

Maintaining Farmland: a New Focus for Agricultural Policy

by

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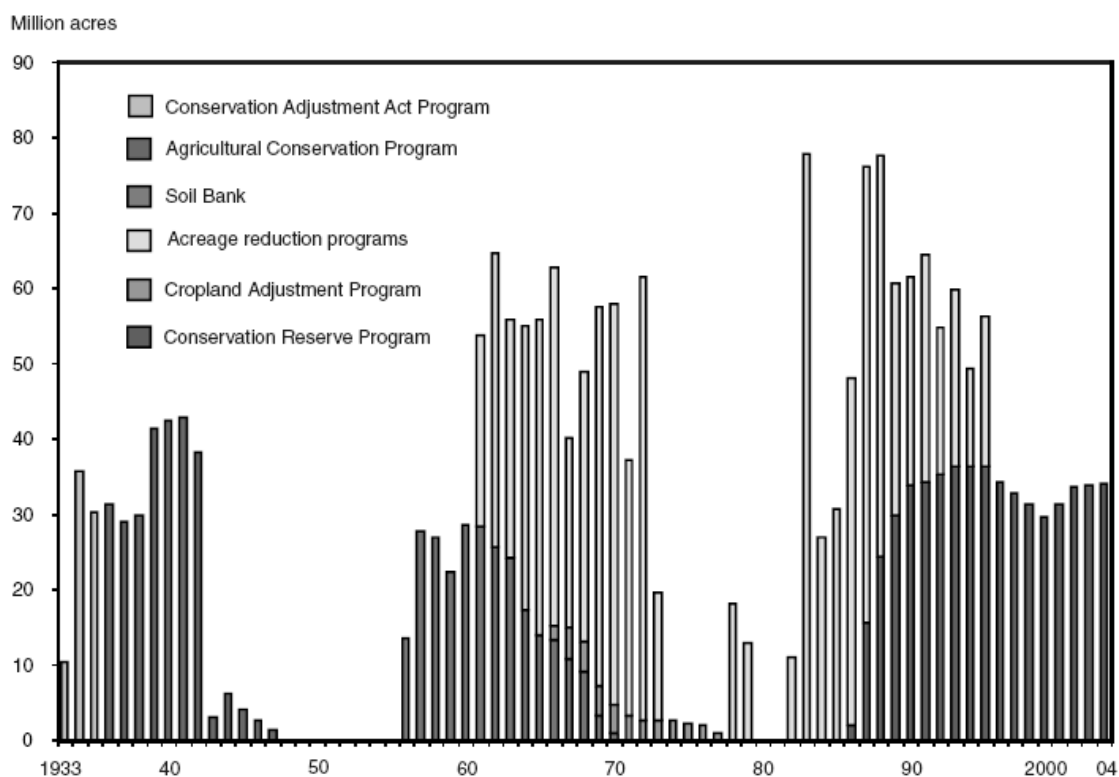
Agricultural policy reforms, including CAP reform in Europe, periodic changes in U.S. Farm Bills, and adjustments in Canadian agricultural policies, have a number of common threads. These can be grouped under the concept of multifunctionality, although in North America and some other countries the term is not popular (Garzon, 2005; Dobbs and Pretty, 2004). Even so, there is a general recognition by the majority of OECD countries that farm policy has to move beyond its historic focus on increasing commodity production and supporting farm incomes (Cochrane, Normile and Wojan, 2006). Largely, this involves recognizing the various non-commodity outputs of agriculture and finding ways to adjust farming practices to alter the balance between commodity and non-commodity outputs (OECD, 2003).

This shift involves two important changes in policy. The first is a focus on land use. Traditional agricultural policy considers land use as a secondary issue because it recognizes other factors of production are more important constraints on the level of commodity output and farm incomes. The second is a shift from a focus on aggregate production and aggregate farm income to a smaller spatial scale of the region and the individual farm. While commodities are by definition homogeneous products, non-commodity outputs have values that are typically specific to a particular location, and the potential mix of feasible commodity and non-commodity outputs varies considerably across farms. An important consequence of this adjustment is that agriculture becomes much more a domestic policy issue, because the majority of non-commodity outputs are not tradable.

These two changes are implicit in the moves to reform agricultural policy and they may appear to offer a way to harmonize policies as countries shift their focus from increasing outputs of food and fibre. However, in practice the term multifunctionality has become a divisive issue, even though there is considerable support for its underlying concepts (Dobbs and Pretty, 2004; USDA, 2001; Matheson, 2006). The main objective of this paper is to explore why this controversy exists, even though the adversaries share a common appreciation for the importance of rebalancing the mix of agricultural outputs. The conclusion is that while general concerns with land use, particularly the loss of farmland, are central in each country, the specific nature of the concerns vary greatly between the “old world” of Europe and the “new world” of North America.” Differences in concerns are interpreted on each side of the Atlantic as a failure by the other side to truly embrace the underlying principles of multifunctionality, that thereby demonstrates a lack of commitment to true agricultural policy reform.

A key difference between the European Union and Canada and the United States is the historic policy response to maintaining the stock of farmland. In Canada and the United States, other than for brief periods of high market prices for commodities, there have been on-going efforts to take land out of production. The most obvious of these were in the 1930s when in both these countries a major portion of the vast amount of support for agriculture involved relocating farm families from marginal lands and eliminating production on these lands (Cochrane 1993; Fowke, 1946). Following World War II there were additional programs to further reduce production on marginal lands and to take them permanently out of production. Figure 1 shows the amount of potential cropland idled over time in the United States since the 1930s.

