Abstract book

S 1A – Track Session
Conceptual, Theoretical and Methodological Foundations for Interdisciplinary and Transdisciplinary Research on Sustainable Consumption

Introduction

An entire session is proposed in the present abstract. Selected research results of the synthesis of the focal topic “From Knowledge to Action – New Paths towards Sustainable Consumption”, one of the thematic research projects under the “Social-ecological Research Programme” (SÖF) launched by the German Ministry of Education and Research, will be presented in the form of four papers. This focal topic addresses a problem that has continuously gained political importance in recent years. Despite extensive research findings pointing to the need for sustainable consumption patterns and a large amount of measures available to inform consumers, a general trend toward sustainable consumption has yet to be seen. The research in the ten joint projects (with approximately thirty individual projects) focussed on different consumption areas (e.g. energy, housing, food) and was based on transdisciplinary collaboration with various stakeholders in the field (e.g. consumer advice centres, schools). The aim is to provide guidance and practical knowledge that will be useful to several stakeholder groups, as well as to contribute towards an increase in consumer competence. (For more information on the focal topic see http://www.sozial-oekologische-forschung.org/en/947.php).

Since 2009, a synthesis process has been taking place, coordinated by an accompanying research project aiming to bring the results of the joint projects together and identify overall findings (see http://www.ikaoe.unibe.ch/forschung/soe/konsum/index_en.php). The papers of the session focus mainly on the synthesis, but they also provide an insight into the results of individual project groups, which illustrate and support the findings of the synthesis. In three papers, selected aspects of the synthesis will be presented and discussed. In addition, an introductory paper will provide an overview of the synthesis process in the focal topic.

S 1A-1
Key Issues and Synthesis Process in the Focal Topic

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Research programme «From Knowledge to Action – New Paths towards Sustainable Consumption», funded by the German Federal Ministry of Education and Research as part of its «Social-ecological Research» initiative (SÖF), accompanying research project, University of Bern

Individuals and households consume goods and services to satisfy a range of needs. Consumption is never exclusively functional and always contains a symbolic element, such as an individual’s wish to express his/her self-image, status or personal understanding of quality of life. Consumption is socially embedded and shaped by the social interactions of individuals and households. Consumer behaviour is subject to an inherent dynamic, there is a reciprocal interaction between the ever-changing supply of products and services and consumers’ wishes and demands. In order to steer private consumption towards sustainability, the consumer behaviour of individuals and households must be understood and recorded properly, in all its complexity and social embeddedness. This is what will provide indications about the starting points for a change in consumer behaviour. Moreover, consumption and the idea of sustainability must be conceptually linked to each other, in order to identify compatibilities and incompatibilities and derive responsibilities. Thus, the following issues are raised:

• How can consumption and the notions of good life – which is, according to the idea of sustainability, the ultimate goal of sustainable development – be reconciled? What normative implications does this entail?
• What is the responsibility of consumers in view of sustainable consumption? What are the responsibilities of the state and the economy?
• Which theories of action are most appropriate to capture the complexity of consumer behaviour and identify starting points for change?
• How can dynamic consumer behaviour be measured empirically in adequate ways, in order to detect new opportunities and risks for sustainable consumption early?

The introductory paper provides details about the theoretical foundations and the methods used to work on the above issues with all participating project groups, in order to develop the synthesis. It also gives a short overview of the ten joint projects.
The Normative Aspects of Consumption in the Context of Sustainable Development

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For a scientific debate about consumption in the context of sustainable development, a concept of need must be defined that is compatible with the concept of consumption, as well as with the idea of sustainability and the notion of good life. This concept of need must provide an adequate basis for the discussion of normative issues (e.g. What type of consumption can be referred to as "sustainable"? What criteria must be used to assess the level of sustainability of consumption and consumer behaviour? What issues about responsibility and justice are raised in the context of sustainable consumption?), as well as the orientation of empirical (disciplinary, interdisciplinary, transdisciplinary) research. In the focal topic synthesis, such a concept of need and a linked conceptual system were developed. This system is composed of the following related terms: individual constructs of wanting (objective needs, subjective wants, ideas about the degree and extent of the satisfaction of objective needs and subjective wants, demands as to consumer goods), consumer goods (products and services/infrastructures), natural resources and resource services, as well as demands in terms of quantity and quality of natural resources and resource services. In the paper, this conceptual system will be presented, followed by examples from the research of three or four project groups substantiating it. Finally, the resulting obligations of individuals and of the state in view of sustainable consumption and the questions open to further inquiry, discussion and political decision will be presented.

Theoretical Foundation of the Object of Research 'Sustainable Consumption'

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Consumption takes place through the behaviour of individuals or rather through the single consumption actions of choosing, acquiring, using/consuming and disposing of/passing on goods. That is why a core issue when dealing with sustainable consumption in both science and in practice is the identification of which theories of action are relevant for the different phenomena in the context of (sustainable) consumption, and the discussion of their performance. To date, no new theories of action have been established in sustainability research. Instead, available theories were used, both individually or combined with others. For the focal topic synthesis, consumer behaviour phenomena and theories of action were linked in a manner which enabled the identification of the most appropriate theories to explain specific consumer behaviour phenomena. As a result of the collaboration of all involved in the synthesis process, this paper presents the structuring of the phenomena of individual consumer behaviour in its social and cultural context and in its changing forms over time. In addition, the allocation of theories of action to the phenomena and their profiles are explained on the basis of examples. The resulting "theory system" of theories of action relevant in the context of consumer behaviour aims to enable experts both in research and in practice to find theories of action that may be helpful to their particular questions or duties.
Methodological-empirical Assessment of 'Sustainable Consumption'

Technische Universität Berlin, Technische Universität Berlin, Goethe University Frankfurt, University of Münster, Institute for Social-Ecological Research, University of Applied Sciences Fresenius Economics & Media, Leuphana University of Lüneburg, Stuttgart University, University of Applied Science Lausitz

The relation between qualitatively and quantitatively oriented social research is not completely unproblematic, and an approach based on one single method is usually the preferred strategy in everyday disciplinary scientific research. However, in research projects on sustainable consumption, both qualitative and quantitative methods are often used, which was also the case for focal topic project groups. This led to some reflection about the reasons for this. The objective of the synthesis discussions was to identify possible patterns or circumstances which could point to why the combination of methods is a promising starting point for research on sustainable consumption. Also, the aim was to find out whether this is linked to the nature of the object of research, as described in papers 2 and 3. In this paper, examples from two or three project groups are given, which illustrate what was expected from the combination of qualitative and quantitative methods. The choice of the forms of the method combinations is explained, and the various challenges faced are described. Based on the experience gained, the added value, both in terms of content and strategy, will be specifically discussed for research on sustainable consumption, focussing on research whose results aim to promote changes in consumer behaviour patterns towards more sustainable consumption.

Social influence on sustainable consumption: Evidence from a behavioral experiment

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Although social influence on consumers’ behaviour has been recognized and documented, the vast majority of empirical consumer studies about sustainable products considers mainly, if not only, individual characteristics (socio-demographic attributes, individual environmental attitudes, etc), to explain the decision to buy sustainable products. Making use of experimental methods, this paper studies the social influence that peer groups like colleagues, family and friends may exert in the decision to choose for environmentally friendly products rather than conventional ones. We also test for different types of social influence, in particular for “herd behaviour” versus “social learning”. In our experimental setting the relevance of peer effects is corroborated. We find clear evidence for “imitation or herd behaviour” and the data indirectly support the presence of “social learning” effects. The results also suggest heterogeneous impact of social groups.
The influence of ethnocentricity on preferences for local fiber products

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A choice experiment of consumers in three southern U.S. states was conducted to determine preferences and marginal willingness to pay (mWTP) for wool blend sweaters based on fiber origin and country of manufacture. Survey questions were used to determine an average consumer ethnocentric tendency (CET) score for each participant, and a median split was used to place each into a High or Low CET group. Nested logit models were analyzed for both groups, and mWTP estimates were computed from the estimated coefficients. Results indicated a price premium across both CET groups for wool blend sweaters knitted in the U.S. versus knitted in China. State produced fiber, considered local, was also preferred over both U.S. and Imported fiber for both CET groups. However, even though both groups showed evidence of valuing local fiber origin and domestic country of manufacture, the Low CET group exhibited lower mWTP premiums overall compared to their High CET counterparts. For sweaters knitted in the U.S., High CET consumers were willing to pay a price premium of $24.08 more for one made with wool from their state compared to imported wool while Low CET consumers’ estimated premium was $6.86. Premiums for state wool over wool from elsewhere in the U.S. were $19.37 and $4.85 for the High and low CET groups, respectively. These results suggest that local wool producers in the U.S. have the potential to obtain substantial price premiums for their wool apparel products by targeting specific consumers within their states.

Connecting consumers to local animal fiber producers through transparent fiber origin labeling can increase their ability to act on their desire to support the local agricultural economy.

Exploring the social value of organic food

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The purpose of this paper is to analyze whether organic foods are used to signal social identity, class, or status, i.e. if they have social value. Bourdieu’s (1979; 1994) approach and symbolic interactionism (Solomon, 1983) are used to frame the causes and consequences of social value and to highlight the marketing implications. Specifically, results of a four focus group study indicate that organic food has a social value, but that its value depends on other green behaviors by the consumer or the producer, and also on the venue (CSA, market, supermarket).
The impact of innovations on laundry-care behaviour
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Introduction
In the days of climate change, an optimum balance between energy consumption and product performance has become a key consumer demand with regards to washing machines and tumble dryers. Consumers are only willing to embrace a product if it excels in terms of combining low energy consumption with convincing performance. The challenge to the manufacturing industry lies in bringing together the three elements of cleanliness, gentle fabric care and low consumption.

And therefore the question is: How are things in practice? What are consumers' washing habits? These vary, depending on the region, and consequently Europe is not a single, uniform market. In Scandinavia, in particular, where energy and water costs are high, consumers wash at high temperatures and use mainly powder detergents - and expect excellent detergency and performance. In Southern Europe, on the other hand, it is usual to wash at very low temperatures, to use predominantly liquid detergent and to enhance wash results as required using chlorine bleach. There is a north-south divide with respect to wash temperatures, with the south tending more towards a colder wash. There are large differences when it comes to the ownership and frequency of use of tumble dryers. In Italy, one of the largest markets for washing machines, market penetration is very low. In Switzerland, only the sale of dryers with an 'A' rating for energy efficiency will be permitted from 2012 onwards.

The impact of innovations: It is therefore clear that when we talk about potential savings through technical innovations, we must also differentiate by region. We have seen that many consumers still wash at very high temperatures or use programmes with high water consumption – even though this may not in fact be necessary. Laundry-care knowledge and expertise tends to be handed down through the generations within families, as younger family members emulate their parents. These traditional patterns and a certain lack of knowledge results in unnecessarily high consumption. Generally, users are unclear of the weight of the laundry they put in their machines and tend not to read dispensing instructions in detail.

Garments today are often not heavily soiled, with the result that dispensing and temperature selection is based on gut feeling or on past experience. This, in turn, results in a huge waste of both energy and detergent. In many cases, consumers are simply unaware that their behaviour results in unnecessary additional consumption. This can be avoided by deliberately selecting low-energy programmes and options. Miele therefore places its focus not only on energy-efficient washing and drying technologies but also promotes environmentally friendly behaviour by offering specially designed user interfaces and displays such as the EcoFeedback function on washing machines. In order to facilitate the greatest possible energy savings, special process technology is developed which produces top-class cleaning performance combined with energy and water efficiencies. The clear focus is on sensing the properties of a given load. The electronic controls on washing machines detect the size of the laundry load and adjust water intake and energy consumption accordingly. For consumers, this means that even less-than-full loads are washed particularly gently. This is a highly relevant approach under practical, everyday conditions as the typical load size is only 3-4 kg per cycle.

Garments which are only slightly soiled require only low temperatures to achieve good wash results. However, in homes running low-temperature programmes exclusively, there is a risk of the growth of bacteria in the drainage system of a washing machine, resulting in perceptible odours. Hence it is always advisable to run a high-temperature programme from time to time. Although this is a simple and highly effective measure, this advice is however only heeded by a limited number of consumers. Consequently, a display on Miele washing machines now reminds owners periodically to perform a sanitising wash.

Several studies have revealed that consumers regularly overdose as a result of not being able to gauge the weight and size of the actual load and of dispensing intuitively as a result. New developments on the washing machine market are machines that automatically dispense liquid detergent. For the cycle in hand, the user simply enters the degree of soiling and the correct amount of detergent is dispensed automatically, also taking into account the weight of the load as detected by the machine itself. This offers above all the benefits of the sparing use of detergent as manual dispensing is always less precise. Furthermore, this approach also offers superb user convenience as the process is considerably simplified. As a result, we are faced with a win-win situation: on the one hand this innovative technology goes easy on the environment and, on the other, it also saves money.
The new AutoDos feature now goes one step further: Alongside automatic dispensing of liquid detergent, this system also dispenses detergents in powder form. Depending on the selected programme, the machine automatically selects the most appropriate detergent. Recent studies conducted by Miele have confirmed however that users do not like to be forced into a straight-jacket by machine specifications and wish to be in control of the process at all times. Hence it is important to allow the option of manual dispensing alongside automatic dispensing.

Since January 2011, utilities in Germany are under obligation to offer electricity tariffs with prices that vary during the course of the day in order to shave off consumption peaks. On SmartGrid enabled units, the user can determine earliest and latest times after and before which a wash cycle must have started or completed respectively. Domestic appliances then start automatically when electricity is cheapest within this time window. For machines to exploit the benefits of smart-grid technology, they must be communication-enabled.

Laundry care naturally includes the tumble dryer. Here, too, it makes sense to take an ecological view of things. The drying air path on a condenser dryer is a closed circuit. This means that the process air in the machine is recycled and used repeatedly. On this type of dryer, energy is wasted by virtue of the fact that the condensation process relies on the use of cool, ambient room air. Condensation extracts heat from the process air and dissipates this heat to atmosphere. Heating the process air using a conventional heater bank requires a considerable amount of energy.

More recently, a quantum leap in terms of technology has been achieved by the introduction of the heat pump. On a condenser dryer with heat-pump technology, both the heating and the dehumidification of the process air is achieved using a coolant circuit. This saves so much energy that heat-pump dryers are more than 40% more energy efficient than required for an A energy-efficiency label rating. Here, too, it must be remembered that consumers are unwilling to entertain compromises in product performance. In other words, this new system must continue to achieve short cycle times, low sound emissions and low evaporation losses. The latter is of particular importance when a machine is installed in a kitchen, which is often the case in Great Britain and France.

Summary: It is evident that energy-efficient washing machines and tumble dryers are highly relevant products in the eyes of consumers. Nevertheless, the significance of ecological aspects varies depending on national markets.

Heat-pump dryers in particular represent a new segment in the tumble dryer market. This offers benefits to consumers and also affords opportunities to manufacturers to stand out from the competition in an otherwise saturated market.

S 1C-2
Changing laundry habits

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Maintenance is often the most energy requiring stage during clothes’ life cycle. Therefore, changing washing habits towards environmentally friendlier direction has great potential for reducing the energy, water and detergents consumption. This paper discusses the change of laundering practices over time, and attempts to recognise some incentives and obstacles that may exist for consumers to change their laundry habits to more sustainable ones.

Quantitative information of consumers’ experiences, habits and opinions concerning clothing maintenance was collected through three surveys in Norway in 2002, 2010 and 2011. In addition, a strategic sample of households was selected for a qualitative study through in-depth interviews. The average washing temperature has decreased slightly during the studied time periods. For example, in 2002 cotton t-shirts were mainly washed at 60°C, whereas in 2010 the majority washed them at 40°C. This change in practices may be enabled by improved detergents. Some products’ washing frequencies remained the same, whereas other products such as jeans were used a few more days before washing. Cotton programs is the most used washing program, but short programs are gaining popularity. The laundry sorting processes are varying greatly and are influenced by several factors such as washing temperature, colours, fibre type, and use area.

For some consumers, use of several different sorting categories made it more difficult to collect sufficient amount of clothing to fill the machine. They were also afraid of overfilling the machine in case of not getting good cleaning result or having detergents left on the garments. Detergent dosing practices are far from optimal. In 2010, majority of respondents only used eye measure and did not know the water hardness of their area.
However, they tried to vary detergent dosage based on the amount of laundry and level of soiling. Different design for sustainable behaviour strategies could be used for example within detergent dosage systems, care labelling, machine program selection (such as suggesting lower temperature and eco-program), machine filling grade indicator, storage systems for slightly used clothing, and using materials that are easier to clean. Information and awareness campaigns could be used for promoting energy saving potential in using lower washing temperatures combined with good washing result of modern detergents, endorsing less frequent washing and alternatives to washing, and informing about planning textiles acquisition so that garments can be washed together.

