

Chapter 2

Is the Customer Really King?
Stakeholder analysis for sustainable
consumption and production using the
example of the packaging value chain

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1. Introduction

An axiom that has shaped policy approaches to sustainable consumption and production (SCP) has been that if more consumers understand the environmental consequences of their consumption patterns, through their market choices they would inevitably put pressure on retailers and manufacturers to move towards sustainability. Using the example of packaging, this chapter shows that when a consumer goes to shop, he or she is looking for a product or service and not necessarily the packaging; the packaging is usually only incidental, an enabler for the product and a differentiator across categories. However, since a good amount of the packaging waste that goes to landfills and incinerators passes through the hands of consumers, it is too easily assumed that placing greater emphasis on changing consumer behaviour would drive changes in the market in the direction of sustainable production. By examining the relative influences of actors in the value chain, and the limited range of packaging options typically provided to consumers, it can be seen that the consumer mostly just channels packaging waste and is not the most salient or powerful stakeholder in this context. Thus expecting the end consumer, who has very limited influence over major players in the value chain, to be the primary driver of an issue as complex as sustainable

Chapter Highlights

With a view to designing effective SCP policies, this chapter looks at the roles and influences of various stakeholders in the value chain, using packaging as an example. Some key messages are:

- An effective policy mix towards multiple stakeholders should take into account the power variations among actors and allocate responsibility accordingly.
- In the packaging value chain, the consumer, though influential, is not the most significant stakeholder; also, the municipality, which usually carries the costs of waste treatment, has limited influence over business packaging decisions. The brand owner and the retailer form the *nexus of influence*; the brand owner is the *lead actor*—the most influential.
- Policies based on a combination of *choice editing* and *extended producer responsibility* would edit out the most unsustainable packaging options and allocate responsibility towards packaging waste management.
- *Packaging review panels* are proposed to review the national packaging situation, adapt or develop policy options, assist governments in implementation, and advise stakeholders towards sustainable patterns.
- *Harmonisation* of a) product packaging specifications across brands and b) packaging policies across the region is recommended to further reduce unnecessary packaging and waste.
- To integrate sustainable consumption at a systems level, policy design needs to address three pre-conditions: the *right attitude* among actors, a *facilitating system*, and *appropriate infrastructure*.

packaging is unrealistic—and a case of targeting the most visible stakeholder, rather than the most influential.

This study examines macro-level factors affecting packaging use in developing Asia. It describes and analyses major actors in the value chain, looking at their “interests, influences and instruments”—the *Triple I framework of stakeholder analysis*. The analysis highlights the lead actor—the one with the most influence in the value chain. In a multi-stakeholder situation like the packaging value chain, to be effective the right policy mix should direct emphasis at the nexus, targeting the most influential actor, thus allowing him to use his influence across the entire chain, causing cascading effects towards more sustainable packaging, but also recognising that all stakeholders in the value chain have a part to play.

Most research for this chapter was done for food packaging; analyses and recommendations however are not limited to that sector. Plastic is used as the case example, not necessarily because it is the most unsustainable packaging material, but because it shows trends and patterns in overall consumer packaging. Plastic is the most proliferating consumer packaging material for consumer products; it constitutes a substantial amount of household consumer waste, and has proven a burden for municipalities to handle. Plastic demonstrates many of the sustainability issues related to consumer packaging.

The most visible dimension, though hardly the limit, of the packaging problem is the resulting waste. Waste, especially plastic waste, has become an integral feature of our modern landscape—nestled together to form floating plastic islands on the ocean (Ryan et al. 2009), heaped into mountains at open dumping sites, or spewing out as fumes from chimneys of incinerators towering into the skyline (Economist 2009). Whether on land, sea or air, the seeming omnipresence of packaging waste has become indicative of the wastefulness of our consumer culture. Although it has been argued that we would not pay so much attention to the issue if waste was not so visible, the impacts of waste go beyond just being an eyesore. There are social and human health consequences (Talsness et al. 2009), dangers to marine life, resource depletion problems, and several more which science is continuously cataloguing as it investigates the impacts of our packaged lifestyles. Yet, as shown later, packaging also comes with many advantages, from increasing product protection to reducing food waste.

A society's self-management of packaging is part of the bigger problem of self-management of consumption. It is the tip of the iceberg; how we deal with it and the resulting waste, a visible monument to consumerism, is indicative of how far we would go to address other aspects of unsustainable production and consumption.

1.1 The role of recycling—important but limited

Recycling of disposable packaging has increased in recent years and is commonly portrayed as the key to sustainable packaging systems. This chapter recognises the important role of recycling in strategies towards more sustainable packaging, but argues that priority should be given to avoidance, reduction, and modification of packaging design for improved sustainability. While this priority order is not valid in all cases, there are numerous studies validating the “waste management hierarchy” (OECD 2005) as a useful general rule-of-thumb. Recycling should not be regarded as the first or only solution, for several reasons, including:

- In practice, only a fraction of the total amount of packaging can be collected and recycled. Materials with low market value are particularly hard to collect effectively and will therefore end up in dumps or landfills, or be burnt in the open or in incinerators.
- The whole recycling chain, including collection, transportation and material processing consumes energy (often fossil fuels) and generates pollution.
- Post-consumer packaging is often contaminated, which means that it has to be cleaned in the recycling process—often with hot water. Cleaning adds significantly to the environmental impacts of recycling, mainly through water pollution and energy use for water heating.
- Certain types of packaging, especially composite packaging, are technically challenging to recycle.
- Recycling of plastic packaging requires that different kinds of plastics are separated, and this can be difficult to achieve when several types are used and households have little knowledge and low motivation to separate.
- The quality of recycled materials is in many cases inferior to that of virgin materials, either as a result of physical or chemical degradation of the material itself or due to contamination. This means that recycled materials can only be used for certain applications with low technical, hygienic and aesthetic demands. It also means that a constant input of virgin resources is needed for more demanding applications.

Taking the limitations and other drawbacks of recycling as one of its starting points, this chapter explores alternative strategies of addressing the packaging problem and suggests how these could be put into action in developing Asian countries.

