

Agri-Environmental Relationships & Multi-functionality: Further Considerations

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Abstract

Multi-functionality is a currently fashionable argument, especially within the EU, for continued support of the farming sector. However, there is a substantial danger that this will be used, and be seen to being used, as a façade for continued traditional support and protection. If so, the current trend towards liberalised agricultural markets, on which much of the developing world depends, will be frustrated. Nevertheless, farming does matter to many communities, over and above its marketable surplus and the incomes so generated. It follows that any negotiations aimed at liberalising agricultural trade have to take these arguments seriously. To do so requires that the critical elements of the debate be widely understood.

This paper outlines these critical elements, in the light of a previous contribution from Hodge (2000). It argues that there are ways in which quasi-market systems can be used to correct market failures implicit in the notion of multi-functionality. It also argues that proper compensation to existing supported farmers is a necessary and separate condition for sensible policy reform. Much of the commentary on farm trade liberalisation confuses the two separate conditions for reform: multi-functionality and compensation. This confusion threatens progress towards agricultural trade liberalisation, without generating any reliable benefits of a more multifunctional agriculture.

Keywords: multi-functionality; agriculture; trade negotiations; liberalisation

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1. Introduction

Hodge (2000) argues that agricultural multi-functionality admits, if not demands some level of production-related support². Hodge identifies the circumstances in which such support is the only practical policy option as:

- Countryside services are produced as complementary joint products with agricultural production, where production of agricultural products necessarily entails production of countryside services (which Hodge characterises as the ‘output’ model of agricultural and countryside services);
- These countryside services have significant public good characteristics and hence suffer missing markets and consequent market failure;
- The attributes of the services are either impossible or impractically difficult and costly to separately identify or measure.

In these circumstances, Hodge argues that: “payments to farmers can represent the correction of a market failure rather than a distortion to trading relationships. Consequences for agricultural output are to be expected and are analogous to the changes in demand for one product, such as wool, having an effect on the market conditions for the joint product, such as sheepmeat” (p 271). Hodge thus concludes that such payments should not be included in an Aggregate Measure of Support as far as trade negotiations are concerned, despite their clear effect on production.

2 Latacz-Lohmann, 2000, makes a similar argument, which both authors rehearse in the cover article of the premier edition of EuroChoices (Spring, 2001), a joint popular publication by the Agricultural Economics Society (UK) and the European Association of Agricultural Economics.

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Hodge suggests (p 271-2) that the criteria for judging claims for green box status for these payments should include:

- Whether the provision of the environmental value is regarded as a definite external benefit, so that the Provider Gets Principle applies;
- Whether, in the absence of that payment, the environmental return and output would be below the level demanded;
- Whether there is a demonstrable link between the action that is supported through the payment (production) and the specific external benefits;
- Whether the policy mechanism is targeted on the most appropriate indicator.

Although Hodge admits that these criteria will often be difficult to satisfy unambiguously, transparency should be a major element of the assessment procedures. When these criteria are met, then and only then can producer payments be seen as payments for the production of valued countryside services (or Conservation, Recreation, Amenity and Environmental – care – goods (McInerney, 1986)). If so, then the level of payment should reflect the costs of providing the service. Where these criteria are not met, there is no case for justifying support payments as “compensation for natural constraints and disadvantages” (European Commission, 1998). To seek to compensate for natural differences in production conditions is to deny the fundamental basis of trade itself, and is properly seen as a thin disguise for protectionism (Swinbank, 1999).

While Hodge’s prescription appears plausible and logical, and is clearly accepted in the current negotiating position of the EU in the Doha round, the representation of the relationships on which it is based is questionable, and deserves more attention. Current

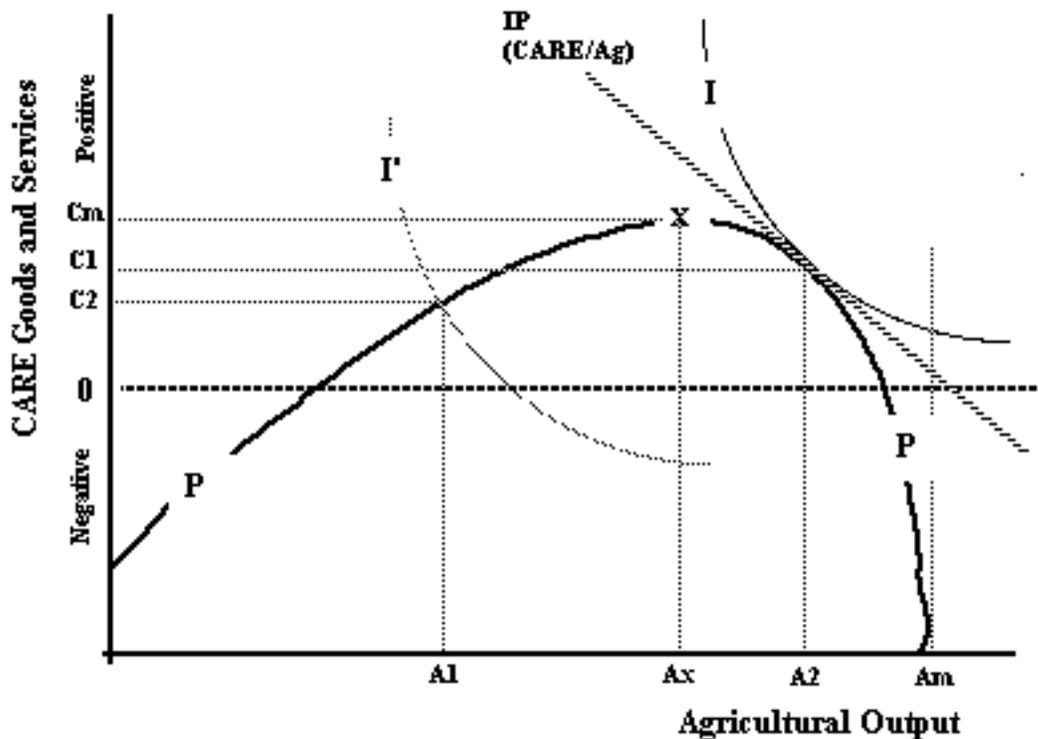
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WTO negotiations on agriculture will clearly include a substantial debate about green payments and their allowable or justifiable market distorting influence. It is important for this debate that the logical basis for considering direct production-related payments to farmers as payments for multifunctional outputs is unequivocal.