**S 1C-3**
Evaluation of the Soil Removal Efficiency of Catholyte on Polyamide 6,6 Fabric

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Laundring textiles is a complex process that has been the subject of intensive study over a few decades and it is an intrinsic part of almost every household. Soil removal plays a vital role in caring for fabrics because it contributes to maintain the fabric in a good condition for prolonged use. Laundry detergents have a detrimental effect on the environment; therefore suitable alternatives need to be investigated.

The development of electrochemically activated media might be the solution. The alkaline part of the activated media (Catholyte) has outstanding detergency properties. Catholyte provides an environmentally friendly alternative to conventional phosphate based detergents. However, as yet little is known of the cleaning efficiency of catholyte on textile materials such as polyamide. Hence the focus of this paper was to evaluate the soil removal efficiency of catholyte. Catholyte removed the soil efficiently from polyamide 6,6 fabric without causing damage to the fabric, thus making it an attractive alternative to conventional laundry detergents because it is effective and environmentally friendly.

**S 1D-1**
Research on Fair Trade Consumption – A Review

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An overview and assessment of the current state of research on individual consumption of Fair Trade products is given on the basis of 51 journal publications. Arranging this field of ethical consumption research according to key research objectives, theoretical approaches, methods, and study population, the review suggests that most studies apply social psychological approaches focusing mainly on consumer attitudes. Fewer studies draw on economic approaches focusing on consumers' willingness to pay ethical premia for Fair Trade products or sociological approaches relying on the concept of consumer identity. Experimental, qualitative and conventional survey methods are used approximately equally often. Almost all studies draw on convenience or purposive samples and most studies are conducted in the USA or the United Kingdom. Several problems in current research are identified: amongst others, studies' rather narrow theoretical focus, potential hypothetical and social desirability bias of conventional survey data, and a lack of generalizability of empirical findings. In turn, we suggest that research would benefit from both a multiple-motives and a multiple-methods perspective. Considering competing theories can help to single out key behavioral determinants of individual Fair Trade consumption. The combination of different methods such as conventional surveys and field experiments contributes to uncovering respondents' truthful answers and improves generalizability of results.

Scholars in the field of ethical consumption research should use experiments to detect causal relations proposed by theories and conduct cross-country surveys to gather insights as to how differences in market structures, cultural traits, and other path dependencies affect patterns of individual Fair Trade consumption.
S 1D-2
Morality or Economic Interest? The Impact of Moral Motives and Economic Factors on the Purchase of Fair Traded Groceries

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In this article we compare the impact of ethical motives and economic factors on fair traded groceries. The impact of moral motives is measured by three different constructs, which are derived from different theoretical perspectives: one from the classical theory of attitude, one from the Subjectively Expected Utility Theory and one from the Norm-Activation-Model. The results show that moral motives as well as economic factors are important factors for explaining the purchase of fair traded groceries. Furthermore, the results indicate that the impact of moral motives is greater than that of economic factors.

S 2A-1
Sustainable Consumption: Conceptualisation and Evaluation of Measurement Tools

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This discussion paper gives an overview on the definition and conceptualisation of the terms sustainable consumption and sustainable development. Various approaches to measure and assess the environmental, social and economic dimensions of the term are discussed. The lack of clarity prevailing in concepts of sustainability is reflected in a variety of definitions, which is presented before discussing measurements of SC in the second part of this paper.
It is suggested that despite the heterogeneity of the concept SC as regards definitions, measurement tools and assessment criteria, some of the approaches discussed in this paper provide valuable starting points for a more coherent conceptualization of sustainable consumption in the future.

S 2A-2
Tracing the Pathways of Sustainable Consumption Policy Instruments and Measuring Sustainability: Results from an EU-wide Impact Evaluation Project "Impact Evaluation"

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Governments are today developing policies to promote sustainable consumption (SC), yet policy makers face many uncertainties about policy impacts. How effective are the existing policies? How successfully do they influence consumption patterns, and what are their ultimate environmental, social, and economic impacts? An assessment of policy impacts must account for consumer action being interlinked with the dynamic activities of other market players and path-creating effects of technologies and systems of consumption and provision.
Findings from an EU FP7 research project (EUPOPP, www.eupopp.net) discuss the results of an interdisciplinary assessment of impacts of SC policy instruments on consumption patterns. The paper consists of three parts: (a) an analytical framework to evaluate sustainable consumption policy instruments; (b) empirical results of European case studies in which the framework was applied; (c) a quantitative analysis of sustainability impacts of future (improved) SC instruments bundles.
Within the case studies specific instruments have been reconstructed for their policy pathway – from the policy output and instrument's 'intervention logic' to its outcomes and selected impacts. The case studies reveal that the analysed SC instruments do not always exploit their impact potential and that conditions of success and failure vary greatly according to instrument type, and its implementation context. With this in mind, hypotheses on the design, the relevance and future effects of new instruments were elaborated and sustainability impacts of future SC policies were analysed and discussed. Based on the findings of a hybrid methodological approach complementing findings of qualitative policy analysis by quantitative material flow analysis, recommendations for and conclusions on policy instrument design were derived.

S 2A-3
Reestablishing Daily Routines following Life Events: Potential for Sustainable Consumption?

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This paper presents results from the project “Life events as windows of opportunity for changes towards sustainable consumption patterns”. The basic assumption of this project was that persons who are passing through life course transitions are more open to reflecting upon and changing daily routines, since they have to adapt their habits to the new situation anyway. In the context of the project, a sustainable consumption campaign was designed and applied to two life event groups (parents with a newborn child and persons who recently moved to Berlin) and a group of people in ‘stable’ living conditions. A quantitative evaluation showed that the campaign had significant overall effects on behavioural patterns in the field of mobility, nutrition and household energy use, though it did not generate higher effects in the life events groups. Qualitative analyses showed that life events lead to reflection on and rearrangement of routines and that many persons are actively searching for information during this phase. Yet, these changes are not necessarily linked to sustainability. There are some issues – such as healthy nutrition for a newborn child – where motivational alliances between new orientations and sustainability targets can be observed. In other areas, however, life events can also motivate towards adoption of less sustainable behavioural patterns.

S 2B-1
Segments of Sustainable Food Consumers: A Literature Review

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Sustainable food consumption is an important aspect of sustainable development. When adopting a sustainable food-lifestyle, consumers are confronted with complex choices. Today’s food consumption is too complex to be explained by socio-demographic factors exclusively. A broader perspective is needed for a better explanation. Homogenous consumer groups need to be identified by segmenting food consumers based on a wide range of variables. The current study aims to provide an overview of published studies that have segmented consumers with regard to sustainable food consumption.

The literature review has been conducted by searching SciVerse Scopus for all relevant articles available until November 2010. The main criterion for including a specific study was the inclusion of empirical analyses of primary data, resulting in consumer segments with regard to sustainable food consumption. Sixteen articles were incorporated in the final analysis.

First, the variables used for segmentation and profiling in the included articles have been categorized into three levels of abstraction: personality characteristics, food-related lifestyles and behaviour. The three levels of abstraction proved to be helpful in categorising the segmentation studies. The findings indicate that variables on all three levels were efficient in differentiating consumer segments regarding sustainability. In addition, the importance of price and health differed across the segments, although these variables are only indirectly related to sustainability.
Second, the three most frequently identified consumer segments with regard to sustainable food consumption were: ‘greens’, ‘potential greens’ and ‘non-greens’. These segments differed from one another on all three levels of abstraction. Attempts at stimulating sustainable consumption might be most effective when differences across consumer segments are taken into account. Future research is needed to explore the characteristics of different sustainable food consumer segments with respect to their potential contributions in promoting sustainable development.

**S 2B-2**

Complementary roles for the personalized behavioural toolbox and public nudges in the sustainability of good food habits among consumers

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"It requires considerable strength of mind to leave the table with an appetite.”
Jean-Anthelme Brillat-Savarin (1825)

There is no shortage of knowledge about, or advice on, healthy eating yet we have a continuing paradox of poor diets in rich countries. People often choose to eat some foods too often or in excessive amounts even when they know better. In the longer term, poor diets cause individual health problems and pose a threat to the sustainability of publically-funded health care systems. Obesity, overweight and an increasing susceptibility to diet-related diseases are now a major source of political and medical concern in many countries. How can people be persuaded to eat a better diet and generally eat less? This paper examines two approaches to this problem. One attempts to empower individuals in making healthier choices, the other focuses on our managing reactions to the way that choices are presented. These approaches are also very different in their view of the appropriate levels of public intervention in individual choice and beguilingly suggest different cost options for countries already struggling with economic difficulties. However, least cost may be wrong choice for health care sustainability.

**S 2B-3**

Food enthusiasts appreciating sustainable, healthy and tasty locally produced and processed food

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Abstract: Local food is considered as a more sustainable food alternative because of short transport distances and the support of local economies. In our article we focus on Finnish consumers’ perception of locally produced food, with the aim of studying the way consumers value, understand and define the different meanings of local food. We interviewed 22 consumers (16 women and 6 men) in an everyday setting. Our analysis suggests that food enthusiasts value sustainable, healthy and tasty food. Everything that is self-produced, self-processed, gathered, hunted and fished is thought of as the most authentic local food for them. We also found that interviewees tend to historicize their relationship to the food through locally produced vegetables, root vegetables, grain, milk and meat products. Consumers are thus searching for ‘real’ or ‘true’ food in a nostalgic fashion using metaphors such as “when bread was bread and milk was milk”.

**S 2C-1**

Comparative analysis of global consumer behaviour in the context of different manual dishwashing methods

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This laboratory study presents an overview of the global manual dishwashing behaviour. The focus of the investigation was to analyse people’s individual attitudes towards manual dishwashing and to determine the amount of water and energy used as well as the cleaning performance achieved. Additionally, manual
dishwashing was compared with the use of automatic dishwashers. Nearly 290 participants from 29 countries all over the world took part in this investigation. Each consumer had to wash up a complete soiled dishwasher load consisting of twelve place settings based on both international and local performance test standards for automatic dishwashers. Country specific aspects like tableware, food residues or washing up equipment were considered. In order to analyse individual consumer behaviour, each participant was recorded on video and had to fill out a questionnaire. The resource consumption for washing up dishes was measured during the tests. At the end of each trial, the cleaning result of the washed up tableware was assessed. To compare manual with automatic dishwashing, country specific dishwasher models were tested in parallel in three programmes with the same soiled dish samples.

The study provides comprehensive data about the average resource consumption for manual dishwashing for a specific load for each country. The average water consumption per country reached from 34.7 L up to 160.1 L, individual values ranged from 18.3 L to 472.8 L. The lowest used average heat quantity accounted for 0.9 kWh per country while the highest amount was five times higher. The cleaning results did not differ much between the countries: The average test results were between 2.2 and 2.8 on a scale between 0 and 5.

The automatic dishwasher tests showed differences between both the machines and the programmes. All machines achieved lower water consumption values than the average consumers with about 9.6 L to 26.7 L of water on average. The energy consumption ranged from 0.5 kWh on average up to 2.0 kWh. The cleaning results of the dishwasher tests varied highly ranging from 1.1 in a quick programme to 4.4 in an intensive programme.

The study comes to the conclusion that automatic dishwashing is superior to manual dishwashing in terms of performance and resource consumption under the tested conditions. Furthermore, it points out that washing up dishes under running tap water is the most water consuming manual dishwashing method of all investigated ones. A high lack of knowledge about the benefits of automatic dishwashing compared to manual dishwashing can still be identified among consumers.

S 2C-2
Application of Best Practice Tips in manual dishwashing in Germany and Spain

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Dishwashing is one part of the household work where natural resources are needed. Investigations on the consumer behaviour of manual dishwashing have shown that there is a large variety of ways how to wash up by hand and the corresponding resource consumption is affected differently. It was seen as a necessity to find out how manual dishwashing can be carried out using a minimum amount of resources and a reasonably good cleaning result. Best Practice Tips for manual dishwashing were defined on the basis of experiments and of the knowledge of everyday behaviour. Consumer studies in the laboratory have shown that it seems to be possible to save resources, such as water and energy, when consumers are trained on Best Practice Tips for manual dishwashing. This study aims at verifying the potential to save resources in real life when consumers are applying Best Practice Tips for manual dishwashing. A four-week in-house study was run in two countries and data was gathered on the manual dishwashing behaviour before and after training on the Best Practice Tips.

The results of both periods were compared with each other and between the countries. The test participants in the German sample needed on average approximately 30% less water and 40% less energy in the period in which they applied the Best Practice Tips. The Spanish test participants needed on average nearly 50% less water and 60% less energy for dishwashing in the period after the training. It can be concluded that an average household can achieve a reduction in the resource consumption when applying the Best Practice Tips. However, it has to be taken into consideration that individual savings are very different due to differing living conditions, household sizes, practices doing the dishes and more or less prejudice against the Best Practice Tips.
S 2C-3
An exploration of dishwashing habits in Anglo and Hispanic communities through the use of Cultural Probes

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Water-related behaviours in the home often happen as a matter of routines, susceptible to the ever-changing circumstances and context in which they are carried out. The research presented in this paper builds on the hypothesis that cultural background greatly influences the creation and development of routines, exploring this through the case of domestic dishwashing patterns.

An ethnographic study was carried out with 14 households in Anglo and Hispanic communities. The aim was to recognize behavioural views and patterns regarding the manual washing-up process across both cultures. Cultural Probes and video recordings were used as main data collection methods. By combining the visual data from the videoing, and the rich qualitative contextual information from the Cultural Probes, the researcher was able to gain a deeper knowledge of people’s real behaviour and identify particularities and common routines from the different participants. This reflects on the complexity of the identified routines of water use/waste by illustrating them with the aid of the qualitative data from the Cultural Probes. Finally, the paper recognises a number of opportunities to use the insights generated from the Cultural Probes to produce tools that aid the design of products for more sustainable water consumption practices.

S 2D-1
Accessing and Affording Sustainability: The Experience of Fashion Consumption within Young Families

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Despite current levels of fashion consumption accelerating, retailers and consumers have yet to apply sustainable principles to fashion. Sustainable principles are increasingly understood and applied by consumers, particularly when affordable alternatives are available. In the competitive fashion retail sector, there exists an opportunity for UK high street fashion retailers to differentiate their brand image through aligning with consumers moral framework. Using phenomenological interviews, this research explores working mothers’ experience of applying sustainable concerns to fashion consumption for themselves and their children. The findings reveal that in the absence of information and labelling, consumers apply heuristics and the mother’s role of providing for the family adds further complexity in a sector which provides affordable alternative options.

S 2D-3
Consumer Profile of a U.S. Market Niche for Cotton Apparel With Selected Socially Responsible Product Attributes

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In light of the growing interest in socially responsible apparel consumption, this study examined the effect of price, fiber origin with transparency (U.S. grown with transparency or not), and fiber production method (sustainable or not) on consumer purchase preferences for cotton apparel. Data were collected from a nationwide sample of U.S. consumers using a telephone survey. Based on a conjoint analysis, the relative importance of product attributes and the potential market shares for products with different levels of each attribute were estimated. Analyses based on the average of each respondent’s part-worth utilities indicated that price is the most important criterion for cotton apparel with a relative importance value of 58.5%. U.S.-grown fibers with transparency had a relative importance of 30% followed by sustainably grown fiber with 11.5%. Cotton apparel at the medium price level, grown in the U.S. with transparency and grown sustainability was estimated to garner 6.6% of the U.S. market share. Age, region, and income were consumer characteristics that were significantly related to this market segment. Insight gained from this study is relevant to marketing apparel products made from U.S. grown cotton, and would be of interest to cotton farmers, apparel manufacturers, and retailers.
Organic consumers’ favoured attributes of yoghurt – Me or the others?

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Interest in organically produced food is increasing throughout the world (Hughner et al. 2007). However, it still remains unclear what characterizes the classical organic shopper. Organic consumers are often considered to share a certain ideology and therefore regarded as being part of a certain way of life (Schifferstein and Ophuis, 1998). Resulting from this, organic is often associated with spirituality (inner harmony and unity with nature), self direction (independent thought and action), ecology (harmony with the universe and sustainable future), benevolence (enhancing the welfare of people with whom one is in frequent personal contact), values of altruism (concern for others) and universalism (protection of the welfare of all people and nature) (Grunert and Juhl, 1995; Makatouni, 2002; Zanoli and Naspetti, 2002; Fotopoulos, Krystalis and Ness, 2003).

As can be seen, there are different types of values, which are linked with the organic consumer. In this context Grunert and Juhl (1995) distinguish between two types of values: self-centred and social-centred.

Due to the existing unsteadiness of what characterizes an organic consumer and based on the above we want to analyse what makes the organic shopper. Therefore we pose the question, whether organic shoppers buy organic products as they want to grant themselves something good (e.g. want to eat healthier) or as they like to act pro-social and pro-environmental (e.g. support less intensive agriculture). In other words: if the underlying motives for consumers’ to decide on organic products are self-centred or social-centred?