2. Developing an analytical framework

Packaging is a complex issue involving several drivers and actors, sometimes competing with each other, as well as implications plagued with both scientific and practical uncertainties. A conceptual framework has been developed for this study to describe and analyse interactions among stakeholders along the packaging value chain, particularly highlighting variations in the amount of influence among actors. In developing the framework, several approaches representing different disciplines were studied, including models of analysing consumption drivers and behaviour, supply chain management, stakeholder engagement, and conceptual frameworks of instituting change. Following are some influential models:

- a) Needs-Opportunities-Abilities (NOA): The NOA model was developed by Gatersleben and Vlek (1998) for describing and understanding motivation for, and patterns of, consumption. It diagnoses consumer behaviour at the macro-level of society and the micro-level of the household. At the micro-level, “Needs” refers to individual objectives to attain, maintain or improve quality of life; “Opportunities” are external facilitating conditions for consumption (e.g., product availability and accessibility); and “Abilities” (such as financial and technical) are the set of internal capacities of the individual to procure desired products. The NOA model then subscribes consumption behaviour to macro-level drivers, because consumption takes place within a larger societal context affected by technology, economy, demography, institutions, and culture.
- b) Stakeholder theory: This theory asserts that companies have an obligation to meet the needs and expectations of diverse stakeholders, who are defined as groups or individuals who can influence, or are influenced by, a company’s operations

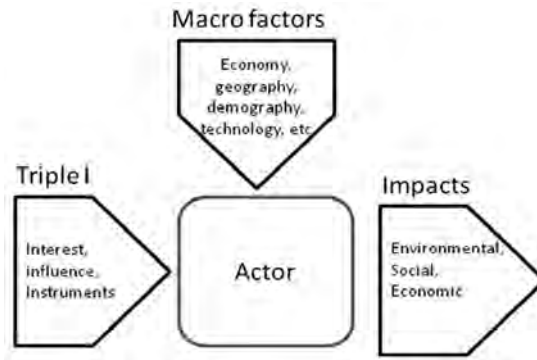
(Freeman 1984). A more sophisticated model has been proposed by Mitchell et al. (1997), who suggest that companies prioritise the needs and expectations of stakeholders based on their perceived power, legitimacy and urgency. The most salient stakeholders are those that possess all three characteristics.

- c) Global Value Chain (GVC):¹ The GVC framework studies global economic processes (such as the interrelated expansion of trade, foreign direct investment and transnational corporations) to understand why and how these processes are transmitted to the local level. It is especially relevant to the context of fast developing Asian countries where global players from industrialised countries are shaping the production and consumption patterns of these Asian economies. The GVC framework adopts the following logical flow of research steps:
- i. It identifies the stages and actors in the value chain from product conception to consumption. It further identifies the relative size, importance and roles of each actor in the value chain.
 - ii. It determines the geographic spread of the chain, taking into consideration how easily major companies are able to relocate their production facilities in order to gain access to raw material, new markets, and cheap labour.
 - iii. It analyses ties between actors in the value chain, examining governance structures that dictate how the chain operates and means through which power is wielded.
 - iv. It then looks at institutions that influence the activities of the value chain. These include governments, unions, trade associations, NGOs, multinational agencies and regulatory bodies.
- d) Awareness-Agency-Association: Ballard (2005) has combined a literature overview of “checklists for sustainable change agents” with his experience from field research and identified three key issues that need to be addressed if individuals and organisations are to respond to the challenge of sustainable development. They are awareness, agency, and association:
- i. Awareness of the issue, its scale, urgency and relevance; awareness of its complexity and of the limits of human agency;
 - ii. Agency refers to the role and skills to do something meaningful, and how actors can be influenced towards change. As Ballard argues, the most significant agency is usually found in addressing the wider contextual issues, for example by changing a law so that sustainability considerations may be more reliably incorporated at the design stage;
 - iii. Association with likeminded agents embarking together to achieve meaningful change. It can be empowering when similar actors are able to mobilise into a group with common objectives.

2.1 The Triple I Framework

In drawing from the above approaches, intersecting points were compiled, unique components in each model highlighted, and then these intersections and components were lined up against the objectives of this study. The result is a simplified model called the Triple I stakeholder analysis framework (see Figure 2.1). It is used in describing and understanding drivers of packaging use, what influences decisions in the value chain, how power is wielded by various actors, and individual and institutional opportunities to facilitate a general shift towards more sustainable packaging.

Figure 2.1 The Triple I model



Source: Authors

- i. **Interests** represent various stakes in the packaging issue, needs and drivers. This contributes an understanding of why packaging is used and why use is growing. It addresses the questions:
 - Who are the key actors involved in the design, manufacture, use and/or recovery of packaging?
 - What are their needs/expectations of packaging (functionality, costs, environmental performance, etc.)?
 - What are the drivers, patterns and trends of usage?
- ii. **Influence** refers to the role of each actor, influence over others, and the actor's position and relative importance in the value chain. This identifies who is most influential and can thus drive change in the value chain.
 - What is the role of each actor in the value chain?
 - To what extent can each of these actors influence the design, manufacture, use and/or recovery of packaging?
 - How much influence does each actor have in the value chain?
- iii. **Instruments** are mechanisms of operation of each actor—what actors use to wield influence, institutional frameworks under which they operate, and opportunities for sustainable change.
 - What instruments does each actor use to influence other actors in the value chain (government policies, procurement guidelines and specifications, etc.)? What other institutional aspects are likely to influence the design, manufacture, use and/or recovery of packaging (industry associations, industry awards, professional development, etc.)?

Given that packaging production and consumption takes place within a broader societal context, results of the Triple I analysis are placed within macro-level factors that affect packaging, such as technology, economy, demography, and culture.

This study examines macro-level factors affecting packaging use in developing Asia. It then describes and analyses major actors in the value chain using the Triple I model. Owing to space limitations, focus is on the four most influential stakeholders, and the analysis is done in reverse order to physical flows in the value chain: municipality > consumer > retailer > brand owner. The packaging producer is not analysed here as an independent stakeholder of major influence. As shall be shown, the bulk of packaging decisions, especially in the food processing industry, are done or influenced by

companies that either a) outsource their packaging production but maintain internal units (usually attached to the marketing department) that exert full control over the type of packaging specified to the contracted producer, or b) have their internal units that design and produce the packaging for their products.

The analysis shows the *nexus of influence* and highlights the *lead actor*—the one with the most influence. Core elements of a policy mix should employ the power of these stakeholders, in combination with other stakeholders, to drive the value chain towards sustainability.

2.2 Macro factors, drivers, trends

Several Asian countries have been experiencing and continue to experience rapid economic growth, with a subsequent rise in the use of packaging, in particular plastic packaging. This growth has been accompanied by a growing middle-class with more disposable income and with appetites similar to those observed in industrialised countries. Most of the resulting consumer class (Gardner et al. 2009) is concentrated in urban areas, which have experienced an influx of people from rural areas seeking better opportunities. The consumer culture has therefore become predominantly urban, with habits and lifestyles that demand more processed and packaged food. This is fostered by government policies promoting neoclassical economic growth, buttressed by the rush of industry to tap into new markets. The plastics industry identifies developing Asia as the region with the highest growth potential (PlasticsEurope 2009). Valued at approximately \$121 billion in 2004, the Asian packaging market is forecast to reach \$174 billion in 2011 (PIRA 2006). Over the last decade, the packaging industry in Asia has become increasingly sophisticated, and in most countries in the region, growth of the packaging sector is ahead of the nation's GDP growth; in the early 2000s, growth in the Chinese plastic packaging market exceeded GDP growth by 3% annually (Hoggard 2004), and in India the use of plastic packaging is expected to increase by 20% per annum over the coming years (PIRA 2007).

3. Triple I analysis for the packaging value chain

There are four main stakeholders in our analysis of the packaging value chain: municipalities/local government authorities, consumers, retailers, and brand owners. In the following sections the Triple I analysis is applied, showing the major interests, influences, and instruments for each.

