

Edited by Japan Environmental Council

The State of the Environment in Asia **2006/2007**



The State of the Environment in Asia 2006/2007

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Preface: Switching to a Cyclical Resource-Conserving Socioeconomic System

Kojima Michikazu

1. Soaring Resource Prices

The prices of oil, iron, copper, aluminium and a variety of other resources soared until mid-2008. Since then, resource prices have dropped dramatically due to the slowdown of world economic growth triggered by the US financial crisis. In the long run, however, resource scarcity is expected to be a crucial problem for the world after recovery. Rising resource prices increase the costs of resource development, and can escalate conflicts over the ownership of and rights to use resources. Humanity's quest for resources has caused wars, cost lives and damaged the environment. Indeed, environmental damage occurs even during the preparations for war. Asia, too, has several resources that could trigger conflict such as offshore oil fields, gas fields and international rivers.

If there is a resource shortage and cost rise, Asia and the rest of the world could be dragged into a grand resource war. On the other hand, the expectation of rising resource prices could serve as a signal to the world that it must break free of the mass-production, mass-consumption, mass-disposal economic structure; such an expectation could be a good opportunity for government policy to encourage the transition to a cyclical resource-conserving socioeconomic system. Now is the time, when public spending is regarded as a major countermeasure and resources are becoming more expensive, to move ahead with a bold transition to such a socioeconomic system. Such a transition may be necessary if we are to maintain world peace and stability.

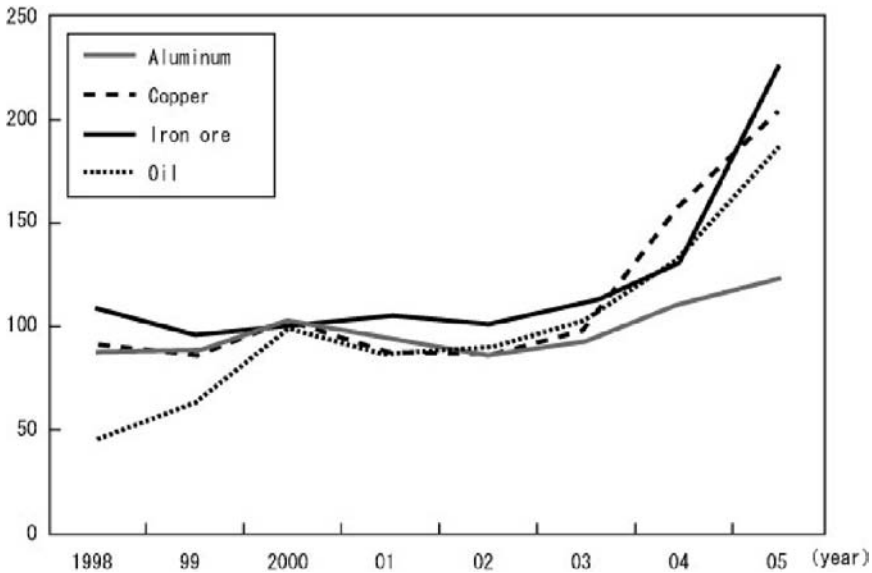


Figure P1 Prices of Four Major Resources (Indexes)

Source: Prepared using IMF, *International Financial Statistics*, May 2006.

Note: All prices were 100 at the beginning of 2000.

Let's compare the prices of several resources in 2000 (Figure P1). Oil was about twice its 2000 price level in 2005 and about 4 times its 1998 price. Iron ore, copper, aluminium and other metal resources are also more expensive, with copper and iron ore doubling in price between 2000 and 2005. Throughout Asia, rising gasoline and electricity prices have had a major impact on people's livelihoods.