**Figure 1. Cropland acreage reductions by program type
1933-2004**

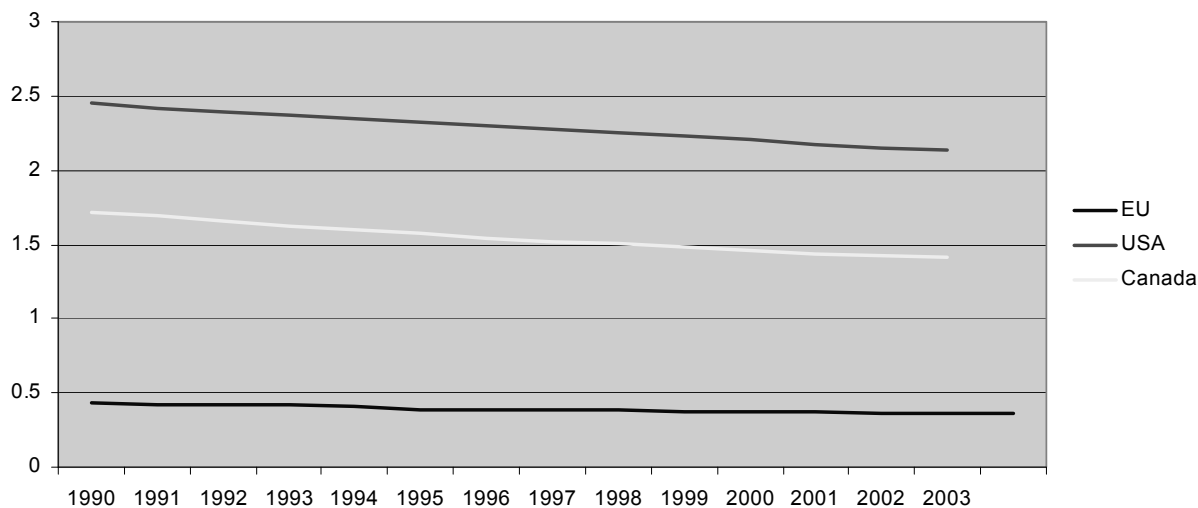


By contrast, a major concern in western Europe after World War II was to increase agricultural output. This reflected the effects of the war and the loss of food supplies from Eastern Europe combined with a large influx of refugees from the east. The result was policy that encouraged the utilization of virtually all arable land. It also encouraged land intensive production practices that maximized the output of food and fibre. Only recently has the European Union begun to try to reduce the degree of intensity of input use and to take land out of production.

In Canada and the United States issues of domestic food availability are largely irrelevant, but while they are almost as unimportant in Europe today there is still a recognition that not very long ago food was scarce. Moreover the stock of farmland per capita in Europe and North America is radically different (Figure 2). Even with rapid population growth in Canada and the United States there is still far more farmland

available per person than in western Europe. This makes farmland relatively scarce in Europe.

Figure 2. Agricultural land per person



The farm policy context

In the majority of the industrialized nations farming is now a minor source of income and employment, even in their rural areas, and concerns with food shortages are now well past recent history. Moreover, the majority of the populations are now more urban and wealthier than at any time in history. In such an environment it is not surprising that there are growing questions about the role that agriculture plays in each society (Office of the President, 2006). In general, there is a growing sense that agriculture is becoming more valued for its contribution to the national landscape and less valued for its production of food and fibre (Platt, 1985). Larger and wealthier populations that seek an alternative to their normal urban environment now commonly travel to rural areas to experience nature. Because farmland is the dominant land use in those parts of all countries that are readily accessible from urban places, the nature that is experienced by urban residents is largely determined by farming practices.

In some cases farming practices provide a positive contribution to the urban visitors experience. This is generally the case for low intensity livestock operations that allow animals to graze in a pastoral setting, or where there is a variety of field crops (Glebe, 2003). In other cases farming provides a less desirable landscape, when an intensive animal feeding operation is encountered, or when monoculture crop systems dominate an area. To the extent that undesirable landscapes are the result of agricultural policies, while desirable landscapes are not encouraged by current policies, there is a disconnect between what the bulk of society wants from its farm policy and what is now provided.

Not surprisingly, in most countries agricultural policy is no longer determined just by farmers and the agricultural bureaucracy. It is now influenced by animal welfare advocates, environmental activists, and rural residents whose livelihoods and life styles are influenced by farming practices, even though they are not directly engaged in

farming. The result is agricultural policy that is steadily moving toward a broader perspective than commodity production and policy which looks at the full set of market priced and unpriced outputs of agriculture.

The focus of this paper is the public concern with farmland preservation, particularly the implications of a decline in the quantity of farmland. However the reason for this focus is not the impacts on commodity production, where other inputs may be effective substitutes, but to ensure the production of non-commodity outputs. Farmland is the source of a large share of the non-commodity outputs of agriculture. It provides visual amenities. It provides habitat for desirable species of plants and wildlife. It provides the location for the cultural experience of observing farming that connects an urban population to roots, that while they may be mythical, are still valued. Striking in this concern with farmland preservation is the limited reference in both North America and Europe to a loss of commodity production in the short run. In those instances when the food security value of preserving farmland is raised, it is typically in the context of a future reserve that can be relied upon if production levels change in the future (Dobbs and Pretty, 2004; Garzon, 2005).

While agricultural subsidies appear large in aggregate, they are a relatively minor share of public outlays in virtually all OECD countries. Moreover they are a form of public expenditure that is not broadly controversial. Farmers and farm supports are generally viewed positively by the public. However, the broad public is increasingly interested in the mix of outputs produced by farmers and how those outputs are produced. In other words, the public is increasingly concerned with how farmland is used and is increasingly interested in ensuring that farm policy does not encourage socially undesirable behaviour by farmers. Society remains willing to support farmers, but there are growing expectations that something more than commodity output is to be provided in return.

One reason land use has become a divisive policy issue is the fundamental concepts underlying multifunctionality as a basis for farm policy imply that it is important to avoid conversion of farmland to other uses. It is farmland that produces the majority of non-commodity outputs. This means that policies to implement multifunctionality are necessarily largely based upon maintaining farmers on the land and the land in farming. Appealing to the non-commodity outputs of agriculture becomes the means for justifying the new policies, particularly those that try to maintain farms in Less Favoured Areas (LFAs) where the financial returns to production are low, even with direct income support for commodities (Brouwer *et al.*, 1997). By contrast, the countries that are suspicious of multifunctionality typically see no social value in preserving marginal farms and marginal farmland, and based upon their values assume that such strategies are merely a ruse to disguise new levels of direct income support to farmers.

