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Item 7 of the provisional agenda[[1]](#footnote-1)\*

#  Mainstreaming of Protected Areas AND OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES across sectors to contribute, INTER ALIA, to the sustainable development goals and as natural solutions to combat climate change

## *Note by the Executive Secretary*

1. In paragraph 9(a) of decision [XIII/2](https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-02-en.pdf), the Conference of the Parties invited Parties, other Governments, relevant partners, regional agencies, bilateral and multilateral funding agencies, in conjunction withthe Secretariat of the Convention on Biological Diversity, taking into account information provided by, and in consultation with Parties and other Governments, to undertake a review of experiences on, among others, (iii) mainstreaming of protected areas and other effective area-based conservation measures across sectors to contribute, inter alia, to the Sustainable Development Goals and as natural solutions to combat climate change. Then, in paragraph 10(a) of the same decision, the Conference of the Parties requested the Executive Secretary to develop voluntary guidance on the elements listed in paragraph 9(a).
2. Accordingly, the Secretariat, issued notification [2017-065](https://www.cbd.int/doc/notifications/2017/ntf-2017-065-pa-en.pdf), dated 12 July 2017, inviting Parties, other Governments, relevant partners, regional agencies, as well as bilateral and multilateral funding agencies, to submit information and experiences on various elements of protected areas, pursuant to paragraph 9(a (i-iv)). A total of 23 Parties and organizations responded and 39 documents were submitted. Then, the Secretariat, in collaboration with the United Nations Development Programme,[[2]](#footnote-2) prepared voluntary guidance on the above sub-item and presented it as annex I in the presession document submitted to this twenty second meeting of the Subsidiary Body on Scientific, Technical and Technological Advice ([CBD/SBSTTA/22/6](https://www.cbd.int/doc/c/36f1/d6e8/90a68e516b0c5e8aa3f5a0eb/sbstta-22-06-en.pdf)**).**
3. The present information document is submitted in support of the voluntary guidance, in particular section B of annex I on suggested steps for enhancing and supporting the mainstreaming of protected areas and other effective area-based conservation measures across sectors.

# Mainstreaming of protected areas and other effective area-based conservation measures across sectors to contribute, inter alia, to the Sustainable Development Goals and as natural solutions to combat climate change.

Mainstreaming has been defined in various ways by different entities. Building off of some of these definitions,[[3]](#footnote-3) this document defines protected area mainstreaming as the integration of the impacts and dependencies of both economic and development sectors into the design, management, financing and monitoring of protected areas, protected areas systems and other effective conservation measures in order to achieve both biodiversity and development outcomes.

Section I of this information document discusses mainstreaming of protected areas and other effective area-based conservation measures across sectors. Section II very briefly presents the contribution of protected areas and other area-based conservation measures to the Sustainable Development Goals and as natural solutions to combat climate change to further highlight the importance of such mainstreaming.

## MAINSTREAMING OF PROTECTED AREAS AND OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES ACROSS SECTORS

Suggested steps for enhancing and supporting the mainstreaming of protected areas and other effective area-based conservation measures across sectors include the following:

## A. Identify the impacts of various sectors on the integrity and functioning of protected areas and other effective conservation measures

