OECD Environment Directorate
Programme on Sustainable Consumption

Experts Workshop on Information and Consumer Decision-Making For Sustainable Consumption

16-17 January 2001
OECD Headquarters, Paris

BACKGROUND PAPER

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Introduction

Consumers in OECD countries are concerned about the environment and how their own actions contribute to environmental quality. However, trends in environmental impacts from household consumption patterns today show that such concern usually is not translated into consumer decisions and purchases. Information is a potentially effective tool for empowering consumers to act in favour of the environment. Improved access to quality information can enhance public environmental awareness and give the public the opportunity to take account of environmental concerns in their everyday decisions.

This paper provides a general background to Workshop presentations and the questions raised for discussion in the Workshop Agenda. Section 1 gives an overview of the major channels of information that influence consumer decision-making via the market, the mass media and social organisations. This overview is intended to complement the discussion of public information campaigns in the Workshop. Section 2 explores the role of information in consumer decision-making in favour of the environment. It looks first at the problems raised for consumer decision-making by information asymmetries and an absence of relevant and accessible information on environmental impacts in the market. It argues that there is an information dilemma today – consumers are surrounded by an abundance of information everyday, but much of the information does not support environmentally aware decision-making. Section 2 also explores why even well communicated, well targeted information does not always result in action. It discusses three issues: consumer preferences and competing decision-making, decision-making on the environment as a public good, and the presence (or absence) of a facilitating environment. The paper concludes with a set of questions to help guide Workshop discussions on strategies for improving consumer access to and use of information to reduce the environmental impacts from their consumption patterns.

1. Information Channels

Every day consumers are surrounded by a large amount of information that influences their decision-making. Very little of this information directly concerns the environment. Of the environmental information that is available, some is informative, but much seems confusing, misleading, or not immediately relevant to consumer concerns. Understanding this information environment is important for designing strategies to help households reduce the environmental impacts of their consumption patterns.

This section provides a brief overview of the principal channels of information to consumers. The coverage is not comprehensive, but instead focuses on some key issues for consumer decision-making in favour of the environment. The discussion covers information conveyed primarily via the <u>market</u> information (labels, advertisements, retailers and corporate environmental reports), the <u>mass media</u> (television, radio, newspaper, magazines and the Internet), and <u>social organisations</u> such as consumers and

environmental organisations. This overview is intended to serve as a complement to Workshop discussions on public information campaigns by government agencies.

1.1 Information in the Market

1.1.1 Environmental Labelling: Eco-labels and Environmental Claims

Information on the environmental characteristics of products and services is communicated in the market through a range of labels (single issue, multi-criteria, place of origin, etc.) and a diverse and constantly evolving set of what can loosely be called "environmental claims", often uncontrolled and self-declared claims and images.   Environmental labelling has expanded rapidly in the OECD countries since 1977 when the first eco-label – the German Blue Angel – was introduced. It has been the topic of much study and debate not only on the technical and organisational aspects of different categories of environmental labels, but also on the efficacy of environmental labels in reducing information costs for producers and consumers and in achieving positive environmental results.

Ideally, eco-labels provide relevant and accurate environmental information on products and services as a means to promote environmentally sustainable consumption and production, by:

- helping consumers to make an environmentally aware choice,

- assisting professional purchasers,

- providing industries with an environmental marketing tool,

- creating markets for environmentally preferable goods,

- providing guidance for product development and design,

- stimulating more sustainable production processes, and

- serving environmental and educational policy objectives (OECD, 1999a).

The potential for environmental labels and claims to capture niche markets and guide interested consumers has led to their proliferation over the last twenty-five years. The International Standards Organisation (ISO) has classified environmental claims into three different categories: ISO Type I, Type II and III. The advantages of each type of environmental claim are summarised in Table 1.

a) Type I (ISO14024) claims are based on criteria set by a third party and are multi-issue because they are based on the product's life cycle impacts. The body awarding the eco-label may be either a governmental organisation or a private non-commercial entity (ERM, 2000). This type of claim normally appears as logos or symbols (e.g. *Blue Angel* (Germany, 1977), *Eco-mark* (Japan, 1989)*, Environmental Choice (*Canada, 1990)*, EU Daisy*, (European Union, 1992), etc.). The number of *Type I* environmental labels has increased considerably during the last decade.

b) Type II (ISO14021) claims are based on self-declaration by manufacturers or retailers. They may appear as symbols, logos, words, pictures or slogans (e.g. "made from x% recycled material", "ozone friendly") (ERM, 2000). Currently this type of claim presents difficulties in terms of verifiability and credibility because they are frequently vague, do not include a product's life cycle impacts, and are not verifiable (e.g. "environmentally friendly", "non polluting"). The ISO and the European Commission are both addressing the problems of misleading Type II claims.

c) Type III (ISO/TR 14025) claims consist of quantified product information based on life cycle impacts. These impacts are presented in a form that facilitates comparison between products (e.g. a set of parameters), although Type III claims do not themselves provide that comparison. An example is Volvo's product profile for its S80 passenger vehicle (ERM, 2000).

d) Single issue labelling schemes such as the private Forest Stewardship Council (FSC) label, the Marine Stewardship Council (MSC) label and organic food labels do not fall within any of these categories but are partially covered by ISO 14020 – General Guidelines for Environmental Claims and Declaration.

Environmental labelling and Consumer Decision-Making

There is debate over the effects of environmental labelling on consumer decision-making. In some cases eco-labels have been shown to be an effective mechanism to inform consumers, but at the same time they have also been a source of confusion and frustration. One of the main problems of eco-labels and environmental claims in general is their perceived lack of transparency and credibility. Various surveys and research have shown that consumers are sceptical about whether environmental claims are truthful and they are confused about what exactly is being claimed (CE, 1999, Mori, 1994). The Mobius loop "recycling" logo -- the most frequently used on-pack claim in the European Union – is a good example of why consumers are confused. The recycling logo present several problems:

- it refers to the packaging itself, but can be mistaken to apply to the product;

- it denotes recyclability, which is theoretical in the absence of specialised local facilities;

- it can denote that a fee has been paid (e.g. the Green Dot) but suggests eco-qualities; and

- it suggests product origin from recycled materials while merely denoting the potential to recycle (Leubuscher et al, 1998).

Although efforts have been made at the international (ISO), regional (EC) and national level[1] to provide standards and guidelines for environmental claims, two other sets of problems remain. The effectiveness of an environmental label ultimately depends on the extent to which consumers perceive and assimilate the information it conveys and then act on it. The first set of problems stems from the number of, and differences between, different environmental claims in the market, which challenges even the most environmentally aware consumer to make simple choices between alternative products. Some research has shown that consumers often do not distinguish between Type I and Type II claims, or between third-party verified and self-declared claims. They often assume that all environmental claims have some kind of official backing (Leubuscher, 1998). Multiple symbols and logos on the same product or packaging lead to consumer confusion. Single-issue claims have the benefit of clarity, but at the expense of environmental comprehensiveness. Multi-criteria labels are comprehensive but complicated. In the end, the confusion, contradictions, and weak credibility that characterise the environmental labelling environment today de-motivate environmentally friendly consumption and offer consumers an easy justification for not acting on their personal responsibility (Moisander, 1997).