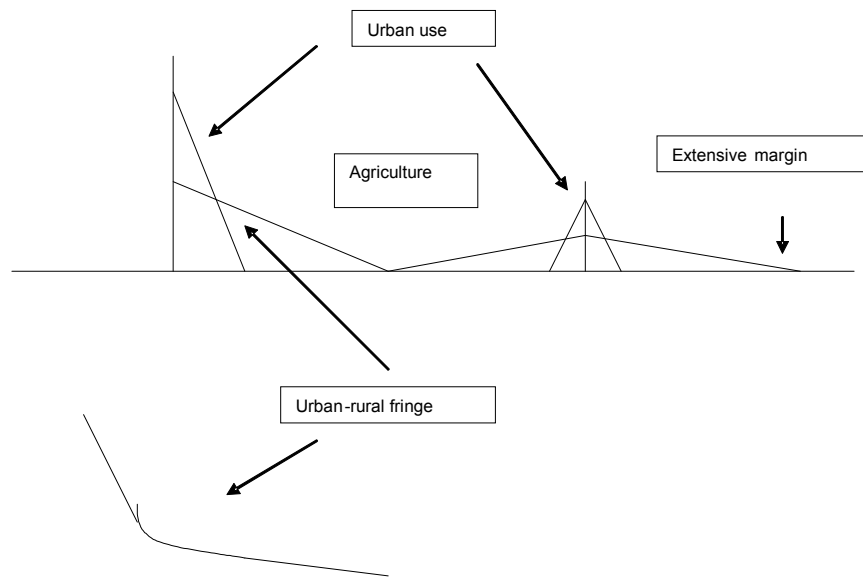
Farms in space

Typically, farmland has limited alternative uses. In most parts of most OECD countries individual farms may cease to operate but the land continues in agriculture under a new operator. This means that from a national, or aggregate, production perspective the stock of farmland can be considered fixed, at least in the short run. With a fixed stock the main land related issues are how much land is allocated to the production of specific commodities and the relative productivity of various parcels of land (Ricardian rents) (Tweeten, 1979).

However, while the assumption of a fixed stock of land is consistent with historical data on measures of the quantity of land in farms, it masks considerable change at two points. These are the urban fringe, where development pressure leads to land being converted from agricultural uses to urban uses, and the extensive margin, where farming ceases to a profitable activity and land is used for forestry, wildlife habitat or some other low value per hectare use. The nature of these changes is easiest understood by examining a simple von Thunen-type land use model.

Assume a uniform plain with a central market town. In the immediate vicinity of the market are homes for merchants and other urban dwellers. These urban dwellers have a strong preference for proximity to the market and are prepared to pay more for land near the market than can be justified by any agricultural use. Consequently in a ring surrounding the market we find urban land use. Land values decline with distance from the market because these locations are less desirable. Urban land use ends at the point where the highest value agricultural use just exceeds the urban use. In the classic von Thunen model every farmer producing a given commodity receives the same market price and all land is equally productive. However, each farm incurs transport costs to get to market, so locations closer to the market yield higher returns than more distant ones. This means that agricultural land values are higher closer to the market to reflect the higher profit potential (Figure 3). While the upper part of the figure suggests a clean break between urban and farm land uses, the urban fringe is generally less distinct. The lower part of the figure suggests that a mix of farm and urban uses are present, reflecting the reluctance of established farmers to sell, leap-frog development, variability in land quality and other factors.

Figure 3. Stylized Depiction of Intensive and Extensive Margins



Suppose there is only one crop. At some distance from the market transport costs will reach a high enough level to exhaust the return from producing and selling the crop. At this point agricultural activity ceases, and in the von Thunen model land beyond this frontier is wilderness. Now suppose crop prices fall. Logically the extensive margin should contract as farmers who were once able to earn an adequate return now find the market price no longer covers their production and transport costs. Similarly, suppose the urban population expands, increasing the need for housing. As house prices increase the value of farmland closest to the town becomes lower than its value in housing and land is converted. Note in this model the use of all other farmland remains unchanged. Only the land at the margins is affected by change.

Even with a model this simple it is easy to describe a situation where land use at the margins changes but the aggregate quantity of farmland remains constant. Consider the case of an increase in urban population. This leads to the loss of farmland in closest proximity to the town. However, if the larger population results in a greater demand for food, we might expect prices received by farmers at the market to increase. This will in turn allow expansion of the extensive margin because land that was unprofitable before now becomes viable farmland.

Space and farm policy

Standard analysis of farm policy ignores the spatial aspects of agriculture. But policy clearly has a spatial impact. In reality land is not uniform and parcels of land that are more productive command higher prices than do less productive land. In many cases highly productive land is in close proximity to urban centres because historically settlements near good farmland tended to grow faster and become wealthier than those in less favourable locations. Similarly, more remote land is often less productive because not only is it unsuitable for agriculture, but it is undesirable for most other human uses, which assures it remains remote. This adds a degree of complexity to the analysis, but does not alter the fundamental logic of the two margins.

The new agricultural policy framework necessarily involves recognizing spatial differences. The specific features of parcels of land and the local environment determine both the achievable level of non-commodity outputs, and, to a great extent, the value of land. For example, Vihinen notes that local communities in rural Finland are prepared to pay to keep fields open to preserve landscape amenities, but only in locations where there is the opportunity for people to actually view the specific open space (Vihinen, 2006). Classen *et al.* show that it is possible to achieve significant increases in environmental quality by spatially targeting programs to locations where environmental damages associated with production are high but remediation costs are relatively low (Classen *et al.*, 2001). Not only is farmland important, where the parcel of farmland is situated is also important.

