# Agricultural Policies and Rural Development

## A SYNTHESIS OF RECENT OECD WORK

OECD

# *Foreword*

The present report, based on material prepared by David Blandford − Professor of Agricultural and Environmental Economics, The Pennsylvania State University − provides a synthesis of the three studies which have been undertaken in the 2007-08 Programme of Work and Budget of the Committee for Agriculture. The three studies are:

- The Role of Agriculture and Farm Households in Rural Economies: Evidence and Initial Policy Implications (OECD, 2009a);

- Methods to Monitor and Evaluate the Impacts of Agricultural Policies on Rural Development (OECD, 2009b); and

- Farmland Conversion – The Spatial Dimension of Agricultural and Land-use Policies (OECD, 2009c).

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# Executive Summary

Agriculture, in conjunction with other land-based industries such as forestry, has played an important role in the economic development of OECD countries. Although the contribution of agriculture to national income and employment has tended to decline, the sector continues to play a key role in the management of natural resources, particularly land and water. In 2005, agriculture accounted for only 1.7% of gross domestic product (GDP) and 5.6% of employment in the OECD area. By contrast, it accounted for 37% of total land use (if the use of land for forest is included, the figure rises to 68%). Three recent OECD studies that form the basis for this paper have focused on the linkages between economic activity and land use in agriculture and rural communities, and their implications for policy implementation and evaluation.

Agricultural households contribute to the rural economy through the employment and income generated by their agricultural and non-agricultural activities. While agriculture continues to be a major part of the local economy in some regions, it is increasingly the case that "rural" is no longer synonymous with "agriculture" and "agriculture" is no longer synonymous with "rural". Hence, while agricultural policies are important for those who obtain their livelihood from the agricultural sector, the contribution of these policies to the economies of rural communities is tending to diminish.

Despite the relative decline in the economic importance of agriculture in rural regions, "rural" does not mean economic decline. High rates of employment growth are often to be found in rural regions, particularly those having good transportation links or proximity to urban centres or those able to cultivate local assets, such as rural amenities. In contrast, most OECD countries have rural regions that are lagging behind in terms of economic growth. Consequently, policy makers face considerable heterogeneity in rural areas.

Agriculture's role in land use and the provision of environmental services means that the emphasis of agricultural policy in many OECD countries is shifting from commodity production to land-use and the environment. There is growing interest in the re-orientation of policy and the

use of a broader range of policy instruments to achieve economic, social and environmental sustainability in rural areas.

An important characteristic of many OECD countries is the tendency towards economic diversification by agricultural households. Additional activities can be closely related to farm work (*e.g*. processing of agricultural products, production of handicrafts, on-farm tourist activities) or dependent on off-farm activities, such as working in non-agricultural industries or the service sector. Information obtained from country case studies indicates that the engagement of farm households in the broader rural economy is steadily increasing.

A range of policy measures designed to encourage diversification have been introduced in OECD countries. However, public expenditure on measures to promote diversification is modest in comparison to other areas of expenditure on agriculture, such as price and income support. Furthermore, a range of regulatory or other measures can act as a disincentive to diversification.

While there are differences among OECD countries in the economic contribution of agriculture in rural areas, in most cases the sector remains the principal user of rural land. To the extent that agriculture contributes to rural amenities through positive externalities and the provision of public goods, this can add to local economic activity by attracting new residents or visitors to rural areas, or by creating service-based activities. In contrast, negative externalities associated with agricultural production (such as air or water pollution) can reduce environmental quality and exert a negative effect on rural development. A range of policies can influence the supply of both positive and negative "non-commodity" outputs by agriculture, including price and income support as well as agri-environmental and rural development programmes. Care needs to be taken to avoid any negative unintended policy impacts on the environment in the pursuit of rural development objectives.

Although the use of targeted payments to farmers to achieve environmental or other land-use objectives has increased, these payments continue to be much lower than production-linked support for farmers in OECD countries. Environmental and other policy issues to be addressed often differ, depending on the geographical location of farming − for example, regions close to centres of population, as distinct from those in distant locations. Consequently, place-based policies are likely to be more effective in achieving policy aims than those which are typically not spatially differentiated, such as price and income support measures for farmers.

Growing pressures on scarce public resources make policy evaluation an increasingly important requirement. Country-case studies reveal that a variety of approaches is used to evaluate the effectiveness of measures linked to agriculture and rural development. Despite differences among countries in the interpretation of rural development policy and a range of conceptual challenges that must be faced in determining policy impact, a review of country experiences yields a set of guidelines for improving the effectiveness of policy monitoring and evaluation.

The guidelines indicate the need for a well-developed evaluation methodology whose measures, data requirements and analytical methods are determined prior to the implementation of any new policies. *Ex ante*, interim and *ex post* evaluations of programmes are required, employing specific, measurable, achievable, relevant and timely performance criteria that focus on the "additionality" of policy measures. Existing data should be supplemented by new sources to fill information gaps, and any shortcomings in evaluation criteria need to be identified. Whenever possible, policy impacts should be traced to specific rural development targets and an attempt should be made to explain any discrepancies between expected and actual outcomes. Effective evaluation will involve dialogue between those working in public administrations and others (*e.g.* academics), and evaluation procedures should be reviewed periodically by independent experts and improvements fed back into the evaluation process.

The work of the OECD on the linkage between agricultural policies and rural development highlights the range of objectives that can be pursued in this area, and the range of measures that have been adopted to pursue those objectives. The primary emphasis of agricultural policy in many countries continues to be on price and income support, although there has been some tendency to adopt a broader array of policy measures, both to address directly the issue of economic sustainability in rural areas (for example, through the development of new economic activities for farm households), or to ensure their continued contribution to the supply of rural amenities. Faced with heterogeneity in rural areas, the work conducted by the OECD suggests that a continued shift from a sectoral emphasis towards place-based policies is likely to lead to increased policy effectiveness.

# I.

# Introduction

Three recent OECD studies have focussed on aspects of the linkage between agricultural policies and rural development. The studies address, respectively:

a) The role of agriculture and farm household diversification in rural economies (OECD 2009*a*);

b) The relationship between agricultural policies, land use and the environment (OECD 2009*c*); and

c) The evaluation of the impacts of agricultural policies on rural development (OECD 2009*b*).

The purpose of the present paper is to provide a synthesis of the major conclusions from these studies and their policy implications. While the primary emphasis is on the findings of the above mentioned reports, the synthesis also draws upon other closely related work conducted by the OECD in recent years.

# II.

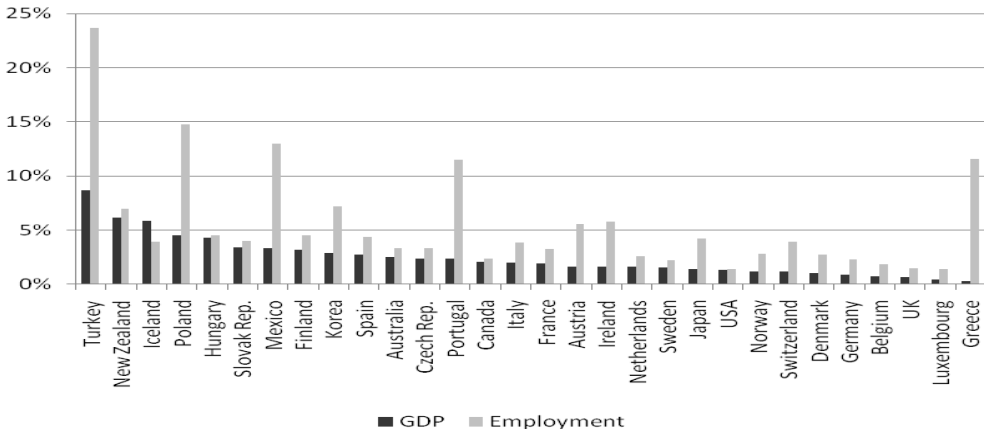
# The role of agriculture in rural areas and the policy dimension

Agriculture, in conjunction with other land-based industries, such as forestry, has played an important role in the economic development of OECD countries. It continues to play a major role in the management of natural resources, particularly land and water. Growth and structural change in OECD economies has resulted in a relative decline in the contribution of agriculture to national income and employment.

The sector currently accounts for less than 5% of gross domestic product (GDP) in the majority of OECD countries (Figure 2.1).[1] However, it continues to account for a proportionately larger share of employment, and, in a few cases, for more than 10% of total employment.[2] Agriculture and forestry occupy the majority of the land area in most countries across the OECD area (Figure 2.1). According to statistics from the U.N. Food and Agricultural Organization, agricultural land use accounted for roughly 37% of the total land area of OECD countries; if the use of land for forests is included, the figure rises to 68%.

On-going structural change in the agricultural sector has a major impact on its social and economic contribution to rural areas. In its work the OECD has highlighted the diversity of such areas within and among OECD countries in terms of their development experience, economic structure, natural and human endowments, geographical location, and demographic and social conditions. The OECD's work on rural indicators sought to develop a typology that would reflect major differences between areas in order to guide the formation, implementation and evaluation of policy (OECD, 1994).

**Figure 2.1. Agriculture's share of GDP and employment in OECD countries**




1. Employment figures are from the Annual Labour Force Statistics (ALFS) dataset, except for France and the US which are from the Annual National Accounts dataset. Data are for 2008, except for Belgium, Greece, Luxembourg, Poland and the USA for which data are for 2007.

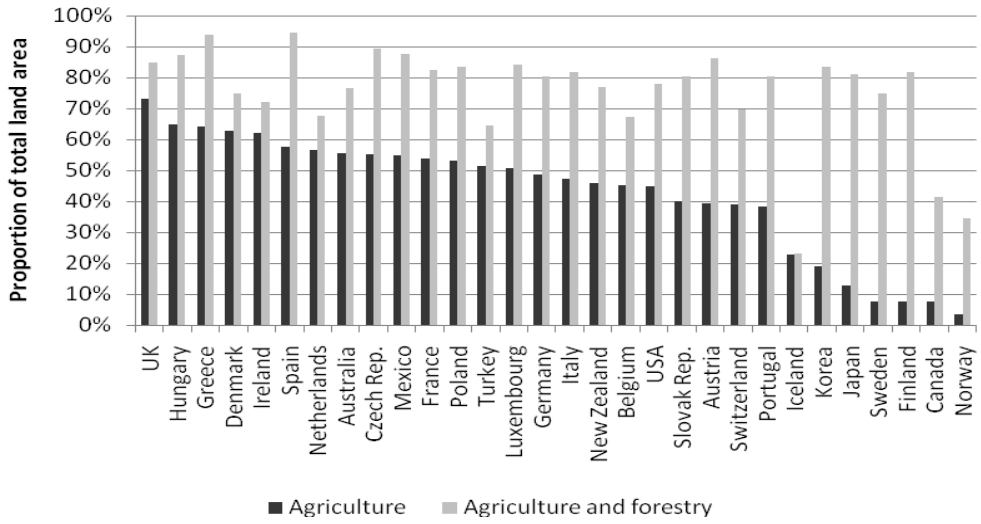
2. GDP figures are gross value added at current prices from the OECD National Accounts database. Data are for 2008, except for Australia, Belgium, Czech Republic, Denmark, Finland, Germany, Ireland, Japan, Korea, Switzerland, Turkey and the USA for which data are for 2007; Mexico (2006); Iceland (2005); and Canada and New Zealand (2004).

