

**GUIDANCE
NOTE FOR
BORROWERS**

**Environmental &
Social Framework
for IPF Operations**

**ESS6:
Biodiversity
Conservation and
Sustainable
Management of
Living Natural
Resources**

The Guidance Notes provide guidance for the Borrower on the application of the Environmental and Social Standards (ESSs), which form part of the World Bank's 2016 Environmental and Social Framework (ESF). The Guidance Notes help to explain the requirements of the ESSs; they are not Bank policy, nor are they mandatory. The Guidance Notes do not substitute for the need to exercise sound judgment in making project decisions. In case of any inconsistency or conflict between the Guidance Notes and the ESSs, the provisions of the ESSs prevail. Each paragraph of the Standard is highlighted in a box, followed by the corresponding guidance.

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Introduction

1. ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services!¹

Footnote 1. Requirements related to ecosystem services are set out in ESS1.

2. ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the nonliving environment. All habitats support complexities of living organisms and vary in terms of species diversity, abundance, and importance.

3. This ESS also addresses sustainable management of primary production² and harvesting³ of living natural resources.

Footnote 2. Primary production of living natural resources is cultivation or rearing of plants or animals, including annual and perennial crop farming, animal husbandry (including livestock), aquaculture, plantation forestry, etc.

Footnote 3. Harvesting of living natural resources, such as fish and all other types of aquatic and terrestrial organisms and timber, refers to productive activities that include extraction of these resources from natural and modified ecosystems and habitats.

4. ESS6 recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, whose access to, or use of, biodiversity or living natural resources may be affected by a project. The potential, positive role of project-affected parties, including Indigenous Peoples, in biodiversity conservation and sustainable management of living natural resources is also considered.

Objectives

- To protect and conserve biodiversity and habitats.
- To apply the mitigation hierarchy⁴ and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.
- To promote the sustainable management of living natural resources.
- To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.

Footnote 4: As set out in ESS1.

Scope of Application

5. The applicability of this ESS is established during the environmental and social assessment described in ESS1.

6. Based on the environmental and social assessment, the requirements of this ESS are applied to all projects that potentially affect biodiversity or habitats, either positively or negatively, directly or indirectly, or that depend upon biodiversity for their success.

7. This ESS also applies to projects that involve primary production and/or harvesting of living natural resources.

GN6.1. Projects in many different sectors can affect biodiversity or habitats. There is a wide range of project-related physical and/or biological impacts that can affect biodiversity and habitats, including, for example, habitat conversion; interruption of important ecological processes such as species migrations, dispersal, or pollination; degradation of habitat quality (from air/water pollution or temperature change, light or noise pollution, habitat fragmentation); introduction of invasive alien species; and vulnerability to fire or other stresses. Impacts can be direct, indirect, and/or cumulative.

GN7.1. Harvesting of living natural resources includes, in addition to the types listed in ESS6, footnotes 2 and 3, the harvesting of native wild species as well as harvesting of substances produced by living species, such as sap from trees, or honey and wax from bees.

Requirements

A. General

8. The environmental and social assessment as set out in ESS1 will consider direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example, habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional, or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties.

GN8.1. ESS1, footnotes 20–22, and the related Guidance Note, provide definitions and guidance relating to direct, indirect, and cumulative impacts.

GN8.2. Managing risks and impacts of projects on biodiversity and natural habitats begins with scoping to determine whether the project has the potential to affect areas important for biodiversity and living natural resources, which should include consideration of transboundary risk or impact. A useful first step is to use, for example, tools and databases available online or in-country that can identify areas and species of conservation importance, to determine whether the project area is located within or near them.

GN8.3. If scoping indicates proximity of the project to areas important for biodiversity and living natural resources, the environmental and social assessment analyzes specific risks and impacts, using the best available data for review and analysis. Depending on the nature and scale of the project, such analysis includes existing spatial data and landscape mapping, where possible. Resources that can be used for the analysis include land classification and land use maps, satellite imagery or aerial photographs, vegetation type and ecosystem maps, and topographical and hydrological mapping, such as those for watersheds and interfluvial zones.

9. The Borrower will avoid adverse impacts on biodiversity and habitats. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 and with the requirements of this ESS. The Borrower will ensure that competent biodiversity expertise is utilized to conduct the environmental and social assessment and the verification of the effectiveness and feasibility of mitigation measures. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will develop and implement a Biodiversity Management Plan.⁵

Footnote 5. Depending on the nature and the scale of the risks and impacts of the project, the Biodiversity Management Plan may be a stand-alone document or it may be included as part of the Environmental and Social Commitment Plan (ESCP) prepared under ESS1.

GN9.1. A Biodiversity Management Plan (BMP) typically includes key biodiversity objectives, activities to achieve the objectives, an implementation schedule, institutional and gender-inclusive responsibilities, and cost and resourcing estimates. Indicative content for such a plan is included as Appendix A of this Guidance Note.

Assessment of Risks and Impacts

10. Through the environmental and social assessment, the Borrower will identify the potential project-related risks to and impacts on habitats and the biodiversity that they support. In accordance with the mitigation hierarchy, the Borrower will make the initial assessment of project risks and impacts without taking into account the possibility of biodiversity offsets.⁶ The assessment undertaken by the Borrower will include identification of the types of habitats potentially affected and consideration of potential risks to and impacts on the ecological function of the habitats. The assessment will encompass any areas of potential biodiversity importance that may be affected by the project, whether or not they are protected under national law. The extent of the assessment will be proportionate to the risks and impacts, based on their likelihood, significance, and severity, and will reflect the concerns of project-affected parties and other interested parties.