High levels of support for agriculture have three distinct effects. At the urban fringe they increase the returns to farming which will slow the rate of urban conversion. However, as Kuminoff, Sokolow and Sumner note the value of land in urban uses is typically an order of magnitude or more higher than its agricultural value. Thus in most cases agricultural support provides only a weak impediment to urban sprawl. A few counter examples to this are apparent. In Lexington, Kentucky, thoroughbred farms are effective barriers to urban sprawl because wealthy horse farm owners are prepared to pay more for farmland than most developers. Similarly, in the Cote d'Or of France the quality

of the vines is high enough to control urban expansion. In these cases it is not public policy that supports farm uses but highly location specific agricultural activities.

Agricultural policy has a larger role at the extensive margin because it raises returns above market rates. Higher prices lead to agriculture being carried out in areas where it would otherwise not exist. Conversely significant reductions in price supports can have major impacts on farm viability in those remote areas with marginal productivity, as the combination of low yields and high transport costs overwhelm market returns. The third effect refers to those farms between the margins – the vast majority of farmland. For these farms price supports are pure rents,¹ in the sense that with or without the policy the land will have an identical use. This does not mean that policy has no effect. Removing price supports may lead to a reduction in the use of other inputs, so output declines, or it may lead to the farm operator becoming bankrupt and losing the farm. Nevertheless the land will not change use, so from an aggregate perspective the loss of policy support has no broad use effect on land that is not at either margin. A shift in agricultural policy from traditional commodity support to multifunctionality has major implications for land use at the margins but less impact on other land.

Consequently in principle all three effects should be recognized, but in practice in both Europe and North America the focus is on just one. As noted earlier, in Europe the predominant concern is the loss of farms at the extensive margin if traditional supports to farmers are not replaced with an alternative mechanism. In North America the main concern is with urban sprawl encroaching upon prime farmland. The first question is why the difference in focus and, secondly, why there is limited concern in both regions with the impact on farmland between the two margins?

Land use at the margins

Two potentially important differences between land loss at the fringe and extensive margin are, the general irreversibility of losses at the fringe and the fact that land lost at the fringe is generally more productive. Land lost at the extensive margin can be readily shifted back into agriculture if its opportunity cost changes, so this land remains part of the agricultural reserve. But, land lost to urbanization is typically transformed in a way that eliminates the possibility of restoring it to farming uses in the future. Also, the loss of land to urbanization has a significantly higher cost than the number of hectares alone implies. Because cities were often first established in areas of high agricultural productivity, their expansion continues to consume high quality land. In most countries the quality of farmland is quite variable and there is more lower quality than high quality land. While modern farming methods have greatly reduced the agronomic benefits associated with high quality land they still remain, so urbanization typically leads to a reduction in average output per unit of land even if the extensive margin shifts out to leave the total amount of farmland constant.

Another way to consider the two types of farmland loss is to note that land lost at the fringe does not change function because of changes in agriculture that reduce its ability to generate output and income. Instead it leaves agriculture because the opportunity cost of remaining in agriculture exceeds the returns from farming. By contrast, land at the extensive margin typically has a very low opportunity cost. Land at the extensive margin

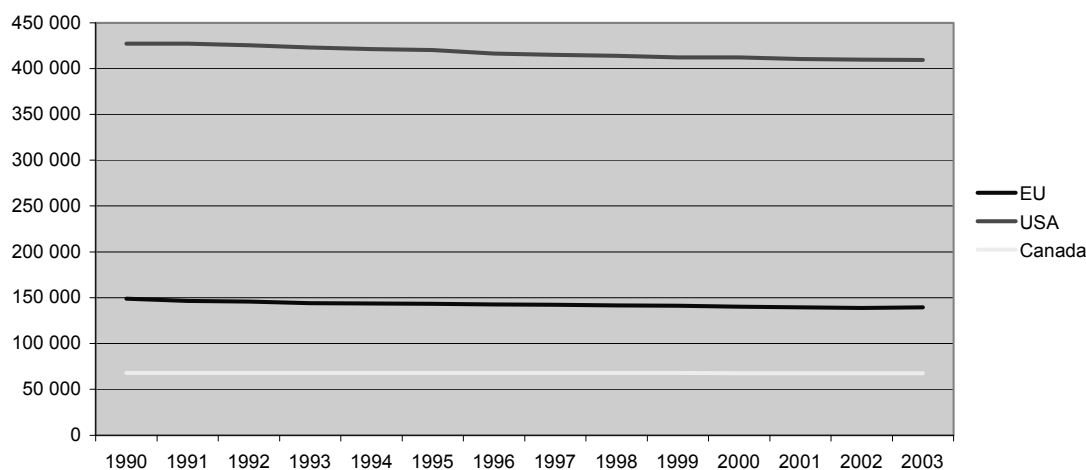
1. A rent is a factor payment that need not be made. With or without the payment the factor earns more than its opportunity cost and consequently does not change its use

leaves because the market value of the output produced is insufficient to cover the costs of the resources used in production.

From a larger perspective the model has some value in thinking about farm policy. In general most countries are mainly concerned with agriculture as a sector and less concerned with the well-being of individual farms. From this perspective the simplest way to think about agriculture is as if it were one large farm. Supposing that government is primarily concerned with sector wide results, then its main concern with farmland will be with changes in aggregate quantity. A change in the amount of land used for farming means that agriculture is either less able to compete for the resource at the urban fringe, or agriculture is not profitable enough to allow land to remain in agriculture at the extensive margin. Situations where the aggregate stock of land remains constant over time can be thought of as indicating that agriculture, in aggregate, is in equilibrium. Of course, within the agricultural sector there can be significant adjustments in the amount of land allocated to the production of specific commodities.

From this perspective significant reductions in the stock of farmland can be seen as an indicator of a weak farm sector, even if only commodity production is considered. In North America, the stock of farmland has remained remarkably constant over time in both Canada and the United States, despite large declines in farm numbers and large increases in farm output (Figure 4). In Europe the stock of farmland has declined somewhat over the last decades for the EU16, but with enlargement the relative decline has been reduced, since the new entrants have not lost as much farmland, Similar trends in farm numbers and farm output are equally evident. Thus, from a sector perspective, there is little evidence that agriculture is out of equilibrium in either the EU or North America. However, once we admit that government or society is concerned with more than just aggregate farm sector results, and we also include non-commodity outputs, then the problem of land conversion is more difficult.

