

Wild Investments: Protected Areas as Natural Capital

Francesca Booker, Phil Franks, Nathalie Seddon
and Dilys Roe International Institute for
Environment and Development

Asia Pacific's protected areas (PAs) are growing both on land and in the sea, but more investment is needed if the region's rich biodiversity is to be adequately protected, but more investment is needed. PAs harbour key ecosystem services that underpin economic development and human wellbeing locally nationally and globally. They provide revenues, jobs and recreation and contribute to climate adaptation and mitigation. Effective management and governance are crucial through partnership with communities and the private sector. Finance is a challenge, but Asia Pacific countries are finding new innovative opportunities for funding PAs through fees, funds and loans.

Key messages

- 1) The number of protected areas (PAs) on land and sea is growing in Asia Pacific, but are still below the global target for terrestrial areas.
- 2) PAs safeguard important stocks of natural capital. These provide ecosystem services (regulating, supporting, provisioning and cultural services) on which sustainable economic growth and development depend.
- 3) Increasing the coverage of PAs will create billions of dollars of benefits across sectors - including coastal protection, fisheries, tourism, recreation and climate mitigation.
- 4) New partnerships with communities and the private sector can provide effective governance and management of PAs, and offer a credible alternative to state management.
- 5) Domestic funding from central government budgets is typically the largest source of finance for PAs, and will continue to be at the centre of sustainable finance for protected areas.
- 6) Diversifying PA finance is a challenge, but there are opportunities for Asia Pacific countries to leverage investments from the private sector and grants and loans from international donors.

Why invest in Protected Areas?

A protected area (PA) is a clearly defined geographical space, recognised, dedicated and managed through legal or other effective means to achieve the long term conservation of nature and associated ecosystem services including cultural values (IUCN, 2008). PAs range from areas that are strictly protected from human activity to those managed, governed and, in many cases, owned by indigenous and local communities with the aim of contributing to human wellbeing as well as biodiversity conservation. The Asia Pacific region currently protects 13.7% of its land area (compared to 15.4% globally). Parties to the Convention on Biological Diversity (CBD) have set a target that by 2020 at least 17% of the world's land area should be protected. The Asia Pacific region could therefore help to contribute to this goal by further expanding its PA network. The region is, however, leading the way in marine protection with 11.9% of marine and coastal areas protected (compared to 8.4% globally) - above the CBD target that 10% of marine and coastal areas should be protectedⁱ

PAs play an important role in safeguarding ecosystem services that underpin livelihoods and human wellbeing. Local populations can derive benefit from a wide range of ecosystem services from marine and terrestrial PAs. This includes provisioning services such as food, fibres and fuel and energy to supporting services that sustain local agricultural or aquaculture production (e.g. pollination and water quality maintenance) as well as cultural services such as through recreation or spiritual and religious practices.

PAs play a key role in supporting climate resilience and other regulating ecosystem services. In particular, PAs can play an important role in supporting ecosystem-based adaptation¹. An innovative example from Viet Nam is Hoi An's vision to become a formally designated eco-city by 2030. At the heart of the city's bid is Cham Islands Marine Protected Area where coral reef protection is integral to securing the coast against erosion, salt water incursion and climate

extremes (e.g. storms, typhoons and floods) as well as providing for peoples' livelihoodsⁱⁱ.

PAs can also have an important role in climate mitigation through carbon sequestration of green (terrestrial) and blue (coastal and marine) carbon resources. Indonesia, for example, stores 17% of the world's blue carbon reservoir in carbon rich mangrove forestsⁱⁱⁱ. A recent analysis suggests that between 2000 and 2010 Indonesia's marine PAs yielded US\$ 540 million in social welfare benefits from reduced mangrove loss and the subsequent avoided blue carbon emissions^{iv}. By extending protection and restoration of mangroves, Indonesia could achieve a quarter of its emissions reduction target of 26% by 2020^v.