Footnote 6. Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development, and persisting after appropriate avoidance, minimization, and restoration measures have been taken. Therefore, potential offsets should not be considered in determining inherent risks of the project.

11. The Borrower's assessment will include characterization of baseline conditions to a degree that is proportional and specific to the anticipated risk and significance of impacts. In planning and undertaking environmental and social assessment related to the biodiversity baseline, the Borrower will follow relevant Good International Industry Practice (GIIP) utilizing desktop review, consultation with experts, and field-based approaches, as appropriate. Where further investigations are needed to evaluate the significance of potential impacts, the Borrower will carry out additional investigation and/or monitoring before undertaking any project-related activities, and before taking irrevocable decisions about project design that could cause significant adverse impacts to potentially affected habitats and the biodiversity that they support.

GN11.1. Depending on the results of the scoping, the environmental and social assessment identifies and describes the following:

- (a) *Ecosystems Affected.* The different types of habitats that could be affected by the project and the existing quality of the potentially affected habitats.
- (b) *Species Affected.* Species of global or national conservation interest; and of significant local interest for livelihoods, nutrition, or other reasons which may potentially be affected by the project. Species of global or national conservation interest include those classified as Critically Endangered, Endangered, Vulnerable, or Near Threatened under international Red List criteria.
- (c) *Ecosystem Services Affected.* Any important ecosystem services that are provided by the biodiversity and living natural resources that may be affected by the project, and their value to project-affected and other interested parties. Ecosystem services are the benefits that people derive from ecosystems. They are organized into four types: (i) provisioning services, which are the products people obtain from ecosystems and which may include food, freshwater, timbers, fibers, and medicinal plants; (ii) regulating services, which are the benefits people obtain from the regulation of ecosystem processes and which may include surface water purification, carbon storage and sequestration, climate regulation, and protection from natural hazards; (iii) cultural services, which are the nonmaterial benefits people obtain from ecosystems and which may include natural areas that are sacred sites and areas of importance for recreation and aesthetic enjoyment; and (iv) supporting services, which are the natural processes that maintain the other services and which may include soil formation, nutrient cycling, and primary production. Depending on their significance, potential adverse impacts on ecosystem services are considered in the assessment of social risks and impacts of the project, such as community health, safety, livelihoods, and cultural values.
- (d) *Protection Status.* Whether the ecosystems (land, water, and air), species, or ecosystem services affected by the project have protected status, such as (i) any category of formal protected area (for example, a national park, a marine protected area, a wildlife reserve, and so forth); (ii) other protection under national or local laws or regulations (such as restrictions on forest clearing or wetland conversion, or local parks); (iii) formal or informal protection by local communities or traditional authorities (such as community forests or grazing lands, or sacred natural sites); or (iv) have existing or proposed recognition as a Ramsar Wetland of International Importance, UNESCO Biosphere Reserve, World Heritage Natural Site, or other special international or national status.
- (e) *Site Ownership and Control.* Ownership, control, and/or use of the biodiversity and natural living resources where project risks and impacts may occur.

- (f) *Baseline Threats.* The description of the existing baseline including (i) habitat loss or degradation; (ii) trends with and without the project; and (iii) existing and likely future threats, including cumulative impacts (as defined in ESS1). Threats might include, for example, ongoing habitat loss or degradation (including from the decline of overexploited species) from long-standing or recently initiated human activities, existing development plans for the area, or expected climate change.
- (g) *Potential Project-Related Risks and Impacts.* Potentially significant physical, biological, chemical, and hydrological impacts to biodiversity and living natural resources resulting from the project. This includes an estimate of the extent of the impacts, for example, the size of habitats expected to be converted (lost) or modified (including degradation), and the proportion of the specific species populations at risk. Temporary or seasonal impacts on biodiversity and living natural resources are included as well; impacts on wildlife may be temporary depending on their timing in relation to daily cycles of movement and activity, or seasonal depending on cycles of migration, breeding, and food abundance.

GN11.2. The nature and level of detail of baseline data are determined during the scoping stage of the environmental and social assessment, with the involvement of technical specialists, local communities, and other stakeholders, as appropriate. Baseline data studies may comprise a combination of literature review, stakeholder engagement, in-field surveys, and other assessments, using sound scientific practice, GIIP, and reflecting the nature and significance of potential risks and impacts of the project.

GN 11.3. It is recognized that decisions regarding the management of biodiversity, habitats, and natural resources often are made in the context of scientific uncertainty. In part, this is because reliable baseline data on the status and trends of species and habitats are scarce or absent for many locations. Another source of uncertainty is that ecological systems are inherently highly complex, often making it difficult to predict the multiple and long-term impacts of actions. In such circumstances, a precautionary approach should be applied where there is not full scientific certainty about adverse impacts on biodiversity, the Borrower should nevertheless apply cost-effective mitigation measures.

12. Where the environmental and social assessment has identified potential risks and impacts on biodiversity or habitats, the Borrower will manage those risks and impacts in accordance with the mitigation hierarchy and GIIP. The Borrower will adopt a precautionary approach and apply adaptive management practices in which the implementation of mitigation and management measures are responsive to changing conditions and the results of project monitoring.

