



Global Public Sector Trends in Ecosystem Services, 2009-2012

February 2013



About This Report

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Introduction

Ecosystem services are gaining the attention of government officials around the world. From 2009 through 2012, BSR has documented a wide and growing range of public-sector activities related to the issue. Given the breadth and growing depth of public sector work on ecosystem services, it is increasingly clear that it now has the potential to shape future policy and regulations as well as government expectations of the private sector, particularly on public lands.



For businesses, the questions about this emerging domain are many and include where, how, and on what time frame ecosystem services may gain traction in specific governments around the world. This work is linked with the growing efforts on natural capital and integrating monetary value, along with more traditional measures, into gross domestic product (GDP). The potential implications are numerous and could ultimately include transferring the costs of using ecosystem services to beneficiaries and user groups, including the private sector.

This document was developed to help businesspeople track the public sector's uptake of ecosystem services concepts around the world. It is based on four years of research by BSR's [Ecosystem Services Working Group](#). We hope that it offers new intelligence on the uptake of ecosystem services concepts within the public sector around the world. The insights in this report are especially relevant to companies that have, or are crafting, internal policies on biodiversity and ecosystem services (BES).

To the best of our knowledge, both this assessment of policy uptake and the detailed tables in the appendix offer a unique view of emerging public-sector trends vis-à-vis ecosystem services. We have documented the full range of

Ecosystem Services

Ecosystem services are the benefits that functioning ecosystems provide to people. Though they seldom acknowledge them, people realize these benefits in terms of factors that contribute to personal health, jobs, and safety.

The 2005 Millennium Ecosystem Assessment (MEA) organizes ecosystem services into four overarching categories:

- » **Provisioning services**, which are goods or products produced by ecosystems (e.g., food, freshwater, wood, fiber, etc.)
- » **Regulating services**, which are natural processes regulated by ecosystems (e.g., regulations concerning climate, food, or disease; water purification; etc.)
- » **Cultural services**, which are nonmaterial benefits obtained from ecosystems (e.g., aesthetic, spiritual, educational, recreational, etc.)
- » **Supporting services**, which are functions that maintain all other services (e.g., nutrient cycling, soil formation, primary production, etc.)

Source: Millennium Ecosystem Assessment, www.unep.org/maweb.

government action, including new task forces convened, voluntary programs formed, administrative decisions issued, and, of course, new regulations passed. We have also tracked activities undertaken by NGOs when we felt that their work could influence governments. The breadth of our tracking efforts reflects the reality that the ecosystem services domain is in many ways still emerging. There are numerous potential avenues of influence that could ultimately shape a legislative agenda or specific regulations.

The questions that we have asked in our research over the past four years include:

- » *Are there new ecosystem services-focused government policies and legislation or regulation?*
- » *Are there existing or emerging government-supported, voluntary incentive-based initiatives that focus on ecosystem services?*
- » *Have governments and/or multilateral organizations issued reports that focus on ecosystem services and could signal a change in their approach?*
- » *Are there ecosystem services-based NGO or voluntary initiatives that appear to be influencing (or seem likely to influence) policy makers?*

Our research clearly shows that public-sector exploration of ecosystem services concepts is on the rise globally. (See figures below for both specific geographies where activity is underway as well as illustrative initiatives in various nations.) It is not surprising, therefore, that public-sector funds are increasingly available to define, measure, and map ecosystem services, as well as apply the concepts in decision-making processes. We anticipate that such activity will continue to expand in the coming years.

In reading this report, we suggest that corporate decision makers consider a few follow-up questions:

- » *What are the implications of this government activity for our business?*
- » *What types of projects should our company become engaged in if public-sector activity increases and/or policy signals strengthen?*

For insights on these questions, please see [BSR's Ecosystem Services Working Group](#) website for other reports that provide details about potential pathways forward for business, particularly a recent [piece](#) on scenarios for how ecosystem services uptake may play out by 2025.

Finally, while we have sought to provide global coverage of trends, there may well be a sample bias inherent in our conducting this research in English. Therefore, even though we have documented activity around the world, there are more entries for the United States (U.S.) and the United Kingdom (U.K.) than for other countries. (Please see Figure 2, which shows the nations covered by our public-sector tracking data in sizes that are proportional to their frequency of inclusion.) To address this gap, we have sent earlier drafts to colleagues around the world for review and input. We may well have still missed public-sector activity, particularly if it was written about in languages other than English.

We welcome additions to this report as well as our ongoing research on this topic. Please send comments and additions to Sissel Waage at swaage@bsr.org and Corinna Kester at ckester@bsr.org.