Figure 4. Agricultural area: European Union, United States and Canada



Farmland conversion issues

In reality the loss of farmland is a more serious public policy issue than the aggregate changes in quantity would suggest in both North America and the European Union. It appears that public concern with the loss of farmland may actually be the main driving force behind multifunctionality. While farming has become a minor function in terms of most social and economic indicators, it remains the dominant land use in both regions. This means that small percentage changes at the aggregate level can be associated with large absolute changes in the stock of farmland at sub national levels. Recall most farmland is not subject to conversion, it is only land at the two margins that changes uses, so the effects are geographically concentrated. And if at those margins the land provides particular values that go beyond commodity outputs, the cost of conversion can be much higher than standard farm accounts would suggest. This is particularly the case if the farmland that lies between the two margins is unable to provide the same non-commodity outputs.

At the fringe farmland is typically of better than average quality and has a high productivity, but a major share of its total social value comes from the non-commodity outputs of “green space” and visual amenities that are readily available to urban residents. Farmland further away from the fringe is unable to provide these local public goods and externalities. Further, a normal by-product of urban conversion is higher cost public services for urban residents as public infrastructure (sewer, water, transit) is pushed out to more remote areas. Since local services are typically priced on the basis of average cost with a uniform charge for all residents, an implication of land conversion from farm to urban use is higher infrastructure costs for all.

At the extensive margin the value of commodity production is almost by definition low. However, once again, this land can have a social value that greatly exceeds its value in producing commodities. Because the land is marginal for farming, it is typically not intensively managed which often allows it to support a wide variety of wildlife. When the land has been involved in agricultural production for an extended period of time the local ecosystem adapts to the management process and may be unable to survive if land reverts to an unmanaged state. This means that ending farming may also mean accepting a significant change in the ecological balance of the region, not just on the farmland itself. Once again farmland that is interior to the extensive margin is unable to provide a similar function, because it lacks the same attributes and because of more intensive management practices.

Valuing farmland conversion: North America

The main public concern with the loss of farmland in North America is urban conversion. Since 1970 the population of Canada has increased by 50%, while the population of the United States has grown by 44%. Over the same period, the urban share of the population has grown and the majority of this growth has taken place in a relatively small number of the largest cities. Even if the average population density of cities had stayed at the level of the 1950s, considerable expansion of the urban footprint would have been required, but because the average population density of cities fell as suburbs became more desirable and accessible, the amount of farmland converted to urban uses was even larger (Hoffman,).

Urban conversion issues in North America reflect a relatively high rate of population growth that has been concentrated in a small number of urban centres. Much of the growth is from immigration, because natural population growth rates are low and falling. Immigrants overwhelmingly settle in urban areas. Internal rural to urban migration flows have slowed, and at times reversed in recent decades, so they have limited effect on the location of the population.

In recent decades high rates of population growth in urban centres imply urban expansion even where controls on land conversion are strong. However in most parts of North America land conversion has been a relatively easy process and farmers have typically been more than willing to sell property for development. Land use management is a provincial responsibility in Canada and a state responsibility in the United States. In both countries provinces and states have largely transferred this responsibility to local governments. Only recently have local governments been encouraged to adopt regional planning practices. Consequently even if one locality chose to limit urban expansion, it was relatively easy to simply bypass its territory and develop land in an adjacent county that had less restrictive practices. Ironically the consequence of local land use controls was often more rapid sprawl as developers jumped further out.

As noted earlier national averages mask huge variability in conditions across North America. Despite a large growth in the amount of land in urban use over the last fifty years the stock of farmland has remained relatively constant. Moreover, urban growth is only one way that farm land is lost. Large amounts of farmland have been converted to parks and recreation areas. Other farmland has been converted to forest. Finally large amounts of crop land have been idled for extended periods through agricultural policies that take land out of production. While some studies continue to consider idled crop land part of the farmland base, others do not (Greene and Stager). In the latter case declines in the stock of farmland appear much larger.

Moreover, the spatial distribution of land use has varied greatly. In Canada most of the land taken out of production at the extensive margin has been in the Maritime provinces where productivity was low (Parson, 1999). Additional land has been abandoned in the northern portions of Quebec, Ontario and the prairies. Concern with the loss of farmland to urban uses is concentrated in two regions – Toronto and Vancouver. Both cities have grown rapidly in the last three decades and it is inconceivable that their current population could have been contained within their historic footprint. But this expansion has had important consequences for some high value agricultural production that was concentrated in close proximity to the two cities (Farmland Preservation Research Project, 2005; Gordon and Richardson, 1998). As a result local capacity to supply specific commodities has been greatly reduced, but there has been no noticeable effect on the availability of these products for consumption.

Even in Ontario, where population pressures are most evident, there have been large losses of farmland to abandonment (Farmland Preservation Research Project, 2005). The area in farms in the vicinity of Toronto has declined largely due to urbanization. The area in cropland in south-western Ontario, which is relatively productive, has remained stable. The area in farmland in eastern Ontario, which is largely marginal land, has declined by a considerable amount, but not because of urban pressure. This land was largely abandoned due to its inability to produce an adequate return.

Similar patterns are true for the United States (USDA, 2006). Farmland declines in the Northeast reflect a mix of urban conversion, conversion to parks and recreation, and abandonment. Meanwhile cropland in the centre of the country has expanded as pasture

was converted to crop production (Figures 5 through 8). Consequently the resulting appearance of stability at the national level reflects large gross increases and declines in various sub-national regions. While from a national perspective there is no obvious reason to worry about farmland, from a local perspective in many parts of the country farmland conversion is an important issue. And it is important largely because the loss of farmland has major consequences for the local supply of non-commodity outputs, especially visual amenities and recreation space. While farmland may not be experiencing any increase in scarcity from a national perspective it is becoming scarce in certain regions because large amounts have been lost to other uses.

