

SUSTAINABLE PRODUCTION AND CONSUMPTION

There is growing worldwide pressure on natural resources, environmental carrying capacities, and material prices. As a result, there is growing interest in increasing efficiency in use of resources and reducing environmental impacts and waste. There is also greater awareness of the need to be better stewards of the environment and to reach a more sustainable level of production and consumption in order to become more competitive.

Stewardship is an ethic and a behavior that move us along a path toward sustainability. In the United States, there are many efforts in place in the public, private, and non-profit sectors to foster stewardship and progress toward sustainability. However, these efforts are often not connected within or across organizations.

Provided below are illustrative examples of activities to advance stewardship and sustainability. The categories encompass environmental impacts and focus areas. The activities encompass tools and sources of information and data that can lead to greater stewardship and sustainability.

The following description of sustainability efforts are organized by a) Domestic: Sustainable Manufacturing; Energy; Water Quantity/Water Quality; Products; Supply Chain; Sustainable Agriculture; Sustainable Communities; Ecosystems; and Government Agency Toolbox; and b) International.

1. DOMESTICALLY-FOCUSED AGENCIES AND PROGRAMS

1.a. Sustainable Manufacturing:

According to the Alliance for American Manufacturing, manufacturing represents 12 percent of the US gross domestic product, two-thirds of its total exports of goods and services, and supports more than 20 million jobs. However, the role of manufacturing in the US economy continues to decline. US Department of Commerce is interested in a more competitive manufacturing sector with greater profits and presence in the US economy.

Sustainability. As U.S. companies look to more efficiently use of resources (e.g., improve energy efficiency, minimize raw materials use), ensure compliance with domestic and international environmental and health regulations, and enhance marketability of their products and services, they have also become interested in sustainable manufacturing practices. U.S. Department of Commerce defines sustainable manufacturing as the creation of manufactured products that use processes that minimize negative environmental impacts, conserve energy and natural resources, are safe for employees, communities, and consumers, and are economically sound. There is a growing understanding that sustainable manufacturing practices will improve U.S. global competitiveness, firm profitability, and manufacturing job growth.

One of the main goals at the U.S. Department of Commerce is to foster domestic and international conditions for doing business that allow U.S. firms to be more sustainable and thereby improve competitive advantage, compete more successfully, and enhance profitability.

In order to ensure comprehensive implementation of this initiative and meet a critical need in ensuring communication between federal agencies engaged in this area, Department of Commerce's Manufacturing and Services unit created an interagency working group on sustainable manufacturing.

(<http://manufacturing.gov/sustainability>)

(<http://trade.gov/competitiveness/sustainablemanufacturing>)

By-product synergy.

By-product synergy (BPS) matches producers of under-valued waste streams with users, helping to create new revenues or savings for the organizations involved while also reducing environmental impacts. BPS also works with regulators to establish support for the process. Participants learn about each other's production processes, input needs, and by-product streams. Through facilitated collaboration, e.g., by the U.S. Business Council for Sustainable Development, they identify innovative ways to partner and integrate their operations to cut pollution, save energy, reduce material costs, and improve their bottom line.

(<http://www.usbcسد.org/byproductsynergy.asp>)

Life cycle assessment (LCA) is a technique to assess the environmental aspects and potential impacts associated with a product, process, or service, by:

- compiling an inventory of relevant energy and material inputs and environmental releases;
- evaluating the potential environmental impacts associated with identified inputs and releases; and
- interpreting the results to help you make a more informed decision.

EPA promotes the use of LCAs to make more informed decisions through a better understanding of the human health and environmental impacts of products, processes, and activities.

(<http://www.epa.gov/nrmrl/lcaccess>)

Footprinting. Measuring an organization's footprint is an estimate of the impacts on the environment from its activities. These impacts can include the organization's direct impacts as well as its indirect impacts from its suppliers and customers. The footprint can measure specific impacts, e.g., carbon or water. (e.g., Global Footprint Network -

<http://www.footprintnetwork.org>; H2O Conserve - <http://www.h2oconserve.org>) There are a

number of on-line calculators to assist organizations estimate these impacts. (e.g.,

<http://www.nature.org/initiatives/climatechange/calculator>;

http://www.epa.gov/climatechange/emissions/ind_calculator.html;

http://www.h2oconserve.org/wc_disclaimer.php).

Carbon footprint. PepsiCo. estimated its carbon footprint to determine how much each carbon dioxide is released into the atmosphere to produce each half-gallon of its orange juice.

Design for the Environment (DfE) Program works with environmental organizations and industry to protect human health and promote sustainable chemistry. The DfE Safer Product Labeling Program empowers the consumer to make informed choices about safer household and cleaning products by allowing the use of its logo on products. This program also offers manufacturers assistance in selecting safer chemicals for cleaning products. DfE's Alternatives Assessments program helps other industries choose safer chemicals, like lead-free solder and flame retardants in furniture and electronics. When safer chemical alternatives have not yet been identified, DfE encourages best practices to minimize pollution, especially in the auto refinishing and spray polyurethane foam industries. (<http://epa.gov/dfc>)

Performance benchmarking. The benchmarking analysis is based on publicly available information on each company's Internet site. The findings are posted on the company's website. The benchmark comparisons are used to help the company analyze how to further improve its environmental performance. For example, Bristol Myers Squibb benchmarked its environmental performance to other pharmaceutical companies and companies in other industries.

Environmental management system (EMS) is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. Most EMSs are built on the "Plan, Do, Check, Act" model, which leads to continual improvement based upon: Planning, including identifying environmental aspects and establishing goals; Implementing, including training and operational controls; Checking, including monitoring and corrective action; and Reviewing, including progress reviews and acting to make needed changes to the EMS. (<http://www.epa.gov/EMS>; <http://www.iso14000-iso14001-environmental-management.com>)

Lean is a business model and collection of methods that help eliminate waste while delivering quality products on time and at least cost. EPA is interested in finding ways to maximize the environmental benefits of lean in the manufacturing realm and in streamlining administrative processes.

(<http://www.epa.gov/lean>; <http://www.lean.org>)

Sector strategies. EPA's Sector Strategies Program works to improve environmental protection, energy efficiency, and resource management in major U.S. manufacturing and business sectors by developing and promoting strategies that reduce barriers to progress and drive improvement. The program's sector-based approach complements EPA's traditional focus on individual media (air, water, and waste), by providing a holistic view of the full range of each sector's environmental impacts and challenges within its regulatory and economic frameworks. (<http://epa.gov/sectors>)

1.b. Energy:

The role of energy in the U.S. economy and environmental protection efforts is becoming more clearly understood. Energy has also become a greater focal point in national security. One area of focus has been to increase the amount of energy derived from renewable sources – e.g., according to the U.S. Department of Energy, renewable energy represented over 7 percent of total U.S. energy consumption in 2008, compared to 6 percent in 2004.

(http://eia.doe.gov/cneaf/alternate/page/renew_energy_consump/rea_prereport.html)

Energy assessments. Department of Energy's Industrial Technologies Program conducts energy assessment through Save Energy Now. These assessments help facilities identify opportunities to save energy and money in energy-intensive industrial manufacturing systems.