PAs are needed urgently as biodiversity and habitats continue to decline across Asia and the Pacific. This loss is associated with rapid economic growth, population increases (and associated increases in consumption and urbanisation), growing human-wildlife conflict and increased demand for wildlife as medicine or luxury foods (particularly from East Asia). South-east Asia has lost 13 % of its forest area since 1992 – an area equivalent to the size of Viet Nam. And marine ecosystems are becoming ever more vulnerable to growing commercial fisheries and overexploitation with use of illegal and inappropriate fishing gear in artisanal fisheries. All these pressures are being compounded by the impacts of climate change^{vi}.

Increasing the coverage of PAs will create a multitude of benefits across many sectors of society. Indeed, estimates for expanding PAs to cover 10% (Aichi Target 11) of coastal and marine areas globally range between US\$ 45 and 47 billion, but would yield benefits of US\$ 622 - 923 billion from coastal protection, fisheries, tourism, recreation and carbon storage^{vii}.

What investments for Protected Areas?

Both existing and new PAs in land and sea need investment. Investment is needed to ensure PAs are effectively managed^{viii}. PAs also need to be expanded to include under-represented ecosystems (example?) and to ensure ecological connectivity in fragmented landscapes. It is

effects of climate change. See Policy Brief 10 of this series: Investing in nature to adapt to climate change.

¹ Ecosystem base adaptation is defined by the CBD as the use of biodiversity and ecosystem services to help people adapt to the adverse

estimated that over a quarter of the world's terrestrial ecoregions have less than 5% coverage as PAs and nearly half of the world's marine ecoregions have less than 1%^{ix}. One option is to use a landscape level approach to biodiversity conservation - i.e one that encompasses PAs and sustainably managed areas outside PAs. From a financing viewpoint, this could help align conservation investments with other policy objectives (preventing counter-productive parallel programmes) and costs can be shared across sectors by joint programming^x

Providing effective governance arrangements for PAs is vital. Traditionally PAs have been governed by the state. However, there is growing recognition internationally that indigenous and community-based approaches deliver conservation outcomes just as (if not more) effectively^{xi}, and that strengthening the rights and participation of local communities also delivers more equitable conservation^{xii}. To extend PA coverage in Asia Pacific, one opportunity is to invest in the establishment of Indigenous and Community Conservation Areas (ICCAs). There are already many ICCAs across Asia Pacific – from forest conservation in China and the Philippines to marine conservation in Fiji – and they are gaining popularity. Crucially, as with all types of PAs investment, ICCAs will need to address governance and property rights (e.g. tenure security).

Private protected areas (PPAs) and public-private partnerships (shared governance) are also essential to expanding and maintaining PAs. In comparison to Africa and Latin America where private parks are relatively common, there are few known PPAs in Asia Pacific, though several countries recognise their potential. China, for example, acknowledges that PPAs could be a solution for poorly funded and managed government PAs and have spent over US\$ 100 billion in eco-compensation to buy back development rights to land. In 2006, Yujiashan Forest private protected area in Pingwu County was set-up following an eco-compensation payment. Additionally Laohegou private protected area was created in 2009 following the successful trialing of a Land Trust model^{xiii}.

How to finance Protected Area investments?

Despite progress, the current scale of finance is insufficient. Analyses of Asian PAs show that there is a fiscal gap between the amount of finance available and the amount needed to be commensurate with the pressures facing the region's natural resources^{xiv}. And this affects Asia Pacific's developing and middle incomes countries alike – for example, there is an estimated 90.7 % funding shortfall for the seven Peninsula PAs in Malaysia^{xv}.

The investment required to establish and care for PAs can be significant, including the cost for land (or legal fees needed to expropriate) as well as the social and economic opportunity costs from removing large areas from other land uses, such as agriculture. Although, with the appropriate national accounting of natural capital the costs of protecting areas are likely to look small in comparison to the long term benefits (locally and globally).

The effective and equitable governance and management of PAs requires appropriately targeted funding commitments – and in particular, attention must be given to the costs of PAs on local communities. For example, reduced access to natural resources or human wildlife conflict, such as crop damage by wild elephants in Sri Lanka. As such, within PAs, funds will also be needed to avoid, mitigate or compensate for any negative impacts of PAs and to encourage conservation (e.g. through benefit and revenue sharing or credit and enterprise funds).

