely</p> <p>Imaginary friends</p> <p>Avoid the sin of NoProof</p> <p>Fake brands and certifications</p>	<p>Be transparent, cooperative and allied to the stakeholders</p> <p>Involve the customers in green networks or initiatives aiming at creating a community</p> <p>Political spin</p>
Greenwashing Index Scoring Criteria	Seven signs of green washing erra choice	Ten signs of green washing uterra	Six steps to stamp out green washing uterra	Ottman et.al	Assolombarda	Greenpeace

Table 8) Greenwashing /green marketing assessment framework

Suggestion	Description
Analyse the entire product's Life Cycle	Life Cycle Analysis (LCA) allows the company to verify its claim of being sustainable; the entire life cycle should be considered. Search out both internal and external experts and ask their opinion before embarking on green promotions. This reduces the risk for the company reputation (and competitiveness) related to false claims of sustainability.
Your ad contents should be accessible complete and verifiable.	Each statement should be based upon verifiable proofs (results), deriving from studies adopting comparable and reproducible methods. This info should be easily accessible for the consumer and other external stakeholders. Avoid masking information.
The language should be understandable and non misleading	The language used in the ads should not be confusing. The language should not involve a complex scientific jargon but made clear and to the general public, adopting, when possible graphics or images. Always tell the truth to gain the customer trust. The new media make it easier to reveal false claims and to make it known to the large public.
Adopt green marketing strategies only when communicating sustainable activities which are effective, meaningful and voluntary	Avoid misleading the customer by passing a compulsory law regulation for a voluntary sustainability activity. Also avoid claiming your product is different based upon a sustainability activity that other companies already are performing. Help each customer find the product that is right for them, based on their needs and wants. Don't try to make a customer feel 'green' about a choice that is harmful or unnecessary.
Involve/ engage	Be transparent, cooperative, interdependent and allied to the stakeholders. Involve the customers in green networks or initiatives aiming at creating a community to empower, educate and engage the consumers and other stakeholders.
Do not use misleading "green" images	Do not use images, which exaggerate, or do not relate to, the real sustainability contents of your product.
Choose reliable third parties certification schemes	When a company decides to use a third party sustainability certification, the most authoritative and widely recognised certification scheme should be adopted.

3.2 The Barilla Sustainability Report analysis

The company

Barilla is one of the largest food companies in Italy, world leader in the pasta market. The company is actively involved in the sustainability debate promoting, and participating to, many different initiatives sustainability-related. Among others, Barilla is member of the Sustainable Agriculture Initiative (SAI) group, collecting the main global food companies involved in promoting sustainable agriculture; created the Barilla Center for Food and Nutrition (BCFN) aiming at raising awareness on Food and Nutrition Security and sustainability issues. Barilla is a member of the international organisation Roundtable on Sustainable Palm Oil (RSPO).

One of their most widely known contribution to improving food and nutrition and sustainability is provided by the double pyramid model defined by the Barilla Center of Food & Nutrition (BCFN). The model supports a food consumption style suggesting both the healthiest and environmentally sustainable food categories should be preferred (see Image 1). Considering the group size and its interest in sustainability, the application of the greenwashing assessment framework results particularly interesting and impacting both on the company, and the many stakeholders involved.

The results showed that the sustainability actions related to possible greenwashing represent a relatively low share of the total action implemented by Barilla (see tabb. 9a - 9d and graph. 1). The total scores of greenwashing vs. green marketing actions referring to the set of chosen indicators are respectively 54 to 7.

Indicators' relevance

Different indicators are involved frequently in the Barilla green marketing activities (GM) activities : *Adopt green marketing strategies only when communicating sustainable activities which are effective, meaningful and voluntary* (17 GM), *Your ad contents should be accessible complete and verifiable* (12 GM), *Involve/engage* (10 GM) and *Choose reliable third parties certification schemes* (8 GM).

Relatively less frequent are other indicators like *Analyse the entire product's Life Cycle* (4 GM). When considering *the indicators Your language should be understandable, and non misleading* (1 GM) and *Do not use misleading "green" images* (2 GM), they are very rarely reported with reference to a single activity; anyway they represent a very positive part of the Barilla green marketing strategy since are evenly spread along the Report, which shows a full range of references (texts, links and QR Codes) to support their sustainability claims; the language is clear and the use of graphics and other illustrations makes the information more accessible. The possibility to further investigate through the new media the claims made increases the chance of non-misleading communication to the client/customer.