2. The Illustrative Model Revisited

Hodge's illustrative model is reproduced as Figure 1.

Figure 1 Production Opportunities for CARE and Agricultural Products



In this figure, **PP** represents the production possibility boundary (PPB) for a given area of land, capable of providing both agricultural (or other biomass) output as well as a bundle of countryside or care goods and services. Over a certain range of agricultural production

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(to the left of **X**), the production technology is such that both care and agricultural goods are produced in complementary fashion as joint products (which Hodge labels as the ‘output’ model). Indeed, in this representation, a certain reference level of agricultural output is necessary to generate a positive production of care goods. Below this level, the agricultural disruption of the natural landscape and ecosystem generates a negative output of care goods. At levels of agricultural output greater than **A_x**, however, further agricultural production results in a reduction in the care provision (the ‘input’ model, with agricultural production being competitive with care provision).

The optimal production mix can only be defined with reference to a community indifference curve (**I**). Once this is identified to the producers, the optimal mix **C₁**, **A₂** will be produced, implying an incentive price ratio (**IP**) between the production of care and agricultural products, which is simultaneously both the supply price ratio (the slope of the PPB) between these goods and also the demand price ratio (as the slope of the indifference curve).

Hodge argues that in conditions where farmers are only rewarded for agricultural output and are not rewarded for care goods, they will produce **A₁** agricultural output and only **C₂** care goods. However, the logic of this assertion is not clear. If farmers are only rewarded for agricultural production, then the incentive price ratio between agricultural and care goods becomes vertical as far as the farmers are concerned, since they are paid nothing for care goods. At this price ratio, other things being equal, they will produce **A_m** agricultural output, and not **A₁**. Conversely, if farm production is not rewarded at all, and farmers are only rewarded for their production of care goods, they will produce **C_m** care and **A_x** agricultural goods (indicating that there is some substantial complementary

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jointness in production). In other words, providing farmers can recognise incentive signals (whether by market price or by public subsidy), the 'output' model section of Figure 1 (to the left of **X**) is irrelevant to the analysis of farmers' economic behaviour. There are no price or reward signals that could possibly result in farmers operating on this section of the PPB.

However, this conclusion depends on the extent of the demands for the two products from this given area of land. Since this is a partial analysis (ignoring the rest of the economy and the rest of the country), the only coherent interpretation of the community indifference curve is as an effective social market demand schedule for both care and agricultural goods, indicating not only the relative prices of care and agricultural goods, but also the extent of the market for quantities of each good. It is possible that the effective demand for the products from this land is actually less than the productive capacity of this particular area of land. If **I'** is the total demand for both agricultural products and for care goods from this particular area of land, the social market could generate an outcome of **C2** care and **A1** agricultural outputs. However, in such conditions, the supply price ratio (reflecting the technologies and production practices employed by the agricultural and land management industries) would be expected to alter to match the effective demand. This would contract the PPB so as to be tangential to the effective demand relationship, which in turn would reflect the extent to which care goods are valued separately from farm products.

This condition illustrates the phenomenon of desertification. Historically, the population of remote rural areas was sufficient to generate an effective demand for the production of both care and agricultural products equivalent to **I**, given the available technologies and

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infrastructures of the time. However, technical, economic, social and structural changes have led to a decline in the effective demand for these particular products to **I'**, especially because of the increasing availability of competing agricultural products from elsewhere, and the emigration of people from these remote areas to other more attractive locations.³ The consequence is that both agricultural and care production decline from **A2** to **A1** and **C1** to **C2** respectively. Such areas are popularly seen as suffering from natural constraints and disadvantages. However, the underlying causative constraint and disadvantage from which they suffer is actually an insufficiency of effective demand for their potential products, rather than an innate natural disadvantage of their location and circumstance.

Part of this demand insufficiency may well be caused by market failure – the lack of an effective market for the externalities and public good care aspects of a cultivated landscape. In this case, the logical remedy is obvious: ensure that the effective demand (closer to **I**) is reflected properly to land users. In practice, though, the social valuation of the bundle of care goods is difficult. Furthermore, the technical production relationships between agricultural and care goods are largely unknown. It is attractive to suppose that the socially optimal production mix can be provided by paying farmers to produce **A_x** agricultural products, instead of paying them directly for the production of the required care goods, as Hodge recommends.

