

Turning Waste into Resources

By: Mr. Leung Yih-Terng*

The debate over satisfying economic growth and protecting the environment centers on how to strike a balance between them. One side urges a radical change in current economic patterns while the other sustains the “business as usual” perspective. Either end is extreme and idealistic. An economy cannot sustain itself without development, but development more or less causes damage, both reversible and irreversible, to the natural environment. However, what is commonly ignored is that this argument is centered on an industrializing economy rather than on a service- and consumption-based economy.

The major implication of economic growth is the subsequent consumerism. This statement is exemplified by the bourgeois Asian countries and regions such as Hong Kong, China; Republic of Korea; and Taipei, China, where the economies rely on the consumption of goods, while other developing Asian countries rely on producing consumption goods for them, which in return boosts their own economies. With the majority of the world’s economy relying on mass consumption, the stress on disposing of what is consumed, or so-called waste, emerges. The need to dispose of unwanted material is pressing. Conventional disposal methods including incineration and landfills are criticized for being environmentally unfriendly and causing residential repulsion. As society calls for a cleaner and more acceptable way of waste disposal, recycling seems to be a better alternative.

The concept of recycling includes reuse, reduce and remake. The ultimate goal is to reduce consumption of resources through reusing and remaking existing materials.¹ These merits enable the economy to grow without extracting further resources from nature. Despite its early existence in literature, numerous environmentally related summits and conferences, and its environmental merits, recycling is rarely practiced thoroughly. One reason for this is the massive manpower required for separating what can and cannot be recycled. Another reason is the willingness to participate and cooperate. The most important factor that determines whether recycling is applicable in a city is the subsequent use of collected material. Without a clear purpose for recycling, the collected material is not turned into economically valuable products. Not meeting any one of the above criteria can easily make a city’s recycling plan obsolete, which is also why recycling is rarely done in a city-wide systematic fashion but remains a sporadic scavenging act. However, in this essay, I would argue that with proper institutional arrangement, recycling can be made facile and efficient to combat waste problems and maximize its environmental merits.

It is not uncommon for schools to educate students about the importance of recycling. Aside from education, actual implementation remains exclusively a personal choice. Therefore, in order for recycling to be effective, government intervention and encouragement are needed. Examples can be drawn from the experience of Taipei, China and Seoul. The two municipal governments have established sets of regulations that direct the entire process of recycling. In Taipei, China, the government arranges for different types of material to be collected on different days of the week. For example, Monday is the day for collecting papers. Aside from providing collection services, the municipal government also punishes those who violate recycling regulations through fines.² At the same time, recycling is boosted through a rubbish disposal fee, which is paid through the purchase of rubbish

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¹ Lyle, John T. 1994. *Waste as Resources: From Regenerative Design for Sustainable Development*. In *The Sustainable Urban Development Reader*, edited by Stephen Wheeler and Timothy Beatley. New York: Routledge.

² The Conservancy Association. 2005. *A Report on Taipei Waste Recycling Program* (in Chinese). Available: http://www.conservancy.org.hk/monitor/waste/taipei_recycleC.htm

bags. Citizens are required to buy government-issued rubbish bags. To avoid the cost of the bags, the citizens have to recycle.

The collected materials are used for a variety of economically sound purposes. Kitchen residuals, both cooked and raw, are used for animal feed or fertilizer. Papers can be exported for remaking value-added paper products. Large furniture can be put on public auction or donated to less affluent families. Seoul has established various industrial facilities to handle the collected material. For example, plastics are sorted and cleaned prior to being made into valuable bottles and equipment.³ Aside from transforming collected waste into usable raw materials, the Seoul government goes one step further and encourages second-hand goods trading. Numerous shops that specialize in selling second-hand goods are run for non-profit purposes to support the less advantaged or underrepresented groups in society, for instance, the single mother's group.

