

## Illustrative Ecosystem Services

### Supporting services

- » Nutrient cycling
- » Net primary production
- » Pollination and seed dispersal
- » Hydrologic cycle

### Regulating services

- » Climate regulation
- » Disturbance regulation
- » Water regulation
- » Nutrient regulation

### Provisioning services

- » Water supply
- » Food
- » Raw materials

### Cultural services

- » Recreation
- » Aesthetic
- » Spiritual and historic

Source: Millennium Ecosystem Assessment 2005.  
<http://www.millenniumassessment.org/en/index.aspx>

Ecosystem services are gaining attention among academics, leading NGOs, and government officials around the world. Yet much of the ongoing work remains in a research or exploratory phase.

**The question for businesses is whether, how, and on what timeframe ecosystem services may gain traction among key stakeholders, government officials, and/or regulators.**

In response, BSR's Environmental [Services, Tools, & Markets Working Group](#) has been tracking significant policy developments and signals related to government engagement with ecosystem services.

**This report lays out key 2009 developments and important ongoing efforts in the policy realm**, ranging from new regulations in select geographic areas through administrative decisions and voluntary initiatives that could influence legislative and regulatory policy around ecosystem services. Through a series of tables, the report answers key questions including:

- » Are there new ecosystem-service-focused government policies and legislation/regulation? If so, what and where?
- » Are there existing or emerging government-supported, voluntary- and incentive-based initiatives that center on ecosystem services? If so, what and where?
- » Are there key government- and/or multilateral-organization-issued reports that focus on ecosystem services that could signal a change in the future approach of regulation? If so, what reports?
- » Are there ecosystem-services-based, nongovernmental voluntary initiatives that appear to be influencing (or likely to influence) policymakers?

**The current “state of play” reveals a growing number of government-supported ecosystem services initiatives around the world.** Both these efforts as well as an expanding body of government reports and recommendations indicate a “mainstreaming” of ecosystem services concepts and could signal a change in the future approach to regulation.

**While the trends are still emerging, it appears there will be a shift in the coming years toward a systems-based approach to environmental issues that includes consideration of ecosystem services.** The following tables detail the current state of play for 2009 by region.

## North America

Type	Policy or Report	Summary	More Information
Government policy and legislation/regulation	<b>United States:</b> Food, Conservation, and Energy Act of 2008 (Farm Bill)	Section 2709 of the conservation title requires the secretary of agriculture, in consultation with other agencies and interests, to "establish <b>technical guidelines that measure the environmental services benefits</b> from conservation and land-management activities." These guidelines will be used in the development of measurement and reporting protocols and registries.	<a href="http://www.fs.fed.us/ecosystemservices/Farm_Bill/index.shtml">www.fs.fed.us/ecosystemservices/Farm_Bill/index.shtml</a>
Government policy and legislation/regulation	<b>United States:</b> Oregon Senate bill 513	Legislation designed to <b>establish a framework for rewarding landowners who preserve and improve a range of ecosystem services</b> . Under the bill, a newly formed work group will have one year to develop policy recommendations for the 2011 legislature.	<a href="http://www.leg.state.or.us/09reg/measures/sb0500.dir/sb0513.en.html">www.leg.state.or.us/09reg/measures/sb0500.dir/sb0513.en.html</a>
Government administrative decisions	<b>United States:</b> Department of Agriculture's (USDA) Office of Ecosystem Services and Markets	Established a <b>new USDA Office of Ecosystem Services and Markets and a U.S. government-wide Conservation and Land Management Environmental Services Board</b> "to assist the secretary of agriculture in the development of new technical guidelines and science-based methods to assess environmental service benefits, which will in turn promote markets for ecosystem services, including carbon trading to mitigate climate change."	<a href="http://www.usda.gov/wps/portal/!ut/p_s.7_0_A/7_0_2KD?contentidonly=true&amp;contentid=2008/12/0307.xml">www.usda.gov/wps/portal/!ut/p_s.7_0_A/7_0_2KD?contentidonly=true&amp;contentid=2008/12/0307.xml</a>  <a href="http://www.fs.fed.us/ecosystemservices/">www.fs.fed.us/ecosystemservices/</a>
Government administrative decisions	<b>United States:</b> Environmental Protection Agency's (EPA) Office of Research and Development (ORD)	<b>Focus on ecosystem services research</b> that "is transforming the way we account for the type, quality, and magnitude of nature's goods and services so that they can be considered in environmental management decisions. The research is providing the data, methods, models, and tools needed by states, communities, and tribes to understand the cost and benefits of using ecosystem services."	<a href="http://www.epa.gov/ecology/">www.epa.gov/ecology/</a>
Government-supported voluntary or incentive-based initiatives	<b>United States:</b> Virginia Dept. of Forestry Ecosystem Services Initiative	Vision is <b>for users to develop an "ecosystem services portfolio" for various ecosystem services provided by a tract of land.</b>	<a href="http://www.fs.fed.us/ecosystemservices/">www.fs.fed.us/ecosystemservices/</a>

