



Biodiversity and Natural Resources Management

Conservation and Development – hand in hand

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Why focus on Biodiversity and conservation?

- We recognize that **protecting and conserving biodiversity** and sustainably managing living natural resources are **fundamental to sustainable development**
- Worldwide concern now exists about rapid, human-caused biodiversity loss
- The ongoing extinction of many species is unprecedented and irreversible
- **Biodiversity loss mainly due to:**
 - Habitat loss and degradation
 - Invasive non-native species
 - Overharvest; direct and incidental take
 - Climate change

Why focus on Biodiversity in Pacific?

- There are 857 Protected Areas in the Pacific covering 4,801,348 km²:
 - 303 of these are terrestrial (34,283 km²),
 - 554 are marine (4,767,064 km²).

32% of coral reefs are inside designated protected areas

17% of known Key Biodiversity areas lie inside boundaries of protected areas

Seagrass capture carbon 35 times faster than tropical rain forests

Half of 200 migratory species in the Pacific are in decline

Countries spend less than 2% of their budget on protecting environment

Pacific Ocean has more marine species than any other ocean basin

70% of the global fish catch is from the Pacific

The Pacific has the most coral reef species in the world

High level of endemism in PNG and Solomon Islands

Deforestation rate higher than the global average, harming protective forests and coastal wetlands.

How does the WB tackle biodiversity issues?

Through:

- a) Direct project support
- b) **ESF** – Environmental and Social Framework and its **ESS** – Environmental and social standards



ESS6 - Why focus on biodiversity and conservation?

Objectives:

1. To **protect and conserve** biodiversity and habitats
2. To apply the **mitigation hierarchy** and the **pre-cautionary approach** in the design and implementation of projects that could have an impact on biodiversity
3. To promote the **sustainable** management of living natural resources
4. To support **livelihood** of local community, including Indigenous Peoples, and **inclusive economic development**, through the adoption of practices that integrate conservation needs and development priorities

ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 recognizes

- that **protecting and conserving biodiversity** and sustainably managing living natural resources are **fundamental to sustainable development**
- the **importance of maintaining core ecological functions** of habitats, including forests, and the biodiversity they support
- and addresses sustainable management of **primary production and harvesting** of living natural resources
- the **need to consider the livelihood of project affected parties**, including IP, whose access to, or use of ecosystems may be affected by a project. The potential, **positive role** of project affected parties, in biodiversity conservation and sustainable management of living natural resources is also **considered**.

What is Biodiversity?

- Biological diversity (or biodiversity) was placed firmly on the **international agenda** when the Convention on Biological Diversity (CBD) was opened for signature at the 1992 UNEP Earth Summit in Rio de Janeiro.
- Biodiversity definition adopted at the CBD:
*"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 part; this includes diversity within species, between species and of ecosystems"***
- Both WB ESF and ADB SPS adopt this definition.

What is Habitat?

Habitat: 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.

Modified Habitat

- Large proportion of plant and/or animal species of non-native origin
- Where human activity has substantially modified an area's primary ecological functions and species composition

Natural Habitat

- Contain viable assemblages of species of largely native origin
- Where human activity has not essentially modified an area's primary ecological functions and species composition

Critical Habitat - Areas with high biodiversity importance or value, including:

- a) Significant importance to Critically Endangered or Endangered species (IUCN Red List)
- b) Significant importance to endemic or restricted-range species
- c) Supporting globally or nationally significant concentrations of migratory or congregatory species
- d) Highly threatened or unique ecosystems
- e) Ecological functions needed to maintain viability of biodiversity values a) to d)

Often: Critical habitats include those areas either legally protected or officially proposed for protection, such as areas that meet the criteria of the World Conservation Union classification, the Ramsar Sites, and the UNESCO world natural heritage sites.

Ecosystem Services

- Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.
- **Ecosystem services are the benefits that people derive from ecosystems.**
- Four types of Ecosystem Services:
 - (i) Provisioning Services: the products people obtain from ecosystems (i.e. food, freshwater, timbers, fibers, and medicinal plants);
 - (ii) Regulating Services: the benefits people obtain from the regulation of ecosystem processes (i.e. surface water purification, carbon storage and sequestration, climate regulation, protection from natural hazards)
 - (iii) Cultural Services: the nonmaterial benefits people obtain from ecosystems (i.e. sacred sites, recreations area)
 - (iv) Supporting Services: the natural processes that maintain the other services (i.e. soil formation, nutrient cycling and primary production)



What protection is required for different habitat types ?

