„Product Differentiation and Consumer Preferences for Sustainable Food“

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Introduction

Agri-food systems have a key role to play in addressing the most pressing global economic, environmental and ethical challenges. There is clear evidence, that the patterns and trends in food production, processing, trade and retail as well as in food consumption are closely related to major global development issues such as food safety and food security, resource depletion and biodiversity loss, environmental pollution and climate change, urbanisation and rural development (Abeliotis et al., 2010; de Haen and Requillart, 2014; Garnett, 2013; Reisch et al., 2013; Verain et al., 2012).

Since the United Nations (UN) Conference 1992 in Rio de Janeiro the question of how to address these challenges is usually answered by pointing out the need for sustainable development, defined as: "*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development includes economic, environmental and social sustainability, which are independent and mutually reinforcing pillars, and can be achieved by rationally managing physical, natural and human capital. Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of, and essential requirements for, sustainable development."* (United Nations Environment Programme, 2010).

The UN acknowledges that sustainable production and consumption is one of the overarching requirements for a global sustainable development (United Nations, 2012). It is defined as*: "The use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations."* (Norwegian Ministry of Environment, Oslo Symposium, 1994).

While this definition can be applied to every production or consumption there is until now no broadly accepted definition for sustainable food production or consumption. However some core criteria have been identified; Food and drink products can be considered as sustainable if they:

- respect biophysical and environmental limits (i.e. natural resources/ biodiversity) in their production and processing,
- respect high standards of animal health and welfare,
- are compatible with the production of affordable food for all sectors of society,
- support rural economies and the diversity of rural culture,
- provide a viable livelihood for farmers, processors and retailers, whose employees enjoy a safe and hygienic working environment whether nationally or abroad,
- are available,
- are affordable, safe, healthy and nutritious

(British Sustainable Development Commission, 2005; Hayn et al., 2006; Reisch 2010; Reisch et al. 2013).

From this it becomes clear that sustainable food consumption challenges both ends of the food supply chain. On the one hand production, processing, trade and retail (supply side) and on the other hand the consumer (demand side). For the supply side it is important to undertake and communicate efforts concerning a more sustainable production, processing, trading and retailing. For the demand side it is necessary, that consumers include the sustainability question in their decision making process about which food to buy and how to consume it.

Contemporary food choice decisions are already very complex and include a wide variety of situational (i.e. time, price), egoistic (i.e. taste / health) and altruistic (i.e. environmental protection / animal welfare) motives (i.e. Caswell and Joseph, 2008; Tsakiridou et al., 2007). A key issue why in particular sustainable food consumption is such a difficult task for consumers, is not only the vast number of possible topics that characterise sustainable food and should thus be addressed simoultaniously, but the fact that most of them are so called credence attributes (Akerlof, 1970). This means that their specific sustainability characteristics cannot be proven by the consumer himself who only has access to the final product. Most sustainability attributes are process characteristics referring to production techniques, working conditions and trading patterns which often do not lead to obvious visible differences in the product itself. This is why the whole production, processing and trading process of sustainable foods have to be certified by an independent third party. As a result of a successful verification and certification process the respective product is labeled. This is how label enable consumers to make conscious buying decisions, because they are able to turn credence

attributes to visible search attributes (Caswell and Padberg, 1992; Jahn et al., 2005). Today a number of so called sustainability labels are available for food products, but most of these labels cover only some of the sustainability dimensions such as i.e. environmental friendly production or fair trade conditions. A comprehensive sustainability label is still missing and most labels / labeled products are only available in niche markets.

Against this background it becomes clear that there are many different ways to approach the overall societal goal and policy aim of sustainable development by promoting and contributing to more sustainable food consumption.

Over the past decades a number of studies have explored the above mentioned topics. However, most of them chose very specific examples of sustainable food products such as organic, fair trade or animal welfare labeled products. Moreover, in most cases data collection took place only in some industrialised countries. Today the characteristics, attitudes, as well as the willingness to pay of food consumers with regard to organic, fair trade or animal welfare products are well known for most industrialised and some emerging countries (i.e. Aertsens et al., 2009; Andorfer and Liebe, 2012; De Barcellos et al., 2011; Lagerkvist and Hess, 2011). However, until now there is a lack of studies looking at sustainable food consumption from a more general point of view including both, environmental aspects, like eco-friendly or organic and ethical aspects, such as fair trade or animal welfare, without focusing on only one or two of these aspects and / or on one specific country.

For many actors in policy and agri-food business “sustainable” has become a widely used claim, but due to the fact, that most data for studies on sustainable food consumption is collected in single industrialised countries, many questions concerning the overall consumer expectation in different industrialised and emerging countries still remain open. For a long time the relevance of sustainable food consumption has only been attributed to developed countries. Yet, there is growing evidence that also in emerging countries some consumer groups also start demanding more sustainable food products. However, so far there is only very limited literature available about such topics (i.e. Bartels and Reinders, 2010; Chen, 2007 & 2009; Roitner-Schobesberger et al., 2008; Suprapto and Wijaya, 2012). Even in the extensively studied field of organic

consumption the number of studies that compare developed and emerging markets is very small (i.e. Squires et al., 2001; Wier et al., 2008).

Additionally this work contributes to the literature about labelling by sharing practical experiences and theoretical considerations about strategic orientations and successful management of sustainable food labels.

The ten individual research articles included in this dissertation offer unique insights into sustainable food consumption in industrialised and emerging countries as well as into the theory of food labelling. The four chapters of this dissertation address these main research questions:

1. What do consumers expect from sustainable food?
2. What characterises potential target groups for sustainable food and what hampers sustainable consumption?
3. How do organic food consumers in mature and emerging markets differ?
4. How can sustainable food be successfully introduced to the market and communicated?

This dissertation pursues two complementary perspectives on how to enhance sustainable food consumption. On the one hand it focuses on revealing consumer expectations towards sustainable food in general, (Chapter I.1 and I.2) and, more specifically, with regard to organic food consumption (Chapter III.1 and III.2). In both cases the analysis covers mature and emerging markets. Moreover, this dissertation pays special attention to the barriers of sustainable food consumption (Chapter II.1) and the core target group of convinced and heavy sustainable food consumers is characterised based on their attitudes and socio-demography (Chapter II.2). Furthermore, the methodological difficulties (hypothetical bias in choice experiments) in the identification of consumers' willingness to pay for sustainable food are investigated (Chapter II.3).

On the other hand this dissertation analyses labelling of sustainable food with regard to potential differentiating strategies for sustainability labels (Chapter IV.1) and identifies the requirements for successful labelling from the consumers point of view (Chapter

IV.2). Additionally, supply chain barriers for sustainability labels, are investigated, using animal welfare as example (Chapter IV.3).

The various results of the here presented studies reveal first evidences and highlight implications which can help actors in the agri-food business and policy arena to appropriately tailor and market sustainable food products on a global scale.

Methodologically this dissertation is based on an in depth literature review combined with several extensive online consumer surveys collecting data from a range of different developed and emerging countries worldwide. Moreover, some studies also include expert interviews, approaches of action research and different types of choice experiments. The methods used for data analysis were chosen with regard to the respective research questions and the underlying theoretical approaches. Most of the data is analysed with the help of the IBM® software Statistical Package for the Social Sciences (SPSS®) using especially uni- (i.e. frequency analysis) and multivariate (i.e. explorative factor analysis) techniques. Besides this the partial least squares approach (PLS) was used for one specific study (III.1) as well as conditional logit models for the analysis of the hypothetical and non-hypothetical choice experiments (II.3).

The above mentioned topics of sustainable food consumption and labelling addressed in this dissertation are covered by ten individual research articles, separated into four chapters. Tables 1-4 outline the structure of these chapters and give an overview about the articles.

The research articles forming this dissertation are presented in the way they have been submitted to the respective Journal, conference proceedings or working paper series. Additionally extended and structured abstracts are provided for each paper. Subsequently to the general introduction of this dissertation and the ten research articles an overall conclusion is given to provide a summary of the main findings, implications for agri-food business actors and policy makers and to give an overview about future research topics.

Table 1: Chapter I: Consumer expectations towards sustainable food

Index	Title of the article	Authors / Status	Design / Analysis
I.1 p. 14-37	"Sustainability" a semi-globalisable concept for international food marketing - Consumer expectations regarding sustainable food – An explorative survey in industrialised and emerging countries	M. v. Meyer-Höfer & A. Spiller Global Food Discussion Paper, No. 44	Online-consumer survey in 3 industrialised (CH,GE,USA) and 3 emerging countries (CN,BR,IN) Total N=1.179; ca. 300 / country Ranking of mean values
I.2 p. 38-49	Labels on Sustainability: Relevant sustainability dimensions from the consumers' point of view	M. v. Meyer-Höfer & A. Spiller 134th EAAE-Seminar "Labels on Sustainability: an issue for consumers, producers, policy makers and NGOs", March 21-22, 2013, Paris	Online consumer survey in Germany; Total N=300 Analysing whether different dimensions (environment, fair trade, climate, animal welfare) matter to consumers in the same way or whether they evaluate only specific dimensions to be important

Table 2: Chapter 2: Characterising sustainable food consumers

Index	Title of the article	Authors / Status	Design / Analysis
II.1 p. 51-61	Characteristics and barriers of sustainable food consumption in Germany	M. v. Meyer-Höfer & A. Spiller Jahrbuch der ÖGA Band (23) 2013, in press.	Online consumer survey in Germany; Total N=300 Mean value comparisons of consumption attitudes and barriers for environmental friendly, climate friendly, animal welfare and faire trade food
II.2 p. 62-63	Characterising convinced sustainable food consumers	M. v. Meyer-Höfer, V. v. d. Wense, & A. Spiller Accepted in British Food Journal 2014, in press. An earlier version has been published as Global Food Discussion Paper, No. 28	Online consumer survey and choice experiment in Germany; Total N=300 Binary logistic regression
II.3 p. 64-65	Hypothetical bias in choice experiments: A web based study with real consequences	U. Liebe, M. v. Meyer-Höfer, & A. Spiller Working Paper	Online consumer experiment in Germany; Total N=299 Hypothetical and non-hypothetical choice experiment Conditional logit, error component logit model, pooled model comprising both groups (hypothetical and non-hypothetical)

Table 3: Chapter 3: Organic food consumption in mature and emerging countries

Index	Title of the article	Authors / Status	Design / Analysis
III.1 p. 67-68	Mature and emerging countries organic markets: Modeling consumer attitudes, and behaviour with PLS	M. v. Meyer-Höfer, E. Olea Jaik, C. Padilla Bravo, A. Spiller Accepted for publication in Journal of Food Products Marketing 2014, in press. An earlier version has been published as Global Food Discussion Paper, No. 26	Online consumer survey Total N=567 ca. 300 / country Partial least squares approach (PLS) analysing attitudes (consumption motives) and barriers of organic food consumption
III.2 p. 69-70	Is there an expectation gap? Consumers' expectations towards organic: An exploratory survey in mature and emerging European organic food markets	M. v. Meyer-Höfer, S. Nitzko, A. Spiller Accepted for publication in British Food Journal 2014, in press. An earlier version has been published as Global Food Discussion Paper, No. 25	Online consumer survey in Czech Republic, Germany, Spain and the United Kingdom; Total N=1.180; ca. 300 / country Mean values, explorative factor analysis

Table 4: Chapter 4: Labelling for sustainable food

Index	Title of the article	Authors / Status	Design / Analysis
IV.1 p. 72-73	Diffusionsstrategien für Nachhaltigkeits-label: Das Fallbeispiel Tierschutzlabel Diffusion strategies for sustainability labels: The case of an animal welfare label	A. Franz, M. v. Meyer & A. Spiller Zeitschrift für Umweltpolitik und Umweltrecht, 2010: 33 (4), 417-444.	Literature review, 14 semi-structured expert interviews, action research approach on multi stakeholder meetings
IV.2 p. 74-86	Anforderungen an eine nachhaltige Land- und Ernährungs-wirtschaft: Die Rolle des Konsumenten Requirements for a sustainable agri-food sector: The consumers' role	M. v. Meyer-Höfer & A. Spiller KTBL-Schrift 500: Steuerungsinstrumente für eine nachhaltige Land- und Ernährungswirtschaft - Stand und Perspektiven, KTBL, Darmstadt, 2013.	Online consumer survey in Germany; Total N=300 Analysing level of publicity, knowledge, consumption and trust regarding different real and fake sustainability labels for food.
IV.3 p. 87-88	Prospects for an European animal welfare label from the German perspectives: Supply chain barriers	A. Franz; M. v. Meyer & A. Spiller International Journal on Food System Dynamics, 2010: 4, 318-329.	Action research approach on multi stakeholder meetings, Semi-structured expert interviews

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Chapter I: Consumer expectations towards sustainable food

Article I.1

"Sustainability" a semi-globalisable concept for international food marketing - Consumer expectations regarding sustainable food – An explorative survey in industrialised and emerging countries, 14-37.

Article I.2

Labels on Sustainability: Relevant sustainability dimensions from the consumer's point of view, 38-49.

I.1 "Sustainability" a semi-globalisable concept for international food marketing - Consumer expectations regarding sustainable food – An explorative survey in industrialised and emerging countries

Authors: Marie von Meyer-Höfer and Achim Spiller

Global Food Discussion Paper, No. 44
https://www.uni-goettingen.de/de/globalfood-discussion-paper-series/213486.html

Structured Abstract

Purpose

Global food systems today often oppose the objectives of sustainable development. Sustainable food products are an essential means of addressing this global challenge. However, to ensure uptake of these products it is crucial for agri-food business actors to understand consumer expectations regarding sustainable food. The questions relevant for the appropriate tailoring of differentiation and communication strategies for sustainable food are: 1. Which sustainability aspects are expected by consumers of such products? 2. Where and how should sustainable food be communicated.

By addressing these questions, this explorative study reveals the consumer expectations regarding sustainable food in industrialised and emerging countries.

Design / Methodology / Approach

This explorative study analyses data from an online consumer survey conducted 2013 in three industrialised (Germany, Switzerland, United States of America) and three emerging countries (Brazil, China, India). The total number of respondents is 1,719 (N per country ca. 300).

The main question analysed in this study was the following: "Which characteristics should a sustainable food product have?" 24 attributes (belonging to the categories environmental, ethical, and traditional food quality) are tested. Mean values of the 24 tested items are identified, compared and ranked for each country.

Findings

Consumers around the globe have quite diverse expectations regarding sustainable food products. Only very few attributes can be used to meet a range of international consumers' expectations regarding sustainable food (i.e. no chemical pesticides, safety, or freshness). Some sustainability attributes matter only in some individual markets.

Implications

International food marketers should build a more comprehensive picture of their consumers in each country, and learn how to address them specifically. A semi-globalised marketing strategy seems to be a good opportunity for sustainable food.

Originality

This is one of very few studies identifying consumer expectations towards sustainable food products on an international scale, and the first to include both industrialised and emerging countries.

Keywords:

Sustainable Food; Consumer Expectations; Food Product Differentiation; International Marketing

1. Introduction

Food systems around the globe contribute significantly to a number of environmental and ethical problems (Garnett, 2013; Reisch, Eberle, & Lorek, 2013). It is widely accepted that, if future global challenges such as i.e. resource depletion, pollution, loss of biodiversity, changing consumption patterns, issues of food safety and security are to be addressed, more environmentally and ethically sound food production and consumption is needed (Abeliotis, Koniari, & Sardianou, 2010; Verain, Bartels, Dagevos, Sijtsema, Onwezen, & Antonides, 2012).