However, such a solution only begs the questions that it seeks to answer. How do we know what sort of agricultural production to pay for and encourage unless we have a

³ The possible shift of this particular production possibility boundary in favour of agricultural output, because of technical and structural change, is ignored here in the interests of simplicity.

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good idea of the technical production complementarities? How do we know how much agricultural production to pay for unless we have a good idea of the social value of the care goods we get as complements? In other words, the supposed solution does not solve the practical difficulties of determining the technical relationships between care goods and agricultural production, or of establishing the social values of care goods. It side-steps these critical issues. As a consequence, it runs the substantial risk of being used as a façade for the continued support and protection of farming.

3. Clarification: a different illustrative perspective

Solution of these problems requires that they be clarified. The illustrative model of Figure 1 is not an appropriate device for this purpose. Figure 2 shows a different and more comprehensive perspective (from Harvey, 1991 and Traill, 1988).⁴ We concentrate on a particular area and location of land, and consider the production of both care and agricultural outputs as the intensity of land use increases, i.e. as the quantity of agricultural output (and hence use of inputs) per hectare increases.

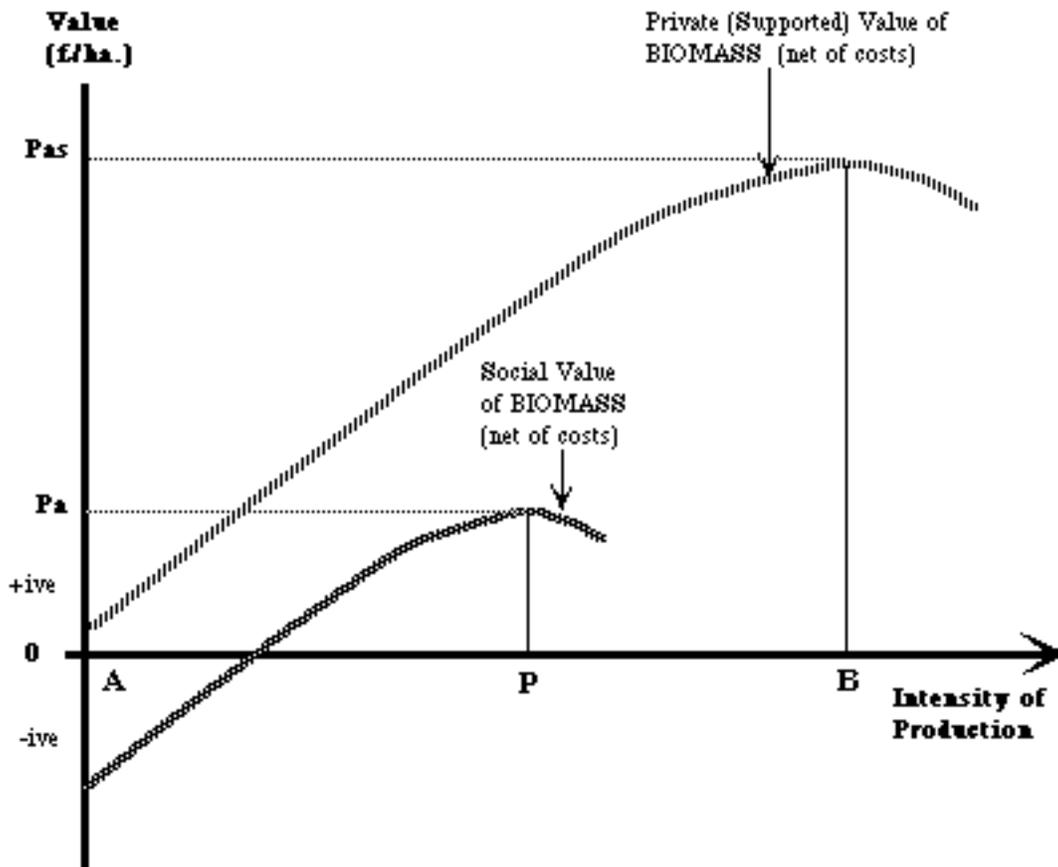
Consider, first, the situation in which the farmer receives no reward for care production, but is only rewarded for agricultural production, which is subsidised. The margin between total revenues and all costs except land rents will increase to some maximum (optimum) point as production is increased. Thereafter, further increases in land use intensity will generate diminishing returns, and the margin between total revenues and all

⁴ Interested readers are also referred to an extensive analysis of multi-functionality by the OECD, 2001. A recent and more technical treatment of the problem is provided by Vatn, 2002.

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costs except land costs will diminish. A competitive market in land will (in time) ensure that those who can earn the most from land, after covering all other costs, will end up using the land. The use of the land will be dictated by the returns to be earned from agricultural production, and the value of land will be maximised. This point is illustrated for this particular area of land as point B in Figure 2, as the private profit maximising level of intensity. Notice that, under reasonably competitive conditions, it would be expected that this maximum value of land would take proper economic account of the conservation of soil properties and fertility, since to exhaust these would damage the value of the land.

Figure 2. Value of Land Using Activity with Intensity of Production .