Domestic funding from central government budgets is typically the largest source of finance for PAs, especially those located in remoter regions where tourism is low. More and more, national governments, however, are realising that they need to become savvy at valuing their biodiversity and identifying new and innovative sustainable financial mechanisms to support PAs. Indeed, many of the region's National Biodiversity Strategies and Action Plans (NBSAPs) recognise this, for example, Nepal's NBSAP^{xvi}. However, because new mechanisms typically require new skills, institutions, partnerships and regulations that can take decades to develop, improving the structure and

function of existing mechanisms should not be overlooked^{xvii}

PA entrance fees are often used for generating funding. Examples include at the Namena Marine Reserve, Fiji where a dive tag fee of FJ\$ 30 generates finance for the reserve's management and community development projects^{xviii}. Tourism can also generate PA finance in other ways – for example, concession management in Mongolia's PA network^{xix}. However, park revenue is not always shared with PA managers due to an unclear legislative framework and challenges with ineffective governance and management.

Private sector finance is an important and often unexplored source of finance. Conservation International, for example, have supported the Forestry Bureau of Pingwu County (China), to establish a payment for ecosystem services fund known as the Pingwu Biodiversity and Freshwater Conservation Fund. The fund captures payments from Marriot International and other private sector organisations. Yujiashan PPA received financial assistance from this fund to recruit rangers and strengthen the patrol inside the PA^{xx}.

Credit Suisse estimate that worldwide private sector conservation finance has the potential to reach US\$ 200-400 billion by 2020, and that in the Asia Pacific some two thirds of investors surveyed consider such impact investing as a separate asset class (in recognition of the potential it presents). One opportunity they identify for PAs is a Marine PA bond that establishes a portfolio of PPAs which generate financial benefits through concessions over future cash flows generated by the marine PAs (e.g. through license fees, (blue) carbon credits and mitigation banking)^{xxi}.

National and international environmental funds or conservation funds can leverage significant finance. This has most commonly been used in Latin America, but there are some good examples from Asia Pacific – including the world's first conservation trust fund, The Bhutan Trust Fund for Environmental Conservation (BTEC). Amounting to US\$ 52 million, BTEC has been instrumental to the establishment of 10 PAs covering more than half the country's total area^{xxii}. In 2016, Indonesia began exploring the

establishment of a conservation fund following an annual budget slash of the environment ministry from around US\$ 69.5 million to US\$ 61.9 million. The scheme would build on a model established last year in Raja Ampat district where tourism revenue from marine PAs was channeled directly to regional conservation agencies^{xxiii}.

Environmental or conservation funds can also generate finance by introducing new levies nationally. Palau has become the first Pacific nation to have a PA Network Fund financed two thirds by a green fee of US\$ 15 charged to all international visitors as a departure tax, with the other third financed by international donors. The green fee became operational in 2009 and as of October 2010 US\$ 3.4 million had been disbursed^{xxiv}. Such a mechanism could be adapted to other countries in Asia Pacific - in Thailand for example, the revenue generated by entry fees of US\$ 789,109 could be dwarfed by a US\$ 1 green fee per international tourist with the potential to generate US\$ 4.2 million^{xxv}

International finance for strengthening PA management and governance can also be important. Most of this support has been provided through technical cooperation and grant finance such as through the Global Environmental Facility. Regionally, ADB has supported two major multi-partner initiatives which provide finance for PAs- 1) The Heart of Borneo project and 2) the Coral Triangle Initiative. The latter, for example, has the establishment and effective management of marine PAs as a specific goal to support the 130 million people sustained by the Coral Reef Triangle^{xxvi}.

Meanwhile, financing through loans is beginning to emerge, such as in Sri Lanka where the Ecosystem Conservation and Management Project is financed through a US\$ 45 million World Bank loan from 2016 to 2021 and aims to strengthen the country's PAs. Taking conservative estimates of the watershed benefits, and assuming the project successfully conserves 975 ha, it will have an economic rate of return of 15.54 per cent.