3. Employment and GDP figures for agriculture include forestry, hunting and fishing.

*Source*: OECD Territorial Database, 2008.

Based on population density, distribution and size, the classification distinguishes between regions that are: i) predominantly rural; ii) significantly rural and; iii) predominantly urban.[3] Because rural areas can be defined according to different criteria stemming from different aspects of rurality, any system of classification can be criticised for failing to capture subtle gradations among regions attributable to social, economic and cultural factors and results can vary significantly, depending on the particular classification system used (OECD, 1998*a*). Furthermore, international comparisons are complicated by the fact that regions can exhibit large differences in size.[4] Nevertheless, the OECD classification provides a useful first approximation in distinguishing areas that are primarily rural, from other areas.

**Figure 2.2. Use of land by agriculture and forestry in OECD countries**




Data are for 2007.

*Source*: FAOSTAT.

As noted above, agriculture plays a dominant role in land-use and in some regions it continues to play an important role in the local economy. However, it is increasingly the case that in economic terms "rural" is no longer synonymous with "agriculture", and "agriculture" is no longer synonymous with "rural" (OECD 2006*a*). Data from 20 countries for 2000 indicate that − even in regions that qualified as "predominantly rural" under the OECD classification − an average of just 9% of the workforce was engaged in agriculture, the remainder being employed in industry or services (OECD 2006*a*).[5]

However, there is significant variation among OECD countries in the share of agriculture in total employment in predominantly rural regions – ranging from less than 5% in countries such as Germany, Sweden and the United States, to over 30% in Greece and Mexico. A comparison of available data for 1980 or 1990 to that for 2000 reveals that in most countries the share of agriculture in total employment in predominantly rural regions has tended to decline in line with the share of agricultural employment in national employment. The annual rate of decline in agricultural employment between 1990 and 2000 was 2.6% for the 19

countries for which data are available: the rate of decline in predominantly rural regions was slightly lower, at 2.3%.

Predominantly rural regions account for about 75% of the land area and almost a quarter of the population in OECD countries (OECD 2006*b*). Rural per capita GDP was only 83% of the national average across OECD countries in 2000. Rural regions can face several challenges that contribute to weaker economic performance than other regions. These include out-migration and an ageing population; and lower levels of educational attainment, average labour productivity and levels of public services.

However, "rural" is not synonymous with economic decline and in more than one in three of the countries for which data are available (10 out of 27) the region with the highest rate of employment creation was found to be rural (OECD, 2006*b*). Lagging rural regions are primarily characterised by a declining and ageing population and distance from markets and services. These impediments have a major negative impact on economic dynamism and job creation, accessibility, to and quality of, public services (such as education) and the quality of infrastructure.

Although transport infrastructure or proximity to a major urban centre often appear to provide major advantages to more rapidly growing regions, they do not seem to be necessary or sufficient conditions for growth. A number of regions have been able to overcome the barrier of distance by cultivating local assets, such as rural amenities. In short, policy makers are confronted by considerable heterogeneity in rural regions. Consequently, at an early stage in the OECD's work, it was recognised that it would be difficult to address the diverse issues and conditions experienced in rural areas through a "one-size-fits-all" approach.

A primary focus of recent OECD work has been the linkage between agricultural policies and policy reform and the well-being of those engaged in farming and, more broadly, the implications for rural communities. Agricultural policies are important for those who obtain their livelihood from the agricultural sector, either from farming or in related upstream and downstream industries, or through activities associated with agriculture or land use, such as forestry or tourism.

Agricultural policies can also have important implications for land use and the provision of environmental services by agriculture. However, with a relative decline in the economic contribution of agriculture in many regions, sectoral policies have, inevitably, become less significant − and more broadly-based policies with either a rural or a regional development focus have become increasingly important. As noted above, across the OECD area as a whole, less than 10% of the rural workforce is employed in agriculture and in most countries the percentage is continuing to fall.

This development has been reflected by a shift in policy emphasis in OECD Ministerial meetings and communiqués away from agriculture, towards broader rural development policies (OECD 1998*a*). Furthermore, in many countries the emphasis of sectoral policy is shifting from agricultural production, towards land-use and the environment. For these reasons, there has been growing interest in re-orienting policy and adopting a broader range of policy instruments to achieve economic, social and environmental sustainability in rural areas.

# III.

# Agriculture, agricultural diversification and the rural economy

The contribution that agricultural households make to the rural economy depends on the employment and income generated by their agricultural and non-agricultural activities. Consequently, in the following section the focus will be on the economic contribution of agriculture and on predominantly rural regions, where agriculture can generally be expected to be a more important sector in the local economy. This will be followed by a consideration of the wider economic contribution of agricultural households, both through their on-farm activities that extend beyond primary agricultural production, and, also through their involvement in the broader rural economy, through off-farm activities. Given that definitions of various terms vary greatly across countries, caution should be exercised in making comparisons across countries (for a detailed discussion on international and national rural classification, see OECD, 2009*a*).

## 3.1 The economic role of agriculture and farm households in rural economies

The role of agriculture and farm households in rural economies must be viewed in the context of differing regional distributions of population and economic activity. A study (OECD, 2009*a*) demonstrates that, while just under one-quarter of the population in the OECD area lives in predominantly rural regions (PR), there are important differences among countries. PR regions are particularly significant in Ireland, where they accounted for roughly 72% of the total population in 2005.

In Austria, Finland, Norway and Sweden, roughly 50% of the total population lives in PR regions. In contrast, intermediate regions (IN) are inhabited by 80% or more of the population in Australia, the Czech Republic and Luxembourg; and 50-60% of the population in France, Iceland, New Zealand, the Slovak Republic and Switzerland. In the

remaining countries, either urban regions contain a large proportion of the population, or there is a more even distribution across the three regional types.

A comparison of data for 1995 and 2005 reveals that while total population increased in all but three OECD countries (the Czech Republic, Hungary and Poland), the population of PR regions declined in six additional countries (Finland, Japan, Korea, Portugal, the Slovak Republic and Sweden). In contrast, population growth in PR regions equalled or exceeded the national growth rate in six countries (Belgium, Germany, Ireland, Mexico, the United Kingdom and the United States).[6]

With the exception of Japan and Korea, data are not available on the number of the inhabitants of agricultural households. The OECD Secretariat has derived indicative estimates of the agricultural population in each type of region for 1995 and 2005 by taking the number of farms in the region and multiplying by an average number of persons per household.[7] The resulting figures can then be combined with total regional population to compute an agricultural household population share. These estimates suggest that there has been a general decline in the share of the farm household population in the total population of PR regions between 1995 and 2005 in virtually all OECD countries (OECD 2009*a*, Table 2.4).[8]

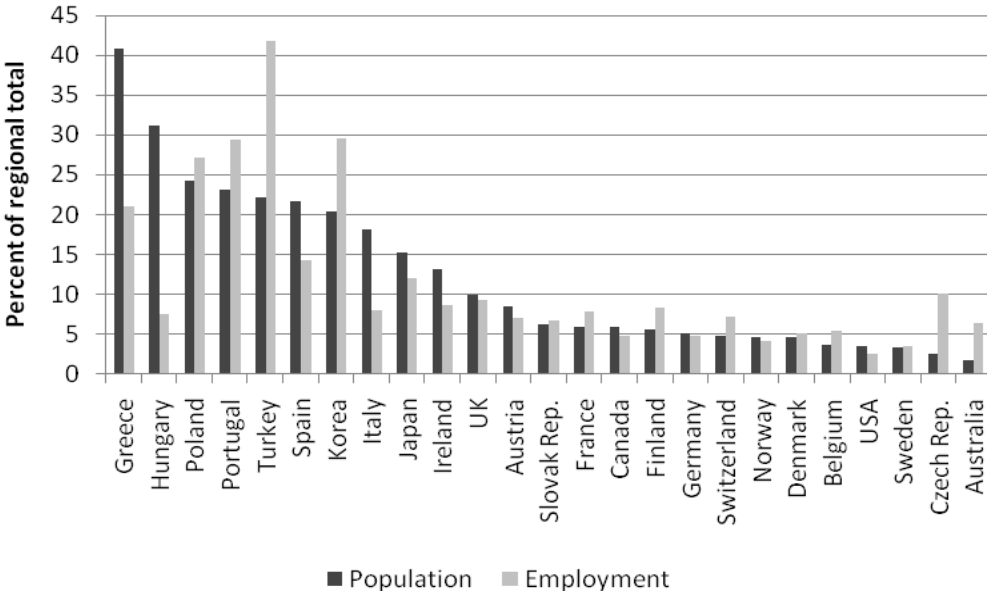
Data are available on employment in agriculture and, with the exception of Portugal, would suggest that total employment in agriculture has also declined in PR regions (OECD 2009*a*, Table 4.5).[9] Both sets of information are suggestive of a decline in the relative importance of agriculture in PR regions, in line with the relative national decline cited earlier.

Nevertheless, data also suggest that the farming population continues to be large and that agricultural employment remains important in certain PR regions within some OECD countries. Figure 3.1 combines the estimates from the OECD (2009*a*) study on the population share of agricultural households and the total employment share of agriculture in PR regions for 2005. In some countries (Greece and Hungary) agricultural households are estimated to account for more than 25% of the population in PR regions. In others (Poland, Portugal, Turkey and Korea), agricultural employment accounts for more than 25% of total employment in such regions.

A comparison of the proportion of the population in agricultural households with the share of agricultural employment in total employment, suggests that in some countries agriculture is relatively more important from a demographic perspective than from an economic perspective (Greece, Hungary, Ireland and Italy). In others, the opposite applies (Czech Republic, Korea, Portugal and Turkey). Countries with a proportionately larger share of the population in agriculture often tend to be characterised by small, part-

time farms. However, for the majority of OECD countries the data suggest that the proportion of the regional population employed in agriculture is broadly in line with the estimated percentage of the population in agricultural households. In other words, the general pattern is that the demographic and economic significance of agriculture are similar in predominantly rural regions in OECD countries.

