

RIGHTS AND RESOURCES INITIATIVE | JUNE 2018

Cornered by Protected Areas

Replacing 'Fortress' Conservation with Rights-based Approaches Helps Bring Justice for Indigenous Peoples and Local Communities, Reduces Conflict, and Enables Cost-effective Conservation and Climate Action

> Victoria Tauli-Corpuz Janis Alcorn Augusta Molnar

The authors thank Alastair Sarre for his invaluable contributions and editorial assistance.

About the Rights and Resources Initiative

RRI is a global coalition consisting of 15 Partners, 7 Affiliated Networks, 14 International Fellows, and more than 150 collaborating international, regional, and community organizations dedicated to advancing the forestland and resource rights of Indigenous Peoples and local communities. RRI leverages the capacity and expertise of coalition members to promote secure local land and resource rights and catalyze progressive policy and market reforms.

RRI is coordinated by the Rights and Resources Group, a non-profit organization based in Washington, DC. For more information, please visit <u>www.rightsandresources.org</u>.



The views presented here are not necessarily shared by the agencies that have generously supported this work, nor by all the Partners and Affiliated Networks of the Coalition. This work is licensed under a Creative Commons Attribution License CC BY 4.0.

Contents

Introduction	4
1. Commitments haven't added up to action	4
2. Fortress conservation is spreading globally	6
3. But it is a source of injustice for local communities and Indigenous Peoples	6
Killings and evictions	6
Loss of livelihoods and cultural identity	7
Conflicts	7
4. Indigenous Peoples and local communities are effective biodiversity and forest mana	gers.7
5. Indigenous Peoples and local communities are substantial investors in conservation .	8
Official investments in protected-area systems	8
Investments by Indigenous Peoples and local communities	9
6. A new approach is needed for effective and equitable conservation	10
1. Create a conservation monitoring and grievance mechanism	11
2. Create national accountability and reparation mechanisms for conservation measures	11
3. Ensure that UNDRIP is centrally placed in all measures on biodiversity conservation and c change	
4. Strengthen and promote rights-based approaches and conservation models	12

Introduction

Faced with growing environmental threats, governments and the international community have sought ways to halt biodiversity loss and ecosystem degradation and realize global climate and development priorities. Today, expanding the global network of protected areas is a key approach for achieving the goals of the Convention on Biological Diversity (CBD), the 2030 Agenda for Sustainable Development, and the Paris Agreement on climate change.

But human pressure is increasing in and around protected areas,¹ and far from improving the lives of those affected by the growing number of conservation initiatives, land and forest sequestration through "fortress" conservation approaches is creating chronic patterns of abuse and human-rights violations. In a context where many protected areas are underfunded and therefore limited in their capacity to deliver climate or biodiversity outcomes, the push for still more and even larger parks and conservation areas only stands to exacerbate the existing funding gap and the potential for injustice.

Yet, despite widespread poverty and insecure resource rights, evidence shows that Indigenous Peoples and local communities are nevertheless spending their limited resources on conservation efforts and achieving outcomes that are at least equivalent to those of government-funded protected areas. As this brief shows, there is an urgent need to replace the fortress-conservation model with rights-based approaches to both improve conservation outcomes and end human rights abuses committed in the name of conservation.²

1. Commitments haven't added up to action

In 2004, Forest Trends published a report documenting the contributions of Indigenous Peoples and local communities to biodiversity conservation.³ It showed that the estimated 370 million hectares of community-designated or community-owned forest areas often coincided with areas of high biodiversity. Drawing on data from a wide range of communities, the analysis estimated that communities invested US\$2 billion–4 billion per year on resource management and conservation, equal to one-quarter of the amount spent by the conservation community on all public protected areas globally.

However, despite their limited means, Indigenous Peoples and local communities play a crucial role in the protection of the world's forests and biodiversity. In recognition of this fact, the 2004 study called on governments and conservation organizations to both respect and meaningfully support community-led conservation solutions.

Little has changed, however, in the 14 years since, despite the near-universal approval of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007 and commitments by the world's most influential conservation organizations to respect the rights of Indigenous Peoples and local communities.⁴

New research by the Rights and Resources Initiative⁵ shows that indigenous and local communities continue to suffer no or only limited recognition of their rights and contributions to conservation in many new and existing protected areas. National laws in Africa, Asia, and Latin America threaten Indigenous Peoples and local communities with the risk of expropriation without compensation.⁶

Widespread allegations exist of human-rights abuses in protected areas⁷ and of the obstruction of justice by governments (See box). And little has been done to restitute Indigenous Peoples and local communities for past human-rights violations, decriminalize customary practices in protected areas, or direct a greater share of conservation and climate financing (such as for reduced deforestation and forest degradation in developing countries—REDD+) to support the essential stewardship role of Indigenous Peoples and local communities.

