

Executive summary

Agricultural policies in OECD countries are in the process of evolution and there has been a shift away from production-linked support, towards various types of payments, which are frequently linked to land use. In many OECD countries, this shift in agricultural policies is intended – to an increasing extent – to be a vehicle for contributing to the economic and social revitalisation of rural areas – and not solely a means of maintaining farm incomes. Nevertheless, the sector-specificity of these policies – and their economic cost – have raised questions about their effectiveness in addressing non-agricultural objectives, including rural development.

Agricultural land has declined, on average, by 4% in the OECD area over the last two decades and this decline is projected to continue. But it still remains the main user of rural land across OECD countries, and accounted, on average, for more than 85% of rural land in the OECD area in 2005. Despite its predominance, the loss of farmland can adversely affect the rural economy of some regions in OECD countries.

Today, in particular, there is concern expressed in some countries that farmland loss could be associated with reduction in the potential supply of food. However, the most significant concern about farmland loss, to varying extent across OECD countries, is driven by the potential effects on farmland-based rural amenities. This is reflected in the adoption of an array of farmland protection programmes designed to provide rural amenities in several OECD countries.

Land is an input to the production of a wide range of private goods, including – but not of course limited to – agricultural commodity production. Private decisions about the use of land, however, often give rise to external costs, such as restrictions on access to land and deterioration of wildlife habitat, and to external benefits, such as visual landscape, the provision of opportunities for recreation and countryside activities.

Changes in agricultural, agri-environmental, land-use and regional policies and many non-policy factors – such as climate change, demographic change and globalisation – increasingly affect land use and management choices. The environmental implications of changes in agricultural land use are complex, because they can impact on other agricultural land uses; alter the mix of arable crops, permanent crops and pasture; change property-rights related to land (and water).

From the rural development perspective, policy concerns with changes in the use of farmland are five-fold: i) adverse environmental impacts on landscape provision, wildlife habitat and the preservation of ecosystems stemming from the abandonment of farmland in some high-value-nature rural areas; ii) knock-on economic effects of the abandonment or long-term retirement of farmland influencing the socio-economic viability of such rural areas; iii) risks to the provision of farmland-based rural amenities, particularly in those rural areas where such amenities are instrumental for their sustainable development; iv) concern with the alternative uses of farmland and water in the encouragement of environmentally sustainable rural development and alternative sources of income and employment in rural areas; and v) urban sprawl in cases where farmland is lost to urban uses. One role of policies is to narrow the divergence between privately and socially desirable outcomes.

The aim of this report is to analyse the effects of diverse policies on farmland conversion. The approach adopted is a combination of economic analysis and empirical case studies material. A central hypothesis of

the report is that agriculture is essentially a spatially specific activity as both the returns from agriculture and the opportunity costs of keeping land in agriculture vary across space.

In order to analyse these differences and to analyse how agricultural and land-use policies influence changes in farmland use, a generic typology of three agricultural land categories is developed, with the extent of each varying between countries:

- The *urban fringe*, or *peri-urban zone*: is found at the edge of a town or city, where urban activity has a strong influence on land uses and on the nature of farming. Farmland conversion to urban uses is largely irreversible in this zone.
- The *agricultural core zone*: this zone comprises the majority of agricultural land in most OECD countries. Returns from farming are high enough to keep the land in agriculture and there is little pressure for urbanisation. Land may be idled by farm operators, but it is typically not sold and can be returned to farming should economic conditions warrant this. The management of agricultural land may also be altered either by changing the allocation of land to the production of different crops or to be used more intensively for the production of a given commodity.
- The *far*, or *extensive*, *margin zone*: agriculture is a marginally profitable activity, due to a combination of remoteness and low productivity, and declines in the returns from farming cause production to cease. Whereas the urban fringe faces pressure to convert farmland to higher-value uses, the issue at the far margin is whether agriculture can be sustained. If this is not the case, then land will revert to a less intensively managed use, such as forests or native ground cover for hunting and recreational activities. But, in contrast to the case of the urban fringe, farmland can be brought back to farming if returns from farming warrant this, except if permanent vegetation has begun to grow as reconversion can become too expensive.

