

Editorial — The future of Payments for Ecosystem Services in Cambodia

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In 2016 Cambodia's protected area system increased significantly in size. The establishment of five new protected areas (Souter *et al.*, 2016) and the declaration of an additional 1,427,940 ha of 'biodiversity conservation corridors' (RGC, 2017) increased Cambodia's coverage of terrestrial protected areas to 42% of its land surface, up from 26% in 2014 (World Bank, 2017). This places Cambodia in the top 4% of nations worldwide in terms of the percentage of land under protection (World Bank, 2017). However, providing adequate oversight is proving difficult, with Cambodia experiencing high rates of both forest and biodiversity loss (Souter *et al.*, 2016).

Financing protected area management is a formidable task for the already under-resourced Ministry of Environment (MoE). Current levels of financial support from government and development partners are significantly below that needed (Souter *et al.*, 2016). There are very few policies or regulations that enable collection of revenues from forests, protected or otherwise, and the revenues that are collected are remitted to the national treasury, rather than directed back into natural resource management. Private sector engagement in sustainable forest management is also very low. Consequently, Cambodia relies heavily on support from development partners, especially bilateral and multilateral donors and large NGOs, to fund protected area management. However, as continued investment by donors and NGOs is not sustainable (Souter *et al.*, 2016), there is increasing pressure for Cambodia to devise independent, long term strategies for funding the management of its natural resources.

Payments for ecosystem services (PES) offer a promising source of revenue which could be directly tied to conservation and management of Cambodia's protected areas. PES is a financial model through which people who benefit from an ecosystem service (like water), provide financial recompense to people whose lands or activities provide that service (such as forest-dwelling communities). Cambodia's urgent need for sustainable

finance is not the only priority that PES could help the country to address: poverty reduction, species conservation and boosting the agricultural sector are amongst the others. The people contributing to the maintenance of Cambodia's forest ecosystems or threatened species are often among the nation's poorest and have limited income sources. A PES programme could offer a new, continuous source of revenue and provide an alternative to non-renewable income sources such as unsustainable logging or mining.

Forest ecosystems provide four major ecosystem services (Pagiola, 2008) to which PES could be applied in Cambodia: greenhouse gas mitigation, hydrological services, biodiversity conservation, and scenic vistas for recreation and tourism. PES has previously been used or assessed for some of these purposes in Cambodia. Reducing Emissions from Deforestation and Forest Degradation (REDD+) demonstration sites have been assessed in Mondulkiri, Oddar Meanchey, and Preah Vihear (Cambodia REDD+, 2017) with the aim of generating revenue through reducing greenhouse gas emissions and sequestering carbon. Carbon credits have been sold to protect the Keo Seima Wildlife Sanctuary (Wildlife Conservation Society, 2017). The Wildlife Conservation Society's Ibis Rice programme, bird nest protection, and ecotourism programme have all improved biodiversity conservation (Clements & Milner-Gulland, 2015). Conservation International's conservation agreement programme in the Central Cardamom Mountains has reduced deforestation (Chervier & Costedoat, 2017). Also, the hydrological services provided by the forest catchment of the Stung Atay hydro-power dam have been assessed (Fauna & Flora International, 2014).

There is considerable scope to build upon these efforts and expand the scope and coverage of PES in Cambodia. Providing incentives to improve agricultural productivity and add value to Cambodian farms, including maintaining and increasing forest cover could result in medium- and long-term gains, including increasing the

production of traditional (timber) and non-traditional (carbon, firewood, water and biodiversity) goods and services. The growth of Cambodia's agricultural sector (the largest contributor to the national economy) has lagged behind that of the industrial and service sectors. This indicates a real potential for PES to improve agriculture's contribution to GDP, which the government hopes to maintain at 7–8% per annum.

PES could also help the government reach water security goals. The Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III recognizes the critical role of freshwater ecosystems for ensuring food security as well as sustaining economic activities such as hydroelectricity production and servicing a burgeoning tourism sector. Ongoing water provision through incentivized forest conservation and restoration will be critical for social security, for traditional and emerging economic activities, and for human health.

A well-designed national PES scheme could also facilitate the government's efforts to meeting its international commitments under the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the Sustainable Development Goals.

Under the direction of Minister Say Samal, the MoE is drafting a national policy on PES, and a workplan to undertake the studies required to develop a national PES scheme. So far, two PES pilot sites have been identified for further investigation—Kbal Chhay in Sihanoukville, and Phnom Kulen in Siem Reap—both critical watersheds for important tourist destinations, and both supplying water to large beverage companies. In developing its policy, the Royal Government of Cambodia has been examining the highly successful use of PES in the small Central American nation of Costa Rica.

Costa Rica's PES programme is funded by a gas tax, a water tax, protected area entry fees and payments from hydropower operators (Pagiola, 2008). It is credited with contributing to the country's economic success. In only 25 years Costa Rica has tripled its GDP, doubled its forest cover, and won acclaim as an ecotourism destination (Guerry *et al.*, 2015). From 1986 to 2012, national forest cover increased from 21% to 52% (JICA, 2016), and Costa Rica has pledged to become the first carbon neutral country by 2021.

In September 2016, a Cambodian government delegation, sponsored by Conservation International, led by Minister Say Samal and comprising senior officials from MoE, the Ministry of Economics and Finance and the Ministry of Agriculture, Forestry, and Fisheries, visited Costa Rica to examine its PES approach. The visit was

hosted by the former Costa Rican Environment Minister, Carlos Manuel Rodriguez, who shared the Costa Rican experience with the Cambodian delegation. On receiving a report of the trip Prime Minister Hun Sen responded with an official order to set Cambodia's PES development in motion.

Cambodia's adoption of PES also needs to be informed by the experience of neighbouring Vietnam. The Government of Vietnam implemented a pilot policy framework on Payments for Forest Ecosystem Services in 2008 which aims to strengthen forest conservation, improve local livelihoods and generate external revenue for nature conservation. The policy focuses on water supply and regulation, soil conservation and landscape conservation for tourism (To *et al.*, 2012). Buyers of ecosystem services in Vietnam include the government, and hydropower, water supply, and tourism companies (To *et al.*, 2012; Surhardiman *et al.*, 2013).

However, PES schemes in Vietnam have been compromised by insecure land tenure, high transaction and opportunity costs, benefit-capture by local elites and lack of a market structure and other regional PES schemes (To *et al.*, 2012; Surhardiman *et al.*, 2013). Lack of monitoring has also made it difficult to determine whether these PES schemes have succeeded in protecting forests. Indeed, it is believed that two of the main drivers of forest degradation in Vietnam—uneven land tenure and lack of community participation in forest protection—cannot be solved by PES as it is currently practiced (McElwee, 2012). These are all problems which, unless carefully managed, could undermine PES in Cambodia.

Conservation International is continuing to support the Royal Government of Cambodia's PES programme, and the Costa Rican government has extended an invitation to develop a bilateral memorandum of understanding with Cambodia to formalize ongoing technical assistance. The road to a national scale PES scheme will be long and difficult—Costa Rica's success took 25 years to realize—and there are lessons from neighbouring Vietnam that need to be learned. PES will only be one tool in the range of approaches needed to secure Cambodia's natural capital. But if, in the long term, we can implement market-based incentives that result in forest and waterway conservation, and a healthy, prospering rural population, the journey will be well worth it.

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