In both countries there is a clear differentiation among the new uses. Farmland proximate to urban centres is valued largely because of its proximity which allows ready access. Even if similar land is available further away the cost of getting to it is higher making it less desirable. Further, even if per capita demand for access does not increase with urban expansion, the simple fact that there are many more people increases the demand considerably. By contrast, the conversion of farmland to wilderness typically improves access by reducing the distance that has to be travelled from urban areas to experience the site. In addition, because what was previously farmland is not considered to be “virgin wilderness” it may actually have greater value for more intensive recreational use. Similarly, farmland that is directly converted to park or recreation uses moves land that could previously only be used passively, because it was private property, into land that can be used actively.

Figure 5. Major land use share in the North-East

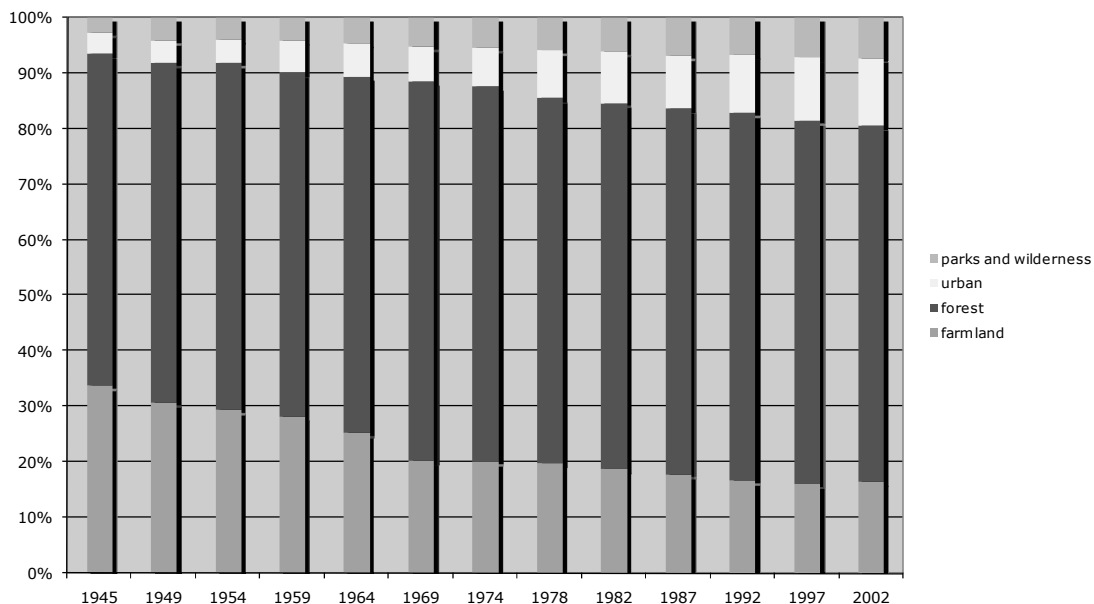


Figure 6. Land use share in New York

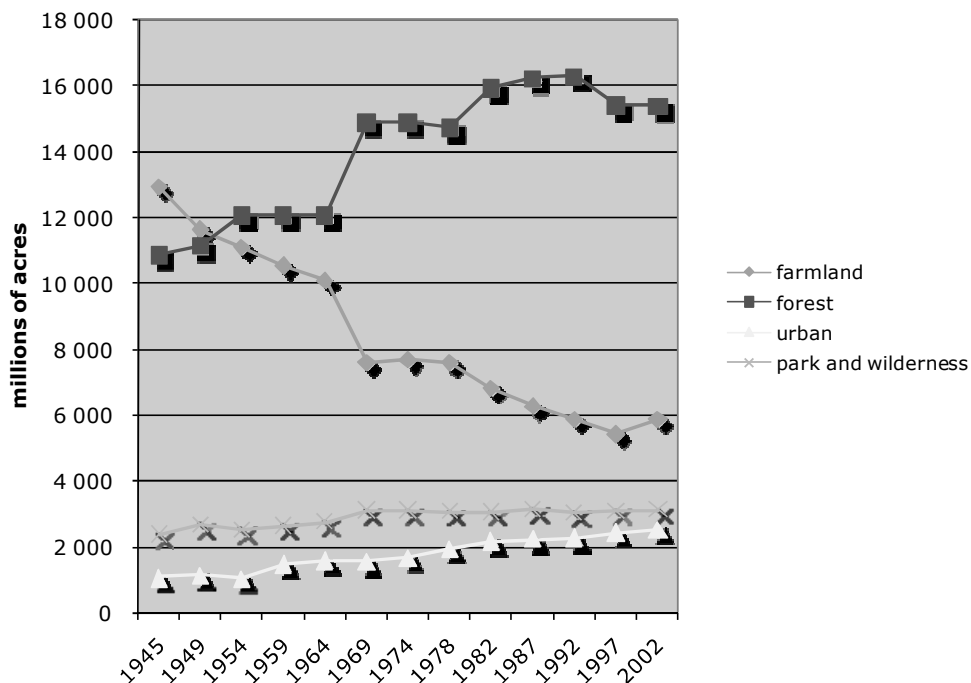


Figure 7. Land use share in the Northern Plains

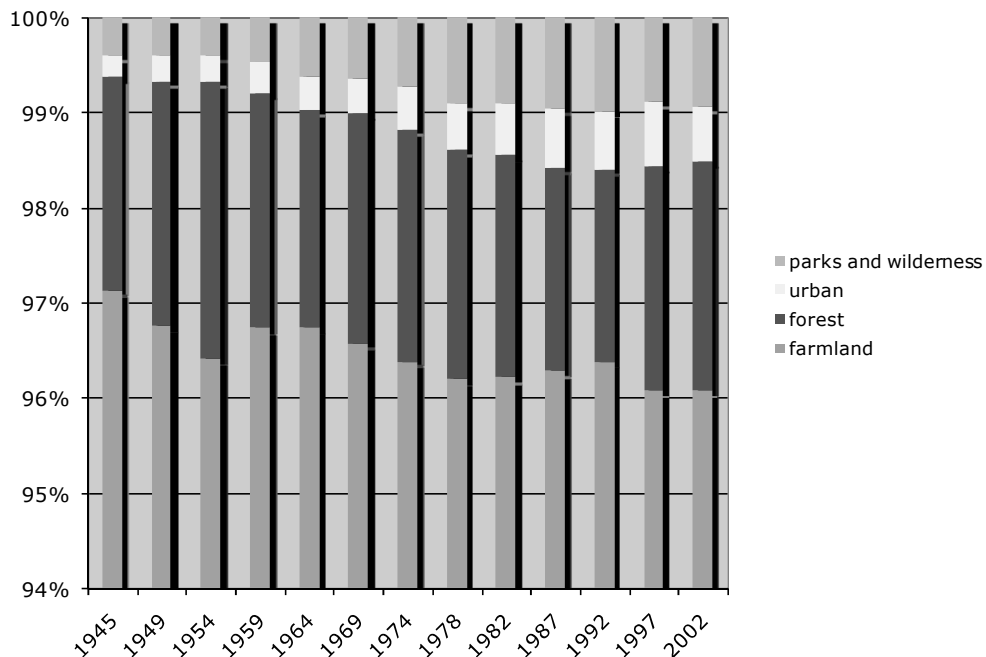
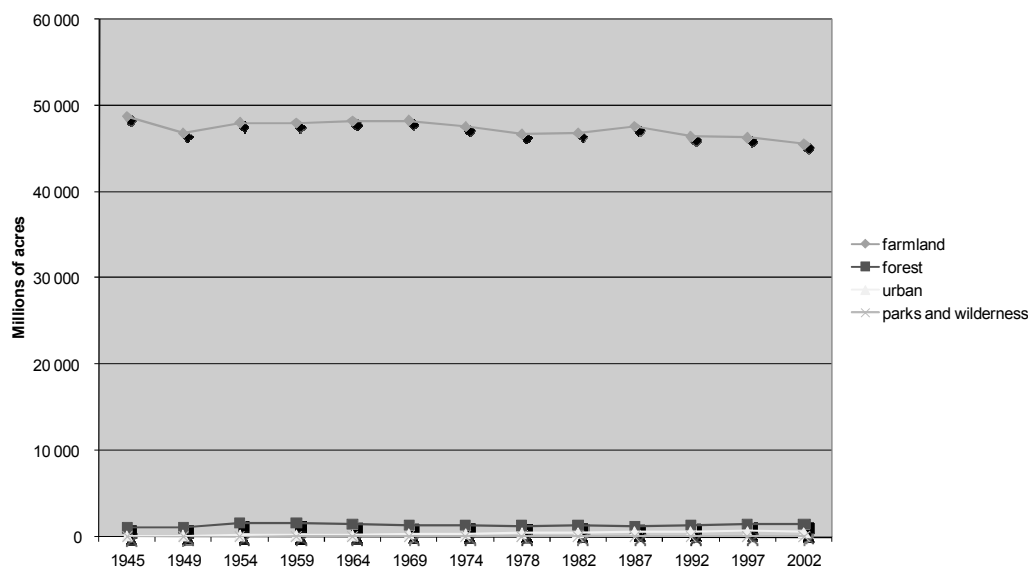


Figure 8. Land Use share in Kansas



Valuing farmland conversion: European Union

The concern with farmland loss is a much more recent phenomenon because of the pressures to increase food production in western Europe in the twentieth century. In Europe, urban sprawl is an emerging issue, but it is less visible as part of agricultural policy (EEA, 2006a). Urban areas account for a growing share of national populations, but in most countries the rate of growth in urban areas has been relatively slow by North American standards, except for those cities that have experienced large immigrant influxes (EEA, 2006b). In addition, European urban patterns are different than in North America. Central cities are still desirable residential locations, which reduces the demand by wealthy individuals for large low density ex-urban residences. This creates a much more compact urban form. Country houses are popular, but they are typically second homes in rural locations where farming is prevalent; unlike in North America where second homes are typically found in wilderness areas. Importantly, land use decisions in Europe are dominated by higher levels of government, and land conversion takes place only under strict supervision and in patterns that are consistent with long term plans.