Figure 1. Global Public-Sector Activity Related to Ecosystem Services

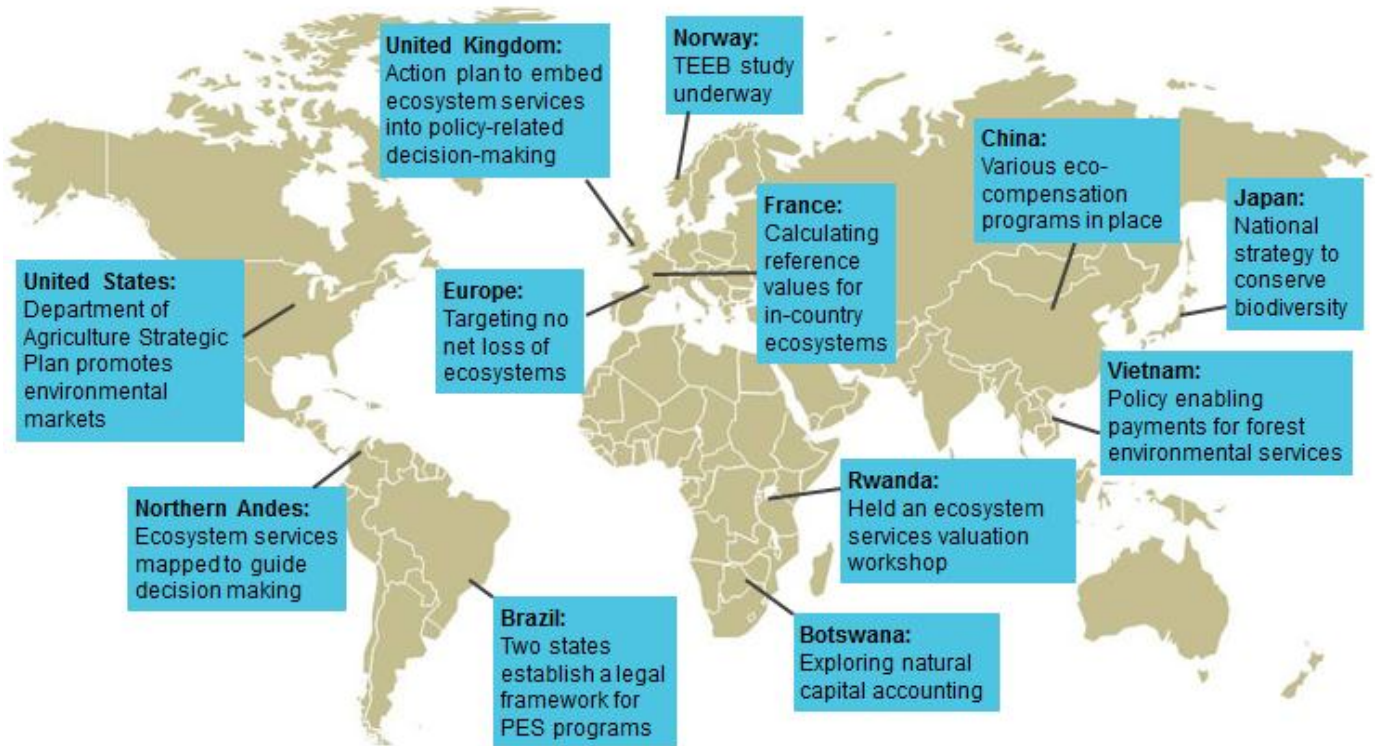


Figure 2. Frequency of Country Inclusion



Emerging Trends

Growing Support for Integrating Natural Capital into GDP

“More than fifty countries and 86 private companies have joined forces behind the move to factor the value of natural assets like clean air, clean water, forests, and other ecosystems into business decision making and countries’ systems of national accounting.

Fifty-seven countries and the European Commission are supporting a communiqué that calls on governments, the UN system, international financial institutions, and other international organizations to strengthen the implementation of natural capital accounting around the world.

Private-sector companies and financial institutions (like Wal-Mart, Woolworths Holdings, Unilever, Standard Chartered, and Caisse des Dépôts) ... have reaffirmed their commitment to collaborate globally to integrate natural capital considerations into their decision-making processes.”

Source: World Bank, “Massive Show of Support for Action on Natural Capital Accounting at Rio Summit,” www.worldbank.org.

Within the emerging field of ecosystem services policy, five trends appear to be underway.

1. National governments around the world are exploring expansion of gross domestic product (GDP) measures to include natural capital, which would draw in ecosystem services measures.

The year 2012 may prove to be a turning point in which a critical mass of national government officials publicly committed to measuring natural capital and factoring it into decision-making processes, along with more traditional measures. Specifically, during the June 2012 [Rio+20](#) conference, the [Natural Capital Declaration](#) was issued. By the end of year, 41 financial institutions and 23 NGOs became [signatories](#).

While numerous efforts are in early stages, a [World Bank report](#) documents 24 nations that are deploying some form of natural capital accounting in economic decision-making processes. Advocates assert that this approach provides policy makers with more accurate information about national wealth.

This work is synergistic with that of the 11 countries engaged with the World Bank’s [Wealth Accounting and the Valuation of Ecosystem Services \(WAVES\)](#) global partnership focused on “ensuring that the national accounts used to measure and plan for economic growth include the value of natural resources.” The effort includes representatives from the governments of Australia, Botswana, Canada, Colombia, Costa Rica, France, Japan, Madagascar, Norway, the Philippines, and the U.K.

2. Public-sector exploration of ecosystem services valuation is on the rise.

Initiatives focused on the economic valuation of ecosystem services are growing, as is illustrated by:

- » [The Economics of Ecosystems and Biodiversity \(TEEB\) reports](#) which were issued in 2010 and highlighted both the public- and private-sector imperative to begin considering ecological factors within national as well as corporate accounting calculations. It was developed in response to a German government proposal as part of the Potsdam Initiative for Biological Diversity.
- » In 2011, the **European Environment Agency (EEA) issued a new framework for [ecosystem capital accounting](#)** that highlights interactions between ecosystem services and the economy.
- » Starting in 2010, the **U.K. government began building on an action plan that lays out a strategic approach to embed ecosystem services more fully into policy-related decision-making**. Recent efforts propose a framework for payments for ecosystem services (PES) and document a baseline assessment of ecosystem services. Specifically, the UK National Ecosystem Assessment was published in 2011, which was the first comprehensive assessment of the state of, and trends associated with, the UK ecosystems and its services as well as benefits to the economy and human wellbeing. The UK government followed this report with the Natural Environment White Paper published in June 2011. One high level commitment from this white paper is the creation of the [Natural Capital Committee](#) to advise government on the state of English natural capital. The first state of natural capital report is due to be published in early 2013. Finally, the Office for National Statistics (ONS) and Defra published its

Peru's Watershed Services Incubator

In 2012, the Peruvian Ministry of Environment and NGO Forest Trends launched the [Watershed Services Incubator](#). The incubator is intended to help Peruvian cities develop financing mechanisms for watershed protection. It is also hoped that this work will provide a template for use in other countries.

Note: For details, see “[Can Peru's Swiss-Style Finance Model Erase the Global Water Crisis?](#)” in *Forbes* and the [Ecosystem Marketplace](#) coverage of this effort, as well as many other payments for watershed services in their “[State of Watershed Markets](#)” report.

Vietnam's Decree 99: Policy on Payment for Forest Environmental Services

“This Decree provides for the policy on payment for forest environment services in Vietnam... Forest environment has use values to meet social and human needs, referred to as use values of the forest environment, including soil protection, water source regulation, headwater protection, coastal protection, natural disaster prevention and combat, biodiversity, carbon sequestration and retention, tourism, habitat and spawning ground of organisms, timber and other forest products... Beneficiaries of forest environment services shall pay for these services to owners of forests providing such services.

Decree 99 (2010), Minister of Agriculture and Rural Development, Vietnam

[roadmap](#) on natural capital accounting for moving forward work on these issues.

- » **Growing numbers of regional and national TEEB studies** are underway or in planning phases, including in Brazil, China, Germany, India, Norway, and Southeast Asia.

3. Governments around the world are showing interest in attracting investment in ecosystem services, such as through PES and eco-compensation mechanisms.

In Asia, China and Vietnam are exploring eco-compensation and PES, respectively. Local governments in China have been considering various approaches for eco-compensation, such as transferring funds from the central government to maintain public forests, placing taxes and fees on mineral resources, and establishing payment mechanisms on upstream parties within watersheds. Two reports released in 2011 by the Asian Development Bank focus on institutional challenges and sources of finance for these initiatives. Even earlier, in 2009, Vietnam passed Decision 380, the pilot policy for developing a legal framework and national policy on payment for its forest environmental services. In 2010, Vietnam issued Decree 99/ND-CP focused on Payment for Forest Environmental Services, with implementation across all forests in the country.

