

# A Market Approach to Land Preservation

*Elizabeth Kopits, Virginia McConnell, and Margaret Walls*

**As more and more agricultural land is turned over for development, many government officials are turning to new tools to control sprawl, including transferable development rights.**

**T**he rate of conversion of agricultural land and open space to development has accelerated over the past several decades. The combination of larger lot sizes, more affordable housing at distant locations from center cities, and increasing reliance on vehicles has encouraged the conversion to housing of nearly a million more acres per year, compared with 20 years ago.<sup>1</sup>

As development spreads, there is a growing concern about lost farmland, open space, and environmentally valuable areas that may have public value beyond their private value to landowners. Even though the extent and magnitude of the public value of this “undeveloped” land is uncertain and the subject of controversy, land trusts have purchased or placed easements on some 5 million acres in the United States since 1982.<sup>2</sup> Many elected officials in state and local government have made controlling “sprawl” a priority, and the 2002 Farm Bill authorized nearly \$600 million over six years for the federal Farmland Protection Program. Here, we examine a market-based policy tool for preserving farmland and open space—transferable development rights (TDRs).

## *How TDRs Work*

**I**n TDR programs, the right to develop a parcel of land is severed from ownership of the land itself, and a market is created with buyers and sellers of development rights. Those who sell development rights permanently preserve their land in its current undeveloped state (for example, as farmland); purchasers of development rights are typically developers who want to build houses at a greater density than allowed by local zoning ordinances.

Often, TDR markets are used to try to channel development away from areas considered valuable for farming or

other undeveloped uses (so-called sending areas), toward already-developed areas with infrastructure to handle additional development (receiving areas). In this way, TDR markets promote more efficient development patterns and compensate landowners for lost development potential.

TDRs were first used in the United States in the 1960s, but their use has grown in recent years. About 135 programs are in place, with such objectives as preserving farmland, safeguarding unique natural areas or historic landmarks, and protecting environmentally sensitive areas.

## *Difficulties in Implementation*

**D**espite their potential, only a few programs have been successful in maintaining active and efficient markets for TDRs. One major difficulty in many programs is an imbalance between demand and supply. Often, large areas targeted for preservation are designated as sending areas and the zoning density is reduced, prompting a large number of landowners to sell development rights. Demand for these rights on the developers’ side, however, may be insufficient if homebuyers are satisfied with the densities permitted in receiving areas under baseline zoning. This is common in many urban programs—Atlanta and Oakland, California, are two examples—where TDRs have been used to direct growth to already-developed areas that have high-density zoning. An imbalance can also occur in low-density rural communities; programs in Chesterfield Township, Pennsylvania, and several Florida programs, for example, have had little demand for building beyond the relatively low baseline density limits.

Regulatory conflicts can impede TDR markets as well. Lack of infrastructure in receiving areas or binding environmental and development regulations often prevent

densities from exceeding baseline zoning. Island County, Washington, and Springfield Township, Pennsylvania, for example, reportedly lack the sewer service necessary to achieve the density bonuses allowed under TDR. In Lee County, Florida, hurricane evacuation restrictions prevent building in some TDR receiving areas. In many suburban counties, development moratoria imposed under adequate public facilities ordinances can delay development and dampen TDR demand. Demand for TDRs is further decreased if communities allow density increases through other mechanisms, such as clustering, planned unit developments, or in-lieu fees.

Another common problem is the lack of good information about the market. Since TDRs are primarily a county-level planning tool, the potential size of a TDR market is limited. Transactions in most programs number only tens or at most a hundred a year, making it difficult to establish a record of transactions that provides critical information for potential entrants. In these “thin” markets, either developers on the demand side or landowners on the supply side can dominate and prevent the TDR market from operating efficiently.

