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'Multifunctionality'

A pretext for protection?

To its proponents, 'multifunctionality of agriculture' refers to any unpriced spillover benefits that are additional to the provision of food and fibre

Governments in some countries are promoting the concept of the 'multifunctionality of agriculture' as a justification to maintain high levels of subsidies and protection for their agricultural sectors.

What is 'multifunctionality'

To those who wish to use 'multi-functionality' to justify agricultural protection, the term refers to any unpriced spillover benefits that are additional to the provision of food and fibre. Claimed benefits range from environmental values, rural amenities, cultural values, rural employment and rural development. In some countries, food security is also emphasised (OECD Secretariat 1998).

In a policy context, multifunctionality has become associated with a view that providing support to agriculture is an appropriate mechanism to enhance these spillover benefits.

Positive and *negative spillovers*

There are strong arguments against using support to enhance spillover benefits. Indeed, there is a strong case that the current way in which the concept of multifunctionality is being used in Japan and some countries in Europe is little more than a rationalisation for continuing agricultural protection. There are two key reasons for this.

First, providing agricultural support is a very indirect and high cost way of enhancing spillover benefits. Policies that directly target specific positive spillovers are more effective and efficient.

Second, while agriculture might provide positive spillovers, it also produces negative spillovers that are increased by subsidising agricultural production. Negative effects include environmental damage and loss of wilderness and natural biodiversity.

Threats to trade reform

There are substantial threats to agricultural trade reform if agricultural protection is sanctioned as a means of achieving 'multifunctional' policy initiatives in the next round of multi-lateral trade negotiations under the World Trade Organisation (WTO).

For example, both the Japanese government's justification for continued support for rice production to provide flood mitigation benefits and the European Union's push to maintain a wide range of agricultural support allegedly to enhance spillovers would continue to distort world production and trade.

Such policies impose considerable costs on consumers and taxpayers in countries where agriculture is highly supported. They also impose costs on efficient agricultural exporters elsewhere.

The purpose in this paper is to throw light on the veracity and policy relevance of multifunctionality.

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Who pays for multifunctionality?

Providing high levels of support to agriculture penalises many people in the countries where agriculture is highly protected. Support to agriculture stops resources moving to nonagricultural activities where they could earn higher net returns.

Consumers are made worse off by having to pay higher prices for the goods produced by these other industries. For example, the price of land for other purposes, such as residential, recreational or industrial use, is bid up excessively by over-production in agriculture. As a result, aggregate domestic income is reduced.

In addition, taxpayers in these supporting countries are worse off from having to pay for agricultural protection measures.

Impacts on other countries

Agricultural support policies have negative impacts on producers in other countries by increasing domestic production and reducing imports. International spillovers are imposed by way of depressed world prices as import demand is reduced or export supplies increased (Tyers and Anderson 1992).

When support is provided through price support, as it is with Japanese rice, domestic consumption is also reduced.

If the supporting country maintains stable internal prices by regulating imports and/or exports, it will transmit the variability in its own production and demand to greater variability in world market supplies and prices (Johnson 1991). As a result, the economies of other agricultural producing countries are penalised because producers in the countries that protect their agriculture are shielded from changes in world prices that result from fluctuations in world demand and supplies.

Using agricultural protection in one country to attain multifunctional benefits lowers the benefits from agriculture, including multifunctional benefits, everywhere else. This includes in developing countries.

For example, employment in agriculture, which is the occupation of more than half of the population in many developing countries, is threatened by European subsidies that distort world prices and production (Eurostep 1999).

In addition to positive spillovers from agriculture there are negative spillovers, often made worse by agricultural protection

Multifunctionality, agricultural protection and negative spillovers

In addition to *positive* spillovers from agriculture there are *negative* spillovers. These include environmental damage such as chemical and animal effluent leaching into water supplies, increased salinity and loss of vegetation. Further, there is considerable evidence that negative spillovers are made worse by protecting agriculture (US Environment Protection Agency 1990; Mahé and Ortalo-Magné 1999).

Subsidising agriculture means that production and input use in subsidising countries are higher than would be the case in the absence of protection. This in turn leads to the production of more negative spillovers from the greater amounts of inputs used.

For example, the maintenance of high levels of industry protection in the European Union under the Common Agricultural Policy has resulted in 'excessive intensification of input use, resulting in the deterioration of the rural environment and natural resources' (Mahé and Ortalo-Magné 1999, p. 99).

ABARE has analysed the impact of trade liberalisation in the European Union on the contamination of water from increased use of nitrate fertilisers (Gunasekera, Rodriguez and Andrews 1992).

Some negative spillovers from agriculture

- **Pollution of water supplies**
- **Loss or damage to wildlife habitats**
- **Effluent from intensive livestock production**
- **Greenhouse gas emissions**
- **Loss of vegetation cover**

The study found that reducing protection in the European Union would lead to a reduction in EU farm production and a significant decrease in farm input use, including the use of nitrogenous fertilisers. This translated to a substantial reduction in the negative environmental spillovers from excessive input use.

