

4 The effects of land-use policies on agricultural land use

4.1. Land-use policy and agriculture

The term “land-use policy” refers to the set of rules and regulations that directly influence the use of farmland, whether they are implemented by national or sub-national governments. Land-use policy provides an alternative mechanism for influencing agricultural land use. Typically, land-use policy has not been seen as a key factor in agriculture. This, in part, reflects the prevailing assumption that the stock of farmland is largely fixed and that, while land use policy might have some impact on the stock of farmland at the local or regional level, it has limited influence on the agricultural sector taken as a whole. By its nature, land-use policy is explicitly spatial in nature. While policies may be designed to deal with broad land-use issues, they have their impact on particular parcels of land.

While there are a few forms of land use policy that employ financial incentives to alter the relative returns to farmers from agriculture and other uses, in most countries the majority of land use policy uses the regulatory power of government to compel land owners to follow particular actions. In this sense, most land use policy is not market-based.

In some OECD countries, the application of land use policies regulating farmland is largely a national matter, while in other countries it is largely a local matter (OECD, 1996a, 1998, 2008a). In some countries, there are strong controls on farmland conversion, while in others there is little to stop farmland being converted to alternative use. For example, while in Canada land regulations generally restrict farm splitting, in Japan, non-agricultural activities are prohibited for land that is designated as farmland-use.

In OECD countries, the concern with regulating farmland is usually limited to the broad definition of agricultural use, and there is no intent to regulate the specific type of agricultural production that takes place. However, in many regions there are prohibitions both on specific types of agricultural land uses and on specific production practices, for example, bans on animal feeding operations in close proximity to high-density residential developments, or on the application of animal manure or fertiliser in ways that lead to high levels of run-off into waterways, are common.

Land-use policy influences agricultural land use in two distinct ways. The first, and most common, way is through either imposing restrictions on farmers’ behaviour, or encouraging specific actions. This type of land-use policies may alter the costs of production, or the revenues from carrying out agricultural production, and thereby influence the viability of the farm enterprise. However, altering the amount of land in agriculture is not the basic premise of such programmes, and for the majority of farmers this type of land-use policy can be thought of as mainly influencing how farmland is to be used.

The second type of policy is designed to influence land use at a larger scale – that is, to affect decisions to either bring land into farming or remove land from farming. Clearly, these policies are most important at the urban and far fringe, where land conversion is a relevant issue. By contrast, farmland in the agricultural core zone is, by definition, hardly affected by these programmes because there is little reason to modify the

current land use. These programmes can be thought of as influencing how much land is available for farming. It is this latter class of programmes that is the focus of this part of the report.

4.2. Land-use policy effects on farmland types

In this section the influence of a variety of land-use policies that are designed to control farmland conversion are discussed. These policies are broken into two broad categories depending on whether a policy uses financial inducements, or simply the regulatory power of the state, to achieve its objectives. Within each category, policies are ranked in terms of their ability to influence behaviour. Table 6 provides a summary of the spatial effects of land use policies on farmland conversion.

Pure regulatory programmes

Comprehensive zoning establishes acceptable land uses for specific parcels of land. It is an explicitly spatial programme that determines what land uses are permissible for each parcel of land within the zoning ordinance. While zoning schemes may allow a change of land use, they typically require regulatory approval for each change. Authority for zoning can rest at any level of government. In some countries, land use patterns are determined by national governments, while in other countries zoning is a local government responsibility – and in certain regions may not exist at all. In some countries, zoning regulations are subject to legal challenge, while in others there is clear authority for government to regulate land use.

Zoning can be highly effective in regulating land use conversion in the urban fringe. If land uses cannot be changed, then the existence of potential profit from conversion becomes irrelevant. Essentially, zoning takes away the opportunity cost of farmland, and as long as other factors of production earn an acceptable return, the land will continue in agriculture.

In the agricultural core zone, the introduction of comprehensive zoning has little effect. Since farmland has no alternative higher value uses, there is no pressure for conversion. At the far margin zoning may be considered as a way to block farmland conversion but it is likely to be ineffective. While a parcel of land may technically be zoned as agricultural land, it will not be used for farming unless it is profitable. Other regulations may be used to compel landowners to keep their land in a condition suitable for farming, but even in this case benefits are limited and enforcement costs can be high.