Government-supported voluntary or incentive-based initiatives	<b>United States:</b> EPA Agriculture and Food Research Initiative	Enhancing ecosystem services from agricultural lands: The program will <b>support research on the ecosystem services in agricultural settings</b> , including both agro-ecosystems and ecosystems that are impacted by agriculture, with the goal of quantifying these services, identifying risks due to different stressors, and developing strategies to reduce negative environmental impacts while enhancing ecosystem services provided by working lands.	<a href="http://www.csrees.usda.gov/fo/enhancingecosystemservices/afri.cfm">www.csrees.usda.gov/fo/enhancingecosystemservices/afri.cfm</a>
Government-supported voluntary or incentive-based initiatives	<b>United States:</b> USDA Natural Resource Conservation Service	Northern Forest Watershed Service Project: Conservation Innovation Grant to support a <b>US\$1 million effort to conserve ecosystem services provided by forests in two watersheds</b> in the Northeast: the Upper Connecticut River watershed in Vermont and New Hampshire, and the Crooked River watershed in Maine.	<a href="http://www.whiteriverpartnership.org/index.php/news/northern-forest-watershed-services-project">www.whiteriverpartnership.org/index.php/news/northern-forest-watershed-services-project</a>
Government-supported voluntary or incentive-based initiatives	<b>United States:</b> EPA's Ecological Services Research Program (ESRP) and Nicholas Institute (Duke University)	National Ecosystem Services Partnership <b>goals:</b> <b>1. Establish ecosystem services standards, indicators, and measurement protocols that support environmental accounting systems and markets.</b> <b>2. Advance ecosystem services valuation techniques.</b> <b>3. Create institutional capacity for investments in natural capital that provide sustainable flows of ecosystem services.</b> <b>4. Improve the ability to perform ecosystem services assessments across institutional, spatial, and temporal scales.</b>	<a href="http://www.epa.gov/ORD/esrp/pdfs/ESRP-CRADA-Brochure.pdf">www.epa.gov/ORD/esrp/pdfs/ESRP-CRADA-Brochure.pdf</a>
Government- and/or multilateral organization reports	<b>United States:</b> EPA Science Advisory Board	"Valuing the Protection of Ecological Systems and Services: A Report of the EPA Science Advisory Board"	<a href="http://yosemite.epa.gov/sab/sabproduct.nsf/WebBOARD/ValProtEcolSys&amp;Serv?OpenDocument">http://yosemite.epa.gov/sab/sabproduct.nsf/WebBOARD/ValProtEcolSys&amp;Serv?OpenDocument</a>
Government- and/or multilateral organization reports	<b>United States:</b> EPA Office of Research and Development	Ecosystem Services Research Program: Partnering with 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.	<a href="http://epa.gov/ord/esrp/">http://epa.gov/ord/esrp/</a>
Government- and/or multilateral organization reports	<b>United States:</b> USDA Forest Service	Quantify local urban forest composition and its associated ecosystem services and values to improve urban forest planning: field measurements and monitoring of urban vegetation structure and its effects on various ecosystem attributes.	<a href="http://nrs.fs.fed.us/urban/monitoring/tools_ecosystem_services/">http://nrs.fs.fed.us/urban/monitoring/tools_ecosystem_services/</a>

