Chapter 5.6

Farmland Protection Programs

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Public support for protection of farmland—cropland, pasture, and rangeland—is growing, as private decisions to convert land may not account for rural amenity and other nonmarket benefits of farmland. Protection programs include both regulatory and voluntary measures. Whether the benefits of farmland protection exceed program costs may depend greatly on local conditions.

Introduction

Expansion of land in urban uses often encroaches on cropland, pasture, and rangeland. When these types of farmland are converted to urban uses, the ability of the land to produce agricultural outputs is lost. Such losses are the focus of growing public financial support for farmland protection. All 50 States have enacted one or more farmland protection programs to help slow the conversion of farmland to developed uses.

If farmland only produced agricultural commodities, the normal workings of the land market would optimally allocate land between farming and urban uses. However, farmland also provides a number of other benefits, or rural amenities, including open space, scenic views, rural agrarian character, and wildlife habitat. These nonmarket benefits are not typically accounted for in the land market, as landowners are seldom able to extract payment from anyone for providing these amenities. Consequently, landowners may not take the social value of these amenities into account when considering whether to develop land for urban-related purposes.

Trends in Farmland Losses

While farmland converted to urban uses comes from a large base, urban areas have grown rapidly from a small acreage base (see Chapter 1.1, "Land Use"). On average, 2.2 million acres of farmland per year were converted to urban uses between 1992 and 2001, versus 1.1 million acres per year during the previous decade (Vesterby and Krupa, 2001). Still, this annual rate represents barely 0.2 percent of the Nation's 1.03 billion acres of cropland, grassland, pasture, and rangeland, and suggests little threat to the Nation's capacity to produce food and fiber (Barnard, 2000).

Rapid urban development since World War II has been fueled primarily by population and economic growth, which has occurred in conjunction with increased automobile ownership, declines in average household size, and an increase in average residential lot sizes beyond the urban fringe (Heimlich and Anderson, 2001). The movement of urban populations to suburban locations has also increased development pressures (Barnard, 2004). Despite

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more than doubling since 1960, urban area made up less than 3 percent of U.S. land area (excluding Alaska) in 1997. Developed area—which includes urban areas plus large lot development, development in rural areas, and rural roads and transportation—made up slightly more than 6 percent in 1997 (Vesterby and Krupa, 2001).

Land moves into and out of different uses for a variety of reasons. Movements of land into urban uses, however, tend to be permanent. Once farmland is developed, it is typically economically infeasible to revert back to farming. In 1982-97, 22.7 million acres of farmland were converted to forest, versus 13.9 million acres converted to urban uses.[1] About 5.4 million acres of land converted to urban uses were prime farmland. However, the share of land converted that was prime (22 percent) was very similar to the share of the land base that was prime in 1982 (20 percent), so prime farmland was not disproportionately converted (fig. 5.6.1).

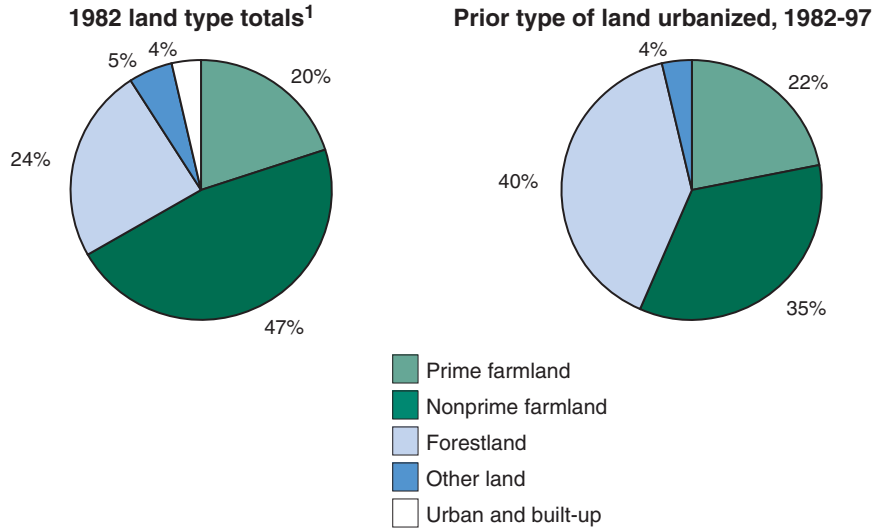
[1]Some of the reported shift to forest use is likely due to reclassifications. As trees reach a 10 percent canopy level, they are classified as forest, even though the land may still be used for grazing.