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[1] See OECD, 1999a and 1997a for a discussion of national frameworks for regulation or self-regulation of manufacturer claims in the market.

Table 1 Eco-label classification		
Type	**Suitability**	**Critical success factors, including complementary measures**
Type I	♦ Applicable to purchases by individual private and public organisations; ♦ Individual Quick-purchase decisions; ♦ Lack of consumer understanding of complex environmental impacts; ♦ Use of 'soft' policy tool- indirect impact via indication of best practice/future legislation e.g. re chemicals. ♦ More suitable than a single issue where there is; ♦ A wide range of environmental impacts; ♦ Trade-off between impacts; ♦ Low public concern surrounding impacts.	♦ Transparency. ♦ Consumer awareness: adequate publicity to ensure recognition of the label and its credibility. ♦ Endorsement by key stakeholders, ♦ Ensuring stringent, significant and up-to-date criteria developed with stakeholder participation to maintain credibility. ♦ Harmonisation of criteria between different Type I schemes, in line with above, to facilitate us by producers. ♦ Robust data check. ♦ Visibility of logo on product. ♦ Affordable application process. ♦ Appropriate selection of products. ♦ Market penetration.
Type II	♦ Potentially applicable to purchases by individual and private and public organisation, if credibility assured; ♦ Individuals-quick purchase decision - high level of recognition; ♦ More suitable where there is; ▪ Single significant environmental impact, ▪ High level of actual or potential consumer concern.	♦ Framework to prevent invalid claims: misleading advertisement directive; ISO 14021; Best practices guidelines. ♦ Potentially some form of verification or data checks. ♦ Sector approach to achieve consensus on significant environmental impacts. ♦ Issue of conflict with Type I needs to be addressed.
Type III	♦ Best suited to purchases by business or public bodies; ♦ Potential role in replacing (or structuring) supplier questionnaires if standardised and suitably designed; ♦ Potential use by individual consumers for major purchase decision with several high concern environmental impacts.	♦ Label format tailored to end user e.g. consumer *vs* professional purchaser. ♦ Common label parameters and methodology to be developed by industry sector/product group (with significant stakeholder involvement) to enable comparability between products. ♦ Set common Life Cycle Analysis system boundaries. ♦ Data transferable to Type I labels and vice-versa. ♦ Access to data ♦ Control to ensure validity of approach and data e.g. verification by trusted 3rd party.
Source: ERM, Study of Different Types of Environmental Labelling, 2000		

The second set of problems stems from the absence of framework conditions that would stimulate consumers to act on the information eco-labels convey. Evidence from the most successful eco-label programmes (e.g. Blue Angel and Nordic Swan) suggest that success depends on a relatively high level of consumer awareness of environmental issues and the availability of environmentally preferable products on store shelves (OECD, 1997a). These facts in turn reinforce the need for market prices and instruments (taxes, rebates) that reflect environmental costs and benefits and stimulate product innovation. They also point to the importance of publicity and educational campaigns that provide complementary information and raise consumer environmental awareness. These issues are discussed further in Section 2.

1.1.2 Corporate Environmental Reports

The newest generation of environmental information to consumers in the market is corporate environmental reports. These so-called "social auditing" and environmental reports are a channel through which companies seek to inform consumers of their general corporate mission or strategy and to demonstrate their openness and environmental stewardship to key stakeholders. Rather than providing information on specific products or services, they seek to improve the corporate image and reputation, which for some consumers can be a consideration when making a purchase. In the early 1990s, a few companies, notably Body Shop International and Ben & Jerry's Homemade, Inc. began to publicise their environmental and social policies in this way. Today, as mainstream interest in environmental and social issues has increased, more companies have started to report their environmental performance (e.g. Shell Oil and British Petroleum, Ford, BMW).

There is currently no international standard for corporate environmental reporting. Some companies set down only general principles, others specify procedures followed (such as internal environmental audits), and others are experimenting with special reports designed for particular stakeholders. The International Organisation for Standardisation (ISO) has set up a Strategic Advisory Group on the Environment (SAGE) that is studying how to measure and report eco-efficiency and environmental performance.

Compared to other forms of environmental information available to consumers, corporate environmental reports likely reach a much smaller number of consumers, and likely only those that are very active information seekers (shareholders, activist green consumers, NGOs). More information is needed on how these report influence consumer decision-making.

1.1.3 Advertising

Advertising is a powerful and pervasive channel of information and its influence on consumer behaviour is hotly debated. At a minimum advertising enables producers to inform consumers about the goods and services they offer in the market. But ads also seek to convey images and ideas to consumers that encourage consumption.

The advertising sector and the ads it produces have changed enormously over time in many aspects. A few trends:

a) Six or seven decades ago, advertising still had the function of providing information on the characteristics and quality of the products. Nowadays, advertisements that give relevant facts for consumers to make an informed choice are the exception -- only 17 per cent of Americans, for example, thought ads were informative in a 1989 poll (Hurtado, 1997). Ads in fiercely competitive OECD markets are now mostly about establishing brand loyalty and evoking human desires, dreams and lifestyle options, rather than providing detailed information about products. Car ads, for example, are more often about freedom, status and security than engineering and environmental aspects.

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b) The number of ads and the ways in which the consumer is exposed to them have increased in an exponential manner. It has been estimated that an average American citizen is exposed to 3,000 commercial messages a day (Helm, 1999), and that an average American child sees 360,000 TV commercials before graduating from high school. (Centre for a New American Dream (CNAD), 2000a). Some studies have reported 50 ads for each hour of radio transmission, while some newspapers devote 60 per cent of space to advertising and television almost 50 per cent (Hurtado, 1997). But advertising is almost everywhere, not just in these traditional media, but all over our external environment: on the streets and highways, in and on buses, trains and underground, in restaurants, in movies, at concerts and sports events, even in schools. Now as consumers become more mobile and less attentive to traditional ad vehicles, some companies are moving to "alternative media" (inside airplanes, elevators, etc.) -- "where the consumer is not expecting us to find us" (Gardyn, 2000).

c) From 1950 to 1990, total global advertising expenditure increased nearly seven times. It grew one third faster than the world economy and three times faster than world population. In real terms, spending rose from $39 billion in 1950 to $256 billion in 1990. This is more than the gross national product of India and more than all third world governments spend on health and education (CUTS, 1996). Despite the declining cost of disseminating information via the Internet and mass media brought about by technological improvements, the price of advertising space has increased enormously. In 1997, American companies spent more than $100 billion on TV advertising, paying up to $8,000 per second of air time (Laird, 1999). The average amount spent by the advertising industry in 1998 to reach *one* American household was $1,987.00 (Juliet Schor, 1998 in Centre for A New American Dream (CNAD) 2000a). These kinds of figures dwarf the budgets of government and NGO environmental information campaigns.

The Internet has opened a whole new channel for advertising and product marketing information. It is also rapidly changing the traditional relationships between businesses and consumers. The electronic marketplace is highly competitive: growth in Internet advertising will grow faster than any traditional sector in the future. In 1998, online advertising spending worldwide was around US$2 billion. A study of US, European, and Asian advertising and media companies estimated that global spending on Internet advertisement would reach US$15 billion by 2003 (OECD, 1999b). Other sources report even higher figures (Table 2).