GN 12.1. The Cross-Sector Biodiversity Initiative and the Multilateral Financing Institutions Biodiversity Working Group have produced a number of useful guidelines and descriptions of good international practice relating to environmental and social assessment of project risks to and impacts on biodiversity, living natural resources, habitats, and ecosystems. This includes aspects such as early screening and scoping of potential impacts, application of the mitigation hierarchy, collection and verification of baseline data, and monitoring.

GN 12.2. Biodiversity loss and degradation of ecosystems may be irreversible, or reversible only over very long time periods and at great expense. At the same time, decisions with potential implications for biodiversity, habitats, and natural resources often must be made prior to completion of project designs and/or without the benefit of detailed or up-to-date baseline data. In addition, ecological systems are highly complex, which can make it difficult, if not impossible, to make reliable predictions concerning the longer-term impacts of project activities. For these reasons, a precautionary approach and adaptive management are two important strategies for managing risks when faced with a high degree of uncertainty. In the precautionary approach, the emphasis is on avoiding actions with potentially harmful (and particularly with irreversible) consequences until there is sufficient information available to properly assess and weigh the likely costs and benefits. Adaptive management involves adjusting actions and approaches based on the results of ongoing monitoring of outcomes.

GN 12.3. Precautionary approach: Where project screening and scoping indicate that there is good reason to believe that important biodiversity features may be present and could be adversely affected by project activities, key knowledge gaps should be addressed prior to making decisions on whether or how to proceed with those activities. The adage “absence of evidence is not evidence of absence” is particularly relevant to the question of whether there are unique or endangered species, or evolutionary or ecological processes at a project site. Biodiversity surveys should cover biologically important periods (such as breeding and migratory seasons, and dry and wet seasons), and consider all aspects of the life histories of species of conservation interest (such as availability of prey for predatory species, and of pollinators for flowering plants). Absolute knowledge and certainty is rarely, if ever, achievable in relation to biodiversity and

ecological systems, and avoiding or delaying development activities can carry economic and social costs. Consequently, adopting a precautionary approach does not mean demanding full and conclusive information or absolute certainty before taking action. In some cases, data collection or analysis can also proceed in parallel with project development, but they should be completed prior to taking irreversible actions or decisions with significant implications for project impacts. Advice from technical experts and stakeholder consultations should be used to determine what information is sufficient for decision making, and when the anticipated benefits of a development activity outweigh either known or suspected risks and impacts. Where there is residual uncertainty it is common to leave a margin of error, such as setting harvesting limits for wild capture fish or other species, below the best available estimate of sustainable yield, at least until this estimate can be refined through monitoring and experience.

GN 12.4. Adaptive management: Environmental and social assessments carried out during project preparation are necessarily constrained by the information available at the time, and assessment-related decisions may need to be made based on assumptions and predictions. During project implementation, new information and unforeseen or changing circumstances can arise that may lead to the failure of mitigation measures or other unexpected results. Adaptive management includes regular monitoring of environmental and social indicators, comparing these with expected outcomes, and revising actions as needed in order to realign the project with ESS objectives. For example, the monitoring of bird and bat mortality at a wind farm might find patterns that lend themselves to adaptive management, such as short-term shutdowns during peak bird-use periods, or a change in turbine cut-in speed to reduce bat fatalities (during low-wind speeds when bats are most active). Similarly, the monitoring of a river-edge forest or wetland might lead to recommendations for changing the water flow releases from a dam. The use of leading indicators, which help to identify problems before they become significant and possibly irreversible, is particularly important for adaptive management in relation to maintaining biodiversity and ecological systems. Details of monitoring and decision-making processes that will support adaptive management of the project should be set out in the BMP and the ESCP, as appropriate.

GN12.5. Generally accepted sources of GIIP for biodiversity and habitat conservation and management are available in relation to certain sectors.

Conservation of Biodiversity and Habitats

13. "Habitat" is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the nonliving environment. Habitats vary in their significance for conserving globally, regionally, and nationally important biodiversity, their sensitivity to impacts, and in the significance different stakeholders attribute to them. Because, in most instances, habitat loss, degradation, or fragmentation represents the greatest threat to biodiversity, much of the focus of biodiversity conservation actions is on maintaining or restoring suitable habitats.

GN13.1. Habitats are three-dimensional and include the biologically active airspace above land or water areas. Some airspaces, such as migratory bird corridors, for example, may be of high biodiversity significance, even if the land underneath them has been highly modified. In certain circumstances, habitats also may extend below ground to include caves, aquifers, and other subterranean ecosystems.

14. This ESS requires a differentiated risk management approach to habitats based on their sensitivity and values. This ESS addresses all habitats, categorized as 'modified habitat', 'natural habitat', and 'critical habitat', along with 'legally protected and internationally and regionally recognized areas of biodiversity value' which may encompass habitat in any or all of these categories.

GN14.1. Both natural and modified habitats can be classified as a critical habitat (see paragraph 23).

15. For the protection and conservation of habitats and the biodiversity they support, the mitigation hierarchy includes biodiversity offsets. Offsets will be considered as a last resort, only if significant residual adverse impacts remain after all technically and financially feasible avoidance, minimization, and restoration measures have been considered.