On the other hand the activities where possible greenwashing is concentrated concern the indicators *Adopt green marketing strategies only when communicating sustainable activities which are effective, meaningful and voluntary* (4 GW), *Your ad contents should be accessible complete and verifiable* (2 GW) and *Choose reliable third parties certification schemes*, following the same ranking as in the Green Marketing (GM) activities.

Activities' relevance

When looking at the single activities where most of the potential greenwashing is concentrated activity *The amount of Barilla electric power supplied to Barilla coming from renewable sources is not detailed and the consumer cannot quantify it* seems involved in two greenwashing indicators. (1 GW related to *The ad contents should be accessible verifiable and complete*, and 1 GW related to *Adopt green marketing strategies only when communicating sustainable activities which are effective, meaningful and voluntary*).

Of the other five activities 3 activities are involved in greenwashing related to the same indicator: i) **Claim:** *100% of products from Barilla coming from the lower steps of the Environmental Pyramid. Present situation (2015): reached 94% of the entire supply;* ii) **Claim:** *100% of barn eggs. Present situation (2015): 80%;* iii) *All Barilla suppliers apply the Barilla's Code of Ethics, whose respect is verified according to the standard del Global Food Safety (GFSI).*

The other activity *4 products' categories are listed in the website "guardatustesso.it" (have a lookyourself.it)"* where the information on the chain and the production process are reported is related to a possible greenwashing indicator: *The ad contents should be accessible verifiable and complete*. Finally the activity *Barilla reports that in the US the tomato cultivation chain sustainability is assessed in collaboration with the University UC Davis and its suppliers Morning Star and Ingomar* seems related to the greenwashing avoidance indicator *Choose reliable third parties certifications*.

Table 9a)	Suggestions to avoid Green Washing							Total Activity relevance
Actions : GM = green marketing GW = Greenwashing	Analyse the entire product's life cycle	The ad contents should be accessible verifiable and complete	The language should be understandable and non misleading	Adopt green marketing only when communicating sustainable activities which are effective, meaningful and voluntary	Do not use misleading "green" images	Choose reliable third parties certifications	Involve/engage	
Barilla adopts an LCA, where the system boundaries involve the main links related to the raw materials procurement and processing up to the company gates. 71% of the Barilla production is monitored through and LCA analysis; the results are considered when defining their sustainability strategies.	GM							GM:1
Barilla involves third party producers (copakers) in its sustainability procurement policy. From 2016 each copacker defines a sustainability action Plan aligned to the Barilla principles.	GM						GM	GM: 2
Barilla designs its products according to the Double Pyramid principles.				GM	GM			GM:2
69% of the Barilla production volume adopts the Environmental Product Declaration - (EPD). Each EPD is verified verificata by a third party agency following the ISO 14025 Rules.		GM	GM			GM		GM:3
Reduction of waste production and water use; increased waste reuse (94%) and water reuse. Nevertheless in the last year water consumption slightly increased. Not having hidden this information complies to the rule of a good green marketing.	GM	GM		GM				GM:3
Only 4 products' categories are listed in the website "guardatustesso.it" (have a lookyourself.it") where the information on the chain and the production process are reported. Not having reported the full range of products can create uncertainty in the consumer Barilla would like to involve and run the risk of being perceived as greenwashing.		GW						GW:1
Sustainability commitments up to 2020:								

i. Claim: 30% reduction in the CO ₂ emissions and water consumption/t of finished product, with respect (baseline 2010). Present situation (2015): 23% reduction in CO ₂ , 19% water consumption reduction (from 2014 to 2015 water consumption increased by 1%);		GM		GM				GM:2
ii. Claim: 100% of responsible raw material procurement Present situation (2015) 18% of raw material responsibly procured;		GM		GM				GM:2
iii. Claim: 100% of products from Barilla coming from the lower steps of the Environmental Pyramid. Present situation (2015): reached 94% of the entire supply. Claiming to obtain 100% of lower environmental pyramid steps is a little misleading since Barilla core business relates to these categories of food.		GM		GW				GM:1 GW:1
iv. Claim: 100% of barn eggs. Present situation (2015): 80%. In general both the objectives and the results obtained so far are clearly illustrated and detailed analysis are also available comparing the year 2014 to year 2015. Anyway this claim is bordering the greenwashing since barn eggs sound “green” but in reality the best options could be related to free-range eggs, improving the chickens welfare.		GM		GW				GM:1 GW:1