Table 2 Advertising Spending on Different Media Channels			
Segment	Spending in Billion USD	CARG*	Rank
	1999	2004	1999-2004	
Internet	14,016	38,981	22.7%	1
Sponsorships	7,631	13,016	11.3	2
Outdoor advertising	4,832	7,648	9.6	3
Radio Broadcasting	16,930	26,605	9.5	4
Cable & Satellite TV	56,777	86,423	8.8	5
Business Information SVCS	44,225	64,258	7.8	6
Professional, educational & training	32,822	47,491	7.7	7
Business-to-business communication	23,081	32,020	6.8	8
Business-to-business promotion	36,509	50,406	6.7	9
Entertainment	60,600	83,995	6.7	10
Direct Mail	41,601	55,985	6.1	11
Consumers Magazines	20,580	32,020	5.8	12
News Paper	63,052	83,690	5.8	13
Yellow Pages	12,666	16,242	5.1	14
Consumer Promotion	33,472	41,965	4.6	15
Broadcast Television	38,564	48,181	4.6	16
Consumer Books	17,386	21,540	4.4	17
* Compound annual growth rate. *Source: Veronis Subler Communications Industry Forecast*			

Advertising and Consumer Decision-Making

It is broadly argued that advertising is a major driving force behind unsustainable consumption patterns. However, there is no consensus among media managers, policy-makers, legislators or even the private sector on the kind of influence that advertising has on consumer decision-making. Certainly, advertising alone is not responsible for environmentally damaging consumption, but nor does it play a neutral role in consumer purchasing decisions. A survey conducted in 1995 in India, for example, reported that fifty-five per cent of those interviewed admitted to trying out new products advertised; 72 per cent of those who had children under 15 said their children pressed them into buying things they had seen on TV; and 72 per cent admitted to having changed brands as a result of advertisements (Hurtado, 1997). In the United States it has been reported that three year-old American children make specific requests for brand-name products even before they can read (McNeal et al, 1993 in CNAD, 2000b). Many of the foods most often over-consumed from a health and nutrition standpoint (e.g. confectionery, high-fat foods) in OECD countries are those with the largest advertising budgets (OECD, 2001 forthcoming).

Advertising standards and guidelines are covered in national competition, commercial or consumer protection legislation. In addition, a few OECD countries have adopted regulatory constraints on advertising directed to children based on the belief that children (generally defined as under 12 years of age) are not yet capable of critically viewing advertisements and of understanding their commercial intent. Sweden and Norway do not permit any television advertising to be directed towards children under 12 and, no advertisements at all are allowed during children's programmes. Australia does not allow advertisements during programmes for pre-school children and, in the Flemish region of Belgium, no advertising is permitted 5 minutes before or after programmes for children. Sponsorship of children's programmes is not permitted in Denmark, Finland, Norway and Sweden while in Germany and the Netherlands, although it is allowed, it is not used in practice (Consumers International, 1999b). Children are nevertheless increasingly exposed to advertising in the external environment and the Internet. Recent OECD work has turned to online advertising and marketing directed toward children in order to look at out OECD countries are dealing with issues related to children and the Internet (OECD, 1999b).

Advertising could contribute to promoting environmentally aware consumer behaviour. This point was emphasised at the Commission on Sustainable Development (CSD) Rio+5 Earth Summit where governments agreed "to encourage business, the media, advertising and marketing sectors to help shape sustainable consumption patterns" (UNEP, 1997). The United Nations Environmental Programme (UNEP), for example, is working with the advertising sector on how to turn the jargon of "sustainable consumption" into a positive image that people can recognise and react to (UNEP, 1999). At the same time, however, the trend in environmental advertising is declining. This is likely in part due to a shift in the dominant social issues -- health and personal well being are major selling points today. It is also likely linked to other factors, including the transparency and credibility problems discussed above and the tightening of standards for environmental claims, which have made it more difficult and perhaps less profitable for advertisers to use the environment as a way of attracting consumers (NCC, 1995).

1.1.4 Retailers: Strategic Information

Retailers have been the "invisible link" in most discussions about sustainable consumption to date, but they have a potentially important role in information dissemination through their strategic position as the principal interface between producers and consumers. Their influence on, and importance for, consumers is often ignored or under-estimated.

In order to support environmentally aware consumer choice, information must be relevant and available when it is most needed, which is often at the time the purchase is made. Retailers occupy this key position. Retailers are also often perceived as being neutral but personal advisers, which provides them more credibility than producers and advertisers. The large market share for organic food in Austria compared to other countries, for example, is attributed in part to the active role one major hypermarket

chain has played by creating its own organic food label and by serving as an intermediary between consumers and producers (OECD 2001a forthcoming). Travel agents often play an important role in steering consumers toward different tourism destinations and packages (OECD 2001b forthcoming).

There are other key areas where retailers could play an important role in disseminating environmentally relevant information. For example, consumers often seek more complete comparative information when planning the purchase of high-cost large electronic appliances (refrigerators/freezers, washing machines, televisions, computers etc.) Energy efficiency has become a slightly more important consideration for some consumers when they are choosing electrical appliances, but it is not the prime deciding factor. Retail sale staff are ideally placed to facilitate consumer decision-making by explaining energy labels or energy consumption of these appliances, and comparing up-front investment costs with long-term operational expenses. Retail staff, however, are not always well informed or motivated and may not volunteer information the consumer has not requested. An example from the Do-it-Yourself (DIY) home improvement sector in the Netherlands will be discussed in the Workshop that highlights the advantages of including the retail sector in helping consumers adopt more environmentally friendly consumption patterns.

1.2 The Mass Media

The mass media - television, screen, radio, print, and increasingly the Internet - are major conduits of images, advertisements, news and information into the average household. It is not possible here to provide a comprehensive review of media influence on culture, society and individual behaviour, but it is important to identify a few key issues concerning media content and how the general public uses the media in the context of environmentally sustainable decision-making. Some trends:

a) A recent survey of EU citizens found that approximately 75% of Europeans most frequently rely on the media – television, written press, and radio – to obtain information about the environment (Commission Européenne, 1999). The media is in many cases an important filter through which the public perceives local and global environmental problems and their personal or local relevance or urgency. In some instances, these perceptions have a direct impact on consumption patterns. Recent media coverage of the debate over genetically modified organisms (GMO) and the BSE crisis for instance, has contributed to heightened public concern and the demand for food labelling. In the case of BSE it has also fuelled public scepticism of the ability of governments to safeguard public health.

b) Americans prefer local over national or international print and broadcast news and commercial over public media formats. Presumably this is because the local media provide news and information that are more relevant to people as they go about their day-to-day lives. Local television news reaches more people, gets better ratings of quality and has more credibility than the broadcast networks or local papers. Local evening television news shows are watched by 86% of the American public, making them the most used source of news and information followed by national network news (80%) and local daily newspapers (77%). Radio newscasts are the least frequently used of the four (54%). On average, each of the four main media sources is used five days per week (Center for Media and Public Affairs (CMPA), 1997).

c) Commercial competition in the media has grown dramatically in the last twenty years. Two decades ago all European countries had a monopoly of public channels[2] with a total of 36 public and 5 private channels across Europe. In contrast, in 1997 only three countries had purely public national channels (Austria, Ireland and Switzerland) and there were more commercial (55) than public stations (45) (Holtz-Bacha and Norris, 1999). The expansion of private channels has led to a surge in the amount of imported television programmes, mainly from the United States, and increased the total amount of time watched. The commercialisation of the media market has been accompanied by the fear that entertainment