As exemplified by Taipei, China and Seoul, waste recycling can foster environmental consciousness among citizens, which indirectly translates into the amount of resource uptake by the society. With the process of waste separation so tedious and the cost of conventional waste disposal so expensive, consumers will come to prefer renewable products over non-renewable. This can have a massive impact on how consumer products are packaged and produced, and ultimately make producers adapt to more eco-friendly production. Punitive measures and economic incentives can further induce citizens to practice recycling. The overall effects are a reduction in waste volume and less dependence on landfills and incineration. With less incineration, the municipal government does not need to invest heavily in incinerators and the damage to the environment from the smoke produced can be minimized. Landfill can be filled up at an exponential rate to conserve natural landscapes. Most importantly, the citizens' attitude towards environmental conservation can be enhanced. Additional benefits also include employment, eco-friendly industries, and reduction of waste generation. Although recycling does not contribute significantly to the consumption component of Gross Domestic Product (GDP), it enables society to maintain its current trend of consumption without radical changes to current economic practices and at the same time reduces reliance on resource exploitation.

Unfortunately, the majority of Asian countries have yet to embrace the concept fully or partially. Part of the reason is economic. Without a strong market demand for recycled products due to their slightly higher price, the private sector does not want to invest in recycling activities. Also, providing recycling facilities and organizing manpower are costly activities for less affluent countries. Most importantly, in many countries, some peoples' livelihood depends on collecting waste materials such as iron in exchange for money. If everyone recycled, they would lose their source of income. Institutionally speaking, as recycling involves multi-sector cooperation within governments, coordination and levels of responsibility can be chaotic and ambiguous. For example, in the case of Taipei, China, passing recycling legislation involved the police department for enforcement, the environmental protection department for policy making and evaluation, and the education department for promotion. The situation would be chaotic in countries with less obvious divisions of labor within the government structure. Furthermore, if a government is reluctant to take responsibility, then so is the public. Appropriate motivation is needed to encourage recycling, but a government may not be solvent enough to supply concrete incentives for recycling. Thus recycling remains a plan on paper rather than being turned into a plan of action.

In order to achieve the aforementioned win-win results, the role of local government is crucial, despite the uncertainties. Society needs government to push recycling forward by

³ Radio Television Hong Kong (RTHK). 2005. *Jian Fei Zhi Du 減廢之都* Episode III. VCD in Chinese. Hong Kong: RTHK.

providing (i) facilities for citizens to separate wastes into different categories for easier collection, (ii) education to the society for better understanding of the need for recycling, and (iii) thorough plans for the use of collected materials. Without government initiatives, it will be difficult to mobilize a whole city to participate as recycling involves changes in consumption patterns and disposal habits. The tremendous manpower engaged in the stage of waste separation is costly, which is one reason why despite the availability of materials, only a limited number of private companies would invest in the recycling business. If policies can be made to reduce the transaction cost of this step, more investment can be drawn from the private sector, as it would be more economical to use recycled materials. Punitive measures, which are equally as important as the incentives, also call for governmental involvement. By legislating recycling, the message to citizens would be clearer and more concrete: recycling is mandatory rather than voluntary. Thus, governments should be proactive rather than reactive towards issues like recycling. The success stories of Seoul and Taipei, China serve as good examples for other national or municipal governments in establishing relevant policies.

For a consumption-based economy, the problem is the plethora of unwanted material rather than the environmental consequences of a factory. Managing waste is important to ensure that as the economy grows and living standards improve, the natural environment will not be turned into a disposal site. Recycling shows, in essence, that economic development does not need to clash with environmental conservation if proper environmental policy is made possible. In the cases of Seoul and Taipei, China, both cities did not choose economic development over environmental protection or vice versa. Instead, by implementing recycling policies, the economy was not disturbed. The changes to society were minimal and limited to the way waste is disposed. Thus, the balance between economic development and environmental conservation can be maintained by forward-looking institutional actions, which in turn depend on governmental leadership.