The amount of land in cropland uses remained nearly constant nationwide between 1945 and 1997, at about 20 percent of U.S. land. Yet, some regions have consistently lost cropland (fig. 5.6.2). The Northeast lost 46 percent (11.6 million acres) of the cropland that existed in 1945, the Southeast lost 33 percent (9.0 million acres), Appalachia lost 20 percent (7.0 million acres), and the Lake States, 12 percent (5.5 million acres). Western regions, however, added 12 percent (37.1 million acres). Losses in the East are likely due to increased urbanization, while Western gains are due in part to federally subsidized irrigation water (Vesterby and Krupa, 2001).

Losses in grassland pasture and range in 1945-97 exceeded 70 percent (7.3 million acres) in the Northeast. Causes include natural regeneration of forests and losses of grassland to urban development (Vesterby and Krupa, 2001). Grassland losses in the West were 10 percent (61.4 million acres),

Figure 5.6.1

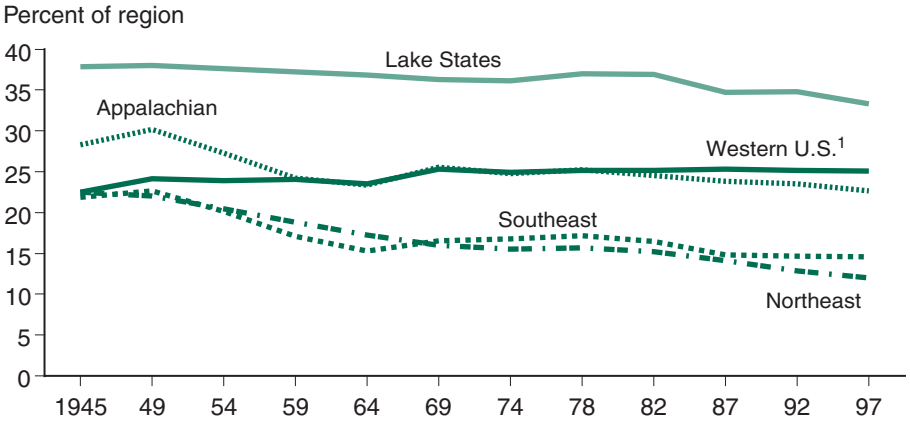
Land type and composition of change, 1982-97



[1]Excludes about 400 million acres in federally owned land and 365 million acres in Alaska.
Source: ERS analysis of National Resources Inventory data, 1982-97.

Figure 5.6.2

Share of region that is cropland, 1945-97



[1]Includes Northern and Southern Plains, Mountain, Pacific, Corn Belt and Delta regions.
Source: Vesterby and Krupa (2001).

due largely to nonpermanent conversions to cropland. (See the "Major Land Uses" data product on the ERS website for more information.)

Farmland Protection Policies and Tools

Because private land use and conversion decisions may not account for rural amenity and other nonmarket benefits provided by farmland, government agencies and other organizations adopt policies and programs to protect farmland. Land use management is a local prerogative by tradition and law, and every State has enacted measures that help protect farmland. An ERS analysis of the "purpose clauses" of State farmland protection laws and programs found that protecting rural amenities was cited by 36 States, along with protecting local food supplies (30 States), protecting environmental services—including water and air quality (29 States), protecting the local economy's natural resource-related jobs (23 States), and maintaining orderly development (18 States). The focus on protecting rural amenities most often stemmed from goals relating to the protection of open space and rural/agrarian character.

Local jurisdictions and nonprofit organizations have adopted an expanding array of farmland protection programs since World War II. Agricultural/rural residential zoning defines minimum parcel sizes and may include limitations that restrict use to farm-related activities (farm family and labor housing, processing, and marketing). Another regulatory approach is right-to-farm laws, which protect farmers from nuisance lawsuits brought by neighbors objecting to normal farm activities, and sometimes from local government-imposed ordinances that unreasonably restrict agricultural activities

Voluntary approaches include preferential assessment, which allows jurisdictions to assess agricultural land for property tax purposes at its value in current agricultural uses instead of its full market value for potential urban (developed) uses. In some cases, landowners must forgo development for a specified time period. Preferential assessment laws were first enacted at the State level in Maryland in 1956; by 1989, they had been adopted by all 50

States. Other voluntary approaches include agricultural districts, in which enrolled landowners maintain the land in an agricultural use for a specified term, in exchange for property tax relief, insulation from nuisance complaints, and other benefits; Purchase of Development Rights (PDR) programs, in which landowners sell the rights to develop the land; and Transfer of Development Rights (TDR) programs, in which landowners in locally designated "sending areas" privately negotiate to sell development rights to developers who use them to develop at higher densities in locally designated "receiving areas." Use of these incentive-based mechanisms avoids the property rights issues that have hampered regulatory programs.