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[2]   Except for Britain and Italy (with dual systems) and Luxembourg (all commercial).

programming would outweigh and marginalise information content, leading to an impoverished public sphere.[3] A study realised in Europe has concluded that commercialisation matters: watching public television is associated with higher levels of political information and overall higher levels of information than is watching commercial TV (Holtz-Bacha and Norris, 1999).[4]

d) The evolution of digital computer and network technologies and their immersion into daily lives of people around the world have added a new dimension to the commercial and cultural landscape that largely ignores political and geographic boundaries. In 1996, there were fewer than 40 million people connected to the Internet world-wide: by December 1997, that number grew to approximately 96 million, and by 2005, growth projections predict there will be nearly one billion users online (OECD, 1999b). Children and teenagers represent one of the fastest growing categories of online users: 4.1 million children between the age of 2 and 17 were online in 1996, a number that was expected to grow to 19.2 million by 2000 (OECD, 1999b).

Mass Media and Consumer Decision-Making: Where are the Sustainability Signals?

The media plays a decisive cultural role in OECD societies, helping shape individual and social perceptions, meanings and values.[5] Some common media images of affluent lifestyles, social trends, and fashions are an important influence on our views of "normal" and ideal lifestyles and an engine behind modern consumption patterns. Some research, for example, has found a direct relationship between television viewing and spending on consumption: instead of trying to "keep up" with their neighbours, viewers were comparing their own lifestyles with those of television characters and celebrities (Schor (1998) in OCEES, 2000).

The influence that the media has on consumers depends on many variables, and is not a one-way cause and effect relationship. Consumer preferences for different media channels and for different content within those channels are influenced by their own personal characteristics (e.g. education, political interest, income, values, etc.). For example, Americans with high levels of civic involvement are generally more educated, more affluent, and more likely to vote. They use the print and radio media more but are also more critical of it. In contrast, those who rely on television to obtain information tend to be less educated and to view the media in a more benign fashion (CMPA, 1997). Similarly, studies on the potential of the Internet as an information channel have found that the most frequent users of the Internet are people who are already engaged and active information seekers from other media sources (newspapers, television informational programmes). Income, education, age, and family structure are important social determinants of Internet access. The relative costs and expertise associated with using the Internet have led to a concern about the rise of a "digital divide" between information "haves" and "have-nots" (Bucy, 2000).

While many consumers use television, screen and magazines as a means of escape, a source of information and topics of conversation, or as an intellectual and emotional stimulus (OCEES, 2000), they are not necessarily a passive audience and are often critical of the images and messages conveyed. The print and broadcast news media in particular have been criticised (albeit not always by consumers) for their coverage of environmental issues, which has often been either insignificant or focused only on high-profile

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[3]   As early as 1948 Lazarsfeld and Merton argued that "the social effects of the media will vary as the system of ownership and control varies" and that in the US "…our commerically sponsored mass media promote a largely unthinking allegiance to our social structure." (Lazarsfeld and Merton, 1948 "Mass Communication, Popular Taste and Organized Social Action" in Holtz-Bacha and Norris 1999).

[4]   Nevertheless, it also important to recognise the positive effect of private channels of communication since they can allow the expression of various voices and more plural and multicultural information flows.

[5]   See for example research themes covered in the work programme of the Oxford Commission on Sustainable Consumption (OCEES, 2000), the Sussex University Media Studies programme [http://www.sussex.ac.uk/units/media_studies]; the Harvard International Journal of Press/Politics [http://mitpress.mit.edu]; and the Center for Media and Public Affairs [http://www.cmpa.com].

problems or controversies. Sometimes that coverage reflects the state of knowledge about a particular environmental problem and ways to solve it. More often, however, it is a result of traditional journalistic criteria, such as timeliness, proximity, prominence, human interest, drama, and visual appeal. The need to capture audiences in an information-rich environment means that only big controversy is intrinsically newsworthy: it is hard to make an interesting story out of "further research is needed" (Sandman, 1994). In this respect "sustainable consumption" is too vague a notion to be considered newsworthy and is consequently rarely covered.

The way environment and sustainable consumption issues are covered in the news media is important because television and newspapers also play an agenda-setting role, affecting their audience's awareness of issues if not their opinions on those issues. It is also important where the public expects the media to play the role of "watchdog" over public officials and institutions in society.[6]   At the same time, the credibility of the mass media, like other information sources, has deteriorated. The public worries that the media tend to favour one side when reporting on political and social issues: in the US, for example, 77% thinks that there is at least a fair amount of political bias in the news they see (CMPA, 1997).

The mass media (especially screen, television and the Internet) are often blamed for all kinds of social ills, from children's use of bad language to street violence and changing sexual norms, to unsustainable consumption patterns. But it is also clear that they could contribute to creating visions of more sustainable lifestyles as well. Soap operas, for example, have been used in the past as vehicles for messages about health and safety (OCEES, 2000). A study on characters and themes in 175 episodes of animated and live-action children's shows found that when cartoons (especially "Captain Planet") take on environmental issues, they frequently portray a world menaced by impending catastrophe. But they also tell children that the problems can be solved, and that individuals can make a difference. Children's shows also portray scientific and technological progress as generally positive, even if they are more sceptical toward the scientists and businesses who create and produce advanced technologies (CMPA, 1995). The communication challenge for sustainable consumption is to find a media-friendly message that enables consumers to visualise positive and desirable sustainable lifestyles.

1.3 Social Organisations

Non-governmental organisations (NGOS), the so-call "third sector" or "civil society", are a relatively new political force in local, national and international arenas (Wapner, 1996; Lipschutz, 1996), and are another important channel of information to consumers/citizens (Princen et al, 1994; Keck et al, 1998). The influence and activities of NGOs have grown tremendously especially over the last 20 years. To illustrate, Friends of the Earth International, one of the largest federations, had one million members and united 5,000 umbrella activist groups in 1998. The World Wildlife Fund (WWF) grew from 1 million to 4.7 million members in 100 countries between 1991 and 2000.

For many consumers NGOs are an alternative channel of communication, sometime judged of greater credibility than either the government or businesses. This alternative channel of communication is a powerful one, since it means that public discourse is no longer dominated by governments or business as it was 15-20 years ago (Keck et al, 1998). Moreover, this alternative flow of communication also allows many small individual voices to be organised and amplified in a national or international arena (Keck et al, 1998). Certainly, the tremendous flow of information from NGOs to the public and among NGOs has been possible because of the advances in technology, especially the Internet. But NGOs have also created their

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[6]   In the US, for example, 82% of the population share the belief that first and foremost the media should provide news and information, but 75% of adults think it is also very important for the media to act as a watchdog on public officials. Two-thirds think it is very important for the media to protect the public from abuses of power. In this role, pluralities of the public want more emphasis on holding officials accountable (45%) and fighting abuses of power (43%) (CMPA, 1997).

own communications space through associations, workshops, forums, conventions and campaigns and networking apart from the traditional ways of disseminating information.