Table 9b)	Suggestions to avoid Green Washing							Total Activity Relevance
Actions : GM = green marketing GW = Greenwashing	Analys e the entire produc t’s life cycle	The ad contents should be accessible verifiable and complete	The language should be understanda ble and non misleading	Adopt green marketing only when communicating sustainable activities which are effective, meaningful and voluntary	Do not use mislead ing “green” images	Choose reliable third parties certific ations	Involve/eng age	
The amount of Barilla electric power supplied to Barilla coming from renewable sources is not detailed and the consumer cannot quantify it.		GW		GW				GW:2

Barilla asks its suppliers to manage their animal farms respecting the five fundamental freedoms of animal welfare: i) Freedom from hunger or thirst by ready access to fresh water and a diet to maintain full health and vigour ii) Freedom from discomfort by providing an appropriate environment including shelter and a comfortable resting area, iii) Freedom from pain, injury or disease by prevention or rapid diagnosis and treatment, iv) Freedom to express (most) normal behaviour by providing sufficient space, proper facilities and company of the animal's own kind; v) Freedom from fear and distress by ensuring conditions and treatment which avoid mental suffering. Its claim has been verified and Barilla ranks among the top companies in the BBFAW (Business Benchmark on Farm Animal Welfare), developed by the Compassion in World Farming e World Animal Protection organizations.		GM		GM				GM:2
During the Milan Expo 2015 Barilla showed a limited edition of pasta whose chain is fully traceable thanks to a QR code enabling the customer to fully trace the story of the products from cultivation to distribution. These proactive action of Barilla improves the chain transparency increasing the consumer's trust in the Barilla sustainability strategy.	GM	GM		GM				GM:3
Increased the adoption of railways based logistics, thus reducing 1.100 ton of GHG emissions per year.				GM				GM:1
New eco-friendly packaging was designed by Barilla in connection with Favini				GM			GM	GM:2
To reduce the Barilla workers' transport impact, when driving from home to the workplace, incentives to the purchase of bicycles and the maintenance of cyclepaths, to the use public and private collective transport means have been defined. A "Mobility Management Agreement" between Barilla and the Parma Municipality have been signed, where the parties' commitments to a sustainable mobility have been defined				GM			GM	GM:2
In collaboration with PETA (People for Ethical Treatment of Animals), Barilla published a position paper: "No to Animal Testing" This is a voluntary collaboration, improving the Barilla Group commitment to sustainability through an alliance with the stakeholders.		GM		GM			GM	GM:3