Case studies on the struggle for rights in protected areas

- In **India**, conservation authorities are resisting the full implementation of the Recognition of Forest Rights Act, which offers *adivasi* and other forest dwellers the possibility of claiming land rights. In the Biligiri Rangaswamy Temple Wildlife Sanctuary, for example, the Soliga *adivasi*, who were forcibly relocated after the reserve's creation in 1974, are being stymied from claiming their rights by notification of the sanctuary as a tiger reserve, potentially requiring the further relocation of eight communities.
- The Indigenous Peoples living in their ancestral lands in **Peru**'s Manu National Park are
 malnourished and vulnerable. The national park was created in line with the conventional
 conservation concept that protected areas are pristine, untouchable areas and the Indigenous
 Peoples in the area have mostly been ignored or suppressed. This can clearly be seen in the zoning
 of the Manu National Park and its many restrictions, in which biodiversity conservation is prioritized
 over improving living conditions through the full recognition of indigenous rights. None of the four
 "stable" communities of Indigenous Peoples living in the park has titled land, representing a debt
 owed by the state and to which the communities lay claim.
- In **Panama**, the government is yet to recognize a number of the customary lands of Indigenous Peoples because of their location in, or proximity to, protected areas. The Ministry of Environment has held up titling for over two years, with more than two-thirds of indigenous land claims pending due to overlaps. The situation has become a major bottleneck in the recognition of indigenous land rights in Panama.
- In **Indonesia**'s Gunung Halimun Salak National Park, a national inquiry found that changes in forest governance and the status of customary territories have caused a lack of community control over and access to forests, the depletion of resources and livelihoods, the decline of cultural order, and a decreased quality of life for the Kasepuhan. Overlap between Kasepuhan territories and the national park has disrupted the Kasepuhan's farming systems and reduced their food security.
- In the **Republic of the Congo**, the Ba'aka were expelled from the Nouabalé-Ndoki National Park when it was created and their hunting suppressed. Those Ba'aka have gravitated toward logging towns, losing, over time, much of their connection with their traditional way of life. Although legal avenues may exist for the Ba'aka to claim some of their rights, full redress in terms of the restitution of lands and traditional usage rights, or meaningful compensation, seems a distant prospect.

The full accounts of these case studies are available at <u>www.corneredbypas.com</u>.

2. Fortress conservation is spreading globally

Grounded in the convention that governments are the best custodians of the commons,⁸ the global network of protected areas increased by 80 percent between 1970 and 1985, with two-thirds of this growth occurring in developing countries.⁹ In 1982, the World Parks Congress called for the expansion of this emerging network to cover at least 10 percent of the Earth's land area, a goal that gave primacy to the role of governments in determining, establishing, and managing national conservation agendas.¹⁰

Global commitments to conserving biodiversity were enshrined at the 1992 Rio Summit with the signing of the CBD. In 2010, parties to the CBD adopted the Aichi Biodiversity Targets, including Target 11:

By 2020, at least 17 percent of terrestrial and inland water, and 10 percent of coastal and marine areas ... are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures ...

In accordance with a recommendation in the 1987 report of the World Commission on Environment and Development, the proportion of the Earth's land surface in protected areas tripled between 1980 and 2005, thanks to substantial donor investments. Today, protected areas cover 45 million km² worldwide, comprising 20 million km² (15 percent) of the world's land surface outside Antarctica and 25 million km² (7 percent) of the world's oceans.

3. But it is a source of injustice for local communities and Indigenous Peoples

Globally, the overlap between protected areas and the lands of Indigenous Peoples and local communities is estimated at 50–80 percent,¹¹ creating a near-constant state of confrontation and ongoing potential for conflict and violence. The UN Special Rapporteur on the Rights of Indigenous Peoples has reported receiving numerous allegations of large-scale violations of the rights of Indigenous Peoples in the context of conservation measures,¹² including forced evictions from protected areas (further aggravating the risk of marginalization, poverty, food insecurity, and loss of livelihoods), extrajudicial killings, disrupted links with spiritual sites, and denial of access to justice and remedy.