Wild investments

Financing PAs is more than just providing funds, it's also about how those funds are mobilised and managed to respond to the range of challenges facing biodiversity conservation. To be

sustainable, PAs need diverse portfolios that use multiple funding sources – though public funding from central government will likely continue play at least a partial role in sustainable PA finance (in particularly to cover ongoing running costs). PA financing must consider local benefits as a central element of PA funding needs, as well as finance to strengthen and support institutions integral to effective and equitable PA governance and management^{xxvii}. Asia Pacific countries should explicitly determine the socioeconomic value, both locally and globally, of the natural

capital within their PAs (and beyond) to leverage finance nationally and internationally^{xxviii}.

About this policy brief series

Natural capital is the stock of ecosystems within a country. Our focus is on renewables like soils, water, forests, fisheries and urban ecosystems. These sustain millions of jobs and incomes in Asia Pacific, which could be at risk if this natural base is lost. Through this series we explore why invest in sustainable natural capital, what to invest in and how to finance this investment.

ⁱ UNEP-WCMC (2016) *The State of Biodiversity in Asia and the Pacific: A mid-term review of progress towards the Aichi Biodiversity Targets*. UNEP-WCMC, Cambridge, UK.

ⁱⁱ Trinh CM (2014) Chapter 17: Building Resilience in Hoi An city, Viet Nam through the Cham Islands Marine Protected Area. In Murti R and Buyck C (ed.) (2014) *Safe Havens: Protected Areas for Disaster Risk Reduction and Climate Change Adaptation*. Gland, Switzerland: IUCN. xii + 168 pp.

ⁱⁱⁱ Alongi DM, Murdiyarsa, D, Fourqurean JW, Kauffman JB, Hutahaean A, Crooks S, Lovelock CE, Howard J, Herr D, Fortes M, Pidgeon E and Wagey T (2016) Indonesia's blue carbon: a globally significant and vulnerable sink for seagrass and mangrove carbon. *Wetlands Ecological Management*, 24:3–13.

^{iv} Miteva DA, Murray B and Pattanayak SK (2015) Do protected areas reduce blue carbon emissions? A quasi-experimental evaluation of mangroves in Indonesia. *Ecological Economics*, 119: 127-135.

^v Murdiyarsa D, Purbopuspito J, Kauffman JB, Warren M, Sasmito S, Donato D, Manuri S, Krisnawati H, Taberima S and Kurnianto, S. (2015). The potential of Indonesian mangrove forests for global climate change mitigation. *Nature Climate Change*. 5:1089-1092

^{vi} UNEP-WCMC (2016) *Ibid*.

^{vii} Brander L, Baulcomb C, van der Lelij JAC, Eppink F, McVittie A, Nijsten L and P van Beukering (2015) *The benefits to people of expanding Marine Protected Areas, Final Report*. IVM Institute for Environmental Studies.

^{viii} Juffe-Bignoli DS, Bhatt S, Park A, Essam EM, Belle S, Murti R, Buyck C, Raza Rizvi A, Rao M, Lewis E, MacSharry B, and N Kingston (2014) *Asia Protected Planet Report 2014: Tracking progress towards targets for protected areas in Asia*. UNEP-WCMC, Cambridge UK

^{ix} Watson JEM, Dudley N, Segan DB, and M Hockings (2014). The performance and potential of protected areas. *Nature* 515, 67–73.

^x Berghöfer A, Emerton L, Moreno A, Rode J, Schröter-Schlaack C, Wittmer H and H van Zyl (2016) *Enhancing the financial sustainability of*

biodiversity conservation – conclusions from a review of experience in German development cooperation. Discussion Brief November 2016. [https://www.researchgate.net/publication/311087325_Discussion_Brief_Enhancing_the_financial_sustainability_of_biodiversity_conservation_-_conclusions_from_a_review_of_experience_in_German_development_cooperation]