In addition, complex and time-consuming TDR transfer processes can deter potential market participants. In Boulder County, Colorado, for example, densities can be tripled with the use of TDR, but because receiving areas are not predetermined, a lengthy and uncertain public hearing process deters developers. Even when receiving areas are predetermined, as in Montgomery County, Maryland, opposition from existing residents can make it difficult for developers to achieve TDR density bonuses. In the New Jersey Pinelands, the establishment of a credit bank and a strong marketing campaign helped to simplify the complexities of the transaction process, making TDRs more attractive to developers.

### *A Policy Alternative: PDRs*

**T**he difficulties of maintaining active TDR programs have caused some communities to rely more heavily on alternative tools to preserve farmland and open space. In a purchase of development rights (PDR) program, as in a TDR program, landowners voluntarily sell their rights to develop a parcel of land, but the development rights are not used to increase density elsewhere. Rather, the government or a private land trust buys the development rights and essentially retires them.

An obvious drawback of a government PDR program is that the government must raise the revenue to purchase the development rights. On the other hand, the vagaries of

the housing market and baseline zoning in residential areas do not affect the government demand for development rights, as they do in private TDR sales. Moreover, the government may be able to target lands for preservation more easily in a PDR program.

RFF has examined one program that is primarily a TDR program but includes some elements of a government PDR program—a farm and forestland preservation effort in Calvert County, Maryland, established in 1978. This program, after 25 years of operation, appears to be working well: the market for development rights is active and stable, and TDR sales have permanently preserved nearly 13,000 acres of land.

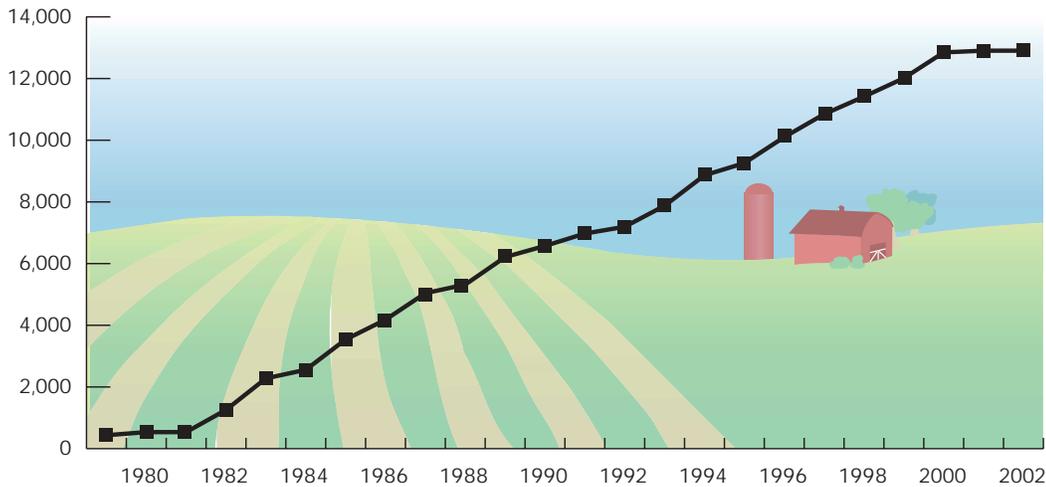
### *The Calvert County Program*

**C**alvert County is within commuting distance of Washington, DC, Baltimore, and Annapolis, and has seen the fastest rate of housing growth of all Maryland counties in past decade. The county’s preservation program has several unique features. First, any farming or forested property with productive soils is eligible to enter the program and sell TDRs; its location does not matter. Unlike many other TDR programs, there was no downzoning or reduced density of targeted preservation areas.