(<http://www1.eere.energy.gov/industry/saveenergynow/assessments.html>) In addition, the Industrial Technologies Program sponsors Industrial Assessment Centers, which provide these energy assessments and also serve as a training ground for the next-generation of energy savvy engineers. (<http://www1.eere.energy.gov/industry/bestpractices/iacs.html>)

Energy efficiency. ENERGY STAR is a joint program of the U.S. EPA and the U.S. Department of Energy to encourage greater deployment of energy efficient products and practices. Products in more than 60 categories are eligible for the ENERGY STAR label due to their energy savings.

Product categories include:

- Appliances;
- Heating and cooling;
- Water heaters;
- Home envelope;
- Home electronics;
- Office equipment;
- Lighting;
- Commercial food service; and
- Other commercial products. (<http://www.energystar.gov>)

Green power. Green Power Partnership is a voluntary program that supports the procurement of green power by organizations by offering expert advice, technical support, tools and resources. Partnering with EPA can help an organization lower its transaction cost of buying green power, reduce its carbon footprint, and communicate its leadership to its key stakeholders. Green power is electricity produced from a subset of renewable resources, such as solar, wind, geothermal, biomass, and low-impact hydro. (<http://www.epa.gov/grnpower>)

Reducing transportation-related emissions. Smart Way Program is a brand that represents environmentally cleaner, more fuel efficient transportation options. The SmartWay brand identifies products and services that reduce transportation-related emissions. However, the impact of the brand is much greater since the SmartWay brand signifies a partnership among government, business, and consumers to protect the environment, reduce fuel consumption,

and improve our air quality. All of EPA SmartWay transportation programs result in significant, measurable air quality and/or greenhouse gas improvements while maintaining or improving current levels of other emissions and/or pollutants. (<http://www.epa.gov/smartway>)

1.c. Water Quantity/Water Quality:

For many areas of the U.S., water availability continues to be a major long-term issue. Water availability refers to the quantity and quality of water to support increased development. Some areas have resorted to rationing, but, more often, increased water conservation and protection efforts are relied on.

Sustainable infrastructure. Much of the drinking water and wastewater infrastructure in the U.S. was built 30 years following World War II, mirroring the increase in population. We will face infrastructure rehabilitation and replacement needs over the next several decades. If these needs are not addressed, the achievements of the last 30-40 years and our nation's waters and public health will be at risk. EPA is promoting sustainable practices that will help to reduce the potential gap between funding needs and spending at the local and national level. EPA's Sustainable Infrastructure Initiative guides its efforts in changing how the nation views, values, manages, and invests in its water infrastructure. EPA is working with the water industry to identify best practices that have helped many of the nation's utilities address a variety of management challenges and extend the use of these practices to a greater number of utilities. Collaboration with a coalition of leaders, with EPA playing a prominent role, can build a roadmap for the future promotion of sustainable infrastructure through a Four Pillars approach:

- Better management of water and wastewater utilities;
- Rates that reflect the full cost pricing of services;
- Efficient water use; and
- Watershed approaches to protection. (<http://www.epa.gov/waterinfrastructure>)

Reducing and returning water. Some companies are voluntarily establishing an ambitious goal to be water neutral across its operations and its supply chain. It plans to reduce and recycle the amount of water used and return the water that it uses. Coca-cola, for instance, is working with the World Wildlife Fund to identify opportunities to reduce water use in its supply chain, for example, with sugar growers.

Water quality monitoring. As of 2004, 16% of nation's river miles and 39% of nation's lake acres assessed, and 29% of nation's bays/estuary square miles.

(<http://www.epa.gov/owow/305b/2004report/report2004pt1.pdf>) Kodak Colorado Division, in collaboration with the City of Fort Collins, South Fort Collins Sanitation District, Boxelder Sanitation District, Town of Windsor Sanitation District, and the City of Greeley Sanitation District, work with the Colorado Department of Public Health and Environment, the North Front Range Water Quality Planning Association, and EPA Region 8 to coordinate water quality monitoring along 40 miles of the Cache la Poudre River and provide the monitoring data to the State. In addition, Kodak worked with the state to exercise permitting flexibilities based on new

monitoring guidance developed by the state to encourage similar efforts in other watersheds (www.cdphe.state.co.us/wq/PermitsUnit/PolicyandGuidance/MonitoringReductionPolicy.pdf). As a result of sharing their water quality monitoring data, the State integrated ambient water monitoring into Kodak's effluent monitoring strategy and reflect this in their permit.

Volunteer water quality monitoring. EPA provides information to inform the public of local watershed protection and restoration efforts. (<http://www.epa.gov/adopt>) For example, EPA provides information about how volunteers can monitor water quality (<http://www.epa.gov/owow/monitoring/volunteer>) and a directory of volunteer organizations around the country engaged in monitoring rivers, lakes, estuaries, beaches, wetlands, and ground water. (<http://yosemite.epa.gov/water/volmon.nsf>)

Water efficiency. WaterSense, a partnership program sponsored by EPA, makes it easy for Americans to save water and protect the environment. WaterSense helps consumers identify water-efficient products and programs. The WaterSense label will indicate that these products and programs meet water efficiency and performance criteria. WaterSense labeled products will perform well, help save money, and encourage innovation in manufacturing. WaterSense is partnering with irrigation professionals and irrigation certification programs to promote water-efficient landscape irrigation practice, and is also partnering with manufacturers, retailers and distributors, and utilities to bring WaterSense products to the marketplace and make it easy to purchase high-performing, water-efficient products. (<http://www.epa.gov/WaterSense>)

Watershed association. Stony-Brook-Millstone Watershed Association is a non-profit organization dedicated to enhancing the quality of the natural environment surrounding Stony Brook and the Millstone River. The association is committed to informed land use decision making, the protection of water quality and supply, and an improved community awareness of environmental issues. In addition to management of a nature reserve and hiking trails, the association sponsors educational programs, teacher workshops, and a partnership program to foster stewardship of the watershed. (<http://thewatershed.org>)

1.d. Products:

Products have environmental implications based on the materials and resources used to produce and transport them and their form and destination after they are used. Product purchase and product manufacturing decisions are inter-connected. There is growing awareness that a company's environmental footprint includes the use of its products, and in some cases, these product use impacts outweigh the company's direct environmental impacts.

Environmental impacts. Consumer product choices have environmental implications. EPA provides information to inform consumer choices. (<http://www.epa.gov/epahome/shopping.htm>)

Ecolabels. Ecolabels represent a way to communicate the environmental impacts of products. A website has been established to list and provide information about various ecolabels in use around the world. (<http://www.ecolabelling.org>)

Product design. Some companies classify ingredients considered for use in its products by their impact on the environment and human health. As an example, SC Johnson scientists have a computerized system that helps them select the best available ingredients and continually improve their products.