When looking at the transformation of global agri-food systems over the past few decades a shift towards higher value food, higher food quality and safety can be observed (de Haen & Requillart, 2014; Moomaw, Griffin, Kurczak, & Lomax, 2012; Regmi, 2001; Reisch et al., 2013). This development has primarily been induced by income growth, urbanisation, changes in demographics and values, as well as a better access to information (de Haen & Requillart; Moomaw et al., 2012; Regmi, 2001). When incomes rise, consumers shift their preferences from less expensive staple foods to higher-value products, and also demand higher food quality and safety (Moomaw et al., 2012; Regmi, 2001). Simultaneously, process characteristics such as environmental or ethical aspects have become increasingly important for consumers and in food marketing (Codron, Siriex, & Reardon, 2005; Franz, von Meyer, & Spiller, 2010; Grolleau & Caswell, 2006). The proliferation of certification schemes around the world making such credence attributes visible to consumers i.e. via labels shows the contemporary relevance of such sustainability attributes for differentiation on the global food market (Codron et al., 2005; Franz et al., 2010; Grolleau & Caswell, 2006; Jahn, Schramm, & Spiller, 2005). This development is best illustrated by the growing markets for organic or fair trade food (Fair Trade International, 2013; Sahota, 2013). Against this background food marketers have to address the questions, where and how to communicate sustainable food on a global level.

For several years now, attempts to improve the environmental and / or ethical situation along the food supply chain via differentiating strategies, certification or labelling initiatives have been summarised under the term “sustainability”. However, there is no exact definition for it and thus also the term “sustainable food” is open to a wide variety of interpretations. Some authors point out that this is one reason for the wide diffusion

of the term. They call the underlying phenomenon a "bridging concept" (Schön et al., 2007).

As more and more food is marketed using this claim, it gains market momentum, but limited literature is available on consumer perceptions and the corresponding demand for sustainable food (Golden, 2010). Most studies deal with single credence attributes in individual countries, so that a clear picture of what consumers expect from sustainable food on a global scale is still missing (Verain et al., 2012).

From an international agri-food business perspective, it is, however, important to understand consumer expectations regarding sustainable food and its specific environmental and ethical attributes, in order to appropriately tailor marketing strategies (Grunert, 2005; Darby, Batte, Ernst, & Roe, 2008; Douglas & Craig, 2011; Garnett, 2013). Moreover, the growing demand for more sustainable food due to individual consumer, private or public sector interests has encouraged competition within the global agri-food business. Consequently, the differentiation and communication of food products with regard to their sustainability is becoming crucial.

This explorative study therefore aims at giving insights for international agri-food market actors, about what consumers expect from sustainable food and where and how to address this by adequate marketing strategies, using a unique data set from an online consumer survey (N=1,179) in three industrialised (Germany, Switzerland, United States of America) and three emerging countries (Brazil, China, India).

2. Sustainable food and international marketing

2.1 "Sustainability" as a differentiating attribute in food marketing

Sustainability is increasingly recognised as a major issue for most industries, but especially in the agri-food sector it has become an important differentiation and marketing topic (Codron et al., 2005; Grunert, 2011; Reisch et al., 2013; Verain et al., 2012; Vermeier & Verbeke, 2006).

On the one hand, sustainable food products are in demand because environmentally conscious consumption as well as ethical responsibility play an increasingly important role for many consumers (i.e., National Geographic & GlobeScan, 2012; BBMG,

GlobeScan, & SustainAbility, 2012; SustainAbility & GlobeScan, 2012). On the other hand, sustainability attributes also enable product differentiation and help agri-food businesses to increase the value of commodities (Codron et al., 2005; Dosi & Moretto, 2001; Mc Eachern & Mc Clean, 2002). Moreover, demonstrated environmental and / or ethical responsibility can actively foster a positive corporate image (Carlson, Grove, Kangun, & Polonsky, 1996; Morris, Hastak, & Mazis, 1995).

Food can be differentiated according to many different aspects, of which traditional quality criteria, environmental friendliness and ethical aspects are the most relevant in the context of this paper. The category of traditional quality criteria comprises the most common differentiation aspects, such as the product price or the level of innovation, that influence the strategic positioning and can be easily identified by the consumer himself (Antle, 2001; Darby & Karni, 1973; Nelson, 1970). The two other categories (environmental and ethical aspects) open up an alternative way of differentiating products, namely according to process characteristics or credence attributes. These cannot be proven by the consumer himself. Instead, third-party certification and labelling is needed in order to transfer the credence attributes of organic food into search attributes and to make them visible and considerable to consumers. This then enables the consumer to make conscious buying decisions (Jahn et al., 2005; Mc Cluskey, 2000).

Today environmental and ethical attributes are often used to differentiate food products and to communicate them as more sustainable. Most sustainable food products are, however, still niche products with small but continuously growing market shares (WFTO, 2013; Willer, Lernoud, & Home, 2013).

Organic food is one example for the differentiation of food products regarding their sustainability. According to the International Federation of Organic Agriculture Movements (IFOAM) organic agriculture is defined as “a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved”. The globally most important regulations for organic production are those of the EU and USA. They specify mainly, that organic food production may not

use mineral fertilisers, chemical pesticides or genetically modified organisms, ensures the protection of natural resources, animal welfare and biodiversity. The global market share of organic food has grown enormously in recent years (Sahota, 2013; Willer et al., 2013). The most mature markets can be found in the EU (i.e. Germany, United Kingdom, Denmark) and the USA, where organic products are widely spread across various retail channels (Sahota, 2013; Wier, Jensen, Andersen, & Millock, 2008). However, the growing interest in organic production is not limited to industrialised countries. Since several years, there has been an increase of production and also a growth in consumption especially in urban centers of emerging countries in Latin America (i.e., Costa Rica, Brazil, Chile) and Asia (i.e., Thailand or India) (Eguillor Recabarren, 2009; Flores, 2013; Garibay & Ugas, 2009; Kung Wai, 2013).

Apart from the environmental aspects that play a major role in the differentiation of organic food, ethical aspects are equally important for sustainable food. Fair trade movements are an example for ethical engagement in trade relationships that not only focus on monetary profit maximisation, but aim at a "trading partnership, based on dialogue, transparency and respect, that seek greater equity in international trade. Fair trade contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalised producers and workers – especially in the south" (WFTO, 2013). The most well-known label for fair trade food is Fair Trade, offering fair prices for producers, good working conditions and guarantees not to involve child labour. Its sales have been growing for many years and its most prominent products such as coffee, chocolate and orange juice have already entered conventional supermarket shelves, not only in industrialised but also in emerging countries like in India or Kenya (FLO Fairtrade International, 2013; ; Henseleit, 2012; v. Meyer-Höfer & Spiller, 2013).

These examples of two major sustainability differentiation aspects for food (environmental / ethical attributes) show that there are a number of different attributes that can be used for the differentiation of sustainable food, too.

The above-mentioned examples hint at a need to revise one old and widespread conventional wisdom that in emerging and developing countries consumers are purely seeking to satisfy their basic material needs without caring about the environmental or ethical aspects of their consumption. For many years, it was asserted that consumers'

environmental concern and the "postmaterialist"-value of environmental protection was limited to affluent nations (Dunlap & York, 2008, p. 529; Ingelhart, 1977). However, in recent years this view has been challenged by the results of several studies (i.e., Health of the Planet survey in 1992; World Value Surveys). Especially the results of the "Health of the Planet" (HOP) survey revealed high inconsistencies and several negative correlations between national affluence and environmental concern. This suggests, in accordance with other studies reviewed in Dunlap and York (2008), that environmental and ethical concern among consumers has become a global phenomenon that is not predictable by a nation's affluence.

Although a number of studies have already analysed consumer attitudes, behaviour and characteristics of potential target groups for sustainable food, to our best knowledge, no study has so far analysed consumer expectations towards different sustainability aspects simultaneously in several countries of different economic development status. Most of the available studies analyse single aspects of sustainable food consumption, and the majority of these focus on environmentally friendly or organic consumption (i.e. Aertsens, Verbeke, Mondelaers, & van Huylenbroeck, 2009; Honkanen, Verplanken, & Olsen, 2006; Loureiro, Mc Cluskey & Mittelhammer, 2001; Roberts, 1996). Far fewer studies look at ethical aspects of consumption such as fair trade (i.e. Adams & Raisborough, 2010; Mc Cluskey, Durham, & Horn, 2009) or animal welfare (i.e. Honkanen & Olsen, 2009; Lagerkvist & Hess, 2011).

The question which sustainability aspects agri-food market actors should focus on when marketing sustainable food products on the global food market, has not yet been addressed. This paper therefore analyses consumer expectations regarding sustainable food in industrialised and emerging countries using a list of environmental, ethical and traditional food quality attributes.

2.2 Global marketing strategies for sustainable food

The second crucial question for international agri-food market actors marketing sustainable food products is, where and how to communicate. Is it possible to use the same attributes for communicating sustainable food on a global scale or is it necessary to differentiate among countries?

One of the critical challenges that marketers face today is globalisation (Douglas & Craig, 2011; Ko, Taylor, Sung, Lee, Wagner, Navarro & Wang, 2012). This leads to expanding business operations on a global scale of firms from all parts of the world, which is especially true for firms that are looking for new growth opportunities outside the developed markets of the "industrial triad" (USA, Europe, Japan). They focus on expansion into new markets of the emerging countries like India, Brazil or China, where in particular the more affluent members of the growing urban middle-class provide a prime target group (Douglas & Craig, 2011).

Meanwhile, there is a growing global consumer culture (Alden, Steenkamp & Batra, 2006; Miller, 1998; Shermach, 1995; Ter Hofstede, Steenkamp & Wedel, 1999). The increased and accelerated exchange of information, goods and people across national boundaries leads to the emergence of global consumer segments. These are today no longer limited to industrialised countries, but start to expand globally. Besides commonly known global segments for luxury, fashion or music there are also segments of environmentally and or ethically concerned consumers (Craig & Douglas, 2006; Court & Narasimahan, 2010; Douglas & Craig, 2011; Miller, 1998; Shermach, 1995). Examples of firms aiming to attract these segments are i.e. The Body Shop or Aveda (cosmetics), but there is also a number of individual fair trade stores, organic retailers or shops (Douglas & Craig, 2011).

However, the emerging markets outside the "industrial triad" may differ from the developed and mature markets in the industrialised countries. This requires an improved understanding of the differences in consumers' needs, interests, attitudes and behaviours, but often such data is not available for the emerging countries (Douglas & Craig, 2011). Moreover, there is a lack of cross-country studies in this field.

The above described circumstances imply the need for changes in the marketing strategies of firms. It includes adapting to a broader focus, especially with regard to their market segmentation (Ghemawat 2010), with which they can subdivide heterogeneous markets into homogeneous groups of consumers (Foedermayr & Diamantopoulos, 2008; Hassan & Katsanis, 1994; Hassan, Craft & Kortam, 2003). Traditionally, global markets have been segmented with the help of geographic and economic characteristics on a country-by-country basis (Ko et al., 2011). In recent years, however, marketing is focusing on meeting the needs in interrelated markets

worldwide rather than organising operations on a country-by-country basis (Douglas & Craig, 2011; Steenkamp & Ter Hofstede, 2002). Despite the above described changes in the world markets, marketing practice literature remains often limited on issues regarding the development of global marketing strategies focussing on industrialised countries rather than displaying the potential of alternative approaches (Douglas & Craig, 2011; Ko, Taylor, Sung, Lee, Wagner, Navarro & Wang, 2012).

One interesting idea to expand marketing across markets with different maturity is presented by Douglas and Craig (2011). They advocate developing a semi-global marketing strategy, which means to follow different directions in different parts of the world. In contrast to Ghemawat (2003), who uses the term "semiglobalization" to indicate that markets are typically regional rather than global, Douglas and Craig (2011) use the term to indicate that some markets are truly global, while others are much more fragmented, requiring unique strategies. According to them some markets can be targeted on a global scale, because consumers such as ecologically concerned consumers have similar preferences and response patterns worldwide. Only a small amount of local adaptation would be required, but this would have to be carefully inserted into the local context, i.e. due to cultural factors. With regard to the large emerging markets of the so called BRIC countries (Brazil, Russia, India, China) the authors propose, the development of country-centric marketing strategies to be able to address specific local preferences, traditions and other features. Furthermore, they recommend developing independent strategies for each of the BRIC countries. Drawing also on Doctoroff's (2005) results, Douglas & Craig, 2011 suggest that marketing communication should be adapted to each country.

3. Approach

For the marketing of sustainable food, it is today important to get to know consumers' expectations regarding sustainable food on a broad and global scale. The aim of this explorative study is thus to analyse the following research questions:

1. Which sustainability attributes are expected by consumers?

2. Where should international agri-food market actors communicate sustainable food products how?

This analysis does not estimate the market potential for sustainable food in the analysed markets, nor can the results of this study be generalised to the entire globe. Rather, the objective is to detect and compare consumers' expectations regarding sustainable food across a wide range of nations and to identify marketing strategies for sustainable food. Displaying consumer expectations towards sustainable food in a number of different countries can help market actors to appropriately tailor their product and target their markets on a national as well as international scale.

3.1 Data

The data for his explorative study was collected in an online consumer survey conducted during July and August 2013 in three industrialised (Germany, United States, Switzerland) and three emerging countries (Brazil, China, India). The total number of respondents is 1,719 (N: GE= 288 CH=282; USA=290; BR=285; CN=295; IN=279). The participants were recruited by a private marketing research panel provider. Only respondents responsible for the majority of food shopping in their household took part in the survey.

Among the industrialised countries of the world, the United States of America, Germany and Switzerland were chosen. They represent leading markets for sustainable food products, in terms of production and consumption of i.e. organic food (Sahota, 2013) or fair trade products (Fair Trade, 2013). They also belong to the two continents that are among the economically most developed in the world.

The chosen emerging countries belong to the so called BRIC-nations (Brazil, Russia, India, China), which combine the location of the majority of the global population, land area and economic growth (O'Neill, 2001).

The sometimes rich diversity of cultures and languages within the studied countries could not fully be taken into account. Only respondents in Switzerland could choose between an English and a French version of the questionnaire. In Switzerland 70% of the population speak German, 20% French and 10% Italian. The two data sets are shown in the results part as separate samples. In India an English questionnaire was used for all respondents. In China a Mandarin questionnaire was used for the whole country. The questionnaire was originally designed in English, and then professionally

translated into each of the languages. To ensure the quality of the translation, native speakers did a back-translation, before the questionnaires were pre-tested in each country.

The main reason for conducting an online survey was that this method means that data collection is not regionally restricted based on the mobility of the interviewer. Further advantages are lower costs and quicker response times compared to other survey methods (Weber and Bradley, 2006). In industrialised countries, online consumer surveys have become quite common in marketing research, but also in emerging and developing countries more and more online surveys are conducted with the help of private marketing research panel providers. The panel providers sent the link of the survey to their panel participants and they could respond to the questionnaire at any time or place where they had internet access. The statements of the respondents were saved online and converted into SPSS files for the analysis. The average time spent for answering to the questionnaire lay between 14 (USA) and 20 (IN) minutes.

The total sample of 1,179 respondents (around 300 per country) is not representative to make general conclusions, because the sample is biased towards higher educated participants with higher incomes from urban centres compared to the averages of the analysed countries.

However, it is known that, socio-demographic characteristics often have only marginal effects on the consumption of sustainable food in industrialised countries (Anderson & Cunningham, 1972; Dagevos, 2005; Diamantopoulos et al., 2003; Dickson, 2001; Doran, 2009; Gil et al., 2000; Jain & Kaur, 2006; Loureiro & Lotade, 2005; Verain et al., 2012). In the context of emerging and developing countries, studies show, that richer and better educated consumers often have a significantly higher willingness to pay for food safety and quality (Gonzalez et al., 2009; Krishna & Qaim, 2008; Liu et al., 2009; Mergenthaler et al. 2009; Padilla Bravo et al., 2007).

Even though simple generalisations may be misleading, it is likely that the biased samples of the analysed countries may therefore represent the potential target groups for sustainable food quite well. Table 2 gives an overview of the gender distribution and education level of the samples in the analysed counties.

Respondents of the questionnaire stated that they are mainly responsible for the food shopping in their household. Surprisingly, the samples show a majority of men in some countries, which might be due to the fact that in these countries men are more often registered in private marketing panels than women. Another reason might be that the filter was not set strictly enough for these countries, so that men that stated to be at least partly responsible for the food shopping might outbalance the share of women.