Nongovernmental voluntary initiatives	<b>United States:</b> Ecotrust Forests LLC	Fund gives investors an opportunity to own forests managed for competitive financial returns, improved forest health, and job generation in rural communities. Provides competitive returns for investors through the production of high-quality timber and pulp and the monetization of ecosystem services such as carbon storage, habitat, and water quality.	<a href="http://www.ecotrust.org/ecosystemservices/Old%20GrowthBettina%20chapter.pdf">www.ecotrust.org/ecosystemservices/Old%20GrowthBettina%20chapter.pdf</a>
Nongovernmental voluntary initiatives	<b>United States:</b> American Farmland Trust	Tools for promoting healthy soil and clean water while protecting farmers' income; includes ecosystem services markets program to pay farmers for providing environmental benefits such as clean water, carbon sequestration, and wildlife habitat.	<a href="http://www.farmland.org/programs/environment/issues/ecosystems-services.asp">www.farmland.org/programs/environment/issues/ecosystems-services.asp</a>
Nongovernmental voluntary initiatives	<b>United States:</b> Willamette Partnership (Pacific Northwest)	Two-year program initiated in November 2009 to create and pilot a shared accounting system for quantifying impacts and benefits to ecosystem services for application to ecosystem markets and beyond.	<a href="http://www.willamettepartnership.org/">www.willamettepartnership.org/</a>
Nongovernmental voluntary initiatives	<b>United States:</b> Conservation of red wolf habitat in North Carolina	Two-phased project that 1. quantifies the economic value of selected ecosystem services benefits associated with conserving red wolf habitat, including carbon storage on agricultural and undeveloped lands; 2. quantifies the economic value of open space property value premiums and recreation; 3. conducts a cash-flow analysis associated with the provision of these services from private agricultural lands, and identifies and promotes policy proposals for the implementation of market-based incentives that link the protection of red wolf habitat to national or state resource conservation programs.	<a href="http://walker-foundation.org/net/org/project.aspx?s=76840.0.69.5316&amp;projectid=76840">http://walker-foundation.org/net/org/project.aspx?s=76840.0.69.5316&amp;projectid=76840</a>

# Europe

Type	Policy or Report	Summary	URL
Government-supported voluntary or incentive-based initiatives	<b>U.K.:</b> Department for International Development (DFID)/Natural Environment Research Council (NERC)	Ecosystem Services for Poverty Alleviation Program	<a href="http://www.nerc.ac.uk/research/programmes/espa/">www.nerc.ac.uk/research/programmes/espa/</a>
Government- and/or multilateral organization reports	<b>EU:</b> EASAC policy report	Ecosystem Services and Biodiversity in Europe	<a href="http://www.easac.eu/document.asp?id=90&amp;pageno=1&amp;detail=1&amp;parent=31">www.easac.eu/document.asp?id=90&amp;pageno=1&amp;detail=1&amp;parent=31</a>
Government- and/or multilateral organization reports	<b>EU:</b> The Economics of Ecosystems and Biodiversity (TEEB) and the Potsdam Initiative	TEEB report <ul style="list-style-type: none"> <li>» The study will evaluate the costs of the loss of biodiversity and the associated decline in ecosystem services worldwide, and compare them with the costs of effective conservation and sustainable use.</li> <li>» Facilitate the development of cost-effective policy responses, notably by preparing a “valuation toolkit.”</li> </ul> Phase II: Goal is to further develop and apply the framework presented in the <a href="#">interim report</a> , and provide tools for a variety of potential end users interested in the economic evaluation of biodiversity and ecosystem services.	<a href="http://www.unep.org/greeneconomy/index2.asp?id=teeb">www.unep.org/greeneconomy/index2.asp?id=teeb</a>  <a href="http://www.teebweb.org/">www.teebweb.org/</a>
Government- and/or multilateral organization reports	<b>Finland:</b> Finnish Environment Institute	<b>Vulnerability Assessment of Ecosystem Services for Climate Change Impacts and Adaptation (VACCIA)</b>	<a href="http://www.ymparisto.fi/default.asp?node=24015&amp;lan=en">www.ymparisto.fi/default.asp?node=24015&amp;lan=en</a>
Government- and/or multilateral organization reports	<b>U.K.:</b> Defra	Research project to establish the <b>basis for an ecosystems approach</b> and how it might be used to make effective assessments of the benefits that the natural environment provides.	<a href="http://www.ecosystemservices.org.uk/">www.ecosystemservices.org.uk/</a>