16. A biodiversity offset will be designed and implemented to achieve measurable, additional, and long-term conservation outcomes⁷ that can reasonably be expected to result in no net loss⁸ and preferably a net gain⁹ of biodiversity. In the case of an offset used as mitigation for residual adverse impacts on any area of critical habitat, a net gain is required. The design of a biodiversity offset will adhere to the “like-for-like or better” principle¹⁰ and will be carried out in alignment with GIIP.

Footnote 7. Measurable conservation outcomes for biodiversity will be demonstrated in situ (in natural conditions, not in captivity or depository) and on an appropriate geographic scale (e.g., at the local, national, or regional level).

Footnote 8. ‘No net loss’ is defined as the point at which project-related biodiversity losses are balanced by gains resulting from measures taken to avoid and minimize these impacts, to undertake on-site restoration, and finally to offset significant residual impacts, if any, on an appropriate geographic scale.

Footnote 9. ‘Net gains’ are additional conservation outcomes that can be achieved for the biodiversity values for which the natural or critical habitat was designated. Net gains may be achieved through full application of the mitigation hierarchy that may include the development of a biodiversity offset, and/or in instances where the Borrower could meet the requirements of paragraph 24 of this ESS without a biodiversity offset, through the implementation of additional programs in situ to enhance habitat, and protect and conserve biodiversity.

Footnote 10. The principle of “like-for-like or better” means that in most cases biodiversity offsets should be designed to conserve the same biodiversity values that are being affected by the project (an “in kind” offset). In certain situations, however, areas of biodiversity to be affected by the project may be neither a national nor a local priority, and there may be other areas of biodiversity with like values that are a higher priority for conservation and sustainable use, and under imminent threat or in need of protection or effective management. In these situations, it may be appropriate to consider an “out-of-kind” offset that involves “trading up” (i.e., where the offset targets biodiversity of higher priority than that affected by the project). Regardless of type, any areas considered as offsets for residual adverse impacts in critical habitats will also be critical habitats, meeting the criteria of paragraph 24 of this ESS.

GN15.1. If, as a last resort, a biodiversity offset is being considered, it is important to include in the BMP both an evaluation of the offset and documentation that all technically and financially feasible measures have been taken to avoid, minimize, or mitigate significant adverse impacts.

GN 16.1 (Footnote 10). The principle of “like-for-like or better” can be achieved in a number of ways and is based on an evaluation of the biodiversity and ecological values that may be at risk. Offsets are typically “off-site,” usually (though not always) located outside the area in which the project is located. For example, in restoration offsets, conservation gains are achieved by restoring the biodiversity value of an area that was previously degraded through causes not related to the project.

17. When a Borrower is considering the development of an offset as part of the mitigation strategy, stakeholders and qualified experts with demonstrated knowledge in offset design and implementation will be involved. The Borrower will demonstrate the long-term technical and financial feasibility of undertaking the offset. When offsets are proposed for residual adverse impacts on critical habitat, the Borrower will engage one or more independent internationally recognized experts to advise as to whether the proposed offset is feasible and whether, in their professional opinion, it can be reasonably expected to result in a sustainable net gain of biodiversity values for which the critical habitat was designated.

GN17.1. Paragraph 17 refers to the engagement of internationally recognized independent experts in specific circumstances in which the project needs a higher degree of independent advice. The engagement of an internationally recognized independent expert reflects the significance of the decision to propose an offset, and is intended to avoid any conflict of interest, whether actual or perceived. Technical expertise, competency, and substantive experience in designing or managing offsets with similar risks and impacts are prerequisites for engagement of the expert. For further discussion of “internationally recognized independent experts” to be engaged under Bank projects, see also Guidance Note for ESS1, paragraph 25.3.

18. Certain residual adverse impacts cannot be offset, particularly if the affected area is unique and irreplaceable from a biodiversity standpoint. In such cases, the Borrower will not undertake the project unless it is redesigned to avoid the need for such offset, and to meet the requirements of this ESS.

Modified Habitat

19. Modified habitats are areas that may contain a large proportion of plant and/or animal species of nonnative origin, and/or where human activity has substantially modified an area’s primary ecological

functions and species composition.¹¹ Modified habitats may include, for example, areas managed for agriculture, forest plantations, reclaimed¹² coastal zones, and reclaimed wetlands.

Footnote 11. A habitat will not be deemed to be a modified habitat where it has been converted in anticipation of the project.

Footnote 12. Reclamation as used in this context is the process of creating new land from sea or other aquatic areas for productive use.

GN19.1. There are few natural habitats that are free from nonnative species or modification by human activity, for example, because of overharvesting or overgrazing, pollution, or the introduction of invasive species. Differentiating modified habitat from natural habitat may call for expert judgment as to whether the character and functions of the habitat remain essentially natural. Habitats affected by potentially harmful human activities are typically still considered as natural habitats if such activities:

- (a) Have limited impact on the species composition or ecological function of the habitat;
- (b) Form part of a long-term pattern of traditional use, to which native species assemblages have adapted;
- (c) Are no longer prevalent, and the habitat supports a mature and diverse community of predominantly native species; or
- (d) Have not profoundly affected the habitat's ability to recover its former ecological characteristics.