**Figure 3.1. Population share of agricultural households and share of agricultural employment in total employment in predominantly rural regions (2005)**




For Luxembourg, New Zealand and the Netherlands no region is classified as predominantly rural.

*Source*: OECD (2009*a*), Tables 2.4 and 4.4. OECD Territorial Database, 2008 and OECD Secretariat calculations based on national sources.

The significance of agriculture for the rural economy can be amplified through linkages to agro-food industries. To the extent that such industries are located in PR regions, agriculture's contribution to employment in those regions can be enhanced. Data limitations preclude comprehensive analysis of the additional contribution that agro-food industries make to employment.

However, estimates for the EU15 countries for 2004 suggest that the food industry (food products, beverages and tobacco) accounted for an average of 2.5% of employment in PR regions.

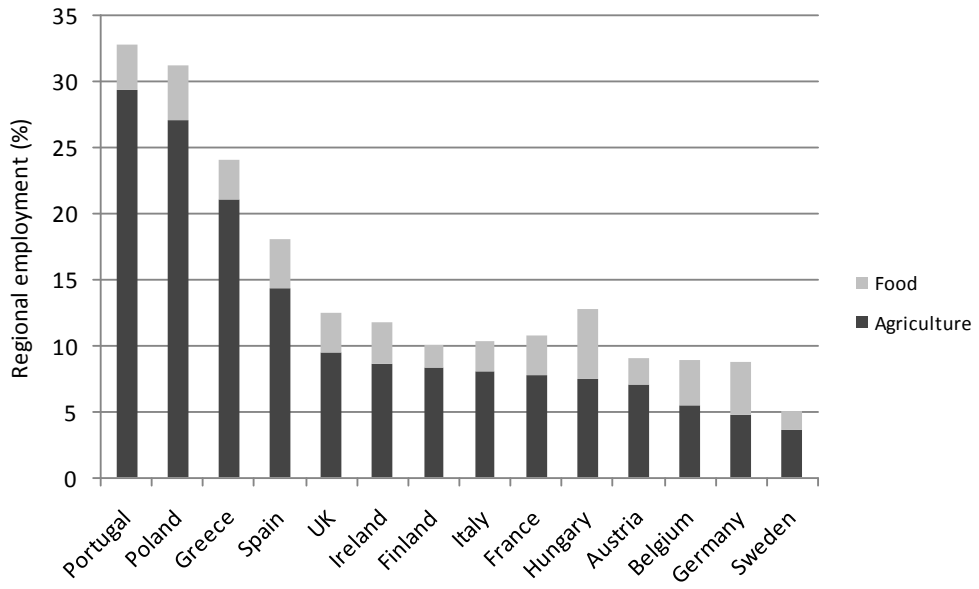
Figure 3.2 combines the estimated data for the employment shares of agriculture and that for the food industries in PR regions for EU countries for which a comparison can be made. In three countries (Belgium, Germany, Hungary) the contribution of food industries to regional employment is large in comparison to the contribution of agriculture.

As is the case for demographics and employment, the pattern of economic growth in PR regions differs among OECD countries. The largest share of agricultural GDP in the OECD area is generated in IN regions (roughly 44% in 2005). PR regions accounted for about one-third of the total. A comparison of data for 1995 and 2005 suggests that in most countries GDP growth in PR regions has either been in-line with or below that for the nation as a whole (OECD 2009*a*, Figure 5.1). Growth exceeded that for the overall economy in only three countries (Korea, Mexico and Sweden). It was broadly similar to national growth in a further 11 countries, and below the national average in 10.

These figures confirm that regions in which agriculture is a less important sector economically tend to perform better in terms of economic growth, than regions in which agriculture is a more dominant sector. A review of the literature on the economic multipliers for agriculture and related industries indicates that multipliers tend to be higher for more intensive agricultural activities, such as intensive livestock production, and for agro-food processing. To the extent that these activities tend to be located closer to consumer markets, as is the case in IN regions, they may benefit more from overall economic growth in such regions.

The overall picture obtained from examining available data on the economic role of agriculture in rural areas in the OECD countries is that while the sector continues to be important in some, its relative role is declining. This is due to a steady decrease in the number of farms and agricultural employment. While growth and employment in agro-food industries add to the economic impact of the sector, those industries tend to be located outside PR regions. In the light of this, the OECD has examined how various types of diversification activities by farm households can contribute to expanding economic activity in rural areas. Its work in this area is largely based on country reviews.

**Figure 3.2. Share of employment in agriculture and food Industries in predominantly rural regions**




Data for agriculture are for 2005 and estimates for food are for 2004.

Data for the food industry are on NUTS2 regional unit.

*Source*: OECD (2009*a*), Table 4.4 and Box 4.1. OECD Territorial Database, 2008 and OECD Secretariat calculations based on national sources.

Diversification activities by farm households can take several forms: ranging from increasing the range of agricultural products generated by the farm to the allocation of household factors of production (particularly labour) to productive activities off the farm. Hence, diversification can involve changes in the way that farm households allocate their resources, the outputs that are generated from the use of those resources, and the location of the activities involved.

While diversification in primary agricultural production (changing the mix of crops or livestock) can contribute to local economic development, a primary focus in many countries is on diversification beyond primary production. Such activities can be closely related to farm work (*e.g.* processing of agricultural products, production of handicrafts, on-farm tourist activities) or dependent on off-farm activities, such as working in non-agricultural industries or the service sector.

Analysis of survey data for farms or farm households in the European Union and Norway shows that in many countries a significant proportion of farmers can have other gainful activities (OGA) directly related to farming.[10] More than 20% of holdings engaged in such activities in Austria, Finland, France, Germany, the Netherlands and the United Kingdom in 2005 (OECD 2009*a*, Figure 7.2). In the EU19 the number of farms with OGA increased by 4% between 2000 and 2005, although the number of such farms declined in some countries probably due to a decline in the total number of farms.[11]

The types of activities involved differ among countries (OECD 2009*a*, Table 7.2). For example, on-farm food processing is particularly prevalent in Italy and Portugal (over 80% of farms declare this activity); contract work in Finland and Greece (over 55%); and tourism in Austria and the United Kingdom (35% and 47%, respectively). Between 2000 and 2005 the percentage of farms with farm tourism activities increased in all EU countries for which data are available with the exception of Ireland and Spain (OECD 2009*a*, Figure 7.4). A range of other farm activities, such as handicrafts, wood processing and renewable energy production are reported by OECD countries.

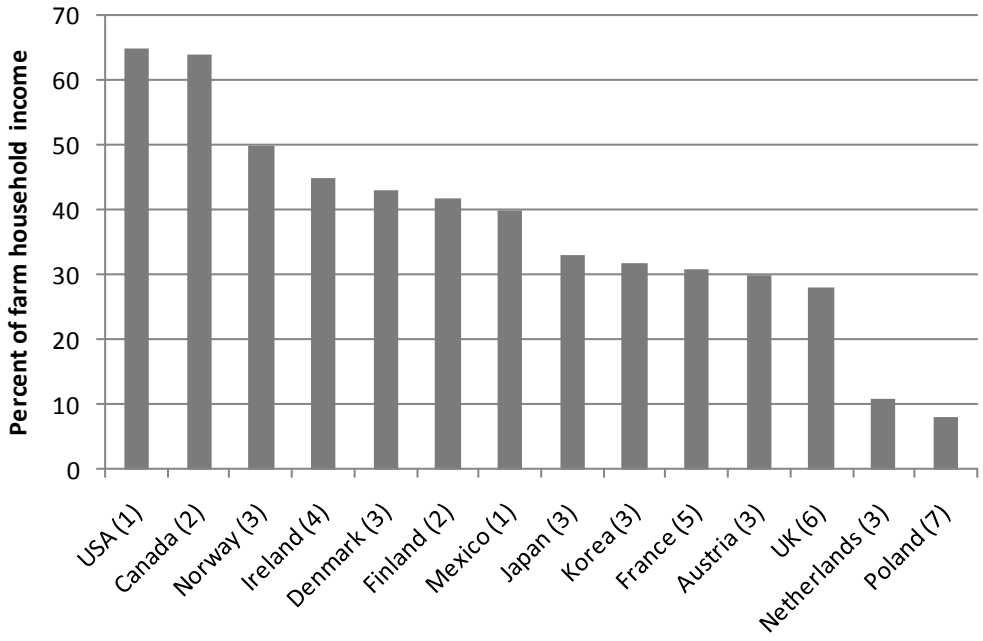
Despite the broad typology of on-farm diversification activities the financial returns that these generate may not be large. Agricultural accounts data for the European Union, for example, suggest that receipts from on-farm activities other than primary agricultural production accounted for 2.6% of the total value of farm output in 2006 compared to 1.9% in 1995 (OECD 2009*a*, Table 8.1). Farm accounts data suggest that the income derived from contract farm work and from renting out-buildings and land are the two most important contributors of additional farm-based income in countries for which detailed information are available (OECD 2009*a*, Table 8.2).

Information obtained from case studies on the participation of farm households in off-farm income-generating activities in OECD countries reveal that this is a more widespread phenomenon than on-farm diversification, and that the engagement of farm households in the broader rural economy is steadily increasing. In many countries off-farm employment for the farm operator and/or spouse appears to be an essential part of the economic activity of farm households.

Figure 3.3 summarises the contribution of off-farm labour activities to the total income of farm households in recent years. For the majority of the countries listed the off-farm labour contribution was roughly 30% or greater, and in some countries it exceeded 60%. Although comparable regional data are difficult to obtain, the limited amount of information available (Austria,

Japan, Korea and Norway) suggests that the contribution of off-farm labour income to farm households in PR regions is not substantially different from national averages. Overall, although it is difficult to evaluate the importance of off-farm activities on a comparable basis across countries due to the different definitions used and varying methods of data collection, the data suggest that in many countries the availability of off-farm employment is an important factor in the income of farm households. However, little information is available on the type of off-farm activity in which household members are engaged and the regional location of the activity.

**Figure 3.3. Share of off-farm labour activities in farm household income in selected OECD countries**




1. 2006; 2. 2003-05; 3. 2004-06; 4. 2004/05; 5. 2003; 6. 2002/03-2004/05; 7. 2003-06.

Definitions of what constitutes a "farm household" can differ substantially across OECD countries and there are differences in how many household members are included in the income calculations (see OECD, 2009a, Table 8.3 and Annex II.1).

Because of different definitions data may not be comparable across countries.

*Source*: OECD (2009*a*), Table 8.3. OECD Secretariat calculations based on national sources.