1. Economic sectors such as tourism, agriculture, energy and many others often have a variety of impacts on the integrity and functioning of protected areas and other effective conservation measures. Planners should identify what these impacts are, where they occur, and their breadth and extent as one of the first steps of mainstreaming. This analysis provides the basis for developing policy and other measures to mitigate sectoral impacts on protected areas.
2. *Identify key sectors*: The first step is to identify the specific sectors that have impacts on protected areas. Some examples of key sectors, and some of their potential impacts on protected areas are listed below.
* *Tourism*: Tourism is a major global industry, but the effects of unregulated tourism can have many negative impacts on protected areas, including impacts on sensitive areas and species from human disruption such as motorized vehicles, fragmentation by roads, damage to coral reefs, habitat loss from infrastructure, among others.
* *Freshwater and marine fisheries and aquaculture*: Overfishing and harmful fishing practices such as bottom trawling, either within or adjacent to marine protected areas, can have a detrimental effect on fish populations. In some cases, aquaculture and releases of invasive fish species for food production can have determinantal effects on marine protected areas by creating nutrient loads and by fostering genetic erosion of key fish species. In many areas of the world, the primary vehicle for invasive alien freshwater species is through fishing boats.
* *Forestry*: Forest management practices, if not aligned with the goals of the protected area system, can create fragmentation and migratory bottlenecks within the landscape, limiting the viability of protected areas.
* *Transportation*: Transportation can have a major impact on protected areas, including the creation of major highways and railways that fragment protected areas, as well as those that create barriers for species movement and migration between protected areas. Marine shipping lanes can be equally harmful to marine protected areas.
* *Energy*: Energy typically requires substantial infrastructure, which in turn can have detrimental impacts on biodiversity within protected areas. Examples include oil and gas exploration fields, pipelines, and the roads that service these, among others.
* *Minerals, mining and extraction*: Similarly, mining and extraction of minerals and other materials can have high impacts on protected areas, including through direct encroachment within protected areas, as well as the roads and facilities that service this sector.
* *Manufacturing*: Manufacturing of commodities (e.g., factories, tanneries, processing facilities) can have detrimental effects primarily through air and water pollution impacts.
* *Agriculture*: Agriculture can have multiple impacts on protected areas through direct encroachment, as well as runoff from fertilizers and pesticides.
1. *Identify where impacts are occurring*: The second step is to identify specifically across the landscape and seascape where impacts are occurring. Rapid methodologies and technologies can be used to gain a broad overview of system-level impacts and more detailed assessment tools can provide insight into specific protected areas.[[4]](#footnote-4) Some examples are included below:
	* *State of Parks assessments*: A systematic review of the overall state of parks typically includes a review of sectoral impacts. An example is the State of Parks of New South Wales.[[5]](#footnote-5)
	* *System wide assessments of management effectiveness*: Some management effectiveness tools include rapid reviews of threats and impacts. See for example WWF’s Rapid Assessment and Prioritization of Protected Area Management.[[6]](#footnote-6)
	* *Spatial data analyses*: Satellite data and other forms of spatial data can provide a rapid overview of key areas where sectors are having impacts on protected areas.[[7]](#footnote-7)
2. *Identify the extent and breadth of impacts of key economic sectors*: This step entails quantifying the impacts of economic sectors on protected areas. There are multiple approaches and methodologies for assessing impacts, but many of these are modelled after Environmental Impact Assessments.

B Identify dependencies of various sectors on the integrity and functioning of protected areas and other effective area-based conservation measures

1. Economic sectors not only have impacts on biodiversity within protected areas, they may in many cases depend on the benefits of biodiversity within protected areas. Planners should identify the range of these dependencies, in order to make an economic, political and business case for supporting effective protected area systems. This analysis should include both the economic sectors that are important for businesses, as well as the development sectors that are important for governments in reaching their national development goals. Steps include:
2. Identify the economic and development sectors that depend on the ecosystem services provided by protected areas and other effective conservation measures: Below are some examples of economic and development sectors that typically depend on biodiversity within protected areas:

*Economic sectors:*

* *Tourism*: Protected areas are a major driver in many national economies, primarily because of tourism. Tourism is worth more than US$15 billion, and provides for over 300 million jobs worldwide, and a leading destination in many countries is the national protected area system, particularly in countries with highly intact ecosystems and strong ecotourism infrastructure.
* *Fisheries*: 90% of the world’s fisheries are either fully fished, overexploited or have collapsed. Marine and freshwater protected areas are essential to restoring and maintaining fisheries throughout the world. They provide areas of refugia, enable fish stocks to grow, and provide a safeguard to overfishing and unsustainable fisheries management.
* *Agriculture*: Protected areas are essential to supplying water services for irrigated agriculture. They also house crop wild relatives, and harbour pollinators.