Table 2: Sample Characteristics

	CH-F	CH-GER	GER	USA	BR	CN	IN
N	**130**	**152**	**288**	**290**	**285**	**295**	**279**
Female (%)	48.5	47.4	56.6	68.3	44.9	41.4	29.0
Male (%)	51.5	52.6	43.4	31.7	55.1	58.6	71.0
University degree completed (%)	25.4	16.4	22.2	43.8	47.7	88.8	90.0

Source: Own data, 2013

3.2 Analysis

The main question analysed in this study was the following: "Which characteristics should a sustainable food product have?" The answer options were on a seven point Likert Scale (1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree nor disagree; 5 = somewhat agree 6 = agree; 7 = strongly agree). 24 items (Table 2) are used to find out what consumers expect from sustainable food.

To provide a comprehensive presentation of these they are divided into three sub-groups including traditional quality criteria for food, environmental and ethical sustainability attributes.

Table 2: Sustainability items grouped according to differentiating aspects

Possible differentiation attributes	Sustainability items
Environmental attributes	Environmentally friendly production
	Environmentally friendly packaging
	Reduction of greenhouse gas emissions
	No genetically modified organisms (GMO)
	No synthetic fertiliser
	No chemical pesticides
	Seasonal production
	Local production
Ethical attributes	Animal welfare
	Fair prices for producers
	Good working & living conditions for food producers
	No child labour
	Safety
	Health
	Naturalness
	No artificial additives
Traditional attributes	Price (cheap for consumers)
	Taste
	Freshness
	Nutritional value
	Trendy
	Innovation
	Tradition
	Convenience

Source: Own compilation, 2013

The division of the 24 tested variables shown in Table 2 is by no means exclusive or explicit, but rather a classic attempt to make the huge variety of attributes more comprehensible by grouping them according to the three basic sustainability dimensions (environmental, ethical, economic) (United Nations Environment Programme, 2010). "No GMO", for example, is certainly an attribute used to differentiate sustainable food from conventional food, whether it is motivated from an environmental perspective (biodiversity) or from an ethical perspective (health / safety).

The group of environmentally friendly attributes include most of the basic criteria required for organic products by the EU organic regulation 834/2007, such as "no use of chemical pesticides", "no use of synthetic fertilisers", and "no use of GMOs". Moreover, it contains more general aspects of environmentally friendly food production like i.e. environmentally friendly packaging, which is required by a number of eco-

labels (i.e., EU-Eco-Label, FSC) and climate friendly aspects such as the reduction of greenhouse gas emissions.

The group of ethical attributes summarises social aspects such as those required for fair trade certification programs like "good working and living conditions and fair prices for producers", but also ethical aspects such as "animal welfare". Additionally it also contains health aspects (i.e., "safety", "no artificial additives") which play an important role for the sustainability of food consumption (Reisch et al. 2013).

Instead of including only pure economic aspects of food consumption like price into the analysis, the third group of tested variables contains a broader collection of traditional food quality (i.e., "taste", "freshness") and differentiation (i.e., "innovation") aspects

Mean values and standard deviation for each of the tested 24 items are reported in Table 3. The mean values are compared using an ANOVA-Table which gives evidence about the significance of their differences. Consequently the mean values are ranked for each country focussing on the top 10 (Table 4).

4. Findings

The mean values of the 24 tested items were analysed and ranked for each of the seven data sets. Table 3 and 4 display the results. The higher the mean value (Table 3), the more consumers expect sustainable food to have the respective attributes characteristics. The items are segmented according the three groups environmental, ethical and traditional food quality attributes.

Comparing the ranking of the top ten mean values per country (shaded in Table 4) it becomes obvious which attributes matter most for consumers' expectations regarding sustainable food products and in which countries. Of all 24 items analysed in this study, only three are found among the top ten mean values in all analysed seven data sets. Two of them belong to the tested environmental attributes ("Environmental friendly production", "No chemical pesticides") the other one belongs to the tested ethical attributes ("Naturalness").

Consumers in six countries expect "Safety" (not among top 10 in CH-GE) and "Freshness" (11th in BR) with regard to sustainable food products. "No child labour" is

among the top 1-4 in CH, GE, USA and BR, but not among the top 10 in CN (13th) and IN (11th). “Health” is among the top 1-5 in the analysed emerging countries and the USA, but not in CH (CH-F: 13th; CH-GE: 11th) and GE (13th).

Some attributes are ranked among the top 10 only in a few / single countries, like “No GMO” (CH, GE, CN), “NO synthetic fertiliser” (CH-F, GE, IN), “Reduction of GHG emissions” (CH-F, BR) or “Seasonal production” (CH-GE). Furthermore, some attributes are not found among the top 10 in any of the analysed data sets. Most of these belong to the group of traditional food quality attributes like “Price” or “Innovation”.

While for the majority of items the mean values differ highly significantly between the seven data sets “freshness” (.081), “no GMO” (.007) and “no chemical pesticides” (.012) show no significant difference.

Table 3: Mean values, standard deviation and significance level of mean value differences

	CH-F		CH-GER		GER		USA		BR		CN		IN		Sig.
	MV	SD	MV	SD	MV	SD	MV	SD	MV	SD	MV	SD	MV	SD	
Environmental attributes															
Environmental friendly production	6.25	.959	6.03	.969	6.09	.944	5.88	1.194	6.13	.970	6.32	.773	6.11	.959	.000
Environmental friendly packaging	6.12	1.159	6.01	.952	5.92	1.016	5.71	1.236	6.08	1.067	6.16	.867	6.10	1.014	.000
Reduction of GHG emissions	6.05	1.180	5.72	1.175	5.82	1.066	5.65	1.315	6.19	1.037	6.01	.956	5.92	1.108	.000
No GMO	6.09	1.349	6.02	1.350	6.02	1.316	5.77	1.426	5.91	1.999	6.15	1.036	5.89	1.232	.007
No synthetic fertiliser	6.12	1.220	5.85	1.249	5.89	1.224	5.80	1.364	5.99	1.184	6.14	.920	6.14	.970	.001
No chemical pesticides	6.28	1.064	6.06	1.146	6.31	1.005	6.03	1.240	6.19	1.115	6.28	.845	6.23	.962	.012
Seasonal production	5.95	1.147	6.00	1.029	5.80	1.114	5.50	1.150	5.27	1.285	5.60	1.185	5.75	1.157	.000
Local production	5.88	1.806	5.70	1.178	5.64	1.213	5.57	1.201	5.26	1.483	4.89	1.369	5.53	1.302	.000
Ethical attributes															
Animal welfare	6.04	1.203	6.09	1.038	5.88	1.157	5.77	1.294	6.15	1.014	5.65	1.092	5.85	1.143	.000
Fair prices for producers	6.05	1.044	5.79	1.065	5.88	1.007	5.82	1.193	6.17	.969	6.00	.810	5.95	1.036	.000
Good working conditions	6.08	1.012	5.81	1.002	5.86	1.003	5.79	1.231	6.22	.928	6.05	.829	6.03	.955	.000
No child labour	6.43	1.213	6.22	1.081	6.40	.982	6.12	1.264	6.33	1.149	6.01	.955	5.98	1.283	.000
Safety	6.15	.973	5.70	1.191	5.92	1.044	6.37	.958	6.27	1.015	6.47	.764	6.24	.947	.000
Health	5.89	1.161	5.85	1.096	5.72	1.157	6.05	1.002	6.38	.849	6.48	.679	6.20	.988	.000
Naturalness	6.26	.859	5.88	1.057	5.88	1.034	5.86	1.111	6.21	.941	6.23	.866	6.18	.970	.000
No artificial additives	6.09	1.158	5.85	1.102	6.02	1.047	5.91	1.143	6.08	1.121	6.17	.974	5.97	1.064	.000
Traditional attributes															
Price (cheap for consumers)	5.59	1.179	4.28	1.566	4.30	1.357	4.93	1.413	5.81	1.359	5.00	1.375	5.40	1.293	.000
Taste	6.10	.947	6.07	.977	6.20	.931	6.17	.988	6.02	1.206	5.84	1.009	6.11	.926	.001
Freshness	6.25	.874	6.12	.913	6.25	.904	6.25	.968	6.12	.978	6.33	.759	6.33	.855	.081
Nutritional value	5.61	1.217	5.66	1.201	5.61	1.169	6.01	1.034	6.18	1.043	6.19	.800	6.19	.945	.000
Trendy	3.62	1.640	3.32	1.525	3.32	1.487	4.31	1.605	5.13	1.494	5.14	1.423	5.41	1.260	.000
Innovation	4.60	1.513	4.64	1.476	4.50	1.443	5.03	1.280	5.38	1.459	5.49	1.118	5.65	1.162	.000
Tradition	5.05	1.352	4.57	1.525	4.58	1.463	4.81	1.394	5.07	1.533	4.89	1.269	5.46	1.332	.000
Convenience	5.08	1.471	4.53	1.496	4.60	1.380	5.06	1.231	5.87	1.242	5.61	1.070	5.82	1.079	.000

Question: “Which characteristics should a sustainable food product have?”
Answer options: Likert Scale (1 = strongly disagree … 7 = strongly agree)
MV=mean value; SD=standard deviation; Sig.=significance level of mean value difference
Source: Own data, 2013

Table 4: Ranking of mean values in each country, focussing on top 10

	CH-F		CH-GER		GER		USA		BR		CN		IN	
	MV	**Rank**	**MV**	**Rank**	**MV**	**Rank**	**MV**	**Rank**	**MV**	**Rank**	**MV**	**Rank**	**MV**	**Rank**
Environmental attributes														
Environmental friendly production	**6.25**	**4**	**6.03**	**6**	**6.09**	**5**	**5.88**	**9**	**6.13**	**10**	**6.32**	**4**	**6.11**	**8**
Environmental friendly packaging	**6.12**	**6**	**6.01**	**8**	**5.92**	**7**	5.71	15	6.08	12	**6.16**	**9**	**6.10**	**9**
Reduction of GHG emissions	**6.05**	**10**	5.72	14	5.82	11	5.65	16	**6.19**	**6**	6.01	13	5.92	14
No GMO	**6.09**	**8**	**6.02**	**7**	**6.02**	**6**	5.77	14	5.91	15	**6.15**	**10**	5.89	15
No synthetic fertiliser	**6.12**	**6**	5.85	11	**5.89**	**8**	5.80	12	5.99	14	6.14	11	**6.14**	**7**
No chemical pesticides	**6.28**	**2**	**6.06**	**5**	**6.31**	**2**	**6.03**	**6**	**6.19**	**6**	**6.28**	**5**	**6.23**	**3**
Seasonal production	5.95	12	**6.00**	**9**	5.80	12	5.50	18	5.27	19	5.60	18	5.75	18
Local production	5.88	14	5.70	15	5.64	14	5.57	17	5.26	20	4.89	22	5.53	20
Ethical attributes														
Animal welfare	6.04	11	**6.09**	**3**	**5.88**	**9**	5.77	14	**6.15**	**9**	5.65	16	5.85	16
Fair prices for producers	**6.05**	**10**	5.79	13	**5.88**	**9**	5.82	11	**6.17**	**8**	6.00	14	5.95	13
Good working conditions	**6.08**	**9**	5.81	12	**5.86**	**10**	5.79	13	**6.22**	**4**	6.05	12	**6.03**	**10**
No child labour	**6.43**	**1**	**6.22**	**1**	**6.40**	**1**	**6.12**	**4**	**6.33**	**2**	6.01	13	5.98	11
Safety	**6.15**	**5**	5.70	15	**5.92**	**7**	**6.37**	**1**	**6.27**	**3**	**6.47**	**2**	**6.24**	**2**
Health	5.89	13	5.85	11	5.72	13	**6.05**	**5**	**6.38**	**1**	**6.48**	**1**	**6.20**	**4**
Naturalness	6.26	3	**5.88**	**10**	**5.88**	**9**	**5.86**	**10**	**6.21**	**5**	**6.23**	**6**	**6.18**	**6**
No artificial additives	6.09	8	5.85	11	**6.02**	**6**	**5.91**	**8**	6.08	12	**6.17**	**8**	5.97	12
Traditional attributes														
Price (cheap for consumers)	5.59	16	4.28	20	4.30	19	4.93	21	5.81	17	5.00	21	5.40	23
Taste	**6.10**	**7**	**6.07**	**4**	**6.20**	**4**	**6.17**	**3**	6.02	13	5.84	15	**6.11**	**8**
Freshness	**6.25**	**4**	**6.12**	**2**	**6.25**	**3**	**6.25**	**2**	6.12	11	**6.33**	**3**	**6.33**	**1**
Nutritional value	5.61	15	5.66	16	5.61	15	**6.01**	**7**	**6.18**	**7**	**6.19**	**7**	**6.19**	**5**
Trendy	3.62	20	3.32	21	3.32	20	4.31	23	5.13	21	5.14	20	5.41	22
Innovation	4.60	19	4.64	17	4.50	18	5.03	20	5.38	18	5.49	19	5.65	19
Tradition	5.05	18	4.57	18	4.58	17	4.81	22	5.07	22	4.89	22	5.46	21
Convenience	5.08	17	4.53	19	4.60	16	5.06	19	5.87	16	5.61	17	5.82	17

Figures in bold: top 10 mean values per country
Question: “Which characteristics should a sustainable food product have?”
Answer options: Likert Scale (1 = strongly disagree … 7 = strongly agree)
Source: Own data, 2013

5. Conclusion

Today's food production and consumption often stand in sharp contrast to the aim of sustainable development. Hence, if global challenges are to be addressed, more environmentally and ethically sustainable food production and consumption is needed.

Both supply chain actors and consumers are increasingly interested in sustainable food, which differs from conventional food in its environmental and ethical attributes. Although the market for sustainable food is still a niche market, more and more products are marketed as such. However, there is no clear definition of sustainable food, thus for agri-food market actors it is crucial to understand consumer expectations regarding such products, in order to appropriately tailor marketing strategies on a global scale, including both: the level of attributes and the geography. To explore the consumer expectations towards sustainable food, data from an online consumer survey conducted in three industrialised (CH, GER, USA) and three emerging countries (BR, CN, IN) was used.

The question "Which characteristics should a sustainable food product have?" (Answer options: 1 = strongly disagree … 7 = strongly agree) was analysed focussing on mean value comparison and ranking.

The results show that consumers around the globe have quite diverse expectations of sustainable food products. Only some attributes provide opportunities for cross-national differentiation and communication. Among the environmental attributes these are: "environmental friendly production" and "no chemical pesticides" (in 7 data sets), "environmental friendly packaging" (in 5 data sets) and "no GMO" (in 4 data sets). Among the ethical attributes these are: "naturalness" (in 7 data sets), "safety" (in 6 data sets), "no child labour" (in 5 data sets), "good working conditions", "health" and "few additives" (in 4 data sets). Moreover, the traditional quality criteria that should be considered in the marketing of sustainable food are: "freshness" (in 6 data sets), "taste" (in 5 data sets) and "nutritional value" (in 4 data sets). Mean values of the tested items all differ significantly between the analysed countries, except for "no GMO", "no chemical pesticides" and "freshness".

The overall results of this analysis point to a great diversity regarding consumer expectations towards sustainable food. A simple division into industrialised vs.

emerging countries, North vs. South, East vs. West can thus not be made. Only some attributes could be suitable for a global or cross-national marketing strategy. Most of the attributes should, however, be communicated only in specific regions.

In agreement with the above mentioned results, Douglas and Craig's (2011) suggestion of a semi-globalised marketing strategy seems to be an adequate solution for an international marketing strategy for sustainable food products. This means to differentiate and communicate sustainable food according to some global or cross-nationally expected attributes on the one hand, and on the other hand to respond to country-specific expectations. Moreover, it seems to be adequate to target the analysed emerging countries with specific marketing strategies and not to group and treat them all the same.

The underlying economic, political and cultural reasons, why some aspects are expected in some countries, but not in others could not be identified by this study and open up possibilities for future research. Possible reasons for the diverse consumer expectations among the different data sets might be due to different levels of exposure to environmental or ethical problems, public consciousness as well as to different traditions, attitudes and values.