While the categorisation of three spatial zones in the report is a gross simplification of the spatial distribution of agriculture across OECD countries, it is capable of showing how policy effects can vary with geography. The key observations emerging from the analysis can be summarised as follows:

- The production and value of many farmland-based environmental services is specific to particular farming practices in specific locations.
- The conversion of farmland is also spatially determined. It is largely an issue at the urban fringe and the extensive margin, where the economic returns from farming are inadequate to maintain land in agriculture. A potentially key aspect of the conversion of farmland to non-agricultural uses in these two margins is how the environmental amenities associated with farmland are valued.
- Given that the farmland in the agricultural core zone (which can represent the majority of farmland) is not at risk of conversion, across-the-board policies are inefficient against farmland conversion and specific policies need to be defined for the two margins. In the agricultural zone, agricultural policy influences the relative mix of products produced, the farming practices used and may alter the spatial location of specific products, but it does not really influence the amount of land in farms. However, these policies will be a critical factor in setting the spatial location of the boundary with the extensive margin.
- In the urban fringe, as the opportunity costs of farmland can be high and so policy tools to prevent conversion to urban use, spatially non-targeted agricultural policy and those forms of land-use policy that use payments, will be either inefficient or exceedingly expensive instruments. However, these policies can be used in a complementary way to ensure farming is profitable.
- In the extensive margin, while some forms of agricultural policy can be effective, traditional payments for commodity production may have limited effectiveness because the level of commodity production per farm is typically small. Land-use policy is largely impotent at the extensive margin because it acts mainly to impede changes to higher-value uses.

- At the extensive margin, the central issue is the value society places on maintaining a managed environment, which is location-specific. Habitat change can have important ecological consequences, but not all habitats are of equal importance. If farm policy continues to evolve in a way that includes increased support for farmland-based rural amenities, then there is an obvious mechanism for maintaining farmland. Whether similar ecological benefits could be maintained using another policy instrument at a lower cost, is, of course, a relevant question.

To summarise the analysis of how agricultural and land-use policies influence the conversion of farmland in the three spatial zones identified in the report, Table 1 provides a stylised description summarising the relative effectiveness of various broad programme categories. As shown in the Table, certain categories of policy could be more or less effective in different spatial conditions. Starting with traditional commodity programmes, they have the largest influence on farms in the agricultural core zone, where farming is a dominant land use and larger farms, especially those with high levels of output per unit of land, tend to benefit the most from commodity programmes.

Agri-environment programmes to address environmental problems (e.g. buffer strips, hedges, etc.), by contrast, tend to have the largest influence on farmland conversion in the urban fringe and the extensive margin. The rationale is that it is in these two zones where farmland faces significant opportunity costs. If agri-environment programmes increase the cost of production by forcing farmers to internalise externalities without compensation, a logical consequence is that farming becomes less viable. In the agricultural core zone, the lack of significant conversion pressure leads to the increase in costs not having a large effect on farmland conversion, although some marginal land may be shifted to an alternative use on the farm.

The spatial effect of rural development programmes (e.g. infrastructure, off-farm diversification), however, differs from the programmes described above. A major goal of rural development programmes is to expand economic opportunity in rural areas. In the peri-urban zone, the presence of an urban economy creates economic opportunity for rural residents. Indeed, a common concern in these regions is that growth and conversion of farmland are occurring at too rapid pace. In contrast, in the agricultural core zone, the dominance of farming as a land use implies a limited level of economic opportunity. While it is possible that rural development may provide diversification benefits in this area, these benefits are not linked to significant losses of farmland. In the far margin regions, if opportunities for rural development exist, these programmes can play a significant role in slowing farmland losses by augmenting farm family household income. A higher income stream may lead to more part-time farms, but it tends to preserve land in farms.

Programmes that target farmland-based environmental services can have various effects. In the urban fringe, the presence of high amenity benefits, if fully compensated, can slow farmland conversion. In the agricultural core zone, these programmes may be of limited importance due to the predominant role of commodity support programmes. In the extensive margin, high farmland-based environmental services may be associated with strong potential future demand for the consumption of environmental goods and services provided by agriculture (option value) if unique species habitat is involved. Moreover, in cases where high levels of tourism are possible, there may also be a strong direct demand for environmental services from agriculture.

Turning to various land use policies, it is clear from country experience that the regulatory power of the state can obstruct farmland conversion. This is most evident in the urban fringe, where pressure for conversion is strongest. But it is important to recognise that regulations do not remove the pressure for conversion – they only impede it. Since there are strong economic incentives for farmland conversion, there are also strong pressures to find ways to bend the intent of restrictions on conversion. The presence of horse farms in the urban fringe is a common example of ex-urban residential development fitting in the technical definition of maintaining farming. In the other two zones, regulation is less effective, because there is either less pressure for conversion, or because the low levels of return from farming make it unviable.

