

## Eco-solutions for a sustainable Asia

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Asia is a big family that varies across and within its regions, with a plethora of systems all bumping against one another. But one thing Asia's constituents have in common is the challenge posed by the transition to green growth. That challenge also presents enormous opportunities.



Since the industrial revolution, global material wealth has dramatically expanded. Though the development paradigm has brought prosperity, it has caused severe environmental consequences, including climate change, pollution and biodiversity loss. The existing development paradigm is not just environmentally unsustainable and infeasible, but also appears removed from the ultimate purpose of development — happiness.

Unfortunately, the development path of industrial countries — and the lifestyle that goes with it — is treated by most developing countries as not only a target but also the law of economic development they must follow. But Asia needs to fundamentally rethink whether such a development paradigm should be the target of their modernisation.

As the world faces global environmental crises, it's no longer a matter of whether to take up green development but how. Emerging economies are no longer able to achieve the established pathway towards economic development, and developed countries need to accelerate the shift towards green economies.

Can Asian economies — especially the poor economies — achieve prosperity through green

growth? The answer is yes, but it depends on whether they understand what green growth is about and how to seize its opportunities. Green growth is not just an issue of energy preservation, emission reductions and renewable energy, but also a comprehensive and profound transformation of the development paradigm.

A new theory is needed. The conventional analytical framework says that carbon mitigation and environment preservation are a burden to growth. Mainstream economics has limited capability of predicting the opportunities that will grow from the structural changes of a green economy. We need to think outside the box.

There is a chicken-and-egg dilemma that needs to be broken. Some people argue that the government should not take strong action to promote green growth since there is not yet sufficient evidence of its benefits. But if no action is taken, there will be no evidence. Green growth is a self-fulfilling process; once triggered, it will gain momentum.

There are two ways of thinking about green growth. The first takes the existing consumption pattern in industrial societies as given, and assumes that green growth aims to achieve the same consumption but in a greener way. The second not only considers greener production, but also consumption of green products and services. The latter represents a paradigm shift.

Unfortunately, almost all developing Asian countries seek to emulate the consumption patterns of the advanced economies. They pursue the advanced countries' high carbon growth paths, and duplicate their consumerism and materialism leading to the existing environmental crises. This may be a wrong approach for their economic modernisation.

Many people tend to think that green growth is expensive and highly dependent on future technological breakthroughs, or that it cannot survive without subsidies. This is somewhat misleading. Here are some examples in major sectors.

Renewable energy does not need government subsidies but a level playing field on which to compete with the entrenched fossil fuel sector. Renewable energies are actually more cost-effective. Total annual global subsidies to fossil fuels, according to the [International Energy Agency](#) <sup>[1]</sup>, are estimated at around US\$550 billion. And the external costs of fossil fuels are higher. According to [a working paper](#) <sup>[2]</sup> by the IMF, if things like the health costs of air pollution are included, global fossil fuel subsidies reached US\$5.3 trillion in 2015, which is equivalent to 6.5 per cent of global GDP.

But efforts to reduce our ecological footprint are not limited to nation-wide energy production. Take the agriculture sector, for example. Rice production in Asia accounts for about 90 per cent of global rice output. Yet it is dependent on chemical fertilisers, pesticides and herbicides, and has severe environmental impacts on water, soil, air and biodiversity.

Takao Furuno's integrated rice-duck farming (IRDF) system is one of a variety of eco-solutions. The idea is simple: when ducks are placed in a rice paddy, the rice and ducks become perfectly symbiotic. Ducks eat harmful insects and weeds, eliminating the need for chemical pesticides and manual weeding in the rice field. Duck droppings are a natural fertiliser, and their

continuous movement provides natural stimulation and aeration, which increases the availability of nutrients to the rice crop. Methane gas emissions from IRDF rice fields have [also been shown to be](#) <sup>[3]</sup> around 30 per cent lower. But while this farming method is applied in some areas of Northeast Asia, the Philippines and Bangladesh, its use is not as wide as is deserved, because the lock-in effect of path dependence on industrial agriculture.

Another problem is household energy consumption. Including heating and cooling, it accounts for about 30 per cent of total energy consumption in China. Here, passive houses are an alternative to conventional structures. They require very little energy for heating and cooling, greatly reducing household energy consumption. China has been exploring the use of passive houses and low energy buildings in China. A successful passive housing pilot project in Qinhuangdao city, Hebei, demonstrated that it is technically feasible, environmentally friendly, healthy and cost-effective.

The above examples demonstrate the various ways we can use cheap green solutions to more-sustainably enjoy the consumption levels of industrial economies. There is [huge potential](#) <sup>[4]</sup> for green growth in the less developed areas of Asia. And if emerging economies don't simply follow the consumption and life style patterns existing in the industrial societies, there are further opportunities for more [sustainable growth](#) <sup>[5]</sup>.

Ultimately, a mutually reinforcing balance between the environment, economy, society and culture could be established by exploring new green growth pathways. Given [Asia's diversity](#) <sup>[6]</sup>, various [green growth models](#) <sup>[7]</sup> could be explored according to the characteristics of different regions.

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[1] International Energy Agency:  
<http://www.forbes.com/sites/timworstall/2014/11/12/as-the-iea-says-the-550-billion-a-year-subsidy-to-fossil-fuels-restricts-renewables>

[2] a working paper: <http://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf>

[3] also been shown to be: <http://www.doc88.com/p-7488225876579.html>

[4] huge potential:  
<http://www.eastasiaforum.org/2015/06/26/north-koreas-changing-climate-of-environmental-cooperation/>

[5] sustainable growth:

<http://www.eastasiaforum.org/2015/11/23/looking-after-this-generation-in-asia-and-the-next/>

[6] Asia's diversity: [https://en.wikipedia.org/wiki/Geography\\_of\\_Asia#Regions](https://en.wikipedia.org/wiki/Geography_of_Asia#Regions)

[7] green growth models:

<http://www.eastasiaforum.org/2015/11/28/a-roadmap-for-a-haze-free-asean/>

[8] East Asia Forum Quarterly: <http://www.eastasiaforum.org/quarterly/>

[9] *Asia's Intergenerational Challenges*:

<http://press.anu.edu.au/wp-content/uploads/2015/11/whole5.pdf>