Latin America

Type	Policy or Report	Summary	URL
Government-supported voluntary or incentive-based initiatives	<b>Colombia:</b> Exploring Ecosystem Services Planning Tool	“The Nature Conservancy (TNC) and partners (including the Humboldt Institute, Conservation International, and WWF) have a three-year agreement with the Ministry of the Environment to provide them with a <b>tool to help the national government make decisions about where to site infrastructure projects</b> (gas, coal, mining, roads, transportation, harbors, etc). The primary goal: Help inform the process of how to avoid, minimize, and compensate biodiversity impacts from concessions projects. The biodiversity data layers are based on eco-regional maps developed by TNC, but fine-scale versions of these maps using modified, more spatially explicit data layers are being developed for regional-scale planning. The goal is to overlay ecosystem services maps from <b>InVEST</b> with the biodiversity maps so government can have information on biodiversity and services.”	<a href="http://www.naturalcapitalproject.org/nasca.html">www.naturalcapitalproject.org/nasca.html</a>
Government-supported voluntary or incentive-based initiatives	<b>Costa Rica:</b> Environmental Services Payment Program	Financial recognition by the state (through Fondo Nacional de Financiamiento Forestal (FONAFIFO) granted to forest and plantation owners for the environmental services rendered by them, which directly affect the protection and improvement of the environment.	<a href="http://www.fonafifo.com/paginas_english/environmental_services/servicios_ambientales.htm">www.fonafifo.com/paginas_english/environmental_services/servicios_ambientales.htm</a>
Government-supported voluntary or incentive-based initiatives	<b>Ecuador:</b> Exploring Ecosystem Services Planning Tool	A collaboration is underway to inform the main national planning agency: Secretaria Nacional de Planificacion y Desarrollo ( <b>SENPLADES</b> ), for whom “ <b>software has been developed with models that provide dynamic biodiversity maps</b> . The data layers will allow the software to calculate the effect of theoretical infrastructure projects on biodiversity. Users draw a polygon, line, or point as a proxy for an infrastructure project. The software generates biodiversity-impact maps based on these inputs. <b>InVEST</b> maps provide an ecosystem services layer, giving a snapshot of the effects of the projects on service flows.”	<a href="http://www.naturalcapitalproject.org/nasca.html">www.naturalcapitalproject.org/nasca.html</a>