Killings and evictions

Extrajudicial killings have increasingly been justified as necessary for conservation ends. According to a 2017 report by the British Broadcasting Corporation, authorities in India's Kaziranga National Park were responsible for 106 extrajudicial killings—including of elderly people and children—in the preceding 20 years. The militarization of conservation has been documented in the Central African Republic, the Democratic Republic of the Congo, Guatemala, India, and South Africa.

Evictions from homes, the burning of houses, and the destruction of productive assets are other violent tools used against Indigenous Peoples and local communities in the establishment and expansion of protected areas. A 2017 analysis found that more than 250,000 individuals in 15

countries suffered eviction due to protected areas in the period 1990–2014 and up to 1 billion people were affected by conflicts in forest reserves (of which protected areas are a subset).¹³

Loss of livelihoods and cultural identity

The establishment of protected areas can deny Indigenous Peoples and local communities access to their assets—the knowledge, lands, and forests on which they depend for livelihoods, health, and identity. If the Indigenous Peoples and local communities now using protected-area resources "illegally" were to be prevented from such use, hundreds of millions would likely become conservation refugees.¹⁴

Rural communities have used swidden agriculture for centuries as a land management technique. Despite the positive impacts of small-scale slash-and-burn agriculture on local biodiversity,¹⁵ however, the practice has largely been vilified and criminalized in and around protected areas, causing irreparable harm to the food sovereignty of Indigenous Peoples and local communities.

Conflicts

No global monitoring mechanism exists to systematically register the complaints of Indigenous Peoples against protected areas. Nevertheless, a 2015 study by the Rights and Resources Initiative assessed 34 conflicts between Indigenous Peoples and local communities and protected areas in 21 countries.¹⁶ Only 10 of the assessed countries had legislation for the restitution of lands to communities and, even then, the application of those laws was weak. Six countries had laws specifically allowing the eviction and relocation of communities for the creation of protected areas, even though this would be in violation of internationally agreed indigenous rights standards.

4. Indigenous Peoples and local communities are effective biodiversity and forest managers

Up to 2.5 billion people worldwide depend on community-held lands and resources for their livelihoods and culture, including 370 million Indigenous Peoples belonging to over 5,000 cultural groups. Although Indigenous Peoples comprise only 5 percent of the global population, they represent 15 percent of the world's poor, sometimes living in alarmingly impoverished conditions.

Indigenous Peoples and local communities are as diverse as their lands and resources, but many share an ethical interconnection with nature through their languages, beliefs, and practices, reflecting a commitment to respecting and caring for the natural world. In indigenous worldviews, people are seen largely as intrinsic parts of nature rather than as distinct and separate from it. Most Indigenous Peoples have a deep understanding of nature and adjust their practices, institutions, and relationships to maintain an ecological balance.

Research shows that Indigenous Peoples and local communities are effective conservationists, with stronger rights to land and forests positively associated with biodiversity outcomes.¹⁷ Using forests as a surrogate for biodiversity, analyses have linked lower carbon emissions with community-owned forests and local rulemaking.¹⁸ In the Brazilian Amazon, protected areas and indigenous territories have been shown to be equally effective in protecting forests.¹⁹ Analyses of territories and areas

conserved by Indigenous Peoples and local communities, and studies advising on the use of REDD+ funding, document highly effective conservation by Indigenous Peoples and local communities, particularly when enabling conditions are in place.²⁰ A study encompassing Asia and Latin America demonstrated that wildfires are more limited in multiple-use protected areas under management by Indigenous Peoples and local communities than in strictly protected areas.²¹

5. Indigenous Peoples and local communities are substantial investors in conservation

Official investments in protected-area systems

A 2018 Rights and Resources Initiative analysis²² supports the finding of the 2004 study (as described above) that Indigenous Peoples and local communities are major conservation investors. On the other hand, official funding for protected-area systems is consistently inadequate, especially in low- and middle-income countries. The main official sources of funding are, in descending order by value, governments, multilateral organizations (especially the World Bank and the Global Environment Facility), bilateral aid agencies, nongovernmental organizations, foundations, and private entities. According to some estimates, national governments account for more than 70 percent of total spending on protected areas.²³

There is no agreed figure for the official global (i.e. all countries combined) expenditure on conservation; the most convincing estimate is about US\$21.5 billion per year.²⁴ For spending on protected areas only, most literature cites a figure of US\$6–6.5 billion per year,²⁵ increasing to around US\$13 billion if the recent expansion of existing protected-area networks is included.²⁶ The estimated total official investment in global conservation implies an average annual expenditure of US\$14.70 per hectare for all International Union for Conservation of Nature (IUCN) categories of protected areas.