However, this paper suggests that food marketers should try to get to know their consumers better and learn how to address their specific expectations and needs with regard to sustainable food.

All in all, there seems to be a need for more market research, identifying consumer expectations and understanding regarding sustainable food on an international level and regarding the multitude of possible sustainability attributes. Furthermore, there is a need for more studies in the field of global marketing strategies especially for sustainable food products. Only when consumers' expectations are met a more sustainable food production and consumption can be promoted.

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I.2 Labels on Sustainability: Relevant sustainability dimensions from the consumer's point of view

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Structured Abstract

Purpose

Sustainability has become an important issue for the agriculture and food business, because products with additional ecological or social benefits are in demand, and environmentally conscious consumption as well as social responsibility plays an increasing role for many consumers.

In this paper we therefore focus on sustainable food consumption and analyse the importance of four specific sustainability dimensions (Environmental Protection, Climate Protection, Fair Trade, Animal Welfare) from the consumer's point of view.

Design / Methodology / Approach

For this we use an online consumer study with 300 analysed cases from German consumers collected in 2012.

To analyse the relevance of the four dimensions from the consumer perspective, we counted whether, and if so, how often, the dimensions were mentioned as "very important" or "important" (henceforth, we use important as meaning "very important" and "important").

Findings

The majority of German consumers evaluate all four dimensions as important for the food they consume. Especially animal welfare is of great importance for German consumers. In addition also fairness aspects and environmental protection matter.

Implications

It can be concluded that sustainability initiatives should be designed comprehensively. The majority of consumers, who care for all four dimensions, need to be addressed by credible and long term engagement for each dimension. Fairness towards animals and / or people can be promising aspects food differentiation and communication as well as a combination of animal welfare and environmental protection.

Originality

This study analyses the intersection between different dimensions of sustainability concerning their importance to consumers; whether different dimensions matter to consumers in the same way or whether they evaluate only specific dimensions to be important for them.

Keywords

Sustainable Food Consumption; Labelling; Environmental Protection; Climate Protection; Fair Trade; Animal Welfare

1. Introduction

Sustainability is increasingly being recognised as a major issue for most industries, but this is especially true in agribusiness and food industry (Vermeier and Verbeke 2006; Ranalli et al. 2009; de Barcellos et al. 2011; Schrader and Thogersen 2011; Verain et al. 2012). In this sector, sustainability has become an important management topic, because food consumption is an important driver of sustainable development (Vermeier and Verbeke 2006; Abeliotos et al., 2010; Backhaus et al. 2012).

One comprehensive definition of sustainable consumption by the Oslo Roundtable on Sustainable Production and Consumption is: "*the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations*" (Norwegian Ministry of the Environment 1994). According to this definition, sustainable food consumption considers not only individual needs and desires, but also considers the environmental and social responsibility of each consumer (Vermeier and Verbeke 2006; Starr 2009; Otto 2011; Backhaus et al. 2012).

Today, not only scientists but also politicians, businesses and a growing number of consumers discuss the consequences of food consumption. Products with additional ecological or social benefits are in demand, because environmentally conscious consumption as well as social responsibility plays an increasing role for many consumers (Heidbrink and Schmidt 2009; Ranalli et al. 2009; Otto 2011; Grunert 2011). This is also reflected in the growing number of labels that certify the positive ecological or social attributes of food products (Franz et al. 2010).

Corporate social responsibilities (CSR) as well as labelling initiatives serve to communicate the private sector's efforts to protect the environment, support fair working conditions or support better animal welfare (European Commission 2009). Especially labelling is often used today to differentiate markets and to enable the consumers to make conscious buying decisions (Jahn et al. 2005; Grolleau and Caswell 2006; Eberle et al. 2011). A fundamental problem of sustainable food products is that they are so called credence goods (Akerlof 1970). This means that their specific sustainability attributes cannot be proven by the consumer who only has access to the final product. This is why the whole production process has to be analysed and verified

by a third party. After a successful verification and certification process the product is labeled. This is how label enable consumers to make conscious buying decisions (Caswell and Padberg 1992; Jahn et al. 2005). Labels are not only used for marketing, but also for policy where they are often used as instruments to increase transparency or to reduce negative external effects i.e. for the environment (Eberle et al. 2011). On the German food market however a comprehensive sustainability label does not exist yet (Eberle 2001). Instead, consumers have to choose from a wide variety of products labeled as ecologically or socially beneficial such as organic or fair traded food.

The question of which target groups may have particular relevance for sustainably produced food has already been addressed by a number of studies. Most of them analyse aspects of environmental friendly or organic consumption (Roberts 1995 and 1996; Blend and van Ravenswaay 1999; Loureiro et al. 2001; Yiridoe et al. 2005). Much less studies look at social aspects of consumption such as fair trade (Mc Cluskey et al. 2009; Adams and Raisborough 2010) or animal welfare (Honkanen and Olsen 2009; Lagerkvist and Hess 2011). Surprisingly, to our knowledge, no study has been published yet analysing the intersection between different dimensions of sustainability from a consumer's point of view; whether different dimensions matter to consumers in the same way or whether they evaluate only specific dimensions to be important for them.

In this paper we therefore focus on sustainable food consumption, analysing the importance of four specific sustainability dimensions (Environmental Protection, Climate Protection, Fair Trade, Animal Welfare) from the consumer's point of view.

2. Background: the four analysed sustainability dimensions

Due to the fact that many consumers still have difficulties in fully understanding the term sustainability we decided to reduce the complexity of the term by analysing four dimensions (4 D) representing its different aspects. The dimensions we chose are: Environmental Protection; Climate Protection; Fair Trade; Animal Welfare. Environmental and Climate Protection represent the ecological aspects while Fair Trade and Animal Welfare represent the social aspects of sustainable food production.

Among these four, Environmental Protection is the most traditional in the sense that scientists, practitioners and consumers have all been aware of its relevance for the food industry for many years now. This concept has entered the daily lives of Germans in many different ways, whether through the consumption of organic food, recycling of waste or by seeking to save resources (Tremmel 2004; European Commission 2009). The market share of organic products for example has grown enormously in recent years in Germany. Organic food products are available not only in specialised shops but also in conventional supermarkets and even at discounters. Nevertheless, in absolute terms their relevance remains on a very low level of under 4 % (BöLW 2012).

The second dimension, Climate Protection, has in contrast not yet reached this wide acceptance or consciousness among consumers, but is still an aspect of growing importance. Food production and consumption have major impacts on the sustainability of the global food industry although the connections are yet not seen by the majority of consumers (European Commission 2008; WWF 2012). In Germany there is no labelling for climate friendly produced food yet. Consumers that care for such aspects have to look for other information that might indicate the climate friendliness of food production processes.

The two dimensions representing the social aspects of sustainable food are Fair Trade and Animal Welfare. Fair Trade sales have been growing for many years and fairly traded products such as coffee or juices have already entered supermarket shelves. The underlying motivation of guaranteeing fair prices for small scale producers in developing countries is to support and improve their living and working conditions, which is approved by many consumers in Germany (Fairtrade Deutschland 2013; Andorfer and Liebe 2012; Henseleit 2012). The overall market share even of the most prominent fair trade product coffee is however with 2 % still very low (Fair Trade Deutschland 2013).

Animal Welfare was chosen as the second social dimension, because it is of great importance for a majority of German consumers (Schulze 2008). In addition, it is one of the most emotionally discussed topics in German food industry and often the topic with the highest discrepancies between the opinions of consumers and practitioners (Böhm et al. 2010; Deimel et al. 2010; Franz et al. 2010; Kayser et al. 2012). Until now there is no comprehensive animal welfare label for meat products available in conventional

supermarkets. Consumers that want to be sure about good animal welfare conditions during meat production tend to buy organic meat products. For eggs there exists a system based on numbers indicating consumers how the eggs producing hens were kept (BMELV 2013).

3. Data and analysis

Data was collected during February and March 2012 in an online consumer survey. The standardised questionnaire was sent to consumers with the help of a private marketing research organisation. The final sample size for analysis was 300. A pre-test with 20 volunteers was done before the actual start of the study. The online questionnaire was created using the Globalpark software from Unipark. Data was analysed with Microsoft Excel 2007 and IBM Statistics SPSS 19.

The standardised questionnaires focus lies on sustainable food consumption, but for this paper we only analyse one specific question which is shown in figure 1.

The total number of analysed questionnaires is 300. In this sample 52 % respondents are female, 44 % are male. The mean age of the respondents is 45 years. The youngest respondent is 18, and the oldest 75 years old. The majority of the respondents lives in cities (5,000 – 100,000 inhabitants; 25 %) or big-cities (> 100,000 inhabitants; 32 %), which is typical for Germany. The education level in the sample is quite high compared to the German average (26 % have completed a university degree). Half of the sample report to have a monthly net income between 1,000 and 3,000 Euro.

Looking at the more specific sample characteristics, we find that 15 %, being a member of an NGO, are active in at least one of the four analysed fields. Especially environmental and animal protection NGOs have huge numbers of members in Germany. Additionally, over 30 % state that they donated money to such NGOs during the past 12 months. Being asked whether they abstain from any food due to religious or ethical reasons, 14 % respond with “yes”. Most of them report abstaining from eating meat, but also eggs from cage production and fish were mentioned.

Figure 1: Analysed question: importance of four sustainability dimensions

	4 Dimensions
How important it is to you that the food you consume…	…helps to protect the environment.
	…helps to protect the climate.
	…is fair traded.
	…guarantees good animal welfare conditions.

Answer options: 5 point Likert Scale:
(very important; important; neither important nor unimportant; unimportant; not important at all)
Source: Own illustration, 2013

To analyse the relevance of the four dimensions from a consumer perspective, we analysed whether, and if so how often, the dimensions were mentioned as "very important" or "important" (henceforth, we use important as meaning "very important" and "important").

4. Results

At first, we counted the frequency of answers that mentioned only one dimension to be important. This was the case for 9 % (28 cases) of the respondents. Animal Welfare was the most frequently mentioned dimension (21 cases) if respondents only evaluated one dimension as important. Much further behind come Fair Trade (5 cases) and Environmental Protection (2 cases). Climate Protection was not mentioned by any consumer as being the only dimension mattering to them.

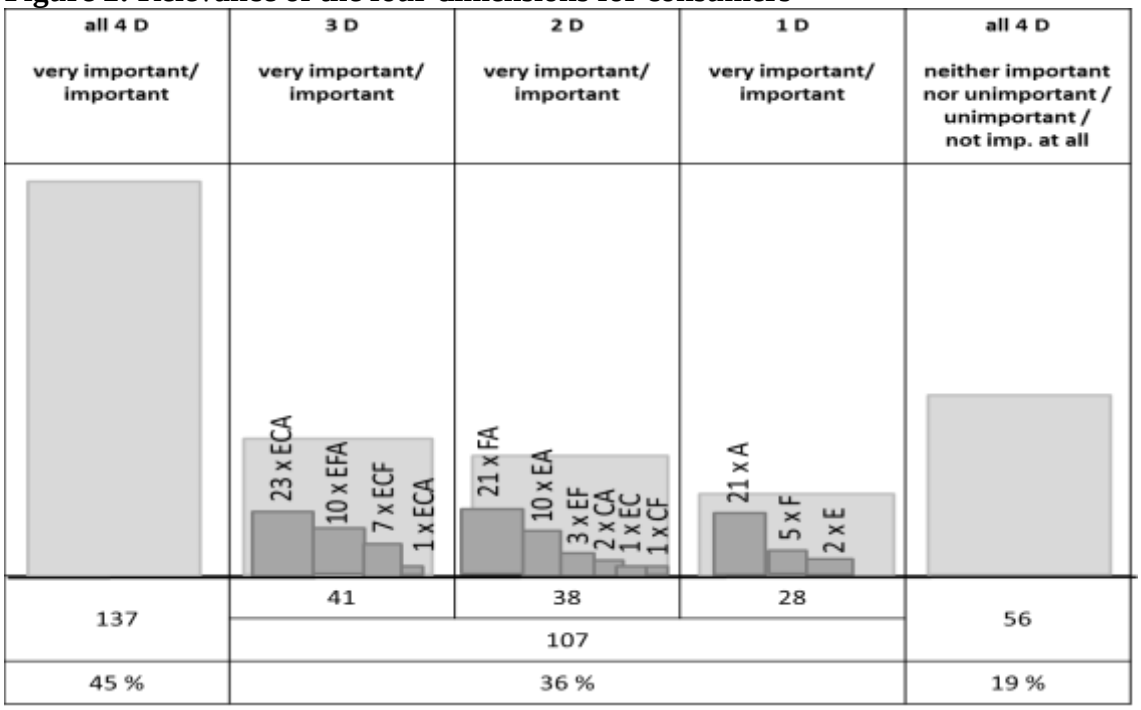
We then evaluated all cases where respondents claimed at least two dimensions to be important to them, which applies to 38 cases or 13 %. Here the combination of Animal Welfare & Fair Trade was the most frequent one (21 cases). In second position is the combination of Animal Welfare & Environmental Protection (10 cases) and in third position is Environmental Protection & Fair Trade (3 cases). Moreover, there are combinations of Climate Protection & Animal Welfare (2 cases), Environmental & Climate Protection (2 cases) and Climate Protection & Fair Trade (1 case). It becomes obvious that Animal Welfare is again the dimension included most of these combinations.

We then counted all cases where respondents stated that three of the four dimensions are important to them, totaling 41 respondents (14 %). The combination chosen by most to be important for them is that of Environmental Protection, Climate Protection &

Animal Welfare (23 cases) followed by Environmental Protection, Fair Trade and Animal Welfare (10 cases); Environmental Protection, Climate Protection & Fair Trade (7 cases) and Environmental Protection, Climate Protection & Animal Welfare (1 case).

Finally, we analysed the cases where respondents chose all four dimensions to be important to them, which applies to the majority: 45 %, or 137 cases. 19 % of the respondents do not evaluate any dimension as important. Figure 2 illustrates the above described results:

Figure 2: Relevance of the four dimensions for consumers



N = 300; E = Environmental Protection, C = Climate Protection, F = Fair Trade, A = Animal Welfare
Source: Own calculations, 2013

5. Conclusion

Interpreting the results, it can be summarised that the majority of German consumers is interested in sustainably produced food that respects the environment, climate, fairness and animal welfare in its production and trading process. Moreover, the results highlight the dimensions which agribusiness and the food industry need to further address in the future in Germany.

Taking a closer look at the results, Animal Welfare and Environmental Protection seem to be of greater relevance to consumers than Fair Trade and Climate Protection. Overall, Animal Welfare is the dimension which most respondents evaluate as important, no matter which other dimension they favour. It is a concern for many consumers since a long time, however, most German dairy and meat producers still fail in credible efforts to support such standards or communicate their actions in this field.

It can be concluded that corporate social responsibility (CSR) as well as sustainability labelling initiatives should be designed comprehensively. Those actors of the food supply chain who want to attract the majority of consumers, who care for all four dimensions of sustainability in food production and trading, need to show a credible and long term engagement for each dimension. Animal Welfare and Environmental Protection matter to most consumers. Animal Welfare and Fair Trade is also an often preferred combination. Fairness towards animals or people should thus be taken as serious aspect of sustainable food production. Climate Protection might already be highly relevant in business to business sustainability initiatives, but for consumers it still seems to be of less importance compared to the other dimensions with regard to sustainable food. It therefore seems to be less attractive to be communicated as single aspect of a sustainability initiative.

The results for the relevance question give a first impression about the positive attitude of consumers towards the four sustainability dimensions of food. Additional research is needed to answer the questions whether and how the perceived importance of the four sustainability dimensions can be converted into sustainable consumption behaviour.

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Chapter II: Characterising sustainable food consumers

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Hypothetical Bias in Choice Experiments:
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II.1 Characteristics and barriers of sustainable food consumption in Germany

Authors: Marie von Meyer-Höfer and Achim Spiller

Jahrbuch der ÖGA, Band (23) 2013, in press.

