West Coast Forum Research Work Group Topic 3 – Changing Consumer Behavior

Summary of Research Findings and Gap Analysis

Topic 3: Changing consumer behavior

RESEARCH QUESTION(S)

- What strategies, techniques and policies are effective at changing the way consumers behave relative to materials management (including purchasing decisions as well as disposal choices) so as to be more sustainable? Measures could conceivably include GHG reductions, participation rates, tons of material avoided, sales volume of types of products, etc.)
- What strategies, techniques and policies and innovative approaches have not yet been tried but have been proposed that are considered to have greatest potential?
- Can the results of the various strategies, techniques and policies be compared or are there fundamental differences in the way they are measured across studies? If comparable, what is the comparison?
- How do the costs for these compare? What factors influence the cost and what strategies can be used to reduce the cost?
- Which have been more successful: mass-media approaches or focused, localized, or "hands-on" groups
- Does behavior change more from increasing consumer costs (such as tipping or collection fees), from increasing convenience, or other factors?
- What are the barriers to more sustainable purchasing practices by individuals? How effective are various methods at overcoming those barriers?
- How can behavior change programs best prioritize behaviors and design programs so as to minimize negative rebound effects?
- How effective are green labeling approaches and certifications at changing behavior and how do they compare? Is the impact lessening as more labels and certifications come into existence?

The research findings on this topic are divided into two primary categories: 1) consumption – consumer behavior in the purchase and use of goods and 2) discards management – behavior associated with end of life disposition of the purchased goods.

SUMMARY OF KEY FINDINGS[1]

General

The literature identifies a number of potential government interventions that might change consumer behavior, in addition to specific types of behaviors (by both consumers and producers) that might be targeted for change.

The literature addresses potential target behaviors such as:

- Extending the lifetime of goods in use; repair and reuse

[1] *This research summary includes resources from a literature review compiled by ICF International for the Forum's Research Work Group as well as resources in the Consumption Mediagraphy developed for the Forum's Consumption Work Group.*

- Designing products to last longer; extended product warranties
- Diet shifting; reducing consumption of food
- Reducing wasting of food
- Product-service systems (purchasing the service provided by a product, as opposed to the product itself)
- Choice editing by producers
- Reducing unwanted mail

Potential government interventions include:

- Choice editing by government: "shifting the field of choice for mainstream consumers; cutting out unnecessarily damaging products and getting real sustainable choices on the shelves"; product standards; product bans; a large global review in the UK found that choice editing for quality and sustainability by government and businesses – not green consumers – has been the critical driver in the majority of green innovations.
- General awareness campaigns – although much of the literature questions the effectiveness of these, particularly if implemented in isolation
- Providing information resources that help households understand their impacts.
- School education
- Regulation of products; requiring transparency in product design/ingredients/components
- Regulations governing truth in advertising
- Media standards, particularly limiting advertising aimed at children
- Taxes and subsidies – there appears to be a strong consensus that these are less effective if targeting consumers (diffuse) rather than producers, and also rarely effective unless large. Shift taxes from labor to resources
- Expanded and/or comprehensive collection systems for recyclables
- Voluntary or mandatory labeling (see below)
- Requiring corporate reporting (and certification of claims)
- Publicly-funded research and development
- Government spending on or support for infrastructure to facilitate sustainable consumption and end of life management choices; other efforts to facilitate conditions and situational factors (e.g., access to reused goods)
- Government procurement (government as a consumer) and operations (important for market development, signaling intent, avoiding hypocrisy, and learning opportunities)
- Building standards
- Signaling institutional goals and priorities
- Pay-as-you-throw garbage collection
- Material or sector based voluntary agreements with industry; one author says that voluntary initiatives rarely play a leadership role and lowest common denominator industry standards should be avoided.
- Goal setting, with better targets than "less bad"; alternative measures of progress and wellbeing; visions and stretch targets
- Landfill restrictions
- Setting emissions and resource use caps
- Articulating sustainable industrial policy

Consumption

What Works, What Doesn't?

