

Transitions to Sustainability in Production-Consumption Systems

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East Asia is the manufacturing belt, garden, and kitchen of the world. It is also the woodlot and toilet. Many of the natural resources and materials that are required as inputs into the production of export commodities are extracted at low prices from the developing countries of the region. At the same time the region's oceans, soils, and atmosphere are drains and dumps for waste and pollution.

Consumers

Consumers, whether in the gated communities of the capitals of East Asia, or the export markets in the United States and European Union, are oblivious to the consequences of their consumption decisions for the environment. The environmental implications have been made invisible by friendly, hygienic packaging in natural colors. Stretched commodity chains do not need such ruses, because there is no way consumers could ever really trace back in a meaningful way the story of what they are eating, wearing, and throwing away. Clever marketing addresses us with endless promises of convenience, comfort, and pleasure. Firms and government agencies are no more sophisticated than household consumers. They may be even less accountable. Marketing tactics to lure contracts differ, but the deceptions, goals, and outcomes are simi-

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lar. Aggregate demand grows and is applauded (Hamilton 2003).

Each link in a commodity network or value chain can be thought of in terms of both a production and a consumption relation (Princen et al. 2002). The idea is not restricted to households doing their shopping. Adopting a consumption perspective is significant because it draws attention to the possibility of demand management, of finding alternative ways of meeting consumer demands, and even of removing the need or the desire.

Researchers

Researchers across East Asia have begun to grapple with methods for assessing the sustainability of different behaviors and practices. Using tools of life-cycle assessment, material flows, ecological footprints, and so on they are finding ways of counting aggregate environmental impacts. The results can be surprising. The shrimp you eat from the aquaculture pond needs four times its weight in ocean fish and shrimp to be produced. The amount of water that goes into resort gardens, golf courses, and swimming pools for the wealthy is staggering compared to the amount an urban slum dweller survives on each day. Analyses are made of how to replace the protein of marine-caught fish and shrimp with soybean and improve material, energy, and water efficiencies. Better management, more stringent standards, substitute resources, and more frequent monitoring are the chorus. Barely audible is the voice

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proclaiming “enough!” Few proposed solutions involve a reduction or elimination of consumption. Why?

Power

The answer is power, pure and simple. The control of individual commodity chains and more importantly of multicommodity networks or production-consumption systems has shifted toward the retail end of the system. Over the last decade, Tesco-Lotus, Carrefour, and a handful of other multinational companies have gained almost full control of the retailing of food and household goods across Asia, and indeed much of the globe. The consequences for small retailers in developing countries have been devastating, but for consumers, arguably, and that is the way it is sold, wonderful. Networks produce what consumers demand, and retailers, through advertising, don't just *stimulate* demand but *create* wants (e.g., Rosenblatt 1999). The system thrives on growth. Manipulating consumers is the easiest way to increase throughput. Protecting ecosystems from irreversible changes, critical thresholds, and costly damage is not a system goal. Neither is meaningful, safe, and secure work for poor farmers and factory workers.

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The answer is also fear of value change, cultural norms, and power. Researchers do not probe the material basis of their privileged positions or societies. Thus, we have sophisticated research agendas on “environmental change in developing countries” and on “industrial transformation and ecologies” but only the beginnings of a comprehensive research agenda on “sustainable production and consumption” (Princen et al. 2002). Researchers are also big consumers and fear charges of hypocrisy, or worse, labels such as “antimarket” or “antidevelopment”. Research agendas are set by governments and corporations wedded to the idea of consumption growth.

The response to power and fear is better governance. Accountability, transparency, and reflexivity do not remove power, but they do provide opportunities for redressing imbalance and unfairness in the system. Resistance by consumer groups and civil society to large asymmetries of

control and influence is an important component of better governance. So are free, independent, and diverse mass media. Democratizing the global institutions for trade and credit may also help to reduce conflict and lead to a more equitable sharing of involuntary risks, but by itself this is not sufficient for a sustainable future.

Sustainability

Often we do not need scientific assessments to tell us what we already know. Oceans, forests, and rivers are being degraded. More fresh water simply does not exist. In the aggregate many of the things we do as individuals, as societies, as businesses, and as governments are clearly unsustainable. Sustainability transitions in production-consumption systems seem to require at least three major considerations.

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First a focus on assessments of individual commodities must be acknowledged as ultimately misleading. Much of corporate strategy is about product diversification and multiple sourcing; targeting single commodities leaves too many loopholes and leaks. A multicommodity approach to industrial networks raises complexity, but may help identify opportunities for linking procedures, for example, through recycling and by sharing the other facilities found in well-designed industrial estates.

Second, environmental feedback and ecological warnings need to be made visible so that critical thresholds and irreversible negative changes can be avoided. Industrial management needs to focus not only on current states, but also on processes critical to maintaining ecological resilience. A profound humility needs to be instilled about the limits of human capacity to control, restore, and substitute for ecosystem goods and services. Let us face it: sometimes all that can be done is to frame opportunities for self-organized renewal and repair.

Third is everything else that matters, such as culture, values, and well-being (e.g. Lebel 2004). Organizations are locked into doing business in ways that fit industry norms. Sustainability in business means gaining ISO 1400 certification. Global trade, satellite television, and on-line trading in currencies and stocks link producers and consumers across the world in

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entirely new ways. A world has been created where success is measured by wealth accumulation and where goods are the standards for social comparison, class identification, and power labeling. A whole suite of values and social institutions are transformed once a society buys into the corporate-created world of consumer choices. Although cultural differences between societies persist, even these are targeted by country and regional sales managers and advertising agencies. What they do not say is that increasing consumption does not lead to more happiness (Kasser 2002).

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Industrial ecology in Asia, if it is to support transitions to sustainability, needs to become a study of linked socioecological systems. Much of the research will have to be done, not in the factories of Asia, but in field sites in Europe and the United States. Can researchers from the Third World, especially from Asia, escape the trappings of Western-sponsored consumer culture and lead the world out of the pit being dug for everyone?

References

- Hamilton, C. 2003. *Growth fetish*. Crows Nest, Australia: Allen and Unwin.
- Kasser, T. 2002. *The high price of materialism*. Cambridge, MA: MIT Press.
- Lebel, L. 2004. Social change and CO₂ stabilization: Moving away from carbon cultures. Pages 371-382 In *The global carbon cycle: Integrating humans, climate and the natural world*, edited by C. B. Field and M. R. Raupach. Washington, DC: Island Press.
- Princen, T., M. Maniates, and K. Conca, eds. 2002. *Confronting consumption*. Cambridge, MA: MIT Press.
- Rosenblatt, R., ed. 1999. *Consuming desires: Consumption, culture and the pursuit of happiness*. Washington, DC: Island Press.

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