Environmental and some consumers' organisations have worked to stimulate governments, corporations, international governmental organisations (IGOs) and people to change their behaviour in order to protect the environment. Their roles and activities vary from organisation to organisation, but it is possible to identify four ways in which NGOs are channels of information.

a) Generation and Dissemination of Environmental Information: In many cases NGOs function as both think tanks generating research and studies and as educators disseminating environmental information. Friends of the Earth International (FoEI), for example, is working in partnership with national governments and the European Union on the Sustainable Societies Programme, which analyses the reduction of natural resources that is required to achieve sustainable development. Its contribution has been relevant not only for the public but also for the international agenda. Likewise, Consumers International has published studies on consumption patterns, advertising to children, and environmental claims aimed to improve understanding and awareness of key market dynamics and support consumer organisations that are promoting sustainable consumption.

NGOs use both traditional means to disseminate information such as reports, publications, brochures, videos and the Internet. Many have developed creative and practical tools including "green" shopping guides, lists of small actions individuals can take to reduce their environmental impacts, and website tools to measure individual's consumption environmental impact (ecological footprint). But NGOs also bring that information to consumers in a more interactive way through workshops and conferences, and direct action on projects (e.g. the Canadian NGOs (Life Cycles and WCEYA) Organic Community Gardens; recycling schemes that have emerged through NGO co-ordination). Many consumers organisations have also developed one-on-one calling centres to inform and advise consumers on product quality and consumers' rights.

b) Information Campaigns: Various NGOs are co-ordinating information campaigns to not only raise environmental awareness and improve understanding of environmental problems, but also to suggest alternatives to problematic consumption patterns. Experience from many areas of household behaviour demonstrates the importance of providing concrete options and suggestions for behaviour change.[7] The Center for a New American Dream co-ordinates *Step by Step*, a monthly e-mail service providing thousands of individuals with practical tips, ideas and simple actions to change their consumption habits and protect the environment while improving their life-styles [http://www.newdream.org]. The UNEP Youth Advisory Council launched a global campaign *Step Lightly* in 1999 aimed at generating discussion and action by young people. Adbusters co-ordinates an international *Buy Nothing Day* (29th November) and *Turn off the TV Week* (in April) to make people aware of the impact of advertising in their daily lives and to provoke a reaction to today's materialistic and consumption-based culture.

c) Social Mobilisation, Campaigns and Boycotts: NGOs are also well known for their demonstrations, campaigns and boycotts. In the past, this has been one of their main mechanisms to bring an issue onto the national or international agenda and to grab public attention and raise awareness. WWF and Conservation International played key roles in 1988 and 1989 in creating a new issue around the banning of trade in African elephant ivory and bringing it into the Convention on the International Trade in Endangered Species. The U.S. Clean Air Coalition was instrumental in gaining public support for the regulation of CFCs to protect the ozone layer (Wapner, 1996; Princen et al 1994). In their role as watchdogs over the private and public sector NGOs also play a role in disseminating information and raising public awareness. Other NGOs are also verifying the credibility of the information provided by

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[7]   See OECD reports on Individual Travel Behaviour [http://www.oecd.env/consumption/studies.htm], Sustainable Water Consumption and Water Resources Management (OECD, 1998), and Education for Sustainable Consumption (http://www.oecd.env/consumption/studies.htm).

corporations, such as the Canadian Environmentally Sound Packaging Coalition of Canada (ESPPC), a coalition of consumer and environmental organisations. Through its project on 'Truth in Environmental Labelling and Advertising' the ESPPC aims to help change the misleading use of environmental claims and advertising (OECD, 1997b).

NGOs have also become media-savvy. Greenpeace is just one example of how NGOs now use the media to draw public attention to environmental damages from private sector activities or lack of government oversight. Their campaign against the Brent Spar North Sea platform in 1995 and earlier campaign and boycott to French nuclear tests and waste management made international headlines. Greenpeace, and other NGOs, however, have not escaped the problems of public credibility. In fact, surveys that have reported that Europeans trusted government and private sector sources of information less today than five years ago reported the same decline in public trust in NGOs (Commission Européenne, 1999).

d) **Development of Eco-labels:** Finally, some NGOs have taken a direct role in stimulating market demand for environmentally preferable products and services by developing their own eco-labels as a mechanism to inform consumers on environmentally friendly products. One successful example is the Forest Stewardship Council (FSC). The FSC was created in 1994 by a group of timber users, traders and representatives of environmental and human-rights organisations in 1990, who recognised the need for a verifiable and credible system for identifying well managed forests as acceptable sources of forest products. Forest inspections are carried out by a number of FSC accredited certification bodies, which are evaluated and monitored to ensure their competence and credibility. FSC's label is internationally recognised and increasingly accepted by intermediate producers of consumer goods (paper, furniture). It is now working in 34 countries covering 20 million hectares of certified forest.

2. Information and Consumer Decision-Making for Sustainable Consumption

The previous section provided a quick snapshot of the many sources and types of information available to consumers today. Looking at the range of information available in the market, and via the media and social organisations, it is not surprising that many people feel that consumers do not need any more information before taking action to protect the environment. The idea of offering more information, or more specific information, seems like a risky or wasteful proposition given the volume and complexity of the information that is already available. Yet it is clear from empirical experience, and a quick personal experiment in any local grocery store, that the consumer does not always have enough information on environmental impacts, or cannot access and assimilate the information that is out there, to make simple purchasing decisions. If that is true, than it seems inadequate to work from the status quo. This is something we call the "information dilemma" and it is a serious challenge for governments seeking to use information instruments to help consumers reduce the environmental impacts of their day-to-day decisions.

To further complicate matters, it also clear from empirical experience that even well targeted, well communicated information that is easily assimilated by the consumer does not always result in a change in consumer behaviour. A number of other factors contribute to determining whether information is translated into action. This section explores further the role of information in consumer decision-making for sustainable consumption. It is divided into two sections. The first looks into the notion of "information barriers" -- asymmetry and the absence of information, and the costs of information dissemination, access and assimilation. The second section explores three issues that can determine how and when information turns into action: consumer preferences and competing decision-making criteria, decision-making vis-à-vis the environment as a public good, and the presence (or absence) of a facilitating environment.

2.1 Information barriers

Why does information matter?

Information on environmental pollution has been called the "third wave" in pollution control policy, following the first wave of command-and-control regulation in the early 1970s and 1980s and the second wave, emphasising market-based instruments, which has characterised many environmental policies in the 1990s. This third wave builds on the potential of information as a vehicle for making the community an active participant in the regulatory process and in reducing environmental pollution (Tietenberg and Wheeler, 1998). This is true not only in the context of public reaction to, or engagement in, the development of environmental policies but also in terms of empowering consumers to make better choices in favour of the environment. Informed consumer action can complement or replace regulatory measures (e.g. bans, minimum performance standards), facilitate the internalisation of environmental costs and benefits into the price of consumer goods and services, and stimulate private sector innovation in the design and delivery of products and services.