Agricultural exporters in other countries would also benefit from decreased EU production from the resultant relative increase in world prices for a range of agricultural commodities.

Using the GTAP model (Hertel 1997), it is estimated that removal of agricultural protection in the European Union would reduce the use of variable inputs such as fertilisers, chemicals and fuel by 18 per cent. The implication is that with reduced protection, producers would use far less production inputs and hence would probably produce fewer negative spillovers.

Address spillovers directly

Providing agricultural support is a very indirect, high cost and often ineffective way to achieve enhanced spillover benefits from agriculture. Many of the benefits put forward by supporters of multifunctionality as a basis for agricultural protection are related to agricultural production only indirectly.

In some instances, such as with the preservation of natural features or human made features that are no longer used for farming, the spillovers are not related to agriculture but happen to be located in rural areas. In these cases, subsidising agricultural production is unlikely to enhance positive spillovers because the subsidy is not targeted at the spillovers themselves.

In most other cases, beneficial spillovers could be enhanced without using agricultural protection to maintain or increase agricultural production. Such an approach would avoid the negative spillovers that agricultural protection has for the national economy and for farmers elsewhere, including in developing countries.

Direct payments

A more direct and effective way of enhancing benefits is to explicitly pay for specific spillovers to be supplied. If society collectively places a high value on spillovers such as cultural, heritage, rural amenity and environmental benefits, it should be prepared to pay to preserve them.

Payments linked explicitly to the specific spillover benefits and to the size of those benefits will generally be much more effective in attaining the desired spillover effects than support to protect agriculture.

The provision of direct payments should be made conditional on achieving the desired outcome — for example, payments for maintaining hedgerows should only be made where hedgerows are properly maintained.

With direct payments being used to address the multifunctional outcome, it is important that markets be allowed to address market outcomes. Hence, the price that producers receive for their output should be the unsupported world price.

Some examples of addressing spillovers directly

There are numerous instances where spillover benefits could be provided more efficiently than they are currently.

Rural employment

One example of a frequently cited key multifunctional spillover benefit of agriculture is enhancing rural employment.

While agricultural industries are located in rural areas, rural economies are not necessarily dominated by agriculture (Anderson 1998). In some especially densely populated industrialised countries, many rural areas are adjacent to urban areas and have numerous nonfarm as well as farm activities. For example, '[European] farm households earn a larger part of their income from nonfarm activities' (Mahé and Ortalo-Magné 1999, p. 93).

Support to agriculture costs nearly twice as much as agricultural wages in the European Union (European

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Commission 1998; Eurostat 1998). If rural employment were a desired social policy, a more efficient and lower cost option would be to redirect agricultural support payments specifically to rural or regional employment programs (see Industry Commission 1993 for a discussion of regional labor policy options).

Flood mitigation and erosion prevention

Another example where positive spillovers could be obtained more directly and at a lower cost is flood mitigation and erosion prevention benefits in Japan. Currently, paddy rice production, which is supported at prices about six times the world market price, is given credit for important spillover effects in flood mitigation and control and prevention of soil erosion. While some of the rice paddies fulfil these spillover roles, others are located in areas where they have little effect on flood mitigation or soil erosion.

The question of the most efficient means of obtaining the spillover benefits of flood control, water storage and the prevention of soil erosion is a matter to be determined by research.

Cultivating paddy fields is unlikely to be the only way of providing the desired environmental benefits. There would be a range of other flood mitigation options that need to be assessed and compared with the costs (such as chemical leaching into groundwater tables) and benefits (flood control and prevention of soil erosion) of growing rice.

If it is demonstrated that cultivated paddy fields are the most direct and least cost form of providing flood mitigation benefits, then the most efficient policy is to pay farmers based on their capacity to maintain specific paddy fields as a water buffer.

Payments would be directly related to the contribution of the fields to flood mitigation. Payments would be made only to growers who provide the spillover of flood control at a payment rate based on the degree of water buffering provided by paddy maintenance or alternative activities. This means that not all farmers would be subsidised at the same rate.

The key difference between this and the current broadly based support measure is that payments that farmers receive would be decoupled from the production and price support measures for rice. Under this system, producers would only receive the world price for rice. This would minimise both the distortion to the allocation of resources domestically and the international spillover effects on rice producers in other countries.

Targeted spillover policies already exist

More efficient policies directly aimed at preserving spillover benefits in rural areas already exist in some countries.

For example the Countryside Stewardship Scheme in England offers direct payments to conserve, restore and/or maintain a range of landscape, wildlife and historical features (MAFF 1999). The scheme is targeted to where the greatest public benefits can be gained and individuals other than farmers are also eligible to apply.

Over the period 1991–96, farmers represented 75 per cent of scheme applicants, with the remainder including nonfarming landowners and tenants, local authorities and voluntary bodies (Mahé and Ortalo-Magné 1999).