Behind the skyrocketing price of oil in recent years are conflicts in oil-producing countries such as Iraq and Nigeria, and supply-side factors such as insufficient refining capacity. A long-term supply constraint is the exhaustion of oil fields that can produce high-quality oil at low cost. Demand-side factors, however, cannot be ignored either, as the high economic growth rates of Asian countries (Table P1) are quickly increasing the demand for resources. China has maintained a high rate of economic growth with an annual average rate of 10.6% through the 1990s and 9.4% since 2000. India's rate was 6% a year through the 1990s and has been at 6.2% since 2000. Other Asian countries excluding Japan have since 2000 achieved growth rates exceeding the world average of 2.5%. These high economic growth rates are brought about by expanded production in the manufacturing sector, investments in roads and other infrastructure, investments in housing, increasing ownership of durable consumer goods

Table P1 Economic Growth Rates of Selected Asian Countries and Regions

Country/region	Annual average growth rate (%)		Per capita national income (US\$)
	1990–2000	2000–2004	
Japan	1.3	0.9	37,370
Republic of Korea	5.8	4.7	14,000
China	10.6	9.4	1,500
Taiwan	6.2	3.2	12,381
Philippines	3.4	3.9	1,170
Vietnam	7.9	7.2	540
Cambodia	7.1	6.3	350
Laos	6.5	6	390
Thailand	4.2	5.4	2,490
Malaysia	7	4.4	4,520
Singapore	7.7	2.9	24,760
Indonesia	4.2	4.6	1,140
Bangladesh	4.8	5.2	440
India	6	6.2	620
World	2.9	2.5	6,329

Source: Prepared by the author using World Bank, *World Development Indicators 2006* and Council for Economic Planning and Development, *Taiwan Statistical Data Book*, 2005.

and other factors. This increase underlies the rapidly growing demand for resources. Not to be forgotten is that even though resource prices dropped dramatically in 2008, this was largely due to the decrease in demand, especially in the USA and Europe. Be assured, prices will rise again.

Except for a few countries such as Japan, the Republic of Korea (ROK) and Singapore, per capita national income in Asia is still not very high. In contrast to Japan's \$37,370, China's per capita income is only \$1,500 and India's is only \$620. If incomes in these populous countries continue to rise, demand for resources will also rise. Again, resource prices are expected to increase again after demand in the USA and Europe recover.

2. Favourable Opportunity for Socioeconomic Transformation

High resource prices will possibly also encourage less resource consumption and lead to the dissemination of highly efficient technologies for resource use. For example, the lack of vehicular traffic volume statistics in many Asian countries makes it difficult to track changes in vehicle use,

though legitimate expectations are that high gasoline prices will discourage private car use and result in increased use of public transit. Interest in biofuels as a replacement for petroleum is also increasing, and biofuel production facilities using biomass such as corn, sugar cane and palm oil for feedstock are being developed increasingly in China, Thailand, Malaysia, Indonesia and other countries. Furthermore, development and use of fuel blends in which biofuels are mixed with gasoline in proportions of 5 to 10% is widening. Additionally, interest in energy conservation is increasing. At the August 2006 meeting of Japan's Overseas Economic Cooperation Council, members confirmed that cooperation in the field of energy conservation would be extended to the heavy energy consumers China and India.

High resources prices also make recycling more economical. Because prices of recycled resources are linked to those of natural resources, the former are becoming more expensive. This, in turn, has made it economical to recover and recycle materials that were previously disposed of as waste. Therefore, as noted above, high resource prices create the opportunity for transitioning to a cyclical resource-conserving socioeconomic system.

We must bear in mind the risk of still more environmental damage because of more expensive resources, however. For example, increased mining and refining of mineral resources could cause mining pollution. More production of biofuels using palm oil and other such feedstocks could encourage the development of plantations for oil palms and other energy crops and cause deforestation. Finally, the recycling industry could expand without adequate pollution-abatement safeguards.

More investment in the development of new oil fields and mines, and in oil refineries in response to rising resource prices would induce a surge in the amount of natural resources supplied. Because such development investment is generally recouped over the long-term, cutting production once supply capacity is increased is difficult. Thus, as was seen with the large numbers of SUVs and other gas-guzzling vehicles in the mid-1980s and mid-1990s, the risk is that an extended period of low resource prices could encourage the widespread use of resource-wasting technologies and products.

But if we see high resource prices as a good opportunity to make the transition to a cyclical resource-conserving socioeconomic system, we will not try to cope with rising resource prices by increasing the supply of natural resources, as we have done so far. Instead, we must hold down natural resource demand itself through energy conservation, expanded use of renewables and more initiatives for recycling and reuse. Additionally, expanding measures to address pollution from mines and other sources in order to avoid environmental and health damage will also lead to

higher natural resource extraction costs and to curbing demand for natural resources. Such measures would be helpful in making the transition to a cyclical resource-conserving socioeconomic system. As noted above, however, if these measures are delayed, then over the long-term resource prices will slump and the deployment of technologies to conserve and cycle resources will be delayed. For this reason, these measures must be implemented early.