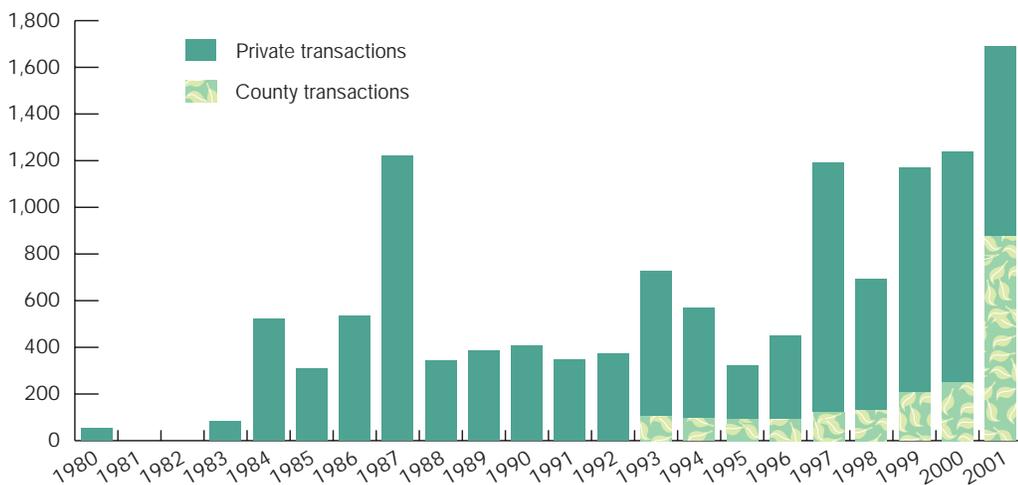
Second, although some farming regions targeted as particularly valuable for preservation were designated as sending areas only, much of the rural land can become either a sending or a receiving area. In these regions property owners have the option of selling TDRs and preserving their farmland, developing their properties, or buying TDRs and developing their properties beyond the baseline zoning limits.

A third unusual feature of Calvert’s program is that an entire parcel of land is preserved when a single TDR is sold off that parcel. In other words, a farmer may be allocated, based on her acreage, 50 TDRs, but once she sells the first TDR, her entire farm is in permanent easement status.<sup>3</sup> Hence, the timing of decisions can be critical. Moreover, landowners’ trust in the viability and longevity of the program must be strong.

Finally, Calvert’s current program has evolved as a combination TDR and PDR program. The county government became a direct participant in the TDR market in 1993 when it began buying and retiring TDRs. Purchases fluctuate from year to year, but in 2000, the county bought 252 TDRs in 21 transactions. Although private developers are more active in this market—in 2000, buying 989 TDRs in 43 transactions—the county is still a significant force in the marketplace. Figure 1 shows the combined acres preserved



**Figure 1.**  
Cumulative preserved  
acreage, Calvert County  
TDR program



**Figure 2.**  
TDRs sold by year,  
Calvert County TDR  
program

in the program, through both county and private market transactions, from 1978 through 2002.

### *Our Assessment of the Calvert Program*

The Calvert County program’s minimal constraints on both sending and receiving areas have affected the spatial patterns of preservation and development. We found that TDR demand was highest in rural communities where baseline zoning permitted one housing unit per five acres, but the purchase of development rights would allow density to be increased to one unit per two acres. There was little use of development rights in residential or town center areas, where baseline density ranged from one to four houses per acre.<sup>4</sup> This suggests that the failure to create higher-density development through TDR programs may be partly due to low demand for such housing.

Our analysis also found that the TDR program is permanently preserving farmland in the regions identified as most important for preservation—the rural areas that were

designated as sending areas only. Of the TDRs sold to date, about 80% were sold from these sending areas.

We found that most of the TDR supply—especially in the early years of the program—has come from farms in the central and southern part of the county—areas less valuable for development because they are farther from Washington, Baltimore, and Annapolis. TDRs are being used to increase development relatively more in the northern part of the county.

Political opposition to the program has been minimized in several ways. When the TDR program was implemented, the county zoning designations were not changed. Development is not completely prohibited in any part of the county: all rural land may still be developed at a rate of one dwelling unit per five acres. This flexibility reduces the potential for local opposition to the adoption of TDRs and the legal battles that have often followed in other TDR programs after a targeted sending area is downzoned. The county recently downzoned<sup>5</sup> but did so in all areas, as a way of reducing overall development.