The Rights and Resources Initiative estimated expenditures on protected areas and conservation activities in a range of low- and middle-income countries, based on the best available data (which, however, are universally poor).²⁷ Table 1 on the next page presents estimated official expenditure (i.e. not including community contributions) in six low- and middle-income countries, showing that there is considerable variation between them; given the low quality of the available data, these figures are likely to be underestimates.

Table 1. Estimated annual investment in conservation by "official sources" in six low- and middle-income countries

Country	Annual conservation investment (US\$)	Total protected land area (ha)	Annual conservation investment per unit area (US\$/ha)
Brazil	153,272,973	246,849,300	0.62
India	73,876,818	18,264,700	4.04
Indonesia	208,450,000	22,625,000	9.21
Kenya	78,167,801	7,254,400	10.78
Peru	104,318,571	27,619,200	3.78
Tanzania	102,023,918	36,133,500	2.82

Note: "Official sources" comprise investments in conservation and biodiversity by governments and private foundations, and includes official development assistance.

Source: 2018 Rights and Resources Initiative analysis.

There is also huge variation within countries. India's 50 tiger reserves receive 70 percent of the national government's protected-area budget, and the remaining 567 protected areas receive only 30 percent. In Peru, around 64 percent of all funding from domestic and international sources in 2009–2015 was invested in 14 percent of protected areas. Seven of the country's protected areas received no funding at all, and 29 were significantly underfunded.²⁸

REDD+ finance is potentially important for protected areas but, to date, pledges have been much higher than actual disbursements. Most of the money for REDD+ has been spent on readiness—including the expansion of existing protected areas and the creation of new ones, with no guarantee of long-term funding for managing this expanded area. Most sources indicate that total pledges for and investments in REDD+ from both the public and private sectors amounted to US\$8.7 billion–9.8 billion in the period 2006–2014;²⁹ much less than this has been disbursed, however.

Despite the large overlap between protected areas and community lands and the often very high conservation value of the latter, Indigenous Peoples and local communities receive only a small percentage of official conservation funding. According to one review, 43 funders invested approximately US\$1.07 billion in conservation in the Amazon in 2013–2015, of which 11 percent was invested in indigenous land management and 6 percent was spent on local livelihood initiatives.³⁰

Investments by Indigenous Peoples and local communities

Table 2 on the next page provides a 2018 update of the 2004 estimate of investments by Indigenous Peoples and local communities in low- and middle-income countries in the conservation of territories and lands under their control or ownership. As in 2004, the new estimates are based on case studies of labor and cash invested by communities from their own resources in conservation actions such as forest management, fire protection and management, restoration and rehabilitation, patrolling/policing, and mapping and cataloguing biodiversity. The area under community forest tenure has increased since 2004: a recent estimate indicates that nearly 500 million hectares of forestlands in low- and middle-income countries are designated for or owned by Indigenous Peoples and local communities.³¹

Land-tenure category	Area (million ha)	Total annual investment (US\$ billion) (Based on median unit investment value)
Forest land owned by Indigenous Peoples and local communities	381.43	1.36
Forest land designated for and owned by Indigenous Peoples and local communities	478.05	1.71
Total land area owned by Indigenous Peoples and local communities	886.09	3.16
Total land area designated for and owned by Indigenous Peoples and local communities	1,279.60	4.57

Table 2. Estimated annual investment in conservation by Indigenous Peoples and local communities in low- and middle-income countries, by land-tenure category

Note: The median unit investment value is estimated at US\$3.57 per hectare per year based on findings from 29 case studies in 14 low- and middle-income countries.

Source: 2018 Rights and Resources Initiative analysis.

Globally, therefore, Indigenous Peoples and local communities are investing an estimated 16–23 percent (i.e. US\$3.16 billion–4.57 billion) of the amount spent by governments, donors, foundations, and nongovernmental organizations, combined, on conservation. Much of the value invested by Indigenous Peoples and local communities is in developing countries, whereas the lion's share of public spending is in developed countries. It can be argued that communities are more efficient in such conservation than the conventional fortress model because they spend less per hectare yet are likely to achieve at least equivalent conservation outcomes.³² (Full methodology, caveats, and findings are available at <u>www.corneredbypas.com</u>.)