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However, this value is partly derived from the subsidies paid for agricultural production, including so-called direct payments, which depend on the number of livestock kept or areas of crops grown. If these were to be removed, the net value of agricultural production would fall, as would the returns to land, as (dramatically) illustrated in Figure 2. Removal of these subsidies, in the spirit of trade liberalisation, would generally reduce the level of intensity, since lower valued outputs justify lower levels of spending on the necessary inputs, so that intensity of production declines to **P** (the ‘input’ model above), with agriculturally based land values falling from **P_{as}** to **P_a**. The decline in output (and thus input use, including labour and management) as well as the fall in asset values, is an indication of the adjustments necessary to cope with support elimination.

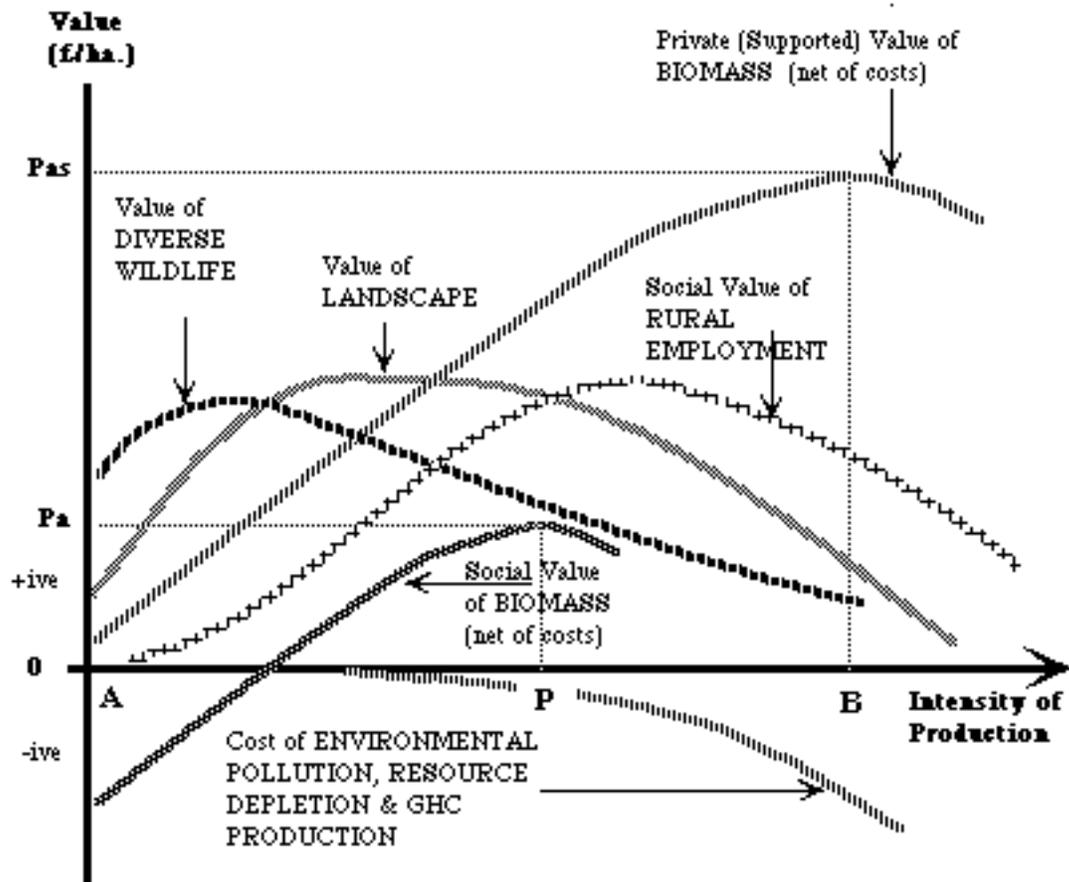
Nevertheless, agricultural activity also produces a cultivated landscape and associated wildlife – the care goods – that are also socially valuable. These care goods can be represented on this diagram by hypothesising relationships between the value of these components and the intensity of agricultural production, as shown in Figure 3.

As illustrated here, it is plausible to suppose that a cultivated landscape might be valued more highly than a wilderness area, though may be characterised by a less diverse (or at least different) wildlife. It is also plausible to suppose that more intensive production results in a greater production of pollution and other negative externalities. In addition to these care goods, a further curve reflects a possible relationship between intensity of land use and rural employment, as one measure of socio-economic concern, here assuming that greater intensity beyond a certain point tends to be associated with a shift in employment associated with land use (at least in terms of producing biomass) away from rural areas and towards the industrial and urban areas, or even offshore, as purchased

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inputs and bought capital plant and equipment increase with intensity. In principle, separate curves could be added to represent contributions to reducing greenhouse gases and net costs of depleting non-renewable resources, here included in the general pollution curve. Other curves, representing country sports provision for example, could also be included.

Figure 3. Intensity of Agricultural Production and Care good production.