Stewardship. Product stewardship is a product-centered approach to environmental protection and calls on those in the product lifecycle -- manufacturers, retailers, users, and disposers -- to share responsibility for reducing the environmental impacts of products. This website highlights the latest developments in product stewardship and provides numerous links to other sources of information. (<http://www.epa.gov/epawaste/partnerships/stewardship>)

1.e. Supply Chain:

There is growing understanding that a company's environmental footprint does not start or end at the fence line of its facilities, but its footprint also includes its supply chain. In some cases, the environmental impacts of a company's supply chain may outweigh its direct environmental impacts.

Greening supply chain. The [Green Suppliers Network](#) is a collaborative venture among industry, EPA, and the U.S. Department of Commerce's Manufacturing Extension Partnership (MEP). The Green Suppliers Network works with all levels of the manufacturing supply chain to improve processes and minimize waste generation. Through onsite technical reviews, suppliers continuously learn ways to increase energy efficiency, identify cost-saving opportunities, and optimize resources and technologies to eliminate waste. The result has been more effective processes and products with higher profits and fewer environmental impacts. Operating under the umbrella of the Green Suppliers Network, **E3: Economy, Energy, and Environment** is a coordinated federal and local technical assistance initiative to help manufacturers adapt and thrive in a new business era focused on sustainability.

Sustainable sourcing. A number of companies are actively engaged with sustainable sourcing of supplies through purchase of certified sustainable forest and paper products or sustainable agricultural products. For example, Xanterra Parks & Resorts Sustainable Cuisine program and Xerox's support of sustainability forestry through its product offerings and partnership with The Nature Conservancy.

Transparency. Some companies share the names of their suppliers to promote transparency and to raise the environmental standards in the electronics industry supply chain. Hewlett Packard, for instance, provides the list of its top suppliers through its website. In addition, it has provided information regarding the greenhouse gas emissions from its suppliers

Industry Code of Conduct. Electronic Industry Citizenship Coalition promotes an industry code of conduct for global electronics companies and their supply chains to promote progressive corporate social responsibility programs and improve working and environmental conditions. (<http://www.eicc.info>)

1.f. Sustainable Agriculture:

Agriculture and forestry are a major U.S. industry, providing significant economic benefits from both domestic and export sales. In addition, agriculturalists and foresters manage extensive acreage in the United States and, thus, can exert significant impacts—both positive and negative—on the natural environment and communities. This section provides highlights of the scope of agriculture in the United States along with a brief overview of the programs of the U.S. Department of Agriculture affecting economic, environmental and social dimensions of agriculture-- including consumers.

In 2007, U.S. farms sold \$297 billion in agricultural products (of which \$81.9 billion were exports) while incurring \$241 billion in production expenses. In addition to receipts from sales, U.S. farms also received \$8 billion in government payments and \$10 billion in farm-related income in 2007. (See National Agricultural Statistics Service, www.nass.usda.gov, www.agcensus.usda.gov).

The value of agricultural production is concentrated in a few regions: the Midwest, the Mississippi Delta, California and the Atlantic Coast. The top five states for the value of agricultural products sold and their percentage of the total value are: California (11.4 percent), Texas (7.1 percent), Iowa (6.9 percent), Nebraska (5.2 percent) and Kansas (4.8 percent). Of the almost \$300 billion agricultural products sold in 2007, grains and oilseeds accounted for 26 percent, cattle and calves for 21 percent, poultry and eggs for 12 percent, milk for 11 percent, and fruits and nuts for 5 percent.

Non-Federal agricultural and forest lands occupy 1.4 billion acres or nearly 70 percent of the contiguous United States. U.S. land types include forests (28 percent), croplands (20 percent), urban, suburban and rural residential areas, (6 percent), miscellaneous other uses (7 percent); and special uses—primarily parks and wildlife areas (13 percent)-- (<http://www.ers.usda.gov/publications/sb973.pdf>). In addition to supporting the agriculture and forest sectors, farms and forests also provide a range of ecosystem services including wildlife habitat and corridors that support healthy wildlife populations, filter groundwater supplies, regulate surface water flows, sequester carbon, and provide open space and scenic vistas that improve quality of life for people. Increasingly, methods of valuing and accounting for ecosystem services associated with landscapes and their management are being developed and implemented. (See USDA Office of Ecosystem Services).

Many farmers and ranchers have a strong conservation ethic and produce in sustainable ways. As a whole, the U.S. farming community has made considerable strides in moving toward agricultural practices that have lower impacts on the environment and are more sustainable.

For example, the soil erosion rate on U.S. croplands has been reduced by 40 percent since the 1980s while use of no- and minimum tillage has increased significantly. Pesticide use has dropped with the increased adoption of integrated pest management (IPM), and use of insect-resistant crops. U.S. agriculture has continued to increase in productivity so that demands of a growing global population for food, fiber, and more recently, biofuels, may be met without bringing new lands into production and without increases of most agricultural inputs. At the same time, farming and ranching may include activities that can have negative environmental consequences. Crop and animal production can affect water and air quality, water flows, and wildlife habitat. Fertilizers, insecticides, pesticides and livestock waste can enter ground and surface water, adversely affecting water quality. Overgrazing and cropping fragile lands can increase particulate matter in the air. The conversion of grasslands to crop and can increase soil erosion and reduce wildlife cover” (See “Conservation and the Environment”, 2007 Farm Bill Theme Papers, USDA/OCE).

Farms in the United States fall increasingly into a bimodal size distribution. The 2007 Census of Agriculture results show that concentration of production agriculture has increased in the last five years. In 2002, 144,000 farms produced 75 percent of the value of U.S. agricultural production. In 2007, the number of farms that produced that same share of production declined to 125,000. (www.agcensus.usda.gov) The 2007 Census of Agriculture counted 2,204,792 farms in the United States, which was a 4 percent increase from 2002. Overall, however, the number of farms nationwide has been on a declining trend since World War II. Most of the recent growth in U.S. farm numbers came from small operations, especially farms with sales of less than \$1,000 (an increase of 118,000 between 2002 and 2007), but also farms with sales of more than \$500,000 (an increase of 46,000). Most farms in the United States are small, with 60 percent of all farms reporting less than \$10,000 in sales of agricultural products. Of the 2.2 million farms nationwide, only 1 million show positive net cash income from the farm operation. The remaining 1.2 million farms depend on non-farm income to cover farm expenses. Sixty-five percent of farmers also work off-farm.

The United States Department of Agriculture (www.usda.gov) promotes sustainable development related to agriculture, forestry, and communities by working with farmers and forest managers of all sizes, organizations, individuals, and state, local and tribal governments to:

- Emphasize farm and forest management and practices that are profitable, ecologically sound and good for communities.
- Conserve important farm-, range-, and forest lands and protect them from conversion.
- Provide incentives and know-how to keep environmentally sensitive farmland covered with grasses and trees.
- Help citizens care for their neighborhood gardens, community trees and forests and other green spaces.
- Help farmers get the most value for their products through farmers markets, direct marketing techniques, and organic market expansion along with export and other markets.

- Connect small business owners—including farmers—to the latest technologies and resources.
- Foster start-up of micro- and small enterprises through grants and loans.
- Work with communities to identify options and plan their futures.
- Create regional partnerships to connect urban and rural consumers and producers.
- Target information and education to families, consumers, ranchers, woodlot owners, and local government officials through a national network of extension agents.
- Link rural communities across long distances to vital services using the latest technologies, for example eXtension.
- Reduce hunger; improve nutrition and food quality; and build community food systems, linking local farmers and markets.

