MYTH: THERE ARE NO MARKETS FOR ENVIRONMENTAL SERVICES

Over the past 30 years, the United States has made considerable strides in protecting the environment. The Clean Water Act of 1972, through the use of regulation and capital investment, has significantly reduced pollution, especially that emitted from wastewater treatment plants and industrial sources. However, there is still much more to do, for example in the area of nonpoint source (NPS) pollution. Policies have been developed and programs are in place that reward farmers for protecting our air and water. Well-managed forested and agricultural land can provide landowners with income, and provide environmental services such as watershed protection, clean air, wildlife habitat, and healthy soils. The promotion of environmental services benefits private companies and organizations that invest private money into environmental goods. Here are a few examples of environmental services for which farmers have been compensated.

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Providing Clean Water to Water Utilities

One of the principal beneficiaries of good land management practices are downstream water utilities, as water contaminants directly add to their cost of providing pure, safe drinking water. One of the greatest pressures facing utility managers is the proliferation of suburban sprawl, where impervious surfaces, lawn chemicals and stormwater runoff can be far more detrimental than agricultural land. Agricultural and forested land is increasingly recognized as providing multiple environmental and social benefits, and these lands should therefore be considered a preferred landscape.

New York City has successfully implemented this philosophy to protect its drinking water and save money. The New York City water supply system is the largest surface storage and supply complex in the world, yielding 1.2 billion gallons of water daily. Within this watershed is the Catskill Mountain region of New York, an area primarily agricultural and forested but facing development pressure.

The Catskill farmers and the NYC's Department of Environmental Protection both acknowledged that agriculture is a preferable land use in the Catskills watershed, and that maintaining well-managed agriculture is the best method of watershed protection. Thus, the New York City Watershed Whole Farm Program emerged. A Whole Farm Plan is an extended farm business plan that includes management and structural steps to reduce pathogen, nutrient, sediment, and pesticide runoff. Farmer participation in the program is completely voluntary, and all aspects of the program are implemented by the farmer-led Watershed Agricultural Council. NYC agreed to provide cost-share assistance for the implementation of agricultural best management practices in the watershed. The Watershed Agricultural Council recently announced that it has achieved its 85% participation goal ahead of schedule.[1] The Agricultural Council is also working to connect upstate farmers with downstate consumers who appreciate knowing where and how their food is grown.

Wildlife Recreation as an Incentive for Conservation

Farmers and ranchers have long provided access to their land for hunters, anglers, and birdwatchers usually without charge. A national survey showed that in 1996, hunters paid $324 million ($348 per hunter), anglers paid $84 million ($54 per angler), and birdwatchers paid $106 million ($67 per birdwatcher). As a rough estimate, if five percent of the two million U.S. farmers participated in these opportunities, each farm could gain approximately $5,000 of additional farm income.

Dan Hammack, a family farmer in Georgia, is primarily interested in managing his 400 acres of wooded land for wildlife. To finance management practices, he uses fees for hunting deer, quail, and turkey, money which he

puts toward planting combinations of perennial, spring, and winter crops in three to five acre food plots, interspersed within wooded areas. These plots provide food and shelter for wildlife on the property. Dan's primary interests are wildlife conservation, increasing wildlife populations, and improving habitat.

Protecting the Climate and Improving Soil Quality Through Carbon Credits

Many activities burn fossil fuels and produce carbon dioxide, the most prevalent greenhouse gas. Fortunately, many natural processes, like the growth of trees, take carbon dioxide out of the atmosphere and store it as carbon. As interest increases in reducing greenhouse gasses in our atmosphere, companies, government agencies, and some international bodies are exploring the feasibility of purchasing carbon credits from landowners that perform carbon sequestering practices. A carbon market would provide a market-based method for reducing greenhouse gas concentrations, while also providing incentives for conservation practices that provide multiple environmental benefits.

By exchanging greenhouse gas emission reductions for cash, the Confederated Salish and Kootenai tribes in Montana will reforest the Flathead Reservation damaged by forest fires. Sustainable Forestry Management offered the tribes an investment for reforesting and maintaining the land for 100 years. Sustainable Forestry Management will collect the "carbon credits" on the reforested land for 80 years, which will serve to offset industrial carbon emissions. Under the 1997 Kyoto Protocol, industrialized countries are to reduce greenhouse gas emissions to below 1990 levels. This "cap" on emissions would provide a powerful financial incentive for carbon emitters to purchase carbon credits.[2]

Iowa farmers are also receiving credits for reducing carbon emissions through conservation tillage and good nutrient management practices. A coalition of Canadian power utilities, GEMCo, is purchasing these credits. Farmers receive up to $15/acre for their credits, depending on the range of practices they incorporate into their farm.[3]

Conclusion

Opportunities do exist for farmers and landowners to get paid for environmental services. Sometimes direct payments are received for services rendered, like protecting drinking water sources or reducing air or water pollution, while other entrepreneurs have benefited indirectly by developing businesses based on a working landscape.

Government policy plays a critical role in fostering the creation and promotion of these services. Some environmental services are not well-defined or hard to measure, and programs are needed that compensate landowners for their production. Yet, private markets can often provide funding for needed services and government can play a key role eliminating obstacles or reducing the financial risk for interested parties. Finding ways to expand the private sector's role in fostering environmental services benefits the environment, taxpayers, and rural economies.

On average, Minnesota citizens are willing to pay an additional $201 per household annually for specific and substantial public benefits that are produced under diversified land use and farming systems."

The Multiple Benefits of Agriculture: An Economic, Environmental, and Social Analysis, George Boody and Mara Krinke, Land Stewardship Project

COSTS OF REPLACING THE MULTIPLE FUNCTIONS PROVIDED BY FORESTS

Pure water	$0.70/liter
Pure air	$0.04/cubic liter
Climate moderation	$22,000/day
Wind protection	$6000/hectare
Wild genes	$11,000,000/gene
Recreation	$2,000,000/park
Flood control	$24,000/hectare

Source: "Editorial: How Much is a Forest Worth?" International Journal of Ecoforestry, Ecoforestry Institute

1 The Watershed Agricultural Council (http://www.nycwatershed.org) and The New York City Watershed (http://www.state.ny.us/watershed/water.html)
2 Robson. 2001. Native Americans sell carbon credits from forestry project. Environmental Finance. May 2001.
3 Personal communication with Aldyen Donnelly, President of GEMCo, 1/5/2000