^{xi} Davis A and Kandel S (2016) *Conservation and Community Rights: Lessons from Mesoamerica*. PRISMA, Rainforest Foundation US and Clark University. [http://www.prisma.org.sv/index.php?id=detalle&x_ttnews%5Btt_news%5D=678&cHash=b1fb7e4b6fcf0acd474beab4ddd92062]

^{xii} Schreckenber K, Franks P & A Martin (2016) *Unpacking equity for PA conservation*. *PARKS* 22:2. [<http://pubs.iied.org/X00165/>]

^{xiii} Stolton S, Redford KH and Dudley N (2014). *The Futures of Privately Protected Areas*. Gland, Switzerland: IUCN. [<https://www.iucn.org/content/futures-privately-protected-areas>]

^{xiv} Castillo GB, Chan S, Li Y, Fatah HL, Malivarn S, Lee KF, Anda Jr, Laengcharoen, Pham DC and B Laplante (2015) *Fiscal Gaps and financing of Southeast Asia's protected areas: A cross-country analysis*. EEPSEA Research Report No. 2015-RR13. Economy and Environment Program for Southeast Asia, Laguna Philippines.

^{xv} Mansourian S and N Dudley (2008) *Public - Funds to Protect Areas*. WWF International.

^{xvi} *Nepal National Biodiversity Strategy and Action Plan 2014-2020* (2014) Prepared by Government of Nepal, Ministry of Forests and Soil Conservation Singhadurbar, Kathmandu, Nepal. July 2014.

^{xvii} Berghöfer A *et al* (2016) *Ibid*.

^{xviii} Coral Reef Alliance (2014) *Namena Marine Reserve User Fee Manual: Procedures and guidelines for the design, production, distribution, and sale of dive tags supporting the sustainable management of Fiji's Namena Marine Reserve*. Available at: [<http://coral.org/wordpress/wp-content/uploads/2014/02/Namena-Marine-Reserve-Dive-Tag-Manual-FINAL.pdf>] [Accessed 6 Sep. 2016].

^{xix} Thompson, A., Massyn, P.J., Pendry, J., Pastorelli, J. 2014. Tourism Concessions in Protected Natural Areas: Guidelines for Managers. United Nations Development Programme.

[http://www.undp.org/content/undp/en/home/librарypage/environment-energy/ecosystems_and_biodiversity/tourism-concessions-in-protected-natural-areas.html]

^{xx} Stolton S, Redford KH and Dudley N (2014). Ibid.

^{xxi} Credit Suisse Group AG and McKinsey Centre for Business and Environment (2016) Conservation Finance, From Niche to Mainstream: The Building of an Institutional Asset Class.

[<https://thegiin.org/knowledge/publication/conservation-finance,-from-niche-to-mainstream-the-building-of-an-institutional-asset-class>]

^{xxii}

^{xxiii} Satriastanti F (2016) Indonesia exploring new model to fund national parks. Mongabay.com -

[<https://news.mongabay.com/2016/09/indonesia-exploring-new-model-to-fund-national-parks/>]

[Accessed 20th Jan. 2016].

^{xxiv} Cantin E (2010) Sustainable Finance for a Countrywide Protected Area. KM 4 CTI Learning

Notes, 2010-5. ADB Regional Technical Assistance (RETA) 7307: Regional Cooperation on Knowledge Management, Policy and Institutional Support to the Coral Triangle Initiative.

^{xxv} UNDP (2012) Protected Areas, Chapter 4 in the International Guidebook for Environmental Finance Tools: A Sectoral Approach. Protected Areas, Sustainable forests, Sustainable Agriculture and Pro-poor Energy.

[http://www.undp.org/content/undp/en/home/librарypage/environment-energy/environmental_finance/international-guidebook-of-environmental-finance-tools-.html]

^{xxvi} Reuchlin-Hugenholtz E and E McKenzie (2015) Marine protected areas:

Smart investments in ocean health. WWF, Gland, Switzerland.

^{xxvii} Emerton L, Bishop J and L Thomas (2006) Sustainable Financing of Protected Areas – A global review of challenges and options. Gland, Switzerland: IUCN.

^{xxviii} Mansourian S and N Dudley (2008) Ibid