Very little evidence is offered regarding the relative effectiveness of different interventions for changing consumption. More research has been done in the field of energy conservation; one key finding is that the

variability in outcomes between similar programs (based on community characteristics, effectiveness of implementation, etc.) may be greater than variability between different interventions.

Several authors suggest that mixes of interventions tend to be more effective than individual interventions in isolation. Some warn against narrow, incremental interventions, which can distract from and even undermine systemic change. Similarly, traditional market-based approaches that emphasize financial savings and economic self-interest (e.g., RecycleBank) may undermine the deeper cultural shift that needs to move away from unsustainable consumer culture.

Labeling and Consumer Demand

Specific to labeling, many authors expressed skepticism regarding the potential of labels. One suggested that labels may make it even harder for government to engage in choice editing, which is expressed as having "immense potential". An OECD report states "studies have shown that the sustainability effects of labeling schemes are growing with heightened consumer interest in environmental and social issues . . . However, the general weakness of labels, including low levels of consumer awareness, criteria differences across products, market competition between various schemes, and possible technological lock-ins for business thus limiting innovation, still persist. The proliferation of voluntary labels on the markets has also led to consumer confusion . . . " Mont and Bleischwitz go further, arguing that "Proliferation of eco-labels or producer eco-claims can increase consumer confusion. Purchasing eco-labeled products may also legitimize increasing consumption . .. leading to overall increase of consumption levels. Another important problem is that due to practical problems, criteria of eco-labels based on life cycle thinking are not as holistic as they could be. For example, products that are labeled as produced locally may rely on supplies from far away . . . although in some countries eco-labels reached significant market penetration, in the majority of countries eco-labels are still novices." Vanclay et al. and Deutsch report on two labeling experiments in Europe; one led to consumers increasing their purchasing of lower carbon products by four percent, the other reduced life cycle energy use of appliance purchases by 0.8 percent.

In a 2008 survey of American and Canadian consumers, researchers conducting the GfK Roper Yale Survey on Environmental Issues found that while consumers felt it was important that products they purchase be environmentally friendly, price and quality took priority for the majority of respondents. Only one in four Americans say eco-friendliness is the most important feature. In addition, sponsors of eco-labels are not trusted equally. Environmental groups received higher ratings as a trusted source (75%) than either government (55%) or industry (51%).

Education and Information

Authors debate the role of education and the "rational choice model" of consumer behavior. Some make a compelling argument that many consumer choices are deeply irrational, thus limiting the potential influence of traditional education/information or even persuasive outreach campaigns. Yet even if education campaigns by themselves are of limited effectiveness, consumers still need help and advice to distinguish between merely symbolic shifts in behavior and changes that really matter.

A common theme throughout the literature is that consumers as individuals are often "locked in" to unsustainable patterns of consumption, and that the effective and higher leverage points lie in shaping the conditions in which consumer choices are made, rather than directly exhorting consumers to change. Dauvergne states that at the core of the problem "is the inability of environmental governance to alter, in any fundamental way, the *global* ecological effects of (the drivers of consumption) – such as advertising, economic growth, technology, income inequality, corporations, population growth, and globalization – that together are causing consumption, much of which is wasteful, to rise steadily worldwide . . . The challenge is . . .about much more than influence 'consumers' – much of what is happening globally is beyond their control. Rather, it is about transforming a global system that is driving unsustainable production, much of which is increasing masking itself as sustainable consumption." In this light, the idea that "greening of household consumption can significantly reduce the global (impacts) of consumption" is

wrong-headed and needs to be argued against. By the same token, Mont and Dalhammer point to the need to account for a variety of consumer perspectives and offer a range of alternatives to meet consumers where they are (e.g. avoid consumption, reduce consumption, postpone consumption, use alternative or substitute means, consumption of "greener" products, etc.).