In a general sense the provision of information to consumers in the market serves a number of purposes, in particular to:

a) **Differentiate products** to communicate the characteristic of a product, in such a way that it promotes its consumption. This represents an incentive and even a necessity for producers who normally pay for marketing and promotion of their products.

b) **Protect consumer interests** by ensuring accurate information flow considered important for consumer well-being, such as product labels conveying product composition, nutritional or safety information.

c) **Support informed consumer choice** by bringing information of certain products and their characteristics, including those that are "invisible" in the final good (production process and waste management). This kind of information has been demanded increasingly by consumers, (e.g. organic food, GMO-free food, recycled paper, CFC's free, dolphin friendly, etc.). In many cases, producers have started to give this kind of information under voluntary schemes.

d) **Stimulate certain behaviour or behaviour change** by filling information gaps concerning product purchases and household behaviour in general (e.g. public information to promote recycling initiatives and energy conservation).

From an environmental policy perspective, the provision of information is one response to the assumption that obstacles to environmentally conscious behaviour are in part due to a lack of consumer knowledge, perceptions of cost or complexity, or inertia through habit. Information is one means by which to fill these gaps, to help reconcile personal and social welfare choices, and to increase consumer preferences for environmentally preferable products or household behaviour. However, there are basic problems embedded in the provision of information to consumers. These barriers mainly arise from asymmetry and absence of information, and the cost of information dissemination and assimilation of information.

2.1.1 Asymmetry and absence of information

In a typical case producers and/or regulators have the best knowledge about the environmental impacts of a product, not consumers. Moreover, producers are unlikely to share that information unless external factors (e.g. market imperatives, consumer protection regulation) motivate or oblige them to do so (Tietenberg and Wheeler, 1998). Organic farmers, for example, have market incentives to provide information that differentiates their products from the rest of the market, usually through brand marketing or an eco-label. Conventional agricultural producers have no such incentives. In this case, consumers do not have accessible information on the environmental impacts of their purchases.

A second problem arises where the information is incomplete or absent, which generates the risk that the environmental impacts -- whether positive or negative -- of any particular consumer decision are

not sufficiently taken into account. This was the case for earlier consumer products (pesticides, detergents, CFC's sprays, lead paint) for which the full environmental or health impacts were unknown (e.g. soil and water pollution, biodiversity loss, depletion of the ozone layer, human intoxication) and which were consequently over consumed from an environmental perspective. Today the absence of definitive evidence of the potential long-term environmental and/or health effects of genetically modified crops and food products is fuelling debate over an appropriate strategy for informing consumers about their food options. As for other examples of new technology where long-term impacts are unclear, and current information thus imperfect, the case of GMOs raises an important question concerning information provision as a response to information asymmetry. Will the net impact of "GMO-free" labels, for example, be a means of avoiding potential negative externalities or a prejudicial instrument that could inhibit positive innovation?

2.1.2 Costs of Information Dissemination, Access and Assimilation

Providing information and accessing it can be very expensive. However, today costs are declining through improvements in technology and telecommunications, as well as through the growth and emergence of new channels of communication, particularly the Internet. The increased connectivity and integration of the new information age means that even though resources are required to initially collect and organise information, once available it can be replicated at very low cost (Butler, November 2000).

Nevertheless, for decision-making with regard to the environment, some of the costs to consumers to find and assimilate information are growing. Three dynamics of today's information context drive those costs. First, the same factors that are facilitating the transfer of information have also increased the volume of information available to consumers and diversified information sources. Second, information on the environment is often complex and expert opinions both diverge and evolve over time (e.g. BSE, climate change). This means that often there is no single message communicated simply and without qualification. Finally, consumers are both more aware of this complexity and more sceptical vis-à-vis different information sources than they were in the past. The net effect of these dynamics is that the search for information has become for many consumers a complicated challenge of finding meaningful information and qualitatively weighing different "sound bites".

As a result of these dynamics, consumers may have to invest considerable time and effort when buying a new product in order to obtain credible information about how it compares to others for any number of criteria, including environmental performance. But time has a cost, and consumers look to avoid these costs. In the absence of clear and accessible information consumers will also likely seek to lower the risks of making a wrong decision. In these cases, information asymmetries between the producer of environmentally preferable products and the customer are likely to cause the consumer to avoid higher quality but more expensive products (e.g. an energy efficient refrigerator) (Truffer, *et al*, 2000). As a result, reducing the costs of consumer access to and assimilation of environmental information is a priority for increasing consumer willingness to change environmentally intensive consumption patterns.

2.2 Turning Information into Action

Even when consumers benefit from full and accessible information, a second set of issues comes into play in determining whether consumers access it, process it and change their behaviour. Recent market research at the retail level, and environmental impact trends, point to a widespread "implementation gap" between what consumers say they are willing to do to support the environment and the decisions and purchases they actually make.[8] A number of factors influence consumer decision-making for the environment.

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[8] Opinion polls and market research in many countries show that customers state clear preferences and an associated willingness to pay for renewable energy sources. As a general rule these studies indicate that

2.2.1 Consumer Preferences and Competing Decision-Making Criteria

Consumer decision-making is a complex process affected by different and sometimes competing criteria, including self-interested motives (price, quality, individual taste, life-style,) as well as unselfish motives (culture, self-identity, social pressure, environmental and social concerns) (Moisander, 1997). The complexity of consumer behaviour is perhaps best reflected in the wealth of disciplines that have something to say about it. Theories of consumer behaviour are offered in marketing studies (psychology of decision-making), microeconomics (individual preferences and maximisation of utility), philosophy (why do people consume), anthropology (consumption as a cultural expression and social identity), sociology (life-stage, social status, cultural meaning of consumption), and ethics (individual's value, social and environmental responsibilities in consumption behaviour). Each of these fields explains important motives for consumption and are undoubtedly strongest when considered together.

When environmental and social values are included in consumers' preferences and purchasing decision-making the equation becomes even more complex. Moreover, different consumers may have very distinct preferences and conceptions of environmentally friendly behaviour and, thus, diverse motivations and ways of acting that out. This gives place to additional considerations of product characteristics (e.g. natural *versus* artificial products, locally *versus* long-distance origins, animal-based *versus* vegetarian food, long-term versus short-term considerations) and how much consumers are willing to pay for different attributes (see below).

What is the current market for environmentally preferable goods? There is conflicting evidence. Although results at the retail level suggest that environmental criteria often are not reflected in actual consumer purchases, several marketing suggest that the number of "green consumers" is increasing (Environics, 2000; UBA, 2000; OECD, 1997, 1999). While the environmental characteristics of products have never been the primary factor for the majority of consumers, several studies have identified different profiles of consumers according to their environmental values, concerns and behaviour. Roper Starch Worldwide, for example, has identified five different type of consumers: True-Blue Green 11%, Greenback Green 5%, Sprouts, 33%, Grousers 15% and Basic Browns, 34%. Levels of environmental awareness are highest in the former and lowest, if not completely absent, in the Basic Browns (Roper Starch Worldwide,1998).

Environics International 2000 has further classified consumers according to their willingness to pay (in this case 10% more for gasoline/petrol) and their environmental activism (e.g. boycotting environmentally damaging products, gathering environmental information, writing a letter or making a phone call to express environmental concern, and refusing wasteful packaging). Four consumers groups were found to best describe the population in terms of their environmental behavior: *Green Consumers, Green Activists, Latent Green* and *Inactives* (Table 3). Environics reports that the number of "*Green consumers*" has grown from 27 per cent in 1999 to 33 per cent in 2000 (Environics International, 2000)[9].