Structured Abstract

Purpose

Sustainable food is a steadily growing niche market in Germany, because consumers are increasingly interested in ecologically and socially responsible produced products. This paper focuses on sustainable food consumption by analysing the importance of four specific sustainability dimensions (4D=Environmental Protection, Climate Protection, Fair Trade, Animal Welfare). The main research questions are: How important are the 4D for consumers? How often do consumers buy sustainable food? Which barriers hamper the purchase of sustainable food?

Design / Methodology / Approach

Online consumer survey (N=300; 2012) with a questionnaire design based on the Theory of Planned Behaviour (TPB). Attitudes (importance of 4D) and barriers are measured on 5-point Likert Scales. Behaviour is measured by the frequency of sustainable food consumption. Barriers are measured on two different levels: 1. Information and availability barriers with specific regard to products labelled according to the 4D; 2. General barriers (price; lack of idealism and trust; fixed routines).

Findings

To many consumers the sustainability of food products is important, however, they do not always translate this positive attitude into purchasing behaviour. Animal Welfare is the dimension most consumers care about.

The perceived high prices for sustainable food are the major barrier for consumers, moreover they have difficulties to identify and know where to purchase sustainable products.

Implications

If the niche market for sustainable food is supposed to be mainstreamed, information about these products needs to be made easily available and comprehensive. Additionally, their premium price has to be better justified, by better communicating the additional qualities of sustainable food in the future.

Originality

Analysing different sustainability dimensions regarding their importance as well as barriers and behaviour concerning sustainable food consumption from a consumer's point of view simultaneously.

Keywords

Sustainable Food Consumption; Consumption Barriers; Environmental Protection; Climate Protection; Fair Trade; Animal Welfare

1. Introduction

Sustainability is being increasingly recognised as a major issue for most industries, but especially in the agribusiness and food industry where it has become an important marketing topic (Vermeier and Verbeke, 2006, 169; Grunert, 2011, 207; Verain et al., 2012, 123).

Sustainable food consumption considers not only individual needs and desires, but also the environmental and social responsibility of each consumer (Vermeier and Verbeke, 2006, 170; Reisch, 2011, 1). Today, sustainable food products are in demand because environmentally conscious consumption, as well as social responsibility, plays an increasing role for many consumers. This is also reflected in the growing number of labels certifying the positive ecological or social attributes of food products (Franz et al., 2010, 417). On the German food market however, there is no comprehensive sustainability label yet.

The question of which target groups may have a particular relevance for sustainable food has already been addressed by a number of studies. However, most of them analyse single sustainability aspects such as environmental friendly or organic consumption (i.e. Roberts, 1996; Loureiro et al., 2001; Honkanen et al., 2006; Aertsens et al., 2009), or look at ethical aspects of consumption such as fair trade (i.e. Mc Cluskey et al., 2009; Adams and Raisborough, 2010) and animal welfare (i.e. Honkanen and Olsen, 2009; Lagerkvist and Hess, 2011). Surprisingly to our knowledge, no published study has yet analysed different sustainability dimensions from a consumers' point of view simultaneously. Thus, this paper focuses on sustainable food consumption by analyzing the importance of four specific sustainability dimensions (4D=Environmental Protection, Climate Protection, Fair Trade, Animal Welfare). Three research questions are posed: How important are different dimensions of sustainable food production and trade for consumers? How often do consumers buy sustainable food? Which barriers hamper the purchase of sustainable food?

2. Introduction of analysed sustainability dimensions

Today, sustainability is a widely used claim in the agri-food industry. Based on the idea that it is a composition of at least three major pillars (economic, environmental, ethical), this study analyses the environmental and ethical pillar: Environmental sustainability dimensions (Environmental- / Climate Protection); Ethical dimensions (Fair Trade / Animal Welfare).

Among the analysed 4D, Environmental Protection (E) is the most traditional because the concept has entered the daily lives of Germans in many different ways, i.e. through recycling or the consumption of organic food (European Commission, 2009). The market share of organic products in Germany has grown enormously in recent years and the awareness of organic labels is quite high (v. Meyer-Höfer and Spiller, 2013, 4). Nevertheless, in absolute terms, their market share remains on a very low level (4%) (Bölw, 2012).

In contrast, Climate Protection (C), while very important for business and policy actors, has not reached this wide acceptance or consciousness among German consumers yet and there is no label for climate friendly food so far (European Commission 2008; WWF, 2012).

Fair Trade (FT) initiatives seek better prices, decent working conditions and fair terms of trade for farmers. In Germany, the Fair Trade label is well known, but the overall market share even of the most prominent fair trade product coffee is still very low (2%) (Fairtrade Deutschland, 2013; Henseleit, 2012, 138; v. Meyer-Höfer and Spiller, 2013, 4).

For a majority of German consumers, Animal Welfare (AW) is an ethical concern of great importance (Schulze et al., 2008, 482). In addition, it is a topic with major discrepancies in the opinions of consumers and producers (Böhm et al., 2010, 265; Kayser et al., 2012, 421). During the data collection, there was no comprehensive animal welfare label for meat products available in conventional German supermarkets.

3. Methodology and Data

This exploratory study was conducted to gain first insights into the characteristics and barriers of sustainable food consumption in Germany. The questionnaire was structured following the Theory of Planned Behavior (TPB) so that the constructs attitudes, behavior and barriers could be analysed (Ajzen, 1985, 1991). Attitudes were measured with the following question: "How important it is to you that the food you buy has been…?" produced / traded according to the 4D. Answer options laid on a five point Likert-Scale from "not important at all" (-2) to "very important" (+ 2). For the measurement of buying behavior the following question was used: "How often do you buy…" food produced / traded according to the 4D with the answering options: very often; often; sometimes; rarely; never; I am not sure.

The barriers of sustainable food consumption were measured on two different levels using the most often mentioned barriers by consumers with regard to sustainable food consumption (Aertsens et al., 2009, 1150). First respondents were asked whether they know where to buy sustainable food and how to identify such products with regard to the 4D. In a second step, they were asked about more detailed barriers not differentiating between the 4D anymore: I think such products are too expensive. I don't know why I should buy such products. I don't think such products do really exist. I would buy such products, but I often forget it while shopping.

During spring 2012, data was collected in an online consumer survey. With the help of a private marketing research organization, the standardised questionnaire was sent to 2.530 respondents without any quota or regional restrictions. The final sample size for analysis was 300. A pre-test with 20 volunteers was done before the actual start of the study. In the sample, 52% respondents are female, 44% are male (4% missing). The mean age of the respondents is 45. The level of education in the sample is comparatively higher than the German average. Due to the sample characteristics, the results of this study should not be generalised, but interpreted as first exploratory insights.

4. Results

4.1 Importance of 4D from a consumer's point of view

In order to analyse the relevance of the 4D from a consumers' perspective, it was counted whether, and if so, how often, the 4D were mentioned as very important / important. 19% of the respondents do not find any of the 4D important. About one third (36%) does find 1 (9%), 2 (13%) or 3 (14%) of the 4D important. Nearly half (N=136; 45%) of the respondents evaluate all 4D as important to them when buying food. Animal Welfare is the most frequently mentioned dimension, while in comparison, Climate Protection does not matter to consumers.

4.2 Conversion of positive attitude into buying behaviour

The above described results show that German consumers care about sustainability when they buy food. The question arising from this is whether the positive attitude 136 consumers have towards the 4D is also translated into sustainable food buying behavior.

The results show that out of the 136 respondents stating all 4D are important, only 26 also state to buy products that have been produced accordingly very often / often. The small number of these so called "Sustainable Food Consumers" reveals a clear Attitude-Behavior Gap (ABG) (Fishbein and Ajzen, 1975). 110 respondents, hereinafter "Indifferents", state they value all 4D as important for them, but they do not buy such products often. Moreover, there is another group identified as the "Conventional Food Consumers" (N=164) that do not think that any of the 4D are important to them and thus do not buy such products.

4.3 Barriers that hamper sustainable food buying behaviour

Research question three is analysed in order to reveal the barriers hampering sustainable food consumption in Germany. With the help of ANOVA-Tables mean value comparisons are used to show the differences between the three consumer groups.

The identification of food products that have been produced according to the 4D and the knowledge where to buy such food were analysed at first. The overall results are displayed in Table 1 and 2.

Respondents seem to have difficulties in identifying sustainable food which is especially true for environmental and climate friendly produced food. Also, when looking at the knowledge where to buy sustainable food, they seem to have bigger difficulties to find food that has been produced according to these ecological aspects. The group of "Sustainable Food Consumers" has fewer problems with the two tested barriers, while in the other two groups the barriers augment.

Table 1: Identification and Availability Barrier

		E	**FT**	**AW**	**C**
It is easy for me to identify food that has been…					
Significance of mean value differences	*Sig.*	*.000*	*.000*	*.000*	*.000*
Sustainable Food Consumers	MV	0,42	0,85	0,65	0,31
	SD	0,809	0,925	1,018	0,970
Indifferents	MV	0,10	0,41	0,26	-0,05
	SD	0,928	0,989	0,945	0,913
Conventional Food Consumers	MV	-0,27	-0,02	-0,08	-0,50
	SD	0,921	1,074	1,039	0,869
Total	*MV*	*-0,07*	*0,21*	*0,11*	*-0,26*
	SD	*0,940*	*1,066*	*1,027*	*0,933*
I know where to buy food that has been…		**E**	**FT**	**AW**	**C**
Significance of mean value differences	*Sig.*	*.000*	*.000*	*.000*	*.000*
Sustainable Food Consumers	MV	1,12	1,19	1,23	0,92
	SD	0,653	0,694	0,710	0,688
Indifferents	MV	0,48	0,65	0,68	0,27
	SD	0,974	0,963	0,976	0,957
Conventional Food Consumers	MV	0,05	0,23	0,25	-0,22
	SD	1,061	1,142	1,104	1,039
Total	*MV*	*0,30*	*0,46*	*0,49*	*0,06*
	SD	*1,049*	*1,086*	*1,071*	*1,042*

Sig. = Significance; MV=mean value; SD=standard deviation
Scale: -2=does not apply at all; -1=does not apply; 0=party; 1=applies; 2=fully applies
Source: Own data, 2012

Apart from the barriers that were tested for all 4D, there were four more general barriers tested (Table 2). The results again display that there are significant differences between the three consumer groups.

The "Sustainable Food Consumers" do not perceive any of the tested barriers as such, while for the "Indifferents" and "Conventional Food Consumers" price constitutes a clear barrier for sustainable food purchases. Apart from this, the low mean values of the barriers concerning the lack of trust in the certification of such products and the difficulty to change fixed routines hint at important additional reasons why these two consumer groups do not buy sustainable food products frequently.

Table 2: Availability Barrier

		High price	**Lack of idealism**	**Lack of trust**	**Fix routines**
Significance of mean value differences	*Sig.*	*.000*	*.000*	*.005*	*.015*
Sustainable Food Consumers	MV	-0,08	-0,92	-0,08	-0,58
	SD	0,891	1,017	1,129	0,902
Indifferents	MV	0,35	-1,05	-0,17	-0,14
	SD	0,894	0,811	1,030	0,903
Conventional Food Consumers	MV	0,71	-0,54	0,22	0,01
	SD	0,912	1,059	0,940	1,012
Total	*MV*	*0,51*	*-0,76*	*0,05*	*-0,10*
	SD	*0,934*	*0,999*	*1,005*	*0,975*

Sig. = Significance; MV=mean value; SD=standard deviation
Scale: -2=does not apply at all; -1=does not apply; 0=party; 1=applies; 2=fully applies
Source: Own data, 2012

5. Discussion

The market for sustainable food in Germany is still a niche market, but steadily growing. Many consumers care about the sustainability of food products, although this positive attitude is not always translated into purchasing behavior. There is a big group of consumers that believes in the importance of all 4D (45%), but only occasionally buys such products. This group should be the target group for a more effective marketing of such food. Consumers still have difficulties to identify and know where to purchase sustainable products, although there are well known labels such as Fair Trade. Specifically, respondents had clear difficulties identifying environmental friendly food,

which might be due to the fact that occasional consumers tend to not exclusively associate organic products with environmental but more with health aspects (Wier et al., 2008, 412). Animal Welfare is the dimension most consumers care about and thus would be a good topic for supply chain actors to focus on when they want to profit from the possibilities of the sustainable food market. Climate friendly food production however does not seem to get much attention from consumers. The perception that the price for sustainable food is too high is a major barrier for consumers even if they have positive attitudes towards sustainability.

For policy as well as marketing actors, the results of this study hint at the importance of better communicating the additional qualities of sustainable food in the future. If the niche market is supposed to be mainstreamed, information about sustainable products, as well as the products themselves, needs to be made easily available and comprehensive i.e. via labels. Moreover, it is crucial to educate and motivate consumers that their consumption impacts the overall sustainability the premium price is justified.

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II.2 Characterising convinced sustainable food consumers

Authors: Marie von Meyer-Höfer, Vera von der Wense and Achim Spiller

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Structured Abstract

Purpose

Today, the majority of sustainable food products are marketed as organically produced and or fairly traded. Although the segment of core consumers for such products is often responsible for the majority of revenue and profit, their characteristics are often not well known. This paper generates deeper insights into their distinguishing characteristics with regard to their demography, attitudes, perceived consumer effectiveness and their shopping behaviour. Furthermore, this study contributes to the sparse literature about tea consumption.

Design / Methodology / Approach

An online consumer survey with tea consumers in Germany (N=300; 2012). First, respondents took part in a choice experiment with tea varying in its price (four levels) and quality (conventional / organic / fair trade / organic & fair trade). Then they had to complete a questionnaire about their attitudes towards food consumption.
Respondents were grouped into those who always chose sustainable tea, no matter what price, (convinced sustainable consumers) and those that always chose the conventional tea (convinced conventional consumers). Bivariate logistic regression is used to analyse the influencing socio-demographic and attitudinal dimensions that characterise the two consumer groups.

Findings

Convinced sustainable consumers are more often female than male and perceive that their personal purchase decision has an impact on overall sustainable development. They show a higher willingness to increase sustainability through their consumption behaviour. Moreover, they are very much interested in high food quality and are not as much influenced by advertisements and offers in their purchase decision-making as convinced conventional consumers.

Implications

Marketing actors, who want to promote sustainable food consumption, should focus on motivating and convincing consumers that their personal purchase decisions matter for global sustainable development. A marketing approach purely based on information and facts might, however, not be very effective. To really convince consumers, they should be addressed emotionally.

Originality

This is the first study characterising the core target group for sustainable consumption: the convinced sustainable food consumer on the basis of choice experiment data using tea.

Keywords:
Sustainable Food Consumption; Convinced Consumers; Heavy Buyers; Tea Consumption

II.3 Hypothetical Bias in Choice Experiments: A Web-Based Study with Real Consequences

Authors: Ulf Liebe, Marie von Meyer-Höfer and Achim Spiller

Working Paper.

Structured Abstract

Purpose

The so-called hypothetical bias, the divergence between the hypothetical and actual willingness to pay, is a major issue in stated preference experiments. This paper tests the hypothetical bias and hence external validity of (discrete) choice experiments in a web survey. Moreover, the advantages and disadvantages of web surveys for testing the hypothetical bias are discussed.

Design / Methodology / Approach

Web-based choice experiment with an efficient design conducted 2012. Respondents (N=299) were randomly assigned to the hypothetical or non-hypothetical choice experiment. Tea (Darjeeling) was used for the eight choice sets presenting each two generic alternatives (Tea A / Tea B) and an opt-out option (none of these). The alternatives were described by the three attributes organic production (attribute levels: no, yes), fair trade (attribute levels: no, yes), and price (at four levels).

Findings

At the level of utility functions, differences in the estimated coefficients for the attributes organic and fair trade are not statistically significant. However, the valuation of the price attribute differs in a significant manner; participants of the non-hypothetical choice experiment are more price sensitive. At the level of willingness-to-pay estimates, lower values for the attributes organic production and fair trade in the non-hypothetical experiment are found. This provides evidence of a hypothetical bias in choice experiments.