In Latin America, the nations of Brazil, Costa Rica, and Peru continue to explore financial incentives for investing in the restoration and maintenance of ecosystem services. In 2012, the Peruvian Ministry of Environment and NGO Forest Trends launched the [Watershed Services Incubator](#) to help Peruvian cities develop financing mechanisms for watershed protection. Their intention is to create a watershed-services investment approach that can be applied in other countries. In Brazil, the states of Acre and Amazonas have passed laws to establish a legal framework for measuring and valuing ecosystem services so that they can implement PES programs.

In Europe, Spain released the first draft of its forest action plan in 2011, with links to PES. In the U.K., a team commissioned by the Department for Environment, Food, and Rural Affairs (Defra) developed a draft “[Best Practice Guide for PES](#)” that was released in late 2012. Defra is planning to publish jointly the Best Practice Guide for PES and an Action Plan for PES in Spring 2013.

It is noteworthy that some of these financial transfers from the central government for maintaining forests are not new, and indeed have been a core element of financing for biodiversity and ecosystem services traditionally. Yet, the distinction is that a growing number of players are exploring the idea of financing to cover the cost of managing ecosystem services (or capturing user fees from beneficiaries of the services). The most accurate reading of these initiatives is *not* that they are about voluntary investments as a public good, but rather a new form of regulation to drive investment in natural resource flows. For this reason, the proliferation of public sector activity in this area of PES and eco-compensation is worthy for following closely.

4. Public sector-funded research on ecosystem services is on the rise.

Europe, the United States, and China continue to explore a wide array of government-supported research and voluntary initiatives related to ecosystem services, despite the absence of specific, targeted policies. For example, in China—where already strained natural-resources face increasing pressure—the government has initiated academic research on ecosystem services

assessments. This research will likely inform the analytical approaches used in crafting eco-compensation mechanisms and, perhaps ultimately, broader policies.

Public-sector research on ecosystem services is being shared in a growing number of well-attended academic conferences. Examples include the December 2012 [ACES conference](#) (ACES stands for “A Community on Ecosystem Services Linking Science, Practice, and Decision-Making”) and the upcoming 2013 [Ecosystem Services Partnership conference](#). In addition, ecosystem services sessions are increasingly included at other relevant conferences, such as those of the [International Association of Impact Assessment \(IAIA\)](#) and the [Society of Environmental Toxicology and Chemistry \(SETAC\)](#).

5. Engagement between the private and public sectors on ecosystem services is limited, but it has grown each year.

Despite the public sector’s wide and expanding set of exploratory activities on ecosystem services, relatively few companies are actively engaged around this issue. While more companies than ever before flag ecosystem services as an issue that they are tracking, few have corporate policies and/or personnel and budgets allocated to managing their ecosystem services impacts and dependencies. (For a list of companies that name ecosystem services, please see the appendix to BSR’s 2012 report [“The Quiet \(R\)Evolution in Expectations of Corporate Environmental Performance.”](#)) Yet, private-sector activity may be on the rise, as indicated by:

- » The global [TEEB for Business](#) launch in November 2012, which provides another platform for corporate engagement on the issues
- » The corporate support for the [Natural Capital Declaration](#), which was launched at the June Rio+20 meeting and continues to be open to new signatories
- » The U.K.’s launch of the [Ecosystem Markets Task Force](#), a business-led initiative that brings together U.K. companies to look for opportunities to “drive green growth,” including through markets that value and protect the environment. (The [interim report](#) by the EMTF was published in November 2012, with the final report to be launched in March 2013.)

We anticipate further private-sector engagement with ecosystem services following from the growing number of training initiatives that are focused on the private sector. For example, current training initiatives include: the World Business Council on Sustainable Development’s (WBCSD) [Business Ecosystems Training \(BET\)](#), the UN Environment Programme and Development Programme (UNEP-UNDP) and other partners’ training on [“Valuing and Mainstreaming of Biodiversity and Ecosystem Services into Development Planning.”](#) and the Equator Banks’ training for member-company analysts, which is driven by changes in due-diligence protocols that now explicitly include ecosystem services.

Pathways Forward

Collaboration between the public and private sectors will likely be a key component in accelerating the uptake of ecosystem services concepts and applications. Private-sector decision makers will need to understand ecosystem services concepts and the state of emerging best practice for assessing ecosystem services impacts and dependencies. Public-sector decision makers will need to understand the range of corporate processes, protocols, and other approaches that are currently in place to measure and manage environmental and social impacts. Some of these processes are regulated, but many are voluntary and have emerged from corporate history and culture, as well as industry best practice.

Ultimately, the private sector's implementation of approaches to measure and address ecosystem services impacts and dependencies will be contingent upon identifying the differences between current corporate processes and what is needed to integrate ecosystem services approaches. On a practical level, to adopt ecosystem services metrics, analytical tools, and management approaches, the private sector must adapt current processes and possibly develop new ones. Given the wide variety of ecosystems around the world, the details of this work may need to be calibrated for specific contexts and may be affected by data availability. (For details on the tools for measuring ecosystem services impacts and dependencies, please see related reports from [BSR's Ecosystem Services Working Group](#), particularly our 2011 report comparing various tools and our 2013 [report](#) on the state of play of the tool landscape.)

Effective collaboration between public and private sectors on *how* to operationalize and integrate ecosystem services concepts—within both public- and private-sector measurement and decision-making processes—would likely move the domain forward and accelerate adoption. We hope that this report will offer both private and public sector representatives with the rationale to engage with ecosystem services more fully, as the trends for uptake seem to warrant.

Appendix:

Detailed Uptake of Ecosystem Services by Year, Region, and Country, 2009-2012

2009

AFRICA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
- » *Government and Multilateral Reports*
 - » **Tanzania:** The 2006 government paper [“Integrated Ecosystems Assessment in Tanzania”](#) identifies concrete ways in which ecosystem management can contribute to poverty-reduction goals.
- » *Voluntary Nongovernmental Initiatives*
 - » **East Africa’s Eastern Arc Mountains:** Experts from seven countries launch the [application](#) of the InVEST tool in the Eastern Arc Mountains, with a focus on analyzing the mountains’ water supply, carbon storage and sequestration, ecotourism, and non-timber and timber products.