GN19.2 (Footnote 11). Where a habitat was converted in anticipation of the proposed project, the requirements of ESS6 that are appropriate for the original habitat are applicable. Conversion of habitats in the project area in anticipation of the project is considered as an adverse impact of the project, even if it takes place before project identification. However, it is important to note that for ESS6 to apply to a previous conversion, it must have taken place reasonably close in time to project identification by the Borrower. Where prior conversion in direct anticipation of the project precedes the formal project identification mission undertaken by the Bank, the environmental and social assessment should assess the impacts of the prior conversion and application of ESS6.

20. This ESS applies to those areas of modified habitat that include significant biodiversity value, as determined by the environmental and social assessment required in ESS1. The Borrower will avoid or minimize impacts on such biodiversity and implement mitigation measures as appropriate.

GN20.1. Examples of modified habitats with significant biodiversity value may include:

- (a) Tree plantations or other perennial crops that provide corridors enabling birds or other animals to move between areas of natural habitat;
- (b) Livestock pastures that also provide seasonal grazing for wildlife;
- (c) Orchards and horticultural fields that provide pollen and nectar for bees and other pollinators; and
- (d) Abandoned quarries, irrigated rice fields, or sewage settlement ponds that provide habitat for migratory birds and other wetland species.

Natural Habitat

21. Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

22. If natural habitats are identified as part of the assessment, the Borrower will seek to avoid adverse impacts on them in accordance with the mitigation hierarchy. Where natural habitats have the potential to be adversely affected by the project, the Borrower will not implement any project-related activities unless:

- (a) There are no technically and financially feasible alternatives; and
- (b) Appropriate mitigation measures are put in place, in accordance with the mitigation hierarchy, to achieve no net loss and, where feasible, preferably a net gain of biodiversity over the long term. When residual impacts remain despite best efforts to avoid, minimize and mitigate impacts, and where appropriate and supported by relevant stakeholders, mitigation measures may include biodiversity offsets adhering to the principle of "like-for-like or better."

Critical Habitat

23. Critical habitat is defined as areas with high biodiversity importance or value, including:
- (a) Habitat of significant importance to Critically Endangered or Endangered species, as listed in the IUCN Red List of threatened species or equivalent national approaches;
 - (b) Habitat of significant importance to endemic or restricted-range species;
 - (c) Habitat supporting globally or nationally significant concentrations of migratory or congregatory species;
 - (d) Highly threatened or unique ecosystems; and
 - (e) Ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described above in (a) to (d).

24. In areas of critical habitat, the Borrower will not implement any project activities that have potential adverse impacts unless all of the following conditions are met:

- (a) No other viable alternatives within the region exist for development of the project in habitats of lesser biodiversity value;
- (b) All due process required under international obligations or national law that is a prerequisite to a country granting approval for project activities in or adjacent to a critical habitat has been complied with;
- (c) The potential adverse impacts, or likelihood of such, on the habitat will not lead to measurable net reduction or negative change in those biodiversity values for which the critical habitat was designated;
- (d) The project is not anticipated to lead to a net reduction in the population¹³ of any Critically Endangered, Endangered, or restricted-range species, over a reasonable time period;¹⁴
- (e) The project will not involve significant conversion or significant degradation of critical habitats. In circumstances where the project involves new or renewed forestry or agricultural plantations, it will not convert or degrade any critical habitat;
- (f) The project's mitigation strategy will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated; and
- (g) A robust and appropriately designed, long-term biodiversity monitoring and evaluation program aimed at assessing the status of the critical habitat is integrated into the Borrower's management program.

Footnote 13. Net reduction is a singular or cumulative loss of individuals that affects the species' ability to persist at the global and/or regional/national scales for many generations or over a long period of time. The scale (i.e., global and/or regional/national) of the potential net reduction is determined based on the species' listing on either the (global) IUCN Red List and/or on regional/national lists. For species listed on both the (global) IUCN Red List and the national/regional lists, the net reduction will be based on the national/regional population.

Footnote 14. The timeframe in which Borrowers will demonstrate "no net reduction" of Critically Endangered and Endangered, endemic and/or restricted-range species will be determined on a case-by-case basis and, where appropriate, in consultation with qualified experts and taking into account the species' biology.

GN24.1 (Footnote 14). Factors to consider in determining the appropriate time frame for demonstrating "no net reduction" include:

- (a) The time period during which significant adverse biodiversity impacts are likely to occur (for example, during construction and/or operation);
- (b) The reproductive cycles and behavior of the species in question (for example, it may take several years to observe project impacts on populations of slow-reproducing species); and
- (c) The type of mitigation measures proposed (for example, restoration of degraded habitats may take several years to demonstrate full recovery).

25. Where a Borrower has satisfied the conditions set out in paragraph 24, the project's mitigation strategy will be described in a Biodiversity Management Plan and set out in the legal agreement (including the ESCP).

Legally Protected and Internationally Recognized Areas of High Biodiversity Value

26. Where the project occurs within or has the potential to adversely affect an area that is legally protected,¹⁵ designated for protection, or regionally or internationally recognized,¹⁶ the Borrower will ensure that any activities undertaken are consistent with the area's legal protection status and management objectives. The Borrower will also identify and assess potential project-related adverse impacts and apply the mitigation hierarchy so as to prevent or mitigate adverse impacts from projects that could compromise the integrity, conservation objectives, or biodiversity importance of such an area.