Spillover Effects

Authors draw inconsistent conclusions regarding potential "spillover effects", that is, whether engaging in one conservation activity increases or decreases the propensity of consumers to engage in additional related (or unrelated) conservation activities. For example, a US study finds that when "nonconservationists" sign up for a green power program that carries a price premium, they subsequently reduce their use of electricity (due solely to the higher price), but when "conservationists" sign up for the same program, they don't reduce consumption, as if the fact that the electricity is now "green" removes the incentive to reduce consumption. Crompton (2008) argues that there is little evidence of positive spillover effects; encouraging individuals to adopt simple and painless behavioral changes does not motivate them to engage in more significant changes. A Danish study found that while those who engage in recycling are more likely to actually also engage in packaging waste prevention, the spillover effect is fairly "mindless" and that the act of recycling reduces the *feeling* of obligation to take other actions to prevent waste. Apparently, some consumers perceive recycling as sufficient to solve the waste problem, making prevention superfluous, or use recycling as a convenient excuse for continuing a traditional, unsustainable lifestyle in other areas.

Fundamental Drivers of Consumption

Several documents highlight the social and psychological functions played by materials and consumption, for example, Jackson (2005): "Material goods and services are deeply embedded in the cultural fabric of our lives. Through them we not only satisfy our needs and desires, we also communicate with each other, and negotiate important social relationships . . . Behavior change initiatives will encounter considerable resistance unless and until it is possible to substitute for these important functions of society in some other ways. In this context, motivating sustainable consumption has to be as much about building supportive communities, promoting inclusive societies, providing meaningful work, and encouraging purposeful lives as it is about awareness raising, fiscal policy and persuasion.

Fedrigo and Tukker (2009) build on this, wanting to open a discussion about the link between consumption and happiness. "What is needed is a fundamental re-think of production, consumption and the economic system as a whole. The goal should be providing good lives for everyone, while remaining within ecological limits. Where in the past, we focused on wealth, growth and efficiency; the future will need to be about well-being, quality and sufficiency. This includes living within limits; shaping a sustainable society (not just a sustainable consumer); addressing the public as citizens, not consumers; addressing production and consumption; and creating the systems that lead to sustainable behavior . . . yet not everything is about reduction – there are some things that are not near peak or have no limited supply: community, personal autonomy, satisfaction from hones work well done, intergenerational solidarity, cooperation, leisure time, happiness, ingenuity, artistry and beauty."

The Importance of Collective Action

Scholl et al. emphasizes the importance of collective action and creating a supportive framework for collective progress, rather than exhorting individuals to go against the grain. Crompton emphasizes the importance of values that are antithetical to the premise that individuals are 'consumers' whose primary interest is to acquire products and services that confer social status (or perhaps save them money). "We have to address the inclusive sense of self-identity (personal growth, emotional intimacy, community involvement) vs. the extrinsic sense of self (acquisition of material goods, financial success, image, social recognition). Studies indicate that inclusive individuals are more highly motivated and persistent in engaging in pro-environment behavior." Dobson advocates for "eco-citizenship" as a framework for

motivating lasting, meaningful change at the individual level as an alternative to financial incentives which may only lead to short term behavior change without a corresponding change in attitude. "Crucially, market-based instruments do not raise this possibility in any systematic way, and so must be regarded as incomplete as prompts for social learning. The constant focus on 'self-interested' solutions to environmental problems is in danger of undermining the very possibility of collective, common good solutions." Financial incentives may actually "'crowd out' citizenly behaviour, making it less likely that such behaviour is either followed or fomented."

Reducing vs. Shifting Consumption

Several papers emphasized the need to reduce consumption outright and the hazards of focusing on "greening consumption" or "shifting consumption" only. Mont and Dalhammer argue that economic instruments can help shift consumption to be more environmentally sound products and services but they " do not necessarily change the reigning view that individual consumption is tightly linked to individual welfare." Price signals and good information are only two of the factors influencing consumer choices and perhaps not the most important. They promote "eco-efficiency" or the consumption of goods that are simply "less bad." As Jackson and Michaelis point out "consuming more efficiently avoids basic assumptions about consumer society while consuming less challenges the link between material consumption and the good life."