ASIA AND AUSTRALIA

- » *Policy or Legislation*
 - » **Vietnam:** [Decision 380](#) sets up a pilot policy for Payments for Forest Environmental Services, which enables the collection of money from entities who benefit from ecosystem services provided by healthy forests.
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
 - » **China:** The NGO Forest Trends studies and documents [eco-compensation and ecosystem services](#), including the Conversion of Cropland to Forests and Grasslands Program and the Forest Ecosystem Compensation Fund.
 - » **Japan:** [The Japan Long-Term Ecological Research network](#) offers [scientific data and information](#) and predictive understanding of ecological processes for the scientific community and policy makers.
- » *Government and Multilateral Reports*
- » *Voluntary Nongovernmental Initiatives*
 - » **Asia:** The [Ecosystem Services Management in Asia project](#) aims to improve understanding of the effects of land management on ecosystem services that are provided by upper tributary watersheds in China, Indonesia, and Thailand.

CENTRAL AND SOUTH AMERICA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
 - » **Colombia:** The Natural Capital Project establishes a [three-year agreement](#) with the Ministry of Environment to provide a tool to support decisions on locations of natural capital.
 - » **Costa Rica:** The country's [Environmental Services Payment Program](#) grants financial recognition to forest and plantation owners for the environmental services that they maintain through management practices.
 - » **Ecuador:** The Natural Capital Project is working with the country's national planning agency to [manage biodiversity impacts of infrastructure](#). InVEST maps provide an ecosystem services data layer.
- » *Government and Multilateral Reports*
- » *Voluntary Nongovernmental Initiatives*
 - » **Brazil:** The [Agroambiente Project](#) works to maintain the highest level of environmental services in agricultural landscapes and ecosystems.
 - » **Colombia, Costa Rica, Ecuador, Panama, Peru, the southern tip of Nicaragua, and Venezuela:** The Natural Capital project is [mapping ecosystem services](#) to generate information that can guide and inform decision making.
 - » **Costa Rica:** Osa Conservation Area [evaluates the cost-efficiency](#) of payments for ecosystem services (PES) to private landowners.
 - » **Colombia, Costa Rica, and Nicaragua:** The World Bank's [Integrated Silvopastoral Approaches to Ecosystem Management Project](#) monitors multiple ecosystem services.

EUROPE

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
 - » **U.K.:** The Department for International Development and the National Environment Research Council's (NERC) [Ecosystem Services for Poverty Alleviation Program](#) begin to gather data on ecosystem services, their full value, and links to sustainable poverty reduction.
 - » **U.K.:** The [Department for Food, Environment, and Rural Affairs \(Defra\) research project](#) aims to establish the basis for an ecosystems approach and how it might be used to effectively assess the benefits that the natural environment provides.
- » *Government and Multilateral Reports*
 - » **EU:** The European Academies Science Advisory Council (EASAC) issues a policy report titled ["Ecosystem Services and Biodiversity in Europe."](#)
 - » **Finland:** The Finnish Environment Institute issues a report titled ["Vulnerability Assessment of Ecosystem Services for Climate Change Impacts and Adaptation."](#)
- » *Voluntary Nongovernmental Initiatives*

NORTH AMERICA

» *Policy or Legislation*

- » **United States:** The [Food, Conservation, and Energy Act of 2008 \(Farm Bill\)](#) establishes technical guidelines that measure the environmental service benefits from conservation and land-management activities.
- » **United States:** The [Oregon Senate Bill 513](#) creates an Ecosystem Services Market Working Group to advance policy recommendations for creating a framework of integrated ecosystem services markets in Oregon that produce positive ecological and economic outcomes.

» *Administrative Government Decisions*

- » **United States:** The Department of Agriculture creates the [Office of Environmental Markets](#).
- » **United States:** The Environmental Protection Agency's (EPA) Office of Research and Development focuses on [ecosystem services research](#).
- » **United States:** The U.S. Army Corps of Engineers and the U.S. EPA begin implementing the 2008 [regulations on compensatory mitigation](#) of impacts to aquatic resources under Section 404 of the Clean Water Act (CWA). These regulations introduce ecosystem services into the mitigation decision-making standards.

» *Voluntary Government-Supported Initiatives*

- » **United States:** The Virginia Department of Forestry Ecosystem Services Initiative creates an [ecosystem services portfolio](#).
- » **United States:** The EPA Agriculture and Food Research Initiative conducts [research on ecosystem services](#) in agricultural settings.
- » **United States:** The Department of Agriculture's Natural Resource Conservation Service [grant program](#) supports the conservation of ecosystem services provided by forests in two watersheds.
- » **United States:** The EPA establishes the [Ecological Services Research Program](#), and Duke University's Nicholas Institute establishes the [National Ecosystem Services Partnership](#).

» *Government and Multilateral Reports*

- » **United States:** The EPA Science Advisory Board issues a report titled "[Valuing the Protection of Ecological Systems and Services: A Report of the EPA Science Advisory Board.](#)"
- » **United States:** The EPA Office of Research and Development partners with the University of Vermont's Gund Institute to [study the plains](#) in the upper Midwest, Oregon's Willamette River Valley, coastal areas of North and South Carolina, and Tampa Bay in Florida.
- » **United States:** The Department of Agriculture's Forest Service [quantifies local urban forest composition](#) and its associated ecosystem services and values to improve urban forest planning.

» *Voluntary Nongovernmental Initiatives*

- » **United States:** [Ecotrust Forests LLC](#) shows competitive returns for investors through the production of high-quality timber and pulp combined with the monetization of ecosystem services, including carbon storage, habitat, and water quality.
- » **United States:** The [American Farmland Trust](#) begins to pay farmers for providing such environmental benefits as clean water, carbon sequestration, and wildlife habitat.

- » **United States:** The [Willamette Partnership](#) creates and pilots a shared accounting system for quantifying impacts and benefits to ecosystem services for application to ecosystem markets and beyond.
- » **United States:** The [conservation of red wolf habitat](#) in North Carolina quantifies the economic value of selected ecosystem services benefits associated with such conservation.

GLOBAL

» *Decisions of International Bodies*

» *Voluntary Multilateral-Supported Initiatives*

- » An [Ecosystem Services Assessment](#), conducted jointly by the United Nations University and the Institute of Advanced Studies (IAS), analyzes the links between human well-being and ecosystem services in addressing the environment and development issues associated with achieving the Millennium Development Goals (MDGs).
- » The [UN Environment Programme \(UNEP\) Ecosystem Management Program](#) aims to transform sector-based environmental management into an ecosystem-based approach that integrates forests, land, freshwater, and coastal ecosystems where they affect the overall delivery of ecosystem services.
- » UNEP organizes the [Jakarta Business and Biodiversity meeting](#), during which participants draft the Jakarta Charter on Business and Biodiversity. The chapter emphasizes the value of biodiversity and proposes that economic models and policies need to more accurately reflect ecosystem services. This work highlights the importance of biodiversity and ecosystem services (BES) as a source for future business operations, as well as a condition for new business opportunities and markets.

