Day 2, How to Successfully Implement Biodiversity Management in Business? Thematic Block 1

The Corporate Ecosystem Services Review - ESR: Identifying business risk and opportunities arising from ecosystem change

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This presentation addresses the development and use of a structured methodology that helps business managers proactively develop strategies to manage business risks and opportunities arising from their company's dependence and impact on ecosystems.

Ecosystems provide businesses with numerous benefits or "ecosystem services." Forests supply timber and wood fiber, purify water, regulate climate, and yield genetic resources. River systems provide fresh water, power, and recreation. Coastal wetlands filter waste, mitigate floods, and serve as nurseries for commercial fisheries.

However, human activities are rapidly degrading these and other ecosystems. The Millennium Ecosystem Assessment—the largest audit ever conducted of the condition and trends in the world's ecosystems—found that ecosystems have declined more rapidly and extensively over the past 50 years than at any other time in history. In fact, 15 of the 24 ecosystem services evaluated have degraded over the past half century. The Assessment projected further declines over coming decades, particularly in light of population growth, economic expansion, and global climate change. Left unchecked, this degradation could jeopardize a company's license to operate, creating new winners and losers within the business community.

Ecosystem degradation is highly relevant to businesses because companies not only impact ecosystems and the services they provide but also depend on them. Ecosystem degradation, therefore, can pose a number of risks to corporate performance and it can create new business opportunities. Examples include:

- *Operational risks and opportunities*

  - Risks such as higher costs for freshwater due to scarcity, lower output for hydroelectric facilities due to siltation, or disruptions to coastal businesses due to flooding

  - Opportunities such as increasing water-use efficiency or building an on-site wetland to circumvent the need for new water treatment infrastructure

- *Regulatory and legal risks and opportunities*

  - Risks such as new fines, new user fees, government regulations, or lawsuits by local communities that lose ecosystem services due to corporate activities

  - Opportunities such as engaging governments to develop policies and incentives to protect or restore ecosystems that provide services a company needs

- *Reputational risks and opportunities*

- Risks such as retail companies being targeted by nongovernmental organization campaigns for purchasing wood or paper from sensitive forests or banks facing similar protests due to investments that degrade pristine ecosystems

- Opportunities such as implementing and communicating sustainable purchasing, operational, or investment practices in order to differentiate corporate brands

- *Market and product risks and opportunities*

  - Risks such as customers switching to suppliers that offer eco-certified products or governments implementing new sustainable procurement policies

  - Opportunities such as launching new products and services that reduce customer impacts on ecosystems, participating in emerging markets for carbon sequestration and watershed protection, capturing new revenue streams from company-owned natural assets, and offering eco-labeled wood, seafood, produce, and other products

- *Financing risks and opportunities*

  - Risks such as banks implementing more rigorous lending requirements for corporate loans

  - Opportunities such as banks offering more favorable loan terms or investors taking positions in companies supplying products and services that improve resource-use efficiency or restore degraded ecosystems.

Unfortunately, companies often fail to make the connection between the health of ecosystems and the business bottom line. Many companies are not fully aware of the extent of their dependence and impact on ecosystems, and the possible ramifications. Likewise, environmental management systems and environmental due diligence tools are often not fully attuned to the risks and opportunities arising from the degradation and use of ecosystem services. For instance, many tools are more suited to handle "traditional" issues of pollution and natural resource consumption. Most focus on environmental impact, not dependence. Furthermore, they typically focus on risks not business opportunities. As a result, companies may be caught unprepared or miss new sources of revenue associated with ecosystem change.

The Corporate Ecosystem Services Review (ESR), developed by WRI, WBCSD and the Meridian Institute, is designed to address these gaps. It consists of a structured methodology that helps business managers proactively develop strategies to manage business risks and opportunities arising from their company's dependence and impact on ecosystems. It is a tool for strategy development, not just for environmental assessment. Businesses can either conduct an Ecosystem Services Review as a stand-alone process or integrate it into their existing environmental management systems. In both cases, the methodology can complement and augment the environmental due diligence tools companies already use.

The Ecosystem Services Review can provide value to businesses in industries that directly interact with ecosystems such as agriculture, beverages, water services, forestry, electricity, oil, gas, mining, and tourism. It is also relevant to sectors such as general retail, healthcare, consulting, financial services, and others to the degree that their suppliers or customers interact directly with ecosystems. General retailers, for example, may face reputational or market risks if some of their suppliers are responsible for degrading ecosystems and the services they provide.

The five steps for performing an ESR are presented in figure 1.