Trends in Farmland Protection

State and local governments spend millions of dollars annually on farmland protection programs. For example, ERS estimated that costs incurred through use value assessment programs (a "tax expenditure") range from about $25,000 annually in Wyoming to $218 million annually in California. The national total is almost $1.1 billion annually (Heimlich and Anderson, 2001).

Another major outlay is State and county PDR programs. Nineteen States have State-level PDR programs, and at least 41 local jurisdictions operate separate programs in 11 States (AFT, 2004a and 2004b). The average easement cost in State PDR programs was about $1,400 per acre, and nearly $2,000 per acre in local PDR programs. However, PDR expenditures are one-time expenditures to restrict development over the long term (or permanently).

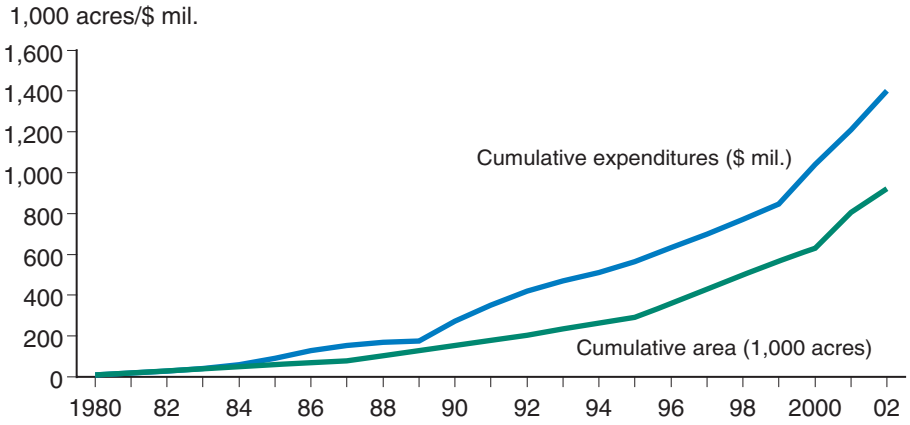
The most active State and local PDR programs are in the Northeast. Maryland, Massachusetts, New Jersey, and Pennsylvania account for 76 percent of State-level PDR expenditures to date and 58 percent of the acres preserved to date in State programs (AFT, 2004a). Especially active programs elsewhere are county-level programs in Sonoma County, CA, and King County, WA.

ERS estimates all State PDR programs to average $123 million in spending annually. State PDR programs have cumulatively preserved nearly 1 million acres of farmland at a cost of nearly $1.4 billion since the late 1970s (fig. 5.6.3) (AFT, 2004a). This is slightly more than the annual tax receipts that are forgone through use value assessment (when capitalized at 4 percent, the 1995 value of U.S. public expenditures on use value assessment is estimated to be $27 billion). The amount of land preserved represents less than 1 percent of cropland that ERS estimates to be subject to some degree of development pressure (fig. 5.6.4). The total cost of preserving cropland subject to development pressure could be as much as $130 billion (Heimlich and Anderson, 2001).

Despite State and local prerogatives in land use management, the Federal Government is increasingly partnering with local/State agencies and nonprofit organizations to protect farmland. Federal efforts to protect farmland began with the Agriculture and Food Act of 1981, which required Federal agencies to evaluate the impact of federally funded programs that converted farmland to nonagricultural uses and to consider alternative actions that would lessen the adverse impacts. Direct Federal involvement in