Implications

This study demonstrates the great potential of web surveys for studying the hypothetical bias in choice experiments. The main advantage of web surveys is that a large sample of individuals can take part at a comparatively low cost. Such samples are closer to the characteristics of the general public and, hence, results that are more valid. This is important because most choice experiments are used to reveal monetary values and market shares for private, quasi-public or public goods, and are subsequently used to inform (political) decision makers.

Originality

This paper presents the first study to test the hypothetical bias and hence external validity of (discrete) choice experiments in a web survey. It comprises a larger sample and sample coverage of the general population and is less prone to context effects than studies that rely on some form of a laboratory or field experimental setting.

Keywords

Choice Experiment; Hypothetical Bias; Social Desirability; Stated Preferences; Web Survey; Willingness to Pay

Chapter III: Organic food consumption in mature and emrging markets

Article III.1

Mature and emerging organic markets: Modelling consumer attitude and behaviour with Partial Least Square Approach, 67-68.

Article III.2

Is there an expectation gap?
Consumers' expectations towards organic: An exploratory survey in mature and emerging European organic food markets, 69-70.

III.1 Mature and emerging organic markets: Modelling consumer attitude and behaviour with Partial Least Square Approach

Authors: Marie von Meyer-Höfer, Evelyn Olea Jaik, Carlos Padilla Bravo and Achim Spiller

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Structured Abstract

Purpose
Although the organic food sector has been researched for around 20 years, still little is known about consumer behaviour when comparing developed and emerging organic markets. Therefore, the aim of this study is to investigate the determinants of organic food consumption in a mature (Germany) and an emerging (Chile) organic market.

Design / Methodology / Approach
Online consumer survey conducted 2012 in Germany (N = 283) and in Chile (N = 284). Based on Ajzen's Theory of Planned Behaviour (TPB), a structural equation model was built and tested using Partial Least Squares (PLS) modelling.

Findings
The use of altruistic arguments in organic food marketing is a key aspect to increase organic food demand in both countries. However, egoistic motives might also gain importance in Chile, like they already have in Germany. In both countries, the barriers for organic food consumption have to be addressed with great attention; a lack of information and availability, especially in Chile, and scepticism about organic food in Germany.

Implications
In Germany, both altruistic and egoistic motivations influence consumer attitudes with regard to organic food and should be stressed by marketers. In Chile, ethical behaviour drives organic food consumption at least for the medium and upper class. Marketing campaigns focussing on the consumer's ethical responsibility could be the appropriate promotion strategy in Chile. Moreover, labels and other positioning instruments should be used there to help consumers to easily recognise organic food.

Originality
Comparison of an emerging organic food market (Chile) with a currently mature market (Germany) using PLS.

Keywords
Organic Food; Consumer Behaviour; Partial Least Squares; Germany; Chile

III.2 Is there an expectation gap? Consumers' expectations towards organic: An exploratory survey in mature and emerging European organic food markets

Authors: Marie von Meyer-Höfer, Sina Nitzko and Achim Spiller

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Structured Abstract

Purpose
While the European organic regulation exists since more than 20 years consumers still do not seem to know what to expect from EU labelled organic food. Therefore this exploratory study examines consumer expectations towards organic food in mature and emerging EU organic food markets.

Design / Methodology / Approach
Online consumer survey data (N=1,180; 2011) from Germany, the United Kingdom, Spain, and the Czech Republic are used to analyse the question: "Which criteria would you expect of an organic food product labelled with the EU-organic label?". 23 items including organic production criteria according to EC 834/07 and unregulated food quality criteria are tested. An explorative factor analysis with these items is performed for each country.

Findings
In all analysed countries consumers' expect of organic food: "no chemical pesticides", "no mineral fertilisers", "no GM technology" and "few additives", "naturalness", "high quality" (not in the UK) and "food safety" (not in the UK). However, only some of these are clearly defined or regulated by the EC 834/07.

Implications
Country specific consumer expectations regarding organic food need to be addressed by policy and marketing actors.

Originality
Only few studies deal with consumer and marketing issues in EU countries with different organic market development. This study identifies consumer expectations towards organic food which should be addressed in the ongoing revision process of the EC 834/07 and in marketing strategies.

Keywords
Organic Food; Expectation Gap; Food Differentiation

Chapter IV: Labelling for sustainable food

Article IV.1

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IV.1 Diffusionsstrategien für Nachhaltigkeitslabel: Das Fallbeispiel Tierschutzlabel
(Diffusion strategies for sustainability labels: The case of an animal welfare label)

Authors: Annabell Franz, Marie von Meyer and Achim Spiller

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Structured Abstract

Purpose

Labels have become a popular policy instrument to differentiate markets and to enable consumers to make conscious buying decisions. Today, a large number of sustainability labels for food exist, but only very few are successful. Most are largely unknown and only available in very small niche markets.

For the market introduction of new voluntary sustainability labels it is thus important to identify successful diffusion strategies. This is done here by taking a planned an aspired German animal welfare label as example.

Data / Methodology / Approach

On the basis of the classic diffusion strategy by Rogers (2003) and the theory of the Conservation and Community Investment Forums (CCIF, 2002) criteria for a successful market introduction of innovative sustainability labels are discussed.

An extensive literature review as well as semi structured expert interviews (N=14; 2009) help to identify the opinions of consumers and supply chain actors concerning the market introduction and diffusion strategy for a planned animal welfare label in Germany.

Findings

An exponential market diffusion for a new animal welfare label on the German food market would be preferable for consumers, but a slower diffusion would also be possible. For the supply side, a slower s-curved diffusion with a "Gold-Standard" strategy would be preferable. Moreover, setting high animal welfare standards could reduce possible conflicts with regard to the credibility of the label.

Implications

For a successful market introduction of a new sustainability label on the food market it is crucial to first identify the appropriate diffusion strategy. In doing so, the perspectives of the consumers as well as the supply side actors have to be taken into account. This requires professional and consistent management.

Originality

There are only very few studies that deal with the diffusion of sustainability labels taking into account the perspectives of all stakeholders along the supply chain. This is the first study to discuss the possible diffusion strategies for an animal welfare label.

Keywords

Sustainability Labelling; Diffusion Strategy; Animal Welfare

IV.2 Anforderungen an eine nachhaltige Land- und Ernährungswirtschaft: Die Rolle des Konsumenten (Requirements for a sustainable agri-food sector: The consumers‘ role)

Authors: Marie von Meyer-Höfer and Achim Spiller

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Structured Abstract

Purpose

Labelling is of major importance for the proliferation of sustainable products in the food market. Only if labels are based upon sound and verifiable criteria, and are known and understood, can they help consumers to make conscious consumption decisions.
This study thus analyses the following questions: How high is the level of awareness of and trust in sustainability labels for food in Germany? To what extent are labelled food products bought?

Design / Methodology / Approach

Online consumer survey in 2012 (N=300). Testing five existing sustainability labels for food products (in the categories organic, fair trade, animal welfare) and three fictitious labels (organic, fair trade, animal welfare) on German consumers.
The tested labels were shown to the respondents, who then had to answer whether they have already seen the label. If yes, they were asked whether they know the meaning of the label and to state their level of trust and buying frequency.

Findings

Only very few labels are known, trusted and bought by the surveyed consumers (i.e. Bio-Siegel, Fair Trade). The EU-Organic Label is generally unknown by most of the consumers who also do not really trust it. Moreover, the general level of trust in food labels is low. Under these conditions, labelling is only of marginal use to promote sustainable food consumption. Reasons for this are identified in shortcomings of marketing and public regulation.

Implications

To overcome the current shortcomings an umbrella label is suggested. Such a strategy would communicate various sustainability attributes (environmental, social, health, ethical) based on a multilayer public certification scheme. Furthermore, intensive public relations work is required to raise consumer awareness.

Originality

The analysis of not only existing, but also fictitious labels enables the results to be benchmarked and easily visualised.

Keywords

Sustainability; Food Labelling; Level of Awareness; Consumer Trust, Umbrella Label

1. Nachhaltige Lebensmittel

Seit der Rio-Konferenz 1992 ist „nachhaltige Entwicklung“ als eines der dringlichsten globalen Themen etabliert. Die Diskussion darüber erfasst mit einiger zeitlicher Verzögerung auch die Land- und Ernährungswirtschaft. Angesichts der steigenden Weltbevölkerung und einer Angleichung an westliche Ernährungsstile mit einem hohen ökologischen Fußabdruck werden Konzepte zur nachhaltigen Produktion von Lebensmitteln, aber auch zum nachhaltigen Lebensmittelkonsum wichtiger (Verain et al. 2012). Ähnlich wie der Begriff Nachhaltigkeit an sich, ist auch der Begriff nachhaltiger Konsum von Lebensmitteln vielschichtig. Eine umfassende, englischsprachige Definition nachhaltigen Konsums lautet: „Sustainable food consumption is a choice for food which is beneficial and life enhancing for individuals, society and the planet.” (Reisch 2010). In diesem ganzheitlichen Sinn wird nachhaltiger Lebensmittelkonsum jedoch nur selten praktisch umgesetzt oder in der Forschung operationalisiert.

Ein grundsätzliches Problem nachhaltig produzierter Lebensmittel ist, dass sie im informationsökonomischen Sinn „Vertrauensgüter“ sind (Ackerlof 1970). Die besonderen Eigenschaften eines nachhaltigen Lebensmittels können am Endprodukt vom Konsumenten nicht überprüft werden. Aus diesem Grund muss der Entstehungsprozess entlang der gesamten Wertschöpfungskette betrachtet werden.

Es ist weitgehend Konsens in der Forschung, dass das Ergebnis solcher Analyse- und Bewertungsmethoden durch eine unabhängige Kontrolle (Third Party Certification) verifiziert und mit einem Label für den Verbraucher sichtbar gemacht werden sollte (Jahn et al. 2005). Label werden deshalb im Lebensmittelmarketing zunehmend eingesetzt und auch von der Politik verstärkt genutzt. Für die Politik ist Food-Labelling ein Instrument mit geringer Eingriffstiefe in Marktprozesse, das neben der Erhöhung der Transparenz auch Steuerungsfunktionen zur Verringerung negativer externer Effekte (z. B. in den Bereichen Tierschutz, Klimaschutz, Gesundheitskosten) erfüllen soll (Eberle et al. 2011).

Mit Blick auf die Nachhaltigkeit von Lebensmitteln werden in Deutschland bisher häufig nur Teilaspekte gekennzeichnet, da ein Dimensionen übergreifendes Gewichtungs- und Bewertungsverfahren noch nicht vorliegt. Am Markt ist die Relevanz von Umweltlabeln, zu denen auch die Kennzeichen für Bio-Produkte gehören, am

größten. Im Bereich der sozialen Aspekte ist in Deutschland vor allem der Bereich des fairen Handels bekannt, der unter anderem faire Preise, sichere Arbeitsbedingungen und das Verbot von Kinderarbeit einschließt. Aktuell gewinnt Tierschutz in Deutschland an Bedeutung (Franz et al. 2010). Im Folgenden wird von Nachhaltigkeitslabeln gesprochen, wenn bei der Kennzeichnung mindestens einer der Bereiche Ökologie, Soziales oder Tierschutz berücksichtigt wird.

Damit ein Label zu einer informierten Konsumentscheidung der Verbraucher beitragen kann, muss es einfach und verständlich sein sowie auf fundierten und nachgeprüften Kriterien beruhen. Zudem müssen die Label den Konsumenten bekannt sein, um nicht in einer Flut ähnlicher und teils missverständlicher Zeichen unterzugehen. Werden diese Bedingungen nicht erfüllt, kann ein unübersichtliches Informationsangebot zu Überforderung und Verwirrung der Verbraucher führen. Im schlimmsten Fall erwächst daraus eine Weigerung, sich überhaupt mit dem Angebot zu befassen (information overload, Kroeber-Riel et al. 2009).

Vor diesem Hintergrund befasst sich die folgende Untersuchung mit dem Wissen und der Einstellung von Verbrauchern und dem Konsum nachhaltig produzierter Lebensmittel in Deutschland, die durch Label gekennzeichnet sind. Die konkreten Forschungsfragen lauten:

- Wie groß ist die Bekanntheit von Nachhaltigkeitslabeln in Deutschland?
- Wie groß ist das Vertrauen in solche Zeichen?
- In welchem Umfang werden gelabelte Produkte gekauft?

2. Emirische Untersuchung

Grundlage der hier vorgestellten Studie ist eine im Frühjahr 2012 online durchgeführte Verbraucherbefragung zum Thema „Nachhaltiger Lebensmittelkonsum und Labelling“. Insgesamt wurden 300 Verbraucher im Alter zwischen 18 und 75 Jahren (Durchschnittsalter 45 Jahre) befragt mit einem Anteil von 54 % weiblichen und 45 % männlichen Personen. Der Großteil der Befragten lebt in einer Stadt (5.000 – 100.000 Einwohner; 25 %) oder Großstadt (> 100.000 Einwohner; 32 %). Das Bildungsniveau der Stichprobe ist höher als das im Bundesdurchschnitt. Aufgrund dieser Verzerrung

und der eingeschränkten Stichprobengröße handelt es sich um eine umfangreiche, aber nicht repräsentative Sondierungsstudie.

Der Schwerpunkt der Befragung lag auf Fragen zur Wiedererkennung von und zum Hintergrundwissen zu Nachhaltigkeitslabeln auf dem deutschen Lebensmittelmarkt. Außerdem wurde das Vertrauen der Probanden in Label allgemein und in Nachhaltigkeitslabel für Lebensmittel im Besonderen untersucht. Zu den hier untersuchten Nachhaltigkeitslabeln zählen fünf existierende Label aus den Bereichen Umwelt, Fairer Handel und Tierschutz sowie drei nicht existierende Label (im Folgenden als „Fakes“ bezeichnet), die zum Zweck der Kontrolle in die Befragung eingebaut wurden. Mit der Einbeziehung der nicht existierenden Zeichen besteht die Möglichkeit, diese bei der Ergebnisauswertung als Bewertungsmesslatte für die tatsächlich bestehenden Label zu nutzen. Tabelle 1 gibt näheren Aufschluss zu den untersuchten Labeln und ihrer Bedeutung.