With this respect we conducted a survey (n = 300) in organic grocery stores in summer 2010 in the region of Cologne/Bonn, Germany.

In this paper we focus on the yoghurt market taking into account recent product differentiations and innovations and analysing consumers’ response to those. Therefore we apply an Information Display Matrix (IDM), a method mapping consumers’ information search process. The use of the IDM serves to track the information search process of consumers.

This paper examines the relevance of self-centred and social-centred factors in the context of different product and process attributes in the information search process and the decision choice of yoghurt. To reveal consumers’ information search the IDM is used. The design of the experiment was as follows: Participants were asked to choose one yoghurt for daily use from a choice set of three. The properties of the yoghurt were described on eight dimensions: Price, Brand, Taste, Production Method, Help for Self Help, Fat content, packaging material and Health Claims. Each yoghurt contained different values on each of those dimensions.

Thus, the matrix consisted of a total of 24 pieces of information. The choice was presented to each participant by means of a computerized version of an IDM. Thus, in the experiment, respondents saw the 8x3 matrix of three yoghurts (each column is one yoghurt) with eight characteristics/attributes (in rows), which were all hidden behind blank cards at the start. At the beginning, respondents had no information about the three yoghurts at all. The participants were able to uncover one attribute after the other. As a consequence the hidden information behind the card was revealed. Once turned, cards remained open. The respondents were told at the outset that they could turn up to 11 of the 24 cards before they had to decide on one of the three yoghurts. Thereby, respondents were motivated to concentrate on those attributes most relevant for their purchase decision. Furthermore this restriction reflects to some extent the situation in a supermarket where the search for information is also limited due to e.g. time constraints. During the whole information search process the time needed to decide on a yoghurt was documented by the computer software.

Results reveal that ‘Taste’ and ‘Production Method’ but also ‘Fat Content’ are by far the most important attributes in consumers’ information search process. Together they account for 69% of the first regarded category and for 40% of all eleven clicks. Considered separately about 17% of all clicks go to ‘Taste’, 12% to ‘Production Method’, 11% to ‘Fat’, 8% to ‘Price’, 6% to ‘Brand’, 5% to ‘Packaging’, 4% to ‘Health Claims’ and 3% to ‘Help for Self Help’. This allows concluding that the latter four attributes are less important in consumers’ decision process regarding the purchase of yoghurt.

As results show the majority of the consumers (34%) search for and decide on self-centred factors (Taste, Fat content, Health claims) when it comes to the question what attributes a yoghurt they decide on should contain. Only 18% of the considered factors are social-centred (Production Method, Help for Self Help), while 14% are others (Price and Brand).

The results of our study also suggest that consumers consider only part of the available package information. Especially labels referring to e.g. ‘Packaging’ and ‘Help for Self Help’ seem to be of minor importance.
It can be stated that our analysis shows that the type and amount of processed information is of importance for the choice decision. Information, which is not considered cannot be processed and is therefore irrelevant for the heuristic applied by the respondent and for the decision. The type and amount of information requested indicates the relevance of information for the product choice. It also provides a hint which product characteristics are important for respondents’ decision making. In our study 20% of the respondents clicked on all possible 11 fields of the IDM. The average number of product attributes consumers’ inspected was 7.18 (Std. Dev. 3.03) thus considerably lower than the maximum possible number of 11 cards that consumers’ were allowed to turn. Only 20% of the respondents requested the maximum possible number of cards (11) while the same share of respondents did not even request one third of the maximum possible information and made their choice at least after having turned the fourth card. In a second step we will apply a Network Analysis to illustrate the information search process particularly with regard to how the attributes are interrelated. We will find out what constellation of attributes is important for consumers’ choice when it comes to deciding on sustainable products e.g. whether the first choice of information affects the second one and so on. Furthermore we answer the question whether the self-centred attributes and the social-centred attributes respectively, are always considered one after the other or whether consumers change between these groups.

S 3B-2
Consumer preferences for sustainable production methods in apple purchasing behaviour: a non-hypothetical choice experiment

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Increasing concern for potential risks on human health related to the overuse of chemical pesticides has encouraged research of alternatives production methods. Consumer preferences for these practices often have been evaluated using stated preference techniques such as Choice Experiment (CE). This paper contributes to the current literature by presenting a non-hypothetical CE study on apple purchasing behaviour performed in the field (in supermarkets) asking respondents to pay out of their own pocket the chosen product.

The focus of the survey is to investigate consumers’ preferences for alternative production systems moving from a conventional to an organic production, passing through an IPM and an innovative technique that employs biocontrol agents. Other investigated attributes are appearance, origin, low greenhouse gases (GHG) emission practices and price.

Data were collected in Trentino Province (Italy) during fall of 2009 by means of a touch-screen computer-assisted self-interviewing system. Respondents’ decisions are modeled according to the Swait soft cut-offs approach. Results suggest that respondents, besides preferring organic production, seem to not perceive the potential benefits of other sustainable production methods. Moreover, most of interviewed people stated to have cut-offs values in mind when purchasing apples. Non-compensatory models estimations confirm previous evidence that ignoring thresholds in datasets that contain them leads to significant errors in term of WTP.
The influence of cause involvement, perceived motivations, and consumer attitude toward a cause-brand alliance on intentions to purchase the product associated with the alliance

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Using a theoretical framework based on congruity theory, attribution theory, and the theory of reasoned action, this study examines the influence of cause involvement, perceived brand motivations, and cause-brand alliance attitude on consumers’ intentions to purchase the product associated with a cause-brand alliance. Hypotheses were tested in the context of mock cause-brand alliance press releases in an online survey administered to 742 U.S. college students. Findings indicate that perceived brand motivations partially mediate the relationship between cause involvement and cause-brand alliance attitude, and that cause-brand alliance attitude positively influences purchase intentions. Managerial and theoretical implications are discussed.

Laundry practices in Mexico: Evolution of Consumer Behaviour

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Mabe R&D

Washing machine development worldwide has focused on time optimization for the cleaning process as the demand of full automatic process increase in LA to match the increasing women’s work force that reduces the time available for house chores. Habits on doing laundry are affected by economic conditions and consumer segmentation based on consumption practices.

In Mexico, when talking about wash habits, we need to consider many things that go with it, from the usual factors that affect it like wash products, water hardness, temperature up to family recommendations and wash recipes inherited from the neighbour, friends, TV, etc.

If you consider only laundry products and additives there is a wide scheme that are “enhance” the expected result (vinegar, chlorine bleach, dishwasher detergent, regular detergent, laundry bar) and of course, the type of machine the consumer has: fully automatic, totally manual or a semiautomatic unit will influence the type of process conducted and the associated consumer behaviour that evolves as the WM does.

This mixture is also affected by the community, that pressure the family to a certain cleanliness standard, a “wash efficiency” that even when it is not defined by a label or a mandatory standard (like the European label) is expected to be supervised by Consumer organizations and advised to the public.

Finally, laundry practices or wash habits have recently gained increased interest from the government due to the regulations of energy and water consumption that is an urgent need on Mexico City.

With this paper we try to review the wash process evolution through the last 50 years and how consumer became more aware of it and even try to make it more “eco-friendly” and sustainable.

Factors that will be discussed are: 1. Washing machine market, 2. Changing consumer behaviour, 3. Changing wash process and 4. Consumer awareness and regulation environment

As a conclusion, we will provide the most recent picture of the Mexican market and how consumers are expected to behave on the following years regarding wash efficiency and the efficient use of water and energy resources.
Consumer washing behavior in Germany – Do we act in terms of sustainability? A consumer study done in 2009.

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Introduction
Sustainable consumption is a major trend and prerequisite for future business. We are forced to change our action and thinking about the environment because of limited resources. They lead to increase costs of energy and water and will keep the topic on our agenda.

A consumer survey about laundry treatment in Germany done in 2007 showed, that consumers are interested in sustainable laundry washing. In consumers view, the most important factors during the laundry process beside cleanliness are energy (89% of the consumers), water (88%) and detergent (81%) consumption. [1]

But one of the observed main problems is the discrepancy between willing and doing. The World Business Council of Sustainable development found out, that consumers are increasingly concerned about environmental, social and economic issues, and increasingly willing to act on those doubts. But they also find out the discrepancy, that consumer willingness cannot be translated into sustainable behaviour. Some of the biggest barriers they identified are availability, convenience, affordability and conflicting priorities. Most significant barriers to behaviour change are in general the lack of understanding, selfishness and a so called ‘I will if you will’- mentality. [2]

A lack of knowledge in the range of laundry treatment could be identified in the consumer study done in 2007 as well. Especially the sustainable choice of the adequate temperature, detergent and/or loading often is not aware - although a correct laundry treatment will also increase the satisfaction of the consumer with the result of his work and the products used. [1]

One aim of the current project was to define a procedure of treating laundry in terms of sustainability. To compare this idea of washing performance with data of real households, it was necessary to collect information about laundry treatment of a defined, non-representative basic population of German households in detail. Therefore, it was needed to give consideration of temperature, as well as the selection of washing program and the detergent consumption. In addition to that, a determination of user’s knowledge about the laundry process with regard to the use of resources in households should be made, to identify what’s the lack of knowledge in washing behavior.

Methods
The consumer sample contains 236 German households and was recruited according to the following characteristics:

• Either: single households above the age of 50 years, couples without children living at home between 30 and 50 years or young families between 25 and 45 years.
• Recruitment in Western-Germany
• Experience in doing laundry

Two in-home visits in each household were necessary: first, to deliver and explain the experimental kit containing a laundry basket, a kitchen and a bathroom scale a questionnaire and a diary. The given questionnaire covers questions about demographic data, estimation of different manners in doing laundry and attitudes in sustainable lifestyle. The diary, which the consumers were instructed to keep for 28 days from delivering date on, involves questions about used amount of detergent and laundry, washing program and temperature, additives and satisfaction with the washing performance per each wash cycle during the observation period.

In a second in-home visit, the experimental kits were collected.

Results
In total, 2,867 wash cycles of 236 German households were documented. In case of estimated sustainability, the majority of observed households (45,8 %) assessed that they live a sustainable lifestyle. Especially a conscious use of water and energy were named as relevant topics in terms of handling laundry. But, lacks of knowledge in doing laundry sustainable, suffering convenience or additional charges were named as considerable barriers to do something for sustainable development.

Referring to applied amount of detergent, a discrepancy between those estimated procedures and actual behavior could be noticed. In average over all kinds of used detergents and all valid wash cycles 26,85g detergent per kg load were applied. In addition to that, 39,8% of the asked households maintain that they would
use heavy duty detergent with bleach for every kind of textiles and - on the other hand – heavy duty detergent without bleach could be used for white textiles as well (19.0%). The average absolute amount of detergent over all wash cycles is with 72.69g in the range of the recommended amount for a full washing machine load (approx. 76g, medium soil level, soft water hardness).

In relation to this, the average load must be mentioned. In average over all valid wash cycles and over all kind of washing programs the participants load 3.20kg in their washing machines.

If the recommendations for each washing program were included, an under loading of in average 30% could be noticed.

Concerning the choice of washing temperature, the majority of wash cycles were done with 40°C-option (45.2 %). On the other hand, both 30°C- (22.0%) and 60°C-option (24.7%) were chosen second most common. The average washing temperature over all wash cycles amounts to 44.5 °C.

Conclusion
In sum, a discrepancy between willing, self-assessment and actual behavior in terms of laundry treatment could be determined. Lacks of knowledge and uncertainties - especially regarding to dosage and choice of detergents and use of the whole capacity of the washing machine respectively recommended loads per chosen program – could be identified. With regard to the average washing temperature compared with data of past studies, a slight decrease since 2004 (46.4 °C) is noticeable. This could be indicative of raising awareness for the benefit of clicking one temperature option down and saving energy and costs.

(1) Berkholz et. al, Verbraucherverhalten und verhaltensabhängige Einsparpotentiale beim Betrieb von Waschmaschinen, Shaker Verlag, 2007

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** 3C-3
Evaluation of the Clothing Cleaning Process in Japan Using Life Cycle Assessment (LCA)

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Many organic solvents used in dry cleaning contribute to global warming, destruction of the ozone layer, and groundwater contamination, among other problems, and are subject to growing legal restrictions and controls. This has led to a rapid increase in washable suits and sweaters that can be washed by domestic wet cleaning. Nevertheless, dry cleaning remains an essential process, one that causes less damage to clothing than water-based cleaning, particularly for a wide range of delicate garments. Our study seeks to estimate greenhouse gas (GHG) emissions (in terms of GWP100: Global Warming Potential) based on life cycle inventory (LCI) analysis of each step of the dry cleaning process, comparing it to domestic washing, and discusses methods for reducing emissions, using 100% wool women’s sweaters in a case study. Our results indicate that, CO2e emissions generated by tetrachloroethyleneÅ|used as a dry-cleaning solventÅ|exceed those of petroleum-derived solvents. In addition, the steam required for solvent recovery accounts for a large portion of these emissions, second only to the amount of steam used in finishing processes of suit. Improved boiler efficiency is a key factor in reducing CO2e emissions for dry cleaning processes. Earlier comparisons of dry cleaning to domestic laundry in a case study of the sweaters have shown that CO2e emissions from domestic laundry are about one-half that from dry-cleaning. Drum-type washing machines generated less CO2e emissions than pulsator-type washing machines and also provided higher detergency (washing efficiency). CO2e emissions generated by hand-washing were significantly higher than from washing machines. Lastly, shrink-proofing clearly increased sweater durability in both dry cleaning and domestic laundry processes.
Second Hand Trading as a Primer Towards Sustainable Consumption?

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Every household in Germany stores unused products with a total value of more than 1,000 Euros. But, many adults do not like to invest time in flea markets to trade used goods. The internet, and, as one of its pilots, the global online platform eBay, offers new opportunities to increase trading of used goods by decreasing transaction costs. The sustainability potentials of online trading of used goods are as diverse as the motifs of the users of eBay. Two modes of consumption, that are relevant in terms of sustainability, could be identified: the “prosumer”, who is trading a lot of used goods and by that causes expanding life spans of goods, but who is not really concerned about environmental impact, and, the “environmentally oriented used goods buyers”, who are willing to care for the natural environment, but are not very interested in reselling goods online. The knowledge gained about ecological effects of online trading of used goods suggests to motivate the “prosumer” to reflect about the energy use of goods before reselling them, and to inform the “environmentally oriented used goods buyer” about the sustainability impact of online trading of used goods.

Traditional market or modern retail

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The objective of this study is to evaluate consumer attitude toward traditional market and retail modern. It is evident in Indonesia, generally in big cities modern retail is growing very fast. Many chains and outlets are emerged and open every year. The growing is supported by the growth of shopping center since 1990s. Even though the growth of modern retail is amazing, but the existence of traditional market still maintain. Survey was deployed to gather data using self administered questionnaire. Respondent to the study is Gunadarma University staffs who are mostly lecturers. It was succeeded to collect 110 respondents but 7 of them are excluded due to incomplete answer. Structural Equation Modeling (SEM) was deployed to analyze data collected as we dealt with latent variables. Result shows on gender, the correlation between attitude towards the important of shopping location and products are different between sexes for fish and chicken. Meanwhile, there is no significant different between male and female respondents on the important of shopping location decision for meat and vegetable products. Without regards to gender moderation effect, female and male respondents are more preferable to shop in traditional market than in modern retail. On education level, it was found differences among respondents on the important of shopping location-products relationship, except chicken product. Again among education level it shows that traditional market is more preferable than modern retail in buying chicken, fish, meat, and vegetables products.
How Stakeholders’ explicit and unspoken expectations determine a labeling system and the consequent market impact.

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CECED

Europe has enjoyed the benefits of an energy labeling system for white goods since the 1990’s. For over a decade the system has served the converging needs of industry, consumers and the environment providing a tool to improve transparency on the market place. Due to advances in product innovation, the question of revising the label subsequently became an issue. This provided the various stakeholders with an interest in the label to enter into a constructive and healthy debate on how to ensure the label was successful. This debate, at times highlights differences of opinion, however a positive agreement was secured. This paper analyzes the expectation of all stakeholders and the possible market impact of their proposals. The paper’s aim is to see what can be learned from past experiences in discussing the revision of the energy label with a view to ensuring a constructive and meaningful debate that could assist future energy label revisions.

Both consumers and producers benefit from a labeling system which provides information on relevant but not visible qualities of a product/appliance. This principle is outlined by the economist George Akerlof in his 1970 paper entitled, “The Market for Lemons: Quality Uncertainty and the Market Mechanism”, for which he was awarded the Nobel Prize in 2001. In this paper he explained why asymmetrical information hinders the development of a market for quality goods. Indeed the possibility to signal the quality of a good is essential for producers since it rewards the quest for higher quality and technological innovation. For consumers, this information allows an informed purchase decision based on not only price but also on the features and specifics of an appliance. Energy labeling systems implemented around the world have consistently proven to pull the market towards higher levels of energy efficiency. In fact in a highly competitive market such that of appliances the capability to differentiate their product is vital for manufacturers. Presented with a large offer of products also consumers benefit from better information when purchasing a product.