*National development goals:[[8]](#footnote-8)*

* *Water security*: Protected areas are essential for safeguarding water security for countries. The importance of protected areas in providing this service will only increase under various climate scenarios.
* *Food security*: Protected areas, especially community conserved areas, play a key role in providing local, climate-resilient food services, including through agroforestry.
* *Gender equality*: An often under-recognized benefit of protected areas is gender consideration. Women disproportionately depend upon nature for the livelihoods of their family, and protected areas can ensure that they have reliable access to natural capital.
* *Sustainable livelihoods*: Protected areas provide a safety net for millions who depend on them for subsistence and for their livelihoods.
* *Jobs and economic growth*: Protected areas can be an engine of economic development and jobs, primarily through tourism, but also through
* *Disaster risk reduction*: Natural disasters are increasing in frequency and intensity around the world, and protected areas are an essential tool for mitigating the impacts of these disasters.
* *Climate change mitigation and adaptation*: Protected areas provide a wide array of climate mitigation and climate adaptation solutions. For a summary, see Natural Solutions.[[9]](#footnote-9)
* *Health*: Forests harbour 50,000 of the world’s medicinal plants, and two out of five families depend on these resources for their health. Protected areas are essential in ensuring health and wellbeing of millions of families worldwide.
* *Energy*: Hydropower is an important source of energy for many countries, but hydropower depends upon healthy forests and intact montane forest ecosystems. In addition, 40% of the world relies on biomass as their primary source of heating. Forested protected areas, with proper safeguards and governance, can supply a renewable, clean source of heating as a bridge to renewable
1. *Identify where essential ecosystem services from protected areas occur, and where economic and development sectors are dependent*: This step entails the identification, mapping and prioritization of specific geographic areas important for essential ecosystem services. This step can be valuable not only for identifying dependencies, and thereby securing political and financial support for protected areas, but also useful for considering the expansion of the protected area system to achieve Aichi Biodiversity Target 14. Examples of essential ecosystem services include:
* *Ecosystems important for food production and food security*: Some ecosystems are more critical than others, but some particularly important areas include: mangroves for fisheries; grasslands important for grazing; forests that harbour wild foods, including nuts and fruits; ecosystems that harbour crop wild relatives such as corn, rice, wheat and potatoes; intact freshwater systems that provide fish; and agroforestry systems that are high in genetic and species diversity, among others.
* *Ecosystems important for climate mitigation*: At least 38% of our climate mitigation solutions can be achieved through nature-based solutions.[[10]](#footnote-10) Ecosystems that are particularly important for mitigation include those that are carbon-dense, such as forests, peatlands, mangroves, seagrass beds and others.
* *Ecosystems important for water security*: Three out of four people depend upon forests for their drinking water, hence forests are critical for enhancing water security. Other essential ecosystems include mountains, wetlands and grasses that provide both surface and groundwater. A recent study found that over 3200 cities could improve their water security through forest conservation, and detailed maps are available at: <https://global.nature.org/content/beyond-the-source>.
* *Ecosystems important for poverty alleviation*: This includes ecosystems that provide subsistence, livelihoods. More than 3.6 billion people directly depend upon biodiversity and ecosystems for their livelihoods. Ecosystems that are particularly important to sustain these livelihoods include areas important for sustaining fisheries (mangroves, spawning sites, sea grass beds, coral reefs); for sustaining agriculture (areas that sustain watersheds for irrigation, areas important to sustain pollinators; areas important for crop wild relatives); and areas for sustaining forest-related livelihoods, including non-timber forest products and agroforestry.
* *Ecosystems important for disaster risk reduction*: This includes for example ecosystems that buffer impacts from coastal storms, such as reefs, seagrass beds, floodplains. A concrete example of integrating protected areas into disaster risk reduction is the coastal zone management trust insured by Swiss Re of the Mesoamerican Reef along the coast of Mexico. The insurance scheme incorporates the value of the area in protecting infrastructure, and has provisions to restore the reef after strong damaging hurricanes.[[11]](#footnote-11)
1. *Quantify the dependencies of economic and development sectors on protected areas*: This step entails an assessment of the benefits of ecosystem services, typically with a social and/or economic valuation tool, or other approach that quantifies the specific social and economic benefits. For a comprehensive summary of the benefits of ecosystem services to various sectors, including agriculture, tourism, water, fisheries, and forestry sectors, see Importance of Biodiversity and Ecosystems in Economic Growth and Equity in Latin America and the Caribbean: An Economic Valuation of Ecosystems.[[12]](#footnote-12)