Rebound Effects

Several documents discuss the importance of "sufficiency" (having enough) as an important goal to partner with "efficiency" (doing more with less), as efficiency by itself (without a reduction in consumption) inevitably leads to the rebound effect. The rebound effect occurs when a consumer engages in a behavioral change that saves them money; the savings are then used in some other manner, with resulting environmental (and economic) impacts. Rebound effects are sometimes classified as "direct" or "indirect" based on whether the rebound is related to the original behavior. For example, purchasing a more fuel efficient car and then driving more miles (due to fuel savings) is a "direct" rebound effect; purchasing a more fuel efficient car and then using the savings to eat out more often would be an "indirect" rebound. One study estimates that specific to materials, the rebound effect may reduce potential savings by as much as 50% (worst case). A greater knowledge of the right policies to counteract the re-bound is needed. Sanne identifies potential macroeconomic/societal responses to negate the rebound effect, such as short-cutting the scope of the economy by reducing work hours, or redirecting money resulting from efficiency gains from new consumption to investments in natural capital. More work is needed to shift negative perceptions of reducing consumption.

Other key findings:

- Kronenberg argues for replacing "sustainable consumption" with "reasonable consumption", because stakeholders find denying "reasonable" more difficult than they find denying or abusing the notion of sustainability.
- In theory, demand side solutions offer the potential for greater environmental benefit than supply side, as in most communities (in the developed world), demand-side impacts (consumption) are greater than in-boundary supply-side impacts (production). However, little evidence is offered that government can effectively change demand.
- Psychological, technological and economic factors exert as much influence on product life spans as technical reliability/durability.
- In a German study, individuals prefer binding collective contributions rather than individual/voluntary market-driven activities. People are willing to pay far more for green electricity if the payment is collective (everyone pays) than if payments are optional (due to free ridership).

- Marketing campaigns run by nongovernmental organizations (NGOs) can be effective in shifting demand from problematic products to improved products. NGOs may also get involved in standard setting, monitoring and enforcement (traditionally the role of government) to maintain market improvement.
- Several articles speak to the benefits – and some challenges – of using a holistic, life-cycle approach to considering changes in consumption and production.

Discards Management
The articles and studies that examine approaches to managing materials or discards at the end of our consumption cycle devote considerable energy to looking at what influences behavior, i.e. what type of outreach and messaging is effective, what systems work best for promoting capture of discards, and what methods and technologies provide the best rewards.

What Works, What Doesn't?
In "*Commingled Versus Separated Curbside Recycling: Does Sorting Matter*?" Oskamp, S., L. Zelezny, P.W. Schultz, S. Hurin, R. Burkhardt contend that commingled programs are more convenient for users and typically accept a broader range of accepted items. These programs can be considered successful in terms of yielding more types and higher quantities of recyclables. The downside is that commingled recycling experiences higher rates of contamination. Policies such as curbside collection, mandatory recycling, providing recycling containers, and concerted outreach campaigns are considered effective in influencing participation. Evidence from documented studies and jurisdiction reports support that these statements are true. The consumer is more likely to recycle (or compost, or reuse) when a simple, convenient system is provided and when ongoing outreach and education are offered broadly and continuously. In a two-year study, participants sustained their activities and 90 percent plus recycling rate. However, one of the drawbacks of commingled recycling is the significant cost investment to set up the infrastructure for a new commingled system.