## 3.2 The diversification of farm households – Incentives and barriers

As has been indicated, farm households play a role in rural areas through the contribution made by their farming activities, on-farm activities that go beyond production agriculture, and their participation in the broader rural economy. An important issue, therefore, is the extent to which policies can help farm households increase their contributions in these areas or alternatively may act to constrain that contribution.

Farm households, in common with non-farm households, are heterogeneous. Their ability to adapt to economic change and to take advantage of opportunities that this creates will vary. However, three sets of characteristics are particularly important: i) human capital characteristics, such as age, experience, education and training, in addition to personal characteristics such as intelligence, motivation and attitudes to risk; ii) the nature of the farm and farm business – for example, the size of the farm, land quality, and access to capital; iii) the external environment in which the farm household operates – for example, access to markets, quality of infrastructure, off-farm employment opportunities, and the strength of formal and informal local social networks.

The importance of these factors varies across OECD countries and between regions within these, as well as among households. Nevertheless, based upon the country studies available to the OECD some broad generalisations can be made about human capital factors that influence the development of on or off-farm enterprises by farmers:

- The lack of basic business skills (including those associated with human resource management, networking and market development) is often a barrier.

- Financial motivation, such as the need to increase farm household income, maintain farm equity, provide for retirement or ensure business succession (inter-generational transfer of the farm) can provide a driver. Improved access to social security programmes or employee benefits provided by off-farm employers may also be important factors.

- Social and non-economic factors, *e.g.* attitudes to working off the farm and social motivations such as a desire to meet others or overcome isolation can operate as either a stimulus or constraint.

- The role of women in farm households can be significant – often, women initiate and engage in alternative economic activities to production agriculture.

- Education – this can influence the ability of farmers and other members of the farm household to engage in new activities.

Similarly, some generalisations can be made about the impact of the nature of the farm and farm business:

- Farm size – farmers of small farms are more likely to be driven to engage in new off-farm activities, although larger farms can use these to create a portfolio of business interests.

- Enterprise type – involvement in labour-intensive farming activities (*e.g*. dairy farming) make it less likely that farm households will engage in other economic activities because of the demands that such activities place upon the supply of household labour.

- Farm structure and ownership – tenants may have less flexibility than owner-operators in accessing capital; the need to supervise non-family labour may limit the effort that can be devoted to the development of new activities; new entrants to farming may be more likely to maintain or develop other activities.

Finally, the following factors in the external environment can have a significant impact on the development of new economic activities:

- Location – the degree of rurality in terms of remoteness from centres of population and population density. This may act as a barrier to the development of certain types of activities (*e.g.* the marketing of value-added products), but may be an advantage for promoting agri-tourism to individuals who value remoteness. The barriers posed by remoteness can also be overcome through improved accessibility in terms of transport and communication links and through organisational development, such as co-ordinated promotional efforts for agri-tourism.

- Consumer demand – successful new activities respond to consumer needs, such as a desire to consume new food products or to enjoy the countryside.

## 3.3 Policies to encourage diversification of farm household activities

As noted above, government policies can act as a stimulus to the diversification of economic activities of farm households in countries where diversification is a policy objective. The OECD has examined the impact of selected policies and countries (OECD, 2009*a*). Over the last twenty years, a

number of policy measures designed to encourage diversification, have been introduced in certain OECD countries. These include grants for processing and marketing of agricultural products, afforestation and the development of other activities such as tourism and craft-related enterprises.

Vocational training and business development schemes have also been used to encourage diversification. Facilitation activities, such as the provision of information, industry organisation and market creation have also been employed. However, public expenditure on measures specifically designed to promote diversification has tended to be modest in comparison to other expenditures on agriculture, such as price and income support.

A range of other policies can affect the likelihood that farm households will attempt to diversify their economic activities. Reponses to questionnaires compiled by the OECD indicate that land-use regulations can be an important factor, particularly for the development of activities that require a change of use of existing buildings or new construction. Differing labour regulations for work that is classified as agricultural, as distinct from other work, may also have an impact in certain cases.

In some countries access to other forms of support (*e.g.* income support or on-farm investment schemes), may be limited if farmers devote too much of their time to non-agricultural activities, or earn too much income from them. This can also apply to eligibility for preferential treatment for farmers under social security systems in some countries and for the treatment of taxation. While such measures may have the aim of redressing perceived economic disadvantages faced by farmers, they may act as a disincentive to diversification. However, these measures can have other objectives, which should be taken into consideration.

# IV.

# Land-use policies and the rural economy

The way in which land is used in agriculture and the conversion of farmland to non-agricultural uses is likely to have implications for the provision of private goods through changes in food and fibre production. It can also have implications for externalities associated with the provision of those private goods and for the supply of public goods, through environmental and other effects, such as on landscape amenities and water quantity and quality.[12] The role of agricultural private goods has been considered above, in the context of the economic activities of farm households. But it is also important to consider the role of externalities and public goods in rural development.

Agricultural activities can generate both positive and negative externalities. The management of natural resources in agriculture can lead to significant environmental benefits, such as habitat protection, provision of a carbon sink (with potentially beneficial effects on mitigation of greenhouse gases), and the conservation of water and soil resources. Agriculture can also preserve open space and contribute to the maintenance of landscape features.

These beneficial effects can contribute to the local quality of life, influence the attractiveness of an area as a place to live, and affect the recreational value of land. Rural amenities can add to local economic activity by attracting new residents or visitors to the region. Agricultural activities can also generate non-local benefits by producing attributes that society as a whole values (*e.g.* the preservation of cultural heritage or biodiversity).

In contrast, management practices in agriculture can lead to negative externalities, such as ground and surface water pollution, habitat degradation, loss of biodiversity, and the emission of greenhouse gases. These factors can have a negative impact on the quality of life of rural residents, the attractiveness of an area to new residents or visitors, as well as damage to attributes generally valued by society.

It is increasingly recognised that a range of policies affecting agriculture can have important implications for the composition of output and the use of inputs, including land and water, and hence for environmental and other "non-commodity" outputs. Such policies include price and income support as implemented through commodity programmes or other mechanisms, agri-environmental and rural development programmes.

In some OECD countries − for example, members of the European Union − rural development policy has a major agricultural orientation and is defined broadly to include both the economic and environmental contributions of agriculture in rural areas, and to encompass a range of other social concerns, such as animal welfare. In other countries − such as the United States − the emphasis on agriculture is less pronounced and the definition of rural development policy is less broad. For example, environmental policies and programmes are viewed as quite separate from those designed to contribute to the maintenance of a viable economy in rural areas.

Nevertheless, the linkage between environmental quality and economic well-being in rural areas is being increasingly recognised across OECD countries, even if policies are categorised differently. In the discussion that follows, the primary emphasis will be on the implications of land use and land-use change for the rural economy, rather than on their environmental effects.

## 4.1 Agricultural land use

A key feature of agriculture, in contrast to many other economic activities, is that it employs land as its principal input. As noted above, while there are differences among OECD countries in the contribution of agriculture to the economy and demographic structure of rural areas, the sector remains the main user of rural land in most countries.

Agricultural land in OECD countries accounts for nearly 40% of the total land area. For around half of these countries, farming is the dominant user of land, with a share of over 50% in the national land area (OECD 2009*a*). There are, however, wide variations in the proportion of the total land area used in agriculture – ranging from 3% in Norway to 73% in the United Kingdom.

There are also significant differences in types of agricultural land use. In some countries, arable land (including permanent crops) tends to dominate (Denmark, Hungary, Poland and the Czech Republic), while in others (Ireland, Australia, New Zealand, Mexico and the United Kingdom)

permanent pasture dominates. In some countries (Finland, Sweden, Austria and the Slovak Republic) forestry is an important user of land.

As noted above, in most OECD countries the amount of land used by agriculture has tended to decline. In some countries (Finland, Hungary, Italy, Japan, Korea, Poland and the United Kingdom) the rate of decrease between 1990 and 2004 was almost double the OECD average of 4%. In some countries, the area farmed has apparently increased (Belgium, Luxembourg, Mexico, Norway and Turkey) – although, with the exception of Mexico and Turkey, this may be due to changes in data reporting methods. The OECD has identified four groups of countries based upon observed changes in land use:

i. Increased agricultural land area: Belgium, Mexico, Luxembourg, Norway and Turkey.

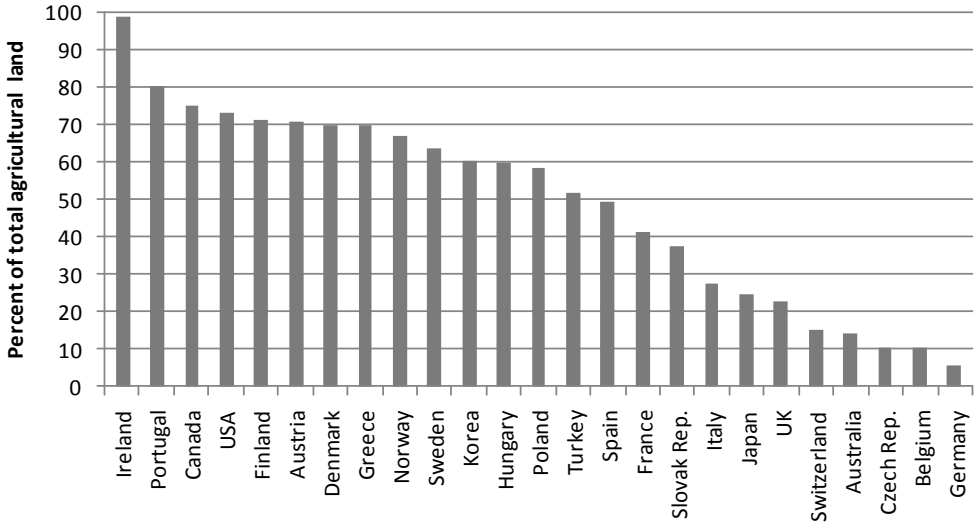
ii. Decreased agricultural land area but increased arable land and permanent crops: Australia, France, Greece, Ireland, New Zealand, the Netherlands and Switzerland.

iii. Decreased agricultural land area and arable land and permanent crops, but increased permanent pasture: Canada, the Czech Republic, Finland, Iceland, Portugal and the Slovak Republic, Spain.

iv. Decreased agricultural land area, arable land and permanent crops, and permanent pasture: Austria, Denmark, Hungary, Italy, Japan, Korea, Poland, Sweden, the United Kingdom and the United States.