Modified Habitat

- Avoid or minimize impacts as much as possible, and implement mitigation measures as appropriate

Natural Habitat: carry out activities with potential adverse impacts only if:

- There are no technically and financially feasible alternatives
- Appropriate mitigation measures (MH) are in place. If residual impacts remain after best efforts to avoid, minimize and mitigate, as last resort may consider biodiversity offset if:
 - Supported by relevant stakeholders
 - Adhere to principle of “like-for-like or better”
 - No Net Loss of biodiversity value (preferably net gain)

What protection is required for different habitat types ?

Critical Habitat: implement project activities with potential adverse impacts only if all the following conditions are met:

- There are **no other viable alternatives** within the region in area with lesser biodiversity value
- **All relevant requirements** under international obligations or national law have been **complied with**
- Potential **impacts not likely to result** in measurable **net reduction in biodiversity values** for which the habitat was designated
- **No anticipated net reduction in population** of any critically endangered, endangered or restricted-range species
- **No significant conversion or degradation of critical habitats;** no conversion or degradation at all for projects involving forestry or agricultural plantations
- **Designed to achieve net gains** of critical biodiversity values for which the critical habitat was designated;
- **Long-term monitoring** and evaluation program is **integrated** into the Government's management program

ESS6: Knowledge Check

An intact tropical forest that contains to numerous endemic tree species

An island which is home to the last remaining population of numerous critically endangered species

A mangrove swamp that has long been used by local communities for fishing and firewood

An aquaculture operation that is used as a stop-over by migratory birds

A monoculture pine plantation

- 1 . To which of the above habitats is ESS6 likely to apply?
- 2 . What type of habitat does each of the above represent? (Modified, Natural or Critical)
- 3 . In which of the above habitats would a project need to achieve a “Net Gain” of biodiversity?
- 4 . In which of the above habitats is it likely that residual impacts of a project could not be offset?

Biodiversity Offsets

(including Compensatory Protected Areas)

- Biodiversity offsets are **conservation actions** with verifiable outcomes that **compensate** for residual adverse biodiversity impacts.
- Usual goal is **No Net Loss** (ideally a **Net Gain**) from a biodiversity standpoint.
- **Restoration** and **Averted Loss** Offsets.
- **Ecological Similarity**: “Like-for-Like”; sometimes “Trading Up”.
- Offsets can protect, enhance, restore **habitats** (sites) and/or protect, manage **species**.



When to Consider Biodiversity Offsets: The Mitigation Hierarchy

Biodiversity offset – last resort

Avoiding:

Adage: “prevention is better than cure”