Figure 5.6.3

Accumulated expenditures and acreage in State PDR* programs are increasing

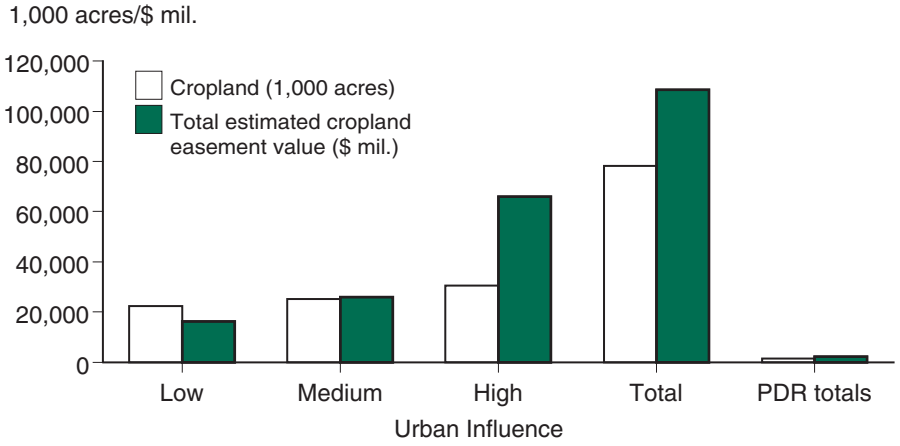


* PDR = Purchase of development rights.

Source: American Farmland Trust, 2004b. Data for some years are interpolated.

Figure 5.6.4

Cropland easement values and acres subject to urban influence versus actual PDR activity



Notes: PDR totals represent cumulative funds spent and cumulative acres preserved by Federal, State, and local PDR programs through 2004 on all farmland types.

Source: ERS analysis of National Resources Inventory land use and NASS land values data (1994-1997); PDR totals from American Farmland Trust (2004b).

permanent farmland protection did not begin until 1996, when the Farmland Protection Program (FPP) was established to help State, local, and tribal governments purchase agricultural conservation easements. The FPP distributed approximately $50 million during 1996–2001 in matching funds.

The 2002 Farm Security and Rural Investment Act reauthorized the FPP, which was renamed Farm and Ranch Land Protection Program (FRPP) through Executive rulemaking. FRPP provides up to 50 percent of easement costs on qualified, privately owned agricultural land. It also expanded the set of entities eligible to apply for funding to include nongovernmental organizations (primarily land trusts). Authorized funding increased to approxi-

mately $100 million per year for the 6 years beginning in 2002. With this increase, FRPP is now authorized to spend almost as much annually as all State PDR programs combined.

The high costs of permanently preserving farmland through PDR programs have generated support for TDR programs. While the sponsoring jurisdiction faces fewer costs, garnering taxpayer support in areas targeted to receive the urban densities being transferred is difficult, as is balancing the supply of and demand for development rights (Fulton et al., 2004). Fifty local jurisdictions have passed TDR ordinances, but only 15 TDR programs have individually preserved more than 100 acres (see AFT, 2001).

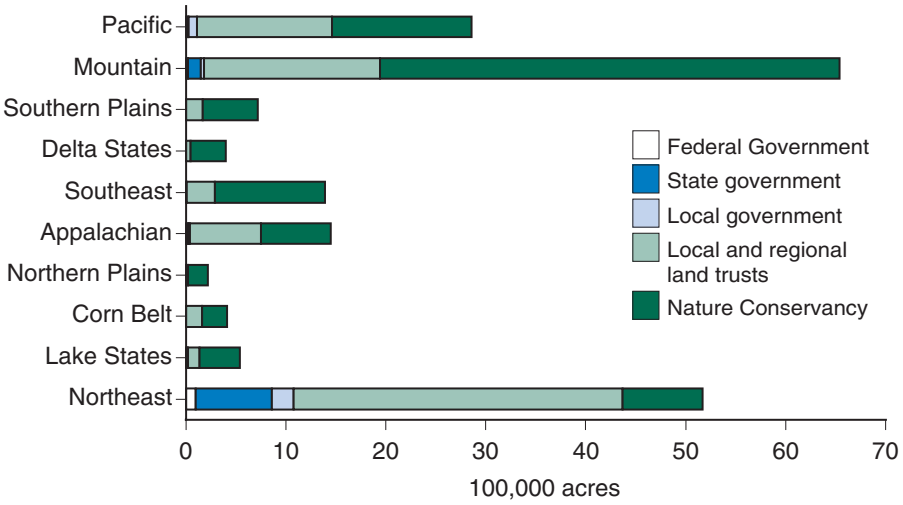
Many land trusts exist to preserve farmland (fig. 5.6.5). These private, nonprofit organizations accept donations of conservation easements on farmland and environmentally sensitive land. The donations benefit landowners in the form of Federal and State (in 10 States) income tax deductions. In Colorado, South Carolina, and Virginia, formal markets are developing that allow a landowner who donates an easement but cannot use the State tax credit to sell the unused credit to a third party (Conservation Fund, 2002).