The system works as long as labels provide clear information and easy comparison. As producers rely on the label to communicate value, they need it to be clear and to outline specific differences between appliances. Facilitating comparisons plays a key role in assisting consumers in deciding what to buy. So what is a right of consumers is also in the interest of manufacturers. One way labels provide clarity and easy comparison is by communicating classes rather than just figures. Therefore based labels in a competitive environment provide for a constant incentive in product development. Through the combined use of colours and lettering the label supports the uptake of top energy class products and discourages purchases of products that fall into lower energy classes.

The challenge of combating climate change has prompted the European Commission to introduce a series of targets (dubbed the 20-20-20 targets) targets. It seeks to encourage all citizens, organisations and industry to cooperate in the effort. Almost 30% of the EU’s electrical energy consumption comes from residential use². Growing sensibility towards the environment has meant that society welcomes a label that guides consumer choice.

For industry anything that drives consumers to choose more efficient and technologically advanced products is beneficial. It also helps drive manufacturers to introduce ever more innovative products. Today we can see that most appliances, which adopted the energy label in the 1990s had slotted into the A class band, by 2007.

This development introduced a new challenge: how to deal with a dynamic improving market? The classification system was getting too heavy. Classes at the bottom of the scale were becoming redundant. It became increasingly clear that a closed label system posed an issue.

The refrigerator was the first appliance to need new energy classes for a share of new models consuming 20% and 40% less than the maximum allowed for A class. In 2003, a new directive introduced the A+ and A++ classes for refrigerator labels. The change proved successful since it created a path for the 2010 framework revision of the labeling directive, which has resulted in 3 new classes added on top of the A Class and the colour scale to be shifted up.

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The new energy label is a masterpiece of negotiation, because the starting points of different stakeholders were
close. The debate focused between an open and a closed label. Closed labeling systems need to be
either substituted or rescaled, open systems in principle never fade out, but by nature they tend to provide more
neutral information rather than deliver the message to buy top class. Some stakeholders have observed: “The
message “Buy A” is easy to understand and has contributed considerably to an uptake of more energy-efficient
household appliances and thereby to a reduction in overall household energy consumption”. Other
stakeholders were concerned about the period of confusion following a rescaling and the breaking of the link
between class and perceived value by consumers.

The final choice of a labeling system that will last through technology innovation has not yet been made,
industry will favour any system which provides clarity and significative differentiation, supports technological
progress and leaves the market to work without external unnecessary interventions. Future debate will certainly
be enriched with the learning from market uptake of the new A++ and A+++ classes.

S 4A-1
Improving sustainable consumption policies to accommodate consumers’ everyday life needs

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In our paper we examine the potential effects of SC policy instruments on consumption practices. We argue
that public policy to influence consumption patterns can be more effective if it goes beyond rationalist
assumptions of consumer behaviour, acknowledging the socially embedded, culturally shaped and habitual
character of consumption practices. Hence, a SC instrument will be successful, if it does fit with the constraints
and requirements of consumption habits in everyday life. The paper draws on a cross-analysis of focus group
results exploring a consumer perspective related to different types of SC instruments in the need area of food.
The first case is on public catering in Finland – i.e., the provision of food services in public facilities such as
schools. The second case refers to the deposit scheme for beverage packing in Germany. The scheme is an
economic instrument, which aims at encouraging consumers to purchase beverages with less environmentally
detrimental packaging.

S 4A-2
A Sample of Sustainable Lifestyle: Seferihisar, First “cittaslow” city of Turkey

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In this study, Seferihisar as a “cittaslow” city is examined in terms of the voluntary simple life opportunities offered
in the context of a sustainable life style and value differences, social differences and the differences about
consumer preferences and media preferences among the industrial world view and voluntary simplicity world
view are emphasized. The purpose of the study is to analyze the evaluations of people on their life styles and
their city as “slow city” in terms of sustainability, and their views on the terminal and instrumental values and the
life style of a voluntary simplicity, which are determinant in issues of life styles and quality, through the method
of a sample case. The sample case study covers the local people living in Seferihisar. 11 in-depth interviews were
made in total. Findings show that the participants are happy to live in Seferihisar leading a calm and peaceful
life, glad with Seferihisar’s becoming a “slow city”, thinking that being “slow city” influences life quality positively

*Well-known A-G layout of Energy Label should be maintained*, Joint statement from ANEC, BEUC, BRC (British Retail Consortium), and FCD (Fédération des entreprises du Commerce et de la Distribution).
in terms of economy, very positively or positively in terms of culture-subculture, cultural-natural resources, and the standards of life and environment, positively or neutrally, in terms of freedom, holding their most favoured terminal values forth as a peaceful world and a comfortable life, instrumental one as open-mindedness, and preferring the life style of a voluntary simplicity with respect to their value judgement, social characteristics, and consumer and media preferences. Besides, in this notice the significance of extending the Cittaslow projects in order to provide a sustainable progress in the life quality and the potential of Turkey to create new Cittaslow towns is emphasized.

**S 4A-3**

Can conscious consumption be learned? The role of Hungarian consumer protection education in becoming conscious consumers

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The purpose of this research is to examine how consumer consciousness can be defined, along what dimensions it might be measured and, according to these dimensions, how conscious Hungarian university students are. In addition, it is also discussed how their consumer protection education might contribute to their consumer consciousness. Two hypotheses have been proposed concerning factors potentially affecting conscious consumer behaviour (gender; participation in consumer protection education). To test these hypotheses, a questionnaire survey has been conducted with a total of 280 respondents, whom are undergraduate students of a Hungarian university. It is found that different aspects of consciousness dominate the consumer decisions of females and males. On the one hand, female respondents appear to be characterised more by hedonistic consumption but they are more price sensitive than males. On the other hand, Veblen effect is stronger for males, and they have greater trust in well-known brands. Nevertheless, young adults participating in the survey already have their own consumer habits and preferences; therefore, their consumer behaviour is difficult to be formed by means of education during their university years. These findings are, however, limited to Hungarian university students and cannot be generalised to the entire society or other countries.

**S 4B-1**

Monitoring and feedback service as a way to reduce the greenhouse gas emissions of consumption

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In this paper, we examine and assess the possibilities offered by an Internet-based greenhouse gas emission monitoring and feedback service for motivating households to make their consumption behaviour friendlier to the climate voluntarily. We studied consumers' experiences and judgements of the acceptability of such a service and its potential to promote the desired behaviour, in a Finnish Climate Bonus research project wherein a demonstration version of a monitoring and feedback service was developed and tested. We found the service to be well received among the participating consumers. They regarded the service interesting because it offered concrete feedback on the emissions caused by their own household consumption. All users agreed, however, that the demonstration service needs to be developed considerably. All in all, the study indicated that a fully functional and consumer-empowering monitoring and feedback service might be a way to motivate people to reduce their consumption-based emissions voluntarily.
Carbon footprint as an index and incentive for sustainable consumer behaviour in the future

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Carbon Footprint is an upcoming tool to allocate a numeric value to products or services for their specific impact on climate. The background of this method is the Life Cycle Assessment (LCA) approach. Accounting greenhouse gas emissions over the whole life cycle of products or services allows a unique Carbon Footprint to be allocated to each product. This could be one of the first steps in communicating the sustainability performance of products or services to the consumer.

The consumer may find it difficult to judge and memorise numeric values, particularly if expressed on different units (e.g. packet size, 1 litre, 100 g). Hence, this contribution provides a review of existing international labeling policies and discusses their 'pros and cons' such as giving a single static numeric value (Carbon Trust, Tesco’s, UK), carbon reduction labels (Climatop for Migros, Switzerland), Carbon Offset label (e.g. CarboNZero, NZ) or airfreight labels (e.g. Marks & Spencer’s, UK).

Contribution of small-scale farmer innovations to sustainable agriculture

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Smallholders play a very important role in sustainable agricultural and rural development processes, as they manage natural resources, produce goods and provide services. This is strongly related to the capacity of smallholders to develop and/or adopt technical and social innovations.

The objective of this paper is to highlight the contribution of smallholders in sustainable agriculture processes through development and use of innovative technologies and collective management systems, and to understand roles of external actors and policies.

Field research activity carried out during February-May 2010 allowed the identification of many smallholder technical and social innovations in 13 countries (Albania, Montenegro, Serbia, Macedonia - FYROM, Bosnia & Herzegovina, Kosovo, Tunisia, Egypt, Syria, Eritrea, Ethiopia, Sudan and Senegal) and 19 of them have been thoroughly analysed using rapid and participatory appraisal methods. Research results were reviewed, analysed and discussed in this paper.

Identified technical innovations deal with agricultural inputs; soil fertility management; pests and disease management; natural resources management; food processing; etc. Innovative technologies used by smallholders are, usually, multifunctional, less capital intensive, affordable, based on local knowledge and local specificities, and adapted to local resources and assets. A wide range of small scale farmer’s groups were presented, including groups of producers; women; young people; for natural resource management and services delivery; etc. These were formal or informal and self-established or formed by externally-driven processes. Local groups are important tools for creating community awareness, commitments and responsibilities on sustainable agricultural processes.

Supportive policies and external institutions, that build on smallholder’s skills and capacities are crucial to develop and scale up smallholder technical and social innovations and increase small scale farmers contribution to sustainable agriculture.
S 4C-1
Sustainability and Demand for Traceability: a cross-national segmentation

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Due to new standards in food safety and production sustainability, traceability systems are becoming an important tool for tracking, monitoring and managing product flows through the supply chain. Traceability can be used as a method of certifying production, processing and nutritional credence attributes of food products. Sustainability is one credence attribute that is gaining in importance in the eyes of consumers. In this research the demand for traceability in verifying environmentally sustainable production practices is examined. The data were collected as part of much larger surveys related to consumer’s perceptions and concerns about food safety, trust and reported behaviour related to beef and venison consumption in three countries – Canada, US and Japan. Determinants of traceability in verifying environmentally sustainable production practices include respondent’s perceptions about food safety, food purchasing characteristics such as whether they normally buy organic product or shop at supermarkets and desire for knowledge about the origin of foods purchased. In comparing across countries, there are significant differences in the interest in traceability to verify environmentally sustainable production practices and in the determinants of such preferences.

S 4C-2
Publication Distribution System in Rural India: Implications for food safety and consumer protection

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Consumers belonging to weaker sections are susceptible to exploitation in various ways particularly with regard to quantity, quality and price of the products and their delivery terms. The exploitation is more when the product enjoys subsidy from the government and administered through persons, who are chosen primarily based on their political affiliations. Corruption, artificial scarcity, favoritism, and black marketing in such systems lead to further exploitation of the poor consumers. In India such exploitation is clearly visible in the “public distribution system” (PDS), which is a government created system intended to ensure food security and supply of other essentials to the rural poor. The system has provided the products at subsidized prices but has failed to protect the consumers against black marketing and shortage in quantity. The agencies/dealers in the distribution system are appointed on political basis and they more often indulge in corrupt practices, causing harassment to the consumers. The realization that the system does not work has led to its revamping. To make the system effective, “Consumer Clubs” which have been established in the rural schools, if energized properly with support from government can contribute significantly to the governance of the system.
S 4C-3
Conceptualizing the acceptance of insect-based food ingredients in western diets.

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We draw on a combination of food anthropology, food sociology and new institutional economics to conceptualise the relation between prevailing food cultures, institutional adaptations and the acceptance of food innovations by consumers. We stress the importance of the cultural-psychological dimension in the classification of the radicalness of food innovations. Furthermore, we link types of innovations (from incremental to radical) with the effect that they have at different institutional levels. In order to illustrate the usefulness of our conceptual framework we apply this framework to three scenario's related to a specific food innovation – at least in Western societies – which is the eating of insects. The three scenarios represent different ways of introducing insects into western diets, where the scenarios are distinguished by the degree of radicalness of the innovation on each of the three dimensions.

S 4D-2
Promoting Financially Sustainable Consumer Behavior

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Introduction:
Current financial crisis has clearly shown that family financial wellbeing is strongly tied to the national financial wellbeing. It has also shown that financial decisions made by a large number of people were flawed. And that most consumers were not well equipped to deal with changing economic circumstances and maintain financially secure future for their families and businesses. Reactions from experts to this recent financial crisis have been mixed. Some are calling for more regulations and more default options that will result in shifting decision making in important areas such as saving and investing for long term goals to the employer or government. Others believe that we must educate, inform, enable and empower people to make sustainable financial decisions. This paper aims to explore how financial education needs to change to ensure sustainable financial behavior resulting in long term financial wellbeing of the family and society.

Methods:
The genesis of this abstract has been drawn from the key findings of a recently completed project “Quarter Century Research in Personal Finance” (Hira, Summer 2010). Four themes (learning strategies, motivations to learn-behave, outcome base course evaluation and emerging trends and new opportunities) were selected to frame the project and establish a foundation for building future approaches to personal finance education and research. A systematic approach was designed to engage a critical mass of distinguished researchers to hold collaborative discussions with a goal to develop major findings and gaps in research and education and develop best strategies for addressing these gaps.

Results:
Factors influencing financial matters and behaviors can be grouped in two major categories - external or macro factors and internal or micro factors. External factors including nature of financial products and services, sales approaches, inflation, interest rate, unemployment rate are same for all consumers in a community, state, and country. Most people do not have much or any control over most of these factors other than how well they are prepared to react or protect themselves from drastic changes in these elements. Internal factors include values, attitudes, knowledge, skills, management practices and financial resources and these factors differ by each person. Most people have some control over most of these factors. According to financial socialization research financial behavior is influenced by values, attitudes, environment and experiences. Family has been shown to be the most important socialization agent. This is where we attain our values, attitudes, knowledge, experiences and sense of responsibility towards finances. From very early age by observing how money is viewed and handled in the family, we develop and carry those approaches throughout their lives. However,
studies also show that we continue to learn from our experiences and from our environments such as schools, friends and family, media and workplace. Financial education is a lifelong learning process, if opportunities are created people can and will learn sustainable financial practices to assure their long term financial wellbeing. Practices that researchers have identified as significant in contributing to one’s financial well-being (measured by net worth) include starting to save regularly and at early age, continue to increase involvement in financial matters and particularly investing throughout the years, attitude toward debt, mastering the use of credit cards and taking responsibility for one’s own financial wellbeing.

A review of the current financial education scene shows that a large variety of educational programs are being offered. Educational materials are available in every form and shape - print, CDs, DVDs, internet, games, plays and musical messages. These programs are offered in a variety of settings such as community centers, schools, colleges, work place, churches, libraries and military basis. Course content is not well defined. Anything goes under the term “financial literacy.” The content and learning objectives vary by who is teaching and where the course is being taught. In reality there are so many programs, all with different motives and content that both individuals and educators feel overwhelmed and confused. They are not sure how to decide which program to select. More importantly most of these programs do not address the personal side of the personal finance. They are mostly focused on the math of the personal finance only. In addition, most teachers in most settings are not formally educated in personal finance, or trained in teaching personal finance or conducting course evaluations. However, researchers have shown that successful outcomes of financial education depend on how well-defined standards for course content are, how well the teachers are trained in that content and in conducting outcome based course evaluations.

Conclusion:

Financial education to fill the urgent need has to be meaningful in our present situation and relevant to our future needs. Filling for this need and responding to this demand calls for expert, informed, down to earth and at the same time visionary education. Our challenge is great. In a time of continuing and global financial crisis and polarizing viewpoints, we must promote and support an ethical and sustainable approach to financial behavior. Some critical questions that we need to address are: Should money be a means an end or the goal itself? What is true affluence? What is genuine wealth? What is the source of true happiness and wellbeing? Personal finance and consumer education should be about human wellbeing in society and should not be separated from moral and ethical considerations. Nothing in life is morally neutral. Current times demand a revolution in thought, as well as new ways of teaching. Personal finance and consumer economics teaching should be far more value based, reflecting the real world, that is not just mathematical, mechanical and robot like. Sustainability should be at the heart of consumer and financial behavior. The failure of markets, institutions, businesses and households during the current financial crisis has shown that the emergence of global capitalism has brought a new set of risks demanding an ethical, moral and spiritual frame work. This paper aims to address questions such as what is sustainable financial behavior. Why the need for sustainable financial behavior now? What theoretical framework is most appropriate for this work? Who is responsible for behaving in a sustainable manner? How to teach, promote and measure outcomes of financially sustainable behavior?
DOLCETA: An online treasure trove for education for sustainable consumption

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DOLCETA is an EU-wide online consumer education project. Each country has its own national website with material developed specifically to suit the local context. Education for Sustainable Consumption (SC) is one of the main foci of DOLCETA, with two sections currently addressing this theme. The framework used for the pedagogical components of DOLCETA is the Competence Based model for Consumer Education (COBACE) (Clair, Martinez-Roca, Haase, Schuh, Schlegel-Matthies, unpublished). This framework promotes a learner-centred constructivist approach to teaching, where the educator works with the learners to facilitate their assimilation and adoption of new knowledge, attitudes and skills. Within DOLCETA active methodologies and ICT are integral to the learning process, though these are adapted to suit different age groups and the targeted competences.