6. A new approach is needed for effective and equitable conservation

Protected areas and other restricted land-use regimes will undoubtedly remain central to biodiversity conservation and to emissions-reduction schemes such as REDD+. Overreliance on centrally governed approaches would, however, be bad for the environment, economies, and

indigenous and local communities. By denying the rights of Indigenous Peoples and local communities and destroying their long-enduring institutions—which have maintained ecosystem services over very long periods—traditional protected-area approaches often cause more problems than they solve.

In the last 14 years, there has been only limited improvement in the recognition of human rights for the millions of Indigenous Peoples and local communities living in or near protected areas, despite commitments by governments and conservation organizations and compelling evidence of the positive and cost-effective conservation role of communities. Yet business-as-usual protected areas are proving insufficient to halt climate change and biodiversity loss.³³

It's time to take down the wall of fortress conservation. To do so, the following actions are urgently needed.

1. Create a conservation monitoring and grievance mechanism

An independent, transparent, **global conservation monitoring and grievance mechanism** would address infringements of human rights in the context of conservation efforts and strengthen the accountability of protected-area managers. Such a mechanism would, among other things, provide an accurate, independent record of progress toward the recognition of community rights, creating a performance-based monitoring system to ensure that conservation investments are not harming Indigenous Peoples and local communities.

The mechanism should be designed collaboratively with the involvement of regional indigenous federations, the UN Special Rapporteur on the Rights of Indigenous Peoples, the UN High Commissioner for Human Rights, the CBD Secretariat, and IUCN. Ideally, it would be anchored in an institution with a legal mandate to enforce compliance.

2. Create national accountability and reparation mechanisms for conservation measures

The work of the global conservation monitoring and grievance mechanism could be complemented by **national accountability and reparation mechanisms** for infringements on the rights of Indigenous Peoples and local communities in the context of conservation, as recommended by the UN Special Rapporteur on the Rights of Indigenous Peoples.³⁴ Such initiatives would encourage dialogue on the damage caused by forced resettlements and the loss of access to resources resulting from the establishment of protected areas, and would seek ways to provide redress for historical and contemporary wrongs. The restitution of community lands in protected areas has been a priority for local peoples for decades,³⁵ but few examples exist of it having actually occurred.³⁶ Accountability and reparation processes would help tackle this difficult issue.

3. Ensure that UNDRIP is centrally placed in all measures on biodiversity conservation and climate change

All future targets and measures on biodiversity conservation and climate change, including REDD+, should fully integrate UNDRIP to ensure that the rights of Indigenous Peoples and local communities are central to country-level operationalization. Although UNDRIP is only a "declaration," it refers to a body of international law that is binding on signatory states. Full adherence to the principles set out in UNDRIP would help countries steer a path toward justice for Indigenous Peoples and local communities.

4. Strengthen and promote rights-based approaches and conservation models

As the primary custodians of most of the world's remaining tropical forests and biodiversity hotspots, the essential role of Indigenous Peoples and local communities in managing terrestrial greenhouse gas sinks and biodiversity reservoirs needs to be globally recognized, promoted, and supported. Building on an emerging suite of approaches such as comanagement, indigenous-managed protected areas, and indigenous territorial governance, community-led conservation initiatives should be leveraged to channel more conservation finance to traditional custodians to strengthen their management and improve conservation outcomes.

These four measures will help shift the centrally governed protected-area conservation model toward emerging approaches that embody reconciliation, respect, and collaboration between local peoples and national societies. Such approaches could also cut states' investments in conservation and reduce the cost of redress for human-rights abuses. Upholding the rights, values, knowledge, and aspirations of Indigenous Peoples and local communities in their traditional territories will strengthen conservation and help create a fairer and more resilient world.

¹ Jones, K.R., O. Venter, R.A. Fuller, J.R. Allan, S.L. Maxwell, P.J. Negret, and J.E.M. Watson. 2018. One-third of global protected land is under intense human pressure. Science 360(6390): 788–791.

² This brief is based on a comprehensive forthcoming report prepared by the Rights and Resources Initiative. The full report draws on an extensive review of literature and the history of formal complaints submitted to the UN Special Rapporteur on the Rights of Indigenous Peoples and reported to the UN, and it presents important new findings on the financing of protected areas.