Notice that the relative slopes of these curves at each level of intensity reflect the differing conditions of jointness of production between care and biomass (agricultural) goods. Where the latter curve is rising as the care good curve rises, the two are complementary, the products are truly joint, which is Hodge's output model. At those

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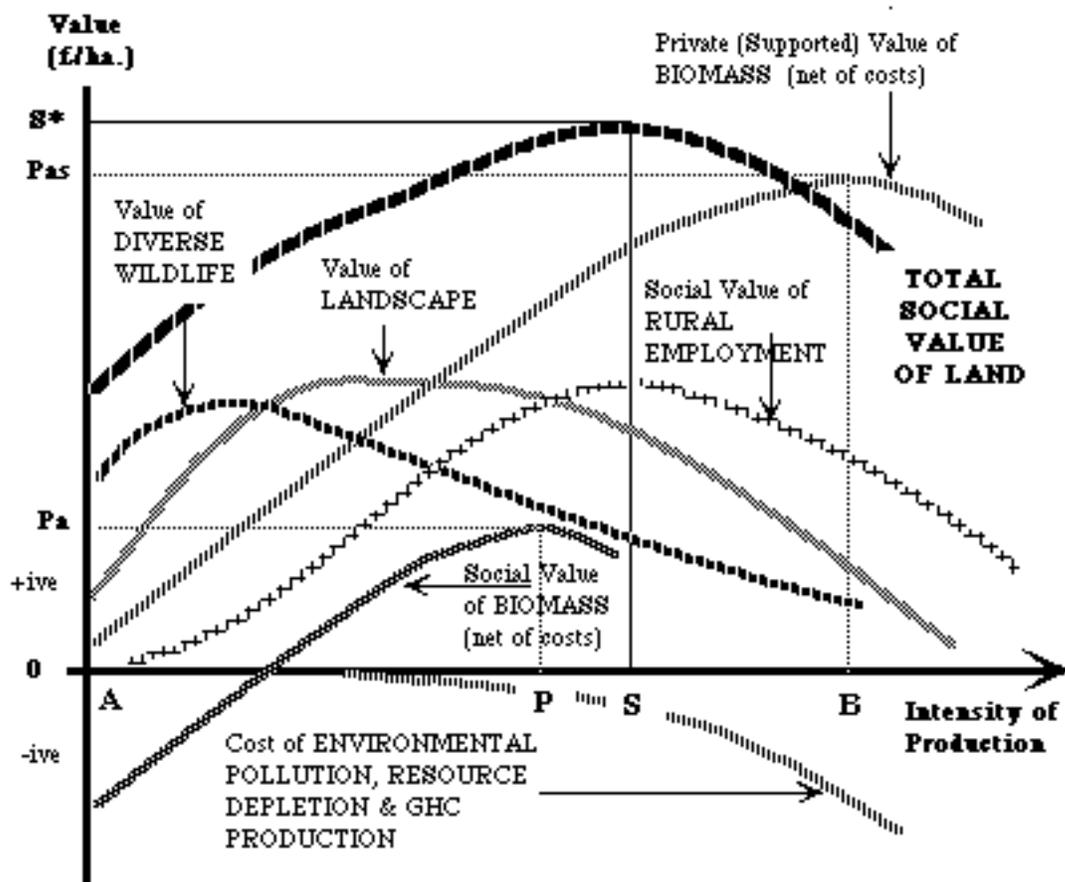
levels of intensity where the biomass and care goods are sloping in the opposite directions, provision of biomass competes with provision of care goods, and production of each is no longer joint but competitive. Obviously, the precise position and slope of each of these curves is dependent on the technologies which are employed, as well as the natural capacity of the particular parcel of land in question.

Supposing that each element of the care good bundle can also be correctly valued and reflected to the land users in their returns, the social value of land at each level of intensity now becomes the vertical sum of the component value curves, as illustrated in Figure 4. This particular representation shows that the socially optimal use of land actually involves greater intensity of production (at point **S**) than the purely private use of land, solely dependent on liberalised markets, would produce (the 'output' model result).

However, this particular circumstance is only one of a large range of possibilities. In particular, the more care goods and services are separately encouraged and paid for, the more one might expect technologies and production practices to be developed to produce these goods. The shape and position of these curves thus depends on the rewards offered for their production, as well as on the specific characteristics of the land and its owners and users.

Three important characteristics of land use are worthy of emphasis in concluding this brief outline of the framework. First, both social valuations and the underlying technical relationships will vary between different regions and locations. This makes the spatial representation of this framework a critical feature of the analysis and also means that appropriate policy prescriptions are likely to be highly locationally specific. Solutions that rely on universal or even large regional application are unlikely to be effective.

Figure 4. Social Value of Land Use & Intensity of Agricultural Production.



Second, land-users responses to both the physical production possibilities and to market incentives and policy signals/constraints are likely to vary depending on individual and social circumstances, and on their motives. Responses to similar market and policy conditions in similar regions are likely to be heterogeneous simply because people do different things for different reasons. Even the economist's assumption that individual behaviour is 'economically rational' - driven by profit/income on the production side and rational choice leading to increased satisfaction on the consumption side - admits of different responses depending on whether land use is seen predominantly as a production or consumption activity. In practice, people are more complex than is conceived of in the

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simple economic model, and their responses will be more diverse than is envisaged in a rigorous application of this framework, though not than is catered for in a properly functioning market place.

Third, different policy options, technological possibilities and market conditions will encourage different production techniques which will shift and alter these curves, while changing incomes, prices and preferences (possibly associated with better or more information) among the general population will change social valuations associated with the goods and services. Thus, the picture is only a snap-shot, and is subject to substantial and generally unpredictable change over time. The dynamics of land-use relationships are deliberately ignored in Figure 4, but cannot be forgotten in the use of the framework for the identification of appropriate policies.