3.1 Municipalities/local government authorities

The municipality, although technically a major stakeholder, is actually not a part of the industry value chain; it only enters after the production and consumption process. With landfills reaching capacity, waste cast aside on roadsides, and waste dumps emitting foul smells and smoke into residential and commercial areas, the problem of packaging waste is becoming more and more visible, increasing pressure on local authorities to take action.

However, local authorities, responsible for waste management in most countries, are usually short of staff and funds, and lack the technical know-how and infrastructure to set up and maintain appropriate waste management systems. Municipalities in Asia can sometimes spend over 50% of their revenue on waste management (Boyd 2002), with packaging waste constituting as much as a third of the waste in some cases. Municipal collection and recycling programmes must compete with other services for funding (CWMI 1999), forcing authorities to reallocate funds which would otherwise go towards other municipal services.

The mandate of local authorities is typically to implement legislation set at the national government level; they have limited power to enact packaging regulation themselves at the local level. In the more developed Asian countries, some municipalities have determined which packaging materials are collected and the collection mechanisms, through kerbside collection service, for example. Here, the municipality influences the options consumers have for disposing of their waste; and they run public education programmes on proper waste disposal. In the much poorer countries, there is often a sense of helplessness as the waste piles up and there is little that can be done to deal with it. Whatever resources are available are directed towards end-of-pipe management to clear away the most visible signs of the problem.

Other than local land use patterns such as zoning laws, municipal authorities have little or no direct influence over locally operating retailers and brand owners. This is especially the case with transnational corporations that are headquartered in another country and have much greater resources than local authorities. Most packaged goods sold at local retail units and supermarkets are not produced in the same locale. While production is done in one municipality, country or continent, consumption is done in another. This gives governments of developing countries with relatively weak economic status rather little influence, and municipalities even less, over flows of packaging. Local authorities are consigned downstream to operationalising waste management policies set at the national level.

3.2 Consumers

Food consumption in developing Asia is largely characterised by a growing dichotomy of co-existence: a rising, assertive consumer class, amid the remaining enclaves and communities of those living in poverty. Consumption takes place within a socio-economic context in which one group exerts itself through consumerism and another group has to scavenge on the resulting waste for its livelihood. Consumption among the emerging Asian middle-class has tended to emulate patterns noticed in the more industrialised countries, as a lifestyle with artefacts to which status is associated. Most of the consumer class is concentrated in cities, responsible for the bulk of consumption that is churning out waste. As an example of this rapid transformation, from 2000 to 2008, Vietnam's GDP grew by 43% in urban areas, along with an emerging middle class with increasing disposable income (Nielson 2008).

Consumers' needs reflect a set of objectives pursued to attain, maintain or improve their quality of life (OECD 2002); they buy to satisfy these needs, or perceived needs. Food designed for convenience and to suit increasingly busy lifestyles needs more packaging; plastic which is light, flexible, durable and impermeable is highly attractive for this purpose. Consumers rely on packaging for food protection, transportation and for information, such as ingredients, instructions for use, and expiry date. Packaging may also have a special cultural resonance. For example, gifts are heavily packaged—the more impressive the packaging, the more impressive the gift. Some consumers now expect major retailer outlets to provide such attractively packaged gifts.

In general though, and away from conspicuous consumption, when a consumer goes to shop, he or she is looking for a product or service, and not necessarily packaging; the packaging is only incidental, an enabler for the product and a differentiator across categories (Brody 2006). While the choice of a consumer is an expression of preference, the consumer only has as many options as are presented on the shop shelf, thereby limiting their ability to reveal their preference to what is available and not necessarily what they desire or with what fits their values. Based on a number of reasons, this choice is an

expression of needs, preference or abilities within a framework and system of provision (e.g., variety of products) that has been presented by the shop or its competitors. Refusal to buy is also such an expression. Saying “no” to the plastic shopping bag, boycotting one shop over the other, or unpacking a product and leaving the packaging at the supermarket instead of taking it home with them are examples of consumer expression observed in some countries. In Asia however, to date, there are few examples of such activism motivated by sustainability concerns.

Lee et al. (2009) discuss increasing brand avoidance as a pattern that demonstrates potential consumer influence. Similar to the effect of boycotts, such discriminatory aspects, if done against unsustainable packaging, would affect the bottom line, and consequently the operations, of the brand owner (Cotte and Trudel 2009). But this is only effective where a consumer has the option of picking between an unsustainable brand and a sustainable one. Faced with a situation where mostly all the food in shops is (unsustainably) packaged, refusing to buy is an unrealistic option. However, where more sustainable options exist, the challenge remains for developing Asian consumers to organise themselves into a critical mass of consumers and express consumer choices that are reflective of the need for more sustainable packaging, under the preconditions that they are aware, active, and associated sufficiently to do so. That organisational aspect is lacking; the authors have been unable to identify effective examples that have led to changes along the value chain as described in this chapter. What comes close are campaigns by NGOs that promote rejection of plastic bags by shoppers, such as Bring-Your-Own-Bag once a week led by the Singapore Environment Council, and a similar initiative under the National Consumer Campaign 2008-2012 by the Federation of Malaysian Consumer Associations (FOMCA). Such campaigns, though politically appealing, are not sufficient on their own, and can even have unintended consequences. Life cycle analysis by the Sustainable Packaging Alliance show that reusable bags have a lower environmental toll than single-use bags, but only when used 104 times, or once a week over two years. The environmental impact of a reusable polypropylene bag used only 52 times is worse than a standard plastic shopping bag (Lewis et al., in press).

Consumer organisations have emerged as the collective voice of consumers. In their activities, they can be classified as working on a) classical consumer protection or consumer rights such as the rights to safety, information, choice and representation, or on b) ecological consumer protection which may or may not include some of the elements of classical consumer protection plus basic needs, redress, education and healthy environment (Akenji 2003). The revised UN Guidelines for Consumer Protection, further expanded in 1999 (UN 2003), have given these consumer organisations a mandate. In developing countries, still locked around questions of basic consumer rights, many consumer organisations have yet to make the signalled transition from classical to ecological consumer protection.

Another factor that, from an environmental sustainability perspective, has negatively affected the potential of consumers is the sway of prices, usually giving prices priority over environmental sustainability. Recent research shows that consumers will buy sustainable products only if “quality, performance and price are equal” (Cotte and Trudel 2009). In Vietnam, for example, 77% of consumers surveyed in 2008 claimed they had changed their shopping outlet because of prices (Nielsen 2008). Since cheaper is generally not more sustainable, it follows that consumers, through the lower-priced choices, are influencing brand owners to search for ever cheaper packaging options. And because environmental resources and end-of-life management costs of these materials are not properly reflected in the costs, the environment loses out in the market pricing equation.

Harnessing the mass of consumers as citizens/voters (Berglund and Matti 2006) presents an opportunity to influence elected public authorities. The potential of consumer education becomes stronger here, where growing environmental and social awareness of sustainability issues, an engaged electorate, or consumers organised by consumer organisations become a viable force for change, ensuring that policy makers and elected representatives place sustainability high on their priority agenda. Groundbreaking work exploring the notion of consumer citizenship has been championed by the Consumer Citizenship Network, and is explored in chapter 3 on education for sustainable consumption.