³ Molnar, Augusta, Sara J. Scherr, and Arvind Khare. 2004. Who conserves the world's forests? Washington, DC: Forest Trends.

⁴ CIHR. 2014. Human rights in conservation: Progress since Durban. White paper. <u>www.thecihr.org/s/CIHR_HRs-</u> <u>since-Durban_2014-cl8w.pdf</u>.

⁵ See "Violations of Indigenous Peoples' rights and steps towards reform in 27 countries" and individual case studies at <u>www.corneredbypas.com</u>.

⁶ Tagliarino, Nicholas K. 2017. Avoiding the worst case scenario, whether Indigenous Peoples and local communities in Asia are vulnerable to expropriation without fair compensation. Paper presented at the World Bank Conference on Land and Poverty, March 20–24, 2017.

⁷ UN Secretary-General. 2016. Report of the Special Rapporteur of the Human Rights Council on the rights of indigenous peoples, Victoria Tauli-Corpuz. 71st session of the UN General Assembly, 16 July 2016. A/71/229.

⁸ Hardin, Garett. 1968. The tragedy of the commons. Science 162: 1243–1248.

⁹ World Commission on Environment and Development. 1987. Our common future. Oxford, UK: Oxford University Press.

¹⁰ World Commission on Environment and Development. 1987. Our common future, paragraphs 64–71. Oxford, UK: Oxford University Press.

¹¹ Stevens, Stan, Neema Pathak Broome, and Tilman Jaeger. 2016. Recognising and Respecting ICCAs overlapped by protected areas: a report to the ICCA Consortium. <u>www.iccaconsortium.org/wp-</u> <u>content/uploads/2016/11/publication-Recognising-and-Respecting-ICCAs-Overlapped-by-PAs-Stevens-et-al-</u> <u>2016-en.pdf</u>. See full report for other citations.

¹² UN Secretary-General. 2016. Report of the Special Rapporteur of the Human Rights Council on the rights of indigenous peoples, Victoria Tauli-Corpuz. 71st session of the UN General Assembly, 16 July 2016. A/71/229.

¹³ Kashwan, Prakash. 2017. Inequality, democracy and the environment: a cross-national analysis. Ecological Economics, 131: 139–151.

¹⁴ Seymour, Frances. 2008. Conservation, displacement, and compensation. In: M. Cernea and M. Mathur, eds. Compensation in resettlement. Delhi: Oxford University Press.

¹⁵ Padoch, C. and M. Pinedo-Vasquez. 2010. Saving slash and burn to save biodiversity. Biotropica, 42(5): 550– 552. See full report for other citations.

¹⁶ The 21 countries are Australia, Brazil, Cameroon, China, Colombia, DRC, Ecuador, India, Indonesia, Kenya, Liberia, Madagascar, Malaysia, Mexico, Nepal, Papua New Guinea, Peru, the Philippines, South Africa, the United States of America and Venezuela. Springer, Jenny and Fernanda Almeida. 2015. Protected areas and the land rights of Indigenous Peoples and local communities. Washington, DC: Rights and Resources Initiative.

¹⁷ E.g. Pretty, Jules, Bill Adams, Fikret Berkes, Simone Ferreira de Athayde, Nigel Dudley, Eugene Hunn, Luisa Maffi, Kay Milton, David Rapport, Paul Robbins, et al. (2009). The intersections of biological diversity and cultural diversity: towards integration. Conservation and Society, 7(2): 100–112. <u>www.jstor.org/stable/26392968</u>.

¹⁸ E.g. Chhatre, Ashwini and Arun Agrawal. 2009. Trade-offs and synergies between carbon storage and livelihood benefits from forest commons. PNAS, 106 (42) 17667–17670. <u>https://doi.org/10.1073/pnas.0905308106</u>.

¹⁹ RAISG et al. 2017. Amazonian Indigenous Peoples territories and their forests related to climate change: Analyses and policy options; Nepstad, Daniel, A. Alencar, A. Barros, E. Lima, E. Mendonza, C. Azevedo-Ramos, and P. Lefebvre. 2006. Inhibition of Amazon deforestation and fire by parks and indigenous reserves. Conservation Biology, 20: 65–73.

²⁰ Nolte, Christoph, Arun Agrawal, Kirstin M. Silvius, and Britaldo M. Soares-Filho. 2013. Governance regime and location influence avoided deforestation success of protected areas in the Brazilian Amazon. PNAS, 110(13): 4956–4951. <u>www.pnas.org/cgi/doi/10.1073/pnas.1214786110</u>.

