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## **Potential Impacts of the Financial Crisis on Natural Resources and Biodiversity**

**Context:** For most of this decade, high rates of economic growth, compounded by population growth and rising per capita consumption by growing middle classes in China, India, Brazil, and oil-producing nations were driving up global demand (and prices) for energy, metals, building materials, other natural resources, grains, fish, meat, and dairy products. In the first half of this decade world GDP grew at more than four percent a year. The resulting rapidly increasing resource extraction and food production exacerbated already severe pressures on forests, water quality, and biodiversity in developing countries.

In the past year a massive worldwide financial crisis originating in housing and mortgage-backed securities markets has emerged.<sup>1</sup> The crisis, coupled with the cumulative impact of sharply higher world market prices for petroleum and other commodities, has led to a slow down of economic growth.<sup>2</sup> The world as a whole now faces a serious and possibly prolonged economic slowdown that will result in slower growth or, in some countries, even temporary downturns of production, income and employment. This briefing focuses on the likely impacts of this crisis and economic slowdown on natural resources, and on natural resources management (NRM), not the impacts of the earlier economic boom on such resources.<sup>3</sup>

**Declining demand due to economic growth slowdown - pros and cons:** The slow down has already reduced demand for energy and many natural resources, causing commodity prices to fall and relieving some forms of these pressures, but much of this is probably temporary, due to the fundamental issue of an ever-increasing population needing food, energy, and water. Decreased disposable income could mean a shrinking in the demand for “luxury” exports that have negative impacts on biodiversity, such as products derived from endangered species (ivory, skins, pets, specialty foods, folk medicines). If well managed, this could yield some improvements in sustainable husbandry of renewable natural resources.

On the other hand, declining incomes are also likely to reduce demand for high-value specialty crops certified as “organic,” “free-trade,” or “biodiversity-friendly,” such as shade-grown/bird-friendly coffees, sustainably harvested woods and essential oils, etc. Such products bring significantly higher revenues (more domestic value-added) to developing countries than more conventional commodities.

In addition, production for commercial markets could be supplanted by more direct and/or speculative pressures to extract/deplete natural assets such as timber for cash and fuel, expand unsustainable subsistence agriculture practices or large-scale aquaculture on ever-more marginal lands, retaliate against crop- or livestock-raiding wildlife, and poach fish and wildlife for protein. To deal with such pressures, targeted economic growth (EG) and poverty reduction (PR), as well as NRM, activities are needed.

**Tourism** is among the largest earners of foreign exchange and employment in many developing countries. Declining discretionary incomes would likely lead to decreased tourism overall, and changes in tourist destination patterns (more domestic, less international), which could translate into reduced incentives for biodiversity conservation. Wildlife in over-frequented areas such as the Galapagos Islands, Kenyan parks, and Egyptian coral reefs could get some reprieve. However, this benefit may be countered by increased harvests of wildlife and damage to their habitats due to local human populations’ experiencing a greater need for subsistence resources, leading to greater human-wildlife conflict.

**Conflict:** It may be worth remembering that the word *rival*, important to resource economics, comes from the Latin *rivalis*, meaning *one using the same stream [river] as another*. Population will continue to grow

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despite this economic downturn. Without investment in technologies and organization to increase land and water productivity to offset shrinking per capita availability, conflict over resources is likely to increase. If the financial crisis translates into protracted global reductions in investment, employment, and incomes (increased poverty), one may expect to see cost-cutting measures that harm sustainability, such as further-reduced attention to managing “externalities” (environmental and social standards), exacerbating conflicts.

Furthermore, since government agencies such as forestry and fisheries departments, agricultural extension services, and protected area agencies are rarely a priority in times of austerity, shrinking government revenues are likely to lead to funding cuts for institutions of natural resource governance and biodiversity conservation. NGOs involved in conservation activities may also see a falloff in funding, and have to cut back in their activities. The combination of increased poverty and reduced management/regulation could exacerbate pressures, not just on natural products being directly consumed for survival, but also on more basic resources and ecosystem services on which continued production of these resources depends.

**Climate/Carbon markets.** Difficulties in debt financing and credit availability could affect the supply, demand, and prices of carbon credits, as companies struggle to fund capital-intensive offset projects in both the regulated and voluntary markets. Despite the recent closure of carbon trading desks at some troubled investment banks and declining prices in the near term, some believe the emerging carbon markets are relatively insulated from the economic crisis because of existing emissions cap obligations, and increasing recognition that innovators in energy efficiency and emissions-reducing technologies will have strategic competitive advantages in a climate-challenged world. Much depends on whether the crisis will delay passage of a U.S. CO<sub>2</sub> cap-and-trade program or carbon tax. Without the assurance of clear legislative signals to level playing fields and drive markets, the voluntary markets will be in a precarious position.

**Biofuels.** In addition to contributing to rises in food prices, U.S./OECD subsidies and production mandates for corn-based ethanol and soy-based biodiesel may have indirectly stimulated the recent rise in deforestation in Brazil (partly to replace American soy formerly exported to China for livestock feed), by stimulating soy expansion and consequently displacing cattle production northward into the Amazon. The financial crisis, added to recent calls by OECD, FAO, and various food security and environmental concerns to reduce the mandates/subsidies for first-generation biofuels, could help ease these pressures.

**Conclusion:** Impacts of the on-going economic crisis for the NRM sector, bio-diversity, and competition over resources in general are likely to be mixed. However, government budget shortfalls in developing countries and straitened circumstances of households, especially poor households in rural areas, certainly will tend to have a negative impact on NRM. Coupled with ongoing massive losses from destruction of natural capital and ecosystem services to economies, this suggests consideration of increases in economic assistance for integrated NRM-EG-PR activities in developing countries during this period is warranted.

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<sup>1</sup> Large amounts of wealth have been wiped out in financial markets, driving investors away from corporate securities into U.S. Treasury bonds, seizing up credit markets, and dampening aggregate demand for goods and services.

<sup>2</sup> Recently released data show that the US has been in a recession for about one year, dampening US demand for imports and thus adversely impacting the economies of many trading partners. However, the resulting rollback of commodity prices does not seem to have moderated the pace of the slowdown.

<sup>3</sup> Looking beyond the current period, a recent EC study led by Deutsche Bank Managing Director of Global Markets Pavan Sukhdev ([http://ec.europa.eu/environment/nature/biodiversity/economics/index\\_en.htm](http://ec.europa.eu/environment/nature/biodiversity/economics/index_en.htm)) suggested that *annual* losses to the global economy from pre-financial crisis levels of destruction of “natural capital” (*assets* such as forests, fisheries, and soils, plus ecosystem *services* such as water cycling and storm protection) might exceed the *one-time* losses from this financial crisis. This “*Interim report*” on “*The economics of ecosystems and biodiversity*” (ISBN-13 978-92-79-08960-2) gauged natural capital losses at \$2 trillion to \$5 trillion per year, according to page 10 of Sukhdev’s May 2008 presentation at the Convention on Biodiversity COP9 (<http://www.cbd.int/doc/meetings/cop-bureau/cop-bur-2008/cop-bur-2008-10-teeb-en.pdf>). Sukhdev more recently compared these figures to the losses in stock market values from the current crisis, considered in October 2008 to be \$1.0 to \$1.5 trillion *cumulative* (BBC 10-10-08, “Nature Loss ‘dwarfs bank crisis’” (<http://news.bbc.co.uk/2/hi/science/nature/7662565.stm>)). But both of these estimates are preliminary, and could be the subject of separate technical briefs later.