For the sections in DOLCETA which focused on education for SC, the principles of sustainability – economic, environmental, social development - were key influences on the choice of topics and learning activities. It was kept in mind that both learning about and learning for SC should be the main goals. A variety of lesson plans and teaching and learning resources were developed. These mainly focused on four areas: a) food and drink, b) the home, its contents and relevant services, c) personal hygiene and dress, and d) transport and travel. The lesson plans targeted primary, secondary and adult learners and tackled a variety of topics pertinent to the different age groups. The primary and secondary level lesson plans were designed to be used in a cross-curricular manner. The adult-oriented lessons were designed keeping in mind current topics of interest, or topics on which local, easily available information was scarce. Teaching and learning resources produced ranged from traditional style worksheets, to case studies, PowerPoint presentations, card games and interactive quizzes.

The DOLCETA project and website have been publicised using different print and electronic media and in different formal and informal venues. Although formative evaluation was conducted at the drafting stage, evaluation of the DOLCETA teaching and learning materials, post to having been placed in the public domain, has been informal. Feedback from educators has generally been positive, but limited in source. Thus, a more rigorous evaluation is warranted.

The DOLCETA project and website is an innovative pedagogical venture for Malta and has a very valid role to play in education for SC among all age groups, with the ultimate goal of helping to achieve a better quality of life for current and future generations.

Sustainability labels from consumer perspective

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In times of climate change, global warming and increasing sea levels the fight against the greenhouse effect is a hot topic. For example each citizen in Germany is responsible for about 11 tons of carbon emission every year. Therefore, depending on the measurement instrument 10 to 20% can be attributed to dietary patterns and even 40% on private consumption in general (UBA 2007, 2pp.). Regardless of the exact share of private consumption on carbon emission, the world population overstrains the carrying capacity of the nature for at least 20% (Sutcliffe et al. 2008, S. 1). Wackernagel and Rees (1997, 29) stated already at the end of the last century that our ecological footprints grow at a steady pace, while the per capita share of biological active areas on our planet decrease continually. Aims of climate policy – usually announced with great amounts of publicity – can only be reached reducing greenhouse gas emissions worldwide and drastically. For industrialized countries such as Germany this means that greenhouse gas emissions would have to be reduced for about 80-90% until the year of 2050 compared to the year of 1990 (BMU 2009a, 1). However, until the year of 2007 only a reduction of about 20% had been realized (BMU 2009b, 104).

Against this background, the support of sustainable products, including more and more food products as well as sustainable consumption are focal points of environmental and resource policies. According to surveys conducted by the German government a great share of consumers is generally willing to switch to sustainable consumption including dietary patterns. This means that they would purchase foods produced emitting a
low(er) amount of carbon dioxide (UBA 2009). However, so far, the market for sustainable products is underdeveloped. The main barrier is, that customers have no knowledge regarding sustainability and therewith are not able to make purchasing decisions including the characteristic of sustainability (Gottwald and Steinbach 2009, 81). Among other European countries Germany is at the lower end of countries marketing sustainability. While sustainability is discussed broadly among actors of the food chain and at government level, citizens are not included in the process. Due to this fact, today, sustainability is rather a buzz word containing no meaning anymore (apetito 2009 in Gottwald and Steinbach 2009, 82). But not only is this an issue. To make an informed decision consumers have to be able to recognize sustainable products in the shop. In this regard, the ecological footprint analysis is one of the strictest and most sensible ways to measure negative human environmental conditions such as greenhouse gas emissions and water use (WWF in Sutcliffe et al. 2008, 2p.). Hence, introducing carbon footprint labels that show carbon emission is recognized as one solution. But, if the consumer is meant to make informed decisions based on such labels, he/she should be included in the process of label developing. This leads to the following research questions:

• How important is sustainability labeling such as a carbon footprint from consumer perspective, per se and compared to other already existing labeling schemes, e.g. organic labels?

• What are determinants on consumer attitudes towards sustainability labeling?

• Who should be responsible for sustainability labeling from consumers’ perspective?

• Which international approaches regarding sustainability labeling already exist and what is consumers’ opinion regarding the respective labels?

• How reliable are such labeling schemes from consumers’ perspective?

Internationally several approaches of sustainability labeling exist. To include consumers in the process of developing labels, we need to focus on consumer perception and evaluation of such labeling schemes. Hence, to account for these facts and to answer the research questions presented a consumer survey was conducted in winter 2010 in Germany to analyze consumers’ perception and attitudes towards food labeling that is based on the carbon footprint. Firstly, we theoretically compare international sustainability labeling initiatives based on different criterions. Criterions account for example for certification standard, type of label, number of analyzed products, country of origin and visualization of label. Afterwards, the consumer survey was used to have consumers evaluate the labels. Furthermore, their perception of the different types of labels and their attitudes were collected by means of an online survey with standardized questions. Preliminary results of the survey show that about 60% of respondents want a carbon footprint label; they evaluate the label of carbon emission positively. Only 12% are against such a labeling. These answers are somewhat different from replies stated in the literature. For instance, a similar survey showed a broad acceptance as well, but results were dependent on the age of customers (ACCENTURE 2007). Also the usability of various label types differs from former beliefs (EcoSMes 2004). The presented international initiatives gave a broad spectrum for our research. Labels by industry were evaluated especially negative by consumers, while labels by NGOs, especially consumer agencies were seen very positive. Consumer confidence in labeling schemes by the European Union is also very high. This leads to the conclusion that policy makers should take into account consumers’ opinion when initiating new certification – also, to avoid that this positive image might receive a drawback. Furthermore, our results indicate that top-runner labels highly ranked by the literature (Walter and Schmidt 2008, 177) are rather inefficient from consumer perspective. They lack comparability. In this regard the visibility of emission share is in general positive, from consumers’ point of view. The fear that a numerical labeling of greenhouse gas emission asks too much of consumers are – according to our survey – legitimate. However, consumers want to be able to make a climate friendly decision. To enable citizens to make these decisions, they need assistance by means of information and education in terms of which amount is high and low and what are alternatives. Less important from consumer perspective is the depiction of the complete life-cycle assessment. In this regard the consumer is satisfied with measures of greenhouse gas emissions ending at the supermarket. Overall, in the food market labeling is an important tool to provide information. 90% of the respondents state that they are influenced by food labels when making the purchase decision for groceries. If consumers’ opinion towards sustainability labeling schemes is taken into account a helpful label for all types of customers can be created.

Note: References will be provided by authors upon request.
**S 5B-2**

Consumer preferences for EU quality food labels related to sustainability

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This paper assesses consumers’ preferences and willingness to pay for EU geographical indication quality labels (PDO and PGI), organic farming label, and other product quality cues. Using a choice experiment, multinomial and random parameter logit models, and olive oil as product of interest, results suggest that respondents are willing to pay the highest premium price for product with a PDO label, followed by organic farming label, a quality cue describing the product as extra-virgin olive oil, and then a PGI label.

**S 5B-3**

Interpreting Green Consumer Behaviour:
An Exploratory Examination Of Cardiff Consumers

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The quest of understanding green consumer behaviour has become more challenging and interesting from years to years. There have been numerous attempts to have a reality check of consumer knowledge about green issues, attitudes towards environmental quality and environmentally sensitive behaviour (Dunlap and Scarc 1991; Chan and Lau 2000; Bhate 2001; Laroche and Bergeron et al. 2001; Diamantopoulos and Schlegelmilch et al. 2003). The main idea is to produce a comprehensive profile of green consumer. However, there is uncertainty surrounding the actual green consumer behaviour. This is due to issues such as consumer environmental attitudes different with actual behaviour and what they really purchase (Hartmann and Apaolaza Ibanez 2006). Majority of attitudinal studies have also shown that environmental concern or attitudinal variables fail to correspond to behaviour (Hines et al. 1986, Scott and Willis 1994, Schultz et al. 1995 cited in Tanner 1999). Has there been enough conclusive research on green consumer behaviour? This paper is developed as part of the present doctoral research on the topic of interpreting green consumer behaviour. Due to the exploratory nature of the study, a mixed method approach is used among Cardiff consumers.

**S 5C-1**

Consumer attitudes to sustainable food: a cluster analysis of Italian university students

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Abstract
In order to evaluate and identify the most explanatory variables to elucidate Italian university students’ attitudes towards sustainable foods, we applied factor analysis and cluster analysis (K-means method) to data from a random sample of 500 students. Three different consumer types were identified: the responsible food consumer, the inattentive food consumer and the potentially sustainable food consumer. The first and third segments, revealing high interest levels and awareness of sustainability issues in food, merit further analysis by food producers and policy makers with a view to assessing their appeal, adopting correct market positioning and defining suitable marketing programmes.
Reflections of food culture in the young and the elderly: A study of decision-making and food sustainability in Northern Ireland

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Introduction
An individual's food culture constitutes their beliefs, attitudes and experiences with respect to food, which is ultimately reflected in their consumption practices. An individual may therefore demonstrate their food culture in every decision they make regarding the selection of the food they wish to consume, how it may be prepared and the circumstances around which it may be consumed. Food culture is formed as a result of a unique combination of both environmental and social factors and can affect all stages of the lifecycle – childhood, adolescence, young adulthood, adulthood and elderly. At each stage there are a number of factors that may predominate and take precedence. This study focuses on the food culture of participants representing the two stages marking the beginning and end of the lifecycle – childhood and the elderly. Decision-making is an integral component of food culture. The decisions consumers make as part of their food culture have consequences as they may choose to include foods in their diet based on their preferences for certain product attributes, which may be independent of the concept of ensuring a sustainable food supply chain. Identifying the dominant desirable attributes of the two stages will enable a characterisation of a "typical" food culture for both and highlight any differences, which may affect the practice of sustainability. This study aims to explore both the concept of food culture and of consumer citizenship and to determine whether underlying consumer citizenship may be exhibited through food-related behaviour.

Methods
Two studies were conducted which focused on the two contrasting stages of the lifecycle – childhood and the elderly. The childhood study was conducted with pupils at Key Stage 2 level (pupils aged between seven and eleven years of age) in eight primary schools throughout Northern Ireland, representing the three main management types – Integrated, Controlled and Roman Catholic Maintained. Each child completed an age-appropriate questionnaire examining their personal environment and food-related influencers in addition to detailing key demographic information. Image-based research methods were also employed and each child designed a collage that represented themselves, highlighting their interests, ambitions and cultural influences. In addition each child demonstrated a "typical meal" through drawing on a paper plate and providing a description of this meal on the back. The elderly study focused on in-depth discussions centred around key topics of food sourcing, preparation and consuming and the cultural influences on these practices. Projective techniques were employed using exemplar meals as points for these discussions, which elicited responses to both their current desires and the desires they may have had when they were young, highlighting the persistence of these memories.

Results
How and what foods young consumers eat is significantly dependent on others and their environment. This dependence can delay the development of consumer citizenship, which is central to becoming a responsible consumer who recognises the importance of practicing sustainability, the purchasing of locally-produced food and preparation of it using culturally sensitive and traditional methods. Young consumers living in Northern Ireland in 2011 have also been exposed to a greater variety of foods, innovative preparation methods, novel products and new eating experiences. Elderly consumers have shown to be more aware of the need for consumer responsibility through their food culture; they have maintained a food culture that has solid foundations in the choices and experiences of their youth. However, elderly consumers also adapt and develop with change and the food culture of most reflect this process – new foods and or ideas maybe embraced and become part of a wider food culture. There is a strong indication of a discrepancy between desires and practice and the consequences of certain eating habits. It has been shown however for those whose diets are predominated by local foods that they consume both a healthier and environmentally sustainable diet.
Conclusion

There is a need to promote the idea of responsible consumerism. In a situation where food supply is secure and access to food is assured, food miles and the impact on personal carbon footprint of decisions made need to become significant concerns for every consumer. It is difficult to identify those within the childhood stage as being truly aware of the need for responsible consumerism and their dependence on others for food may be an influencing factor. This highlights the role of the family decision-makers and the persistence of these dietary habits on the future and the impact on demand this may subsequently have. Promoting sustainable consumption within the home and the education system may highlight these issues and encourage young consumers to become responsible at an early age and to continue throughout their consumer lives. Measures must be put in place to realign the Northern Ireland consumer with the practices that appear within the “typical” food culture of the elderly – a desire for wholesome, traditionally prepared and cooked food and sourcing local produce.

S 5C-3
Influence of age on French consumers’ environmentally sustainable behaviour

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In order to develop successful environmentally sustainable policies that persuade consumers to change their consumption patterns, it is necessary to understand their current behaviour. In this context, the aim of the present study was to provide an insight on French consumers’ environmentally sustainable behaviour and to investigate the existence of age differences. One hundred and twenty seven consumers from Dijon (France) participated in the study. Consumers were recruited according to three age groups: 20 to 35 years old, 36 to 50, and 51 to 70. They were asked to indicate the frequency in which they performed different behaviours related to environmental sustainability (33 statements). Response frequency of each of the statements of the questionnaire was calculated for the whole consumer sample, and for each of the three age groups considered. Multiple Factor Analysis (MFA) was also carried out to visualize differences between the three referred groups of consumers. Differences were found between age groups regarding the frequency in which they reported to perform many of the investigated environmentally sustainable behaviours, suggesting an increase on the awareness of the environmental impact of their everyday actions with age. Results from the present study provide valuable information for the design of educational and media campaigns to increase consumers’ awareness about the environmental impact of their actions, and to promote the adoption of environmentally sustainable behaviours among consumers, particularly considering that younger generations are the decision makers of the future.
Citizens' perceptions on the role of Greek Environmental NGOs

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The aim of this research is to identify citizens' perceptions concerning Greek Environmental Non Governmental Organizations (ENGOs). The study, conducted via closed-type questionnaires, focused on 285 citizens in the Athens urban area, Greece. The results indicated that citizens accept environmental awareness as a particularly important factor in the quality of life. They claim that ENGOs are a mean for individuals to express their opinion about sustainable practices and they are willing to funding support ENGOs. Although respondents point out the important role of ENGOs in environmental protection, they suggest that Greek ENGOs should increase their pressure towards the state in order to raise the protection of the environment. On the basis of citizens' responses on the role of ENGOs, four groups were identified using cluster analysis. The perceptions of the groups covered all the ranges, from being strong supporters of ENGOs to disagreeing (non supporters). There is evidence that there is enough room for improvement in the Greek ENGO sector. It seems that the Greek ENGOs' role is determined by the need for further membership and action by all citizens and government for a more effective sustainable future.

Household food waste in Finnish food production chain

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Wasting of edible food causes a lot of avoidable environmental impacts and is therefore an important part of food chain responsibility. The amount and source of food waste produced by Finnish households had not been studied before in a larger scale and therefore a two-week follow-up study concentrating on mapping the volume and composition of food waste in 380 households was conducted. The results of this research show that around 120 000–160 000 tons of avoidable food waste (about 23 kg/person and 63 kg/household) per year is generated in Finnish households. Most often discarded food products were vegetables, home-prepared food, dairy products, bread and other grain products, and fruit and berries. The main reasons for food waste were: food was spoiled or mouldy, best before date was expired, food was left on a plate, or too much food had been prepared. The average per capita food waste, 23 kilos, calculated from diary entries was significantly lower than the findings in international studies are pointing at. However, these different studies are not directly comparable due to the differences in research methods, sample sizes and presentation of results. Also the economic value and environmental impacts of avoidable food waste were assessed roughly. The results indicate that the reduction of food waste is crucial for promoting environmental and economical sustainability of the entire food supply chain and it calls for efforts both from food supply chain players and consumers. With the help of the observations and results of the study the most effective food waste prevention methods can be identified and all this data can be used in planning of food waste reduction initiatives.
Consumer Behavior towards Alternative Energy Products: A Study

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Introduction:
With the ever increasing demand of energy and limited availability of fossil fuels, the importance of use of alternative energy has been realized across the globe. The aspects of alternative fuels, energy efficiency and subsequently adoption of energy efficient products have also become significant in the light of increasing costs of energy; concerns about energy security, climate change, greenhouse gas emissions, air and water pollutants and other economic and environmental concerns.

Sustainable energy is the provision of energy such that it meets the needs of the present without compromising the ability of future generations to meet their needs. Sustainable energy sources are most often considered as all renewable sources, such as biomass, solar power, wind power, wave power, geothermal power, and tidal power. It is deemed that the scope of term sustainable energy also encompasses, clean fuels like natural gas (and its variants) and energy efficiency technologies.