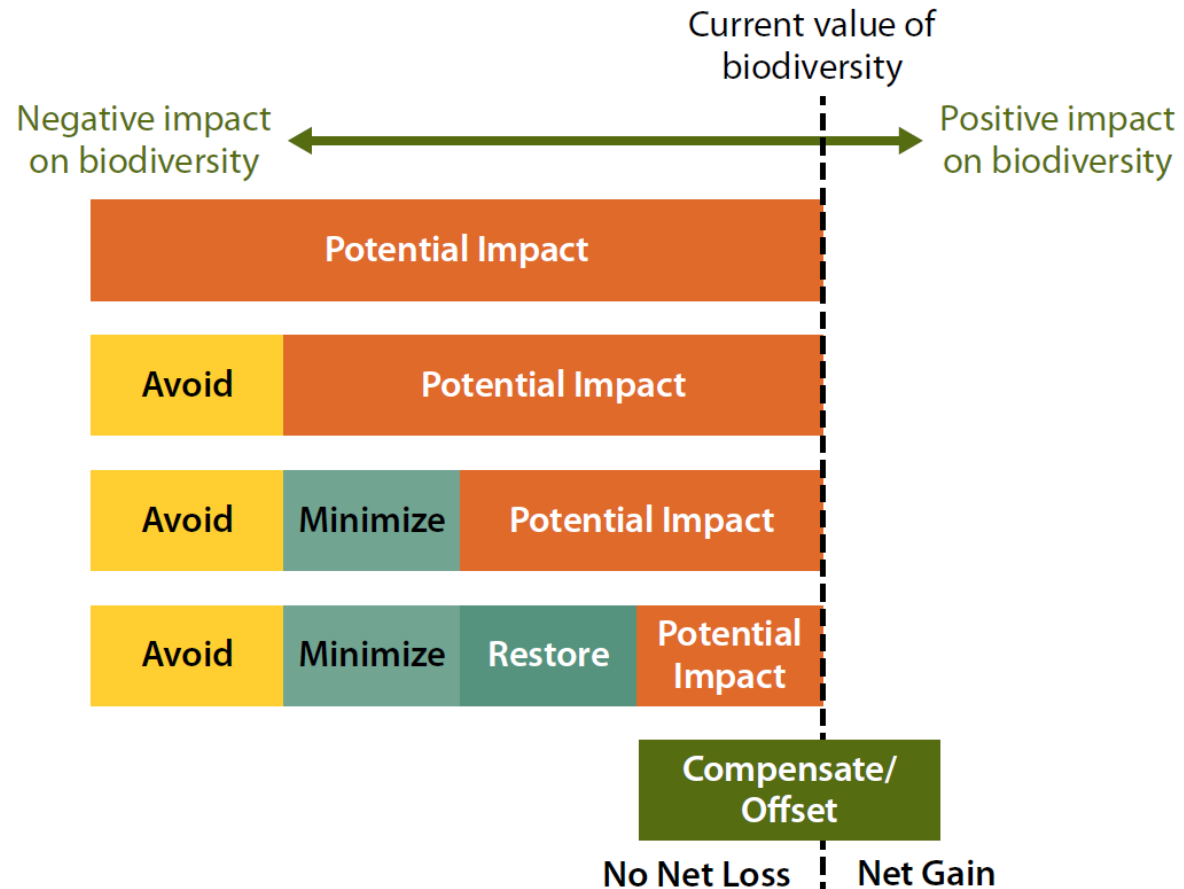
- (1) **locating the project** area away from sites of high biodiversity conservation value;
- (2) carefully **locating infrastructure** within the designated project area;
- (3) **Avoiding the use of certain technologies** or techniques;
- (4) avoiding or curtailing certain types of problematic activities during specific times of year—such as during the migration or breeding periods of species of conservation interest.

Other:

(minimize) seek to minimize any such damage

(restore) consider how to restore sites or species populations damaged by the project

(offset) if adverse biodiversity impacts still remain—compensate through specific actions (not merely cash) comprising a biodiversity offset



Biodiversity in Environmental Assessment

- The environmental assessment will take into account all relevant environmental risks and impacts of the project, including:
 - a) those identified in the World Bank Group Environmental, Health, and Safety Guidelines (EHSGs);
 - b) those related to community safety (including dam safety and safe use of pesticides);
 - c) those related to climate change and other transboundary or global risks and impacts;
 - d) any material threat to the protection, conservation, maintenance and restoration of **natural habitats and biodiversity**; and
 - e) those related to **ecosystem services** and the use of **living natural resources**, such as fisheries and forests.
- The environmental assessment will consider **direct, indirect and cumulative** project-related impacts on habitats and the biodiversity they support.



Adaptive Management and Precautionary Approach ⁽¹⁾

- **Precautionary approach** and **adaptive management** are two important strategies for managing risks when faced with a high degree of uncertainty.
- **Lack of data and complex ecological systems**

Precautionary approach:

- Adage : “absence of evidence is not evidence of absence”
- Absolute knowledge and certainty are rarely, if ever, achievable
- 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.
- **Advice from technical experts and stakeholder consultations** should be used to determine what information is sufficient for decision making
- **Residual uncertainty:** common to leave a margin of error at least until this estimate can be refined through monitoring and experience.