» *Government and Multilateral Reports*

- » UNEP in collaboration with the International Union for Conservation of Nature (IUCN) and other partners issues [“The Economics of Ecosystems and Biodiversity” \(TEEB\) report](#).
- » A [UN Framework Convention on Climate Change \(UNFCCC\) white paper](#) on climate change adaptation takes an ecosystem-based approach to adaptation.

» *Voluntary Nongovernmental Initiatives*

2010

AFRICA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
- » *Government and Multilateral Reports*
- » *Voluntary Nongovernmental Initiatives*

ASIA AND AUSTRALIA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
 - » **Japan** adopts a new [national strategy](#) to conserve and improve biodiversity, which sets specific targets to be implemented by 2020 and 2050. By 2050, Tokyo is required under the strategy to expand the benefits of ecosystem services for human beings in a sustainable manner, by promoting the coexistence of people and nature.
- » *Voluntary Government-Supported Initiatives*
 - » **China:** The Ministry of Environmental Conservation forms the [China Biodiversity Partnership Framework](#) (CBPF) with national and international governments, NGOs, and businesses to increase the number of protected areas, improve biodiversity measurements, and export conservation learning.
- » *Government and Multilateral Reports*
 - » **Japan:** The Ecosystem Assessment, which had been developing the [Japan Satoyama Satoumi Assessment](#) since 2006, releases its findings in a series of [six reports](#).
- » *Voluntary Nongovernmental Initiatives*

CENTRAL AND SOUTH AMERICA

- » *Policy or Legislation*
 - » **Brazil:** The Acre state legislature establishes the [System of Incentives for Environmental Services](#), an institutional and legal framework for Acre to measure and value its environmental services.
- » *Administrative Government Decisions*
 - » **Brazil:** The [Governors' Climate and Forests Task Force](#), a collaboration of 14 states and provinces in the United States, Brazil, Indonesia, Mexico, and Nigeria, signs a memorandum of understanding to make recommendations to the California Air Resources Board on how California can link its emerging carbon market to the REDD program in the Brazilian state of Acre, Mexican state of Chiapas, and possibly other states or provinces.
- » *Voluntary Government-Supported Initiatives*
- » *Government and Multilateral Reports*
- » *Voluntary Nongovernmental Initiatives*

EUROPE

» *Policy or Legislation*

» *Administrative Government Decisions*

- » **EU:** The European Environment Agency (EEA) and European Commission (EC) presents the [first outline](#) of the EU [biodiversity baseline](#) and proposes the development of Biodiversity Information System for Europe (BISE), which would be both an information and technology tool, as well as a network for building a shared knowledge base for biodiversity policies and targets across Europe.

» *Voluntary Government-Supported Initiatives*

» *Government and Multilateral Reports*

- » **France:** A report commissioned by the government, titled “[An Economic Approach to Biodiversity and Ecosystems Services Contribution to Public Decision-Making.](#)” calculates reference values for French ecosystems.

» *Voluntary Nongovernmental Initiatives*

NORTH AMERICA

» *Policy or Legislation*

» *Administrative Government Decisions*

- » **United States:** The Council on Environmental Quality issues its [Proposed National Objectives, Principles, and Standards for Water and Related Resources Implementation Studies](#), which call for a systematic approach to measuring nonmonetary values (such as ecosystem values) when considering dams, levees, canals, and other projects.
- » **United States:** The [Interagency Ocean Policy Task Force Interim Report](#) provides a [strategy for oceans, coasts, and the Great Lakes](#), which prioritizes nine categories for action, including ecosystem-based management, regional ecosystem protection and restoration, and strengthened and integrated observation systems.
- » **United States:** The government develops a [federal strategy for Chesapeake Bay](#). A National Oceanic and Atmospheric Administration (NOAA) administrator notes, “Ecosystem-based approaches to management will enable progress toward a healthy, sustainable Chesapeake ecosystem . . .”
- » **United States:** The Department of Agriculture develops its [Strategic Plan](#) for 2010 to 2015, which states—under pillar 4 within goal 1—the intent to: “Capitalize on opportunities presented by the nation’s efforts to develop markets for ecosystem services and mitigate climate change.”

» *Voluntary Government-Supported Initiatives*

- » **United States:** Various conservation organizations and government agencies—including the U.S. Environmental Protection Agency (EPA) and U.S. Forest Service (USFS)—collaborate to develop [LandServer](#), a web-based tool that provides farmers and woodland owners a way to assess their natural resources and evaluate their property’s potential to earn money if they implement conservation actions.
- » **United States:** The Department of Defense (DOD) [Environmental Security Technology Certification Program](#) seeks proposals for demonstrations of ecosystem services methodologies and tools for DOD installations.

- » **United States:** The EPA's [Future Midwestern Landscapes Environmental Decision Tool Kit \(FML-EDT\)](#) is a study of biofuels and ecosystem services in the midwestern United States with a key outcome to develop a tool to ensure that biofuels policy and land-use decisions are made in ways that recognize implications for ecosystem services.
- » **United States:** The Keystone Alliance for Sustainable Agriculture's Field to Market collaboration develops the [Fieldprint Calculator](#), a tool designed to look at how crop production operations affect the sustainability of farms. Future versions will include modules that factor in effects on biodiversity.
- » *Government and Multilateral Reports*
 - » **Canada:** The Ontario Biodiversity Council issues a report titled [State of Ontario's Biodiversity 2010](#), which summarizes the state of biodiversity in Ontario based on 29 different indicators.
 - » **United States:** The NOAA Ocean Studies Board [calls for a report](#) to evaluate the loss of ecosystem services in the Gulf of Mexico Large Marine Ecosystem resulting from the Deepwater Horizon oil spill.
- » *Voluntary Nongovernmental Initiatives*
 - » **United States:** The Aspen Institute's [Energy and Environment Program](#) discusses accelerating the integration of ecosystem services principles within the human development paradigm, including regulatory regimes and traditional market and financial mechanisms.