Application of sustainable energy means like fossil-fuel alternatives in operation of energy intensive products help in saving money, save the environment and also tackle carbon emissions. Usually it costs more initially, but they are supposed to save money in the long run. However it seems that the energy end-users rarely see the world in the same way. It is felt that energy use is often ‘invisible’ and rarely the subject of conscious decision for energy end-users. It has been assumed that lay people do not have the same kind of knowledge as experts do; they know less about the sustainable use of energy. It is therefore a challenge to understand energy related consumer behavior. There are number of barriers on use of sustainable energy products and energy conservation, including economic, psychological, organizational and social barriers.

Also there are researches that suggest that consumers are skeptical about whether products that are sustainable can also be functionally strong, broadly defined. This is called the “sustainability penalty.” For instance despite matching energy equivalence, ethanol-based-fuel (or other alternative fuels) may be expected to provide less energy and compromise with many functional attributes of the vehicle those are run on these alternative fuels. These types of expectations can be powerful enough to bias consumers’ inferences and judgments of how well these products actually perform. To be successful, energy-efficient products need to overcome the so-called penalty that consumers levy on them.

Focus & Aims:
The subject matter of this research paper is the investigation of how halo is influencing the perception and the intent to purchase Compressed Natural Gas (CNG) based passenger cars. Halo was firstly investigated in the field of psychology as a cognitive distortion urging a rater to judge the performance or behavior of the product being rated, based on a general impression the first holds on the latter or on one of the product’s relevant features. It has then been hypothesized in this study that halo is influencing the way consumers rate CNG operated vehicles. The conventional positive functional associations the fuel “Petrol” evokes are responsible for a pattern of raters’ judgments on a petrol car, so that the product is seen as consistently better in many of its features compared to a CNG operated car.

Methods, Results & Conclusion:
To test the presence and effect of halo a quantitative research has been performed based on a field experiment. The experiment consists of a set of male drivers required to drive two cars of same make, same age and using the same fuel (petrol) on the same driving track under identical driving conditions without a considerable time-lag. The only difference was that one car though petrol operated, is appeared to look like a car fitted with CNG kit (which it was not). For this two minor changes are made wherein the boot space of the car is cosmetically fitted with an ultra-light weight CNG cylinder like empty cylinder without any CNG and having no functional utility. Similarly a CNG ignition switch lookalike is placed in the car which again has no functional utility except giving an impression to the driver that the car being driven is a CNG operated car.

Respondents are then asked to rate the driving experiences on different functional dimensions, such as pick-up, kerb-weight, achieving a particular speed within a specified time, driving pleasure, interface of shifting gears and acceleration etc. The statistical analysis is aimed to reveal how halo is affecting the car driving experience ratings.

Contemporary scenario of alternative energy and related products and aspects germane to these has been discussed in the beginning. Thereafter a detailed literature review is being undertaken to put the issues in
perspective and also provide a conceptual framework to the study. This study has both academic and managerial implications: on one hand it contributes to the existing knowledge on the applied concept of halo to the marketing discipline, on the other hand it also offers certain recommendations for manufacturers producing CNG cars/CNG kits.

**S 6A-1**
Do better working conditions provide the consumer with better products?

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The article examines whether companies that guarantee better working conditions by taking social aspects at their manufacturing sites into consideration produce and market goods which are superior to other products. The study results show that the quality of the production conditions represents no reliable indicator for the quality of consumer goods. This is valid in any case in the sense that the consumer cannot expect that a socially conscientious management will necessarily go with higher product quality. Admittedly the data sets examined indicate a positive correlation. How this result should be interpreted and what conclusions to draw from it will be discussed in detail. In particular the special role of product-related Corporate Social Responsibility (CSR)-Ratings will be considered.

**S 6A-2**
Negative influences of working life on sustainable consumption

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Working life can have negative influences on sustainable consumption. This article systematizes these influences by applying models from work-life-research. Negative influences are enlightened that have not been considered so far in research on sustainable consumption. It is suggested that corporate preventive measures can take place within the scope of CSR.

**S 6A-3**
Dietary Versus Transports: An Analysis Of Environmental Burdens During A Working Day

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Environmental impacts associated to a standard day of work, have been evaluated in this article. In particular the aim is to realise a comparison between different standard meals, provided by a canteen, and a series of transport options that can be used to cover the way from the home to the place of work, following the Life Cycle Assessment (LCA) methodology. The LCA is a holistic methodology that evaluates the environmental burdens associated to industrial productions or anthropic activities, along the whole life cycle of the product. The environmental load associated to a service is characterised by a number of impact indicators internationally accepted, such as GER (Gross Energy Requirement), GWP (Global Warming Potential), ODP (Ozone layer depletion) and others; in the present paper a comparison of impact indicators of several food courses and transportation means are shown. The results of the present analysis demonstrate that high environmental impacts generally come from food, especially when the menu contains meat. In particular the menu including a beef steak appears to have the highest contribution for the most of indicators.
S 6B-1
Comparison of Willingness to Pay for Organic, Sustainable, and U.S. Cotton Apparel

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This study investigated significant factors influencing consumers' willingness to pay a premium for three different socially responsible products—organic cotton, sustainable cotton, and U.S.-grown cotton shirts. Through random-digit-dialing, the study data was collected from 500 respondents nationally via telephone surveys. The results of stepwise regression and mean comparisons showed that more than half of the respondents indicated that they were willing to pay a premium for organic, sustainable, and U.S.-grown cotton shirts. Consumer attitudes toward socially responsible apparel, attitudes toward environment, age, and gender were found to be significant factors for consumers' willingness to pay a premium. Four apparel product evaluative criteria, brand name, laundering requirements, color, and fit, were also found important for consumers' willingness to pay a premium. Apparel businesses planning to offer organic, sustainable, or U.S.-grown cotton apparel products may want to emphasize certain tangible benefits, such as strong brand, reasonable price, easy care, color, and fit, concurrently with intangible benefits, such as feeling good by helping society and environment.

S 6B-2
The Effect of Attitudes, Perceptions and Socio-Economic Factors on Heating Investments

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Household consumption of renewable energy is high on the political agenda, and the Norwegian government aims to increase energy efficiency and reduce the dependency on electricity in household heating. To achieve these goals more information about consumers' preferences for heating equipment is needed. We carried out a web survey with 1860 participants to investigate how attitudes, perceptions and socio-economic factors affect households' investment likelihood and choice of new heating equipment in the last 10 years. Estimation results suggested that Norwegians have very different perceptions about different heating equipments. Characteristics of the residence, demographical factors and household's intrinsic factors, such as motivations, environmental attitudes, are closely related to their heating investment decision and choices. Especially we found that the motivation of saving costs significantly associated with the likelihood to invest in heat pumps. We also found that households investing in pellet stoves are more likely to be concerned about the environment than other investors.

S 6B-3
Acceptance, Attractiveness and Effects of Energy Feedback Information Empirical Results from Germany

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Sebastian Goetz, Fraunhofer Institute for Solar Energy Systems (ISE)
Marc Brunner, Marian Klobasa, Joachim Schleich, Fraunhofer Institute for Systems and Innovation Research (ISI)

In the context of the project Intellexikon feedback systems for energy consumption were developed and provided to over 800 households in Germany and Austria. Participants could choose between a web portal and postal information. An accompanying panel survey was conducted to gather information on how the households experience and use the feedback and which impacts it has. Additionally actual energy consumption was determined as well. Results show that the feedback has been very well received by participants who perceived it to be attractive and helpful in saving energy. Indeed savings effects could be verified but they were lower than expected. These findings suggest that for feedback to be effective and to result in reduced energy consumption, it requires more than technological solutions providing the relevant information. Supplementary and target group specific approaches are required to encourage and support efforts. This could mean providing services assisting in interpreting the information and identifying potentials for energy savings in the individual households or offering...
incentives. Of course such a comprehensive approach will result in high costs. However, if measured against the costs for substituting nuclear energy with regenerative energy, as decided on by the German government, expenses might prove to be not even that high.

S 6C-1
Modelling resource consumption for laundry and dish treatment in individual households for various consumer segments

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Introduction
Numerous studies reveal that energy consumption as well as the usage of water will increase globally in the next decades. Both will be associated with relevant changes in the ecosystem of the earth, causing global warming with increasing drought in some areas and flooding in others. Traditional approaches allocate the origin of resource consumption among various sectors, like industry, agriculture, transport, or residential. In such a sector-based approach, the residential sector is only reflecting general home energy consumption activities, such as space heating, water heating, and appliance use. As consumer activities indirectly impact the usage of resources in the other sectors as well, the so-called lifestyle of consumers was analysed in more detail as to its effect on the total energy and water consumption and its effect on CO2 emissions. Applying geo-demographic consumer segmentation data in an input-output framework to understand the direct and indirect CO2 emissions associated with the consumer behaviour of different lifestyles or integrating all the relevant factors into a production-consumption system (PCS) are examples of ways forward to identify and allocate resource consumption and emissions. It is evident that predicting and trying to influence energy consumption and water use for household purposes needs in-depth knowledge about the relationship between consumer behaviour and social and environmental psychology; socio-demographic and geo-demographic data; and knowledge about the technologies applied.

Target
In a bottom-up model, based on consumer habits, machine technology and efficiency, and socio-demographic data on an individual personal level, the energy and water consumption of a single household for the complete laundry and dish washing processes in private homes shall be predicted. All known influencing factors shall be considered completely to allow mimicking a full range of people's attitudes and behaviours and to analyse ways how resource use can be minimised. Germany is taken as an example for this exercise.

Results and Discussion
Laundry and dishwashing processes in private home are not accomplished only by washing machine or dishwasher. For calculating the resources consumed during the laundry process, manual washing, drying and ironing are relevant processes to be included as well. Dishwashing can also be completed by hand or by using an automatic dishwasher. In many cases, both procedures are done more or less in parallel (if a dishwasher is available).

A bottom-up model is used to predict energy and water usage per year for an average household in Germany by including all relevant factors which influence these parameters. Associated costs are calculated additionally using standard energy and water rates.

The calculations reveal a relevant learning on the influence different consumer behaviour and installed appliances may have on the energy and water usage of laundry treatment and dishwashing in private homes in Germany. Differences of a factor 4 to 5 are much larger as been assumed in other studies where just a factor 2 to 3 in CO2 emissions is found between lifestyle groups. Although we have not calculated CO2 values, the energy and water usage are the driving factors for laundry and dish care processes. This highlights the need to concentrate even more on ways to influence consumer's attitude and behaviour towards a sustainable practice at home. The presented bottom-up calculation model may help to educate or train the consumer as he can easily identify, with the help of a tool based on this approach, how much money he is wasting or how much he may save by applying a certain change in his daily practice or appliance stock.
Manual dishwashing in households with a dishwasher – Results from a home observation

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Introduction
Automatic dishwashers have been invented to free peoples’ lives from a time-consuming and unloved household task, the hand dish wash. But the fact is that almost every households with a dishwasher still do at least some of their dishes by hand either because the dishes take too much space in the dishwasher, are not dishwasher safe or because dishes are being needed immediately, such as knives or other cooking utensils. So for many consumers, having a dishwasher in their homes, manual dishwashing cannot be avoided after all.

What is critical in terms of resource consumption is the manner in which the dishes are being hand washed. Various consumer organisations advise to accumulate dishes and then clean them in a filled sink or bowl, rather than running hot water for a few items as they suggest that this is more economical than washing up under running tap water. This advice is for manual dishwashing in general, but does it meet the needs of a practicable method for households with a dishwasher?

Usually, the majority of dishes can get cleaned in the dishwasher and just a small amount of the dirty tableware is left to be done by hand. Thus, the majority of the people do not want to wait until they have a huge pile of dishes to justify a filled sink wash but do the dishes immediately after usage (cf. Kleiner, 2007). Due to the size of each wash it is not surprising that households possessing a dishwasher are more likely to do their dishes under running tap water than households without a dishwasher (cf. Stamminger, 2009; Richter, 2010).

Apart from the question on how the availability of a dishwasher influences manual dishwashing practices, it also has not been widely investigated yet to what extent households with dishwasher really do their dishes by hand, and what amounts of water and energy are used in the process. The present work investigates these aspects of the daily routine and is highlighting the impact of manual washing up habits on the overall resource consumption of a household with dishwasher.

Methods
This paper reports on a study conducted in four European countries (Germany, Italy, Sweden and the UK), in which the washing up behaviour of 200 households had been observed for the period of two weeks, and provides empirical data of 82 households based on water consumption measurements and webcam observations of the kitchen sink.

Results and Conclusion
The research shows that for most people life without hand washing up remains unimaginable even when a dishwasher is present. There are always at least some dishes done by hand. However, a surprisingly high share of the dirty dishes does not get loaded into the dishwasher. On average between 24% (Germany) and 43% (Italy, UK) of the dishes still get cleaned by hand. In a particular high proportion of the manual dishwashing cycles (62%) only one item is washed. This concerns especially dishes that are usually perfectly suitable for the dishwasher such as cups, glasses, cutlery and plates.

In terms of the dishwashing practice the water consumption measurements of this research study have shown that for cycles with less than 8 items washed it makes no sense to fill a sink or bowl. Apparently, the participating consumers figured that and so the predominant technique was to do the dishes under running tap water. But in total 93% of all cycles were done under running tap water although “filled sink” and “combined” practices are - considering all kinds of washing up cycles - more water efficient.

The research concludes that households owning a dishwasher can do a lot more to optimise the resource consumption during the course of dishwashing. By increasing the number of machine washed dishes in general and by using the most water and energy efficient practice when doing the dishes by hand, consumers are able to save time and money and lower the impact of their dishwashing on the environment.
A new place setting – Consumer-relevant measuring unit for domestic dishwashers

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This study summarises the possible, necessary and recommended steps to align consumer behaviour and the standard place setting used for performance and consumption measurements of domestic dishwashers. The diversity and amount of load items, the composition of the dish materials and the amount of soiling in real life differ from the standard place setting. Through the analysis of secondary data regarding the dishware cleaned in household dishwashers, the development of a new, more consumer relevant place setting was possible. Apart from a reduction of the total amount of load items, new materials and items were introduced. The durability and availability of the dishes has been guaranteed, and reproducible and differentiating soiling for the new dish items have been developed. Although laboratory tests revealed that the new place setting caused slightly different cleaning results, it still delivers differentiable results concerning the performance parameters of dishwashers. Finally, it reflects the actual usage of a dishwasher in the household much better than the current place setting, and standard test results may gain in importance for the consumer.

Effectiveness of PIP-Model for improving pre-service teachers’ teaching skills in the practices of ESD

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The purpose of this research is to develop a model for improving pre-service teachers’ skills in Education for Sustainable Development (ESD) and examine its effectiveness. To attain this purpose, the model, Projection Images by Photography (PIP) was adopted and the PIP-Method was developed. The participants consisted of 140 Japanese pre-service teachers. First, the pre-service teachers identified issues of sustainability, and next they took photos related to the theme “Sustainable Development” based on their own problematic awareness of sustainable issues. Then the pre-service teachers planned their own ESD practices. At the same time, 37 second graders and 20 fifth graders took their own photos of the same theme. Pre-service teachers compared their own photos with those taken by the children, and found similarities and differences regarding how teachers and children respectively interpreted their own problematic awareness of sustainable issues. Finally, they reflected on their own plans through the use of the PIP and the revised plans, referring to the children’s photos. The effectiveness of the PIP-Model was measured by the notions of how pre-service teachers revised their improved teaching plans for ESD practices after the PIP. In addition, it was assessed by changes in the pre-service teachers’ understanding of children’s sustainable developmental processes through the PIP. The result indicated that pre-service teachers comprehended problems in the first ESD practice plan and were able to improve their plans, taking into account children’s sustainable developmental processes. Thus, we have proved that the PIP-Model is effective teaching for ESD practice. Moreover, the implications on how to use the PIP in the educational field were presented.
Adolescents’ Consumer Competence and Interest in Consumer Education

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The main research objectives were to learn more about adolescents’ consumer competence (knowledge in legal commercial practices, attitudes towards advertising, preventive and defensive behaviours) and their interest in consumer information and education. A questionnaire was made available on the Internet to adolescents between 12 and 17 years of age (n= 431). The findings confirmed adolescents’ deficiencies in consumer competence and revealed that this group shows a rather low interest in consumer information and education. One of the determinants of their interest is parent-child discussion about consumer matters. According to the adolescents’ perception, parents and school are among the best sources of consumer information and education. Special thematic activities in school and features on consumption on television shows for young people are the two best activities to do so.

