THE BIODIVERSITY CONSULTANCY

Briefing note

Understanding ecosystem service risks and opportunities

Business relevance and implications

- Poor management of natural resources and the goods and services from nature is one of the biggest drivers of project delays and costs.

- Biodiversity provides ecosystem services important to both industrial projects and their neighbouring communities.

- Early identification of the critical links between a project's impacts and dependencies helps a company mitigate these risks and deliver projects on time and in budget.

What are ecosystem services?

Ecosystem services (ES) are 'the benefits that people, including businesses, derive from ecosystems'[1]. Understanding the dependencies that people and the project have on these services is fundamental to effective risk management.

ES can be broadly divided into four types[2]:

Provisioning: the goods or products obtained from ecosystems, such as food, timber, medicines, fiber, and fresh water.

Regulating: the benefits obtained from an ecosystem's control of natural processes, such as climate regulation, disease control, erosion prevention, water flow regulation, and protection from natural hazards.

Cultural: the non-material benefits obtained from ecosystems, such as recreation, spiritual values, and aesthetic enjoyment.

Supporting: services necessary for the maintenance of other ecosystem services, such as primary production and nutrient and water cycling.

At a glance

Why undertake an ES review?

- An ES review identifies natural resource needs and dependencies so that associated impacts can be effectively mitigated. This can reduce costs and delays associated with lender and stakeholder concerns.
- An ES review is required by IFC PS6 but is of value even where a project is not seeking IFC-aligned funding.

How should ES risks be assessed?

- The common approach, using existing tools and methods, is to identify those ES that are most important to the project and local ES beneficiaries.

Coordinated effort required

- Stakeholder consultation is essential. Close collaboration is required between the various project teams and community stakeholders in assessing ES dependencies and developing mitigation measures.

1. An ecosystem is a biological community of interacting living things and their physical environment.

2. Based on the Millennium Ecosystem Assessment (2005). This classification is also followed by IFC's Performance Standard 6

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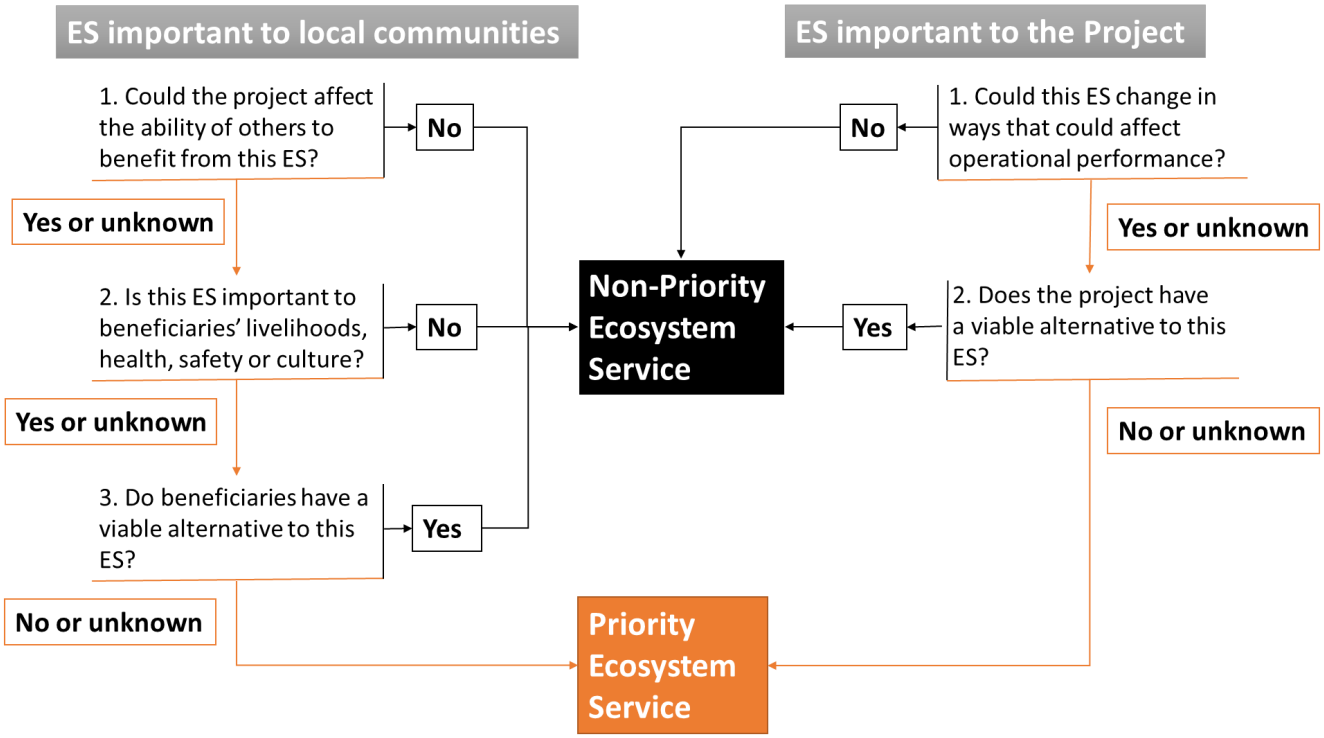

Figure 1. ES screening helps identify environmental resource needs and dependencies important to the project and local communities, informing subsequent social and environmental survey effort so that risks can effectively be identified and addressed. Adapted from Landsberg et al. (2013).