3.3 Retailers

In this analysis, retailer refers mainly to major outlets (“big box” stores, hypermarkets, supermarkets, like Tesco and Auchan) and retail chains (like FamilyMart and 7-Eleven). Preliminary analyses show that: (1) in terms of numbers, there are many small independent retailers but their packaging-related sales volume is relatively smaller than that of major retailers; (2) small retailers are heavily influenced by trends and behaviours of major retailers; (3) in urban areas where most packaging-related consumption occurs, major retailers are not only becoming trend setters but also driving the bulk of consumption, caring for the consumer class as well as for aspirants to the consumer class who try to emulate the consumption styles of the rich; and (4) unlike major retailers which are organised into powerful interest groups, small retailers are less coordinated.

A wave of supermarket growth hit Asia in the 1990s. Reardon and Gulati (2008) observe that there were hardly any supermarkets in China in 1989; today in six of its largest cities, major retailers have a market share of 94% in non-food goods, 79% in packaged and processed goods, 55% in baked goods, 46% in meat, 37% in fruit, 35% in poultry, 33% in fish, and 22% in vegetables. Given that major food retailers usually deal with processed and semi-processed foods, their packaging impact is high. There were half a million stores in Vietnam in 2007 selling consumer packaged goods, representing a 13% growth in number and 18% in retail value from the previous year (Nielson 2008).

As an interface between consumers and brand owners, retailers perform a balancing act of satisfying consumer demand and also pushing through what the producer wants to sell, while, in several cases, ensuring prominence of their own brand. Major retailers' large assortment attracts many consumers and their fast turnover of products empowers these major retailers as high priority customers of brand owners. Prices in major outlets tend to be cheaper due to economies of scale from centralised procurement and distribution (Fuchs 2006; Reardon and Gulati 2008). Retailers also offer air-conditioning in stores, appear cleaner, and display products in ways that appeal to many consumers. As a result of these perceived advantages, retailers are drawing increasing numbers of customers, away from local and convenience shops and traditional markets.

Over the years, retailers have become increasingly powerful. On the one hand, they press producers to supply on the retailer's terms, e.g., in reduced bulk prices or packaged in specified units. However, on the other hand, they influence consumers into ever increasing consumption that increases profitability. Research shows that supermarket acceptance of sales packaging plays a major role in the packaging decisions of manufacturers and that it likely outweighs the demands of consumers (CWMI 1999). Retail giants such as Carrefour regularly refuse to sell certain products unless they meet specific pricing and packaging requirements (Gereffi and Christian 2009). Such detailed specification is a powerful tool for market influence.

As more and more major retailers are increasing shelf space for their own brand products they are gaining more influence over products and packaging of brand owners' as well. Such retailers play a double role of being both brand owners and retailers. They influence the price for the brands that compete against theirs; they determine which brands get shelved in their outlets and which ones do not, and in doing so select their own competition. They decide on shelf position, display size and prominence of products, advertising and advertising space at the outlets, and marketing activities (e.g., product sampling) on the retail floor by brand owners. These are all factors that have been shown to influence product turnover. However, because the retailer cannot produce all the products that it sells, it still depends on the brand owner for most of its stock.

Major retailers provide employment opportunities in places where they operate. A combination of their strong role in the economy and their financial power gives them considerable leverage over other stakeholders, including local authorities. In all the countries looked at for this study, retailers came together to form national associations to represent their interests. These associations have been successful in influencing local and national decisions on packaging or packaging waste management.

3.4 Brand owners

Developing Asia is still a young market in many respects and presents opportunities for brand owners to both initiate consumption by, and shape the appetites of, new consumers. With growing economies, rapid urbanisation and an increasing consumer class, there has been an influx of transnational food corporations to these countries, followed by small and medium size enterprises (SME) to supply them, and a mushrooming of local businesses to meet demands created by the emerging lifestyles. Asian countries are heavily populated and present a fertile ground for investment. Vietnam, for example, has a very young population, with over a third under the age of 19 in 2000, and more than half under 30. In the two main cities of Ho Chi Minh and Hanoi, a third of the population has access to the internet (Nielsen 2008). This provides opportunities for manufacturers to cultivate and sustain customer loyalty in the key cities among these emerging middle class citizens, who are young and hungry for new brands and products. In fact, several marketing activities target this young segment via media like internet and mobile phones that are adapted to their lifestyles.

Brand owners operate in a fiercely competitive market environment, faced with meeting consumer demands for high quality products at low costs while competing with other brands for shelf space and product recognition. As such, the design and packaging, being usually the first visual contact with consumers, should be distinctive and attractive in order to maximise the market appeal of the product (CWMI 1999). This has provided brand owners with one of its strongest marketing tools. Packaging design for successful marketing is a booming industry of its own and, between the marketing departments of brand owners and the packaging designer, resources are dedicated to "get the packaging right." This has sometimes led to a lopsided product-packaging cost ratio—the packaging costing more than the product itself. In 10 out of 40 food industry sectors, packaging costs exceed the costs of edible foodstuff ingredients (Hicks 2002).

Efficiency in the value chain, getting the product from the manufacturer to consumer is a primary consideration of the brand owner. As well as being cost effective, packaging properly serves to protect and preserve its contents during transportation and storage. Packaging is widely credited with being the key driver for such product successes as extended-shelf-life flavoured milk beverages, fresh-cut vegetables, microwave popcorn, moist pasta, microwave entrees and soups, shredded cheese, and bottled water (Brody

2006). In addition, it is used to communicate information about the product to consumers, like content labels, instructions for use, and expiry dates.

As the packaging “specifier,” the brand owner directly communicates its packaging needs to the producer. Specifications instructing packaging design could be as detailed as the dimensions, material, or sustainability criteria for the packaging: “a static entirety of constraints that packaging development must adhere to” (Oostendorp et al. 2006, 209). The packaging producer may sometimes act as consultant to the process of packaging development. However, ultimately, owners want to keep control over their brand image and have the final say in the decision process. The nature of the product and the brand owner’s sales packaging design in turn influences transport and grouped packaging used by suppliers, distributors and retailers.

In line with maintaining control over packaging design and brand image, major food brand owners often have their own internal packaging units (Brody 2006). Ownership of packaging technology and equipment is expensive, and thus could be a potential impediment to change. Once a manufacturer invests in such expensive technology, logical planning is to see a return on investments over a calculated period. Consequently, even if it becomes clear halfway through the productivity cycle of the equipment that the packaging concept has an ecologically negative effect, if marginal contributions of the equipment to the financial bottom line are still positive, then there is little business incentive to change, especially when the comparative costs of the switch are high.