The role of education for sustainable development in families’ sustainable consumption

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The main aim of this paper is to bring the concepts of Education for Sustainable Development (ESD) and Sustainable Consumption (SC) under a common ‘umbrella’, to examine the impact of a long-term programme of Education for Sustainable Development and how it can communicate the message of a lasting pro-environmental behaviour to schools, and in turn if and how such a programme can influence the lifestyles of children’s and their families’. In essence, this is an evaluation of the secondary effects of an environmental education mechanism; namely its ability to raise students’ environmental concern and action and their potential to influence their family members in terms of awareness, concern and action; towards more sustainable lifestyles. Methodologically, this study is a mixture of qualitative and quantitative approaches; including interviews with experts like policy makers and members of academia who work in the area of ESD, consultants on the Sustainable Schools Strategy as well as teachers and heads of schools of the United Kingdom.

NOTE: The methodology of this research study is more complicated including questionnaires and focus groups with students, participant observation and interviews with students’ families, and is still ongoing.

Physical Mobility and the Consumption of Distance

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This paper introduces the concept of consumption of distance for analysing late modern travel practices. It starts off with a critical examination of two key sociological concepts – mobility and consumption –, and explores possible linkages between them. Subsequently, existing theoretical tools for investigating human travel behaviour are critically reviewed to identify potential gaps in the social science literature and to advance arguments for the re-conceptualisation of physical mobility as consumption of distance. It is argued that a consumption-focused practice approach challenges more limited actor-centric, individualistic approaches by drawing attention to powerful (infra)structural and social influences on people’s everyday physical mobility. The paper identifies four key areas that both shape and reflect people’s physical mobility practices and that also contribute to their relative resistance to change in the context of transport-related sustainability efforts: 1) infrastructure and the built environment, 2) the level of regulation, 3) people’s social and cultural context and 4) their beliefs and emotions. The concluding part of this conceptual paper asks how the concept of consumption of distance could be effectively utilised to explore potential
avenues for change. Integrative strategies for sustainable transport and planning policies that seek to radically reduce people’s need to consume distance offer alternatives to more conventional policies that focus on modal choice and individual travel behaviour.

**S 7A-2**
Consumer identity and environmentally sustainable consumption

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Individual consumer behavior can result in persistent consumption patterns that can have significant sustainable dimensions. For instance, the everyday transportation choices, food choices or energy usage can have a profound effect on the environment. Recent developments in the literature of rational choice and decision-making suggest that these choices can be greatly influenced by one’s identity. The article presents a simple analytical model of differentiated consumers where identity effects enter through a simple game of social interaction. The analysis examines the consumer choice between a “green” product and a conventional or “alternative” product where both are assumed to have similar physical attributes and properties but are differentiated with respect to their production process – the “green” product is a result of a process that accounts for environmental and sustainable considerations; on the other hand, the conventional product is associated with exploitative or irresponsible environmental behavior and production practices. Analytical results illustrate how mutual trust among the community of “green” consumers can affect the relevant market shares between the two products.

**S 7A-3**
Obtrusiveness and design for sustainable behaviour

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There is a great potential for reducing the environmental impacts of product use by changing the way users interact with products. To achieve such a behavior change, there is a need for a toolbox to help designers select appropriate design strategies. A first step in the direction of such a toolbox has already been taken, utilizing a distribution of design strategies according to the distribution of control. This paper investigates the potential of adding another dimension to the distribution of design strategies, by investigating the potential of variations of obtrusiveness. Through a literature review, some potential consequences variations in obtrusiveness may have on the behavior are identified. This is finally presented together with the guidelines for distribution of control, as a combined set of preliminary guidelines.
Companies promoting consumers' social responsibility - Complementary Consumer Information or mere Greenwashing?

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Introduction (focus and aims)
Under the claim of Corporate Social Responsibility (CSR) companies have started to contribute to the sustainability paradigm. Meanwhile CSR has entered the mainstream (e.g. Berger et al. 2007; Smith & Lenssen 2009). However, CSR activities remain often invisible to consumers as the added ecological and social values are not usually reflected on the surface of the product. In order to envisage the respective engagement CSR-communication becomes key factor in distributing CSR activities to internal and external stakeholders (Du et al. 2010).

Hitherto, CSR-communication focused on companies' efforts for sustainable products and processes and on customers' freedom to choose sustainable market offers and reward ecologically and socially responsible corporate performances (Schrader et al. 2008). Recently, this type of communication has been amplified by addressing consumers' own responsibility for a behavioural change towards sustainability. Companies address Consumer's Social Responsibility (CnSR) (Devinney et al. 2006).

With the new form of CnSR-communication companies promote their perspective of scopes of action for sustainable behaviour. For instance the automobile company Volkswagen encourages responsible mobility behaviour through the initiative “Think Blue” and energy suppliers offer energy saving hints (e.g. www.energiewelten.de).

Looking at responsible behaviour from a moral-philosophical perspective responsibility itself evolves not through ascription but through the existing scope of action and the individual ability to use it. Hence, consumers' responsibility can be named as the counterpart to consumer rights that a consumer citizen (CCN 2005) possesses. The more choice, information or communication options available for a consumer the greater the responsibility to use these scopes of action to contribute to a sustainable future (Schrader 2007). Vice versa few and unattractive “sustainable” products or services, little information that might be difficult to access or misleading information as well as a reduced right to be heard can hamper the consumer to take up responsibility for sustainable behaviour.

Hitherto, consumer information addressing consumers' responsibility for sustainable behaviour was given by independent governmental and non-governmental consumer policy actors (CPAs). Consequently, through CnSR-communication consumers and society in general are affected in their understanding of sustainable behaviour and in their abilities to take up responsibility.

In this paper we will analyze the role of corporate CnSR-communication for promoting sustainable behaviour. We will identify the diffusion and the message content of this new type of private consumer information. We will explore chances and limits of CnSR-communication. Does it provide useful complementary consumer information in addition to the one given by governmental and non-governmental CPAs or is it a form of “greenwashing”?

Our research focuses on how to improve the empowerment of consumers in the mainstream to take responsibility as consumer citizen while considering social and ecological aspects within the own consumption behaviour.

Methods
Our empirical work focuses on CnSR-communication in the main demand areas nutrition, energy and mobility. (i) Companies in German mainstream markets promoting CnSR-communication will be identified to illustrate the diffusion. (ii) Since the companies' websites have become important interfaces to consumers we will analyze the websites based on a qualitative content analysis (Mayring 2010) regarding CnSR-message content that directly addresses consumers' responsibility for sustainable behaviour. The sustainable behaviour options might concern the companies' products, other areas in private households or the workplace. (iii) Analytical categories will be identified to evaluate the CnSR-message content. The categories will be based on the concept “key points of sustainable consumption” (Bilharz et al. 2008) regarding whether it includes “peanuts” (e.g. empty trunk for fuel-saving) or "key points“ (e.g. avoid car driving). Furthermore, the content will be evaluated concerning the sustainability strategies efficiency, consistency and sufficiency (Princen 2003). (iv) Finally, main CnSR-message contents are clustered. We will assess how sustainable behaviour options given correlate with those given by CPAs.
Results
In this paper first empirical results of CnSR-communication in the identified demand areas will be outlined. Based on the outcomes potential chances and limits of CnSR-communication for consumers will be illustrated. On the one hand we will present how companies can positively stimulate sustainable consumption patterns as their communication power is stronger than that of traditional consumer policy actors and might distribute sustainable behaviour into the mainstream. On the other hand warnings of “greenwashing” sustainability through companies in the mainstream need to be taken seriously (e.g. Fricke & Schrader 2009; Ott 2009). CnSR-communication might evoke contra-productive effects like consumer confusion (Walsh et al. 2007) and rebound effects (Wuppertal Institut 2009). Moreover a possible blurring of the understanding of sustainable consumption looking at irrelevant “peanuts” rather than “key points” of sustainable consumption will be shown. Since these negative effects might lead to a loss in trust and acceptance of CSR, former non-sustainable consumption patterns might be reinforced. The results of this baseline study will be used for a consumer survey (in preparation) to further explore the limits and chances of CnSR-communication within different target groups.

Conclusion
Within this paper we analyze corporate CnSR communication. We will exemplify what role companies can play in addressing sustainable consumer behaviour, whether current activities adequately complement consumer information for sustainable behaviour or must be seen as “greenwashing”. Consequences for CPAs are identified. It is shown how opportunities of corporate CnSR-communication for promoting sustainable behaviour can be strengthened and how contra-productive effects might be reduced. With this paper we would like to contribute to the discussion on how sustainable behaviour can spread further to the mainstream.

S 7B-2
The best way to reduce information asymmetries in Cause-related Marketing

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Cause-related Marketing (CrM) seems to be a promising tool for consumers that are interested in social and ethical aspects of a product or a company. CrM enables consumers to actively participate in companies’ social or ethical commitment since every time a product is purchased a donation is given to a designated cause. As there is - in contrast to e.g. organic labelling - no state-controlled labelling of CrM it is interesting to assess whether consumers are sceptical towards CrM, the donation level and the information provided. A question is whether consumers want the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product. A survey with organic consumers reveals that consumers are very much interested in having the donation amount labelled on the product at all and if so, which kind of information they like to have on the product.

S 7B-3
Essential consumption promoting sustainability

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The various institutions in a society together with people’s valuations, preferences, and expectations shape conceptions of what constitutes essential commodities. We assume that one practical option to promote sustainability is to reduce consumption by focusing on essential consumption and so, exclude unnecessary commodities. Compiling Finnish decent minimum commodity baskets we have listened both consumers and experts in order to determine which commodities are necessities for leading a decent life, where one’s subsistence needs are met and full participation in society is enabled. In this paper we perform both qualitative assessment of the possibilities of essential consumption for promoting sustainable consumption and compare the products in the commodity baskets to the average ownership statistics. The results show that the commodity baskets focusing on essential consumption offer in many ways a useful tool and model for directing consumption practices towards reduced consumption and more sustainable lifestyles, e.g. the current average material footprint of households can be halved while the possibility of a decent lifestyle remains.
**S 7C-1**

**Consumer Value Preferences: A Pre-requisite for Sustainable Performance Improvement in Agri-food Supply Chains**

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The final consumer has the exclusive right to define the value in a product or service. Yet, lack of consumer orientation in agri-food chains in developing countries results in less value and benefits to consumers and chain members respectively. This study uses a multi-step cluster analysis to classify fresh vegetable consumers (n=418) in Nairobi, Kenya, in terms of their product, production and marketing preferences into four segments labelled **Prestigious Shoppers (25%)**, **Market Enthusiasts (18%)**, **Ethics Crusaders (41%)** and **Safety Sceptics (16%)**. All segments expressed high or moderate preferences for product quality attributes. Prestigious Shoppers also expressed moderate preference for customer service. Market Enthusiasts attached the highest values to market conditions and customer service. Ethics Crusaders most highly preferred customer service, while Safety Sceptics most highly preferred safe production systems. Clearly, these segments have unique value preferences despite supply chains treating them as a homogenous group. Ignoring these differences can lead to unsustainable attempts to improve chain performance. This paper advocates for consumer segmentation based on universal value profiles for each segment as a basis for development of consumer-focused strategies for sustainable performance improvement in agri-food chains in developing countries.

**S 7C-2**

**Environmental attitudes and food technology neophobia: How are they related and do they impact perceptions of the benefits of nanotechnology?**

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In recent years, researchers’ attention has turned to the analysis of consumers’ aversion to new applications in food industry and processing. It has also been tentatively demonstrated that environmental attitudes may be related to social purchasing behavior of consumers. This paper presents the result of an investigation into the relationship between the Food Technology Neophobia Score (Cox & Evans, 2008) and environmental attitudes. In general, the research shows that, for this sample, attitudes towards food technologies and the environmental attitudes were only weakly correlated. The results suggest that for people with higher neophobia about new food technologies there needs to be a much more explicit link to benefits for them to perceive the products of new food technologies positively.
Perceived Barriers and Benefits to reducing meat consumption in a UK student population.

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Background:
It is predicted that the world’s population will reach in excess of 9 billion by 2050 and that this may be associated with a doubling of food demand from current levels. It has also been suggested that, if current trends continue, this would include a 60% increase in meat consumption (Foresight, 2011). This is set against an uncertainty of the potential effects of climate change on our ability to increase, or even maintain, agricultural output in many parts of the world. Food production itself, is a major contributor to climate change. However, meat and dairy consumption, specifically, is responsible for over 50% of the GHG emissions from typical diets with these foods resulting in 3-13 times more GHG emissions than vegetables and pulses (Lake et al., 2010).

Methods:
Three-hundred University of Nottingham students, (vegetarians and omnivores) completed a 24-hour recall of food and drinks and a questionnaire related to attitudes towards meat consumption. An intervention event was held to overcome barriers toward reducing meat consumption.

Results:
In a sample of 100 participants, the following percentages were determined regarding barriers towards transitioning to vegetarianism: 57% = Meat Enjoyment; 32% = Perceptions/Stereotypes; 51% = Family/Friend Influence; 26% = Social Factors; 28%= Nutrition and Health; 33% = Lack of Information.
A sample of 44 diaries of female subjects (22 omnivores/22 vegetarians) of the 300 received was analysed and the diets of vegetarian and meat-eating students was compared for nutritional quality. Caloric intake (Veg=1265 kcal, Omni=1410 kcal); Protein (Veg=41 g, Omni=58 g); Total Fat (Veg=44 g, Omni=55 g); Calcium (Veg=659 mg, Omni 672 mg). Carbohydrates (Veg 186 g, Omni 181 g) and Iron (Veg=9 mg, Omni=8 mg). The fibre levels were identical for both groups (17 g).

Conclusion:
The data suggests that the enjoyment of meat and the family/friend influence has had the greatest impact on preventing a potential transition to the vegetarian diet in the population sample. Vegetarian students reported lower levels in caloric intake, total fat and calcium with a greater intake of carbohydrates and iron. Further analysis related to dietary changes and comparisons within the sample and post-intervention results are ongoing.

Home economics approach education for sustainable daily living

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Introduction
Home economics is a unique field of expertise, which serves the fundamentals, and daily necessities of human life. As a field of study and research, home economics has reached its 100 year milestone, but as a field of practise its origin goes back to the early years of human civilisation. The core of home economics has been built around the household, life-supporting activities, human development and the raising of future generations. Human resources and actions are at the very centre of this field. Home economics has a multidisciplinary background, but its knowledge creation follows the rules of inter- and transdisciplinary inquiry because the phenomena on which our professionals focus are constructed around processes and interrelations involving human actions, society, nature and culture. This focus has been accepted since the early history of home economics as a kind of human ecological approach. Owing to these multidimensional premises and embedded character of home economics, it is rather difficult to demonstrate its presence and influence in society. On the other hand, we can make clear connections between the absence of a knowledge of home economics and its capabilities with illness, unbalanced economics and lack of sustainability in societies around the world. Besides home economics approach is often misunderstood based on limited view that has
left it as a marginal position in structuring educational and research agendas. This is why there is a fundamental need to revisit the history of the field and to reflect its basis in the contemporary society in order to lay innovative grounds for sustainable futures locally and globally.

The aim of this paper is to raise discussion on the qualities of home economics and to relate this knowledge base and knowing (home economics approach) to sustainability on a broad basis. This paper is a review paper based on longstanding research focussed on analysing home economics both as a school subject and an academic discipline but also as an arena for daily living in families and households and as a societal arena providing forums for consumers and citizens to perform their daily activities. The first two arenas are essential for raising the quality of education and research, and the two latter essential for restructuring and rebuilding services and working life to promote sustainability and well-being at all levels of society. The blueprint of this research is to cross the boarders and to build holistic and integrated understanding of human daily life related to our daily necessities. Home economics, human ecology and sustainability share several key characters and have similar goals. As an interrelated combination they may lay grounds for new thinking and deeper understanding of the present global crises we all face in practicing our daily activities all over the world. It is very much the question of the consequences of human behaviour we cannot delete.

**Research frame (incl. methodological notes)**

This review paper is based on the multiphase research programme entitled: Home Economics as a Discipline and Science. The starting point of the programme was to lay fundamental grounds for a new academic discipline serving mainly home economics teacher education. In Finland teacher education in general including home economics teacher education have relatively strong position and deep roots in society. As a part of various educational reforms there was a need to initiate basic research to discover the fundamental elements of the subject called home economics. Very strong emphasis was paid to philosophical, conceptual and methodological issues, but at the same time we wanted to focus on everyday practices in households, families and their relations to society at large. The approach selected has approved to be successful, and the research of the unit has been assessed by international research panels as innovative and promising. The project includes various subprojects, such as ‘Home Economics in Process’; ‘New Approaches to the Study of Everyday Life’; ‘Rethinking Home Economics’; and ‘Education for Global Responsibility’. Each subproject has focussed on specific areas, but the basic questions and framework have remained the same. We want to know more about the essence, processes and structures by which home economics is situated and makes contributions in our societies. The framework covers our professional practises from historical and future perspectives, both nationally and internationally, and their presence in society and in the university/higher education sector. The research tries to reveal the fundamental premises encompassed in home economics in order to remain a strong contributor to society. Being situated under the behavioural sciences at the multidisciplinary research university has provided us many possibilities to participate several interdisciplinary networks inside and outside the university, but also to build international partnerships in Europe, Asia and other regions of the world. This global discussion is essential resource to face human basic necessities and daily life that follow many similar premises everywhere.