GLOBAL

- » *Decisions of International Bodies*
 - » The [Intergovernmental Platform on Biodiversity and Ecosystem Services \(IPBES\)](#): The UN Environment Programme (UNEP) develops an international mechanism for scientific expertise on biodiversity and the global strategy on Millennium Ecosystem Assessment (MEA) follow-up, which reflects a general agreement on the need for an intergovernmental science-policy platform on biodiversity and ecosystem services.
 - » Revisions to the [International Finance Corporation's \(IFC\) Policy and Performance Standards on Social and Environmental Sustainability](#) focus on ensuring the "continuous benefits arising from ecosystem services" and assessing impacts and dependencies on BES.
- » *Voluntary Multilateral-Supported Initiatives*
 - » The UNEP launches an [electronic series](#) on policy issues related to ecosystem management.
 - » The World Bank launches a partnership on [Wealth Accounting and the Valuation of Ecosystem Services \(WAVES\)](#) to give developing countries the tools they need to integrate the economic benefits of ecosystems (e.g., forests, wetlands, and coral reefs) into national accounting systems.
- » *Government and Multilateral Reports*
- » *Voluntary Nongovernmental Initiatives*
 - » The Ecosystem Services for Poverty Alleviation Program launches a [two-year project](#) (scheduled for October 2010 to September 2012) to develop a conceptual framework that describes how changes in global values of ecosystem services affect equity at local levels.

2011

AFRICA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
- » *Government and Multilateral Reports*
 - » **South Africa:** A World Resources Report [case study](#) traces South Africa's efforts to incorporate biodiversity information into spatial and development planning and create a national strategy for expanding protected areas to conserve biodiversity and promote ecosystem resilience.
- » *Voluntary Nongovernmental Initiatives*

ASIA AND AUSTRALIA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
 - » **Vietnam:** The [Forest Certification for Ecosystem Services \(ForCES\)](#) project contributes to the overall goal that forest biodiversity is conserved through a process where voluntary Forest Stewardship Council (FSC) certification incorporates expanded and enhanced global and national forest management standards, which are applied to emerging markets for biodiversity conservation and other ecosystems services.
- » *Government and Multilateral Reports*
 - » **China:** "[Buyer, Regulator, Enabler: The Government's Role in Ecosystem Services Markets](#)" provides insights for policy makers in China on the development of a national eco-compensation policy framework and discusses the public sector's role in payments for ecological services internationally.
 - » **China:** The Asian Development Bank releases a report titled "[Eco-Compensation for Watershed Services in the PRC](#)" as China seeks new approaches to water management.
- » *Voluntary Nongovernmental Initiatives*

CENTRAL AND SOUTH AMERICA

- » *Policy or Legislation*
 - » **Brazil:** The State of Amazonas [drafts a policy](#) to implement PES programs. The initial draft includes language on "the establishment of an infrastructure and the adoption of collection, analysis, measurement, validation, verification, and valuation systems and instruments for environmental services and products of the State of Amazonas."
- » *Administrative Government Decisions*
 - » **Colombia:** The [National Policy for the Integrated Management of Biodiversity and Ecosystem Services](#), a revision and update of the current National Biodiversity Policy, is instated to act as the main framework for all environmental policies, programs, plans, projects, or strategies that Colombia develops over the next few decades. Also, the World Bank chooses Colombia as one of the pilot countries to implement the Wealth Accounting and the Valuation of Ecosystem Services (WAVES) project.

- » *Voluntary Government-Supported Initiatives*
- » *Government and Multilateral Reports*
- » *Voluntary Nongovernmental Initiatives*
 - » **Chile and Peru:** These two countries develop an ecosystem-based management of the Humboldt Current Large Marine Ecosystem. A [Global Environment Facility-funded project](#) sets up a [program focused on transboundary and ecosystem-based diagnoses](#) that is intended to lead to an ecosystem-based approach.

EUROPE

- » *Policy or Legislation*
 - » **EU:** The European Union's [2020 biodiversity strategy](#) includes an initiative on “no-net-loss of ecosystems and their services.”
- » *Administrative Government Decisions*
 - » **Spain:** Valencia's regional government releases the [first draft of its forest action plan](#). Among its measurement highlights is an environmental services payment mechanism, the first official one in Spain.
 - » **EU:** The Environment Council meets to [discuss the protection of water resources and integrated sustainable water management](#) in the EU and adopt conclusions, including a section on ecosystems and ecosystem services.
- » *Voluntary Government-Supported Initiatives*
 - » **EU:** The European Commission develops [the Voluntary Scheme for Biodiversity and Ecosystem Services in Territories of European Overseas](#) for conservation and sustainable use of biodiversity and ecosystem services (BES) in its Outermost Regions and Overseas Countries and Territories.
 - » **U.K.:** The Valuing Nature Network, in partnership with the National Environment Research Council (NERC), presents a [draft research agenda](#) based on workshops focused on valuing biodiversity, ecosystem services, and natural resource use.
 - » **U.K.:** Reporting to Defra, the business-led [Ecosystem Markets Task Force](#) launches with a mission of reviewing opportunities for U.K. businesses to improve and protect natural capital.
- » *Government and Multilateral Reports*
 - » **EU:** The European Environment Agency (EEA) publishes a report titled [“An Experimental Framework for Ecosystem Capital Accounting in Europe”](#) that highlights accounting balances and relationships between accounting tables and systems, as well as key indicators and aggregates that describe economy-ecosystem interactions.
 - » **U.K.:** A [Defra report](#) sets out the economic framework and key design principles for payments for ecosystem services (PES).
 - » **U.K.:** The UN releases its [“National Ecosystem Assessment,”](#) the first analysis of the U.K.'s natural environment in terms of the benefits it provides to society and future economic prosperity.
 - » **U.K.:** Defra releases a white paper titled [“The Natural Choice,”](#) which is directly linked to the National Ecosystem Assessment. It catalyzes a Natural Capital Committee and business-led task force.
- » *Voluntary Nongovernmental Initiatives*

NORTH AMERICA

» *Policy or Legislation*

» *Administrative Government Decisions*

- » **United States:** The U.S. Geological Society (USGS) launches the Science and Decisions Center, “an interdisciplinary center for applications and research in decision science, ecosystem services, and resilience.”

» *Voluntary Government-Supported Initiatives*

- » **United States:** The National Oceanic and Atmospheric Administration (NOAA), the Gulf of Mexico Sea Grant Programs, and the U.S. Environmental Protection Agency (EPA) Gulf of Mexico Program sponsor an [Ecosystem Services Valuation Priorities](#) grant request.

» *Government and Multilateral Reports*

- » **United States:** A report titled “[Sustaining Environmental Capital: Protecting Society and the Economy](#)” recommends that the U.S. government launch a series of efforts to assess thoroughly the condition of U.S. ecosystems and the social and economic value of the services those ecosystems provide.