Tucker and Speirs have written extensively about behaviors. In "Attitudes and Behavioural Change in Household Waste Management Behaviours", they examine negative behavior towards composting. The authors assert that "General environmental concern is usually found to be a poor predictor of behavior" and that research has failed to confirm what good predictors of human behavior are. It is commonly agreed that those who perceive more inconvenience tend to recycle less. Tucker and Spear assert that this can change once a person actually gains experience recycling. Simple solutions such as providing free containers can increase convenience and result in higher participation and capture, and ultimately affect other recycling behaviors. Additional findings include:

- Knowledge, especially procedural knowledge, is important and beneficial. Lack of knowledge affects participation and quality of recyclables.
- Social influences operate when there is high visibility of behavior such as in curbside programs.
- Participation in waste management practices is a habitually repeated, relatively stable behavior for most individuals.
- Behavior changes can cause attitude changes, thus adverse experiences such as not having your recycling collected, finding out your carefully separated materials have been landfilled, or having your container disappear can influence both attitude and behavior.

The article "Relationships Amongst Waste Management Behaviours" by Tucker and Speirs explores how "participations in different pro-environmental waste management behaviours might be related." Very close environmental behaviors, such as recycling of traditional items such as paper, bottles and cans, are easier to correlate than others such as composting or conserving energy or water. Targeted promotions are a strong component in achieving behavior change.

In studying the recovery of kitchen and paper waste in home composting, Fletcher, Speirs, Durant and Tucker noted that "individual attitudes of inconvenience and bother, and general forgetfulness" will need to be corrected in order to recover more compostable waste from the home. Perception of inconvenience is a theme that resonates throughout studies that examine barriers to recycling and composting participation.

Education and Social Class

Easwar S. Iyer and Rajiv K. Kashyap attempt to explain in "Consumer Recycling: role of incentives, information, and social class" how we can get more people to recycle more frequently and how can we help them sustain these behaviors. They postulate that internal motivators, external motivators, and individual characteristics influence recycling intentions and actions.

- Internal motivators include an individual's environmental values, beliefs and attitudes. Individualism was found to negatively influence recycling behavior due to perceived inconvenience. Collectivism can positively influence recycling behavior due to perceived importance of recycling. But because people can simultaneously hold individualistic and simplistic values, it can be difficult to achieve clear communication of environmental messages.
- External motivators such as laws and regulations exert influence.
- Peer pressure, such as from neighbors, is the second most important reason for recycling. (Gamba and Oskamp, 1994)
- Economic incentives and information/education are influential.
- Individual characteristics – Environmental consciousness is sufficiently complex; social class and demographic factors add variables and complexity.
- Single demographic measurements are often weak predictors of actual behavior and outcome; using composite measures of social class can result in a more successful prediction.
- Monetary incentives can be useful, but should be evaluated before using to determine whether the results justify the cost.

The Iyer and Kashyap study looked at independent factors such as information and incentives as having positive and negative psychological rewards. In summary:

- Information – can enhance participation, but special efforts such as block leader time investments have had varied results.
- Education and outreach increase knowledge and have a more lasting effect than incentives, ie is more sustainable. Without knowledge of the rules, a well-intended participant may contaminate recycling or otherwise participate improperly. Similarly, the sense of being ill-informed can keep a person from participating.
- Gender plays an important role. Women need to be involved in any program that promotes recycling and messages should be target to them.
- Social class is significant, and underlying reasons are speculated. For example, recycling may be a "defensive NIMBY" action by those most closely affected by activities such as placing landfills or incinerators in low-income neighborhoods. Generalizations about social class however do not always prove true.
- Recycling attitudes and behaviors are only weakly correlated to environmental attitudes and behaviors. Social class was found to be a determinant of only recycling attitudes and behaviors, not of more general environmental attitudes and behaviors.