**Results and Conclusions**

The research has resulted rich material for university studies and research agendas. It has clear influences in national framework curricula for comprehensive schools and adult education. There are several examples to lay grounds for new practices in schools and in service sector. Consumer and environmental education has been renewed. This research is linked to discussions being carried on by the IFHE and the Consumer Citizenship Network financed by the European Union. It also has strong links to the UN Declaration for Education for Sustainable Development, including the Policy Strategies launched at European and national levels. The global coverage is further demonstrated by a four-year project launched by the Ministry of Education entitled ‘Education for Global Responsibility’, which unites various global dimensions meaningful to home economics, and having sustainability as a core dimension. The key focus is the aim to reach all citizens and the whole population to rethink their own activities from the perspective of global responsibility in a lifelong learning frame. Special focus has been at all levels of education including teacher education and higher education. This kind of policy-level programmes and strategies provide excellent forums to practise home economics, and to communicate with diverse stakeholders and other fields.

The title of the conference invites us to raise visionary thinking and makes us to accept change and transformation as our challenge. The conference call for ‘the reconciliation of economic, environmental and social demands to reach sustainability’. With this proposal and contribution I hope to fulfil these demands, and want to challenge the audience to sharpen our focus on the human dimension and to strengthen our knowledge base of human behaviour. Sustainability cannot be fully complete if we do not pay sufficient
attention to human universal values, ways of learning and be willing to commit ourselves to global frameworks as ‘education for global responsibility’. For me, home economics is a human profession; it is a profession based on a human ecological understanding of the world, a philosophy of a everyday life, and a profession for the future. This guides us even to rename some of our specializations with new titles to include the necessary competences to process complex entities. Based on our fundamental strengths, and our holistic and integrated frameworks, we have opportunity to be forerunners for sustainable daily living in a more interconnected world.

**S 8A-2**

Voicing of Consumer Grievances: Approach of Insurance Companies and Public Redress Agencies in India

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For a complex product, like insurance, it is the post-purchase period, during which the consumer is actually exposed to the “servicing” performance of the company. If during this period, the company does not fulfill its obligations towards the consumer, he will have a grievance, prompting him to complain and seek redress thereof. The company must have a mechanism for redressing consumer grievances in order to retain them and to attract the new ones. If a consumer’s complaint is properly handled and grievance redressed expeditiously, he will have hardly any occasion to approach any external agency, for the purpose. The consumer grievance redress agencies in India are: the Insurance Ombudsman and three-tier Consumer Forums (courts). Through a survey of 171 aggrieved consumers (policy-holders), 60 insurance company executives (redress officers), 100 cases disposed of by Insurance Ombudsman, and 155 cases decided by consumer forums, we sought to identify the major grievances of policy-holders and evaluate the approach of insurance companies and redress agencies in India towards consumer grievances. The conclusions of the study will be of interest to both policy-makers and policy-holders, and grievance-redress agencies.

**S 8A-3**

Embedding sustainable development in the curriculum: a case study of Queen Margaret University, Edinburgh

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Through its primary purpose of education and research, the higher education sector is well placed to make a significant impact on global warming by equipping current and future generations with the skills necessary for tackling the economic, social and environmental impacts of climate change: this can be seen at local, national and international levels. Where this works effectively, there will be strong connections between environmental integrity, economic viability and a just society to build communities in which people are happy to live. In the United Kingdom (UK), the growing prominence of rankings observed by students and external demand for excellent corporate performance in this area has been noticeable in recent years (People and Planet Green League 2011; Universities and Colleges Climate Commitment for Scotland 2011; Universities that Count 2011 Environmental and Social Responsibility (ESR) Index ) providing further drivers for action.  
Using a case study of Queen Margaret University (QMU), this article will provide an insight into embedding sustainable development in the curriculum. QMU, the most sustainable campus in the UK, is located on the east of Edinburgh in Scotland, and has won awards for its holistic approach to sustainability; for the ‘green building’, environmental quality and for sustainable ‘green IT’ (QMU 2011). The core of the QMU vision is to provide a holistic approach to sustainable development. Given the global interest in sustainable development, this case study will be of interest to an international audience. It will show that QMU possesses a unique and distinctive profile in this critical area; its ideal mix of programmes and expertise in subjects such as consumer sciences, marketing, business, hospitality, tourism, events, social sciences, health sciences, dietetics, nutrition and human biology enhance the opportunities for impact on students and the communities served by the University. One of the greatest challenges for universities is to embed sustainable development into teaching, learning and research; the approach taken by QMU will be discussed in this article.
South African consumers' consideration of environmental issues when purchasing major household appliances

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Introduction
Although South Africa consumed only 1.1% of the total primary energy in the world in 2002, it accounted for 35.6% of Africa's consumption during the same period. South Africa also emitted 306.3 million tons of carbon dioxide from coal consumption, mainly to generate electricity, which amounted to 3.4% of the world's, and 90.6% of Africa's energy-related carbon emissions. The country's energy intensity thus surpasses that of several other rapidly industrialising countries, which explains why the country has been criticised for its lack of energy efficiency standards (Energy Information Administration, 2004). Since 2002, millions of additional households in South Africa have gained access to electricity through intentional drives to uplift previously disadvantaged communities in a new socio-political dispensation. The demand for major household appliances has therefore soared and will continue to increase in the future. An overextension of existing capacity has hence resulted in perpetual power failures in key urban sectors in recent years. Consumers' choice and use of household appliances as well as the efficiency of appliances have subsequently attracted the attention of retail and industry. The 2006 Living Planet Report issued by the World Wide Fund for Nature (WWF) further reveals that the average South African's ecological footprint is 2.1 global hectares per person, which is slightly lower than the world average of 2.7. Emerging economies such as South Africa can however not disregard prominent environmental issues that confront more developed economies, because (1) the available figures do not account for the gap between rich and poor and may create a biased perception that "all is well" although it is actually not; and (2) it is generally accepted that the environmental crises pose more acute implications for developing countries.

Before any intervention could be done to influence consumers' product decisions in favour of a sentiment for the environmental consequences of their purchases, one would first have to understand which factors and features take precedence and are prominent during their evaluation of product alternatives. Ideally, a consumer should be able to evaluate the environmental friendliness of a product based on a "cradle-to-grave" lifecycle analysis (LCA) that comprises an understanding of the energy and the type and quantity of materials used for the production, packaging, transportation and distribution of an appliance, as well as its subsequent consumption and eventual disposal.

Our research aimed to investigate and describe consumers' prioritisation of product features in terms of the conclusion of an evoked set of appliances that would suit households' product needs and to determine and describe consumers' regard for environmental aspects that have become a major global concern in recent years. A cognitive approach was used because cognition encompasses an individual's understanding and knowledge of a specific topic such as their understanding of environmentally significant product evaluation and choice.

Research methodology
The cross-sectional survey involved a pre tested structured questionnaire that was distributed to middle and upper income households for self-completion across Tshwane, a major urban area in South Africa. Using a drop-down-collect-later process and recruiting households through a convenient snowball method, 500 questionnaires were distributed of which 446 were retrieved within two weeks.

Results
A larger representation of females (69.4%) was coincidental, because questionnaires were completed by any willing partner in a household. The sample was divided into three age-, five income- and five level of education categories for further investigation. Findings revealed particular concern about the functional attributes of appliances during consumers' pre-purchase evaluation of appliances – more so than with attributes such as aesthetics and price and a stronger need for information about the functionality of appliances than for the so-called 'greenness' of appliances. Per definition, SA consumers have not converted to being 'green' yet: their need for information regarding energy information et cetera is not strong enough to confirm concern about the consequences of their product choices for the environment. Females indicated a significantly greater need for information about the functionality of appliances than men (p = 0.0001) as well as a stronger interest in information about environmental issues concerning the operation and use of appliances. The potential role of females in efforts to encourage pro-environmental consumption and choice behaviour should therefore not be underestimated.
The majority of consumers’ (57.3%) consideration of the functional attributes of appliances and their strongly expressed need for information about the functionality of appliances (means ≥ 4/5), suggest rational decision-making that involves cognitive thinking. Factual information about environmental aspects that is provided in printed format (magazines, brochures) might hence be more convincing than emotional appeals to provoke interest and encourage pro-environmental behaviour. Informative articles and advertisements could furnish consumers with declarative knowledge that could strengthen their ‘mental map’ of which appliances or ideas (e.g. product attributes) are associated with being environment-friendly. It is proposed that the knowledge content be semantic in nature, i.e. factual/ conceptual and object- or idea-specific. Printed matter (which is apparently actually used by consumers in this context) seems ideal to convey such information as consumers could then revise it, share it with others (as indicated in this research) and file it for later use. The proviso would be that information and labels be easily understandable. Unfortunately findings indicated that SA consumers are not certain about the environmental consequences of buying locally produced versus imported not certain about the environmental consequences of buying locally produced versus imported appliances, which reflects poorly on local manufacturers.

Conclusions and recommendations
Although the onus is upon the consumer to acquire the necessary knowledge and skills to make independent and rational consumption choices which will benefit both individual consumer and society, retail and industry should accept the challenge and provide consumers with adequate information to enable them to act wisely and responsibly. Consumers need to be educated to use natural resources such as water and energy economically. The so-called ethical consumer ethos that has emerged in First-world countries to replace the former ethos of economism, has probably not gained momentum in SA and other emerging economies yet. Instead of slogans that emphasize “value for money”, manufacturers and retail should in future consider accentuating “value for the environment”. Researchers agree that efforts made by industry are pointless unless consumers fully understand their contribution toward saving our planet, and willingly buy goods that are designed to use our resources sparingly. The results of this special investigation may be transferred to similar target groups in developing countries but are not typical for consumer behaviour elsewhere, whereas the methods are generally applicable.

S 8B-2
Use and appreciation of low cost solar cookers in Burkina Faso
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This study focuses on the introduction of a low cost solar cooker (Cookit) in urban regions of Burkina Faso. The aim is to assess the way people use and accept this ecologically friendly appliance to prepare their daily food and what benefits the cooker delivers to the user.

In total 43 women have been interviewed and 11 of them were also observed individually at their homes when using the Cookit.
The Cookit is a mould cut out of carton on which a thin foil of aluminium is pasted. Once set-up, the sunbeams are concentrated to the centre of the cooker, where a dull black pan is placed on a stone or piece of wood. The solar cooker is supposed to partly replace the traditional way of cooking. The cooking with a traditional open fire may take around two hours, the Cookit takes generally two and a half to three hours for a dish to be prepared.

The social acceptability is good. Husbands could appreciate their wife to use the appliance, and the taste of the prepared dishes is found to be better.

This solar cooker saves up to half of the woodfuel, compared to the traditional way of preparing food in the same family. The practise of using is rather easy to learn and is applied, even in less favourable seasons of the year. Quite some women would like to have two solar cookers, so two dishes could be cooked at the same time or to double the capacity.

Although some important negative characteristics have been notified, the fact that the same women continue to use this solar cooker indicates that the positive features partly overcome its negative points and the urgency to use the solar cooker is quite high. The price is affordable and the durability of the cooker is better than expected by the project.
S 8B-3
Demand for Food of Indonesian Households: Evidence from Longitudinal Data
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Pursuing food security is one of the most important Indonesian government’s agendas. Indonesian government has been successful in maintaining aggregate food production and supply. The government has also formulated several models of food security and established ‘Food Security Council’ to mitigate the food insecurity for Indonesian households. Food security program has been provided since 1998. Nevertheless, poverty and food insecurity are prevalent in today’s Indonesia. This might be due to the inadequate information on household food expenditure patterns which vary across income groups and regions. Using Indonesian Family Life Survey data, this study aims to analyze the demand responses of Indonesian households to food prices, income changes and other socioeconomic factors. Quadratic Almost Ideal Demand System model with demographic and regional factors is employed. Results reveal that food demand behavior varies significantly between urban and rural households as well as income groups. The poorest households consume more staple food and alcohol and tobacco goods while the richest households consume more meat, snack and dried food. It is shown that the poorest households’ expenditure elasticity on alcohol and tobacco is high implying that the poorest households will transfer their extra resources on alcohol and tobacco instead of transferring the extra income into more nutritious food. This finding reveals one of the evidences behind the failure of government policies and intervention on food security. Hence, government intervention might still be wasteful in the absence of providing relevant awareness on nutrition issues.

S 8C-1
Exploring Determinants of Green Purchasing Behaviour amongst Indian Youth
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The growing concern about environmental degradation has propelled governments and other stakeholders to promote awareness about environmental issues. It has also motivated marketers to pursue strategies promoting more ecologically friendly products. Following a review of the extant literature on environmental consciousness and green purchasing behavior and an overview of efforts in India to promote environmental awareness and responsible behavior, the current research focuses on the environment related attitudes and concerns amongst college going young adults in India and the relationship between these variables and green purchasing behaviour. The study also identifies the major sources of information about environmental issues amongst urban Indian youth and perceptions regarding environment related advertising.

S 8C-2
Youth Materialism in Egypt: An Investigation of Parental Influence and Possible Solutions
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Introduction
The debate concerning marketing strategies targeting children became one the most highlighted debates in the global market. On one hand, marketing is believed to have contributed significantly to society; on the other hand, some of its aspects are still subject to heavy criticism. For instance, marketing has been held responsible for nurturing materialism in society (Sangkhawasi and Johr, 2007). The increasing marketing efforts directed at children have evolved to go beyond television advertisements. In fact, it has expanded to include sophisticated technology, extensive research, and the expertise of child psychologists to develop creative advertising strategies directed at children (Kasser and Kanner, 2004). Yusof and Amin (1999) argue that changes in values
held by the society contributed greatly to the current social problems that are on the rise including drug addiction, child abuse, loafing, juvenile delinquencies, unhealthy lifestyles and strains on the family. Focusing on children in particular, Chan (2006b) explains that increasing differentiation made between children who "have" and children who "do not have" may encourage children to think and actually implement illegal ways to acquire products they want.

Given the adverse effects of materialism on society in general and on young consumers in particular (as documented by Abela, 2006; Goldberg et al, 2003; Kasser and Kanner, 2004; Kramer, 2006; McNeal, 1987), this research aimed at gaining better understanding of youth materialism in Egypt along with parental influence in the transmission of materialistic values and hence building up recommendations and programs for impeding this phenomenon. The purpose of this research is tri-divided: first, capturing cultural differences for the manifestation of materialism in the Egyptian context. Secondly, examining the extent to which parents contribute and influence the transmission of materialistic values among young consumers through the process of consumer socialization. Third, proposing parents as a potential countervailing power against excessive youth materialism.

Research Methodology
An exploratory research was conducted where a mix of qualitative and quantitative research methods was pursued as recommended by Deshpande (1983). Exploratory research was found crucial for the current research as no previous studies were conducted in Egypt and thus the current exploratory study would aid in defining the problem at hand more precisely as recommended by Malhotra (2007). The aim of the study was to explore child materialism along with the role of parents in the transmission of materialistic values among children but in a more descriptive manner as well as identifying causal relationships across the tested variables namely, parental mediation practices and materialism.

Thus, the current study consisted mainly of two consecutive stages, a qualitative phase followed by a quantitative phase. A deeper understanding of the problem at hand was generated by the qualitative research through conducting in-depth interviews with children, parents and educators; where the broader target was reached as well as a more comprehensive view was attained by quantitative research through self-administered surveys for parents and children, a known and common approach to employing mixed methods (Tinson, 2009).

Results
The results from the qualitative research showed that materialistic people are perceived negatively in Egypt. Moreover, the results indicated that parents are not really aware of the negative consequences materialism can have on their children. As for the results from the quantitative research, it showed a positive correlation between parental materialism and child materialism. Concerning the relationships between family communication patterns, parental mediation practices and child materialism, the results indicated that indirect mediation was the strongest predictor for child materialism followed by restrictive mediation, while active mediation was not found as a significant predictor for child materialism.

Conclusion
A number of implications for academics and practitioners are provided in this study. First, the study added to the existing literature by capturing cultural differences in materialistic tendencies as well as in family communication in an Arab Islamic context that is lacking in the literature. Moreover, not only has the current research answered the call for prospective research to examine the role of communication structures in the family and parental styles as mediators in the transmission of materialistic values between parents and children (Carlson and GrossBart, 1998; Goldberg et al., 2003) and hence, provided a more comprehensive understanding about parent-to-child transmission of values, but also it has contributed to the consumer socialization literature through developing a framework conceptualizing the role of family communication in the socialization of materialistic values among the younger generation, a framework that was sorely lacking and was fundamentally needed in this area of research. In addition, based on the results, a number of managerial implications are suggested. The implications provide practitioners with crucial insights for developing promotional strategies that is likely to fit the current dynamic context.