Nongovernmental voluntary initiatives	<b>Brazil:</b> The Agroambiente Project	The Agroambiente Project works to conserve native ecosystems and <b>maintain the highest level of environmental services in agricultural landscapes and ecosystems.</b> Agroambiente is supported primarily by Embrapa (Brazil's agricultural research institute), as well as by the National Institute of Science and Technology and partner institutions involved in the project from 2009 to 2011.	<a href="http://www.katoombagroup.org/documents/newsletters/sea/sa_edition3en.htm#project2">www.katoombagroup.org/documents/newsletters/sea/sa_edition3en.htm#project2</a>
Nongovernmental voluntary initiatives	<b>Colombia, Costa Rica, Ecuador, Panama, Peru, the southern tip of Nicaragua, and Venezuela</b>	TNC staff and partners in the Nasca region of Peru are using <b>InVEST to map ecosystem services to generate information that can guide and inform decision-making.</b> Specifically, TNC staff have been able to provide a visual depiction of the spatial distribution and overlap of a variety of services to the environmental ministries. TNC offices in Ecuador and Colombia are publishing national maps of several ecosystem services flows. With these types of national-level ecosystem services maps, TNC is better equipped to inform government about a variety of policies such as siting and licensing for infrastructure projects by national agencies; avoiding, mitigating, and offsetting environmental impacts; and where and how to invest limited conservation funds.	<a href="http://www.naturalcapitalproject.org/nasca.html">www.naturalcapitalproject.org/nasca.html</a>
Nongovernmental voluntary initiatives	<b>Costa Rica:</b> Osa Conservation Area	The cost-efficiency of PES to private landowners is evaluated in terms of the trade-off between biodiversity representation and opportunity costs of conservation to agricultural and forestry land-use, using available GIS data and an <b>'off-the-shelf' software application called TARGET.</b>	<i>Journal of Environmental Management</i> , Volume 90, Issue 2, February 2009, pages 901-911
Nongovernmental voluntary initiatives	<b>Latin America:</b> Integrated Silvopastoral Approaches to Ecosystem Management Project	World Bank project in Colombia, Costa Rica, Nicaragua: <b>Monitoring environmental services component--</b> system to monitor land use changes, carbon sequestration, biodiversity, and water quality to provide accurate information and understanding of the potential of intensified SPS in providing global ecological services and local socioeconomic benefits.	<a href="http://www-wds.worldbank.org/external/default/main?pagePK=64193027&amp;piPK=64187937&amp;theSitePK=523679&amp;menuPK=64187510&amp;searchMenuPK=64187283&amp;siteName=WDS&amp;entityID=000333037_20081125224142">http://www-wds.worldbank.org/external/default/main?pagePK=64193027&amp;piPK=64187937&amp;theSitePK=523679&amp;menuPK=64187510&amp;searchMenuPK=64187283&amp;siteName=WDS&amp;entityID=000333037_20081125224142</a>

## Asia and Australia

Type	Policy or Report	Summary	URL
Government policy and legislation/regulation	<b>China</b>	China's central and local governments are increasing the use of innovative policies and programs, a number of which relate to "eco-compensation" and ecosystem services, including: Conversion of Cropland to Forests and Grasslands Program, Forest Ecosystem Compensation Fund, the "Four Wastelands Policy," and others.	<a href="http://www.forest-trends.org/publication_details.php?publicationID=2317">www.forest-trends.org/publication_details.php?publicationID=2317</a>
Government policy and legislation/regulation	<b>Vietnam:</b> Pilot Policy 380	Payments for Forest Environmental Services: Policy aims to "socialize" forest protection and development and improve livelihoods of forestry laborers; identification of two target groups of "payers for forest environmental services."	<a href="http://www.gms-eoc.org/Event/docs/PES/VietNamPFESPolicy-NguyenTuanPhu.pdf">www.gms-eoc.org/Event/docs/PES/VietNamPFESPolicy-NguyenTuanPhu.pdf</a>
Nongovernmental voluntary initiatives	<b>Asia:</b> Ecosystem Services Management in Asia project	Improve understanding of the impacts of land management on ecosystem services provided by upper tributary watersheds in China, Indonesia, and Thailand.	<a href="http://www.glp.hokudai.ac.jp/ecosmag/background.htm">www.glp.hokudai.ac.jp/ecosmag/background.htm</a>
Nongovernmental voluntary initiatives	<b>Australia:</b> Great Barrier Reef Marine Park	Rezoning and transformation in governance to manage the Great Barrier Reef and associated ecosystems and strengthen their resilience in the face of climatic change.	<a href="http://www.pnas.org/content/105/28/9489.full">www.pnas.org/content/105/28/9489.full</a>
Nongovernmental voluntary initiatives	<b>Indonesia</b>	Multi-stakeholder forestry program in Papua region <b>increased the likelihood of policy change in support of better ecosystem management</b> through encouraging better land-use policy and more understanding of livelihood needs.	<a href="http://www.cbd.int/doc/external/iucn/iucn-ecosystem-approach-en.pdf">www.cbd.int/doc/external/iucn/iucn-ecosystem-approach-en.pdf</a>
Nongovernmental voluntary initiatives	<b>Japan:</b> Long-Term Ecological Research	<b>Data management of ecosystems:</b> Mission is to provide appropriate scientific information and predictive understanding of ecological processes for scientific community, policymakers, and general societies through long-term ecological research in Japan.	<a href="http://www.jalter.org/modules/about/index.php">www.jalter.org/modules/about/index.php</a> ; <a href="http://www.biodic.go.jp/gbm/gbon/PDF/0722/a.m/2/Dr.Ohte.pdf">www.biodic.go.jp/gbm/gbon/PDF/0722/a.m/2/Dr.Ohte.pdf</a>