The USDA Strategic Plan describes Departmental goals and priorities can be found on <http://www.ocfo.usda.gov/usdasp/usdasp.htm>.

Selected USDA Sustainability and Stewardship Programs and Activities include:

- USDA Council for Sustainable Development—facilitates interagency work on the economic, environmental and social sustainability of food, fiber, agricultural, forest and range systems. Provides a Departmental platform to discuss vital issues, set priorities and share best practices. (<http://www.usda.gov/oce/sustainable>)
- Science for Sustainability Research, Education and Extension.
 - Research for Agricultural Systems and Sustainability
http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=207
http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=305
<http://www.nifa.usda.gov/fo/fundview.cfm?fonum=1134>
 - <http://www.nrcs.usda.gov/technical/nri/ceap/> ■ Conservation Effects Assessment Project (CEAP) began in 2003 as a [multi-agency](#) effort to quantify the environmental benefits of conservation practices used by private landowners participating in selected U.S. Department of Agriculture (USDA) conservation programs. The project consists of three components: (1) [National Assessment](#) - Providing national summary estimates of conservation practice benefits and assessing the potential for USDA conservation programs to meet the nation’s environmental and conservation goals. [Cropland](#), [wetlands](#), [wildlife](#) and [grazing lands](#) will be assessed. (2) [Watershed Assessment Studies](#) - Basic research on conservation practices in selected watersheds nationwide to provide a framework for evaluating and improving performance of national assessment models; (3) [Bibliographies and Literature Reviews](#) - Current literature on conservation 3programs. Four literature reviews are being developed that will document what is known and not known about the environmental benefits of conservation practices and programs for cropland, fish and wildlife, wetlands, and grazing lands.

<http://www.ars.usda.gov/pandp/locations.htm?modecode=02-02-00-00>

- Sustainable agriculture information resources
http://afsic.nal.usda.gov/nal_display/index
<http://attra.ncat.org/>
- Grants, research, and education for sustainable agriculture
www.sare.org
- National multi-stakeholder Roundtables on forests, ranges, minerals, and water
<http://www.sustainableforests.net>
<http://sustainablelandlands.warnercnr.colostate.edu>
<http://www.unr.edu/mines/smr/>
<http://acwi.gov/swrr/>
- Sustainable USDA Business Operations
- Biobased fuels and other products
- Biobased products policy to increase utilization of biobased renewable products by USDA and throughout the Federal Government by designation of eligible products
<http://www.usda.gov/procurement/biobased/index.htm>
http://www.usda.gov/procurement/programs/biobased/biobased_finalrule.pdf

http://www.usda.gov/procurement/programs/biobased/awarenessbrochure_may2006.pdf

- Farm and Forestland Conservation Programs to reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, protect farm and forest lands from conversion and respond to forest health threats
<http://www.nrcs.usda.gov/programs/>

<http://www.fsa.usda.gov/FSA/webapp?area=home&subject-copr&topic=crp>

<http://www.fs.fed.us/spf/>

Integrated Pest Management (IPM) reduces use of agricultural pesticides

<http://www.ipmcenters.org/>

http://ars.usda.gov/research/programs/programs.htm?NP_CODE=304

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1114>

<http://www.nrcs.usda.gov/technical/nutrient.html>

- Agroforestry. USDA's National Agroforestry Center accelerates application of agroforestry through a national network of partners. Together it conducts research, develops technologies and tools, coordinates demonstrations and training, and provides useful information to natural resource professionals. One of its focus areas includes tree planting—the right trees planted in the right places for the right reasons can add value to land-use systems. The Center's Working Trees theme promotes development of sustainable agriculture and communities.

<http://www.unl.edu/nac>

- Sustainable Forestry. Certification programs were established to coordinate development of forest management standards for different bioregions, certify sustainable forest management practices, prevent illegal logging, and communicate these practices to consumers and influence their purchase decisions. Supporting organizations include the Forest Stewardship Council (<http://www.fscus.org>), Sustainable Forestry Initiative (<http://www.sfiprogram.org>), Rainforest Action Network (<http://ran.org>) and the World Wildlife Fund (http://www.panda.org/what_we_do/footprint/forestry).

- Sustainable Communities, linking local farms and food to communities, through direct marketing, value added producer grants, farmers markets, and farm-to-school programs.

<http://www.ams.usda.gov/directmarketing/>

<http://www.rurdev.usda.gov/rbs.coops/vadg.htm>

<http://www.ams.usda.gov/farmersmarkets/>

http://www.fns.usda.gov/cnd/Guidance/Farm-to-School-Guidance_12-19-2005.pdf

<http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1200>

-Resource Conservation and Development Program assists local groups plan and implement coordinated approaches to conservation and development

<http://www.nrcs.usda.gov/programs/rcd/>

-Community Food Projects meet the need of low-income people, increase the self-reliance of communities in providing for their own needs, and promote local food, farm, and nutrition solutions (CSREES/ now NIFA)

-Expanded Food and Nutrition Education Program (EFNEP), a program operating in 50 states plus American Samoa, Guam, Micronesia, Northern Marianas, Puerto Rico and the Virgin Islands, designed to assist limited-resource audiences in acquiring the knowledge, skills, attitudes, and changed behavior necessary for nutritionally sound

diets, and to contribute to their personal development and the improvement of the total family diet and nutritional well-being.

-Food recovery/Food donations. USDA citizen guide on food recovery, defined as the collection of wholesome food for distribution to hungry people. (<http://www.usda.gov/news/pubs/gleaning/content.htm>). It has also developed a policy to support food donations (<http://www.afm.ars.usda.gov/ppweb/PDF/223-01.pdf>). EPA Region 1 has a website to identify organizations that accept food donations (<http://www.epa.gov/ne/assistance/reuse/food/html>).

-Nutrition guidance. The USDA Center for Nutrition Policy and Promotion (CNPP) works to improve the health and well-being of Americans by developing and promoting dietary guidance that links scientific research to the nutrition needs of consumers. CNPP is an agency of USDA's [Food, Nutrition, and Consumer Services](#). It collaborates with the Department of Health and Human Services in formulating dietary guidelines for Americans, prepares and maintains the Thrifty Food Plan, and the Diet Pyramid for adults and for children, among other activities (www.cnpp.usda.gov). (<http://www.mypyramid.gov>).

-Nutrition Assistance. Fully two thirds of the USDA budget is provided to U.S. consumers in the form of nutrition assistance through a variety of well known programs including the Supplemental Nutrition Assistance Program (SNAP)—formerly food stamps—the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children (WIC), the School Feeding Programs (lunch, breakfast, etc.). These programs are administered by the USDA Food and Nutrition Service (www.fns.usda.gov).