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about 20% of the households are willing to pay a price premium of 10-20% on their electricity bill for environmentally preferable electricity (Farhar, 1999 in Truffer et al, 2000). However, empirical data from liberalised markets show that the actual customer response to green power offering is initially lower than these surveys proposed with market shares often below 1% (Truffer, et al, 2000).

[9] It is not possible to directly compare the results of the Roper Study and Environics International because they use different criteria to classify consumers according to their environmental preferences and survey periods differ. Nevertheless, the data are not necessarily contradictory.

| Table 3			
Type of Consumers	**Characteristics of consumer**	**1999 (%)**	**2000 (%)**
Green Consumers	Strong pro-environment views. High willingness to pay for environmental attributes. Believe that individuals can make a difference, and express it by consuming green products. Demographically, they have high levels of education and income. Spend leisure time in nature, and are cars owners.	27	33
Green Activists	Have strong pro-environment views. Low willingness to pay for green products. They express they green concern through their lifestyle, activism and political attitude rather than "voting with their dollars." Strongly believe that individuals can make a difference. Demographically, they are more likely to have higher levels of education, often spend leisure time in nature, and own a car.	10	11
Latent Greens	Have significant environmental concerns, but focused very locally. They express high willingness to pay for products that they perceive will solve local air and water problems. They are not active. Latent Greens are mainly concentrated in large urban areas in countries with low GDP per capita. They are not yet car owners.	40	34
Inactives	Have the lowest levels of environmental concerns and, as a result, are not at all engaged in citizen actions to benefit the environment. They do not feel powerful as individuals. Demographically, represented by those over 65 years old and lower levels of education and income. Fully half of the people in this segment do not drive.	23	22
Environics International, International Environmental Monitor, 2000.			

These classifications are useful when consumer decision-making vis-à-vis the environment is tied to product innovation and the development of markets for environmental goods and services. Figure 1

provides an illustration from the green electricity market in Switzerland (Wustenhagen, Markard, Truffer, 2000):

- In the *Introduction* phase the main actors are committed individuals (technology enthusiasts or environmentally conscious homeowners) and grassroots organisations who experiment with and explore the green products. The typical customers in this phase are highly environmentally aware people (called dark green or green activists/green consumers) who have very low price sensitivity and are ready to make significant efforts to get the product they want.

- In the *Early Growth* phase significant expansion of the green products market occurs, giving place to a market niche. In this phase partnerships and joint efforts among private sector, governments and NGOs are developing. The large majority of customers are still price-insensitive, green consumers, but there are more of them.

- In the third phase, *Take Off*, a growing interest among customers and providers emerges; the development of eco-labels and certification schemes could appear, as well as competitiveness. Latent greens could start to be an important customer group.

- Finally, in the *Maturity* phase, it is expected that even "inactive" or "basic brown" consumers obtain this products, because the facilities are already available and have been shown to be a good alternative, and are perhaps more conveniently priced relative to traditional products and services.

This example illustrates two important points concerning consumer information strategies. First, the product innovation process provides a long-term perspective, which suggests the need to tailor information to different consumer groups at different points of time. For instance, in the innovation stages of a new product or service, green activists may not need promotional information designed to convince, but rather high quality and accurate information that allows them to make decisions. Latent greens, on the other, may need to be convinced of the merits of new products or services, and have ready access to related products and facilities. It may be efficient to target inactive or "basic brown" consumers only once a new product or technology is firmly established.

Figure 1 Diffusion of green products over time among customers and suppliers
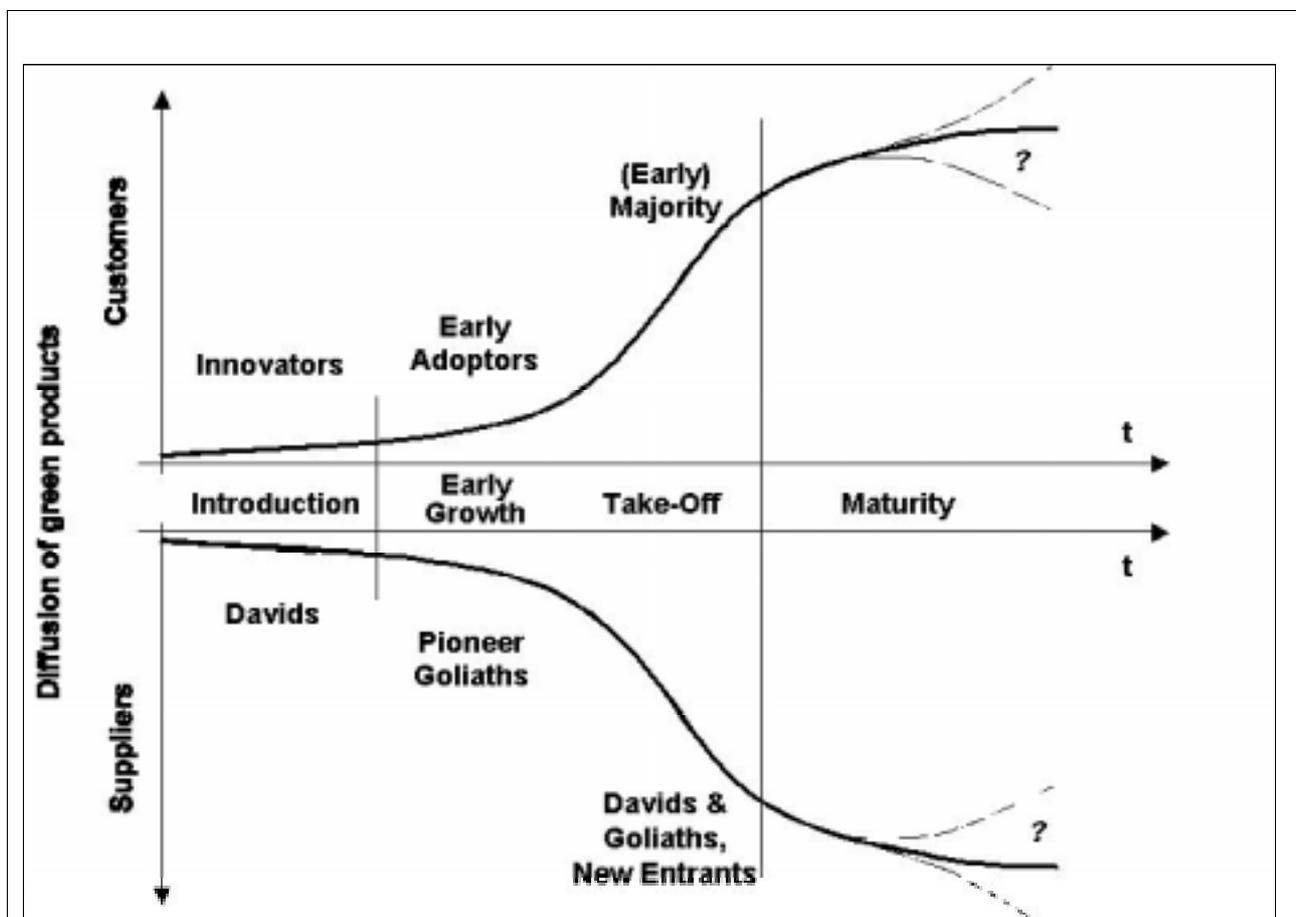
(Source: Villiger/Wüstenhagen/Meyer 2000, p. 32)

The *product innovation system* has been extended to describe the market penetration of green product innovations in the food, clothing and electricity sectors,[10] and has been applied to describe the growth of green energy market in Switzerland[11]. In this system the development of the green market can be divided into four phases: introduction, early growth, take-off, and maturity (Wüstenhagen, Markard and Truffer, 2000), which are closely tied to different kinds of consumers.