The county's role as TDR purchaser has enhanced the working of the market in several ways. It has provided information about TDR prices to potential market participants and helped establish a more efficient market with less price variability. The county government has announced its intention to buy TDRs each year at a price that is slightly above the average of the previous year's price, which has stabilized prices overall. In 1999, for example, the minimum and maximum private market prices were \$2,200 and \$2,800, respectively, and 50% of all transactions in that year occurred at prices between \$2,400 and \$2,600. In 1990, the range was much greater, and 50% of all transactions occurred at prices between \$1,209 and \$2,780 (in 1999 dollars).

Government participation in the program has also increased overall market activity. Figure 2 shows the number of TDRs sold over time. Between 1980 and 1992, the average was 9 transactions and 417 TDRs per year. After 1992, when the county began purchasing, these numbers increased to 29 and 675, respectively. Thus, the county's role in the market appears to have increased private market confidence in the program and helped alleviate the problems of "thin" markets and lack of information.

Although Calvert's private TDR program is not as prescriptive about the location of sending and receiving areas as most programs, it does allow the county to target certain parcels for preservation. The cost to the county is reduced because an entire parcel is preserved once a single TDR is sold. To date, the county has spent a little over \$2.7 million to bring new farms into the program, preserving more than 3,300 acres at an average cost of approximately US\$800 per acre preserved.

## Conclusions

The Calvert County farmland preservation program shows that a transferable development rights program can be a cost-effective way of managing land uses on the urban fringe. With a relatively straightforward structure, good underlying market fundamentals, and the county's participation in purchasing development rights in the TDR market and providing information to market participants, the Calvert TDR program appears to be achieving its goals.

Because the market seemed to stabilize when the county became a participant, combining PDR with TDR may work better than using either type of program alone. Having a market-based TDR program leverages government PDR funds for more acreage preservation, and at the same time allows private markets to channel development to locations where more density is demanded. ■

## For More Information

American Farmland Trust. ([www.farmlandinfo.org/fic/tas/tafs-tdr.html](http://www.farmlandinfo.org/fic/tas/tafs-tdr.html))

Heimlich, Ralph, and William Anderson. 2001. *Development at the Urban Fringe and Beyond: Impacts on Agriculture and Rural Land*. U.S. Department of Agriculture ARS Agricultural Report, 803. June.

McConnell, Virginia, Elizabeth Kopits, and Margaret Walls. 2003. *How Well Can Markets for Development Rights Work? Evaluating a Farmland Preservation Program*. Resources for the Future Discussion Paper 03-08 (March). ([www.rff.org/disc\\_papers/2003.htm](http://www.rff.org/disc_papers/2003.htm))

Pruetz, Rick. 1997. *Saved By Development: Preserving Environmental Areas, Farmland and Historic Landmarks with Transfer of Development Rights*. Burbank, California: Arje Press.

Smart Communities Network.  
([www.sustainable.doe.gov/landuse/transfer.shtml](http://www.sustainable.doe.gov/landuse/transfer.shtml))

Thorsnes, Paul, and Gerald P.W. Simon. 1999. *Letting the Market Preserve Land: The Case for a Market-Driven Transfer of Development Rights Program*. *Contemporary Economic Policy* 17(2): 256-266.

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## NOTES

1 Economic Research Service, USDA.  
[www.ers.usda.gov/Briefing/LandUse/Gallery/devland.htm](http://www.ers.usda.gov/Briefing/LandUse/Gallery/devland.htm).

2 Land Trust Alliance. 2000. [www.lta.org/census.html](http://www.lta.org/census.html).

3 In other TDR programs, an owner can sell an easement for part of a property but retain full development rights for the remainder.

4 Until a zoning change in 1999, one residential category allowed developers to build townhouses and apartment buildings at densities up to 14 units per acre.

5 Several lawsuits have been brought arguing that TDRs constitute a taking of property rights.

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