Footnote 15. This ESS recognizes legally protected areas that meet the following definition: "A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values." For the purpose of this ESS, this includes areas proposed by governments for such designation.

Footnote 16. Internationally recognized areas of high biodiversity value include World Heritage Natural Sites, Biosphere Reserves, Ramsar Wetlands of International Importance, Key Biodiversity Areas, Important Bird Areas, and Alliance for Zero Extinction Sites, among others.

27. The Borrower will meet the requirements of paragraphs 13 through 25 of this ESS, as applicable. In addition, the Borrower will:

- (a) Demonstrate that the proposed development in such areas is legally permitted;
- (b) Act in a manner consistent with any government recognized management plans for such areas;
- (c) Consult and involve protected area sponsors and managers, project-affected parties including Indigenous Peoples, and other interested parties on planning, designing, implementing, monitoring, and evaluating the proposed project, as appropriate; and
- (d) Implement additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area.

Invasive Alien Species

28. Intentional or accidental introduction of alien, or nonnative, species of flora and fauna into areas where they are not normally found can be a significant threat to biodiversity, since some alien species can become invasive, spreading rapidly, and destroying or out-competing native species.

29. The Borrower will not intentionally introduce any new alien species (not currently established in the country or region of the project) unless this is carried out in accordance with the existing regulatory framework for such introduction. Notwithstanding the above, the Borrower will not deliberately introduce any alien species with a high risk of invasive behavior regardless of whether such introductions are permitted under the existing regulatory framework. All introductions of alien species will be subject to a risk assessment (as part of the Borrower's environmental and social assessment) to determine the potential for invasive behavior. The Borrower will implement measures to avoid the potential for accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbor alien species.

GN29.1. Many types of alien species—including agricultural crops—may not be native but are not invasive and do not themselves pose a threat to biodiversity. Only invasive alien species are considered to cause adverse impacts on biodiversity, and can cause habitats to become highly threatened and thus categorized as "critical habitat" for the purposes of this ESS. Types of projects where invasive alien species may present a high risk include linear infrastructure, such as a pipeline, transmission line, or road or rail development. This is because the right-of-way may traverse and link several habitats through one corridor, providing optimal means for a species to quickly spread through the region. In addition, international shipping of goods and services, including transportation of cargo and heavy machinery, may also present risks for introduction of new alien species.

GN29.2. Preventive measures are taken to reduce the risk of transportation, transmission, or accidental introduction of invasive alien plant or animal species, pests, and pathogens. In areas where invasive species are known to pose a significant risk to natural and critical habitats by, for example, reducing available habitat or prey species for native or migratory species, it is recommended to include a survey and review of such species in the biodiversity baseline.

GN29.3. For projects in or potentially adversely affecting non-critical habitat, appropriate mitigation measures can be incorporated into the BMP. For projects in or potentially adversely affecting critical habitats, an invasive alien species management protocol should be prepared as part of the BMP. This should set out preventive and mitigation measures such as inspection, washdown, and quarantine procedures specifically designed to address the spread of invasive species. When invasive alien species are introduced under the project, monitoring or removal of the species may be necessary and included in the BMP.

GN29.4. The Borrower should avoid the intentional introduction of invasive alien species, even when permitted under national law, except in unavoidable circumstances where the species is essential for the success of the project and where adequate monitoring and risk mitigation measures are established, along with budgets for their long-term implementation.

30. Where alien species are already established in the country or region of the proposed project, the Borrower will exercise diligence in not spreading them into areas in which they have not already become established. Where feasible, the Borrower will take measures to eradicate such species from the natural habitats over which the Borrower has management control.

Sustainable Management of Living Natural Resources

31. The Borrower with projects involving primary production and harvesting of living natural resources will assess the overall sustainability of these activities, as well as their potential impacts on local, nearby or ecologically linked habitats, biodiversity and communities, including Indigenous Peoples.

GN31.1. Primary production and harvesting are defined in footnotes 2 and 3. They may include: forestry, whether in natural forests or in plantations, as well as collection of non-timber forest products, which may be harvested from natural forests; agriculture, including both annual and perennial crops, and animal husbandry; and both wild and capture fisheries, including all types of marine and freshwater organisms, both vertebrate and invertebrate.

GN31.2. Management of living natural resources in a sustainable manner means that the land or water resources and the ecosystem integrity that underpins them maintains their productive capacity over time.

32. The Borrower will manage living natural resources in a sustainable manner, through the application of good management practices and available technologies. Where such primary production practices are codified in standards that are globally, regionally, or nationally recognized, particularly for industrial-scale operations, the Borrower and the Bank will agree on the standards to be applied. In the absence of relevant standards for the particular living natural resources in the country concerned, the Borrower will apply GIIP.

33. For projects involving small-scale producers,¹⁷ the Borrower will require producers to operate in a sustainable manner and to gradually improve their practices where such opportunities exist. Where the project consists of a large number of small producers in the same geographical area, the Borrower will assess the potential for cumulative risks and impacts.

Footnote 17. Small scale can be determined by the national context of a given country and is generally relative to the average size of household landholdings.

GN33.1. Operating in a sustainable manner means that all producers, regardless of scale, should employ production and harvesting techniques that allow continued, long-term production of the resource from the same natural resource base. However, for small-scale producers, operating in a sustainable manner can be the (final or interim) objective of a project intervention rather than a prerequisite.