4. The Policy Problems

Multi-functionality of agriculture can hardly be denied. There are clearly conditions in which biomass production also generates substantial joint provision of care products, and *vice versa*. But, it is also clear that joint production is not ubiquitous. There are also conditions in which agricultural production is clearly competitive with care provision. As this framework demonstrates, recognition of multi-functionality does not provide a simple solution to the problem of sensible and justifiable policy reform. The critical policy issues arising from this analytical framework are as follows.

First, removal of existing production related support would clearly result in substantial reductions in agricultural asset values, and consequent adjustment problems. On the other hand, proper reward for care provision could well at least offset these declines, if

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not more than outweigh them in some conditions. There is clearly a temptation to conflate these two statements and suppose that payments justified by care provision (multi-functionality) can both be justified and simply replace existing production-related payments, and hence avoid the difficulties of facing existing producers with a substantial erosion of their asset values.

However, the second policy conclusion from the previous analysis is that there is no reason to suppose that subsidising any particular level of agricultural output will generate a required or desirable provision of care goods. In fact, there is good reason to suppose that subsidising agricultural production – shifting the biomass curve – will be more likely to result in production competing with care good provision than being complimentary to it. This tendency will be re-inforced so long as the care provision (and its components) remains substantially un-rewarded or under-priced. There is no general justification for paying for production as a payment for multi-functionality, as apparently supported by the Hodge analysis (and also by the Vatn analysis (*op. cit.*)). In logic, there is every reason to suppose that such payments might actually reduce the multifunctional performance of agriculture.

This leads to the third critical policy issue. Provision of care products in conjunction with agricultural production (multi-functionality) is complex and multifaceted. It is both highly dependent on specific local conditions, and also highly dependent on the instruments and transactions used to secure the provision. Policies or strategies to ensure proper provision will be necessarily and inherently complex, and difficult and costly to design and execute.

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The crux of the policy problem, as widely recognised (e.g. Buckwell, 1996), is that care goods are frequently associated with market failures, either because they are the products of externalities or because they are public goods. In either case, the care goods are not 'commodified' in the market and are not priced properly. The popular (population) demand for them is not made effective or indicative. As a consequence, the suppliers are not explicitly rewarded for their provision and hence cannot be expected to supply them in appropriate quantities or with the appropriate production practices. The reason that markets fail follows from the underlying problems of externality and public goods. The transaction costs associated with both defining and allocating property rights to these goods, and with arranging the consequent trade between users and suppliers, are effectively regarded as being too high in relation to the benefits generated by their incorporation within the market system.

Thus, the twin focus of sustainable policies from this perspective becomes: a) get the price of biomass "right" (without distorting and supporting it (as under the CAP), which shifts the biomass curve upwards and to the right); b) "properly" reflect the public or social values of the care goods (including pollution) back to the landowners and users. Only then can we expect market forces and a properly liberalised market to encourage land users to operate at the socially optimal level of intensity and multi-functionality at point **S** (Figure 4 above). But the critical problems with this prescription are: a) the transition costs associated with this change from present policies; b) the transaction costs associated with proper provision of the care goods, including a proper reflection of care values as the social value of multi-functionality.

5. Market Responses

In practice, societies find ways of coping with market failures and difficulties, albeit not necessarily fully efficiently. As people become richer, the demands for care goods increase and the potential benefits from overcoming transaction obstacles increase. As a result, more effort is made to overcome these difficulties and to arrange for the proper provision of these goods. Some of this increased demand results in increased pressure on governments to do something, leading to government programmes for the maintenance and enhancement of the countryside. However, this response tends to lead to problems of its own. Government intervention means that the demands for and supplies of care goods are mediated through a bureaucracy rather than directly negotiated. Since the contractor (the government) is neither the beneficiary nor the supplier, it is to be expected that both the efficiency and the effectiveness of the deals suffer. Government responsibility inevitably removes competition and reduces voluntary cooperation, which tends to breed inefficiency, if not actual abuse. Not least is the danger that protectionist pressures from the farm sector will result in excessive and less than fully conditional payments for care provision.

But people do other things to satisfy their demands for care goods, rather than demand that government does it for them. They seek and find other methods of governance of the market. They join clubs, trusts and associations, such as (in the UK) the Royal Society for the Protection of Birds (RSPB), and various wildlife trusts. They pay, voluntarily, for the extra provision of care goods, despite their public good nature. Although the strict application of self-interested economic rationality appears to rule out such voluntary contribution, it clearly happens, and at an increasing rate as people become richer. In

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addition, people find other ways of paying the necessary costs of care provision. At least some of the premia paid for speciality and locally produced products reflects a popular (if not yet widespread) demand for the means by which they are produced. By paying more for particular local and original products, at least some people know that they are contributing to the preservation of the production methods and family businesses that depend on these production systems. Such voluntary and competitive transfers could, no doubt, be increased with appropriate marketing techniques.