2.2.2 Decision-Making vis-à-vis the Environment as a Public Good

When a consumer makes the decision to pay a higher price for an environmentally preferable good or service or to forgo a consumption purchase, s/he accepts that others will benefit from her/his decision (e.g. better air quality, lower prices for environmentally preferable goods) even if they do not change their own consumption behaviour. For many consumers, this "free rider" dilemma is a barrier to behaviour change. In this case, an individual is not willing to pay more for environmentally friendly products (e.g. green energy) or to change her/his behaviour (using public transport instead of a private car) without

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[10] See Villiger, Wüstenhagen, and Meyer, Arnt. Jenseits der Öko-Nische. Birkäuser Verlag. Basel, Februar 2000.

[11] See also, Wustahagen, Markard, and Trufferrd. Green Electricity in Switzerland: Insights in market development and eco-labelling. Paper prepared for the conference "Consumer-driven green electricity in competitive electricity markets" Copehagen, 22-23 May , 2000 (CEPE, EAWAG).

perceiving direct and/or immediate positive personal benefit. The increasing consumption of organic food, for example, is more about personal health than the environment.

The use of information instruments to influence consumer behaviour depends on two assumptions: that the consumer believes acquiring the information will lead to benefits and that the consumer can use the information to reap the benefits (Aldrich, 1999). Unlike information on nutrition, where personal benefits from using that information can be perceived directly and often in the short-term, the public good character of many environmental issues means that for many consumers the personal benefits of acting on environmental information are less tangible, if they can perceived at all.

A second problem follows closely from this. When the environment is seen as a "commons" problem -- a resource shared by all but owned by none -- many consumers might not feel that the protection of the environment is their responsibility. They see governments, companies and NGOs as the responsible agents or main actors for protecting environmental quality. Likewise, when they see companies making changes in their production systems, NGOS co-ordinating activities and campaigns, and governments implementing environmental protection policies, they feel that someone else is already taking care of the problem. Combined with a sometimes confusing information environment on what actions the consumers themselves can take, this sentiment makes it easy for some consumers to justify making only minor changes to their consumption patterns (e.g. recycling their waste but not trying to reduce it in the first place).

Finally, a third problem flows from the individual consumer's perception that any change in behaviour he or she might make is likely to be insignificant if the rest of the consuming public continues business as usual. A large number of consumers think that changing their consumption patterns will not make a significant contribution to protect the environment even if they know that as a group consumers' behaviour is important.

2.2.3 Beyond Information: the Presence (or Absence) of a Facilitating the Environment.

The focus of this paper and the Workshop is on the role of information in promoting more sustainable consumption patterns. It is clear, however, that information alone is insufficient if other important conditions for environmentally aware decision-making are absent. These conditions are not discussed here in-depth, but they are important background to discussions on the opportunities and limitations of information. They include:

- *A price structure for consumer goods and services that internalises environmental costs and benefits* -- Full-cost pricing and economic instruments (environmental taxes and charges, green tax reform, the removal of perverse subsidies,) have an important role to play in influencing consumer behaviour. Wherever the price of energy, road fuels, water or waste do not fully reflect associated environmental costs, households have an incentive to consume more than they would if they faced the full costs of their consumption patterns.

- *A policy and regulatory framework that makes clear the priorities and direction for change* -- Setting priorities for household efforts to reduce their environmental impacts would help focus consumer and producer actions on key issues. An important step in this direction is improving environmental impact data and indicators related to consumption, and developing a policy and regulatory framework that create market signals that steer private sector and consumer behaviour in sustainable directions.

- *The availability of a range of environmentally friendly goods and services* -- The shift in OECD economies towards greater reliance on services offers significant opportunity for creating less environmentally intensive consumption options through new consumer goods and services (personal "mobility packages"; leased carpets; re-use water plumbing). Nevertheless, there remains a tremendous potential for applying principles of design for the environment and for

finding new ways to satisfy consumer needs at lower environmental costs. Resources should be targeted to those areas where lifecycle analysis identifies material flows or pollution from consumption, use or disposal patterns to have significant implications for the environment.

- *Performing technology and infrastructure that include environmental quality criteria in the design and running of transportation networks, housing, waste management, etc*. -- Addressing the environmental challenges of the next twenty years will require adopting a wider systems perspective of persistent environmental pressures, including those from households. The current absence of options to deal with these pressures underlines the importance of medium and long-term development of technologies and infrastructures (energy, transport, waste) that will support sustainable household behaviour.

- *An educational and learning environment that empowers consumers to use information to its best advantage* -- To be able to make environmentally aware decisions, consumers must have certain practical skills and knowledge –to be able to identify the eco-labels, to sort waste, to consider the environmental characteristic of a product or service, etc. (Moisander, 1997). They must also have individual and collective competencies for decision-making. Despite widespread acknowledgement of the importance of education for attaining environmental sustainability in OECD countries, a major effort is still needed to integrate environmental and sustainability education into school curricula, continuing education, and professional and workplace training (OECD, 1999c)

3. Conclusions

If anything, this background paper raises more questions than it answers. Largely that stems from the recognition that information strategies in the past have had limited impact on consumer behaviour. As a result, it seems timely to step back and look at the wider picture of information and consumer decision-making from a consumer perspective. Environmental impacts from household consumption patterns are set to grow in many areas over the next twenty years (via transport and energy demand, waste generation). On the other hand, households have successfully reduced their impacts in other areas (e.g. water consumption). Given both the challenges and opportunities consumers face in finding and using information to reduce their environmental impacts, it is important to improve the effectiveness of measures and policies to stimulate action from individuals and communities. This raises a number of questions for all actors that dialogue with consumers. Workshop discussions are intended to help answer these questions, with particular attention to the implications for government strategies to help households reduce their environmental impacts, and the role of information in those strategies.

- What is the appropriate response to rising consumer scepticism and perceived "information overload" given both widespread calls for a more informed consuming public and the increasing complexity of many environmental issues:
    - Less, but better targeted information?
    - More, but clearer information?
    - The status quo, but increasing consumer capacity to evaluate the information received?

- What are the implications for government policies, and the:
    - Choice of different information instruments,
    - Design of information strategies, and
    - Cost of information-based policies? Has the evolution of the Internet lowered the cost of government information strategies?

- Information to action:
  - Have governments fully exploited opportunities for information dissemination to influence consumer behaviour in the areas where households have high environmental impact (e.g. energy, transport, waste, food, water)?
  - Are there issues of scale (local, regional, national, global) in the effectiveness of information strategies?
  - How can governments make use of what is known about both (a) the types of information consumers want, and (b) the constraints and opportunities that influence how consumers put information to use, to encourage greater and more sustained consumer action for the environment.

- Where private and/or public information is not enough – complementary policies:
  - How far can information take us? What are the policy implications for combining information with other strategies to influences household purchasing and behaviour?

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