Figure 4.1 shows the percentage of national agricultural land use in PR regions in 2005 for OECD countries for which data are available. In Ireland and, to a lesser extent, Portugal, Canada, the United States, Finland, Austria, Denmark and Greece, agricultural land is heavily concentrated in PR regions, with 70% of the total agricultural land. In other countries, most notably Luxembourg, the Netherlands, and New Zealand and, to a lesser extent, Switzerland, Australia, the Czech Republic, Belgium and Germany, most of the agricultural land is located in intermediate or predominantly urban regions.

**Figure 4.1. Share of total agricultural land area in predominantly rural regions**




Data are for 2005, except Canada and Korea – 2006, Turkey – 2001, United States – 2002. No data are available for Iceland and Mexico.

The territorial grid is Territorial Level (TL) 3 for all countries, except for Austria and Australia (TL2), Germany (NUTS2) and Canada (Economic Regions). Because of different territorial levels data may not be comparable across countries.

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For Luxembourg, New Zealand and the Netherlands no region is classified as predominantly rural.

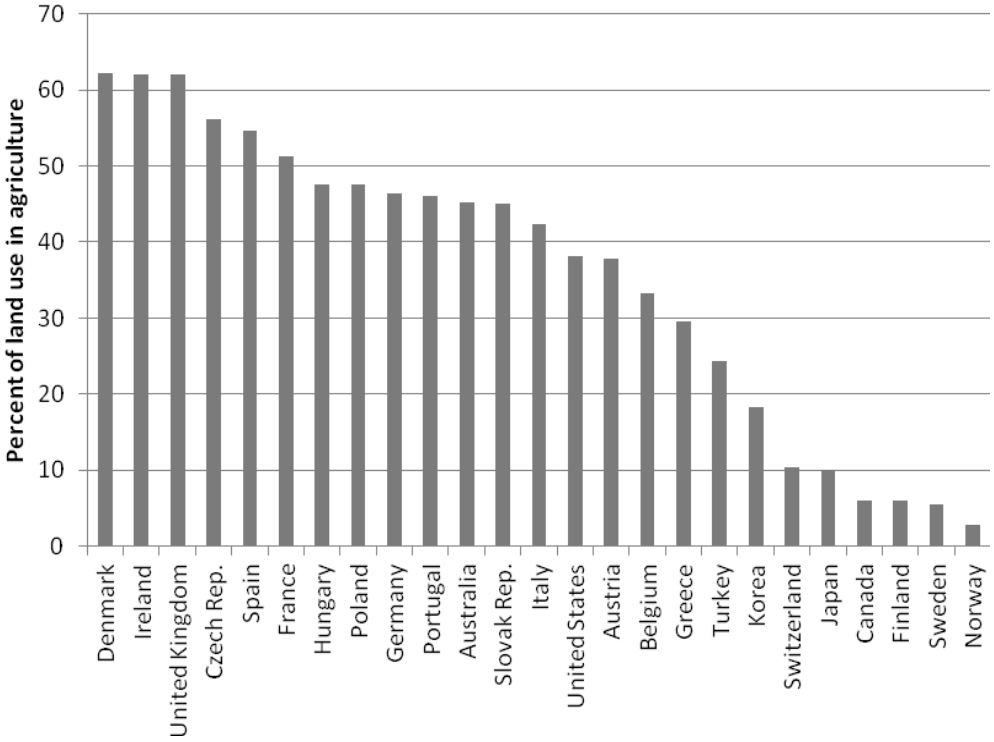
*Source*: OECD (2009*a*), Table 3.2. OECD Territorial Database, 2008 and OECD Secretariat calculations based on EUROSTAT Farm Structure Surveys and national sources.

Figure 4.2 shows that agricultural land-use also tends to dominate land-use in PR regions in many of the same countries as in the left hand side of Figure 6, but this is not always the case. For example, although only 23% of the agricultural land in the UK is in PR regions, in those regions agriculture accounts for 62% of land use. In contrast, 67% of Norway's agricultural land is located in predominantly rural regions, but less than 3% of the land use in PR regions is in agriculture.

It is also interesting to contrast the ordering of countries by land use in Figure 4.2 to the ordering by population shares and the shares of agricultural employment shown in Figure 3.1. This reveals that for some countries in

which agriculture households represent a small proportion of the total population in PR regions, agricultural land use is a large proportion of total regional land use (most notably Denmark). In some other countries (*e.g.* Greece) agriculture is relatively more important in terms of demographics and total employment in PR regions than for total land use.

**Figure 4.2. Share of agricultural land in the total area of predominantly rural regions**




Data are for 2005, except Canada and Korea – 2006, Turkey – 2001, United States – 2002.

No data are available for Iceland and Mexico.

The territorial grid is Territorial Level (TL) 3 for all countries, except for Austria and Australia (TL2), Germany (NUTS2) and Canada (Economic Regions).

Because of different territorial levels data may not be comparable across countries.

For Luxembourg, New Zealand and the Netherlands no region is classified as predominantly rural.

*Source*: OECD (2009*a*), Table 3.3.

## 4.2 Land use and the rural economy – Policy perspectives

In order to analyse how agricultural and land-use policies influence changes in farmland-use, the OECD has developed a generic typology, based on a theoretical analysis, to classify the types of areas in which agriculture takes place into three zonal types (OECD 2009*c*). Although this is simplification of the complex pattern of agricultural land use in the OECD area, the classification provides a useful vehicle for examining the issues involved in changes in land use and related policy issues. The first zonal type is the "core zone". In this zone, agricultural productivity is high. Access to markets is good, farming tends to be profitable and there may be good opportunities for off-farm employment, but farms are sufficiently distant from urban centres not to feel pressure from competing urban land uses.

In contrast, in the second type of zone, "the urban fringe", agricultural land has a high opportunity cost and there are pressures to convert that land to alternative uses.[13] Proximity to settlement may also create pressure to modify agricultural activities to reduce noise, dust or odours created by farming, or to modify the use of agro-chemicals.

Finally, in the "far or extensive margin" zone, agriculture is marginally profitable due to inferior land, unfavourable climatic conditions, or distance from markets. Agriculture in marginal areas is subject to the risk of land abandonment, but its activities may have high environmental value through the maintenance of ecosystems that are dependent on continued agricultural activity. For this reason, particular policy emphasis may be placed on maintaining the environmental benefits created by agriculture in less-favoured areas where agriculture is the dominant land user.[14]

Given these zonal types within which agriculture operates, three important aspects of land use relating to rural development are: i) the implications of existing land use practices – which applies in all three zones; ii) the conversion of land from agricultural uses to other uses – which is a major issue in the urban fringe; and iii) the effect of land abandonment – which is an important issue in the far or extensive margin.

As noted earlier, management practices in agriculture can have both positive and negative implications for environmental quality and the provision of public goods. From the perspective of rural development, existing management practices are important because of their impact on local environmental quality and the provision of amenities. High environmental quality and amenity provision are likely to make rural areas more attractive places to live or visit.

As observed in OECD (2009*c*), however, the relationship between agricultural land use and the provision of amenities is not necessarily straightforward. There are attributes that are uniquely generated by farmed land, such as particular ecosystems that are dependent on farming, or the scenery created by farming. Farming activity may also generate other attributes that are valued by society, such as a particular way of life, or contribute to the viability of communities and community structures. Other amenities that are generated by rural land use, but whose provision is not necessarily restricted to agriculture, include the maintenance of open space and a non-urbanised scenery, wildlife habitats and groundwater recharge.

The provision of amenities by agriculture in all three zonal types can be affected by changes in agricultural practices. The response of farmers to market signals is to vary the amount and composition of agricultural output and inputs. Their response to market forces can affect the intensity with which the land is used and the resulting agricultural landscape. A range of agricultural policies can affect the provision of amenities by influencing output prices and input costs. Specific policies can be targeted to achieving particular amenity outcomes – as is the case with agri-environmental programmes.

Changes in agricultural policies have implications for the supply of agricultural amenities. The overwhelming emphasis of agricultural policy in the OECD area is on price and income support for farmers. In 2005-07 an estimated 79% of the total support provided to agriculture in OECD countries (as measured by the producer support estimate) was for price and income support linked to a requirement to produce, and only 2% for payments based on non-commodity criteria (OECD 2009*c*). Policies of this type will have different implications across the three zonal types. Table 4.1 provides a stylised description summarising the relative effectiveness of various broad programme categories drawn from the conceptual analysis. As shown in the table, certain categories of policy could be more or less effective in different spatial conditions.

Farmers in the core zone will tend to be affected most by such policies since they are located in the most highly productive regions and are likely to benefit more from payments linked to production. Farmers in these regions can be expected to intensify production in response to support linked to commodity output or to payments based on input use, but such support will probably not have a large impact on the amount of land used by agriculture.[15] Most of the available land that is suitable for agriculture will be already in use and, since agriculture is likely to be the most profitable use of that land the amount employed is unlikely to vary significantly.

**Table 4.1. 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 (*e.g.* buffer strips, hedges, *etc.*) | 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 (*e.g.* infrastructure, off-farm diversification) | 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 activity |
| 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 |

*Source*: OECD (2009*c*).

However, output-based support will increase the returns to agricultural land and labour in the core zone and this may influence the willingness of farmers and their families to diversify their on-farm activities or to participate in the non-farm economy (as discussed earlier). The impact of support on the supply of amenities depends on its effects on production methods. If relative economic returns lead farmers in the direction of using less environmentally friendly production methods, to remove existing woodland, wetland or wildlife areas, or to eliminate hedgerows and to used field margins more intensively to increase output per hectare, the effects may be negative. Since both increases and reductions in output-linked support can have an impact on the choice of production methods by farmers, it is not possible to generalise about the net effect of changes in support on the supply of environmental amenities from agriculture.

Output or input-linked support may also act to keep land in particular agricultural activities and promote changes in input use in the urban fringe and the far margin. In the former case, however, the high opportunity cost of agricultural land in the presence of a rising urban population and incomes will tend to provide a stimulus for land conversion, unless this is constrained through land-use policy (*e.g*. zoning restrictions).

The data discussed above indicate that there has been a net reduction in the amount of land in agriculture in most OECD countries since the early 1990s. Although information is difficult to obtain, it appears that in countries where population pressure is high, the conversion of agricultural land to urban and related forms of development accounts for a significant part of that reduction, and that the influence of urban areas on farmland is increasing, particularly where the phenomenon of "urban sprawl" is occurring (OECD, 2009*c*).

In the far margin zone, changes in prices and returns can be expected to have a major impact on land use. Often the next-best use for agricultural land in this zone is a lower-value activity per hectare, such as forestry. Higher agricultural prices and earnings will prompt more land to be brought into production; lower prices will have the opposite effect. In several OECD countries, the issue of land abandonment is viewed to be particularly important, both in terms of its impact on the provision of agricultural, land-based amenities, and its social and economic implications for rural communities. In the OECD countries, land abandonment can be an issue in some lowland areas which have poor soils or high water levels, but it tends to be particularly relevant in hilly and mountainous areas, especially those remote from centres of population.