# Africa

Type	Policy or Report	Summary	URL
Government- and/or multilateral organization reports	<b>Tanzania</b> and UN Development Programme (UNDP)	Government paper identifying concrete ways in which ecosystem management can contribute to poverty reduction goals. Increased awareness and improved knowledge base on the poverty-environment (P-E) linkages through, among other things, a public expenditure review on environment, development of P-E indicators, and introduction of the integrated ecosystem assessment methodology.	<a href="http://www.katoombagroup.org/regions/africa/documents/TanzaniaInventory_7-06.pdf">www.katoombagroup.org/regions/africa/documents/TanzaniaInventory_7-06.pdf</a> <a href="http://www.unpei.org/programmes/country_profiles/tanzania.asp">www.unpei.org/programmes/country_profiles/tanzania.asp</a>
Nongovernmental voluntary initiatives	<b>East Africa's Eastern Arc Mountains</b>	Application of the <b>InVEST</b> tool that was launched by experts from seven countries with a focus on analyzing the Eastern Arc Mountains' water supply, carbon storage and sequestration, ecotourism, and non-timber and timber products. The goal is to provide a scientific basis for new programs in which local residents can receive payments for maintaining natural assets, such as forests that regulate water supplies. To support these efforts, a team of Tanzanian, British, South African, and American researchers aims to calculate and map the remnant forest's economic value to Tanzania's citizens and others, and to show the economic consequences of different policy options.	<a href="http://www.naturalcapitalproject.org/tanzania.html">www.naturalcapitalproject.org/tanzania.html</a>

## United Nations

UN Documents			
Type	Policy or Report	Summary	URL
	UN Division for Ocean Affairs and the Law of the Sea	Focuses on the development and implementation of an ecosystem approach to the management of human activities and their impacts on the marine environment within a national context, while meeting regional and international obligations.	<a href="http://www.un.org/Depts/los/tsc_new/bckgrd_ecosystem_approach.pdf">www.un.org/Depts/los/tsc_new/bckgrd_ecosystem_approach.pdf</a>
	UN Environment Programme 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 impact the overall delivery of ecosystem services.	<a href="http://www.unep.org/ecosystemmanagement/LinkClick.aspx?fileticket=gbPVsoUCp-E%3d&amp;tabid=311&amp;mid=670&amp;language=en-US">www.unep.org/ecosystemmanagement/LinkClick.aspx?fileticket=gbPVsoUCp-E%3d&amp;tabid=311&amp;mid=670&amp;language=en-US</a>
	UNFCCC- REDD for Ecosystem Values	To increase the precision of carbon policy instruments with respect to ecosystem services provision, it will be necessary to map with higher precision and more comprehensively specific ecosystems and agree, on the international political level, how to quantify ecosystem services such that they could be incorporated into an avoided deforestation mechanism.	<a href="http://www.iiasa.ac.at/docs/HOTP/2008/Aug08/accra.pdf">www.iiasa.ac.at/docs/HOTP/2008/Aug08/accra.pdf</a>
	UNFCCC white paper on climate change adaptation	Ecosystem-based approach to adaptation.	<a href="http://cmsdata.iucn.org/downloads/iucn_position_paper_eba_june_09_2.pdf">http://cmsdata.iucn.org/downloads/iucn_position_paper_eba_june_09_2.pdf</a>  <a href="http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/145&amp;format=HTML&amp;aged=0&amp;language=EN&amp;guiLanguage=en">http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/145&amp;format=HTML&amp;aged=0&amp;language=EN&amp;guiLanguage=en</a>