34. Where the project includes commercial agriculture and forestry plantations (particularly projects involving land clearing or afforestation), the Borrower will locate such projects on land that is already converted or highly degraded (excluding any land that has been converted in anticipation of the project). In view of the potential for plantation projects to introduce invasive alien species and threaten

biodiversity, such projects will be designed to prevent and mitigate these potential threats to natural habitats. When the Borrower invests in production forestry in natural forests, these forests will be managed sustainably.

35. Where projects involve harvesting of living natural resources, the Borrower will require that these resources are managed in a sustainable manner. In particular, forests and aquatic systems are principal providers of these resources, and need to be managed as specified below.

- (a) For projects involving industrial-scale commercial forest harvesting operations, the Borrower will ensure such operations are certified under an independent forest certification system¹⁸ or adhere to a time-bound phased action plan acceptable to the Bank for achieving certification to such a system.
- (b) For projects involving forest harvesting operations conducted by small-scale producers, by local communities under community forest management, or by such entities under joint forest management arrangements, where such operations are not directly associated with an industrial-scale operation, the Borrower will ensure that they: (i) have achieved a standard of sustainable forest management developed with the meaningful participation of project-affected parties including Indigenous Peoples, consistent with the principles and criteria of sustainable forest management, even if not formally certified; or (ii) adhere to a time-bound action plan to achieve such a standard. The action plan will be developed with the meaningful participation of project-affected parties and be acceptable to the Bank. The Borrower will ensure that all such operations are monitored with the meaningful participation of project-affected parties.
- (c) For projects involving industrial-scale harvesting of fish populations and all other types of marine and freshwater organisms, the Borrower will demonstrate that their activities are being undertaken in a sustainable manner, consistent with the principles and criteria for sustainable harvesting.

Footnote 18. An independent forest certification system will require independent, third-party assessment of forest management performance. It will be cost-effective and based on objective and measurable performance standards that are defined at the national level and are compatible with internationally accepted principles and criteria of sustainable forest management.

36. For projects that do not involve primary production or harvesting of living natural resources and entail salvage logging, for example in areas to be inundated, the Borrower will limit cleared areas to a minimum and justified by the project's technical requirements, and that relevant national legislation is being followed.

37. The Borrower involved in the industrial production of crops and animal husbandry will follow GIIP to avoid or minimize adverse risks or impacts. The Borrower involved in large-scale commercial farming, including breeding, rearing, housing, transport, and slaughter of animals for meat, or other animal products (such as milk, eggs, wool), will employ GIIP¹⁹ in animal husbandry techniques, with due consideration for religious and cultural principles.

Footnote 19. Such as the IFC Good Practice Note on Improving Animal Welfare in Livestock Operations.

B. Primary Suppliers

38. Where a Borrower is purchasing natural resource commodities, including food, timber, and fiber, that are known to originate from areas where there is a risk of significant conversion or significant degradation of natural or critical habitats, the Borrower's environmental and social assessment will include an evaluation of the systems and verification practices used by the primary suppliers.²⁰

Footnote 20. Primary suppliers are those suppliers who, on an ongoing basis, provide directly to the project goods or materials essential for the core functions of the project. Core functions of a project constitute those production and/or service processes essential for a specific project activity without which the project cannot continue.

39. The Borrower will establish systems and verification practices which will:

- (a) Identify where the supply is coming from and the habitat type of the source area;
- (b) Where possible, limit procurement to those suppliers that can demonstrate²¹ that they are not contributing to significant conversion or degradation of natural or critical habitats; and
- (c) Where possible and within a reasonable period, shift the Borrower's primary suppliers to suppliers that can demonstrate that they are not significantly adversely impacting these areas.

Footnote 21. This may be demonstrated by delivery of certified products or achieving compliance with one or more credible standards for sustainable management of living natural resources in respect of certain commodities or locations. This will include, where appropriate, compliance with independent certification systems or progress towards achieving compliance.

GN38.1. Examples of natural-resource commodity production that may involve significant conversion or degradation of habitats include unsustainably harvested wood products, gravel or sand extraction from riverbeds or beaches, plantation crop production resulting in deforestation, and aquaculture that displaces mangroves or natural wetlands.

GN39.1. The environmental and social assessment determines whether there are known risks regarding significant conversion or significant degradation of natural or critical habitats related to a natural-resource commodity to be purchased under the project.

GN39.2. Where there are appropriate certification and verification systems accepted for sustainable management of living natural resources in the country of origin, it is recommended to procure natural resource commodities certified under such systems.

40. The ability of the Borrower to fully address these risks will depend upon the Borrower's level of control or influence over its primary suppliers.

GN40.1. The Borrower's ability to influence its primary suppliers depends on the terms and conditions of contracts with the primary supplier. In exceptional circumstances, the Borrower's leverage is not deemed to include the ability, as a sovereign state, to regulate such activities outside of the project.

Appendix A: Indicative Content of a Biodiversity Management Plan (BMP)

(a) **Objectives**, based on the findings of the biodiversity baseline and recommendations of the environmental and social assessment or similar document(s). These might include, for example, No Net Loss or Net Gain.