Although brand owners typically go through retailers to provide consumers with their products, they take an active role in marketing and advertising directly to consumers. As Brody (2006, 111) observes, “companies are expanding their employment of persons with the title of Packaging Vice President and compelling marketing, brand, and product managers to apply packaging as one of their key weapons in the ever-increasing competitive marketplace.” The Internet and mobile phones, examples of emerging technologies familiar to young consumers, are providing brand owners with direct channels to consumers, bypassing retailers. In the presentation of products as answers to the demands of modern culture, busy lives, and youth perceptions, packaging goes beyond being just a container and becomes a product in its own right, catering to the emotional and psychological demands of consumers, most of them under the influence of advertising. This type of packaging especially appeals to the emerging consumer class which views consumerism in industrialised countries as a lifestyle to emulate.

Transnational corporations, most of them coming from industrialised countries and seen to embody the appeal of the Western lifestyle, have had strong effects on the way food is produced and packaged in developing Asia. Local products, not to be outdone by competition, are now taking on standards set by these corporations. Global value chain analyses by Gereffi and Christian (2009) demonstrate that transnational corporations are “drivers of the global fast-food technology, processed foods, and Western cultural norms that have become so prevalent in developing countries. The global-local interactions they spark accelerate the speed at which local food producers, manufacturers, and retailers adopt transnational businesses strategies and tailor them to domestic needs” (*ibid*, 10).

Traditional foods, such as noodles and rice, are now being processed to suit the urban lifestyle. Brand owners such as Ajinomoto and Nissin produce instant noodles and rice, packaged in paper, plastic or Styrofoam cups and available for the busy city dweller to “just add water” and be on the go.

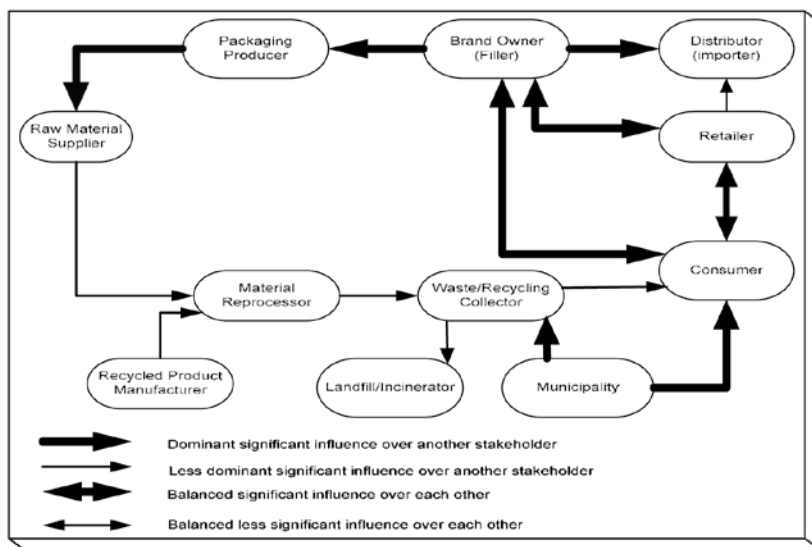
Research and development by companies provides a lot of knowledge to improve existing product quality, develop new products and technologies, or find out new ways of penetrating the market. Brand owners continuously mine data to understand the psychology behind consumption, consumer tendencies and behaviour and how these can be used to draw consumers in. The development of packaging is one field in which consumer psychology is being continuously and intensively studied with a view to driving ever higher consumption.

Brand owners are also influenced by their shareholders, especially where their consumer base or financial bottom line is in question. Given the nature of corporations—which most influential food companies are—shareholders expect returns on their investments. With a competitive market structure and a strong emphasis on shareholder value, there is little space for long-term planning as is required for sustainability. Management, usually different from owners or shareholders, tends to pay the price when its decisions, even when well-intentioned (as is the case with becoming more ecologically friendly), cannot be communicated in the traditional business language to shareholders. A positive change, however, can be observed in the rapid rise of ethical investors, such as large pension funds, that demand improved sustainable performance from the companies they invest in. In the absence of regulation and consumer pressure, corporations can only go so far with cosmetic changes and in final accounting cannot help but be what they are legally defined to be—where the financial bottom line has priority over ecological considerations.

4. Stakeholder salience

Figure 2.2 summarises the relationships and influences among stakeholders in the packaging value chain, based on analysis done in this study. The degree of influence exerted by one actor over the other is indicated by the size and direction of the arrow. Dominant significant influence by Actor A over Actor B indicates that A has more influence over B than B has over A, and that A has more influence over packaging decisions than B.

Figure 2.2 The product-packaging chain, showing relationships and stakeholder influence on packaging sustainability (direction and relative size)



Source: Authors

As demonstrated in the preceding analysis, individual consumers currently have relatively little influence to change market behaviour. The retailer predetermines the variety, size and packaging and has sophisticated ways of influencing consumer decisions, although ultimately it is the consumer who buys the product. As such, the consumer and the retailer tend to have a balanced significant influence over each other. Similarly, there is a balanced significant influence between the consumer and the brand owner. However, because the retailer and brand owner double their influence over the consumer, the consumer ends up with less influence over both of these actors and thus, at least in the area of packaging, can hardly drive change along the entire value chain. This has already been inferred through several studies (see, for example, Fuchs and Lorek 2005; Sustainable Consumption Roundtable 2006). By implication, consumer awareness programmes alone are not sufficient, nor should they be the primary focus of achieving sustainable consumption.

The *nexus of influence* is around the retailer and the brand owner. Their combined influence sways decisions in the value chain. Even if consumers wanted more sustainable packaging, it would still rest upon this dominant significant nexus to introduce such packaging. Government policies that ignore such strong influences are unlikely to be effective. Of particular importance to these actors are their large shareholders, many of which are becoming increasingly concerned about sustainability issues.

The municipality, although it bears the costs of waste management, has little direct influence over the production process. It does have influence over the waste management systems and waste disposal options available to consumers. This partially explains why it is common for municipalities to talk of influencing consumer behaviour and proper waste disposal than engaging with the powerful nexus of retailers and brand owners trying to change the upstream stages of the value chain. Thus waiting for the green consumer and the concerned municipality to act alone will result in insufficient impact up the value chain. National governments must empower these downstream actors to be able to act on the issue, and any set of policies that effectively tackles unsustainable packaging must primarily engage the brand owner and retailer as part of a multi-stakeholder approach.

4.1 The lead actor

The Triple I model identifies where influence comes from, and thus who has the most power in the value chain. This is called the lead actor. The concept is adapted and redefined from “lead firm” as contained in the global value chain model by Gereffi and Christian (2009). The following are characteristics of the lead actor:

1. has majority ownership or legal rights (patents, copyrights, court registration, etc.) over the final product or brand;
2. has a critical marketing, technological, or financial edge that permits it to set the standards or specifications for other actors in the value chain;
3. defines the product and choice of market route, including production, presentation (e.g. packaging) and distribution;
4. has agency—the ability to find a meaningful response to the situation, the resources to change its own behaviour, hence pulling others along.

From the Triple I stakeholder analysis, the nexus of influence in the packaging value chain is around the major retailer and brand owner. Most of the specification of packaging is done by these two actors. They are engaged in production and distribution; have influence over suppliers and availability of retail outlets, hence consumers; and they have the financial leverage and are well organised into assertive self-interest groups.