Agricultural policies in OECD countries are evolving. In 1986-88, 99% of the total support provided to agriculture was linked to a production

requirement, compared with the 79% figure cited above for the more recent period. For the most part, payments that are not linked to current production are primarily based on historical area, animal units, revenue or income. Some payments require a farmer to maintain land in a condition suitable for agricultural use, even if no production actually takes place. In the agricultural core zone this form of payment can result in shifts in the mix of outputs, as farmers respond to changes in relative prices.

Again, there is probably no significant impact on the amount of land used in agriculture. In the urban fringe, the payments may act to delay the conversion of land from agricultural to alternative uses (at least temporarily) since they maintain the returns from keeping land in agriculture. In the far margin, payments may keep land in farming (even if not actually in production), but unless payments are made on condition that specific environmental requirements are imposed, and unless efforts are made to verify that farmers actually meet these requirements, they may not be sufficient to guarantee the provision of environmental services from the land.

## 4.3 Land retention and environmental payments

Traditional non-constrained, a cross-the-board agricultural support programmes are likely to be relatively inefficient instruments for achieving the supply of amenities from agriculture that society desires at a reasonable cost. Consequently, governments have tended to move towards the use of more targeted policies to achieve their aims. In the urban fringe, the primary focus has been on measures to prevent the conversion of agricultural land to alternative uses. In other areas, and particularly in the far margin, agri-environmental programmes have become increasingly important.

Although the use of payments to farmers for agri-environmental reasons or the production of open space amenities is increasing, such payments account for only a small share of the total support provided to agriculture in the OECD countries (OECD, 2009*c*). Two principal types of payments are used: i) for the long-term retirement of factors of production from commodity production; and ii) for the use of farm resources to produce environmental services (or to reduce the environmental damage created by agricultural production).

The former type of payments can have positive environmental impacts, for example, by reducing soil erosion, improving water quality and contributing to wildlife habitat. However, they will also reduce the demand for farm inputs and marketing services. If alternative economic activities, such as hunting and fishing and other forms of recreation do not develop as

a result of land retirement, local economic activity can decline and rural communities can be negatively affected. However, if environmental quality improves and the supply of other land-based amenities increases, this may make rural areas more attractive places to live and this could expand business activity in other sectors.[16]

Payments for environmental services typically require farmers to adopt particular management practices viewed to lead to improved environmental outcomes. Farmers may be paid to replace intensive crop or livestock production systems with more extensive systems. They may be paid to invest in equipment or structures that limit soil erosion or reduce water pollution, or to maintain valued features, such as hedgerows, wetland or wooded areas, or structures, such as barns.

The impact of payments for environmental services depends on the type of farm and its location. In the core zone, payments may be made to induce farmers to divert low-productivity fields to conservation uses or to preserve wetland or grassland areas rather than using them for other purposes. Payments may also help to preserve agricultural land in the urban fringe; − although, given the particularly high opportunity cost of land in this area, payments for environmental services *per se* may not be sufficient to prevent the conversion of land to alternative uses in the absence of land-use restrictions.

However, to the extent that many farm households are more diversified than households in other zones and derive considerable non-pecuniary benefits from their farms, the reinforcement of life-style benefits through non-commodity payments may make it more likely that pluriactive farmers will continue in farming. In the far margin, however, such payments can have an importance influence on the behaviour and well-being of farm households, both because the level of environmental services that can be provided is relatively high and because the cost of achieving that supply is relatively low due to the low opportunity cost of the land and labour involved.

The second area of concern is the prevention of conversion of farmland to alternative uses. This is an issue of particular relevance to the urban core, where "farmland preservation" has become a major issue. Many OECD countries have traditionally used land-use regulations (land-use policy), implemented by national and sub-national governments, to influence the use of farmland. In some countries zoning regulations limit the conversion of farmland and farm buildings to alternative uses. Limitations on providing basic infrastructure can also be used to restrict farmland conversion.

Conversely, right-to-farm laws are used in some countries to limit the ability of other rural residents to prevent normal farming practices. Such

provisions are most relevant in the urban fringe, where there is the largest interaction between farm and nonfarm land uses. While right-to-farm legislation can provide a benefit to farmers by reducing the costs of keeping land in agriculture, zoning and development restrictions impose costs upon the owners of farmland, by preventing them from realising the true economic value of an owned asset.

Consequently, some countries use approaches that seek to compensate landowners for foregoing the option of developing their land. Compensation is achieved through such mechanisms as the purchase of development rights or the outright purchase of land. Taxation policy can also be used to provide incentives for keeping land in agriculture (*e.g.* preferential treatment of property or estate taxes), or disincentives to conversion (*e.g.* taxation of capital gains).

Although these mechanisms may prevent land from being converted to non-agricultural uses they do not ensure the continued viability of farming as an economic activity in the urban fringe. Population pressure can increase the opportunity costs of keeping land in agriculture; the proximity of settlement can create conflict between farmers and the non-farm population over such issues as noise, dust and odours; it may be difficult for farmers to make structural changes in their operations, including increases in farm size, that make their farms viable economically.

In summary, the impact of agricultural policies, broadly defined, on land use and the economies of rural areas is complex, and often site- and country-specific. Some policies may have large environmental impacts, but a relatively small direct effect on regional income and employment. To the extent that policies lead to improved environmental quality, making rural areas more attractive places to visit and reside, this may add to regional economic activity. But, of course, an increase in human activity may impose its own pressures on the local environment, making the net environmental effect over the longer term difficult to predict.

# V.

# Evaluating the impact of agricultural policies on rural development

Rural development policy encompasses actions or initiatives designed to enhance the quality of life and the overall well-being of the inhabitants of the rural areas. Consequently, it is broader in scope than agricultural policy, even though such policy has been broadened in many countries beyond traditional objectives, such as price and income support, to wider aspects, such as the environmental effects of agricultural production and land use. Furthermore, agricultural policies can address objectives which go beyond rural development, such as food security and safety. In what follows, the emphasis will be on the evaluation of the contribution of agricultural policies to rural development.

## 5.1 Rural development policy and agricultural policy

Rural development has a large number of connotations and the term "rural development policy" is frequently used to refer to a wide variety of government interventions. In some countries rural development policy may be used interchangeably with regional policy, particularly when rural development is viewed to be primarily an issue of economic growth. In such cases, the policy focus may extend far beyond agriculture or related sectors to issues, such as the provision of infrastructure and public services.

In other countries, rural development policy is viewed from a more agri-centric perspective in terms of expanding the contribution of agriculture to the local economy and to environmental quality. These two approaches are not necessarily inconsistent, but they influence views on the set of policies that fall within the domain of rural development and the range of issues they are intended to address.

A second important consideration is what is understood by the term "development". In the economics literature there has traditionally been

heavy emphasis on economic growth as the centrepiece of development, although modern development economists take a much broader view by, considering environmental, quality-of-life, and broader social issues associated with economic change.

In some countries, a focus on economic growth carries over into rural development policy – such policy is viewed to be primarily oriented towards the maintenance of the population and the expansion of economic activity in rural areas. In other countries, the emphasis tends to be on the management of resources (particularly land resources) in rural areas to ensure continued economic and social viability, but without necessarily having a focus on economic growth.

The OECD has examined a number of case studies of rural development policies (Australia, Canada, the European Union, Japan, Norway, Switzerland and the United States), focusing particularly on their linkage to agricultural policy (OECD 2009*b*). The following points illustrate some interesting differences among OECD countries:

a) *The integration of rural and regional development policy*. In some countries (*e.g.* Norway and Switzerland) rural development policy is closely integrated with regional development policy. In these countries the maintenance of existing settlement structures and viable local communities is an important aim. This aim is supported by a range of measures, which can include infrastructure development, education and training, and budgetary transfers to local government entities. In some countries (*e.g.* Australia, the EU), rural and regional policy are viewed as separate.

b) *The linkage between rural and agricultural policies*. In some countries (*e.g*. Australia, the United States), rural development policies and agricultural policies are largely separate. In others they are closely linked (*e.g.* Norway).

c) *The degree to which policies have an agricultural focus*. In some OECD countries (*e.g.* Japan), the primary emphasis is on agriculture as a vehicle for rural development. In others, the focus is broader − for example, including policy measures to promote the development of regional infrastructure, such as roads or housing (*e.g*. Switzerland, the United States).

d) *The focus within agriculture*. This can vary considerably. In some countries, the primary emphasis is on improving the business skills of farmers to help them to adjust and adapt to external economic pressures or other difficulties, including natural disasters or climate change

(*e.g.* Australia, Canada and the United States). In others, there is a greater breadth of coverage to include farm investment, competitiveness of the agri-food industry, environmental management, animal welfare, food quality and food safety, the preservation of cultural heritage, and maintaining agriculture in less-favoured areas (*e.g.* the EU).

e) *The responsibility for policy*. In some countries, this is largely devolved to sub-national governments, *i.e.* "bottom-up" (*e.g*. Canada), or it is moving in that direction (*e.g*. Switzerland); in other cases it is largely controlled from the centre, *i.e*., "top-down" (*e.g.* the EU, Japan, Norway).

f) *Funding*. In some countries, this is largely achieved through central government expenditures (*e.g.* Japan, Norway). In others, it is a mixture between central and local governments (*e.g.* Australia, the EU and Switzerland). In some cases there are efforts to involve private organisations, or to create public-private partnerships through the use of measures such as loan guarantees (*e.g.* Australia and the United States).[17]

The case studies also generate information on how programmes are currently evaluated (*e.g.* Australia, Canada, the EU, Norway, Switzerland and the United States). In many countries, the evaluation of rural development programmes is not a separate activity, but is part of a more general process for the evaluation of government programmes or the performance of government agencies. However, there are some differences in the ways in which evaluations are conducted:

a) *Scope of evaluation*. In some countries this is very broad (*e.g.* Australia – through its "Signposts for Australian Agriculture" which focuses on agriculture's contribution to ecologically sustainable development). In others it is more targeted (*e.g.* Canada's evaluation of selected rural development programmes and the determination of potential impacts of the rural impact of other policies through its "Rural Lens" approach).

b) *Degree of reliance on stakeholder input*. In some cases this appears to be relatively high (*e.g.* Australia, the EU).

c) *Use of economic models in the evaluation process*. This seems to be limited in scope, but does apply in some countries (*e.g*. Australia and the United States).

d) *Use of national auditing bodies for selective or regular audits* (*e.g.* Australia, the EU, Norway).

e) *Specificity of indicators to policy actions*. This can be high in some cases (*e.g*. Canada's Results-based Management and Accountability Framework, which requires specification of programme objectives, expected results, monitoring and evaluation methods with performance indicators, and the evaluation process under the EU's Rural Development Regulation).

f) *Regularity of evaluation*. Many countries do not require the evaluation of rural development programmes on a regular basis (*e.g*. Australia, Canada) but a regular formal evaluation system is in place in the EU – with comprehensive *ex-ante*, mid-term and *ex-post* evaluations under the Rural Development Regulation. There are also regular or periodic evaluations of selected programmes in some countries (*e.g.* Norway, Switzerland and the United States).