(b) **Activities** to be carried out, along with any specific project requirements needed to achieve the intended BMP objectives. BMP activities may include, for example, new or expanded protected areas; site-specific habitat restoration, enhancement, or improved management; community benefit-sharing; livelihood restoration activities (to mitigate any negative socioeconomic impacts from newly restricted access to natural resources, in accordance with ESS5); species-specific management interventions; monitoring of project implementation or biodiversity outcomes; or support for increased financial sustainability of conservation actions.

(c) **Project Requirements** that the implementing entities follow to achieve BMP objectives, such as biodiversity-related prohibitions or specific restrictions for civil works contractors and project workers. These may cover, for example, the clearing or burning of natural vegetation; off-road driving; hunting and fishing; wildlife capture and plant collection; purchase of bushmeat or other wildlife products; free-roaming pets (which can harm or conflict with wildlife); and/or firearms possession. Seasonal or time-of-day restrictions may also be needed to minimize adverse biodiversity impacts during construction or operation. Examples include (i) limiting blasting or other noisy activities to the hours of the day when wildlife are least active; (ii) timing of construction to prevent disturbance during the nesting season for birds of conservation interest; (iii) timing of reservoir flushing to avoid harming key fish-breeding activities; or (iv) curtailment of wind turbine operation during peak bird migration periods.

(d) An **Implementation Schedule** for the key BMP activities, taking into account the planned timing of construction and other project activities.

(e) **Institutional Responsibilities** for BMP implementation.

(f) **Cost Estimates** for BMP implementation, including up-front investment costs and long-term recurrent costs. The BMP also specifies the funding sources for plan implementation as well as recurrent operating costs.

References

There are many resources that may be useful to a Borrower in addressing the application of the ESF. Set out below are references that may assist the Borrower in implementing the requirements of the ESF. The resources listed here do not necessarily represent the views of the World Bank.

World Bank Group

International Finance Corporation. 2012. "Performance Standard 6 (PS6): Biodiversity." International Finance Corporation, Washington, DC. https://www.ifc.org/wps/wcm/connect/bff0a28049a790d6b835faa8c6a8312a/PS6_English_2012.pdf?MOD=AJPERES

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———. 2014. "IFC Good Practice Note on Improving Animal Welfare in Livestock Operations." International Finance Corporation, Washington, DC. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_gpn_animalwelfare_2014

World Bank. 2014. "Biodiversity Offsets. A User Guide." World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/344901481176051661/pdf/110820-WP-BiodiversityOffsetsUserGuideFinalWebRevised-PUBLIC.pdf>

Additional References

Alliance for Zero Extinction Sites. <http://www.zeroextinction.org/sitesspecies.htm>

BirdLife International. "Important Bird Areas." <https://datazone.birdlife.org/site/search>

Chartered Institute of Ecology and Environmental Management. 2017. "Guidelines for Preliminary Ecological Appraisal." Chartered Institute of Ecology and Environmental Management, Winchester, Hampshire, UK. <https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf>

Convention on Migratory Species Appendix I and II, Species. Appendix I, II Species. <https://www.cms.int/en/species>

Conservation International. 2016. "Core Standardized Methods for Rapid Biological Field Assessment". Arlington, Virginia, USA: Conservation International. https://www.conservation.org/publications/Documents/CI_Biodiversity-Handbook.pdf

Food and Agriculture Organization (FAO). 2002. "Biodiversity indicators in national forest inventories". <http://www.fao.org/forestry/3946-0e7f052eeb66d8935170504e3d01ab348.pdf>

Inter-American Development Bank and European Bank for Reconstruction and Development. 2015. "Good Practices for the Collection of Biodiversity Baseline Data." http://www.csbi.org.uk/wp-content/uploads/2017/11/Biodiversity_Baseline_JULY_4a-2.pdf

International Union for Conservation of Nature (IUCN). "The Red List." <https://www.iucnredlist.org/>

Plantlife. "Important Plant Areas." <https://www.plantlife.org.uk/international/important-plant-areas-international>

Secretariat of the Convention on Biological Diversity. 2006. "Guidelines for the Rapid Ecological Assessment of Biodiversity in Inland Water, Coastal and Marine Areas." Secretariat of the Convention on Biological Diversity, Ramsar, Iran. https://www.ramsar.org/sites/default/files/documents/library/lib_rtr01.pdf

Relevant Certifications

Forest Stewardship Council (FSC). <https://us.fsc.org/en-us/certification>

Marine Stewardship Council (MSC). <https://www.msc.org/>

SmartWood Certification (Sustainable Communities Online). <https://www.sustainable.org/environment/land-forests-a-ecosystems/1080-smartwood-certification>

Relevant Conventions (non-exhaustive)

Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). Appendix I, II Species. <https://www.cites.org>

Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention). <https://www.cms.int/>

Bern Convention on the Conservation of European Wildlife and Natural Habitats. <https://www.coe.int/en/web/bern-convention>

Food and Agriculture Organization of the United Nations International Plant Protection Convention. <https://www.ippc.int/en/>

Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention). <https://www.ramsar.org/>

UN Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. http://www.un.org/depts/los/convention_agreements/convention_overview_fish_stocks.htm

UN Cartagena Biosafety Protocol. <https://bch.cbd.int/protocol>

UN Convention on Biological Diversity. <https://www.cbd.int/>

UN Convention to Combat Desertification. <https://www2.unccd.int/>

UN Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. <https://www.cbd.int/abs/>

UNESCO World Heritage Convention. <https://whc.unesco.org/en/convention/>

