

Business and Ecosystems; Making the case for Businesses to Restore and Maintain Ecosystems
A Survey of Prospective Buyers for Watershed Services in Uganda
 Preliminary Findings
 By Alice Ruhweza

INTRODUCTION

The world's ecosystems provide many critical services on which businesses and economies rely. Beverage manufacturers, water bottling companies and hydro-electric power companies rely heavily on water; timber companies depend on trees; tourism is often based on nature's beauty, and insurance companies benefit from natural hazard protection provided by ecosystems-such as flood control.

.Accordingly, there has been an increase in awareness of ecosystem services and an expanded interest in mechanisms to pay for the maintenance of these services. The role of businesses in engaging with this work includes becoming both buyers and sellers of ecosystem services, which are deals focused on supporting the restoration and maintenance of ecosystem function.

WHAT ARE ECOSYSTEM SERVICES?

Ecosystems provide a wide range of services from clean water through carbon sequestration to biological diversity. People and companies rely on these services—for raw material inputs, production processes, and climate stability. At present, however, many of these ecosystem services are either undervalued or regarded as a free good, with no financial value at all. As day-to-day decisions often focus on immediate financial returns, ecosystem structures and functions are being fundamentally undermined.¹

Concern drives innovation. Markets are emerging for ecosystem services in countries around the world. For example, formal, multi-million dollar markets now exist in greenhouse gases, wetlands, water pollution, and even in endangered species. And systems of payment are being established for specific services provided by ecosystems.²

Major Ecosystem Services

- *Purification of air and water*
- *Regulation of water flow*
- *Detoxification and decomposition of wastes*
- *Generation and renewal of soil and soil fertility*
- *Pollination of crops and natural vegetation*
- *Control of agricultural pests*
- *Dispersal of seeds and translocation of nutrients*
- *Maintenance of biodiversity*
- *Partial climatic stabilization*
- *Moderation of temperature extremes*
- *Wind breaks*
- *Support for diverse human cultures*
- *Aesthetic beauty and landscape enrichment*

Source: Daily, Gretchen. 1997. Nature's Services. Washington D.C., USA: Island Press.

CHANGING CORPORATE SOCIAL RESPONSIBILITY EXPECTATIONS

New research on ecosystems is transforming thought leaders' conceptions about corporate responsibility in the context of ecosystems, as has been covered in mainstream media outlets including *The Economist*, *Fortune*, and *BusinessWeek*.³ The transformation of business expectations can be summarised as follows::

OLD CSR PARADIGM	NEW CORPORATE RESPONSIBILITY PARADIGM → NEW EXPECTATIONS
Environmental regulations will impact	Diminished or degraded resources will impact the bottom line, through

¹ For more information, please see: Millennium Ecosystem Assessment Board. 2005. "Living Beyond Our Means: Natural Assets and Human Well-Being." Geneva, Switzerland: The United Nations Environment Program.

² For more information, please see: <http://www.ecosystemmarketplace.com/>

³ For example see: "Are You Being Served," *The Economist* (4/21/05), "How Much is Nature Worth?" *Business Week*, (12/29/04). "Cloudy With a Chance of Chaos: Climate change may bring more violent weather swings--and sooner--than experts had thought." *Fortune* (January 17, 2006) and "Investing in Green" *Newsweek* (June 6, 2005).

