

Business threats and opportunities from the ecosystems challenge

“To manage ecosystem services for human well-being and to protect the natural environment in a changing world.”

Issues:

Human society is dependent on critical services from the ecosystems in which we are embedded. The Economics of Ecosystems and Biodiversity project^{1, 2} has been looking globally at recognising, demonstrating and capturing the value of these services so that they are included in decision making processes.

Ecosystems provide:

- Provisioning services – wild foods, crops, fresh water and plant-derived medicines.
- Regulating services – filtration of pollutants by wetlands, climate regulation through carbon storage and water cycling, and pollination.
- Cultural services – recreation, aesthetic and educational value.
- Supporting services – soil formation, photosynthesis and nutrient cycles.

Of these, only the ‘provisioning services’ of directly traded goods have traditionally been assigned an economic value. But it is becoming increasingly apparent that many ecosystems are being degraded to the point where they can no longer provide the services society requires, and that this carries direct costs for society.

Examples include the impact on irrigation-based intensive agriculture of over-exploitation of freshwater resources, and the additional costs of holding back the Gobi desert in China as de-forestation has allowed it to encroach on high quality agricultural land.

Business Threat

- Loss of provisioning services through over-exploitation – Global fisheries would be worth an estimated \$50bn pa more if sustainably exploited compared to current practice.
- Disruption to supply chains through loss of services.
- Over-logging for construction in China caused losses in topsoil and water capacity that led to the Yellow river to run dry for 267 days in one year followed by devastating flash floods the following year. Total economic damage estimated at \$30bn.
- As society moves to protect critical ecosystem services it may ban or place severe restrictions on business exploitation of those services. For example limits on pollution discharges from industrial sites or controls on use of phosphates and nitrates in agriculture to prevent eutrophication.
- Reputational damage can occur to businesses that are seen to damage ecosystems; leading to consumer boycotts, increased costs, and withdrawal of the license to operate. This is particularly an issue in extractive industries.

¹ “The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature”, 2010, TEEB

² “TEEB – The Economics of Ecosystems and Biodiversity Report for Business – Executive Summary”, 2010, TEEB

Business Opportunities:

Many business opportunities arise from managing ecosystem services or providing products and services that have low impact. Estimated markets in 2020 for such services include⁴:

- \$210bn pa - Certified agricultural products (organic, conservation grade etc).
- \$20bn pa – Conservation management.
- \$15bn pa - Certified forest products.
- \$10bn pa – Carbon offsets.
- \$10bn pa – Biodiversity offsets.
- \$8bn pa – Watershed management and other water-related services.
- \$7bn pa – Other ecosystem services.
- \$100m pa – Bioprospecting contracts.

Other growth areas include:

- Bioremediation.
- Eco-tourism.
- Ecosystem restoration after exploitation (eg mining).
- Regeneration of damaged ecosystems (eg reforestation).
- Products and services that enable industry to reduce ecosystem impacts and so comply with tightening regulation.
- Ecosystem management consultancy.
- Monitoring the condition of ecosystems; eg through use of satellite observations.

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