Although resource prices have dropped dramatically, the fundamental need for socioeconomic transformation has not changed. While private investment may decrease, public spending to spur economic activity should be aimed at achieving socioeconomic transformation.

3. The Importance of Sharing Experiences

Governments, companies, NGOs and other entities throughout Asia have thus far made various trial-and-error attempts at switching to a cyclical resource-conserving socioeconomic system with mixed success. For the quick and effective implementation of such measures, provisions for sharing experiences among a variety of actors are essential.

There is broad awareness of the need to share information among many countries, and international conferences of various kinds are held in connection with environmental problems in Asia. A conference in which environmental ministers participate is the Ministerial Conference on Environment and Development in Asia and the Pacific, which has been held every five years since 1995 with the sponsorship of the UN Economic and Social Commission for Asia and the Pacific and other organizations. In 2005, the fifth conference was held in Seoul and adopted a ministerial declaration calling for “environmentally sustainable economic growth” by means of enhancing cleaner production, improving the environmental sustainability of consumption patterns, facilitating protection and management of natural resources, promoting the three Rs (reduce, reuse, recycle) and other measures. The Environment Congress for Asia and the Pacific (ECO ASIA) has been held every year in Japan since 1991, excepting 1992 and 2002, under the sponsorship of Japan’s Ministry of the Environment as an unofficial meeting where environment ministers exchange views. In 2005, the 13th ECO ASIA was held in Gifu Prefecture, where participants discussed initiatives for pursuing renewable energy. Still another conference is the Tripartite Environment Ministers Meeting of Japan, China and Republic of Korea, which has been held annually since 1999. At the seventh meeting held in Seoul in October 2005, participants conducted talks on climate change, building a cyclical society, yellow sand and acid

rain. ASEAN also holds an annual ASEAN Ministerial Meeting on the Environment (AMME), with the 10th being held in 2005. Since 2002, an unofficial meeting of environmental ministers, ASEAN+3, has been held in conjunction with AMME, with the additional participation of Japan, the ROK and China.

In addition to these cabinet-level meetings, there are international conferences such as meetings at the senior-official level, meetings of experts on certain topics, and NGO meetings. In the fields of recycling and the transboundary movement of wastes, which are the author's main areas of research, there have been many international conferences during the last two years, including the "International Conference on Electronic Waste and Extended Producers Responsibility in China", held by Greenpeace and the Chinese Society of Environmental Science in April 2004; "Regional Expert Group Meeting on e-Wastes in the Asia-Pacific", held by the United Nations Environment Programme Regional Office for Asia and the Pacific in Bangkok, Thailand in June 2004; "Workshops of the Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes", held by Japan's Ministry of the Environment in December 2004 and again November 2005 with the participation of representatives from Basel Convention state parties; "Ministerial Conference on the 3R Initiatives", held in Tokyo in April 2005; symposiums on recycling held by the Asia-Pacific Economic Cooperation Human Resource Development Working Group in May and June 2005 in Yinchuan, China and Pataya, Thailand; and the "Senior Officials Meeting on the 3R Initiatives", held in Tokyo in March 2006.

The Japan Environmental Council (JEC), the nucleus for this series' editorial committee, has since 1991 hosted the "Asia-Pacific NGO Environmental Conference (APNEC)" with the cooperation of NGOs and researchers from Asian countries. In early November 2005, APNEC-7 was held in Nepal, where participants confirmed the importance of indigenous know-how and women as actors in managing natural resources as well as the importance of ascertaining the state of damage by conflicts to the environment and biodiversity. Since 2001, JEC has been co-hosting the "Japan-China International Workshop on Relief for and Prevention of Environmental Damage" with the Center for Legal Assistance to Pollution Victims at China University of Political Science & Law. The third international workshop was held in Shanghai in late November 2005.