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the bottom line	additional costs in the short-term and diminished ability to win new projects in the long-term
Sustainability focuses on clean air, clean water, less waste, energy efficiency and protection of biodiversity	Sustainability includes protecting an array of “ecosystem services” such as climate regulation, water filtration, flood regulation, crop pollination, and provision of water, fiber, fuel and food. Ethical case for action growing more mainstream, especially when cast in terms of climate change.
Markets focus on internalizing negative externalities: CO ₂ trading	Markets focus on internalizing positive externalities: extensive discussion of private sector payments for ecosystem services such as provision of clean water
Qualitative description of ecosystem services	Increasingly quantitative descriptions of ecosystem services
No specific carbon expectations	Emerging regulatory requirements for carbon management and expectations for a carbon strategy which may include voluntary purchases of carbon credits
Competitive advantage through cost savings	Competitive advantage from developing expertise on managing risk (i.e., how to avoid ecosystem damages) and maximizing efficient use of ecosystem services – ability to win new projects key.
Lenders, insurers, investors focused on materiality only (i.e., lawsuits, accidents)	Lenders, insurers, investors adopting environmental screens, Equator Principles and other environmental and social standards
Wetlands mitigation banking requirements relatively narrow	Wetlands mitigation banks need to incorporate consideration of all ecosystem services provided by wetlands, such as water filtration, erosion protection, and flood control – and consider who gets those benefits. Biodiversity offsets also emerging.
Contingent environmental liabilities focused on damages to natural resources	Contingent environmental liabilities in the future may focus on damages to ecosystem services

Adopted from : Waage & Roberts (2007);Thinking like a sales Person: Finding New, Private Sector Customers for Ecosystem Services; Forest Trends, 2007

EMERGING BUSINESS RISKS AND OPPORTUNITIES

With or without these new expectations, ecosystem services can affect core business operations and the loss of ecosystem services often creates **strategic risks**. These risks not only affect the company, but they also affect *their suppliers, customers and investors*. The types of risks include:-

- **Operational risks**, through increased scarcity and cost of raw materials (such as freshwater) and higher insurance costs for disasters, such as flooding.
- **Access to capital**, as banks and insurance companies adopt more rigorous investment and lending policies.
- **Regulatory risks**, through the emergence of new government policies—such as effluent taxes, pollution taxes and moratoria on activities (e.g., mining, pollution, etc.)

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Even as risks emerge, businesses may find new sources of revenues and **strategic opportunities such as:**

- **New technologies and products** that will serve as substitutes that reduce degradation, restore ecosystems, or increase efficiency of ecosystem service use (e.g. energy efficiency products).
- **New markets**, such as certified sustainable products, ecosystem service payments (such as payments for watershed services or water quality trading).
- **New businesses**, such as eco-insurance.
- **New revenue streams** for currently unrealized assets, such as wetlands and non-timber forest products.

BUSINESS BENEFITS OF INVESTING IN ECOSYSTEM MAINTENANCE AND RESORATION

The types of specific benefits that can provide the rationale for engaging in markets and payments for ecosystem services include:

BUSINESS BENEFIT	ASSESSING CORPORATE VALUE
1) Secure access to new resources and key raw materials	<ul style="list-style-type: none"> • Access to new resources essential for corporate growth, which may overlap with highly sensitive ecosystems on the land and in marine settings. • Ability to win concessions and new projects based on corporate track records on social responsibility – including ecosystem impacts • Availability of freshwater and other key raw or processed materials, which may depend healthy ecosystems
2) Increase investor confidence	<ul style="list-style-type: none"> • Increasing investor interest in limiting risk through environmental screens particularly related to corporate climate change strategy • Expanding size of socially responsible investment funds (SRIs) which may offer access to key capital over time
3) Ensure access to insurance	<ul style="list-style-type: none"> • Growing insurance company concerns with environmental risks, particularly related to climate and water
4) Enhance or protect brand equity and reputation	<ul style="list-style-type: none"> • Ecological damages can undercut reputation and brand value • Smart corporate environmental strategy can build brand, as witnessed by the investments by companies such as: Wal-Mart, GE (Eco-imagination), Toyota (hybrids), and Starbucks (sustainable supply chain initiatives)
5) Improve relationships with NGOs, local governments & communities (factor for license to operate)	<ul style="list-style-type: none"> • Relationships with local governments and communities can significantly affect corporate timelines and costs - Explore examples of corporate philanthropy supporting reputation - Study increased dialogue and consultation that corporations engage in with NGOs when pursuing environmentally impacting projects
6) Lower operations & maintenance (O&M) costs	<ul style="list-style-type: none"> • Explore the connection between loss of ecosystems (forest cover, wetlands) and increased maintenance costs or slowed operations, such as slow-downs for dredging silt, etc.
7) Increase customer satisfaction	<ul style="list-style-type: none"> • Retail and other commercial “customers” are using “supply chain management” to demand aligned environmental goals and supplier operations