By contrast, financial incentives to maintain current land use can be most effective at the far margin, where a modest payment may be sufficient to maintain a farm in operation. In the agricultural core zone, these

payments are not needed. In the urban fringe, payments would have to be so high in order to be effective that they are likely to be used only in very particular cases where it is difficult to block conversion by regulation, but where a strong interest exists to maintain a particular parcel of land in farming.

Table 1. Summary of the potential ability of policy to influence farmland conversion

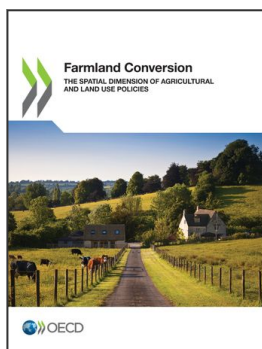
	Urban fringe	Agricultural zone	Far, or extensive, margin
Dimensions of agricultural policy and their spatial effects			
Traditional commodity programmes	Weak influence due to high land values and presence of other policies that are more powerful	Dominant influence on land use and farmers' decisions	Critical factor in setting the spatial location of the boundary, but high cost of production weakens benefits
Agri-environmental programmes to address environmental problems	Strongest effect because externalities are most visible	Weak effect in general, but can be important in some locations	Can be important in either maintaining or discouraging agriculture, depending on programme specifics
Programmes for the provision of farmland-based environmental services	Environmental services from agriculture may be more important than commodities, with direct experience more important than option value	Limited importance due to stronger role of commodity programmes	Environmental services from agriculture may be more important than commodities, with option value more important than direct experience
Rural development programmes	Generally not applicable because development is driven by urban proximity	May be important in areas where full-time farming is not common	Potentially important but difficult to implement, due to remote nature of these regions
Dimensions of land-use policy and their spatial effects			
Restrictions on land conversion	Strong effects if enforced because land uses can be effectively frozen	No real impact because there is no pressure for major changes in use	Ineffective because land cannot be held in a loss-making
Financial incentives	In general limited impacts because the compensation cost for holding land in its current use is high	Little value in using this type of programme because land uses do not change	Can be effective on a local basis for specific high-value parcels

Concerning coherence of agricultural policies with other policies, at the urban fringe, the interaction between urban policy and rural policy is crucial. The motivation for restricting farmland conversion mainly stems from urban development rather than from factors related to farming. This means that better co-ordination between urban policy and agricultural policy is important. In terms of policy, it would seem that the current application of land-use regulations will continue to be the dominant way for society in OECD countries to manage urban fringe farmland conversion.

The generic analysis of this report is complemented with information on a range of programmes in five OECD countries that have been designed to influence farmland preservation. These examples show that different countries influence farmland preservation in different ways. Another important observation is that in all of the cases examined, a significant reason for maintaining farmland is its importance as a habitat for desirable species of plants and animals. They also suggest that it is much easier to maintain land as open space than to maintain the viability of farming, even though maintaining viable farms is a stated goal of most programmes. In the peri-urban area, where agricultural land faces urban development pressures, unless there are some land-use controls in place, raising farm incomes through agricultural support policies is unlikely to succeed in preserving agricultural land.

Although lack of spatially disaggregated information may be a serious impediment for undertaking an analysis of the relative cost-effectiveness of various policies in influencing farmland conversion in different locations, rural land-based amenities can also be provided by non-farm uses of rural land, although the nature of these amenities would be different (such as biodiversity and landscape). A clear definition of the quantity and quality of the public goods provided through agricultural land management that should be supported through agri-environmental policy – including programmes to protect farmland from conversion to

non-agricultural uses is necessary for evaluating whether such public goods are not provided more efficiently by other non-farm uses of land. Overall, the contribution – particularly in quantitative terms – of farmland-based environmental services to the development of rural areas, including the development of sectors such as rural tourism warrants further empirical analysis.



From:

Farmland Conversion

The Spatial Dimension of Agricultural and Land Use Policies

Access the complete publication at:

<https://doi.org/10.1787/ae50672e-en>

Please cite this chapter as:

OECD (2020), "Executive summary", in *Farmland Conversion: The Spatial Dimension of Agricultural and Land Use Policies*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/87d9c388-en>

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