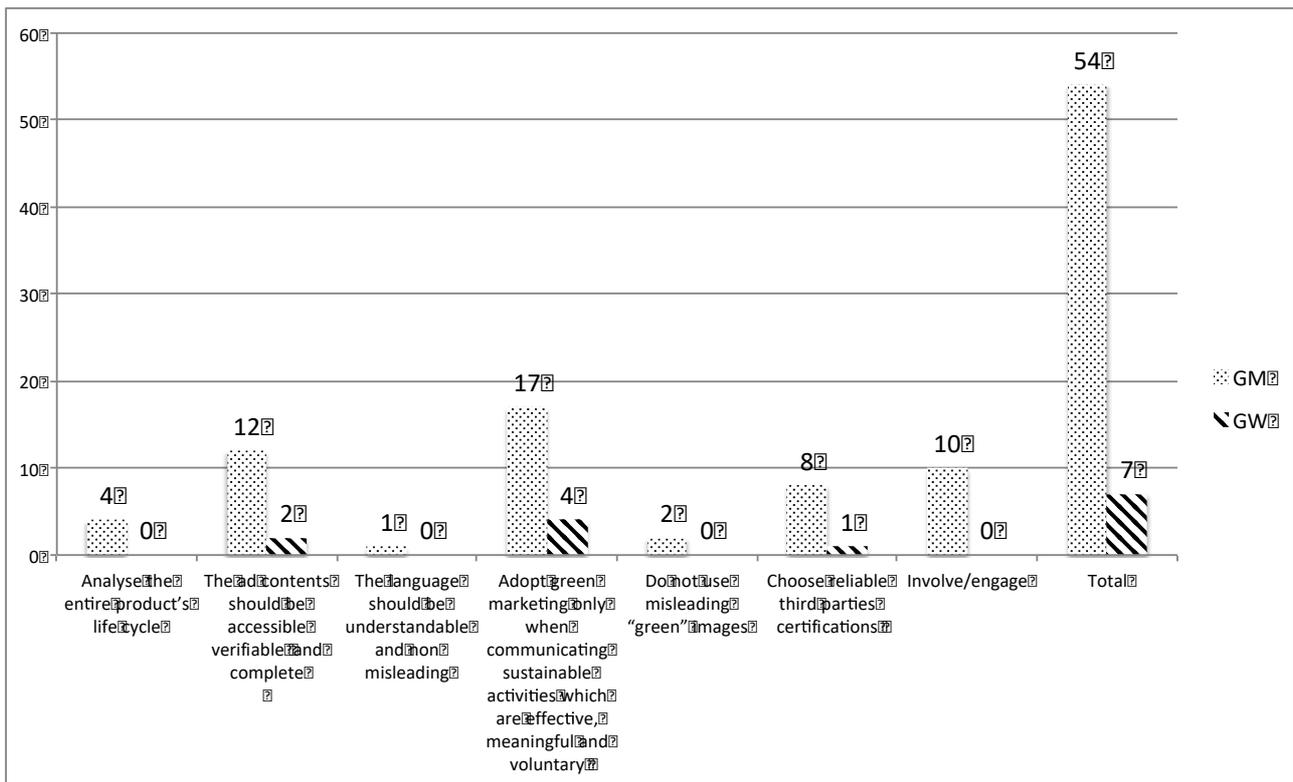
Table 9c)	Suggestions to avoid Green Washing							Total Activity Relevance
Actions : GM = green marketing GW = Greenwashing	Analyse the entire product's life cycle	The ad contents should be accessible, verifiable and complete	The language should be understandable and non misleading	Adopt green marketing only when communicating sustainable activities which are effective, meaningful and voluntary	Do not use misleading "green" images	Choose reliable third parties certifications	Involve/engage	
In collaboration with HORTA S.r.l, an Italian academic spin-off, a project on sustainable durum wheat cultivation practices has been implemented. The "Decalogue for the Durum wheat Sustainable Cultivation" was defined, together with a web-based support decision system for farmers (granoduro.net). The project contributed to the involvement and education of the stakeholders, allowing for a reduction of GHG emissions, a 20% increase in yields and an increase in the farmers' income). This is an example of what Porter and Kramer define as "creation of shared value".		GM		GM			GM	GM:3
Barilla organises the "Barilla Insieme Day" (Barilla Together Day) where the consumers' and other stakeholders' needs are openly discussed at a community level. This provides useful insights to build the Group strategies, involving also the sustainability aspects.							GM	GM:1
A <i>Customer Collaboration Center</i> , was created in Parma to develop new products in collaboration with the consumers, following the Consum-actors and Consum-authors approach (219 products have been modified from 2010 in collaboration with the customers).				GM			GM	GM:2
A nutritional education program for the Barilla workers have been defined involving also stakeholders within the Group.							GM	GM:1

Barilla is member of different organizations related to sustainable food development like, among others, the Roundtable on Sustainable Palm Oil (RSPO) supporting sustainable certification standards), the Sustainable Agriculture Initiative (SAI) group, collecting the main global food companies involved in promoting sustainable agriculture; created the Barilla Center for Food and Nutrition (BCFN) aiming at raising awareness on Food and Nutrition Security and sustainability issues. (for more info see: Barilla, 2016 pp. 48-49).							GM	GM:1
Barilla defined an agreement with a local Italian tomato producers' Association to support the farmers in a pluriannual sustainable agriculture project. The territory and the community sustainable development are at the centre of the project.				GM			GM	GM:2
68% of tomato used in Barilla is certified Global G.A.P.						GM		GM:1

Table 9d)	Suggestions to avoid Green Washing							Total Activity Relevance
Actions : GM = green marketing GW = Greenwashing	Analyse the entire product's life cycle	The ad contents should be accessible verifiable and complete	The language should be understandable and non misleading	Adopt green marketing only when communicating sustainable activities which are effective, meaningful and voluntary	Do not use misleading "green" images	Choose reliable third parties certifications	Involve/engage	
All Barilla suppliers apply the Barilla Code of Ethics, whose respect is verified according to the standard del Global Food Safety (GFSI). GFSI cannot be fully defined as a proactive voluntary initiative, differentiating Barilla from other companies, since it is asked by the majority of the supermarkets' chains and it is normally adopted by most of its competitors.				GW		GM		GM:1 GW:1