Government interventions

How effective are mandates? In looking at the role of government, there is room for much more leadership in purchasing and specifying sustainable consumption and reuse, recycling and remanufacture Nakao Tojo and Christian Fischer offer insights to *Europe as a Recycling Society*, reminding us that in 2005, the European Union proposed a vision to become a "recycling society." Their study tracks the

performance and progress of recycling in the EU and in the EEA member countries. It explores how much was being recycled and what policies were in place to promote recycling.
Using data mainly from 2006/7, countries were ranked according to their recycling levels for 5 material groups: packaging waste, waste electrical and electronic equipment (WEEE), biodegradable municipal waste (BMW), and construction and demolition waste (C&D).
Like the US, recycling in the EU is still in varying stages of development. The EU has a range of varying recycling rates across its member countries, and varying rates for individual types of materials. Landfill bans, tax on landfilling and incineration, mandates and special collection programs are in place with many variables influencing their effectiveness. Targeting higher goals leads to higher capture rates.
Conclusions:

- Interventions are vital to encourage recycling and are still needed.
- Incentives can have an immediate and dramatic effect on recycling behaviors
- Incentives work but in order to sustain the newly learned behavior, ongoing education and information is necessary.
- The United States can look to the progress in Europe when evaluating its own performance.

Innovations
Remanufacturing is a strategy to produce high quality, lower cost products with less environmentally damaging end of life and manufacturing modes (impacts). W. LIjomah describes the potential role of remanufacturing and its significance to the construction industry. The general strategies to reuse materials – recycle, repair, recondition, and remanufacture – are all valuable because each helps to reduce the need for virgin resources and to help slow the rush to landfill. In the article, *Application of Remanufacturing* LIjomah explains that "In recycling, energy is expended twice – first in reducing a product to its 'raw material' form (e.g. smelting), and second to return the reclaimed material into useful products. Remanufacturing differs in that "product recovery keeps the products as whole as possible, thereby retaining the energy and resource input into them at their first manufacture." Generally, more energy and resources are used in recycling than in remanufacture. If as efficient as described, remanufacturing is a highly sustainable technology.

STATE OF KNOWLEDGE AND INFORMATION GAPS

Consumption

Tukker, Cohen, Hubacek and Mont summarize the state of knowledge best when they say: "We suffer from a dearth of knowledge on which interventions are likely to be most effective in massively reducing the environmental impacts of household consumption."

The literature reviewed seems inconclusive on the topic of negative and positive spillover effects. More research is needed here.

Several authors call for government action in helping to build community frameworks and social norms that support sustainable consumption and provide opportunities for "social learning." More research is needed to more clearly define and test these possible actions.

Also, more research is needed to target the technological or structural barriers that "lock in" unsustainable consumption. How can these be removed or dismantled?

Specific to labeling, the research tends to focus on the impact that labeling has on consumer (household) behavior. It seems that more research is needed regarding the impact of labeling on non-household

consumers (e.g., governments and large businesses) as well as the impact that labeling schemes have on the businesses whose products are subject to labeling; to what extent does the existence of labeling schemes cause producers to make changes in order to meet labeling standards or otherwise improve environmental performance?

Discards Management

Much of this information in this category, although still somewhat relevant, is dated. What is still needed is:

- Knowledge of innovative developments, applications and technologies that will enable us to redirect our material resources and recycled feedstocks into more products.
- Infrastructure examples such as mandates and policies that work and result in more immediate and more comprehensive change, on both the consumer and producer sides.
- Less emphasis on the individual to change behavior and more on the systems that can induce overall change.
- Solutions that can improve quality of commingled recycling, including ideas about material mixing and compatibility and collection systems to keep separate the materials that are easily degraded in commingled programs.
- More examples of programs and strategies that do work well in Europe and why these examples might or might not be successful in the United States.
- Insights into which key attitudes might be changed to increase recycling and/or composting participation.
- Better recognition of the reality that recycling can have the rebound effect and actually encourage people to feel good about consuming more.
- Identification of similarities in behavior and values can we build on to help us move away from disposal and towards smart shopping, reuse, remanufacture and recycling.
- Evaluation of the environmental benefits of including paper products in residential curbside collection of yard and food waste.

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