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	<ul style="list-style-type: none"> Environmental product lines can open up new markets, sometimes with higher margins, as illustrated with certification of the Forest Stewardship Council and Marine Stewardship Council
8) Increase employee satisfaction	<ul style="list-style-type: none"> Companies with more socially responsible reputations can boast 'talent' gains, such as higher employee retention and greater success in recruitment
9) Manage contingent environmental liabilities	<ul style="list-style-type: none"> Liability is likely to increasingly flow from links between corporate actions and impaired ecosystem function
10) Competitive edge, or early identification of emerging issues	<ul style="list-style-type: none"> Increasing 'signals' that ecosystem services are an emerging issue, as evidenced by media coverage and NGO priorities. Potential businesses benefiting from a "first mover advantage", such as by initiating and publicizing initiatives that benefit ecosystems before anyone else in their industry. Actions of key competitors on ecosystem services may 'up the ante' and make 'catch up' difficult, by successfully managing environmental issues that affect everyone in the industry, thereby necessitating all companies in the industry improve performance, often according to the parameters set out by the market leader.
11) Lower costs of compliance, better relations with regulators, anticipate or shape regulations	<ul style="list-style-type: none"> Compliance costs can be lower for companies with a track record of being environmentally-focused An increasing number of companies are acting proactively on ecosystem service issues, particularly climate change / carbon
12) Enhance R&D (research and development)	<ul style="list-style-type: none"> Explore examples of how ecosystem services have enabled innovation and/or broadened strategic possibilities.

Adopted from : Waage & Roberts (2007);Thinking like a sales Person: Finding New, Private Sector Customers for Ecosystem Services; Forest Trends, 2007

In order to assess the relevance of particular risks or benefits, companies should start by asking⁴:

- Have we assessed our reliance on ecosystem services, whether these demands are sustainable and potential alternatives?
- Do we have adequate information on the current and projected state of these ecosystem services over the time frames relevant to our business?
- Have we evaluated the potential for nonlinear changes in services on which our business or suppliers depend?
- Do we have any programs or plans to minimize impacts on ecosystems or contribute to maintenance and enhancement of ecosystem services?

BUSINESS ACTION⁵

Companies can pursue several steps to prepare for these risks and/or take advantage of emerging opportunities, including:

- **Assess impacts and dependence:** Conduct a systematic review of impacts and dependence on ecosystem services, covering direct operations as well as those of suppliers and customers.

⁴ <http://www.millenniumassessment.org/en/Products.aspx>

⁵ Adopted from "Business and Ecosystems" – *Ecosystem Challenges and Business Implications*; - Issue Brief by World Resources Institute; World Business Council on Sustainable Development and IUCN (2007)

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- **Assess the status of relevant ecosystem services and key trends:** Consider the conditions of the ecosystems nationally and regionally as well as factors driving these trends and other significant users of these services.
- **Explore and pursue new business opportunities:** Use the assessment to identify, opportunities emerging in response to ecosystem changes, including new technologies, markets, businesses and revenue streams.
- **Develop appropriate corporate strategy, policy and operational responses,** such as “avoid, minimize, mitigate and offset” to reduce impacts, as well as clear targets for improvement, reports on the results
- **Support government policies that align incentives with actions that sustain ecosystem services**

THE SURVEY OF PROSPECTIVE BUYERS OF WATERSHED SERVICES IN UGANDA

It is with the above background in mind that a survey of prospective buyers of watershed services was carried out in Uganda. The survey, which took place from February to June 2007 aimed to explore whether businesses in Uganda:

- are becoming aware of linkages between their core operations and critical ecosystem services on which they rely, and
- see a business case for investing in the restoration and maintenance of ecosystems for reliable and flows of ecosystem services.