²¹ Nelson, A. and K.M. Chomitz. 2011. Effectiveness of strict vs. multiple use protected areas in reducing tropical forest fires: a global analysis using matching methods. PLOS ONE, 6(8): e2272. doi:10.1371/journal.pone.0022722.

²² The methodology, findings, and caveats of RRI's 2018 analysis of conservation funding reported here are available at <u>www.corneredbypas.com</u>.

²³ Emerton, L., J. Bishop, and L. Thomas. 2006. Sustainable financing of protected areas: a global review of challenges and options. Gland, Switzerland: IUCN.

²⁴ Waldron, Anthony, Arne O. Mooers, Daniel C. Miller, Nate Nibbelink, David Redding, Tyler S. Kuhn, J. Timmons Roberts, and John L. Gittleman 2013. Targeting global conservation funding to limit immediate biodiversity declines, PNAS, 110(29): 12145.

²⁵ James, A., K.J. Gaston, and A. Balmford. 1999. Balancing the Earth's accounts. Nature, 401: 323.

²⁶ Balmford, Andrew, Kevin J. Gaston, Simon Blyth, Alex James, and Val Kapos. 2003. Global variation in terrestrial conservation costs, conservation benefits and unmet conservation needs. PNAS, 100(3): 1046–1050.

²⁷ The case studies at <u>www.corneredbypas.com</u> summarize some recent findings on protected-area expenditures.

²⁸ Nakamura Lam, Katie. 2017. Mapping the funding landscape for biodiversity conservation in Peru. Doctorate thesis submitted to Graduate College of University of Illinois at Urbana-Champagne.

²⁹ Norman, M. and Nakhooda S. 2014. The state of REDD+ finance. CGD Working Paper 378. Washington, DC: Center for Global Development; UN-REDD Programme Academy. 2017. REDD+ Academy Learning Journal, 2: 5; Angelsen, Arild. REDD+ as resulted-based aid: general lessons and bilateral agreements of Norway. Review of Development Economics, 21(2): 237–264; Lee, Donna and Till Pistorius. 2015. The impacts of international REDD+ finance; Fletcher, Robert, Wolfram Dressler, Bram Büscher, Zachary R. Anderson. 2016. Questioning REDD+ and the future of market-based conservation. Conservation Biology, 30(3): 673–675; Nhantumbo, Isilda. 2015. REDD+ and the private sector: tapping into domestic markets. IIED Briefing. International Institute for Environment and Development.

³⁰ Strelneck, D. and T. Vilela. 2017. International conservation funding in the Amazon: an updated analysis. Palo Alto, USA: Gordon and Betty Moore Foundation.

³¹ Rights and Resources Initiative. 2014. What future for reform? Progress and slowdown in forest tenure reform since 2002. Washington, DC.

³² Gray, Erin, Peter G. Veit, Juan Carlos Altamirano, Helen Ding, Piotr Rozwalka, Ivan Zuniga, Matthew Witkin, Fernanda Gabriela Borger, Paula Pereda, Andrea Lucchesi, Keyi Ussami. 2015. The economic costs and benefits of securing community forest tenure: evidence from Brazil and Guatemala. Washington, DC: World Resources Institute. <u>www.wri.org/forestcostsandbenefits</u>.

³³ See for example, Jones, K.R., et al. 2018. One-third of global protected land is under intense human pressure. Science 360(6390): 788–791; Collins, M.B. and E.T. Mitchard. 2017. A small subset of protected areas are a highly significant source of carbon emissions. Scientific Reports, 7: 41902.

³⁴ UN Secretary-General. 2016. Report of the Special Rapporteur of the Human Rights Council on the rights of indigenous peoples, Victoria Tauli-Corpuz, paragraph 76. 71st session of the UN General Assembly, 16 July 2016. A/71/229.

³⁵ MacKay, Fergus. 2002. Addressing past wrongs: Indigenous Peoples and protected areas, the right to restitution of lands and resources. FPP Occasional Paper. Moreton-on-Marsh, UK: Forest Peoples Programme.

³⁶ UN Secretary-General. 2016. Report of the Special Rapporteur of the Human Rights Council on the rights of indigenous peoples, Victoria Tauli-Corpuz. 71st session of the UN General Assembly, 16 July 2016. A/71/229.