Issues in Farmland Protection

The public benefits that are lost when farmland is converted cannot be readily measured in money terms. Instead, the benefits are typically estimated based on what people are willing to pay to avoid the losses associated with the conversion of farmland—i.e., the loss of agricultural production

Figure 5.6.5

Acres of land voluntarily protected, by sponsor



Notes: Nature Conservancy and Land Trust data include all acres protected, including farmland acres. Acres protected by local, State, and Federal governments are limited to farmland acres. May include some double counting of protected areas by different entities that collaborate to protect particular parcels of farmland. Nature Conservancy figures include purchases of fee-simple interests in land, in addition to acres on which only a conservation easement was purchased.

Source: Nature Conservancy data compiled by ERS from Wiebe, 1999; Local and regional trust data from Land Trust Alliance 2003 data (www.lta.org); farmland acres protected by State and local governments are from AFT (2004a,b) (www.farmlandinfo.org); farmland acres protected by Federal Government through Sept. 2004 are from data provided by NRCS, 2005.

and rural amenities. Variation in local conditions leads to a wide range in estimates—from a fraction of a penny to more than a nickel per acre annually—to prevent the development of farmland. One analysis suggests this willingness to pay may exceed $1 billion annually for the United States (Heimlich and Anderson, 2001).

Whether the benefits of farmland protection programs exceed program costs again depends heavily on local conditions. The direct costs of purchasing easements must be added to the value of urban benefits forgone when land is preserved (Lopez et al., 1994; Miller and Doering, 2004). Estimates for these opportunity costs are not readily available.

In addition to program costs, farmland protection programs have other impacts on government budgets and on resident taxpayers. Jurisdictions may save money on public service costs by preserving farmland because farmland requires fewer public services than residential uses do. Preserving land may benefit nearby residents who can look forward to rural scenic views and open space for the length of the easement (often into perpetuity). However, farmland preservation may impose costs on potential new residents who then have to live in higher densities elsewhere, face higher land prices, or endure longer commutes if they seek rural land farther from employment centers. How programs are implemented, and the distribution of enrolled lands, will determine the impacts on government budgets and taxpayers.

Farmland protection tools vary in their effectiveness at permanently preserving farmland, and providing intended benefits. For example, agricultural zoning exemptions allowing higher density residential development are common, and can limit the ability to preserve farmland. Agricultural districts may have limited success in areas where landowners commit to not develop only when their land faces little development pressure. Preferential assessment does little to preserve farmland in the long run because the capital gains from developing farmland usually exceed the rollback penalties for conversion. Preferential assessment may even encourage land speculation by reducing developers' costs of holding farmland in inventory.

Because they result in permanent (or at least 30-year) restrictions on nonfarm development, PDR and TDR programs are considered to be the most effective in preserving agricultural lands. However, the actual effect of these programs on land development rates and patterns is uncertain. While the number of acres preserved can be counted, these programs may simply shift development pressures elsewhere. Also, compliance with/enforcement of development restrictions over the long term is not a sure thing.

An often-cited argument in support of PDR programs is that they help keep farmland affordable for new farmers. In theory, once the development rights have been sold, the market value of the preserved land will reflect only its value in a farming use, and may be significantly lower than its residential market value. However, a recent study found little evidence that easement restrictions significantly lowered preserved farmland prices (Nickerson and Lynch, 2001). It could be that landowners who farm as a recreational pursuit are outbidding "traditional" farmers for the land.

Though both TDR and PDR programs rely on conservation easements, economic implications and effectiveness can differ. Some PDR programs (due to ranking criteria and agency efforts to minimize costs) yield a pattern of preserved parcels that are widely separated. This raises questions about whether a "critical mass" of remaining farms can support farm input suppliers, and about the sustainability of remaining farms. TDR programs, on the other hand, have often been implemented in conjunction with reductions in allowed housing density (downzoning) of a large area. While many of the parcels in the downzoned area are not technically "preserved," the combination of zoning and TDRs may be effective at preventing widespread development. It is much more difficult to change zoning on an area-wide basis than on individual parcels. As a consequence, large clusters of "undeveloped" farmland (the downzoned area) may be preserved through TDR.

Policy Developments

Most recently, States have begun to implement "smart growth" strategies. Smart growth is a catchall phrase to describe a number of land use policies for influencing the pattern and density of new development. Without prohibiting development outside designated areas, smart growth policies use incentives and disincentives to direct new development to existing urban areas with appropriate infrastructure. PDR programs are one tool used to meet these goals. The effectiveness of smart growth will depend on how the incentive effects of new policies differ from pre-existing policies (Nickerson, 2001).

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