Through these conferences, people involved in legislating environmental law in China learned about the injuring party's burden of proof to show causation that has been established in lawsuits to win relief for pollution victims in Japan. China's "Solid Waste Environmental Pollution Prevention Law", which was amended in 2004 and entered into force in April 2005, contains this provision in Article 86: "In lawsuits seeking

damages for pollution caused by solid waste, the injuring party shoulders the burden of proof for exemptions provided for by law and to show that causality does not exist between his act and the damage that has resulted.” In this way, Japan’s pollution lawsuit experience has been incorporated into Chinese law.

There are examples in which information exchange at such conferences has led to the discovery of problems held in common and to specific initiatives that take advantage of other countries’ experiences. However, in not a few instances the holding of a conference itself becomes the whole purpose or a conference consists of only superficial presentations by delegates on how they are addressing environmental problems in their countries. These latter experiences must be avoided.

4. Barriers to Shared Awareness

Several factors constituting massive barriers to a shared awareness of problems throughout Asia cannot be ignored and remind us that we must work together to facilitate the shift to a cyclical resource-conserving socio-economic system.

First, many government departments must collaborate to solve environmental problems. The compartmentalized administrative departments of each country are impeding necessary dialogue and cooperation at the government level. In particular, deploying technologies for resource conservation and cycling, and building the requisite social systems necessitates collaboration among a variety of government departments including those in charge of the industrial sector, agriculture and forestry, and transportation. In reality, owing to subtle differences in government department roles from country to country, for the departments responsible for the environment in one country to pursue dialogue with its counterpart in another is not enough because in many cases the departments could only partially ascertain the situation or have the authority take measures. In such a circumstance, little concrete cooperation would be achieved. For example, cargo inspections meant to prevent the improper transboundary movement of hazardous waste are in Japan conducted mainly by customs authorities, while in China inspections are performed by the State Administration of Quality Supervision, Inspection and Quarantine; in Hong Kong by the Environmental Protection Department; and in Thailand by the Ministry of Industry. As such, improving the effectiveness of regulating the transboundary movement of hazardous waste through international cooperation requires conducting dialogue and enacting measures in a way that involves all of these relevant government departments.

Additionally, at government-level international conferences (including UN conferences), presentations are always given on the successes of countries around the world, but rarely is there mention of failures or the downsides of successes. As a result, conferences often result in only superficial information exchange, with little or no in-depth discussion on problems that often require significant measures. Lastly, although not limited to government-level conferences, there are many instances in which – despite the lack of adequate studies to ascertain the environmental situation in Asia – governments or organizations hold international conferences at which participants provide only a limited amount of information on a topic about which they might know much more. In such instances, conducting time-consuming studies to understand situations is often more efficacious than the sharing of information at conferences.

One other obstacle to government-level dialogue is personnel rotation among bureaucrats. Japan's central government ministries and agencies rotate their personnel every two or three years. From the perspective of preventing corruption and fostering generalists who are well versed in policy across the board, shuffling personnel after short periods perhaps has a place, but a two- or three-year period is too short for pursuing international cooperation. By the time a bureaucrat has understood another country's situation, built a relationship of trust with bureaucrats in that country, and arrived at the point where frank dialogue is possible, it is time for rotation. This situation makes working together on joint initiatives on certain environmental problems exceedingly difficult.

Overall, governments have little interest in the environmental problems and policies of their neighbours. Owing to the strong preconception that Western countries are more advanced with regard to environmental policy, even when governments write new legislation, they seldom evince an attitude of wanting to learn from their neighbours' experiences. In Asia, almost the only time such learning occurs is when the ROK, China and Taiwan draw upon Japanese laws, which happens because they all utilize Chinese characters.

Language barriers also keep experiences from being shared. Even if the experiences of a certain country are documented in its own language, only a very limited amount of information is usually available in a common language like English. What this means is that although researchers and NGOs may be well-informed about trends in Western environmental policy, they do not necessarily have enough information on the successes and failures in neighbouring countries.

Although Japan and China both use Chinese characters, a difference in the meaning of the same word sometimes causes discussions to end in misunderstanding. For example, the Japanese term "cyclical society" refers mainly to reducing and recycling wastes from consumer electric and

electronic equipment, containers and packaging and motor vehicles, while China's term "cyclical economy" has a broader definition including energy conservation and water conservation. Unless conference planners are fully aware of such problems when choosing their themes and speakers, a Japan-China international conference on the concept of "cycle" could end up with participants of both countries talking at cross-purposes, merely confirming their different definitions of the term.