## 5.2 Approaches to evaluating policy

Governments in several OECD countries are increasingly aware of the importance of evaluating their policies in order to improve performance. However, as indicated by the case studies examined by the OECD, "evaluation" can be interpreted in different ways by different countries. In what follows, a particular optic is applied in which evaluation is defined as a set of methods and procedures that focus on assessing the achievements (impact) of a policy or programme, measured against its objectives.

Under such a definition, evaluation will necessarily involve the use of analytical methods – qualitative and quantitative techniques that allow the causal relationship between programme inputs and outputs to be determined. As such, evaluation is conceptually distinct from auditing, which seeks to ensure financial regularity and accountability in expenditure, providing an answer to the question: Was the money allocated to a programme spent in the ways intended? It is also different from monitoring, which usually seeks to provide an answer to the question: What are the inputs, processes and outputs of a programme?[18]

However, all three activities can overlap to some extent, particularly in terms of the generation and use of information. Monitoring and evaluation are synergistic in that the former can generate much of the information that is required to perform the latter (provided that the monitoring process generates relevant indicators of policy outputs). While evaluation methods can be used to analyse the potential impact of proposed programmes, the focus in the current case is on *ex post* assessment.

The evaluation process is comprised of three major components: evaluation design, data collection and analysis. The core of the process will focus on programme results – were objectives achieved, what were the impacts and effects of the programme (both intended and unintended) and what was its cost-effectiveness? However, for evaluation to be useful for future programme design, broader questions, such as the relevance of programme objectives, appropriateness of existing instruments, and assessment of potential alternatives can also be addressed.

A key issue in policy evaluation is the establishment of a baseline or counter-factual scenario. In other words, what would the situation have been, had the policy measures not been implemented? Economic adjustment and adaptation is an ongoing process in society and most policies are likely to have an incremental effect on existing trends. It is therefore unlikely that variables of interest would have remained unchanged if a policy had not been implemented.

For example, if measures to promote farm diversification had not been in place to what extent would farmers have diversified their economic activities in response to economic pressures or opportunities? It is necessary to establish a baseline in order to determine "additionality" (*i.e.* the additional impact that particular policy measures have had on a variable of interest, for example, the share of farm household income generated by diversified activities). It is easier to do this for specific policy initiatives that are narrow in scope and have clearly defined objectives − for example, measures to promote the development of new food processing or tourism activities, but, even then, it is not certain that observed developments in these areas will be entirely due to the policy initiatives.

It is even more difficult to establish a baseline for many broader policies that are not necessarily targeted solely to rural development. For example, if commodity policies directed to increasing farmers' incomes had not been in place, how would farmers have responded to economic pressures? Would the level and composition of outputs and inputs have been substantially different? Would rates of entry and exit of farmers and consequent structural change (average farm size) have been different? If so, what would have been the land use and environmental implications? How large would the effects have been? Although it may be difficult to determine a baseline in such cases, it is probably unreasonable to assume that all the changes actually observed can be attributed to a particular policy measure or set of measures.

A second issue in the evaluation process is to determine causal pathways. Ideally, programme evaluation should provide an answer to the question: What was the impact of a specific policy measure on a variable of interest? To a large extent, the answer to this question rests on the

behavioural implications of the measure – *i.e.* how individuals responded to the measure and the specific actions that they took as a consequence of it. To continue with the diversification example, how does a particular set of diversification measures affect decisions on the allocation of the resources of farm household to and among agricultural activities, to and among activities that are closely related to agriculture, and to- and among off-farm activities?

Similarly, it can be highly challenging to try to disentangle the impact of agricultural commodity policies, both those intended to influence commodity production and those intended to improve farmers' incomes without directly influencing production decisions. For example, there is considerable debate on whether "decoupled" payments actually have a significant influence on production decisions and the allocation of inputs by farmers, or largely affect farm household consumption and saving decisions. The difference between such potential responses could have significant implications for the rural economy.

A third issue relates to the evaluation of direct or specific targets *versus* general development objectives. Specific targets are easier to evaluate because it is more likely that the causal link between a given policy measure and the target will be understood. General rural development objectives are more difficult to evaluate because they are often less well-defined and therefore more difficult to formulate and measure, and because causal linkages between specific policy measures are more difficult to establish. For example, while it may be possible to determine the impact of a specific measure, such as the provision of grants for farm diversification on the activities and income of farm households, it may be far more difficult to identify the impact of measures that are oriented towards increasing diversification on overall economic activity and well-being in a rural area.

A fourth issue is the timing of an evaluation. As indicated earlier, *ex post* evaluations take place after a policy has been implemented, but there may be a substantial time-lag in terms of outcomes. Policies must have been operating long enough to affect decision-making by those affected and for the impact of their decisions to be felt. Some types of policies, such as those oriented towards improving human capital, can take several years before any effects become apparent. In such cases, early performance indicators could be used as a rough proxy.

A fifth issue, as with all forms of policy evaluation, is the availability of relevant data. This is likely to be good when monitoring activities are closely linked to evaluation, providing that information on a relevant series of indicators that can be used for evaluation is collected on a regular basis. However, in many cases information from on-going, all-purpose data

collection activities may have to be used due to the lack of alternatives. Since these may not generate all the impact information required, they may have to be supplemented by purpose-built surveys.

The difficulties associated with determining causal pathways can sometimes lead to a focus on intermediate indicators of impact. For example, the effectiveness of a programme is judged on the basis of its uptake by clients, or even by the activities that they have adopted as a result. But this does not lead to a determination of how the programme actually affected incomes or economic activity. Similarly, it often leads to the use of a "bottom-line" approach (*i.e.* an attempt to link the use of policy measures to final outcomes through association).

For example, correlations between observed changes in employment or income and particular programme initiatives may be examined (*e.g.* the implementation of diversification measures, in order to infer programme effectiveness). As with all such associative methods, there is a possibility that a false conclusion will be drawn on the impact of programme. The probability that this will be the case is likely to increase the more difficult it is to establish a direct causal relationship between a programme and a given outcome and, as indicated above, this method also suffers from the problem of potentially overstating additionality.[19]

In assessing the evaluation approaches used in the case-study countries discussed above, a study by the OECD (OECD, 2009*b*) observes that the performance criteria used often do not correspond to final impacts (*i.e.* specific rural development outcomes), and that the precise methodology employed is often unclear. Particular uncertainty appears to be associated with the definition of economic performance criteria needed to identify the nature of benefits and costs and to determine the efficiency of various measures.

In most cases the primary emphasis appears to be on the budgetary costs of measures rather than other costs, such as those incurred by farm households, and there are few attempts to determine the economic benefits resulting from various policies. A full benefit-cost analysis is unlikely to be possible in most cases, but it would seem to be desirable that performance measures be related as closely as possible to the economic and social benefits that are expected to result from the policies pursued.

A range of academic approaches have been developed to determine the impact of policy measures on rural economic performance. Many of these rely on the use of economic models to establish a counterfactual scenario against which the impact of the policies can be measured. Economic impact models, used primarily to estimate the impact of a range of policies on regional income and employment, have become increasingly sophisticated

technically, as demonstrated by the shift from the use of standard input-output (I-O) models, through to the development of social accounting matrix (SAM) models, and finally to computable general equilibrium (CGE) models.

As with all economic models, the quality of the results obtained depends on the realism of assumptions, the extent to which causal pathways between variables can be captured accurately (particularly between policy variables and indicators of outcomes), and the reliability of parameters. With a few exceptions, formal modelling approaches do not appear to occupy a major place in public, as distinct from academic, evaluations of rural development policies. However, they can play an important supporting role − in particular, by helping to focus attention on relevant causal pathways and on what indicators of policy impact are appropriate.

Despite their limitations, the counterfactual use of models can help to illuminate additionality (*i.e.* exactly what marginal impact of various policy measures can be expected). OECD (2009*b*) argues for a closer dialogue between those designing evaluation strategies, data collection and methodologies in public administrations, and economic modellers, particularly in terms of evaluation objectives and the data needed to undertake them.

## 5.3 Improving the monitoring and evaluation of policy effectiveness

In the context of the evaluation of rural development policies as best-practice set of guidelines have been proposed that draw upon approaches already adopted in OECD member countries, but also include new ways to overcome particular problems that have been identified in current practice. These can be summarised as follows:

a) New policies should be subject to *ex ante* appraisal.

b) *Ex post* evaluations should be timed to reflect expected lags between the implementation of policy measures and expected outcomes.

c) Assessments should be clear on the appropriate interpretation or shortcomings of performance criteria.

d) Interim evaluations should be used in addition to a final evaluation.

e) An attempt should be made to explain any discrepancies between expected and actual outcomes.

f) Where possible, policy impacts should be traced to specific rural development targets.

g) Performance criteria should be SMART: Specific, Measurable, Achievable, Relevant and Timely.

h) Care should be taken to avoid overstating the additionality of policy measures.

i) The evaluation methodology should be established prior to the implementation of new policies.

j) Performance measures, data requirements and analytical methods to be used should be established prior to the implementation of new policies.

k) Existing data sources should be supplemented by new sources to fill information gaps.

l) There should be dialogue between evaluators in public administrations and economic modellers to allow for rigorous, impartial and objective evaluation.

m) Evaluation procedures should be periodically reviewed by independent experts and lessons learned fed back into the evaluation process.

# VI.

# Implications for policy design and implementation

The work of the OECD on the linkage between agricultural policies and rural development highlights the range of policy objectives that can be pursued in this area, and the range of measures that can be adopted to pursue these objectives. The primary emphasis of agricultural policy in many countries continues to be on price and income support.

However, many countries have tended to broaden the array of policy measures used, to address economic sustainability in rural areas directly (for example, through the development of new economic activities for farm households) or to ensure their continued contribution to the supply of rural amenities, such as environmental quality. In addition to their value to society as a whole, rural amenities can play an important role in the economic development of rural areas.