Adaptive Management and Precautionary Approach ⁽²⁾

Adaptive management:

- Adaptive management involves adjusting actions and approaches based on the results of ongoing monitoring of outcomes.
- Information constraints during ESIA
- New information / changing circumstances during project implementation
- Implementing arrangements and institutional set up needs to be clear

Principles to promote biodiversity-inclusive IA

<p><u>Principle 1:</u> Use IA to maintain and enhance biodiversity, with a goal of no net loss outcomes and an aspiration for net gain.</p>	<p><u>Principle 2:</u> Integrate biodiversity and ecosystem services in development planning and IA from the earliest possible stages</p>	<p><u>Principle 3:</u> Take an ecosystem perspective to framing of IA, allowing the significance of ecological changes to be assessed at appropriate spatial and temporal scales.</p>
<p><u>Principle 4:</u> Address the rights, values, dependencies, and benefits that people derive from biodiversity and ecosystems in IA, taking a participatory and transparent approach throughout.</p>	<p><u>Principle 5:</u> Design IA baseline surveys and assessments to generate the information and understanding needed to support evidence-based approaches to assessment of impacts on biodiversity and ecosystems</p>	<p><u>Principle 6:</u> Ensure that implications for biodiversity and ecosystem services are fully addressed using transparent, evidence-based approaches and appropriate expertise.</p>
<p><u>Principle 7:</u> Apply the MH, with emphasis on preventive measures and including offsets for residual impacts on biodiversity, ecosystems and the services they provide.</p>	<p><u>Principle 8:</u> Use precautionary approaches where the consequences of development for biodiversity and ecosystem services are unclear and there is insufficient information to exclude the possibility of unacceptable, irreversible, or non-offsetable impacts.</p>	<p><u>Principle 9:</u> Establish robust adaptive management systems to ensure that IA commitments will be met, mitigation measures will be implemented and that no net loss/net gain outcomes can be demonstrated through monitoring, auditing and reporting.</p>

Biodiversity Action Plan

- The environmental assessment will consider threats to biodiversity.
 - i.e. 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.
- It will also take into account the **differing values** attached to biodiversity and habitats by project-affected parties and other interested parties.
 - a differentiated risk management approach to habitats **based on their sensitivity and values.**
- Specific features of a project may require the Client to utilize specialized methods and tools for assessment, such as a **Biodiversity Action Plan.**
- The need to conduct Biodiversity Action Plan will be identified during implementation of ESIA but preferably before.



Good Practice: Biodiversity Management Plan

- **BMP (free-standing or part of ESMP) should include:**
 - **Objectives** (including NNL/NG)
 - **Biodiversity-related Activities to carry out** (PA strengthening, habitat enhancement, species management, livelihoods restoration, etc.)
 - **Project Requirements, including E&S Rules for Contractors**
 - **Implementation Schedule**
 - **Institutional Responsibilities**
 - **Cost Estimates (investment and recurrent)**
 - **Funding sources (esp. for recurrent costs).**
- **Need to turn key BMP measures into binding provisions in Financing Agreement and other Legal Documents.**

Addressing biodiversity conservation in practice

- Ecosystems and their biodiversity **contribute to human wellbeing** in a variety of ways, **some of which are difficult to quantify in monetary terms.**
- These include contributions to health, traditional livelihoods and cultural, spiritual, or religious enrichment.
- These values and benefits are **often overlooked**, underestimated, or omitted from the important trade-offs and decisions for which EIA and SEA are used, **resulting in failure** to internalize significant costs and risks.
- **Failure to recognize risks** to biodiversity can create **serious long-term liabilities for developers** and failure to recognize critical dependencies of people on biodiversity may result in **contravention of human rights**, undermine irreplaceable cultural traditions, or elicit major resistance from affected communities

Stakeholder Engagement in Assessment of Impacts to Biodiversity

- 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](#).
- In assessing impacts of a proposed project/activities to biodiversity, stakeholder involvement is crucial, especially in considering the option for [biodiversity offset](#) as part of mitigation strategy.
- **Good practice:** Involve stakeholders from the outset. Ensure coordination between conservation and main project agency. Advice from technical experts and stakeholder consultations should be used to determine what information is sufficient for decision making (precautionary) and when the anticipated benefits of a development activity outweigh either known or suspected risks and impacts.
- **Benefits:** leveraging local ecological knowledge, understanding the value of traditional ecosystems, learning how natural resources are used and avoiding potential resource conflicts.



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THANK YOU