Over and above these collective actions to provide for care goods, some individuals also provide them for themselves, if they are rich enough or have a strong enough demand for them. Some farmers continue to farm in an environmentally and landscape sensitive manner, even though they and their creditors know that they could be more efficient (and less caring). As people become richer, they frequently seek to extend their property ownership and access, buying or renting rural land. These incomers also frequently demand that their own landscapes and rural environments are preserved and protected, and ultimately are willing to pay to ensure that they are. Furthermore, as economies develop, so the service sector expands and industries become more footloose and less dependent on being in specific locations. The general demands for larger and more rural living and working spaces result in expansion of the historically urban economy into rural areas, where care provision is an important aspect of the attraction of these areas. Once again, ways and means are found to ensure that the rural environment is cared for and that care goods are provided, albeit imperfectly.

6. Policy Implications

The previous paragraphs may suggest that the market, if left free to its own devices, will take care of care good provision, and hence of a multifunctional agriculture, at least to a considerable extent. However, there are two critical features of the transition between policies that directly support agriculture and those that seek to correct market failures for care goods, and thus respect the multi-functional character of farming. The first is the most obvious: the fact that markets, however benign, will tend to undervalue public goods because of the free rider problem, while the transactions costs of resolving this difficulty prevent cooperative actions to provide for multi-functionality. The second is more subtle: the fact that existing policies of farm support have both an economic legacy and a political ancestry and nurture which cannot be ignored in any policy transition process.

6.1 Provision for public care goods

The key policy problems posed by public care goods are:

- They are valued as the sum of all peoples' willingness to pay (the price people are prepared to pay for the provision of the single public good), rather than the sum of the quantities people are willing to buy at any particular price. But since there are incomplete markets, people are not provided with natural opportunities to signal their willingness to pay, so guesses have to be made. As a result, the signals (both incentives and penalties) to actual and potential suppliers are weak and confused.
- The care goods themselves are quintessentially differentiated and locationally individual, and subject to highly specific production systems. This fact makes

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specification of the activities to be pursued to ensure their provision equally specific, individual and differentiated. The necessary signalling and transactions systems need to provide localised and specific incentives and penalties as a consequence.

Bureaucracies and typical government policy directions are not well suited to solving these problems. Design and implementation of environmental conservation, enhancement and countryside stewardship schemes proves difficult and typically expensive, while the outcomes are not always as expected (e.g. Whitby (ed.), 1994, Falconer & Whitby, 1999). On these grounds, continued (albeit re-directed and conditional) farm support may be argued (as by Hodge, *op cit.*, and also Vatn, *op cit.*) as an acceptable second best solution. However, the fact that the social values of care goods are necessarily contested makes them subject to political failure – being either over or under-valued according to the political interests of the constituencies most affected. Given that political systems tend to favour the *status quo*, it is to be expected that there will be a political presumption in favour of high social valuations as justification for continued farm support. In addition, since the management prescriptions are also contested, frequent adjustment and modification of policies will be pressed for and implemented. The forthcoming negotiations within the WTO about green box status are only one example of the contestable nature of care good provision.

Furthermore, estimates of these social valuations necessarily include non-market evaluations, for which people have no direct trading experience. It is well established that, unless people are asked to actually “put their money where their mouth is” when expressing preferences and rankings, their choices tend to be inconsistent, non transitive

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and irrational (e.g. Shogren, 2002). While it may well be a libertarian foundation that individuals are entitled to their irrational choices and preferences, it is hard to argue that they are also entitled to impose the consequences of these irrational choices on their neighbours and on those required to pay for these choices – the taxpayers. It is difficult to make contingent valuations truly contingent (e.g Bjornstad and Kahn (eds.), 1996; Willis and Corkindale (eds.), 1995): on other choices people make with their limited resources; on other conditions surrounding the particular choice about a particular public good; on the levels of provision and funding for this and other public goods; on the choices made by other people; etc. However professional and careful the estimates of social valuations of public goods, they will be contestable. If they become more important as the criterion for allocation and distribution of public support – as the multi-functional attributes of rural land management suggest they should – these valuations are likely to become even more contested.

Nevertheless, it does seem clear that private voluntary contributions towards the provision of care goods (via the market place) will necessarily under-value the social benefit of these goods, and lead to the under-provision of these goods. Many people will free-ride on the altruism and social conscience of the minority. Indeed, strictly self-interested economic analysis assumes we will all free-ride. Some public action and intervention is therefore justifiable. A possible route to reconciling these difficulties is to make more use of the emerging conservation, amenity and recreation trusts (carts, as Dwyer & Hodge, 1996, term them). The voluntary contributions made to these trusts (such as the RSPB in the UK) are an indication of the public willingness to pay for countryside and care goods, while their diversity is an indication of the differentiation of

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these goods. The activities of the trusts themselves are directed towards providing the care goods, either directly or through contracts negotiated with individual farm or land using businesses. Furthermore, it is possible to estimate the extent to which private voluntary contributions are likely to undervalue the public or social benefit of these goods, by comparing the existing private and voluntary provision with estimates of the general willingness to pay for these goods. In any event, it should not be beyond the wit of man to reach a judgement about this likely (justifiable) shortfall. Public policy could then be restricted to simply top-loading voluntary contributions by a given amount – making good the public good payment shortfall - and leaving the voluntary trusts with the responsibility of providing the care goods. In other words, public policy could simply encourage the further development of the private market (as represented by the trusts) for care good provision.