C. Review and update sectoral plans to ensure that they reflect the impacts and dependencies of biodiversity within protected areas and protected area systems

1. Sectoral and development plans typically do not recognize their impacts and dependencies upon protected areas. Once planners have identified the key sectors, and identified the impacts and dependencies, they should review existing plans, and consider ways to ensure that these impacts and dependencies are incorporated into them. To be effective, this step must involve key stakeholder groups in the design and development process.
2. Some examples of actions from the most recent round of NBSAPs that show the intention to update sectoral plans are shown below[[13]](#footnote-13) Although not all are linked directly to protected areas, they are reflective of the kinds of steps that governments can take to mainstream protected areas into various economic and development sectors.

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| Country | NBSAP action | Development or economic sector |
| Botswana | To ensure, by 2020, that biodiversity hotspots are protected through Integrated Land Use Plans | Land use planning |
| Serbia | Implement a National Biodiversity and Climate Change Action Plan | Climate change |
| Uganda | Enhance carbon stocks and storage by mainstreaming climate change into the REDD+ strategy as well as in sector policies, plans and projects | Climate change |
| Zambia | Undertake vulnerability and adaptation assessment on prioritized ecosystems in Zambia (as part of mainstreaming climate change adaptation measures that will enhance resilience of priority ecosystems) | Climate change |
| Jordan | Prepare and disseminate a guidelines manual on biodiversity integration for strategic development projects. | Strategic Environmental Assessments |
| Nepal | Ensuring effective implementation of environmental management (mitigation) plan included in the environmental impact assessment report of hydropower, industries, irrigation, mining, roads, and other infrastructure projects, by 2017 | Hydropower, irrigation, mining, transportation |
| Peru | Towards the end of the second half of 2018 proposals for conservation and sustainable / productive use of biodiversity have been included in at least ten concerted regional development plans. | National Development Plans |
| Benin | Develop a strategy for pollution monitoring and management in coastal and marine areas | Pollution |
| Seychelles | Review National emergency plans to incorporate biodiversity concerns | Disaster risk reduction |
| Sudan | Development of a national strategic action plan for the conservation of plant genetic resources for food and agriculture in Sudan | Food security |
| Venezuela | Collectively build a national project to promote agroecology, linked to the national strategy of food sovereignty. | Food security |
| Gambia | Communicate and integrate values of biodiversity and ecosystem services into local and national development and poverty reduction strategies and plans | Poverty reduction |
| Dominican Republic | Identify national actions for sustainable land management and promote their dissemination and replication in priority watersheds (Sabana Yegua, Artibonite, others), as a contribution to the fight against desertification. | Water security |
| Seychelles | Develop best practice guidelines for water management integrating biodiversity conservation | Water security |

## D. Develop targeted communications campaigns

1. Updating a plan will rarely be sufficient to ensure that key stakeholders understand the impacts and dependencies of protected areas and key sectors. A focused communications campaign, focused on leaders within the various sectors, both government and private, can help promote better understanding.