Selected new programs and priorities are provided here:

- “Know Your Farmer-Know Your Food” Initiative, announced by USDA Secretary Tom Vilsack in September 2009 to help support small and medium farmers through marketing and other assistance.

www.usda.gov/knowyourfarmer

http://www.youtube.com/watch?v=Tms8ye8mw_k

Newly announced changes in Research, Education and Economics¹:

¹ Statement by Dr. Rajiv Shah, Under Secretary of Research, Education and Economics, Before the Subcommittee on Conservation, Credit, Energy, and Research Committee on Agriculture, U.S. House of Representatives, September 30, 2009.

- New Office of the Chief Scientist—Chief Scientist role is to focus resources where scientific breakthroughs can fundamentally change the way we address some of the most vexing of society’s problems, from food safety and food security to climate change.
- National Institute of Food and Agriculture (formerly Cooperative Research, Education and Extension Service).
- Specialty Crop Research Initiative (SCRI), \$50 million
- Organic Agricultural Research and Extension Initiative, \$18 million
- Agriculture and Food Research Initiative (AFRI), provides funding for fundamental and applied research, extension, and education to address food and agricultural sciences. Priorities include:
 - Plant health and production and plant products
 - Animal health and production and animal products
 - Food safety, nutrition and health
 - Renewable energy, natural resources and environment
 - Agriculture systems and technology;
 - Agricultural economics and rural communities.
- Biomass Research and Development Initiative, competitive grants to research, develop, and demonstrate biomass projects. The three main technical areas are: (1) Feedstocks Development, (2) Biofuels and Biobased Product Development, and (3) Biofuels Development Analysis. (Joint with Dept. of Energy)

Agriculture is a major U.S. industry and a net exporter of food. According to USDA, there are currently over two million farms covering an area of over 922 million acres (includes cropland, pastureland, and woodland), representing over 40 percent of the country’s total land area. Given its size, agriculture represents a level of significance in environmental protection efforts.

Sustainable development in agriculture. The USDA Council on Sustainable Development facilitates interagency work on the economic, environmental and social sustainability of food, fiber, agricultural, forest and range systems by providing a Departmental platform to discuss vital issues, set priorities and share best practices. Related topics include sustainable agriculture, sustainable forestry, and sustainable communities, and the links between them. (<http://www.usda.gov/oce/sustainable>)

Sustainable agriculture research and education. The Sustainable Agriculture Research and Education (SARE) program has helped advance farming systems that are profitable, environmentally sound, and good for communities through a nationwide research and education grants program. SARE administers a competitive grants program and publishes a variety of print and electronic resources for farmers, agricultural educators, and consumers. (<http://www.sare.org>)

Sustainable farming. World Wildlife Fund (WWF) works to reduce humanity's ecological footprint – the amount of land and natural resources needed to supply food, water, fiber and timber, and to absorb CO₂ emissions. Its focus areas for reducing impacts include carbon, energy, and climate; farming, fishing, forestry, and water. When farming operations are sustainably managed, both on land and in the water, they can preserve and restore critical habitats, help protect watersheds, and improve soil health and water quality. To achieve these benefits, WWF collaborates with a wide range of players to:

- Convene multi-stakeholder roundtables;
- Identify and implement better management practices that protect the environment and producers' bottom line;
- Create financial incentives to encourage biodiversity conservation;
- Improve agricultural policies; and
- Identify new income opportunities for producers to ensure their economic viability.

WWF focuses on reconciling the needs of people with the diversity of all life found on our planet. With growing global food needs, sustainable resource management of farming activities becomes ever more urgent. (http://www.panda.org/what_we_do/footprint/agriculture)

Agroforestry. USDA's National Agroforestry Center accelerates the application of agroforestry through a national network of partners. Together, it conducts research, develops technologies and tools, coordinates demonstrations and training, and provides useful information to natural resource professionals. One of its focus areas includes tree planting – i.e., the right trees planted in the right places for the right reasons can add value to land-use systems. The Center's *Working Trees* theme promotes development of sustainable agriculture and communities. (<http://www.unl.edu/nac>)

Food recovery/Food donations. USDA has a citizen guide on food recovery, defined as the collection of wholesome food for distribution to poor and hungry people. (<http://www.usda.gov/news/pubs/gleaning/content.htm>). It has also developed a policy to support food donations (<http://www.afm.ars.usda.gov/ppweb/PDF/223-01.pdf>). EPA Region 1 has a website to identify organizations that accept food donations (<http://www.epa.gov/ne/assistance/reuse/food.html>).

Food pyramid. USDA's Center for Nutrition Policy and Promotion was established to improve the nutrition and well-being of Americans. Toward this goal, the Center focuses its efforts on two primary objectives:

- Advance and promote dietary guidance for all Americans, and
 - Conduct applied research and analyses in nutrition and consumer economics.
- (<http://www.mypyramid.gov>)

Sustainable Forestry. With growing public interest in forest management and reducing deforestation, certification programs were established to coordinate development of forest management standards for different bioregions, certify sustainable forest management

practices, prevent illegal logging, and communicate these practices to consumers and influence their purchase decisions. Supporting organizations include Forest Stewardship Council (<http://www.fscus.org>), Sustainable Forestry Initiative (<http://www.sfiprogram.org>), Rainforest Action Network (<http://ran.org>), and World Wildlife Fund ([http://www.panda.org/what we do/footprint/forestry](http://www.panda.org/what_we_do/footprint/forestry)).

1.g. Sustainable Communities:

The goal of sustainable communities is to move and plan toward safe, livable, and healthy lifestyles, while also expanding economic opportunities and protecting the environment.

Green communities. Green Communities website is a portal to tools and information on the best strategies, programs, and policies to reduce one's environmental footprint. A 5-step environmental planning framework leads viewer to a greener, sustainable future. (<http://www.epa.gov/greenkit>)

Sustainable communities. EPA joined with the U.S. Department of Housing and Urban Development (HUD) and the U. S. Department of Transportation (DOT) to help improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide. Through a set of guiding livability principles and a partnership agreement that will guide the agencies' efforts, this partnership will coordinate federal housing, transportation, and other infrastructure investments to protect the environment, promote equitable development, and help to address the challenges of climate change. (<http://www.epa.gov/smartgrowth/2009-0616-epahuddot.htm>; <http://www.sustainable.org>)

Green Buildings. The goal of [EPA's Green Building Program](#) is to facilitate the mainstream adoption of effective green building practices. Recognizing that many other organizations are already working toward this goal, EPA will focus primarily on two roles:

- *Strengthening the Foundations of Green Buildings:* EPA has expertise and credibility to raise awareness of green building practices and to work with this emerging field to ensure that it promotes continual improvement and employs practices that most effectively advance environmental and human health protection. EPA's *Green Building Strategy* commits the Agency to strengthening the scientific, technical, economic and institutional foundations of green building.
- *Raising Public Awareness of Building-related Impacts and Opportunities:* Recognizing that most of the attention to green buildings, to date, has focused on new commercial and public buildings, EPA will increase its focus on untapped opportunities for greening existing buildings and houses, which comprise the majority of the U.S. building market. In particular, the Agency will focus on providing green building information and opportunities to homeowners.