Yet while major retailers like supermarkets are influential and have become increasingly powerful, in the processed food value chain where packaging is most rampant, the dependence of the retailer on brand owners for the full extent of its supplies ultimately leaves the brand owner with more influence. However, as has also been discussed, major retailers are beginning to develop their own brands, which makes them brand owners, too. By targeting the brand owner to change practices within the value chain, the major retailer would be included as well, thus engaging every actor in the nexus of influence. A good way to further understand the potential of the brand owner as a change agent in the value chain is to place it against the characteristics of the lead actor as listed above.

Nestlé, for example, as a lead actor, is the world's largest food company with control over key technological or information assets that allows it to establish the parameters that other major actors in the processed and semi-processed food industry must comply with. Nestlé has direct control of key stages in the supply chain, product and process standards for its star brands like Nescafé, Perrier, Maggie, and it is technologically innovative to come up with and push through new products that redefine the market, such as the Nespresso coffee machine and capsules.

Gereffii and Christian (2009, 5) write that frequently lead actors “exhibit more power in influencing behaviour in an industry than government laws and regulations. The latter are typically hindered by enforcement difficulties, whereas if suppliers do not comply with lead firm standards, they face harsh penalties or can be dropped from the chain.” In issues as complex as packaging and with many stakeholders involved, rather than developing Asian governments casting wide-net policies, they should be targeting brand owners to act more sustainably and demand the same from those they have direct or indirect significant influence over. Institutional shareholders, like pension funds, and other ethical investors may be an important source of leverage. Furthermore, SMEs in developing countries generally lack the resources to move rapidly towards environmental sustainability; governments should ensure that large companies provide sustainability leadership to these SMEs that often serve as their suppliers.

5. Prevention approaches to unsustainable packaging

There are two approaches recommended here for policy makers: choice editing and extended producer responsibility (EPR). Choice editing has two advantages: it is a preventive approach to unnecessary packaging, as well as avoidance of the more unsustainable packaging materials and design. By editing out the bad options, it also prevents consumers from having an unsustainable option on the shelf. But waste cannot be completely eliminated, and for waste which choice editing cannot prevent, EPR is used to allocate responsibility. By distributing among stakeholders and shifting primary responsibility to the source, EPR lifts the burden from resource-starved municipalities and places it on the actors that are most responsible for creating the waste in the first place. These approaches are recommended based on the outcome of the Triple I value chain analysis and should be implemented in tandem.

5.1 Choice editing

The term choice editing was coined by the Sustainable Consumption Roundtable, a group of leading experts in consumer policy, retailing and sustainability. It has recommendations on creating consumer choices that stay within environmental limits. One of its reports, “I Will If You Will” (Sustainable Consumption Roundtable 2006),

examines how to mainstream sustainable consumption and concludes that, given the scope and urgency of the issue of sustainability, and considering the multiple influences on consumer decisions, it is not practical to place the burden on consumers; “the lead for ensuring environmental stewardship must lie higher up in the supply chain” (*ibid*, 16). Among its recommendations is choice editing.

Choice editing involves the use of specified factors and set standards to filter out unsuitable options in the range of products and services available to consumers (Box 2.1). It is done by manufacturers and service-providers when they decide which products and services to offer, and to what specification based on profits, available technology, or social need, for example. And as already established, retailers choice edit what products they shelf so packaging could be an influencing factor in this choice of products.

Governments can also use choice editing to eliminate unsustainable products or services, or to encourage development of sustainable ones which may otherwise not be available. This will influence resource use, production, and consumption. Consumer choice and behaviour are a function of the options available to them, or, in other words, a response to government policy, manufacturers’ and service providers’ choices, and retailers’ decisions on what to (or not to) shelf. In our analysis, in this context the consumer is not really king after all.

The phasing out of incandescent light bulbs from domestic use in Australia, the European Union, and now being considered by Asian countries like China are contemporary examples of governmental choice editing driven by sustainability concerns. Likewise, the ban on plastic shopping bags from supermarkets by several countries can be seen as first steps towards choice editing for packaging. Governmental choice editing has been around for a while and can be found in all countries. It is commonly used for protecting consumers and for public safety. For example, in most countries a consumer cannot just walk into a shop and buy a pistol. This unsafe option has been edited out of the market. Similarly, the use of toxic lead-based paints on toys has been banned in many countries. Choice editing is therefore not new, having been a strong basis of public policy.

Traditionally, most choice-editing criteria used in public policy related to production and consumption has been based on economic growth, health and safety. Except for more recent policies, any environmental benefits have mostly been incidental. Nevertheless, world leaders have acknowledged through Agenda 21 that “the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production” (UN 1992a, 4.3), and states have declared their commitment to “reduce and eliminate unsustainable patterns of production and consumption” (UN 1992b, Principle 8). Governments are therefore obligated to incorporate sustainability factors into choice editing policies for products and production, and to set standards high yet practical enough to eliminate social and environmental pressures.

Box 2.1 Sample logical flow for applying choice editing

- i. **Needs:** What function does the packaging have? Which stakeholder needs it and at which stage in the value chain? How is it being used, and what are the drivers and patterns of its use?
- ii. **Sustainability:** Is production, use and disposal of the packaging sustainable? Life cycle approach would be an example of a tool to understand the sustainability of a product from “cradle to cradle,” or along its entire life cycle.
- iii. **Alternatives:** Are there any (more sustainable) alternatives to the packaging or packaging material that would carry out a similar function and provide similar utility?
- iv. **Costs:** What are the comparative costs—environmental, financial and social costs—of either developing new packaging alternatives or mainstreaming existing ones?
- v. **Edit:** Based on the previous steps, the government could then decide to edit out the existing choice and how. Choice editing requires what the Sustainable Consumption Roundtable (2006, 22) calls a “clear road map for rapid product change,” facilitated by government and with the full involvement of key stakeholders.

Source: Authors

5.2 Extended Producer Responsibility

Davis et al. (1997) describe a situation thirty years ago in industrialised countries that is still the predominant reality of developing Asia:

Regulations have focussed on controlling the pollution outputs from individual firms within the product chain without regard to the linkages to other stages of the product chain. Under this limited view of environmental responsibility, solid waste management, for instance, has been the responsibility of the individual householder or the local government acting on his or her behalf. Traditionally, the producer of the disposable product packaged in multiple layers of non-recyclable packaging has not been viewed as having any responsibility for the product or package when they become waste. As solid waste burdens have increased and tightening disposal regulations have made solid waste management more expensive, the budgets of local governments have been stretched thin, and local taxes have been increased. At the same time, the siting of solid waste facilities has become a major political battleground. Local governments have been saddled with the responsibility for a problem that is not of their own making and about which they can do little on their own to prevent.

Furthermore, due to their limited influence over upstream stages of product value-chains, municipalities are left with short-term, end-of-pipe solutions to a problem that is integral to our production and consumption system. Addressing it from the outcome rather than the source is unlikely to curb the rapid rate at which packaging waste and its related consequences are growing. While in principle this is widely recognised, there remains the challenge of taking the pressure off ill-equipped municipalities and addressing the source itself, where the waste is being generated and where the crucial decisions are being made.