## E. Review and revise existing policy and finance frameworks

9. In addition to updating sectoral plans, policy makers may also wish to identify opportunities to improve the enabling policy and finance environment for sectoral mainstreaming. Examples of a policy and institutional review that can help foster a more systemic approach to mainstreaming are included below.[[14]](#footnote-14)

1. *Review fiscal policies*: This analysis can include related fiscal policies, including the government spending, taxes and transfer payments that in turn create policies that are either harmful or positive for protected areas and biodiversity conservation. These may include specialized tax regimes, subsidies, quotas, and budget support to these sectors.
2. *Review existing sectoral laws*: The goal of this step is to identify laws, acts and decrees that may be inconsistent with the objectives of effective protected areas and biodiversity conservation, and which may take longer timeframes to change.
3. *Review of institutions*: In many cases, the institutional structures of agencies and ministries are not conducive to the mainstreaming of protected areas. An overall analysis of the interactions, roles and responsibilities between ministries and agencies, as well as between other organizations, such as environmental and social NGOs, can inform areas important to improve in order to achieve mainstreaming objectives.

F. Encourage a range of finance solutions to fill finance gaps required to achieve mainstreaming of protected areas, and to ensure the long-term effectiveness of mainstreaming approaches

10. There are multiple finance mechanisms to consider. A new database of consolidated biodiversity finance solutions is available at: <http://www.biodiversityfinance.net/finance-solutions>. Examples include:

* *Biodiversity-friendly subsidies*, such as wetland banking, nutrient trading and biobanking for habitat and species;
* *Bioprospecting*, where the search for economically valuable genetic material can generate fees that provide fair compensation;
* *Biosafety fees*, where the import of biological materials generates fees;
* *Carbon markets*, including voluntary carbon markets, REDD+ and climate credit mechanisms
* *Conservation easements* where private land is permanently conserved
* *Earmarking of taxes* on financial transactions where a tax is placed on a specific type of currency transaction, and assigned to protected areas;
* *Green bonds*, such as forest bonds, ecosystem green bonds, conservation notes, climate bonds and blue bonds;
* *Penalties and fines*, for activities that damage biodiversity within protected areas; and
* *Tariffs and fees*, including for the water sector, such as water fees and charges, wetland use fees, wastewater fees, water quality markets, water tariffs and developer fees, among others.

## G. Assess and update the capacities

11. Assess and update the capacities required to improve the mainstreaming of protected areas, including capacities related to creating enabling policy environments, to spatial mapping of essential ecosystem services, and to assessing the economic values of ecosystem services.

II. Contribution of mainstreaming of protected areas and other effective area-based conservation measures to Sustainable Development Goals and as natural solutions to climate change

1. Protected areas (both terrestrial and inland waters as well as marine and coastal) contribute, inter alia, to the 2030 Agenda for Sustainable Development and the numerous targets of the Sustainable Development Goals; relevant articles of the Paris Climate Agreement, as well as the Sendai Framework for Disaster Risk Reduction 2015-2030 by providing solutions to the most important global challenges: climate change, natural disasters and land degradation that further exacerbate socio-economic and other problems.
2. Protected areas also provide solutions to additional global challenges by contributing, inter alia, to poverty eradication; food and water security; health and well-being; income, employment and livelihoods; economic growth and prosperity; cultural, spiritual, religious and aesthetic values. Hence, mainstreaming of protected areas and other effective area-based conservation measures into various sectors is crucial as it will help reap multiple socio-economic and environmental benefits at local, national and global level not only for current but also future generations.

**Protected Areas and Biodiversity underpin the Sustainable Development Goals,**

**especially Goals 1, 2, 6, 8, 11, 12 and 13, as well as 14 and 15 to which they are directly related**



1. The following table provides few of the numerous examples of the contribution of protected areas and other effective area-based conservation measures.