» *Voluntary Nongovernmental Initiatives*

- » **United States:** Following the Annual Ecosystem Markets Conference in Madison, Wisconsin, the [Ecosystem Commons](#), a virtual community and collaborative workspace, is designed for the ecosystem services community of professionals to advance science and practice.

GLOBAL

» *Decisions of International Bodies*

» *Voluntary Multilateral-Supported Initiatives*

- » The UN Environment Programme (UNEP) Finance Initiative and Hypovereins Bank conduct a workshop titled [Towards a Collaborative Effort by Financial Institutions to Integrate Biodiversity and Ecosystem Services into Business](#). A key outcome of the workshop is an agreement to develop a Natural Capital Statement to further embed biodiversity and ecosystem services (BES) into the finance sector.
- » The International Tropical Timber Organization (ITTO) releases a [call for proposals](#) for its Thematic Program on Reducing Deforestation and Forest Degradation and Enhancing Environmental Services (REDDES). The call for proposals from member countries notes that priority will be given to projects that address the fundamental drivers of deforestation and forest degradation that enhance environmental services.

» *Government and Multilateral Reports*

- » [A UNEP and International Water Management Institute \(IWMI\) report](#) titled “An Ecosystem Services Approach to Water and Food Security” recommends that policy makers consider farmland, fisheries, and other agricultural areas as “agro-ecosystems,” which provide food and perform such diverse ecosystem services as water purification and flood regulation.

» *Voluntary Nongovernmental Initiatives*

- » The [Natural Value Initiative \(NVI\) report](#) titled “Biodiversity and Ecosystem Services Risk and Opportunity Management within Extractive Industry” reviews 30 companies in the mining and oil and

gas sectors and assesses emerging efforts on ecosystem services and corporate systems to manage risk and realize opportunity associated with BES.

2012

AFRICA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
 - » **Eastern Africa:** A [workshop](#) (the first in a series) on the economic valuation of land and ecosystem services in Eastern Africa is held in Rwanda.
- » *Government and Multilateral Reports*
 - » **Africa:** A UN study on the [environmental and social impacts of biofuel production and use in Africa](#) employs the ecosystem services framework developed during the Millennium Ecosystem Assessment (MEA).
 - » **Israel:** The Milken Institute and the Israeli government convene a [Financial Innovations Lab](#) to evaluate financial mechanisms for valuing the country's biodiversity.
 - » **Kenya:** The Kenya Forest Service and UN Environment Programme (UNEP) issue a report on the [contribution of mountain forests to the Kenyan economy](#).
 - » **Kenya:** The International Livestock Research Institute completes a report entitled "[Mapping and Valuing Ecosystem Services in the Ewaso Ng'iro Watershed in Kenya](#)."
- » *Voluntary Nongovernmental Initiatives*

ASIA AND AUSTRALIA

- » *Policy or Legislation*
- » *Administrative Government Decisions*
- » *Voluntary Government-Supported Initiatives*
 - » **China:** The Chinese government [signals its support](#) for a future national study on the value of the country's ecosystems and biodiversity, based on TEEB (The Economics of Ecosystems and Biodiversity).
 - » **Georgia:** The Secretariat of the Convention on Biological Diversity holds a [workshop on valuation and incentive measures](#) for Eastern Europe and Central Asia with the aim of supporting countries in implementing TEEB methodologies and findings.
 - » **India:** The Indian Ministry of Environment and Forests initiates an [Indian TEEB study](#) to assess the value of natural resources and biodiversity in India.
 - » **Southeast Asia:** The ASEAN Centre for Biodiversity presents the results of its [TEEB Scoping Study](#) at the World Biodiversity Congress. The study gathered and reviewed the existing evidence of the value of ecosystem services and identified key critical ecosystems and services in Southeast Asia.
 - » **Vietnam:** The [Vietnam Forest and Deltas Program](#) is created, with a focus on adopting land use practices to address deforestation and degradation of forests and other landscapes and increasing the

resilience of people, places and livelihoods in delta areas through assistance for adaptation and disaster risk management. It will be implemented in co-operation with the Ministries of Agriculture and Rural Development and Natural Resources and Environment and relevant government agencies.

» *Government and Multilateral Reports*

- » **Nepal:** Bird Conservation Nepal, in collaboration with the Nepalese Department of National Parks and Wildlife Conservation, issues a report with the results of a [three-year study](#) of a new toolkit for assessing ecosystem services at a site scale, which was piloted at 27 important bird areas across the country. The data could contribute to the revision of Nepal's National Biodiversity Strategic Action Plan.

» *Voluntary Nongovernmental Initiatives*

CENTRAL AND SOUTH AMERICA

» *Policy or Legislation*

» *Administrative Government Decisions*

» *Voluntary Government-Supported Initiatives*

- » **Peru:** The Ministry of Environment, in collaboration with NGO Forest Trends, launches a [Watershed Services Incubator](#) to help Peruvian cities develop financing mechanisms that would alleviate pressure on the watershed. The incubator also aims to create a formal template for other projects in other countries.

» *Government and Multilateral Reports*

» *Voluntary Nongovernmental Initiatives*

EUROPE

» *Policy or Legislation*

» *Administrative Government Decisions*

» *Voluntary Government-Supported Initiatives*

- » **Germany:** [TEEB for Germany](#) official launches in October.

» *Government and Multilateral Reports*

- » **EU:** The [PEER Research on EcoSystem Services \(PRESS\) initiative](#) describes how different EU policies can help to increase the services and benefits provided by ecosystems. Their fourth report, "[A Spatial Assessment of Ecosystem Services in Europe: Methods, Case Studies, and Policy Analysis—Phase 2](#)," analyzes several policy measures using scenarios of land use change.
- » **EU:** "Science for Environment Policy," a newsletter of the European Commission's Directorate-General for the Environment, focuses its [March 2012 issue](#) on payments for ecosystem services (PES), in order to provide an in-depth look at a key area of environmental research with policy relevance and provide a guide to the latest research in the field.
- » **Serbia:** According to a new WWF report, "[Analysis of PES Needs and Feasibility in Serbia](#)," recent laws in Serbia make possible the use of some basic payments for ecosystem services (PES) mechanisms.
- » **U.K.:** A team commissioned by Defra develops a draft "[Best Practice Guide for PES](#)" and a set of supporting PES case studies.
- » **U.K.:** Defra's Ecosystem Markets Task Force publishes its [Interim Report](#), which sets out the task force's aims, its emerging thinking on

why nature should matter to business, and the potential opportunities for business from valuing nature correctly.