Over the last three decades, some industrialised countries have used extended producer responsibility (EPR) as an approach to address the above situation. It is an environmental policy approach in which a producer bears responsibility for a product and its environmental impacts throughout the product’s life cycle, including upstream impacts arising from the choice of materials through the production stages, to downstream

impacts during the consumption and post-consumption stages (Davis et al. 1997; OECD 2001). In theory, EPR combines both the polluter pays principle and design for the environment, making it suitable as a packaging waste prevention approach by: (i) shifting responsibility (physically and/or economically, fully or partially) upstream toward the brand owner and away from municipalities, and (ii) providing incentives for brand owners to incorporate environmental considerations in the design of their packaging (OECD 2001). Although in principle the latter is implicit, in practice the implementation of EPR has mostly been towards post-consumption waste management, especially recycling and incineration. This has benefited towards increasing recycling rates and reducing landfill disposal, but it skirts the benefits of waste prevention at source, such as reduction of resource consumption and pollution.

EPR cannot place all responsibility on the producer; in order to function properly, other actors along the value chain need to be assigned appropriate responsibilities. Properly applied by government, EPR presents an opportunity for multi-stakeholder engagement and to use a policy mix influencing all actor groups such as, in the case of packaging, producers, retailers, consumers, and local authorities.

A wealth of literature already exists on EPR (e.g., Davis et al 1997; Lindhquist 2000; Lewis 2003) so further explanation shall be avoided here. The OECD (2001) *Extended Producer Responsibility: A Guidance Manual for Governments* is a good publication with which to start. More recently, IGES' *Extended Producer Responsibility in East Asia: In Consideration of International Resource Circulation* (Hotta et al. 2009) explores practical interpretations in the Asian region.

EPR is not a given set of specific policies but a principle that guides policy making. The approach is recommended here not as a stand-alone but to complement a more proactive waste prevention approach such as choice editing. It is recognised that there are challenges to EPR policies (Bengtsson et al. 2009) owing to the limited implementation capacity of developing Asian countries. As such, while a prevention approach could be used to heavily reduce the amount of waste generated, EPR would complement it in allocating responsibility to which actor should be dealing with the waste that eventually passes through the choice editing filter. To make the application of EPR more realistic in developing Asia, national packaging review panels are recommended (below).

6. Recommendations

Among this chapter's specific recommendations are:

- to create national packaging review panels, constituting packaging stakeholders to continuously review the packaging situation, pre-empt emerging trends, evaluate policy options, and advise stakeholder groups, with a view to advancing more sustainable packaging;
- harmonise packaging across brands of similar products, and make them refillable, in order to reduce the need to constantly produce new, individually tailored single-use packaging; and
- further harmonise packaging standards and national policies across countries of the region, reducing the complications for brand owners to develop different types of packaging for different countries of the region and facilitate the potential to achieve major reductions across a wide market bloc.

6.1 National packaging review panels

Packaging patterns are affected by several factors, with variations from one country to another. Rather than follow generic recommendations, each country should set up a multi-stakeholder national packaging review panel (PRP) to integrate issues of packaging design, packaging and packing waste at a system level. A PRP creates an opportunity to examine the country situation and to be able to adapt any of the large pool of tools and instruments available for shifting towards more sustainable packaging.

Most countries have stakeholder groups, such as national packaging associations (e.g., Packaging Council of Malaysia) and federations of consumer organisations (e.g., Indian Consumer Education & Research Society,) which would be legitimate stakeholder representation on a PRP. However, PRPs need to go further than limited interest groups, and have a broader and more immediate mandate that integrates environmental and social factors more forcefully. Under the leadership of the government, such a panel should constitute a wide representation of actors affecting or affected by packaging, participating towards formulation of solutions and taking responsibility for implementation. As demonstrated by the Triple I analysis, it is important to take into consideration the role of each stakeholder and the influence it has on the value chain. Suggested salient stakeholders in the packaging value chain are policy makers, brand owners and retailers, researchers, environmental groups, consumer groups, local and municipal authorities, and independent experts (e.g., on packaging design, marketing, communication).

PRPs would continuously review the packaging situation, pre-empt emerging trends, evaluate policy options, and advise stakeholder groups, each in a manner tailored to the national situation, with a view to advancing more sustainable packaging. It would provide input to and make recommendations for government policy. Brand owners and retailers at the nexus of the value chain could be charged a fee towards funding the panel. A dedicated PRP secretariat, with a strong mandate and independent experts, can save the country high future costs and contribute to shifting the country towards sustainable patterns of production and consumption.

Following are some policies which national governments and PRPs could consider.

Policies for choice editing packaging

Based on discussions in the PRP, the government could set minimum sustainability standards for all consumer packaging, any options below which should all be edited out of the market. Examples include laminated or otherwise complex material combinations with waste either too demanding to manage or hard to recycle with net environmental benefits. Standards should reflect the technical and institutional capacity in each country, and overall operate within environmental constraints. As far as can be enforced, reductions in packaging, e.g., size, volume, thickness, should be mandated. The Chinese Excessive Packaging Law targets product and packaging cost ratios, free space ratios, and maximum number of layers of packaging for a range of products. The South Korean Ordinance on the Standards of Packaging Methods and Materials sets “empty space ratio” goals for most product packaging: an Act restricts the use of disposable cups, plates, plastic bags and paper bags in restaurants, public baths, and department stores, among other places.

The challenge for choice editing is to find where the right minimum standard should be set, in a way that is both feasible to implement and effective in solving the problem without creating overall negative consequences. Bans, taxes, subsidies and phase-

outs are only a few of some traditional tools for choice editing; creative policies could also be more accommodating to diverse stakeholders. While some packaging types already have more sustainable alternatives, some might not. In a market economy, the government would have a critical role to play in “nudging” the market towards adoption or development of viable alternatives, and the consumer to accept these new forms of packaging.

While editing out more unsustainable options, governments should simultaneously provide incentives that will introduce more sustainable ones. Although the potential of bio-degradable plastic as a full scale replacement of petroleum-based plastic is debatable (Song et al. 2009), limited but ingenious applications of such materials could have multiple benefits. For example, using bio-degradable plastic for disposable plates and cutlery used at events takes away the need for source-separation of waste since both the food remains and bio-degradable plastic can then be dumped into one organic waste bin for composting. Countries could initiate pilot projects to evaluate the performance of bio-based plastics, biodegradable, as well as other new materials, and their applications as potential substitutes to current, unsustainable packaging materials. Traditional packaging materials should also be re-examined. For example, India still uses plates and bowls made out of leaves for roadside food vendors, which are left for the roaming cows to clean up.

Packaging bans and reductions must be complemented by government measures to promote food systems that need little or no packaging. For example: providing strategic space (such as centrally located land or stalls) in cities for local produce markets will encourage consumption of local foods with minimal packaging, which is a viable alternative to shopping in supermarkets. It would further encourage (traditional) food processing methods such as drying and salting (Hicks 2002), or urban and peri-urban agriculture (Anh et al. 2004) that reduce the need for packaging.