Tabelle 1: In der Studie erfasste Label

Label	**Bedeutung**
Deutsches Bio-Siegel	Staatliches Bio-Siegel: es wird in Deutschland an Lebensmittel aus ökologischem Landbau (nach EG-Öko VO) seit 2001 auf freiwilliger Basis vergeben.
EU-Bio-Siegel	EU-Zeichen: seit dem 01.07.2010 müssen in der EU alle Bio-Lebensmittel obligatorisch mit diesem Label gekennzeichnet werden.
Fairtrade	Unabhängiges Zertifizierungssystem: Fairer Handel, der zugunsten von Mensch und Umwelt gestaltet wird. Hauptprodukte sind Kaffee, Kakao, Bananen und Blumen. Das derzeitige Zeichen wird seit 2003 verwendet.
Neuland	Verbandszeichen: tiergerechte, umweltschonende und kleinbetriebliche Nutztierhaltung. Das Label wird seit 1988 verwendet.
Marine Stewardship Council (MSC)	Unabhängiges Zertifizierungssystem: umweltverträglicher und verantwortungsbewusster Fischfang. Es wird seit 1997 verwendet.
Fake-Label	**Slogans der Fake-Label**
Fake-Umwelt	„Schütz unsere Umwelt“
Fake-Tierschutz	„Tierschutz in der Landwirtschaft“ für Rinder, Schweine, Geflügel und Fische
Fake-Fairer Handel	„Fair gehandelt – Gerecht geteilt“

Quelle: Eigene Darstellung, 2012

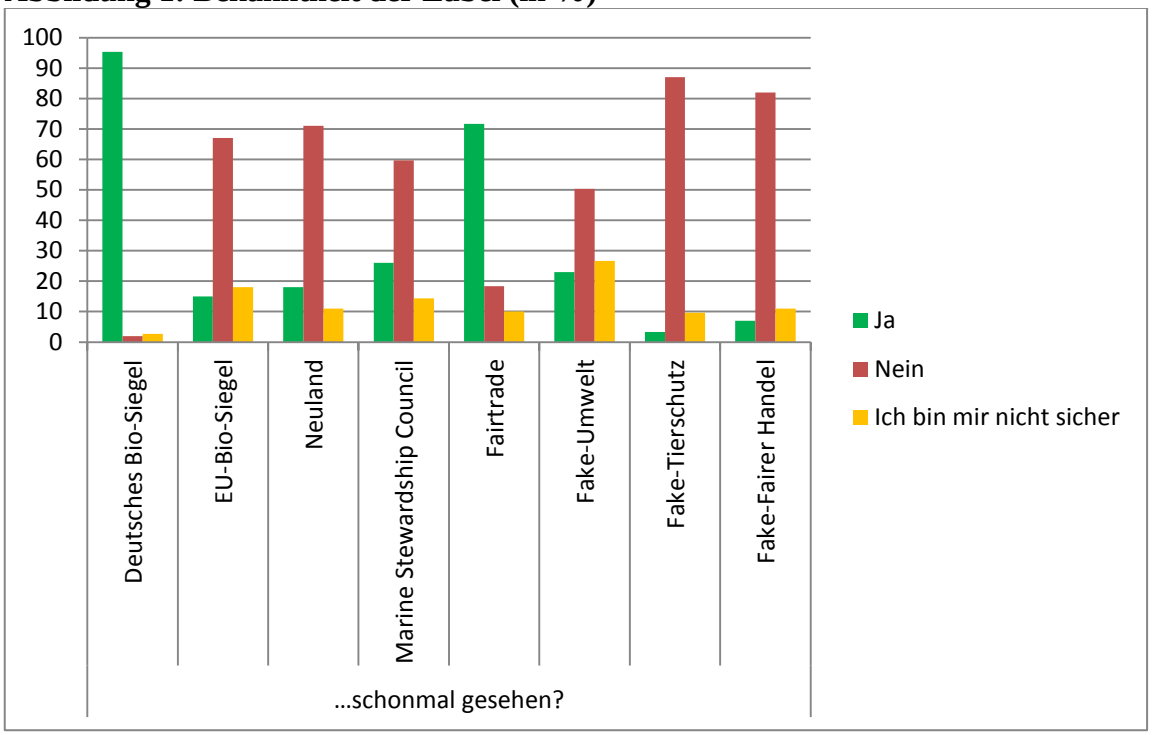
Zu Beginn der Erhebung wurden die Bildzeichen der untersuchten Label präsentiert und der gestützte Bekanntheitsgrad ermittelt. Den Probanden, die das entsprechende Zeichen kannten, wurden anschließend drei weitere Fragen zum jeweiligen Label gestellt: Hintergrundwissen über die Bedeutung des Labels (Antwortoptionen: Ja; Nein; Ich bin mir nicht sicher), Vertrauen in das Label (5-stufige Likertskala von „vertraue ich voll und ganz“ bis „vertraue ich überhaupt nicht“) und Kauf von gelabelten Produkten (Antwortoptionen: Ja; Nein; Ich bin mir nicht sicher). Anschließend wurde das generelle Vertrauen in Lebensmittellabel ebenfalls auf einer 5-stufigen Likertskala abgefragt.

3. Ergebnisse

Wie Abbildung 1 zeigt, ist das mit Abstand bekannteste Bild-Zeichen unter den untersuchten Nachhaltigkeitslabeln das Deutsche Bio-Siegel (95,3 %). Dieses Ergebnis deckt sich mit dem Resultat anderer Studien (Buxel und Schulz 2010). Auch das Fairtrade-Siegel haben 71 % der Probanden bereits einmal gesehen. Bei den anderen Zeichen liegt der Bekanntheitsgrad deutlich niedriger. An dritter Stelle steht das MSC-Siegel für nachhaltigen Fischfang (26 %). Ausgesprochen gering ist der Bekanntheitsgrad des EU-Bio-Siegels, das seit dem 1. Juli 2010 obligatorisch auf allen Bioprodukten in der EU zu verwenden ist. Der geringe Bekanntheitsgrad des Zeichens für Fleisch aus besonders artgerechter Haltung (18 %) ist wenig verwunderlich, da Neuland-Fleisch in Deutschland nicht flächendeckend erhältlich ist.

Erstaunlich ist, dass das gar nicht existierende Fake-Umwelt-Label (23 %) einen höheren Bekanntheitsgrad als Neuland oder das EU-Bio-Siegel aufweist. Hier wird bereits ein Teil der offensichtlich bei Verbrauchern herrschenden Unsicherheit im Umgang mit Labeln deutlich.

Abbildung 1: Bekanntheit der Label (in %)



Quelle: Eigene Erhebung, 2012; N = 300

Alle Probanden, die angegeben hatten, ein bestimmtes Zeichen zu kennen, wurden anschließend gefragt, ob sie auch dessen Bedeutung kennen, ob sie diesem Signet vertrauen und ob sie die entsprechend gekennzeichneten Produkte kaufen. Die Tabellen 2 und 3 fassen diese Ergebnisse zusammen.

Tabelle 2: Hintergrundwissen über die Label (Zahl der Nennungen)

	Deutsches Bio-Siegel	**EU-Bio-Siegel**	**Neu-land**	**MSC**	**Fair-trade**	**Fake-Umwelt**	**Fake-Tier-schutz**	**Fake-Fairer Handel**
Schon mal gesehen	286	45	54	78	215	69	10	21
Kennen Sie die Bedeutung? (Wissen)								
Ja	215	14	21	54	183	33	9	12
Nein	17	14	19	3	7	11	0	2
Ich bin mir nicht sicher	54	17	14	21	25	25	1	7

Quelle: Eigene Erhebung, 2012; N=300

Tabelle 3: Vertrauen in die Label (Zahl der Nennungen)

	Deutsches Bio-Siegel	**EU-Bio-Siegel**	**Neu-land**	**MSC**	**Fairtrade**	**Fake-Umwelt**	**Fake-Tier-schutz**	**Fake-Fairer Handel**
Schon mal gesehen	286	45	54	78	215	69	10	21
Inwiefern vertrauen Sie den Labeln? (Vertrauen)								
Vertraue ich (voll und ganz)	162	19	24	42	151	32	7	15
Teils/teils	90	18	25	31	46	25	1	4
Vertraue ich nicht (überhaupt nicht)	30	2	1	4	11	5	2	0
Weiß ich nicht	4	6	4	1	7	7	0	2
Fehlende Angaben	14	255	246	222	85	231	290	279
Gesamt	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**

Quelle: Eigene Erhebung, 2012; N = 300

Von den 286 Probanden, die das deutsche Bio-Siegel kennen, geben 215 (75 %) an, die Bedeutung des Labels zu kennen. Relativ hohe Werte weist das Fairtrade-Label mit einer Quote von 85 % auf. Die entsprechenden Prozentwerte liegen für das MSC-Label bei 69 %, für das Fake-Umwelt-Label bei 48 %, für Neuland bei 39 %, für das EU-Bio-Siegel bei 26 %, für das Fake-Fairer Handel bei 57 % sowie für das Fake-Tierschutz-Zeichen bei 90 %. Rechnet man den Anteil derjenigen, die bei der Selbsteinschätzung um den Bedeutungsgehalt der jeweiligen Zeichen wissen, auf die Gesamtstichprobe hoch, ergeben sich für die meisten Zeichen sehr niedrige Werte (Tabelle 4).

Das deutsche Bio-Siegel und das Fairtrade-Siegel genießen bei den Probanden das größte Vertrauen. Mit großem Abstand folgen das MSC-Zeichen, das Fake-Umwelt-Label sowie Neuland. Nur 6 % aller Probanden vertrauen dem EU-Bio-Siegel. Dieser Wert liegt deutlich unter dem als Vergleichsgröße herangezogenen selbst gestalteten Umweltlabel.

Tabelle 4: Hintergrundwissen und Vertrauen bezogen auf die Gesamtstichprobe (in % aller Befragten)

Label	Wissensquotient [%]	Vertrauensquotient [%]
Deutsches Bio-Siegel	72	54
Fairtrade	61	50
Marine Stewardship Council (MSC)	18	14
Neuland	7	8
EU-Bio-Siegel	5	6
Zum Vergleich: Fake-Umwelt	11	11

Quelle: Eigene Erhebung, 2012; N = 300

Anschließend wurde erhoben, ob die Probanden die ihnen bekannten Label kaufen. Auch hier fallen die Antworten positiv für das deutsche Bio-Siegel aus (70 %). Produkte mit dem EU-Bio-Siegel kaufen – eigenen Angaben zufolge – nur 8 % der Probanden. Tabelle 5 zeigt, wie viele der Probanden, die ein Label schon einmal gesehen haben, anschließend ankreuzten dieses auch zu kaufen.

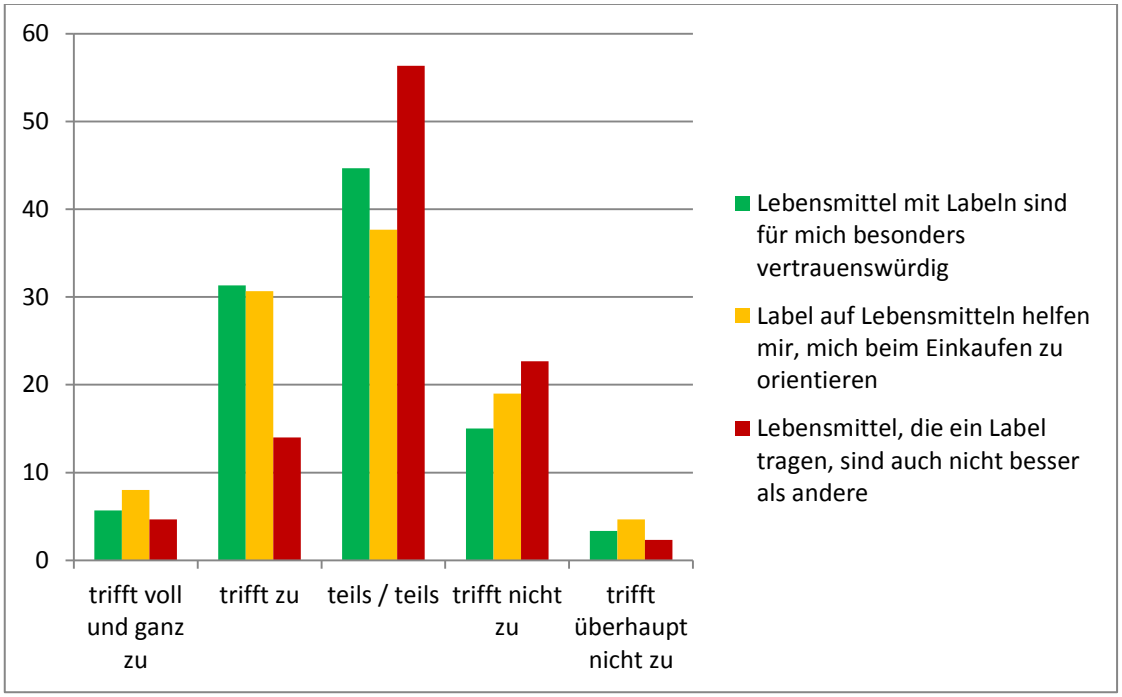
Tabelle 5: Kauf von gelabelten Produkten (Zahl der Nennungen)

	Deutsches Bio-Siegel	EU-Bio-Siegel	Neu-land	MSC	Fairtrade	Fake-Umwelt	Fake-Tier-schutz	Fake-Fairer Handel
Schon mal gesehen	286	45	54	78	215	69	10	21
Kaufen Sie Produkte mit diesem Label? (Kaufverhalten)								
Ja	211	24	23	63	156	23	7	14
Nein	48	8	15	9	22	10	1	2
Ich bin mir nicht sicher	27	13	16	6	37	36	2	5

Quelle: Eigene Erhebung, 2012; N = 300

Die Ergebnisse zum generellen Vertrauen in Label fallen, wie Abbildung 2 zeigt, leicht positiv aus. Rund 30 % der Probanden stimmen den Aussagen zu, dass ihnen Label beim Einkaufen helfen und sie Lebensmittel mit Labeln für besonders vertrauenswürdig halten. Allerdings sind viele Probanden auch der Meinung, dass Label alleine nicht darüber entscheiden, ob ein Lebensmittel besser ist.

Abbildung 2: Generelle Einstellung zum Labelling (in %)



Quelle: Eigene Erhebung, 2012; N = 300

4. Diskussion

Die Nachhaltigkeit von Lebensmitteln und Agrarprodukten ist im informationsökonomischen Sinn eine Vertrauenseigenschaft, da sich der Grad der Nachhaltigkeit am Endprodukt in aller Regel nicht feststellen lässt (Jahn et al. 2005). Label, die nach unabhängigen Kontrollen an Produkte mit solchen Eigenschaften vergeben werden, können Verbrauchern dabei helfen, eine informierte Kaufentscheidung zu treffen. Einfache Werbeaussagen der Anbieter oder selbst kreierte Gütezeichen sind demgegenüber für Verbraucher hinsichtlich ihrer Glaubwürdigkeit kaum zu bewerten.

Vor diesem Hintergrund kommt dem Labelling eine überragende Bedeutung für die Verbreitung von Nachhaltigkeitserzeugnissen im Markt zu. Die vorliegende Studie zeigt, dass es nur sehr wenige Zeichen gibt, die bisher einen höheren Bekanntheitsgrad und Vertrauen beim Verbraucher erworben haben. Auch das geringe Vertrauensniveau solcher Zeichen insgesamt und der niedrige wahrgenommene Nutzen sprechen dafür, dass der Informationswert dieser Siegel und damit ihr Beitrag zum Nachhaltigkeits-Marketing derzeit gering sind. Die Gründe für die analysierten Schwachstellen können

auf zwei Ebenen vermutet werden: 1. Marketingfehler; 2. Regulierungsdefizite (Label-Dschungel).

1. Marketingdefizite: Der Aufbau von Bekanntheitsgrad und Image ist bei Gütern des täglichen Bedarfs wie Lebensmitteln grundsätzlich schwierig, da das Produktangebot eher flüchtig in Augenschein genommen wird. In der Konsumentenforschung wird gewohnheitsmäßigem Einkaufsverhalten und spontanen Kaufentscheidungen beim Lebensmitteleinkauf ein hoher Stellenwert zugesprochen. Der Anteil der Impulskäufe wird je nach Begriffsfassung und Produktkategorie auf 40 bis 70 % beziffert (Kroeber-Riel et al. 2009, Hurth 2006, Trommsdorff 2004). Vor diesem Hintergrund kommt der Markengestaltung und der Werbung im Lebensmittelmarketing eine ausgesprochen hohe Relevanz zu. Es geht um Prägnanz und Klarheit der Botschaft. Es ist deshalb aus Marketingsicht eine Entwertung spezifischer Marketinginvestitionen, wenn derzeit das deutsche Bio-Siegel durch das unprofilierte EU-Bio-Siegel ersetzt wird. Nicht nur, dass hier eine eingeführte Marke entwertet wird: Das neue EU-Bio-Siegel ist weder selbsterklärend noch prägnant. Entsprechend verwundert es nicht, dass das Siegel in der vorliegenden Studie als unbekannt und sehr wenig vertrauenswürdig wahrgenommen wird.