The result is a much more regulated pattern of urban growth that typically considers the importance of maintaining green space in close proximity to urban centres as an important policy concern. When urban conversion takes place it is in a highly regulated process that has considered the broad public impacts. Further the settlement pattern in Europe tends to inherently mask growth effects. The existence of a dense set of villages throughout the countryside offers an opportunity to add housing with less noticeable effects than in North America where one year there is no housing, and the next year there is no farming.

At the extensive margin the driving forces for abandonment are more similar. However, the context is different. The relative scarcity of land in Europe argues for more attention being paid to opportunities for multiple uses. Because land is relatively scarce, abandonment is considered undesirable (Kovacshazy, 1992). The pattern of urban use of rural space reinforces multiple uses. Urbanites in Europe expect a managed environment

that shows evidence of human activity when they visit the countryside. Second homes are typically in villages or near farms, so the abandonment of farmland reduces the opportunity for urban interaction.

Because most land in Europe has been farmed for centuries, it has developed an ecosystem that depends upon active management (Keenyside, Veen and Baldock, 2004). Without management there will be shifts in the mix of species and the possible loss of specific species. While this is not an argument that all marginal farmland in Europe should be protected, it is an argument that specific parcels should be maintained as farmland. As in North America, marginal land that is at risk of abandonment is regionally concentrated; mountain areas in France, Austria and Italy, most cropland in the Nordic countries, and a significant amount of the pasture land in the new Eastern members of the EU (EEA, 2004).

Land abandonment is also associated with an aging population and weak rural economies. Income from farming is too low to support a household and there are limited opportunities for off-farm earnings (EEA, 2004). But the current approach of supplemental payments to maintain full time farming is both expensive and the cause of trade frictions. However similar landscape effects could be achieved if farm households were able to earn more of their income from off-farm sources. This would entail a shift to part-time farming but it need not detract from the current level of production of NCOs. Moreover given the urban interest in Europe of a managed rural environment, it may be possible through rural development efforts to further enhance the level of amenities and maintain landscape value.