Packaging harmonisation

Within similar product groups, most packaging variations are intended to differentiate brands and consumer segments. But this can also be achieved through simple labelling rather than different types of packages. Thus brand owners in similar product groups could be required to develop common packaging standards, the packaging harmonised, and, where a life-cycle perspective demonstrates net benefits, make the packaging refillable. This will reduce the need to constantly produce new, single use packaging as harmonised packaging can be used across brands and repeatedly. A case in point is in Vietnam where beer bottles and distribution crates have standard sizes and shapes, allowing breweries to use them interchangeably. Brands are differentiated by labels printed on paper and placed on the bottle. Furthermore, because they are reusable and there is a refund fee, consumers easily return empty bottles and crates. Packaging for jam and fruit juices could adopt such a system. Governments should work with national packaging associations in evaluating such systems from a life cycle perspective and promote or mandate more sustainable solutions.

Countries of the region should act in collaboration with each other to be effective and to achieve large scale results. Standardising packaging requirements and harmonising policies across these countries will provide aggregate strength to ensure that brand owners, and especially major transnational companies, comply with agreements on extended producer responsibilities for the packaging they produce. It also makes it easier for the companies to streamline to one set of packaging policies following common regional requirements. Furthermore, large scale positive changes in packaging will

also translate to larger sustainability gains. The Asian Packaging Federation (APF), for example, stands in a good position to co-facilitate such harmonisation. APF, an industry umbrella organisation of national packaging associations, has an objective to enhance cross country cooperation among packaging-related bodies, including education, package development, and environmental aspects as well as laws and regulations.

Policies for extended producer responsibility

Using EPR principles can guide Asian countries towards better packaging waste minimisation strategies. Japan, Taiwan and the Republic of Korea have regulated approaches. Introduced in 1995, Japan's Packaging Source Separation and Recycling law gives producers responsibility for recycling consumer packaging. The government sets targets based on recycling capacity. Others, like Australia and Singapore, have voluntary approaches to EPR. The Singapore Packaging Agreement came into effect in 2007 and focuses on the food and drink industry. Action plans are prepared by individual industry sectors and concrete targets set to reduce packaging waste from various packaging materials.

There are several policy instruments that can be used to extend producer responsibility over packaging (OECD 2001). With *take-back requirements*, producers have the responsibility to take back packaging for their products at the post-consumer stage. *Performance standards* determine the extent to which producers are required to recycle their post consumer products, and may regulate how recycling should be done. These standards provide incentives to producers to avoid packaging, or choose packaging that is easy to reuse and recycle, with minimum impact on the environment. Application of EPR should have clear objectives, clear targets, and clear roles for each actor, along with incentives for compliance and penalties for non-compliance.

An effective EPR system requires clear identification of the producer of the packaged product; here it is the brand owner, the lead actor in the value chain. In addition, the retailer being part of the nexus of influence will share with the brand owner the bulk of responsibilities, including bearing most or all of the costs for collection, transportation, storage and treatment of packaging waste. These actors however do not need to physically execute all these activities. In Japan, companies pay a fee to the Japan Container and Recycling Association for the costs of managing the packaging waste. Those at the nexus of influence could set up a third-party entity providing physical infrastructure and handling the physical activities of packaging waste management. EPR gives brand owners incentives for triple benefits that can be derived from packaging avoidance or reduction: reduced packaging costs, reduced packaging waste management costs, and reduced negative effects on the environment.

To ensure that waste prevention is priority, brand owners should review their product packaging periodically and submit the review with improvements in packaging for specific products over the past term, new types of packaging introduced, planned packaging for the next term and planned improvements. Australia's National Packaging Covenant requires each party to submit a three- to five-year plan to meet the Covenant's obligations, prepare annual progress reports, and contribute an annual fee that is used to fund recycling. The Singaporean Agreement requires annual sector reviews. We however recommend a three-year review term as this is more compatible with strategic business review cycles; brand owners would have time for planning as well as to study effects of introduced packaging changes to the market.

To provide incentives for public participation and to ensure a functional take-back scheme, waste should be given economic value and treated as a resource. *Deposit/refund schemes* involve the consumer paying a deposit when purchasing a product and then receiving a refund of the deposit when returning the post-consumer product, the container, or the packaging. The aim is to facilitate product take-back.

From 2000, Taipei, Taiwan started charging a per-bag trash collection fee, based on a so-called “Pay As You Throw” scheme (Chen and Huong 2004). This is comparable to that of Korea: the Volume Based Garbage Collection Fee system that charges per garbage bag discharged per household. Authorised bags can be bought in grocery and department stores; unauthorised bags or illegal waste dumping are fined. Korea and Taiwan however benefit from having relatively stronger state institutions and more organised systems; in other countries, the risk is that people will turn to illegal dumping to avoid paying. Governments and PRPs should evaluate their enforcement capacity in advance, and as a component of their strategy, develop engaging programmes on education for sustainable consumption (see chapter 4 on education for sustainable consumption).

7. Conclusion

The paradox of SCP in the contemporary economic system is that the consumer might be at the centre of the consumption process, but for many crucial decisions in the value chain he or she is not the most influential actor. This is not to downplay the contribution the consumer can make or the importance of enabling greater consumer empowerment; however, to ensure effective environmental gains through SCP, producers must take primary responsibility. The brand owner, as seen through the Triple I analysis, has the power to influence the value chain to bring about transformation. It is the role of the governments to ensure that this transformation takes place.

As for consumers, rather than cosmetic changes in individual behaviour, sustainable consumption should modify attitudes and the systems that facilitate or constrain behaviour, and the infrastructure that is used. This goes beyond just consumer education or simple information provision, a topic at the heart of the discussion in chapter 3 on education for sustainable consumption. Even with a high number of ecologically literate consumers, sustainable consumption can only be actualised if there is the infrastructure to enable sustainable lifestyles and there are sustainable products on the shelf.

To enable sustainable consumption at a systems level, three elements are needed and should operate in concert with each other:

- i. the right attitude from consumers: here, education for sustainable consumption is central;
- ii. being mindful of the attitude-behaviour gap (Osterhus 1997): a facilitating system is needed to convert consumer attitudes into action. This includes incentives for participation, standards to guide consumers and producers, regulatory and economic frameworks that enable or constrain consumer choice; and
- iii. appropriate infrastructure should be in place. This may be physical infrastructure, technology, products and services.

Because infrastructure tends to have a “lock in” character—framing consumer behaviour throughout the use phase—it is important for it to incorporate sustainability considerations

at the design phase. Government and policy makers should consider balancing the above three pre-conditions in the design of policy towards sustainable consumption.²

Notes

1. This analysis is based on work by the Global Value Chain Initiative hosted at Duke University (<http://www.globalvaluechains.org/>) and especially on the paper by Gereffi and Christian (2009).
2. Research for this chapter was conducted partly under the Asia Resource Circulation Research Promotion Programme, a project commissioned and funded by the Ministry of Environment of Japan under the Regional 3R (reduce, reuse, recycle) Forum in Asia.

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