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| **Sustainable Development Goals** | **Examples of Contribution of Protected Areas and Other Effective Area-based Conservation Measures to SDGs and Climate Change:** **Why mainstreaming is important** |
| Goal 1: No poverty  | A study in Indonesia valued mangroves at $US600/household/year based on their ability to control erosion. |
| Goal 2 and Goal 12: Zero hunger; and responsible consumption and production respectively | Achieving food security is intrinsically linked to the maintenance of biodiversity. Terrestrial and marine protected areas contribute to ending hunger, and sustainable production and consumption.* + - About 100,000 species of insects, as well as birds and mammals, pollinate more than two thirds of food plants and are responsible for 35% of the world’s crop production.
		- Value of the pollination service was estimated to be $US 190 billion for the main crops that feed the world society, in 2005.
		- Marine protected areas enhance the protection and sustainable use of marine resources – Fish provides about 3 billion people with almost 20% of their intake of animal protein.
 |
| Goal 3: Good Health and well-being | In some Asian and African countries, 80% of the population depends on traditional medicines for primary health care – Over half of synthetic medicines originate from natural sources including aspirin, digitalis and quinine. |
| Goal 4: Quality Education | Protected Areas offer a treasure trove of genetic diversity and a wonderful resource for research, education and art (e.g. the Wet Tropics World Heritage Areas in Queensland) |
| Goal 5: Gender equalityGoal 8 Decent Works and Economic Growth | Numerous Parties to the Convention have set priority actions for protected areas including the ones related to intervention on gender and social inclusion (Nepal) and green jobs and income generating activities for the poorest especially women (Burkina Faso) * + - In Guatemala, the Maya Biosphere Reserve generates an annual income of approximately $US 47 million while creating employment for 7,000 people.
 |
| Goal 6: Water Quality and Security | Nearly one billion people in the developing world don’t have access to clean water – Protected areas are not a universal solution to managing water resources, but they help secure high quality water supplies, and address problems of scarcity and excess both likely to increase with climate change and increase in population. * + - In Ecuador, about 80% of Quito’s 1.5 million residents receive drinking water from two PAs in the Andes.
		- Mountain Areas are water towers not only to low lands but also to the world.
		- In the Dominican Republic, the Madre de las Aguas Conservation Area protects the source of 17 rivers that provide water for domestic use and irrigation to over half of the country’s population.
 |
| Goal 13: Climate Action Including: Relevant articles of the Paris Climate Agreement; Sendai Framework for disaster risk reduction  | Protected areas have: 1) *Mitigation role*: a) storing carbon dioxide that is present in vegetation and soils and b) sequestering carbon from the atmosphere in natural ecosystems; 2) *Adaptation role*: a) protection/maintenance of ecosystem integrity, b) buffering local climate change impacts, and c) reducing risks and impacts from extreme events such as storms, droughts and sea-level rise. *By buffering the impacts of climate change, protected areas (terrestrial and marine) strengthen adaptive capacity and resilience to disasters and serve as risk management tool.** + - 39 national parks in Canada sequestered approximately 4.43 giga-tonnes of carbon in various pools (at least $72-78 billion); In Vietnam, nearly 12,000 hectares of mangroves, planted at a cost of $1.1 million/year saved $7.3 million/year in dyke maintenance while providing protection against a typhoon that devastated neighbouring areas.
		- Ecosystem-based adaptation as part of an overall adaptation strategy can help people and communities adapt to the impacts of climate change at local, national, regional and global level.
 |
| Goals 14 and 15 | SDGs 14 and 15 are directly related to Aichi Biodiversity Target 11 and the multiple benefits generated by Target 11 contribute to the two goals. The multiple benefits from protected areas range from spiritual, cultural and religious to aesthetic quality for recreational purposes, socio-economic (health, prosperity, economic growth, livelihoods…) and environmental values, among others.  |
| Goals 10 and 16 reduction of inequality, and peace and justice respectively | Governance and equity are important elements in protected areas.* + - Protected areas play an appreciable role in national economies and development: e.g. in Montenegro, the quantified value of protected areas was 2.2% of the Gross Domestic Product in 2010, benefits accruing to multiple sectors and generating multiplier effect across the economy.
		- Good governance of natural resources and protected area is vital, for instance, for post-conflict recovery, supporting the reestablishment of security, delivery of basic services, strengthening the economy
 |
| Goal 7 affordable and clean energy | In Peru, 60% of the hydro-electricity produced comes from rivers in protected areas, a service valued at US$320 million annually. In the Mekong region in South-East Asia, over 40 major existing and proposed hydropower projects are linked to protected areas to help maintain sustainable water supplies. |
| Goals 9 and 11 industry, innovation s and infrastructure; and sustainable cities and communities | Protected areas in and around cities offer various benefits to people by providing vital ecosystem services such as supplying and storing clean water, reducing air pollution and moderating the urban heat island effect, protecting biodiversity and supporting the local economy. Green infrastructure a cost-effective, resilient approach to manging wet weather impacts reduces and treats storm water at its source while delivering environmental, social, and economic benefits to many communities.  |
| Goal 17 means of implementation | Protected areas should be considered as an alternate economic land-use with the potential to stimulate the local housing development sector, encourage local business growth, and sustain local government finances.  |