Another program similarly targeted to the explicit provision of spillover benefits is the Countryside Access Scheme in England and Wales under which money is paid explicitly to farmers to set aside suitable farmland to provide public access for walking.

An interesting example here is a policy on hedgerows. Hedgerows are valued by people as defining the character of the English landscape, by providing a habitat for animals and plants and acting as corridors for the movement of some species (Richardson 1999).

However, support under the European Union's Common Agricultural Policy to promote cereal production encouraged farmers to replace pastures with crops. Modern cropping technologies require large

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areas unimpeded by obstacles such as hedgerows. Indeed, until 1989, farmers were actually paid a subsidy to remove hedges. It is estimated that the length of hedgerows in Britain has shrunk by more than half since the mid-1940s (Conniff 1997).

More efficient policies have been introduced that directly seek to preserve the benefits that people in the United Kingdom derive from the remaining hedgerows. For example, the Countryside Stewardship Scheme provides payments to farmers and other land managers to restore hedgerows at rates of £2–4 a metre for hedge laying, coppicing and planting (MAFF 1999).

Conclusions

Support for a 'multifunctional' approach to agricultural policy is on the rise from countries with highly protected agricultural industries. The spillover benefits from agriculture are being put forward as a reason to maintain or even increase agricultural protection.

If this push is successful, distortions to world markets and damage to efficient agricultural producers elsewhere, including in developing countries, will continue. Potential benefits from trade in agricultural products from upcoming WTO negotiations will be jeopardised.

There are powerful arguments against the 'multifunctional' push, at least as an argument for broadly based agricultural protection. First, there are more effective and less costly ways of maintaining what people in society want. Second, subsidising agricultural production has been shown to also increase the negative spillovers from agriculture, including causing ongoing damage to rural environments.

A more efficient and potentially more effective approach to achieving multifunctional objectives is to use specific payments that are targeted at providing the multifunctional outcome. Indeed, there are already targeted policies explicitly aimed at achieving some of the spillover benefits claimed under the banner of 'multifunctionality'. Where this is the case, the spillovers are already being addressed. Consequently, there should be no need to pursue them through broad based agricultural protection. As protection is not being targeted at the specific objective, it would be neither effective nor efficient. Therefore, there is no justification on the grounds of achieving multi-functional objectives for supporting domestic prices above those in the world market.

'Multifunctional' effects apply to all economic activities. Hence, acknowledging their significance specifically in international agreements on agriculture could be construed as a means of continuing the kinds of exemptions that have so far largely excluded agriculture from the benefits of multilateral trade reform.

Further, direct policy measures are already in place to take account of these multifunctional benefits. Such policies are likely to impose lower costs on consumers and taxpayers, on domestic economies, and efficient producers elsewhere in the world.

References

Anderson, K. 1998, Domestic agricultural policy objectives and trade liberalisation: synergies and trade-offs, Paper presented at the OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 26–27 October.

Conniff, R. 1997, 'Can Britain save its hedgerows?', *International Wildlife Magazine*, July/August, http://www.nwf.org/nwf/intlwild/hedgerow.html.

European Commission 1998, *The Agricultural Situation in the European Union: 1997 Report*, Brussels.

Eurostat 1998, *SPEL EU Data for Agriculture 1973–97*, Office for Official Publications of the European Communities, Luxembourg.

Eurostep 1999, *Eurostep Dossier on CAP & Coherence: Coherence in EU Policies Towards Developing Countries*, Brussels, http://www.oneworld.org/eurostep.

Gunasekera, H.D.B.H., Rodriguez, G.R. and Andrews, N.P. 1992, 'World

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market implications of taxing fertiliser use in EC agriculture', *Agriculture and Resources Quarterly*, vol. 4, no. 3, pp. 389–96.
Hertel, T. (ed.) 1997, *Global Trade Analysis: Modeling and Applications*, Cambridge University Press, Massachusetts.
Industry Commission 1993, *Impediments to Regional Industry Adjustment*, Report no. 35, AGPS, Canberra.
Johnson, D.G. 1991, *World Agriculture in Disarray*, 2nd edn, Macmillan, London.
MAFF 1999, *Countryside Stewardship Scheme*, http://www.maff.gov.uk/environ/envsch/cs.htm.
Mahé, L.P. and Ortalo-Magné, F. (1999), 'Five proposals for a European model of the countryside', in Cap and the Countryside, *Economic Policy*, April.
OECD Secretariat 1998, The OECD and agricultural trade analysis: recent history, possible future directions, Document prepared for OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 26–27 October.
Richardson, J. 1999, Development of hedgerow protection policies in the 1990s, Department of the Environment, Transport and the Regions, London.
Tyers, R. and Anderson, K. 1992, *Disarray in World Food Markets: A Quantitative Assessment*, Cambridge University Press, England.
US Environmental Protection Agency 1990, *Agriculture and the Environment: OECD Policy Experiences and American Opportunities*, Washington DC.

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