5. Building the Foundation for Environmental Governance in Asia

The preface to the previous volume in this series, *The State of the Environment in Asia, 2002/2003*, proposed the need for environmental governance to solve environmental problems in Asia. As we saw in the previous section, environment-related international conferences are now held around Asia at various levels and cooperation by developed countries in, for example, deploying resource-conserving technologies in developing countries has been increasing in a number of ways. But not enough mutual understanding of the problems each country faces, the shared awareness of such problems or discussions aimed at solving those problems exists. This situation presents enormous difficulties when considering how to achieve advances in environmental governance in Asia. As noted in the previous section, behind this circumstance lays several barriers such as personnel rotations in government departments that impair the formation of relationships of trust, governments' compartmentalized administrative departments and the limited amount of information available in a common language like English.

Especially important in the near future is the laying of a foundation to surmount these barriers. For example, if institutional difficulties prevent the lengthening of personnel rotation cycles, one solution would be an arrangement where researchers and NGOs working steadily to ascertain a situation on the ground are involved in dialogue and development of cooperation programs at the government level, thereby encouraging program stability. Without understanding the various roles different government departments play or the past trajectories policies have traced, effective dialogue and cooperative programming is impossible. To help overcome the language barrier, university schools and departments related to the environment must enhance their teaching of Asian languages. Except for Chinese, courses in Asian languages are hardly offered at Japanese universities and other higher education institutions, and there are no opportunities to gain specialized environmental knowledge and learn Asian languages at the same time. Instead of delegating Asian language studies

to universities specializing in foreign languages, Japan's educational institutions should create and enhance educational systems that can provide simultaneous specialized knowledge and training in Asian languages, using those systems to foster a diverse range of talents.

Asian countries and regions must pursue initiatives to lay the long-term groundwork to realize environmental governance and open a pathway to switching to a cyclical resource-conserving socioeconomic system. Because Asia has about six-tenths of the world's population, high economic growth and increasing demand for resources, Asians must take up the challenge of using resources efficiently and cyclically, arresting pollution and taking other actions that help restrain demand for resources and build cyclical resource-conserving socioeconomic systems. Surely now when public spending for economic recovery will be accelerated and prices of natural resources are expected to climb again is the time to create a clearly defined vision and model, starting in Asia, for the switch to a cyclical resource-conserving socioeconomic system and to work steadily at implementing policies that boldly expedite the deployment of energy- and resource-conserving technologies, the use of renewables, resource recycling and other measures that ensure future sustainability and prosperity.

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The State of the Environment in Asia 2006/2007 is the fourth in a series of publications on Asia's environmental landscape. Originally published in Japanese as *Ajia Kankyo Hakusho 2006/2007*, this English-translated edition serves as an indispensable source of information on the Asian environment and offers pertinent commentaries on such wide-ranging issues as public health, water supply, sanitation, wildlife trade, renewable energy, CDM projects, and environmental laws and treaties.

Four important messages emerge from this volume, namely that environmental problems are expected to become more serious as Asian economies continue their rapid growth, the root cause of such problems is the present pattern of economic development and resource use, climate change presents both a crisis and an opportunity for the region, and intraregional and subregional cooperation in Asia must be greatly enhanced.

Despite the breadth of topics covered and the vastly different socioeconomic and environmental conditions found throughout Asia, this book offers a broad yet sufficiently detailed overview of the environment in Asia. Like its predecessors in the series, *The State of the Environment in Asia 2006/2007* succeeds in bringing greater clarity to the region's environmental situation and offers practical steps for thinking locally and acting regionally in global partnership for sustainable development.

"The uniqueness of this volume lies in its vast collection of contributors from across Asia, including academics, independent experts and environmental NGOs. From this base, strong emphasis is given to information gathering and data collection by way of field visits and direct contact with local peoples concerned."

—Hisakazu Kato, Professor Emeritus, Graduate School of Law, Nagoya University

Japan Environmental Council (JEC), founded in 1979, conducts research, holds conferences, and makes policy recommendations on the subject of the environment. JEC was awarded the "Environment for Tomorrow Prize 2005" by the Asahi Shimbun.

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