Source: Various sources as cited in UNEP/CBD/COP/13/INF/19-20

1. \* CBD/SBSTTA/22/1. [↑](#footnote-ref-1)
2. Taking into account submissions received in response to notification 2017-065 and other available information as well as noting lessons learned from the relevant biodiversity-related conventions and agreements. [↑](#footnote-ref-2)
3. Ervin, J., K. J. Mulongoy, K. Lawrence, E. Game, D. Sheppard, P. Bridgewater, G. Bennett, S.B. Gidda

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Canada: Convention on Biological Diversity, 94pp; IIED. 2013. Ten Steps to Mainstreaming Biodiversity. Available at: <http://pubs.iied.org/pdfs/14625IIED.pdf>. [↑](#footnote-ref-3)
4. See a review of different management effectiveness tools at: <https://www.protectedplanet.net/c/protected-areas-management-effectiveness-pame/methodologies> [↑](#footnote-ref-4)
5. See for example: <http://www.environment.nsw.gov.au/sop/index.htm> [↑](#footnote-ref-5)
6. See <http://assets.panda.org/downloads/rappam.pdf> [↑](#footnote-ref-6)
7. See for example: <https://www.researchgate.net/figure/Example-of-mapping-protected-areas-with-Landsat-data-for-the-Changbaishan-Biosphere_fig1_269708605> [↑](#footnote-ref-7)
8. For more details, see World Bank. 2010. Valuing Protected Areas. Available at: <http://siteresources.worldbank.org/GLOBALENVIRONMENTFACILITYGEFOPERATIONS/Resources/Publications-Presentations/ValuingProtectedAreas.pdf> [↑](#footnote-ref-8)
9. Dudley et al. 2010. Natural Solutions – Protected Areas Helping People Cope with Climate Change. IUCN. Available at: <https://www.iucn.org/content/natural-solutions-protected-areas-helping-people-cope-climate-change>. [↑](#footnote-ref-9)
10. See Griscom et al., 2017. Natural Climate Solutions. PNAS. Available at: http://www.pnas.org/content/114/44/11645 [↑](#footnote-ref-10)
11. For more information, see http://www.swissre.com/global\_partnerships/Designing\_a\_new\_type\_of\_insurance\_to\_protect\_the\_coral\_reefs\_economies\_and\_the\_planet.html [↑](#footnote-ref-11)
12. See <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/biodiversity/Report_ENG.pdf> [↑](#footnote-ref-12)
13. All NBSAP actions are from the most recent NBSAPs listed at www.cbd.int/NBSAP [↑](#footnote-ref-13)
14. See [www.biodivesrityfinance.net](http://www.biodivesrityfinance.net) for more details on conducting a policy and institutional review. [↑](#footnote-ref-14)