» *Voluntary Nongovernmental Initiatives*

NORTH AMERICA

» *Policy or Legislation*

» *Administrative Government Decisions*

- » **United States:** The [Science Advisory Board review](#) of the Environmental Protection Agency (EPA) Risk Assessment Forum's (RAF) Ecological Assessment Action Plan becomes available online. The plan sets forth proposed science policy and technical practice initiatives aimed at improving the quality, scope, and application of the EPA's ecological assessments. Its policy initiatives include incorporating ecosystem services into ecological risk assessment.
- » **United States:** The Department of Agriculture signs the final [National Forest System Land Management Planning Rule](#), which is a statutory requirement that outlines the procedures to amend, revise, and develop land-management plans, as well as establish minimum content requirements for these plans. The new rule requires to provide for ecosystem services; protect cultural and historic resources, wilderness areas, and wild and scenic rivers; and appropriately manage other designated areas and areas of tribal importance.

» *Voluntary Government-Supported Initiatives*

- » **United States:** In May, the National Ecosystem Services Partnership (NESP) and A Community on Ecosystem Services (ACES) host an invitation-only policy forum, [Advancing Ecosystem Services in Federal Resource Management Decisions](#), which explores approaches that [agencies are currently testing](#) for incorporating the value of the goods and services that nature provides into federal-resource management planning and decision making.

» *Government and Multilateral Reports*

- » **United States:** The Global Change Research Act requires the preparation of a report for the president and the Congress every four years that integrates, evaluates, and interprets the findings of the U.S. Global Change Research Program. The 2012 report, ["Impacts of Climate Change on Biodiversity, Ecosystems, and Ecosystem Services."](#) is one of the technical inputs for the 2013 National Climate Assessment that synthesizes scientific understanding of the way climate change is affecting biodiversity, ecosystems, and ecosystem services, as well as what strategies might be employed to decrease current and future risks.

» *Voluntary Nongovernmental Initiatives*

- » **United States:** A two-year study called the [Stewardship Ecosystem Services Survey Project](#) in Florida estimates that the value of ecosystem services from Florida's forests can exceed US\$5,000 per acre over 20 years. The study focused on four key ecosystem services—water quality, carbon storage, timber production, and wildlife conservation.

GLOBAL

» *Decisions of International Bodies*

- » The governments of Colombia and Guatemala propose the creation of [Sustainable Development Goals](#) (SDGs) as part of the results of Rio+20, in order to measure success in balancing socioeconomic

- growth with sustainable use of natural resources and conservation of ecosystem services. The SDGs would build upon the Millennium Development Goals (MDGs), which expire in 2015. At the event, member states decide to [launch a process](#) to develop the SDGs.
- » The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), a global science-policy interface, is [officially established](#) after several years of discussion. It seeks to be an all-encompassing clearinghouse on biodiversity and ecosystem services (BES) information. Bonn, Germany, is selected for the location of the secretariat.
 - » [“The Future We Want.”](#) the outcome document adopted at Rio+20, states the need for the sustainable use of natural resources and ecosystems and for broader measures of progress to complement gross domestic product (GDP).
 - » *Voluntary Multilateral-Supported Initiatives*
 - » The UNEP-World Conservation Monitoring Centre (WCMC) and the Institute for European Environmental Policy [launch a survey](#) on the incorporation of BES values into national biodiversity strategies and action plans (NBSAPs), which is expected to support implementation of Aichi Targets 1 and 2 of the Strategic Plan for Biodiversity 2011-2020.
 - » Researchers, policy makers, economists, and practitioners from more than 35 countries attend the first [TEEB conference](#) in Leipzig, Germany. One of the most significant outcomes is the confirmation that TEEB is now being implemented around the world at regional, national, and subnational levels. Sessions highlighted various TEEB-related initiatives taking place in Belgium, Brazil, Germany, the Netherlands, New Zealand, Portugal, and the U.K.
 - » A project sponsored by Global Environment Fund (GEF)—entitled the [Project for Ecosystem Services](#) (ProEcoServ)—begins to operate in Chile, Lesotho, South Africa, Trinidad and Tobago, and Vietnam, with the objectives of: developing support tools for bundling ecosystem services into decision making, seeking to integrate ecosystem services into policy, and creating forums to link scientists and policy makers.
 - » A revised version of the [System of Environmental-Economic Accounting](#) is completed, under the guidance of the United Nations Statistical Commission. It contains the internationally agreed-upon standard concepts, definitions, classifications, and accounting rules and tables for producing internationally comparable statistics on the environment and its relationship with the economy.
 - » UNEP, GRID-Arendal, and Duke University release a discussion paper (titled [“Why Value the Oceans?”](#)) to explore the potential for a TEEB oceans study. The paper identifies the types of marine-management issues and policy that require better information on the economics of marine ecosystems and biodiversity.
 - » The World Bank Group launches the [50:50 campaign](#), an initiative to promote the inclusion of natural capital in economic decisions and business operations, is launched. The organization aims to connect 50 governments and 50 corporations supportive of working toward natural capital accounting.

- » *Government and Multilateral Reports*
 - » The United Nations Global Compact releases a report entitled [“A Framework for Corporate Action on Biodiversity and Ecosystem Services.”](#) which provides a high-level framework for developing, implementing, and disclosing policies, as well as practices on BES that are integrated into corporate sustainability strategies.
 - » The Stockholm Environment Institute and UNEP issue [“Releasing the Pressure: Water Resource Efficiencies and Gains for Ecosystem Services.”](#) which urges policy makers and resource managers to shift from their traditional focus on “more crop per drop” to a broader view including ecosystem services, which would take into account water regulation and purification, pollination, erosion control, and other ecosystem services performed by wetlands and forests.
 - » The second chapter of UNEP’s 2012 *Year Book*, [“The Benefits of Soil Carbon.”](#) links certain soil management approaches to the provision of multiple ecosystem services. The authors provide insights into the measurement and monitoring of soil carbon and conclude with analysis of policy options, including incentives for protection of ecosystem services provided by soil.
- » *Voluntary Nongovernmental Initiatives*
 - » The [TEEB for Business Coalition is launched](#) in Singapore in November, with the goal of studying and standardizing methods for natural capital accounting to enable its valuation and reporting in business.
 - » Scientists issue first [“State of the Planet” declaration](#) in advance of Rio+20, which includes a call for regular global sustainability analyses, building on the foundations of the Intergovernmental Panel on Climate Change (IPCC), Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), and other ongoing efforts.
 - » Fauna and Flora International and Association of Chartered Certified Accountants [release a report](#) on biodiversity and ecosystem services in corporate financial accounting.