2. Regulierungsdefizite: Die Studienergebnisse bestätigen die kritische Einschätzung der Wissenschaftlichen Beiräte für Verbraucher- und Ernährungspolitik sowie Agrarpolitik, die in einem Gemeinschaftsgutachten den derzeitigen Ansatz des Food-Labellings weitreichend kritisiert haben (Eberle et al. 2011). Demnach haben viele Konsumenten zwar ein grundsätzliches Interesse an Informationen zu Lebensmitteln, sie empfinden aber die Vielfalt und Unübersichtlichkeit der Zeichen als Überforderung und beklagen die Schwierigkeit, glaubwürdige Informationen von Werbeaussagen zu unterscheiden. Ein unreguliertes Labelling stiftet demnach eher Verwirrung, als dass es zu einer informierten Konsumentscheidung beiträgt. Spezifisch moniert das Gutachten:

- zu viele Label,
- irreführende Label,
- unklare Bedeutung oder Aussage der Label,
- unbekannte Label,

- Label auf Grundlage von Kriterien, die für das Produkt irrelevant sind,
- zu komplizierte Labelgestaltung,
- unzureichende grafische Abgrenzung (z. B. verwirrend ähnliche EU-Label),
- unzureichende Abgrenzung von gesetzlich geschützten zu nicht regulierten Zeichen und Begriffen, da den Adressaten der Status vieler Bezeichnungen unklar ist (Eberle et al. 2011).

Aus Marketingsicht liegt daher die Herausforderung des Nachhaltigkeits-Labelling darin, valide und transparente Informationen zu Prozess- und Produktqualitäten in einer Form bereitzustellen, die eine fundierte Entscheidungsfindung ermöglicht (Komplexitätsreduktion) und gleichzeitig zu verhindern, dass die Informationsflut durch eine Labelflut ersetzt wird. Dieser Herausforderung sind die Agrar- und Ernährungswirtschaft sowie die Politik bisher nicht hinreichend gerecht geworden (Stiftung Warentest 2011, Eberle et al. 2011). Die Beiräte schlagen daher ein „Dachlabelkonzept“ vor, das unter einem einheitlichen und leicht wiederzuerkennenden „Markendach” die wesentlichen Nachhaltigkeitseigenschaften von Lebensmitteln (Gesundheit, Umwelt, Soziales, Tierschutz) auf Basis eines mehrstufigen, staatlichen Bewertungssystems darstellt. Dieses Dachlabel sollte dann entsprechend intensiv in der Öffentlichkeitsarbeit erläutert werden.

Insgesamt verdeutlichen die vorgelegten empirischen Ergebnisse die Versäumnisse von Politik und Wirtschaft, den Verbrauchern verlässliche Informationen zu einem nachhaltigen Konsumhandeln bereitzustellen (Verbraucherkommission Baden-Würtemberg 2011). Die vielfach beklagte Kluft zwischen Einstellung und Handeln ist zu einem beachtlichen Teil auf die Vernachlässigung elementarer Regeln des Marketings bei der Labelgestaltung zurückzuführen.

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IV.3 Prospects for a European Animal Welfare Label from the German Perspective: Supply Chain Barriers

Authors: Annabell Franz, Marie von Meyer and Achim Spiller

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Structured Abstract

Purpose

Many consumers (in Germany around 20 %) prefer products produced under high animal welfare conditions. However, the supply of such products is limited. Therefore, the German government as well as the European Commission are discussing the establishment of an animal welfare label. Although consumer demand will be decisive for its long-term success, first of all the supply side actors must be convinced of the need for such a label.

The present study identifies barriers within the German meat supply chain that currently prevent the establishment of a market segment for animal friendly products.

Data / Methodology / Approach

The continuing research project "Perspectives for a European Animal Welfare Label" (supported by the German Ministry of Food, Agriculture and Consumer Protection), is used for this action-based analytical study. Furthermore, semi-structured expert interviews with supply chain actors were conducted (N=14; 2009), in order to determine the positions of the stakeholders within the German meat industry in terms of animal welfare and food labelling.

Findings

Market entrance barriers for animal welfare friendly products are high. An initiative for the introduction of an animal welfare label has to begin at the agricultural stage and continue under strict merchandise segregation along the whole supply chain. In doing so, problems with regard to specific investments, separation and distribution costs will emerge. In marketing, coupled production is the pivotal problem. Moreover, these business challenges face a sector that in the past excelled by relatively isomorph behaviour patterns. Isomorphism is influenced very little by the results of market or scientific research, but by the action of a leading company in a sector, however, there are so far no successful examples of this.

Implications

Changes succeed most easily in a situation when a powerful processor or food retailer takes the initiative. The outlined entrance barriers also represent an economic justification for political support of labelling concepts, especially in their diffusion process.

Originality

This is the first application of an action research approach in an on-going multi-stakeholder project for the introduction of an animal welfare label.

Keywords

Animal Welfare Labelling; Supply Chain Barriers; Action Research; Multi Stakeholder Approach

Conclusion

There is growing evidence that the current agri-food system is not sustainable. Major environmental and ethical issues challenge the global development (Abeliotis et al., 2010; de Haen and Requillart, 2014; Garnett, 2013; Reisch et al., 2013; Verain et al., 2012).

Sustainable food consumption can be defined as "*a choice for food which is beneficial and life enhancing for individuals, society and the planet*" (Reisch, 2011). It has thus to be *"safe and healthy in amount and quality; and it has to be realised through means that are economically, socially, culturally and environmentally sustainable*" (Reisch, 2011). This definition reveals the challenging nature of sustainable food for both the supply and the demand side as well as for research along the entire food supply chain.
All sustainable development aspects, traditionally defined as three independent but mutually reinforcing pillars of economic, environmental and social sustainability, have to be taken into account. In the case of food production this applies to every single step of the numerous supply chains involving a diversity of different stakeholders. From a consumers point of view these aspects come on top of an already highly complex decision making task of food buying and consumption. It is thus crucial how sustainability is communicated along the supply chain and towards consumers. Here, third-party certification and labelling schemes can play a major role for advancing towards successful sustainable development.

Against this background it becomes clear, that sustainable food is a global issue, relevant for individual consumers as well as for the society, for agri-food businesses and policy actors. Moreover, sustainable global food opens up a broad field for market research.

Over recent decades an increasing number of researchers have focused on sustainable food. Today, there exists a wide range of literature about sustainable food. Characteristics of sustainable food markets have been investigated as well as the characteristics, attitudes, behaviours and the willingness to pay of sustainable food consumers. Most of these studies, however, do not analyse sustainable food in a comprehensive manner. Instead they rather focus on specific dimensions. Among the most extensively studied aspects are organically produced or fair traded foods (i.e.

Aertsens et al., 2009; Andorfer and Liebe, 2012). Also animal welfare friendly production systems are well studied (De Barcellos et al., 2011; Lagerkvist and Hess, 2011).

Apart from the lack of studies addressing sustainable food consumption in a more comprehensive manner, including environmental and ethical aspects simultaneously, there is also a clear geographical bias. Most of the above mentioned research is concentrated on industrialised countries. There are only a few studies available, which provide evidence for more than one country, and even less studies that include data from mature and emerging markets (i.e. De Barcellos et al., 2011).

This dissertation addresses four major research questions, covering both mature as well as emerging markets. Based on online survey data a set of ten empirical research articles address a wide range of sustainable food topics as well as the views of a diversity of stakeholders:

1. What do consumers expect from sustainable food? (Chapter I; pp. 13)
2. What characterises potential target groups for sustainable food marketing and what hampers sustainable consumption? (Chapter III, pp. 50)
3. How do consumer expectations regarding organic food differ between mature and emerging markets? (Chapter II, pp. 66)
4. How can sustainable food be introduced into the market and communicated successfully? (Chapter IV, pp. 71)

In short, answers to the above research questions can be summarised as follows:

1. Consumers around the world have diverse expectations regarding sustainable food. However, they expect sustainable food to at least respect both environmental and ethical concerns. Thus, they demand a comprehensive concept addressing sustainability along the entire food supply chain from production and processing, to marketing, trading, and finally to consumption.

2. Committed sustainable food consumers believe in their personal consumer effectiveness. They are motivated by the idea of personally making a relevant contribution to a more sustainable development.

Important barriers hampering sustainable food consumption are: Lack of information, availability of produce and often higher prices compared to conventional food products. These barriers, however, vary with respect to market contexts and products.

When analysing sustainable food consumers, their attitudes and actions, the methodology, study design and mode of data collection are of crucial importance. Biases in the sampling and data collection process may lead to false conclusions and inappropriate findings or even actions.

3. Organic food consumers in mature markets are motivated by altruistic and egoistic aspects of organic food consumption, depending on their level of consumption, while consumers in emerging markets are largely motivated by altruistic motives. Barriers that consumers face are, related to lacks of information and availability as well as scepticism.
For consumers in mature markets the barrier of scepticism hints at a potential threat especially for the organic food market of the European Union. Here a significant expectation gap has been identified. Consumers expect more of organic food than is actually regulated by the common European regulation for organic food production (EC 834/07).

4. Although labelling has become a popular instrument for differentiating and communicating sustainable food characteristics it is neither per se guaranteeing market success nor changing consumption patterns. The introduction of sustainability labels and their management needs to be professional, strategic, transparent and inclusive. Multi-stakeholder approaches have proven to be advantageous, because they help to identify potential barriers at an early stage. Moreover, they promise to provide credibility; one of the most important success factors for sustainability labels. Apart from the professional management of labelling initiatives comprehensive and convincing communication is essential for making consumers aware of the choices and the respective difference they can make.

The findings of this dissertation lead to several overall conclusions and have many relevant implications not only for agri-food business but also for policy actors: If sustainable food is to be differentiated and communicated successfully on a global

market a semiglobalised marketing strategy seems to be appropriate. This strategy is based on two different levels. On the one hand it allows for country or segment wise specification. On the other hand it allows for a certain degree of variation concerning the definition of sustainability.

Sustainable food should always be characterised by both environmental and ethical attributes. However, different emphasis can be put forward both with respect to ecological and biodiversity requirements as well as to social and cultural concerns.

From a consumers point of view credibility is of critical importance for any sustainability initiative, especially concerning food products. Only if consumers are convinced of personally making a difference towards sustainable development, they will have a strong enough motivation to change their currently unsustainable consumption patterns. Therefore, it is essential, that sustainable food is communicated comprehensively. It needs to become a realistic, feasible alternative: available and realisable. Both require that consumers have the necessary information about why and from where to consume which product. Finally, these choices have to be reasonably priced.

This dissertation gives evidence about successful examples of sustainable food marketing. It also points out typical challenges. Any sustainable food initiative must be based on reliable market research. This requires thoroughly designed surveys, inclusive multi-stakeholder approaches and professional management. All actors in the field of sustainable food production and consumption must be aware of the following:

Achieving sustainability is a long-term process. It certainly requires changes in the current food production and consumption systems. In particular for food marketing actors, who are used to see immediate responses to their actions, need to become more patient. Sustainability is neither a static concept nor a goal that will be reached in a short period of time. Already the commitment to a comprehensive sustainable food production and consumption system is in itself a first success. It needs to be communicated transparently, admitting that there are no quick short term profits to make, but rather a lot of barriers to overcome.

Once, having started the process of becoming a sustainable part of the food supply chain it is important for all stakeholders to stay open and flexible with regard to new

evidence, innovative ideas or emerging challenges and to stay engaged in continuous dialogue.

Motivation is the key for such an uncertain and often unprecedented journey into the future. Future research must focus on questions like: What motivates decision makers in business and policy to invest in or contribute to a sustainable agri-food system? Who has to be motivated how and where? This calls for further unbiased global food research, transcending disciplinary and national boundaries.

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Additional publications and presentations at scientific events

2012

Presentation: von Meyer-Höfer, M.: Schmusekatze, Versuchsratte und Mastschwein Tiernutzung im Fokus Artgerechte Tierhaltung, tiergerechte Haltung und Tierwohl – Begriffe auf dem Prüfstand, Tagung der Evangelischen Akademie Sachen-Anhalt e.V. 1.- 3. Juni 2012 Evangelische Akademie, Lutherstadt Wittenberg.

2011

Publication: von Meyer, M. : Nachhaltigkeitslabel – Erfolgsfaktoren und Strategien. VDM Verlag Dr. Müller.

Presentation: Spiller, A. und von Meyer, M.: 2011 Nachhaltigkeit bei Lebensmitteln tierischer Herkunft und Tierschutz Anspruch und Wirklichkeit. 30. BbT Internationaler Veterinärskongress, Bad Staffelstein.

Presentation: Franz, A.; von Meyer, M. und Spiller, A.: Marktstrategien von Nachhaltigkeitslabeln in der Agrar- und Forstwirtschaft – eine Expertenbefragung -. 21. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, Bozen, 04. – 06.10.2011.

2010

Publication: Deimel, I.; Franz, A.; Frentrup, M.; von Meyer, M.; Spiller, A. und Theuvsen, L.: Perspektiven für ein Europäisches Tierschutzlabel. URL: http://download.ble.de/ 08HS010.pdf.

Publication: Franz, A.; von Meyer, M. und Spiller, A.: Einführung eines Animal Welfare Labels in Deutschland: Ergebnisse einer Stakeholderbefragung. In: Pöchtrager, S., Eder, M. (Hrsg.): Jahrbuch der österreichischen Gesellschaft für Agrarökonomie, Band 19, Heft 1, S.41-50.

Presentation: Deimel, I.; von Meyer, M.; Spiller, A. and Franz, A.: Perspectives for an animal welfare label: opportunities and barriers for implementation. Paper presented at the IAMA Annual World Symposium 19-22.06.2010, Boston, USA.

Publication: Franz, A.; von Meyer, M. and Spiller, A.: Perspectives and Consequences of a European Animal Welfare Label from a German Point of View: Supply Chain Barriers. Paper presented at the EAAE Seminar, 30.06- 02.07.2010, Capri, Italy.

Participation in scientific workshops

Joint PhD Program in Agricultural Economics Workshop in Talca 13. & 14.11.2012.

Curriculum Vitae

Marie von Meyer-Höfer (von Meyer)

Date & Place of Birth: 21.05.1983, Frankfurt am Main, Germany

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Education

Since 2011
Ph.D. position at the Research Training Group 1666 Global Food at the Georg-August University of Göttingen, Germany

2010
Master of Science in Agribusiness; Georg-August University of Göttingen,
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Bachelor of Science in Agriculture; Georg-August University of Göttingen,

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Erasmus Semester in France at Ecole National Supérieur Agronomie Rennes

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Highschool Diploma (Abitur); Sachsenwald-Gymnasium Reinbek, Germany

Internships and Employments

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Ph.D. position in Research Training Group 1666 „Global Food", Subproject B1
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2011
Research associate at the Department of Agricultural Economics and Rural Development at Georg-August University of Göttingen;
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Project:
EU Ecolabel for food and feed products – feasibility study (ENV.C.1./ETU/2010/0025)

2010
Junior consultant for Agrifood Consulting GmbH, Göttingen, Germany
Project:
Identification of environmental & social Hot Spots in the GE meat supply chain

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Student assistant at the Department of Agricultural Economics and Rural Development; at Georg-August University of Göttingen;
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Perspektiven für ein Europäisches Tierschutzlabel

2007
Student assistant at the Department of Agricultural Economics and Rural Development; at Georg-August University of Göttingen; Chair of Economics of Agribusiness
Project:
Landwirtschaftliche Rentenbank: Risikomanagement in Milchviehbetrieben: Eine empirische Analyse vor dem Hintergrund der sich ändernden EU-Milchmarktpolitik

2005
Internship at the Federal Ministry of Food and Agriculture and Consumer Protection, Department for organic agriculture and extensive production systems, Bonn, Germany

2004
Internship at the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)
Section: social and ecological standard setting, Eschborn, Germany

Regularly since 2003 several internships on organic and conventional agricultural farms in Germany, France and Romania.

Also participation in several excursions and field trips to different farms and firms of food production in Europe (Spain, Italy, Denmark, Hungary, Poland, Austria, Switzerland, BeNeLux), USA & Canada, South America (Argentina, Chile).

Erklärungen

1. Hiermit erkläre ich, dass diese Arbeit weder in gleicher noch in ähnlicher Form bereits anderen Prüfungsbehörden vorgelegen hat.

Weiter erkläre ich, dass ich mich an keiner anderen Hochschule um einen Doktorgrad beworben habe.

Göttingen, den 20.03.2014

.....

(Unterschrift)

2. Hiermit erkläre ich eidesstattlich, dass diese Dissertation selbständig und ohne unerlaubte Hilfe angefertigt wurde.

Göttingen, den 20.03.2014

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(Unterschrift)

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