Why review ecosystem services?

Ecosystem services are important for the well-being of dependent communities and/or the project itself. An ecosystem service review helps a project understand and maintain the value and functionality of these important services. The priority is to avoid impacts where feasible and to minimise those that are inevitable. Compensation – financial or other – should be a last resort: the aim is to maintain the ES wherever possible.

A review also helps businesses identify resource efficiencies and provides assurance that project risks linked to ES have been identified and appropriately mitigated, avoiding project delays and extra costs associated with stakeholder concerns. An ES review is also increasingly a lender requirement, including within IFC's Performance Standard 6, and is especially valuable when conducted early in the project timeline.

Why are ecosystem services often missed?

Understanding and mitigating impacts on ES requires both social and environmental expertise, as well as stakeholder consultation. Such a trans-disciplinary approach is rare in impact assessments, which tend to partition 'social' and 'environmental' components (Figure 2). This can mean duplication of efforts, conflicting recommendations, and, worse, the missing or undervaluing of ES of importance to the project and local people.

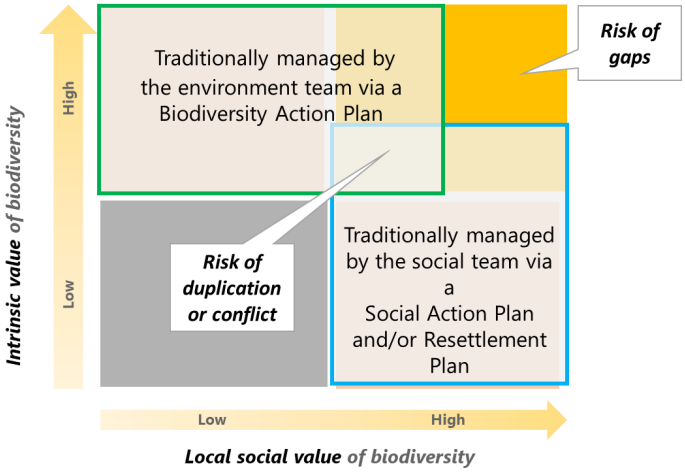

Figure 2. 'Silo-ing' social and environmental impact assessments can lead to duplication, gaps and inefficiency.

Biodiversity management and ES management should occur concurrently throughout the project cycle and should each inform the other: biodiversity management plans should incorporate ES considerations and vice versa (see Figure 3).

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Lender safeguards and ecosystem services

An increasing number of international finance institutions and banks recognise the importance of biodiversity in underpinning ES essential to community well-being. IFC PS6, for example, requires developers to maintain the value and functionality of ES impacted by their projects. IFC PS5 refers to ES in that it requires projects to avoid, minimise and, as a last resort, compensate for physical and economic displacement of local communities – which explicitly includes impacts to natural resources on which communities depend. These natural resources are ecosystem services.

To do this, a developer must first undertake a systematic review to identify priority ES. The Mitigation Hierarchy is then applied to address impacts to priority ES, including through the use of offsets and compensation measures, where necessary. Only those ES over which the project has direct management control or significant influence need to be considered.

How to assess ES risks?

An ES review can be divided into three main stages (Figure 3). These stages of the review should ideally be scheduled within the project's impact assessment and development timetable. However, advanced-stage projects may still benefit from an ES review, which serves as a 'gap analysis' assuring that ES risks are appropriately mitigated.

Stage 1: Screening of priority ES

Identify priority ES from a long list of different ES types[3]. The screening will help guide further data collection priorities (Figure 1). Screening requires early community engagement and specialist input to help understand natural resource needs and dependencies.

Stage 2: Baseline determination and impact assessment

Assess the pre-project state and stakeholder usage of ES – the baseline – allowing determination of potential impact significance and providing a basis for future monitoring[4]. This should be done as early as possible in the project cycle.

Stage 3: Mitigation planning

Apply the mitigation hierarchy with an emphasis on avoidance, especially for those ES that are difficult to replace or where stakeholders are highly vulnerable to a change in its supply. Both direct and indirect project impacts need to be considered. Close collaboration between environmental and social teams helps to identify feasible mitigation opportunities, establish potential synergies and to make explicit trade-offs between biodiversity-focused and ES-focused mitigation actions, where necessary. Compensation may include provision of the same service elsewhere (offsets) or substitution of different services. Some ES, such as spiritual values[5], cannot easily be compensated in this way. Given the high risk and uncertainty often associated with compensation, it should be a last resort.