Hard Growth Boundaries limit urban expansion. Instead of zoning particular parcels of land, a government may designate a boundary beyond which urban development is not allowed. In essence, the government creates the hard edge envisioned by von Thunen between the city and agriculture. Obviously, this approach only deals with the urban fringe. It is also relatively simple to implement because only one line has to be established, with a list of acceptable uses on each side of that line. Similar to the case of zoning, a hard growth boundary removes the opportunity cost of farmland outside the boundary. As a city grows over time and uses up the interior land, the boundary has to be extended, but this process allows planned growth.

Limits on Providing Basic Infrastructure make high-density development difficult or impossible. A government can choose to limit farmland conversion by refusing to provide basic services to parcels of land. Higher-density land use requires the provision of water and sewer lines, electricity and other public infrastructure. If a government refuses to extend these services beyond a designated territory, it may effectively limit development. While it may be possible to provide this infrastructure privately, the increased cost of doing so can make conversion of farmland unattractive. Once again, this approach is most applicable at the urban fringe, where high-density development is most likely and connections to existing infrastructure are feasible.

Table 6. Ability of land use policies to influence farmland conversion

	Urban fringe	Agricultural zone	Far, or extensive, margin
Comprehensive zoning	Effective, but can be costly unless government has clear rights to restrict conversion	irrelevant because land use is constant	impossible because farmers can not be compelled to work for no profit
Hard growth boundary	Effective, but eventually has to adjust to accommodate population growth	Irrelevant because land use is constant	Irrelevant
Limits on providing basic infrastructure	Stops commercial and large-scale residential development, but does little to stop building of individual homes and may increase fragmentation of land ownership	Irrelevant because land use is constant	Irrelevant
Right-to-farm laws	May slow conversion in areas where development is starting to accelerate, but has little value elsewhere	Limited use if conflicts arise with neighbouring non-farm activities	Irrelevant
Land purchase	Feasible for small quantities with very high public value	Infeasible	Feasible for small quantities with very high public value
Purchase of development rights	Effective, but expensive if permanent rights are purchased; limited value if only temporary rights are bought	Irrelevant because land use is constant	Irrelevant
Capital gain capture on conversion	May slow development, especially as distance from urban boundary increases	Irrelevant because land use is constant	Irrelevant
	May slow development, but effect depends on distance from urban boundary	Irrelevant because land use is constant	Irrelevant

These infrastructure restrictions have the greatest impact on large-scale, high-density development. But their effects in blocking small-scale, low density conversion that does not depend upon public services are limited. As a result, it is possible that farmland could become fragmented under this approach if farmers sell parcels of a few hectares in size to individuals, with the cumulative effect being very dispersed, low-density residential incursion.

Right-to-Farm Laws reduce potential conflicts with neighbours. As development increases on land surrounding farms, the potential arises for farm practices to irritate neighbours. Nuisance-type activities associated with agriculture can include: late night and early morning farm operations, equipment blocking road traffic, odour from livestock, and dust from field operations. Similarly, farms can experience problems of trespassing, theft, and livestock being worried by stray dogs. Each of these problems makes it more difficult to continue to operate a farm and in the absence of clearly defined rights to undertake normal farm practices there is a possibility of local government placing restrictions on farming, or of civil law suits. Right-to-farm legislation clarifies the legal status of farming and thereby may provide a modest incentive for farmers to continue farming.

Right-to-farm laws are most useful at the urban fringe, where there is the largest interaction between farm and nonfarm land uses. In the agricultural core zone, while there is a much smaller amount of non-farm activity, this type of legislation can also be helpful in areas where there are second homes or exurban residential development. In the far fringe, nuisance problems may exist but they are likely to be a minor factor compared to the problem of economic viability.

4.3. Land use policies using financial inducements

Land purchase by a body that will maintain the land in agriculture can ensure it remains in an agricultural use. However, application of this approach faces two obvious difficulties. The first is the high cost of purchasing land and then the subsequent ongoing management requirement. While purchased land can be leased to farm operators, it must still be managed in order to preserve its value (i.e. still requires supervision to ensure it is being managed correctly). This makes direct purchase a viable strategy only in the instance of a small parcel of land that has a very high public value.

This is most likely to happen in the urban fringe, where land in a specific location may have a very high non-commodity value. Similarly, in the far fringe there may be special cases where farmland has unique amenity or wildlife value that leads to purchase. In the agricultural core zone, it is difficult to conceive of a situation where farmland purchase would be a realistic option.