Sustainable Tourism/Hospitality: EPA has several ongoing activities in this area:

- EPA is participating with other stakeholders (Green Meeting Industry Council, Convention Industry Council, etc.) in efforts to develop ASTM sustainability standards for the meetings and events industry. Currently, development work is centered around nine related economic sectors involving some facet of the meeting/event industry -- Accommodations, Audio Visual, Communication, Exhibits, Food and Beverage, On-site Office, Destinations, Meeting Venue, and Transportation. EPA hopes the final ASTM standards will be specific, measurable, performance-based criteria, and (if deemed sufficient) intends to adopt them into Agency procurement rules as a means to assist in government purchasing of meeting and conference facilities and services.
- In addition to assisting in developing the ASTM standards, EPA regional offices have helped local hotels, restaurants, sports arenas, and other hospitality providers identify and implement sustainable practices through workshops and other training opportunities.
- EPA also has an on-going dialogue with state green lodging programs to ensure effective coordination and information exchange on green hospitality at the local and state levels.

Low Impact Development (LID) is an approach to land new development, redevelopment, or retrofits to existing development that works with nature to sustainably manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste. There are many practices that have been used to adhere to these principles such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions. (<http://www.epa.gov/nps/lid>)

Green infrastructure refers to systems and practices that use or mimic natural processes to infiltrate, evapotranspire (the return of water to the atmosphere either through evaporation or by plants), or reuse stormwater or runoff on the site where it is generated. Green infrastructure can be used at a wide range of landscape scales in place of, or in addition to, more traditional stormwater control elements to support the principles of LID. (http://cfpub.epa.gov/npdes/home.cfm?program_id=298)

Cleaning up and revitalizing sites. The expansion, redevelopment, or reuse of brownfields may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces

blight, and takes development pressures off greenspaces and working lands.

(<http://www.epa.gov/brownfields>)

Reducing pollution. Community Action for a Renewed Environment (CARE) is a competitive grant program that offers an innovative way for a community to organize and take action to reduce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. Through this program, EPA provides financial and technical assistance to these communities to renew their environment. (<http://www.epa.gov/care>)

1.h. Ecosystems:

There is growing understanding of the need to value and protect ecosystems and of the services they provide. Protection of ecosystems can be fostered through partnership efforts that promote greater environmental stewardship. Companies rely on ecosystems for the services they provide (e.g., material inputs), but they also affect ecosystems. As ecosystems are degraded or depleted, company access to resources and profitability can be negatively affected.

Ecosystems Services. World Resources Institute assist with Corporate Ecosystem Services Reviews, which are a structured methodology to develop strategies for managing business risks and opportunities arising from a company's dependence and impact on ecosystems.

(<http://www.wri.org/project/ecosystem-services-review>)

Habitat Restoration. EPA's Five Star Restoration Program brings together students, conservation corps, other youth groups, citizen groups, corporations, landowners and government agencies to provide environmental education and training through projects that restore wetlands and streams. The program provides challenge grants, technical support and opportunities for information exchange to enable community-based restoration projects. At the completion of Five Star projects, each partnership will have a demonstrated record of accomplishment and will be well-positioned to take on other projects. When added together, these grassroots efforts will make a significant contribution to the environmental landscape and to the understanding of the importance of healthy wetlands and streams in the communities.

(<http://www.epa.gov/wetlands/restore/5star>)

Wetlands. The U.S. federal government protects wetlands through regulations, economic incentives and disincentives, cooperative programs, and acquisition. In addition, a number of states have enacted laws to regulate activities in wetlands, and some counties and towns have adopted local wetlands protection ordinances or have changed the way development is permitted. Most coastal states have significantly reduced losses of coastal wetlands through protective laws. (<http://www.epa.gov/wetlands>)

Wildlife Conservation. Within USDA's Natural Resources Conservation Service is the Agricultural Wildlife Conservation Center, whose mission is to expand and improve efforts to

protect and conserve wildlife. It accomplishes this mission through: a) sponsoring natural resources conservation programs to reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters; b) providing technical resources to farmers and ranchers; and c) technical partnerships with federal, state, and nonprofit groups. (<http://www.whmi.nrcs.usda.gov>)

Wildlife habitat restoration and enhancement. Wildlife Habitat Council is a nonprofit group of corporations, conservation organizations, and individuals dedicated to restoring and enhancing wildlife habitat. The Council helps large landowners, particularly corporations, manage their unused lands in an ecologically sensitive manner for the benefit of wildlife. (<http://www.wildlifehc.org>)

Bird habitat/migratory routes. U.S. Fish and Wildlife Service's Migratory Bird Program seeks to conserve migratory bird populations and associated habitats for future generations, through monitoring and population management. Much of this work is carried out through regional partnerships of government agencies, corporations, and nongovernmental organizations. These partnerships deliver habitat conservation in support of national and international bird conservation efforts. (<http://www.fws.gov/pdfs/Migratory%20Birds%20Transition%202009.pdf>)

The Nature Conservancy partners with indigenous communities, businesses, governments, multilateral institutions, other non-profits, and individuals. Its Migratory Bird Program helps to ensure that protection efforts appropriately address the habitat needs of birds through North America, Latin America, and the Caribbean. They work with conservation ornithologists and planners to identify habitats needed by bird species and develop plans and strategies to conserve habitat at the local level. (<http://my.nature.org/birds/about>) The Gulf Coast Bird Observatory is an organization that has designed and conducted many conservation projects, including migration studies, habitat enhancement, land acquisition, and regional habitat mapping. Its main conservation program is its Site Partner Network, a network of partners located in the U.S. and Mexican states that border the Gulf of Mexico. The 65 sites currently in its Network preserve and restore essential migratory bird habitat for 300 plus species of birds. Among the Partners, more than 8 million acres of precious wetland, forests, coastal prairies and other critical habitats for birds are being protected. "We value ... stewardship of birds and their ecosystems, partnerships with all, and sharing of expertise and knowledge." (<http://www.gcbo.org>) (<http://www.epa.gov/owow/birds/bird.html#pif>)

1.i. Government Agency Toolbox:

Government agencies have a number of tools available to foster environmental stewardship and sustainability:

Environmental education increases public awareness and knowledge about environmental issues or problems. In doing so, it provides the public with the necessary skills to make informed decisions and take responsible action. Through the many programs funded and led by EPA, people of all ages and backgrounds are being provided multiple experiences that foster

development of the combination of knowledge, skills, and attitudes required to be environmentally literate. Because environmental education is a process, it cannot in itself improve the environment. Instead, environmental education provides the capability and skills over time to analyze environmental issues, engage in problem solving, and take action to sustain and improve the environment. As a result, individuals are more capable of weighing various sides of an environmental issue to make informed and responsible decisions.

(<http://www.epa.gov/enviroed>)

Executive Order 13148 states that the head of each Federal Agency is responsible for ensuring that all necessary actions are taken to integrate environmental accountability into agency day-to-day decision-making and long-term planning processes, across all agency missions, activities, and functions. Consequently, environmental management considerations must be a fundamental and integral component of Federal Government policies, operations, planning, and management. The head of each Federal Agency is responsible for meeting the goals and requirements of this order, which deal with environmental management systems, environmental compliance, toxics reporting, pollution prevention, toxic chemicals, ozone-depleting substances, and landscaping. (<http://ceq.hss.doe.gov/nepa/regs/eos/eo13148.html>)

Executive Order 13514 sets sustainability goals for Federal agencies and focuses on making improvements in their environmental, energy, and economic performance. The Executive Order requires Federal agencies to set a 2020 greenhouse gas emissions reduction target within 90 days; increase energy efficiency; reduce fleet petroleum consumption; conserve water; reduce waste; support sustainable communities; and leverage Federal purchasing power to promote environmentally-responsible products and technologies.