In 2015 Barilla published the new Barilla guidelines for sustainable packaging design. 100% of cardboard boxes are certified FSC (Forest Stewardship Council), PEFC (Programme for the Endorsement of Forest) and SFI (Sustainable Forestry Initiative). These third party certification standards are widespread and authoritative. 98% of Barilla packaging is recyclable and report instruction for a correct disposal using clear graphics (icons)		GM		GM	GM	GM		GM:4
86% of Barilla Plants adopt and Integrated Safety and Environmental Management System (ISEM) and is certified by a third party body according to the international standards of environment and safety management: OHSAS 18001 e ISO 14001.				GM		GM		GM:2
In 2015 an Energy Management System, following the ISO 50001 standard has been implemented.				GM		GM		GM:2
100% of palmoil purchased in Malaysia and Indonesia, was certified according to the RSPO. Barilla is a member of the Roundtable on Sustainable Palm Oil, like all its suppliers. RSPO certification recently improved its standards by introducing new regulations following previous criticisms (La Pira R., 2016) related to the use of high carbon content forests and the expansion of palmoil in peatlands. (RSPO, 2016).						GM		GM:1
The main Barilla Brands: Mulino Bianco, Grancereale and Pandistelle are certified GO (Garanzia di Origine) (Origin Guarantee). GO is a voluntary and authoritative scheme adopted to certify that the electric power used comes from renewable sources.				GM		GM		GM:2
Barilla reports that in the US the tomato cultivation chain sustainability is assessed in collaboration with the University UC Davis and its suppliers Morning Star and Ingomar. References to this claim were not found in the Report and neither the UC Davis website seems to report it. This fragmented, or difficult to trace, information can be considered as greenwashing.		GM				GW		GM:1 GW:1
Greenwashing avoidance Total indicators' relevance	GM: 4 GW: 0	GM: 12 GW: 2	GM: 1 GW: 0	GM: 17 GW: 4	GM:2 GW:0	GM: 8 GW:1	GM: 10 GW: 0	GM: 54 GW: 7

Graph 1 Number of Activities falling in GM and GW by greenwashing avoiding suggestion indicator



The analysis showed an effective and reliable communication strategy where a limited amount of “soft” greenwashing cases emerged.

From the results the following indications emerged in terms of suggestions to Barilla. Within an overall very positive performance in terms of greenwashing avoidance the company should concentrate its effort to avoid greenwashing by further improving the communication of effective, meaningful and voluntary activities avoiding to exaggerate or not clearly supporting their sustainability performances claims.

On the positive side Barilla shows an impressive list of different activities spanning through a different range of green marketing indicators in particular as far as the involvement in meaningful, clearly described and community oriented initiatives, relevant sustainability schemes and organization initiatives are concerned.

4. Conclusions

The present paper defined a theoretical framework and an analytical method to support avoiding greenwashing in a company Sustainability communication. The results showed that this integrated framework manages to collect in one set of indicators a broader range of relevant dimensions linked to possible sources of greenwashing.

This can support the definition of effective sustainability policies and green marketing strategies at the company level. A more informed multistakeholders’ debate, where advocacy campaigns, regulations, sustainability standards, consumers’ rights defense, can also be supported; this can therefore contribute to a more effective integration between public-private-civil society in defining shared improved sustainability models.

The categories of suggestions to avoid greenwashing, adopted in the study, have been applied to the Italian food company Barilla’s Sustainability Report 2016. This application showed how a large company can actually use its financial as well as human resources to define a very complex and broad range of sustainability initiatives, impacting not only on the environment, but also on the community social and economic context. It also showed that a Sustainability report can provide a useful tool to investigate the company possible greenwashing and thus guarantees the stakeholders a chance to effectively examine its sustainability claims.

Different problems emerged in the definition of a scoring method particularly as far as the relevance of the different indicators are concerned. Furthermore some greenwashing actions are difficult to enumerate since they are too generic, like *language or images, which should be accessible, complete and non-misleading*.

Further studies should weigh the different green marketing and greenwashing indicators in order to appreciate their relevance in contributing to the overall level of correct communication. Different from the greenwashing index web based platform, where the users can provide a progressive greenwashing score to the advert, a company could maybe find a way of internally check their compliance to greenwashing avoidance indicators by using internal and/or external

experts providing an evaluation on the different categories' weight from the different stakeholders point of view. Finally the choice and definition of the different greenwashing avoidance indicators should be improved both in the phrasing and contents by expanding the review of greenwashing and green marketing literature.

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