The *Purchase of Development Rights* (PDR) provides a less costly way of controlling land conversion. Instead of purchasing the entire property, it may be possible to purchase only the development rights. Essentially, this means purchasing the opportunity cost of land so that the farmland owner retains the right to use the land for agriculture. Obviously, the value of development rights is a strict function of opportunity cost and may be far greater than the residual agricultural value. However, in other cases, development rights may not add much of a premium over the agricultural value of land.

PDR policies can either buy rights permanently or for a defined period of time. Permanent purchases are obviously more expensive than short-term purchases, but the latter allow a given budget to be used to acquire more rights. In addition if the purchase of rights is seen as a temporary solution until a more permanent policy is in place – say, zoning – then the strategy may be justifiable. However, since many developers acquire property several decades before they plan to convert its use, a temporary programme runs the risk of actually increasing the incentive for developers to build an inventory of land well before they plan on conversion.

In the neighbouring part of the urban fringe, PDR programmes face the same problem as direct land purchase. The market value of land is mainly set by its development value, so there is little saving from a PDR over direct purchase. In the more rural parts of the fringe, it may be possible to acquire development rights relatively cheaply, as a pre-emptive strategy to control long-term expansion. PDR programmes seem ill-suited to either the agricultural core zone or the far fringe, where conversion of farmland to a higher use is not an issue.

Capital Gain Capture reduces the incentive for a farmer to sell land for another use. The main motive for a farmer to sell land for conversion is the much higher price the land will command than at its current-use value. If all or a large part of the capital gain is taxed away, however, the motivation to sell will be greatly reduced. One argument for adopting this type of tax is that the increase in farmland value is a pure windfall from the farm owner's perspective. The increase in land value is not a result of any direct action by the landowner, instead it results from changes in the neighbouring community.

This type of policy reduces the returns to the farmer from selling for conversion, but it does not eliminate the demand for land. As a result, the programme is only effective if the opportunity costs of the farm household are low. Otherwise, to the extent that less farmland is made available for alternative uses, this type of policy could have the effect of pushing up bid prices for farmland as non-farm interests compete for the smaller quantity of land. If the policy is designed to control conversion then it is important to be able to isolate capital gains based on farming from capital gains stemming from a change in use. Once again, the policy is most likely to be effective in the urban fringe, where the opportunity costs of farmland are highest and capital gains beyond normal agricultural appreciation are largest.

Use Value Property Tax Assessment reduces the cost of maintaining land in farming. Property taxes based upon current market value provide a strong signal to landowners about the opportunity cost of holding land

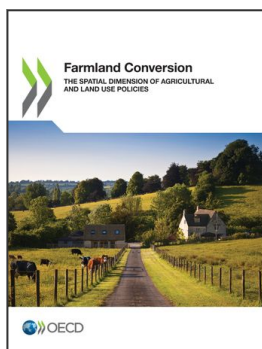
in a lower-value use. Standard public finance theory suggests that market value assessment leads to more efficient land use patterns, but this theory assumes that the full value of property is captured in its market price. In the case of farmland, where there may be environmental services that have no market value, it is possible that market signals could be faulty.

It is common practice to assess farmland at less than the market value. Typically, the value for tax purposes is determined by agricultural productivity and results in an assessed value that is significantly lower than the current market value. Clearly, this practice provides a large benefit to farms where the market value of farmland is largely determined by non-farm opportunity costs. Thus, the primary beneficiaries of this practice are in the urban fringe.

However, it is doubtful whether the reduction in property taxes provides a significant incentive to remain in farming when the potential capital gain from selling is high. As distance from the urban centre increases, the potential influence of a lower tax bill increases, but the effect is likely to decrease over time if development pressure increases. In the agricultural core zone, use value assessment provides no real benefit to farmers because land values are largely set by agricultural use. Similarly, at the far margin, use value assessment offers no benefit to farmers.⁹

Preferential Estate Taxes reduce the likelihood of a farm being sold when the operator dies. Farming in all countries is characterised by a high rate of occupational succession, where families try to keep a farm intact as it passes from one generation to the next. Because farmland is the single largest component of farm assets, there is a common problem of farm income being insufficient to maintain the next generation and pay estate taxes. Most countries have modified their estate taxes to make it easier for farm households to remain on their farms by exempting some of the estate from taxation, taxing it at a lower rate, or extending the payment period. Typically, to receive these benefits the farm has to remain in the family and in operation.

The result is an incentive to keep land in agriculture, at least for the duration of any required holding period. The longer-term effect of the policy is likely to depend upon the potential for capital gains from a sale and the family's interest in remaining in farming. At the urban fringe, the effect is most likely to be significant, with limited benefits for land conversion elsewhere.



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