(http://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf)

Funding. Watershed organizations and state and local governments need adequate resources to achieve the goals of the Clean Water Act and improve our nation's water quality. To support these efforts, EPA created a website to provide tools, databases, and information about sources of funding to practitioners and funders that serve to protect watersheds.

(<http://www.epa.gov/owow/funding.html>)

Funding. [EPA's Pollution Prevention \(P2\) Grant Program](#) provides matching funds to state and tribal programs to support P2 activities across all environmental media (air, water and land) to develop state-based programs. EPA believes these environmental programs have the best opportunity to promote P2 because states and tribes have direct contact with industry and are aware of local needs. This program assists businesses and industries in identifying better environmental strategies and improving business competitiveness. The grants support P2 integration, technical assistance, training, outreach, education, data collection, research, and recognition programs. In recent years, EPA awarded approximately \$4.1 million annually.

Environmental information. EPA provides a menu-driven list of examples of what individuals, communities, businesses and institutions, and governments can do to become better stewards. Environmental stewardship is the responsibility for environmental quality shared by all those whose actions affect the environment. (<http://www.epa.gov/stewardship>) In addition, Department of Interior manages a website that provides an atlas released by the Commission for Environmental Cooperation, which gathers and presents information designed to help understand environmental issues of North America. The maps and tools provided are designed to help the public visualize environmental topics for North America. (<http://www.nationalatlas.gov>)

Incentives. EPA promotes use of various types of incentives to achieve environmental improvements. For example, water quality trading is an incentive to achieve water quality goals more efficiently. Trading is based on the fact that sources in a watershed can face very different costs to control the same pollutant. Trading programs allow facilities facing higher pollution control costs to meet their further pollution reductions by arranging for environmentally equivalent (or superior) pollution reductions from another source at a lower cost, thus achieving the same water quality improvement at lower overall cost. (<http://www.epa.gov/owow/watershed/trading.htm>)

Labels. USDA's National Organic Program regulates the standard for any farm, wild crop harvesting, or handling operation that wants to sell an agricultural product as organically produced. (http://www.usda.gov/wps/portal/!ut/p/s.7_0_A/7_0_1OB?navid=ORGANIC_CERTIFICATIO&n avtype=RT&parentnav=AGRICULTURE) In addition, the Program develops, implements, and administers national production, handling, and labeling standards for organic agricultural products, and accredits certifying agents (foreign and domestic) who inspect organic production and handling operations to certify that they meet USDA standards.

(<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateA&navID=NationalOrganicProgram&leftNav=NationalOrganicProgram&page=NOPNationalOrganicProgramHome&acct=AMSPW>) USDA's Economic Research Reserves provides economic research, analysis, and information about the production and marketing of organic products. (<http://www.ers.usda.gov/Briefing/Organic>)

The **[Electronic Product Environmental Assessment Tool \(EPEAT\)](#)** helps purchasers buy environmentally preferable electronics. A list of EPEAT registered products and participating manufacturers and guidance for purchasers on how to buy EPEAT registered products is located on EPEAT's website. EPEAT-registered computer desktops, laptops, and monitors must meet an environmental performance standard for electronic products – IEEE 1680-2006. This is a voluntary consensus standard developed by stakeholders – including manufacturers, purchasers, and NGOs -- through IEEE's open, consensus-based process. [EPEAT products](#) contain less toxic and hazardous substances, are easier to recycle, and are more energy efficient than conventional products serving the same purpose.

Partnerships. The Federal Network for Sustainability promotes cost-effective, energy- and resource-efficient operations across all branches of government. Through individual initiatives and joint ventures, the Network strives to better understand the interrelationship between energy use, economics, and environmental impact. (<http://federalsustainability.org>)

Revolving loans. Clean Water State Revolving Fund (CWSRF) programs are America's largest water quality financing source. Since 1987, through Congressional appropriations, CWSRFs have funded over \$68 billion, providing over 22,700 low-interest loans to date. In addition, these programs have provided more than \$5 billion annually in recent years to fund water quality protection projects for wastewater treatment, nonpoint source pollution control, and watershed and estuary management. States prioritize which water quality projects to fund. CWSRFs offer:

- Low interest rates, flexible terms;
- Significant funding for nonpoint source pollution control and estuary protection;
- Assistance to a variety of borrowers; and
- Partnerships with other funding sources. (<http://www.epa.gov/owm/cwfinance/cwsrf>)

Partnership programs. EPA has developed a number of partnership programs to address a wide variety of environmental issues. Through these programs, EPA is working collaboratively with companies, facilities, organizations, communities, and individuals. There are now more than 13,000 businesses and other organizations participating in EPA Partnership Programs. (<http://www.epa.gov/partners>)

Partnerships: The [Federal Electronics Challenge \(FEC\)](#) is a partnership program that empowers federal agencies to manage their electronics in an environmentally-sound manner during all three life-cycle phases: acquisition and procurement; operation and maintenance; and end-of-life management. The FEC supports efforts to continuously improve environmental stewardship of electronic assets government-wide. The FEC also provides resources and technical assistance to help federal agencies and facilities improve electronics management throughout the life cycle.

Procurement. EPA's Comprehensive Procurement Guideline (CPG) program is part of its continuing effort to promote the use of recycled materials. Buying products with recycled-content ensures that the materials collected in recycling programs will be used again in the manufacture of new products. A key component of the CPG program is EPA's list of designated products and the accompanying recycled-content recommendations. EPA has already designated or is proposing to designate eight categories of products:

- Construction Products;
- Landscaping Products;
- Non-paper Office Products;

- Paper and Paper Products;
 - Park and Recreation Products;
 - Transportation Products;
 - Vehicular Products; and
 - Miscellaneous Products.
- (<http://www.epa.gov/waste/conserve/tools/cpg/products/index.htm>)

Environmentally Preferable Purchasing (EPP) is a program, authorized by a Presidential Executive Order, which encourages and assists federal agencies in buying or leasing environmentally preferable products and services. Environmentally preferable products are those products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. EPA recognizes the influence the United States government has on what products and services are produced due to its tremendous purchasing power, and works to leverage that influence to minimize environmental burdens.

Regulations. A number of laws serve as EPA's foundation for protecting the environment and public health. However, most laws do not have enough detail to be put into practice right away. EPA is called a regulatory agency because Congress authorizes it to write regulations that explain the critical details necessary to implement environmental laws. In addition, a number of Presidential Executive Orders (EOs) play a central role in EPA's activities.