Implementation

The review outcomes should be integrated into the project's Environmental and Social Management System, including the monitoring and evaluation programme. An ES approach provides a lens to identify gaps and synergies between environmental and social monitoring and should therefore not increase the project's overall monitoring requirement. Effective implementation requires on-going collaboration between environmental and social teams.

Clean freshwater is an example of a vital ecosystem service on which projects, operations and stakeholders depend.

[3] Existing tools, such as those from IPIECA or WRI, provide useful guidance on identification and prioritisation of ES

[4] InVEST, ARIES or Co$ting Nature all provide tools to help map and model ES

[5] Note that IFC places specific requirements on mitigating ES impacts in customary lands and regarding indigenous people's livelihoods (PS7).

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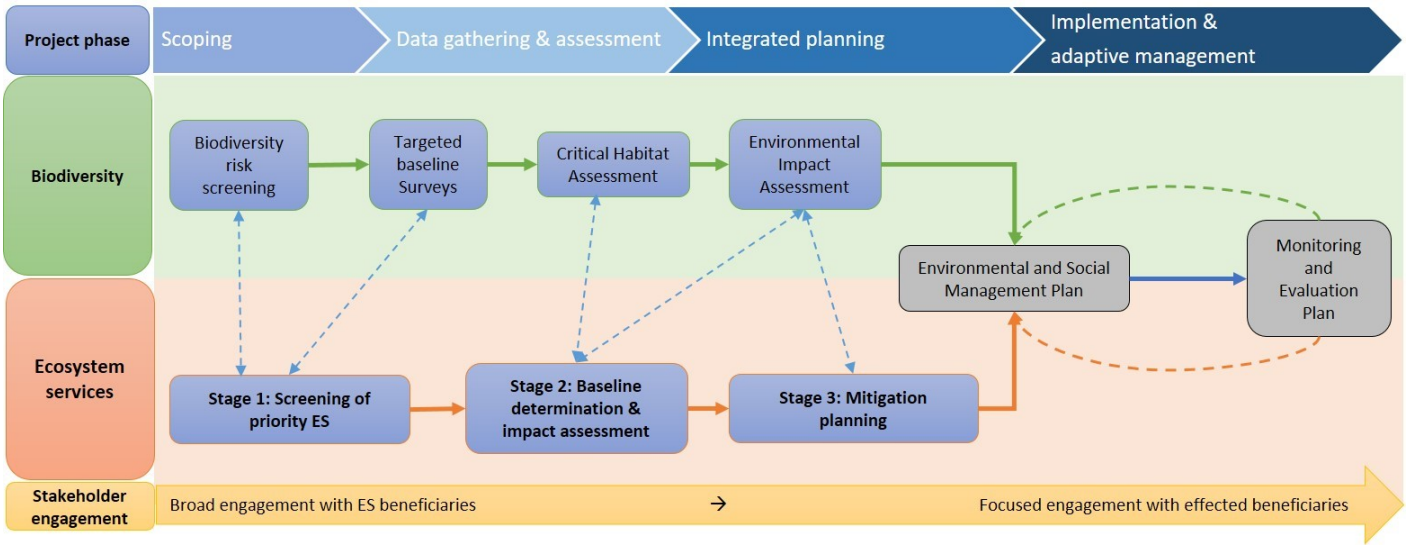

Figure 3. An ecosystem service review interacts closely with a project's overall environmental risk management programme. Engagement with ES beneficiaries at each stage is essential to validate the review's findings.

Ecosystem services (ES) review at a glance

Intended outcomes	- Avoid and minimise impacts on ES; - Maintain the value and functionality of priority ES for the well-being of local beneficiaries; - Increase resource efficiency of project operations.
Scope	- Cultural, regulating, provisioning and supporting ES of importance to local beneficiaries and the project; - Direct and indirect impacts; - Only those ES where the client has direct management control or significant influence; - Involve community stakeholders at all stages.
Process	- Identify priority ES through early project risk screening; - Integrate priority ES into broader social and environmental baseline surveys; - Apply the mitigation hierarchy, focusing on avoidance; - Assess residual impacts and feasibility of compensation; - Integrate mitigation actions into ESMS and monitor implementation and outcomes; adapt as required.

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Biodiversity and ES mitigation can be complementary: marine protected areas can also support sustainable fisheries. In other cases there may be trade-offs.

The principal ES beneficiaries may not live close to the project site – fishing boats may travel far to reach a fishing ground.

An ES might be used by a small number of beneficiaries, but it may be of critical significance to their livelihoods.

The Biodiversity Consultancy works together with industry leading clients to achieve an ecologically sustainable basis for development by tackling complex biodiversity challenges and by supporting positive conservation outcomes.

Contact us to find out how we can:

- Identify and avoid risks before they occur
- Deliver your projects on time and at cost
- Turn environmental challenges into opportunities
- Demonstrate shared value to stakeholders
- Build a positive brand and sustainable business

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Trees can function as places of community gathering - an example of the often undervalued cultural ecosystem services.

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