Participating companies include beverage manufacturers; soft drinks bottling companies; breweries; district/municipal water companies, electricity distribution companies and exporters of cut flowers. These companies were selected on the basis of their dependence on water for all or part of their business,

PRELIMINARY FINDINGS

Assessing Impacts and Dependence on Ecosystems:

All companies surveyed named water as the resource most critical to their business. Most of them draw their water from Lake Victoria, with the exception of the district/municipal water companies which draw their water from underground through the use of boreholes. The flower exporters also own drilled licensed bore holes and have some small shallow wells which they use as back-up. The also mentioned using green house water collection from rain water

Water is used for a variety of activities including as an input for beverage manufacturing; running the turbines for the electricity company; watering the flowers; and domestic household activities.

Energy/Electricity was the second most critical resource and most of the companies surveyed depend on electricity generated from water (hydro-power).

The electricity distribution company stated other impacts on ecosystems unique only to their operations such as use of transmission line poles extracted from the forests; clearance of vegetation along transmission line routes which sometimes results into destruction of fauna and flora;; noise emissions from thermal power ;Gaseous emissions from thermal power; waste oil disposal and storage of persistent organic pollutants in the soil, water, air during their operations and lastly resettlement and compensation for property destroyed along the line routing.

Assessing the Status of Relevant Ecosystem Services and Key trends:

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Most of the beverage manufacturers depend on water from Lake Victoria. The water along the Lake Victoria Port Bell contains a lot of algae and remnants of the water hyacinth. The lake bay area also receives considerable amount of pollution from runoff especially since most of the channels from Kampala city lead to the lake. The poor water quality can be attributed to effluent from flower farms and industries around Lake Victoria, and silt from run-off

Secondly, the water levels of Lake Victoria have been going down and there are projections that they will continue to do so in the next 5 to 10 years (statistics not available). For the electricity distribution company, the reducing water levels in the lake, which act as a reservoir, have resulted into reduced water available for generation. The installed capacity is under utilized because of water shortage.

Good electricity poles are in shortage in Uganda so most of them are now imported from South Africa. Due to land shortage from high population growth, no land will be allocated for growth of poles and the shortage will continue. Eucalyptus poles have high nutrient and water demand and are not a sustainable option.

Diesel for thermal power is imported from Kenya and recently there was a shortage due to pipeline breakage. World oil reserves are dwindling making this an unsustainable source of power. Further, the diesel-generated power is expensive and electricity tariffs have increased recently seriously affecting consumer confidence in the sector. Oil reserves are dwindling and if Uganda commences the extraction of its own oil from Lake Albert areas, there might be considerable ecological degradation (water, soil, and air pollution)

For the cut flower exporters, finding alternate means of energy increases the costs of producing cuttings and has affected plans for expansion. For example, the severe power outages last year resulted into failure to meet export volumes required by customers in time. As a result the overall revenue from flower exports in Uganda dropped from US\$ 24 million to US\$ 20 million in 2006⁶

All the companies cited climate change as a big threat – The flower exporters and the District water supplier raised concerns about the canals drying up during recent periods of prolonged drought which are becoming more frequent. Companies also expect water stress due to climate change. The electricity distribution companies were concerned that less water will be available for power generation. Already, some companies require water abstraction permits from the Directorate of Water Development which now have even more strict approval conditions to use water. Climate change is also due to environmental degradation in the water catchment areas which results into less rain and water fluctuation in the lake. Swamps are also drying out as human settlement along the valley intensifies.