(<http://www.epa.gov/lawsregs>)

Compliance assistance means helping businesses, federal facilities, local governments, and tribes meet their environmental regulatory requirements. Compliance assistance providers help regulated communities and businesses comply with environmental laws through one-to-one counseling, online resource centers, fact sheets, guides and training. Providers include EPA regional office staff; state, local and tribal governments; federal and state small business and pollution prevention technical assistance extension agents, consultants, and trade associations.

(<http://www.epa.gov/compliance/assistance/index.html>)

Technical assistance. EPA maintains a website to provide access to sustainability information (policies and programs; research, tools, and technologies; and assessments and performance measures) related to Urban Sustainability and the Built Environment; Water and Ecosystem Services; Energy, Biofuels and Climate Change; and Materials Management and Human Health.

(<http://www.epa.gov/sustainability>)

Technical assistance. The **Pollution Prevention Resource Exchange (P2Rx)** is a consortium of eight regional pollution prevention information centers, funded in part through grants from EPA. These centers provide a range of services for business, government, and technical assistance providers including information for specific industry sectors, training, library resources, referrals and research. The centers collect, synthesize, and update technical information; and provide contact information for experts and other sources. The centers represent a broad constituency,

including state and local P2 programs, manufacturing extension partnerships, cooperative extension and nonprofit organizations. The diversity of audiences contributes to an overall breadth of P2 information and opportunities.

State based Technical Assistance. EPA's Pollution Prevention (P2) Grant Program provides matching funds to state and tribal programs to support P2 activities across all environmental media (air, water and land) to develop state-based programs. EPA believes these environmental programs have the best opportunity to promote P2 because state and tribes have direct contact with industry and are more aware of local needs. This program assists businesses and industries in identifying better environmental strategies and improving business competitiveness. The grants support P2 integration, technical assistance, training, outreach, education, data collection, research, and recognition programs.

Verification. Environmental Technology Verification Program verifies the performance of innovative technologies that have the potential to improve protection of human health and the environment. The program accelerates the entrance of new environmental technologies into domestic and international marketplaces. Verified technologies are included for all environmental media -- air, water, and land.

<http://www.epa.gov/etv>

Note: Additional sustainable production and consumption activities are described in other chapters of the U.S. national report.

2. INTERNATIONALLY-FOCUSED AGENCIES AND PROGRAMS

Asia-Pacific Partnership on Clean Development and Climate is an innovative new effort to accelerate the development and deployment of clean energy technologies. APP partners Australia, Canada, China, India, Japan, Republic of Korea, and the United States have agreed to work together and with private sector partners to meet goals for energy security, national air pollution reduction, and climate change in ways that promote sustainable economic growth and poverty reduction. The Partnership will focus on expanding investment and trade in cleaner energy technologies, goods and services in key market sectors. The Partners have approved eight public-private sector task forces covering:

- Aluminum
- Buildings and Appliances
- Cement
- Cleaner Use of Fossil Energy
- Coal Mining
- Power Generation and Transmission
- Renewable Energy and Distributed Generation
- Steel

There are a number of U.S. projects to develop and deploy cleaner and more efficient technologies to meet national pollution reduction, energy security, or climate change

challenges. The seven partner countries represent about half of the world's economy, population and energy use, and they produce about 65 percent of the world's coal, 48 percent of the world's steel, 37 percent of world's aluminum, and 61 percent of the world's cement.

<http://www.asiapacificpartnership.org>

Assistance and aid. USDA's Foreign Agricultural Service carries out a broad array of international training, technical assistance, and other collaborative activities with developing and transitional countries to facilitate trade and promote food security. USDA FAS also works with U.S. food aid programs with the U.S. Agency for International Development (USAID). For example, USDA channels food aid to help needy people around the world:

- Food for Progress Program provides donations of agricultural commodities to needy countries to encourage economic and agricultural reforms that foster free enterprise.
- McGovern-Dole International Food for Education and Child Nutrition Program provides for donations of U.S. agricultural products and financial and technical assistance for school feeding and maternal and child nutrition projects in low-income, food-scarce countries committed to universal education.

FAS helps countries focus on the critical role science and technology can play in raising agricultural productivity in an environmentally sustainable way, including assistance in developing appropriate policies and institutions to facilitate research and technology transfer in order to increase incomes, reduce hunger, and improve nutrition.

<http://www.fas.usda.gov>

Assistance and aid. U.S. Agency for International Development (USAID) is an independent federal government agency that receives overall foreign policy guidance from the Secretary of State. U.S. foreign assistance has always had the twofold purpose of furthering America's foreign policy interests in expanding democracy and free markets while improving the lives of the citizens of the developing world. One area of focus in its work is protecting the environment. USAID's programs in natural resource management are closely linked with programs to improve health, increase agricultural productivity, mitigate or adapt to climate change, and governance of the environment. Growing populations are placing increasing pressure on the resources in many countries and many of these resources, once used, are not renewable, so sustainability is important in all of the countries that USAID works with.

http://www.usaid.gov/our_work/environment

Data sharing. Existing emission inventories for countries, regions, and urban areas use different data formats and database structures, thereby making sharing and integrating data cumbersome. Emission analysts, modelers, and policy-makers should benefit from a system that makes it easier to exchange and use these data. The Networked Environmental Information System for Global Emissions Inventories strives to create a web-based global air emissions inventory network that provides catalogs of distributed emission inventory data, tools for processing and analyzing the data, means for sharing data and tools, and an environment for collaboration among international researchers, policy-makers, and the interested public.

<http://www.neisgei.org>

Partnership to protect migratory birds. Partners in Flight is a partnership effort among federal, state, and local government agencies, foundations, professional and conservation groups, industry, academia, and individuals, to protect land habitats of most landbirds throughout North and South America. (<http://www.partnersinflight.org>)

Partnerships with poor countries. Millenium Challenge Corporation forms partnerships with some of the world's poorest countries that are committed to good governance; economic freedom; and investments in their citizens. MCC provides these well-performing countries with large-scale grants to fund country-led solutions for reducing poverty through sustainable economic growth. Some of the areas assisted by MCC grants include agriculture and irrigation; transportation (roads, bridges, ports); and water supply and sanitation. (<http://www.mcc.gov>)

Secretary of State's Award for Corporate Excellence recognizes the important role U.S. businesses play abroad as good corporate citizens. Nominations are based on companies' achievements in one or more of the following areas: good corporate citizenship; exemplary employment practices; provision for a safe and healthy workforce; responsible environmental protection and practices; contribution to overall growth and development of the local economy; innovative programs with measurable results; compatibility/contribution to local science and technology; compliance with U.S., international, and local laws. (<http://www.state.gov/e/eeb/ace>)

Sustainable consumption. North American Sustainable Consumption Alliance is a partnership of people and organizations that working to promote more sustainable consumption patterns in Mexico, Canada, and the U.S. They share a common goal to encourage individuals, businesses, institutions, and governments to reduce their impact on the environment and society by changing how they consume materials and resources. (<http://nasca.icspac.net>)

Voluntary partnerships. Department of State maintains a website that provides information on U.S. efforts to work with other governments, the private sector, civil society, and other organizations to plan and implement voluntary partnerships that promote economic growth, social development, and environmental stewardship. (<http://sdp.gov>)