Policy efficiency, the use of measures that are both effective in achieving their goals and are cost-effective, is a key aim as agricultural policy continues to evolve. The pressure on scarce public funds will continue to intensify in OECD countries, thereby heightening the need for efficiency. At their 1998 meeting, OECD Ministers (OECD, 1998*b*) agreed that in order to meet their shared objectives, agricultural policy measures should be:

- ***Transparent:*** having easily identifiable policy objectives, costs, benefits and beneficiaries;
- ***Targeted:*** to specific outcomes and, as far as possible, decoupled;
- ***Tailored:*** providing transfers no greater than necessary to achieve clearly identified outcomes;

- ***Flexible:*** reflecting the diversity of agricultural situations, be able to respond to changing objectives and priorities and applicable to the time period needed for the specific outcome to be achieved;

- ***Equitable:*** taking into account the effects of the distribution of support between sectors, farmers and regions.

The OECD's work on the reform of agricultural policies has highlighted the importance of these principles and the need for on-going evaluation of the effectiveness and efficiency of policy instruments. Much emphasis has been given to the need for clear, explicit and measurable objectives. Although spatially targeted policies can entail significant transaction costs, there are ways to reduce them, as suggested in OECD (2007). In general, for the gains from targeting to materialise, monitoring, enforcement and evaluation are crucial steps. Agricultural policies may not have any explicit rural development objectives, but, when such objectives are mentioned, the OECD's work has highlighted that these are often unclear and, by extension, the expected contribution of agricultural policies to these objectives is also unclear.

Stated rural development objectives are typically very general in nature, making it difficult to identify criteria that should be used to judge policy effectiveness (OECD 2009*b*). While OECD countries often have broadly similar rural development objectives, the emphasis placed upon them differs. Most importantly, the emphasis attached to agriculture in achieving objectives varies considerably, as does the weight placed on the role of the public *versus* the private sector in pursuing them.

By definition, agricultural policy is directed towards a particular sector of the economy (*i.e.* it is sectorally-based), although this can have important consequences for particular locations. Given a general downward trend in agriculture's contribution to rural income and employment, even in areas that remain predominantly rural, the future effectiveness of price and income support policies in promoting a sustainable economy in many rural areas is questionable.

The impact on the local economy of transfers to households through such policies depends on how the additional income is spent and, particularly, whether it is spent on purchasing local goods and services. The incomes of farm households in many areas increasingly rely on what is happening in the rest of the rural economy, and whether households can take advantage of the employment and income opportunities created by growth in other sectors.

The ability of farmers to respond to new opportunities both on and off the farm can be increased through targeted measures, such as the development of business skills, the creation of products that respond to changing consumer demands, and to tourism. The removal of impediments that restrict the ability of farm households to take advantage of new economic opportunities can also be significant. Recognition of the role of farm households as land managers and producers of non-commodity outputs and public goods provides a further avenue for farm households to improve their economic well-being in many rural areas, and, by increasing rural amenities, to enhance the attractiveness of rural areas as places in which to live or visit.

In contrast to agricultural policy, effective rural development policy (and agri-environmental policy) is typically oriented towards particular areas or regions (place-based), although it will have important consequences for particular sectors. This central difference in focus has significant implications for the design and implementation of rural development policies. To the extent that rural development is the primary policy aim, other things being equal, place-based policies are likely to be more effective than policies that are not spatially differentiated (OECD, 2006*b*).

Many of the elements of rural development policies, such as improvements in infrastructure and the provision of local services, are crucial for economic and social sustainability in rural areas. Again, if rural development is the primary aim, there is a need for well targeted rural development policies, rather than hoping that agricultural policies alone will guarantee sustainable rural economies.

As has been indicated by the studies reviewed in this paper, policy makers are confronted by significant heterogeneity in rural regions. There are spatial differences in terms of the regional distribution of population and economic activity, the outlook for future economic development and pressures on land use, and in the current and potential future environmental contribution of agriculture.

This implies that a "one-size-fits-all" approach to policy is unlikely to be appropriate and that spatially differentiated or spatially targeted policies are needed in order to achieve economic development and environmental objectives. In areas close to urban areas, for example, the emphasis is likely to be on land-use management to control development and to preserve open space.

There is likely to be less need to preserve particular agricultural practices, unless these result in significant local environmental benefits. In more distant areas, the challenge is likely to be to ensure that the environmental goods valued by society as a whole continue to be supplied.

This may require greater attention to achieving targeted outcomes through particular land-use practices. The measures required in each case are likely to be different in order to achieve these outcomes.

As with all policies, there will inevitably be trade-offs and sequencing in pursuing a range of economic, social and environmental objectives. Policies that increase economic activity in rural areas may generate environmental pressures. Conversely, measures that restrict activity in order to preserve the supply of environmental goods may limit the potential for economic growth. A balance will have to be sought between these objectives. To help find this balance, clarity in policy objectives, targeted policy measures, and the evaluation of policy effectiveness are essential requirements.

# VII.

# Future research needs

The OECD's work on the relationship between agricultural policies and rural development has demonstrated that there are two important and closely related areas for possible future work to enhance understanding the evolution of policies. First, there is a need for more in-depth analysis of the design and implementation of policy measures designed to achieve specific rural development objectives. Second, there is a need to work on developing and refining methods for evaluating rural development policies, particularly those that relate to agriculture and land use. Progress in both of these areas will require an expanded dialogue between both those working in agriculture and rural development in national administrations, and external organisations, such as universities.

The first of the areas of work would draw upon the experience gained in OECD countries through programmes oriented towards rural development objectives to examine the relative efficiency of various measures in achieving targeted outcomes. It would also draw upon the results of academic work that seeks to examine programme effectiveness. By reducing knowledge gaps in such areas as policy design and instrument choice the aim would be to define the approaches that might improve the coherence between agricultural and broader rural development policies, and how to addresses the spatial heterogeneity that is a major characteristic of rural areas. Such work could contribute to the process of reorientation and re-instrumentation of agricultural policy in OECD countries.

The second area of work would centre on improving methods for evaluating the impact of rural development policies. The OECD's work has highlighted the need for deepening the approaches used to determine policy effectiveness and efficiency in order to guide the allocation of scarce public resources. One of the ways in which a deepening could be achieved is to expand the dialogue between those working in the management and evaluation of policies, not only agricultural and rural development programmes, in national administrations and those in the academic

community. There are considerable opportunities for strengthening evaluation methodologies by drawing upon quantitative approaches that are being developed by researchers in the rural development area. Despite some of the challenges involved in the development of quantitative and model-based approaches to evaluating rural policy outcomes, existing methods can help to clarify important issues such as establishing paths of causality and how to address additionality.[20]

## *Endnotes*

1. For long time, concerns have been raised about the adequacy of GDP in measuring economic performance and progress of societies. Example, www.oecd.org/pages/0,3417,en_40033426_40033828_1_1_1_11,00.html

2. Note, however, that agricultural GDP and employment data in the OECD database include forestry and fishing. This may increase the employment figure significantly in some countries.

3. Local communities (defined as the small administrative units appropriate to the country concerned) are classified as rural if the population density is below 150 inhabitants per square kilometre (500 for Japan, to account for the fact that the country's national population density exceeds 300 inhabitants per square kilometre). The type of rural region is defined with respect to the percentage of the population that living in such rural communities as follows: predominantly rural (PR) − more than 50%; intermediate areas (IN) − 15 to 50%; and predominantly urban (PU) − less than 15%. Finally, a region that would otherwise be identified as PR is classified as IN if it has an urban centre with more than 200 000 inhabitants (500 000 in Japan): a region that would otherwise be identified as IN is classified as PU if it has an urban centre with more than 500 000 inhabitants (1 000 000 in Japan).

4. For a discussion of the differences between OECD countries in the territorial units used to define rural areas see OECD (2009*a*). This study demonstrates the difficulty of obtaining comparable information across countries. Some countries (*e.g.* the United States) employ multiple definitions of rural areas, therefore in-country comparisons can differ depending on the definition used.

5. The countries concerned are Australia, Belgium, Canada, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland and the United States. The employment data used include data for forestry and fishing, in addition to agriculture.

6. It should be noted that there are slight differences in the years used for some countries.

7. The average number of individuals used is 3. This number is arbitrary. It may under-estimate the farm population in some cases, for example when part-time farming is significant, and overestimate it in other cases. For example, it does not apply to non-family farms and does not consider non-family employees, whose numbers can be significant in large commercial farms or in farms engaged in diversification activities, such as green or farm tourism. To better understand the relationships between

agriculture and population, national statistics should estimate the whole population of households related to farms.

8. The only exceptions are Japan, for which actual farm population numbers exist, and Turkey, for which 2001 data on farm numbers were used, rather than 2005.

9. Labour force employed in agriculture, hunting, forestry and fisheries as reported in the OECD territorial database (Sector A-B in ISIC REV. 3.1).

10. The definition of OGA in the EU case is "activity other than activity related to farm work (i.e. work contributing to primary agricultural production) carried out for remuneration". The Norwegian definition relates to "supplementary activities".

11. The EU19 aggregate in the dataset is composed of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom.

12. Externalities are attributes of the production or consumption of private goods that are un-priced. Public goods are non-rival in that an individual's consumption of the good does not affect the ability of others to consume them, and non-excludable in that it is difficult to limit consumer access.

13. Note that the urban fringe concept does not necessarily imply proximity to large metropolitan areas. It is equally valid for smaller concentrations of population that are expanding into the countryside, often through the phenomenon of "urban sprawl."

14. Note that the extensive margin does not necessarily imply remoteness from population centres, which is a general characteristic of less favoured areas. It can also apply to blocks of land in a core agricultural zone that are of limited productivity.

15. While the amount of land in agriculture in this zone is unlikely to vary substantially over time, changes in the profitability of different products can result in significant changes. For example, if crops become more profitable relative to livestock, permanent pasture may be converted to cropland, and *vice versa*, provided that this is feasible agronomically.

16. A study of the Conservation Reserve Program in the United States, including effects attributable to an expansion of recreational activities, found that the overall economic impact was modest and largely transitory. As might be expected, the effects of payments under the programme were greatest in sparsely populated, agriculturally dependent areas, rather than in more densely populated, economically diversified rural areas (OECD, 2009*b*).

17. The issue of the level of government in financing policies relating to public goods has been examined in OECD (2005).

18. Monitoring can also be used to collect data that can be used for an evaluation or to provide early performance indicators.

19. Other problems associated with this approach − for example, selection bias − are discussed in OECD (2009*b*).

20. Both of these areas of work can also help to identify information deficiencies and focus attention on how to address them. This has been identified as an important issue in the successful re-instrumentation of agricultural policies in OECD countries (Blandford, 2007).

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