Assessing corporate response/strategy to deal with ecosystem changes -

Most of the companies surveyed have made investments to respond to ecosystem changes: The beverage manufacturers have built water reservoirs on their plants which store water for up to two days. Some of them recycle 80% of the water that they use. The beverage companies also have water treatment plants & waste treatment plants. One of the beverage manufacturers cited a service level agreement they have with the National Water and Sewerage Corporation (NWSC) to maintain a certain level of water quantity and quality. They test the samples of the water on site to ensure that NWSC is fulfilling the terms of the agreement. In doing this, they also ensure that all persons within the vicinity of the plant benefit from the agreement by getting constant and clean water.

The flower companies said they have supplemented the water shortages with drilling of bore holes, construction of water collection reservoirs for rain water harvesting, and tree planting.

⁶ Uganda Bureau of Statistics 2006 Export figures

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The district water system advises communities to form water user committees. The water user committees plant grass and dig terraces in their gardens in order to avoid soil erosion

Most companies also said they have an environmental policy to address environmental issues in and around their companies. For example, some of the companies have *Safety, Health and Environment Policies under which* employees are trained on safety health, and environmental issues. However, implementation of some of the issues is costly, so the companies have not achieved all the requirements in the policy.

Corporate Social Responsibility Activities

Most companies are engaged in CSR activities ranging from

- promoting sound water resource management and sustainable service delivery in the areas where they operate;
- ensuring access to constant and dependable water supply and enhance protection of the environment for women, children and other vulnerable community members who are recovering from years of displacement due to the war in Northern Uganda;
- assisting communities to harvest rainwater by training them and construction of water tanks; aimed at easing the burden of fetching water for the rural women in an area that already receives a lot of rainfall but has no technology for utilising the water adequately
- Community tree planting initiatives

Corporate strategy – looking forward:

The beverage manufacturers plan to minimise water usage by modifying technology – they aim to use machines that minimise the use of water and other resources

The electricity sector has not yet articulated a strategy yet to deal with the shortages. However the Ministry of Energy is promoting other sustainable alternative sources of energy like mini hydros (small rivers), solar power, wind power, Biomass energy, biogas, etc. The electricity sector still needs a strategy on water conservation. Currently the water release policy in the hydro power stations is controlled by Directorate of Water Development(DWD) The companies are abiding by this and other policies such as the Agreed Curve. DWD also continuously monitors the water quality .

As the demand for water access and quality in the districts continues to grow, the National Water and Sewerage Corporation (NWSC) is working out avenues of extending the current urban water lines in Kampala city to the outskirts and rural areas. The district also sensitises the water committees on water conservation by showing them how to maintain and reserve the existing water recourses by protecting them (constructing shallow wells?)

All companies said it was critical for natural resources management to integrated in the company strategies. This would enable market-based mechanisms to be part of the company programs. For example water, which is a critical natural resource for ever company, should be paid for on at market-based rates. (the current tarrifs are very low). However, it would take a while to change the mindset of water users because they always think that natural resources are free and should not be paid for.

OBSERVATIONS – Would companies in Uganda pay for Watershed Services?

All the companies that participated in the survey demonstrated awareness of the linkages between their core operations and critical ecosystem services on which they rely; in particular water. They also have invested substantially in anticipation for any shortages in future shortages. However, all of them did not have plans to and are not aware of what they can do to restore and maintain the ecosystems. Therefore, there is need for them to be educated on the concept; and make the case that if they did

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invest in this, they would be able to cut costs on current investments that they are making to ensure both water quality and water quantity.

NEXT STEPS

Base line studies on hydrology, which include identifying and locating specific areas within the watershed which contribute the most to the water problem (water shortages or poor water quality) These studies would also indicate where and how land use changes must be introduced so as to reduce and eventually eradicate the sources of such problem.

Use the study to make a business case for investing in the restoration and maintenance of ecosystems for reliable and flows of ecosystem services.

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