ESR CASE STUDY: Mondi plc
Mondi, a leading international paper and packaging group was one of the ESR road-testers. With substantial forest holdings in South Africa and Russia, Mondi selected three of its South African pine and eucalypt plantation areas—Shanduka, SiyaQhubeka, and Tygerskloof—for its ESR. These areas were chosen for the range of physical, climatic, and other environmental conditions under which the trees are grown. The ecosystem dependence and impact assessment for each of the three plantations was conducted revealing six priority ecosystem services:

> * *Freshwater*. Pine and eucalypt plantations significantly depend upon and impact the quantity of freshwater in their watersheds.
> * *Water regulation*. The plantation depends upon the ability of the surrounding ecosystems to help regulate the timing of water flows.
> * *Biomass fuel*. As a byproduct, the plantation generates biomass residues that can be utilized as a source of energy by the company's mills, local villages, or other parties.
> * *Global climate regulation*. The plantation impacts the carbon cycle since trees sequester carbon dioxide.
> * *Recreation and ecotourism*. Given its proximity to the Greater St. Lucia Wetland Park, a World Heritage Site, the plantation—and the wetlands and grasslands it contains—have the potential to provide recreational or ecotourism benefits.
> * *Livestock*. The plantation impacts the ecosystem service of livestock in that, by being a dedicated industrial tree farm, the site precludes surrounding villagers from using the landscape for large-scale livestock grazing. Selective controlled grazing on the wetlands and remnant grasslands is, however, widely practiced.

After having completed a detailed trends analysis for each of these six priority ecosystem services through interviews with internal staff, outside experts and desk research and having detailed the drivers and users of each ecosystem service, a number of new business risks and opportunities were uncovered. With this, Mondi was able to identify several strategies for managing the risks and opportunities it identified, including:

Internal changes
> * *Implement additional internal water efficiency improvements*. The company can reduce risks associated with growing freshwater scarcity by implementing a series of water-use-efficiency practices such as more aggressively clearing invasive species, better matching tree species to site conditions, utilizing water-efficient strains as they become available, and more frequently conducting prescribed burns on its grasslands.
> * *Start using invasive species as biomass fuel*. Mondi can combine its interest in removing competition for water and in tapping into the growing market for biomass fuel by starting to use the invasive species cleared from its plantations as feedstock for power and/or heat generation. Potential end users of the feedstock are Mondi's own mills or a new biomass pellet manufacturer located not far from one of the plantations.

Sector or stakeholder engagement
> * *Obtain additional water entitlements by (co)financing water efficiency improvements of upstream landowners*. Many farmers operating near Mondi's plantations use inefficient irrigation systems but lack a financial incentive or ability to upgrade. Mondi could engage selected farmers and offer to (co)finance irrigation system upgrades in return for a share of the recipient's water entitlements—the share could be negotiated and based on the amount of projected water savings. These entitlements could, through an afforestation license procedure, result in additional water rights for plantations.

* *Promote coppiced woodlots for biomass fuel*. Leveraging the company's forestry expertise, Mondi could help nearby private landowners and villages establish woodlots on degraded land for growing biomass fuel on coppiced rotations. Mondi could provide seedlings, offer extension services, and purchase the wood to use either in its own mill or sell to a nearby wood pellet manufacturer. These woodlots would provide additional revenue for villagers and thereby strengthen Mondi's reputation and stakeholder relationships.

Policy-maker engagement
* *Engage policy-makers to improve freshwater resource use policies*. Mondi could explore voicing support for stronger policies that encourage water-use efficiency in South Africa and, leveraging its expertise in water management, provide input into policy design. (Specific policy recommendations identified during the ESR are confidential at this stage.)

Figure 1. Corporate Ecosystem Services Review: Summary of Methodology

Step		1. Select the scope	2. Identify priority ecosystem services	3. Analyze trends in priority services	4. Identify business risks and opportunities	5. Develop strategies
Activity		Choose boundary within which to conduct the ESR (a specific business unit, product, market, landholdings, major customer, supplier, etc.)	Systematically evaluate degree of company's dependence and impact on more than 20 ecosystem services. Determine highest "priority" ecosystem services—those most relevant to business performance	Research and evaluate conditions and trends in the priority ecosystem services, as well as the drivers of these trends	Identify and evaluate business risks and opportunities that might arise due to the trends in priority ecosystem services	Outline and prioritize strategies for minimizing the risks and maximizing the opportunities
Who is involved	· Executive managers	√				√
	· Manager(s) from selected scope	√	√		√	√
	· Analysts		√	√	√	√
	· Consultants (optional)		√	√	√	√
Sources of input and information	· In-house business managers and analysts		√	√	√	√
	· Existing and new in-house analyses		√	√	√	
	· Local stakeholders		√			
	· Experts from universities and research institutions			√		
	· Millennium Ecosystem Assessment publications and experts			√		
	· Non-governmental organizations			√	√	√
	· Industry associations			√	√	√
	· Published research		√	√	√	
	· Other resources and tools*		√	√	√	
End product		Boundary for ESR analysis	List of 5-7 "priority" ecosystem services	Short paper or set of data that summarizes trends for each priority ecosystem service	List and description of possible business risks and opportunities	Prioritized set of strategies
Estimated time**		1-2 weeks	2-3 weeks	4-6 weeks	1-2 weeks	2-3 weeks
For details see:		pages 22-23	24-32	33-37	38-46	47-50

* See "Resources" chapter for examples and details. ** Estimates based on road tests and reflect one full time equivalent. Time required to conduct an ESR will vary based on factors including the scope selected, availability of information, and number of staff allocated to gather information and conduct research and interviews.

WBCSD   World Resources Institute   Mondi