Conclusion

The loss of farmland is a sensitive issue in most OECD member countries. In almost every case the loss is characterized by farm interests as having significant implications for agricultural output, if not now, then in the future. However, a more dispassionate examination of broader social concerns reveals that the main issue is really a concern with the loss of non-commodity outputs of agriculture. These tend to be green space based, visual and recreation issues in North America, while in Europe they are more oriented to changes in ecosystems that endanger species of wildlife that are brought about by the end of intensive land management.

These differences in concerns lead to clear spatial differences in the focus of farmland preservation. In Europe the effort to maintain farming focuses on the extensive margin in Less Favoured Areas where small farms generate low incomes. Supplemental payments are used to subsidize production in areas that are incapable of generating adequate rates of return, even given the broad direct support provided under CAP. Payments are structured to preserve low rates of output per hectare in order to maximize NCOs.

In North America, even though large amounts of land have been taken out of production and converted to non-agricultural use in areas where urban pressures are nonexistent, the focus is on urban conversion. The loss of land to expanding suburbs provides a common cause for those trying to limit population losses in urban centres and for those who want to maintain the agricultural use of the land. Similar to Europe the loss of land is driven by an inability of farming to generate sufficient income to justify its continued access to the land. While high levels of government support for agriculture have raised farm income in both Canada and the United States, the value of land close to cities in alternative uses greatly exceeds its value in agriculture.

Interestingly, in North America the loss of land to abandonment has been a more significant factor in reducing the stock of farmland, in terms of the amount of land lost, than it is in Europe. Major regions of North America that are far from urban growth centres have experienced large declines in the amount of land in farms. Governments, especially in the United States, have removed a vast amount of cropland from production through long term conservation contracts. Unlike in Europe, this conversion of farmland to “unproductive” uses is viewed favourably by the population.

Also of interest is the relatively minor visibility of urban conversion in Europe. Despite the fact that Europe is much more densely populated than Canada or the United States, the conversion of farmland to urban uses is not a major agricultural policy concern. Possible reasons for this are: the much stronger controls on urbanization processes in the countries of Europe that strictly limit the expansion of urban development, a much slower rate of growth in the urban population relative to North America, and cultural preferences for urban centre housing instead of ex-urban homes.

A final difference between Europe and North America reflects the much greater relative scarcity of farmland. Because the amount of farmland per capita in Europe is far less than in North America, there is a much stronger interest in managing multiple uses on specific parcels of land. In Europe, even though NCOs may be the most important output of a specific parcel of land, there is still a desire to preserve some commodity production. By contrast, in North America, where farmland is still abundant, it is much easier to assign specific parcels to single uses. Withdrawing land from production to allow it to specialize in producing wildlife habitat is a much easier choice if there is a large supply of farmland relative to the size of the population. As farmland becomes relatively scarce, as in the Nordic countries, the North-eastern states, or in British Columbia, there is much more public concern about any form of single use conversion.

What seems evident from the last few decades of observing agricultural policies is that traditional agricultural policy is of very limited value in dealing with land conversion at either margin. In the case of urban sprawl it is impossible to imagine high enough levels of income support that would keep land in farming, instead of alternative uses. At the extensive margin even current high levels of payments cannot provide a large enough income to convince younger people to take over the family farm. Yet, there is a clear public interest in seeing that some of the land in both instances remain in agriculture. An important country-point to this public interest is a fairly small concern with the actual level of commodity production that takes place on the land. In Europe the existing LFA payment structure is already designed to minimize the incentive for farmers to reduce the ecosystem benefits by increasing commodity output levels.

Importantly it is specific parcels of land that are of interest, which means that any policy response has to be spatially targeted to be effective. This means that policy instruments have to shift from commodity outputs, which are homogeneous, to particular parcels of land, which are heterogeneous. Parcels may be relatively large in some cases – regions, or may be specific parts of a farm in other cases. This creates a very different policy problem that is much harder to manage at a national level, because local negotiations are the main means by which plans for land management are developed and monitored. While national governments can set broad standards and monitor performance most of the implementation has to be done at a sub national level.

At the extensive margin farm land abandonment in Europe and North America reflects both technological change that has increased the productivity of ‘better land’ that is more suitable for mechanization and more intensive production. In Canada and the

United States this is most easily seen by major declines in the amount of land used for farming in both the Maritime provinces and the states of New England. These lands were among the first settled by Europeans and were farmed from early colonial times until the 1950s and 1960s when their limitations became overwhelming. A combination of an aging farm population, fragmented farms, poor soils and short growing season led to large scale abandonment. Most of the land returned to native forest. In Europe a similar process appears to be taking place. Most land that faces abandonment has been farmed for centuries, but under modern production conditions now has too limited productivity to be viable only as a producer of commodities. The key distinctions between Europe and North America in these adjustments are the relative shortage of farmland and cultural differences that favour a managed environment in the “old world” and wilderness in the “new world”.

In OECD countries agricultural policy has continued to focus on the aggregate value of commodity output long past the point where this is the main concern of the general public. While support for farmers remains politically popular there is a growing sense that farm policy should require farmers to produce more of what the public wants in return for continued support. The introduction of multifunctionality as a concept for thinking about what agriculture produces and how it produces it is part of this process. As the role of NCOs becomes more prominent, the inevitable effect for all OECD countries is a shift in the form of agricultural policy to emphasize the way farmland is used, instead of simply the food and fibre it produces. This will also require policy to shift to a spatially targeted approach where specific parcels of land receive support to produce a particular mix of commodity and non-commodity outputs.

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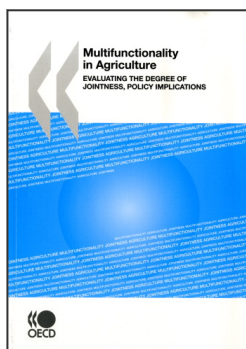
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