

Are we willing to pay for ecosystem services provided by others?

By **Helena Varkkey, Michelle Miller and Alberto Salvo**

PAYMENTS for Ecosystem Services (PES) are becoming a popular approach to environmental conservation worldwide. PES are financial arrangements whereby the beneficiaries of environmental services reward those whose lands provide ecosystem services.

When we breathe in clean air, we are benefiting from forest ecosystem services such as sequestered carbon. In land-scarce Singapore, much of the clean air we inhale is contributed by forests in countries upwind.

This service provision breaks down when lands cleared for planting become prone to wildfires, such as when big businesses deep-drain peatlands for agriculture or when villagers use fire as a cheap way to prepare farming plots.

Hence, clean, smoke-free air is definitely not “free”. The question is, are we willing to pay for it?

In addition to the tangible costs of haze borne by households (the price of masks, air purifiers and air conditioners, medical fees and sick days, lower productivity etc), there are intangible costs.

We experience these costs as the discomfort of wearing a mask and the missed opportunity to exercise outdoors or enjoy a scenic walk in the park. Other costs include the rising and uneven impacts of climate change, as the wildfires emit vast quantities of carbon dioxide into the atmosphere.

Economists have designed various willingness-to-pay (WTP) experiments to test whether people in Singapore experience sufficiently adverse impacts of haze on their day-to-day lives that they are willing to trade personal wealth for reductions in air pollution levels.

Generally, the answer is yes, and by a substantial amount.

A 2017 study found that people in Singapore were willing to pay around one per cent of their annual income towards haze mitigation. Further research has found that the average Singapore resident is willing to pay up to S\$118 for a haze-free year.

Scaling up these results to the whole population, the national WTP for reduced land burning lies between S\$400 million and S\$700 million, according to the two studies. The larger of these estimates is similar to the Ministry of Sustainability and the Environment’s S\$700 million estimate of Singapore’s incurred losses during the 2015 haze episode, suggesting some rationality in the personal benefit calculations of avoiding haze according to those surveyed.

These figures are also in the ballpark of recent cost estimates of S\$600 million for peatland restoration and protection in Indonesia’s priority areas. This suggests that Singaporean WTP funds could help to support meaningful changes to carbon-intensive burning practices.

TRANSBOUNDARY PUBLIC RESPONSE

While some private donors already contribute to peatland restoration and protection efforts, these findings suggest that a transboundary public response could ultimately be more effective.

Singapore’s offers of financial assistance to help control wildfires have sometimes been refused by the governments of neighbouring countries. A PES approach may be a more palatable basis for both contributing and receiving countries to make transfers to reward the protection of environmental goods.

However, any policy that involves spending citizens’ hard-earned dollars overseas would require an account-

ability mechanism. Singaporeans are likely to see their money as being well spent if they experience annual reductions in haze pollution.

But should Singapore bear the financial burden of protecting South-east Asia’s forests and peatlands while other countries in the region and beyond free-ride on the benefits of clean air and climate protection?

WTP studies have revealed that people in Malaysia, Brunei, and Thailand are similarly willing to contribute a small percentage of their income to avert hazy skies and enjoy ecosystem services in the broader Asean region.

Furthermore, fire mitigation is not just about protecting or enhancing natural carbon sinks. Investments in the creation of sustainable and socially inclusive livelihood opportunities are also urgently needed to safeguard against future environmental threats and crises.

Apart from peatland restoration and protection, PES could fund fire-free land-clearing equipment for agriculture and training for farmers, startup costs for sustainable peatland farming, and collaboration with plantation companies to conserve the high-value carbon stocks in forests within their holdings.

Such policy investments could form the basis for other cross-border PES projects where benefits to the region may be less visible (or hazy). Investments in Negative Emissions Technologies (NETS) and other nature-based solutions for capturing and storing carbon in forests, mangroves, and peatlands in neighbouring countries could further generate global benefits in mitigating climate change.

As the basis for a more holistic approach to environmental governance among Asean member countries, WTP could thus be integrated into regional markets to support sustainable supply chains, fire mitigation

strategies, and green finance investments to protect and enhance nature-based carbon sinks.

After all, downwind countries would be paying for the right to enjoy clean air provided by Equatorial Asia’s forests. In the longer term, a region-wide culture based on PES could help to nurture the sort of eco-concerned economy that Asean has long aspired to achieve as the cornerstone of its climate adaptation and resilience strategy.

As global awareness of the climate crisis grows, PES are likely to become an integral component of multi-sited governance responses to planetary problems such as carbon emissions and habitat loss.

CAREFUL PLANNING NEEDED

Being the most developed country in Asean and with limited natural resources, Singapore is poised to take leadership of the carbon marketplace of South-east Asia by investing in nature-based carbon sinks across the region.

Implementation of PES would need careful planning. Difficult questions about whether to fund such a scheme out of the general tax base, accept voluntary contributions, and how to certify and monitor PES projects will also vary between national contexts. Nevertheless, cross-border PES seem to offer a break from the finger-pointing of the past and a profitable pathway to climate adaptation and resilience in the longer term.

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