Consider the desertification case illustrated above. Traditional farm support has been, though barely, sufficient to preserve farming activity in areas where it would not apparently survive under conditions of liberalised agricultural markets. These local communities have the vote, and cannot be expected to vote for their elimination. Furthermore, they can rely on a sympathy vote from other non-locals, who have fond memories of their ancestors' occupations and homes, or who like to know of the preservation and continued existence of their cultural roots, or who either occasionally visit and enjoy these remoter communities and environments, or wish to preserve their own and others' options to do so. Hence the political attraction of the multi-functionality idea, as a justification for continued farm support, at least in remote areas. However, supporting farming will not necessarily result in care provision, at least not without much

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bureaucratic intervention and control – itself destroying much of the attraction and value of care.

Suppose, however, that all those people who value this particular location and its associated environment had the opportunity to join and contribute to a community/environmental trust. This trust would lever additional funds from the public purse, reflecting the difference between voluntary subscription and the full social value of the care provision, including the preservation of the community itself. The trust would be responsible for the local negotiation of contracts for and commitments to the care of the locality. Meanwhile, however, all previous direct and support payments to the local farmers would cease. At least some of the local farmers might then decide that their futures lay elsewhere, thus allowing others to take over their land and buildings and organise their activities so as to contribute to the care of the local community. Their capital base – the value of their assets – would be reduced so long as they remain devoted to non-caring agriculture. This reduction would encourage the re-allocation of these assets to more productive and careful use.

The signals provided by this approach seem more likely to properly reconcile the twin difficulties of valuing care goods and allowing for their differential and specific provision. As far as the consuming or benefiting public is concerned, not only are they required to actively signal their own willingness to pay in order to trigger provision of the goods, they are also encouraged to trade between the several trusts available, and also to promote their own new versions, if they consider the existing ones insufficient or inefficient. Furthermore, if the members become dissatisfied with the levels and types of

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care good provision being offered by the trusts, then their own active participation can be used as an effective remedy.

In other words, the trusts would be largely self-policing, through competition between themselves to provide what the public are prepared to pay for, in the amounts and qualities for which they are prepared to pay. The contests over both valuation and provision would become endogenous within the system, rather than as at present remaining exogenous or external to the system, relying on government as a benevolent dictator. Some ombudsman service would be required to act as arbiter for internal or inter-trust disputes which could not otherwise be settled. It would also be necessary to institute some procedure for vetting the activities and contracts of trusts to ensure that recipients of public funds were actually contributing to the provision of public goods. Trusts could be licensed to operate as a trust, and thus receive public enhancement of contributed funds. Allowing at least a proportion of voluntary contributions as a tax-deductible expense for contributors would further reduce the free-rider problem.

The only features of this quasi-market system that would require international negotiation and sanction are: a) the extent of government top-loading of voluntary subscriptions to care trusts; b) the definitions, establishment and policing of the eligible trusts themselves. Otherwise, there are no grounds for international sanction over private market decisions. Consumers and constituents' private and independent actions cannot be declared *ultra vires* by the WTO. Indeed, these conditions are central to the appropriate definition of eligible trusts. As to the extent of government top-loading, it should be possible to rely on professional estimates of the shortfall in total valuations relative to private voluntary contributions, which would be subject to scientific validation and cross-examination

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within the terms of international agreements. In any event, so long as all these funds are channelled through eligible trusts, there should be the presumption that their trade distorting influence is minimal. At the very least, there can be no greater quarrels over these payments than there will be over continued direct payments, which otherwise seem likely to persist. The top-up payments proposed here seem more readily justifiable as support for legitimate multi-functional objectives.

6.2 Political Ancestry and Economic Legacy of conventional Farm Support

The previous discussion argues strongly that there is a more rational, efficient and practical way of encouraging desirable multifunctional agriculture than continuation of direct (even if cross compliant) payments to farmers to farm. However, there is little sign yet of active development of such new policy directions and instruments, or of a public or political willingness to consider such alternatives (e.g. DEFRA, 2002).

Despite the rhetoric, policies are seldom reformed simply and only on the basis of present economic rationality. Rather, policies evolve (e.g. Harvey, 1995). Adaptations and adjustments are made to existing policies to better fit them to changing economic and social conditions. In so doing, they can be expected to take the line of least resistance. According to this logic, the notion that multi-functionality is a sufficient justification for continuing direct, if cross-compliant, payments to farmers for farming makes some sense. So, too, does the notion that formal government is the best, if not the only possible provider of public goods. To hope that a more rational solution might be found requires the analyst to identify the reasons for the resistance to more radical change. Only then can these causes of inertia be directly addressed and reduced. The causes of inertia are

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embedded in the character of the current policies, themselves a product of their political and economic history – their nature and nurture.

In essence, the traditional systems of market and price support and protection for farmers can be seen as a natural consequence of the development process itself. Economic development necessarily involves fewer people earning a full time living from farming than in the past. The losers from economic progress are those who find themselves stuck in the declining industries, archetypically agriculture. Especially in democracies, these peoples' political power (based on numbers and geographical distribution) substantially exceeds their economic muscle, while they can also rely on the sympathetic votes of their descendants, now no longer working in agriculture or even living in rural areas, yet retaining romantic perceptions of the value of their farming heritage. Protection and support for the agricultural industry is a natural consequence,⁵ even if justified by a rhetoric emphasising economic contribution of the industry and stability considerations.

This support breeds an economic legacy. There is no doubt that market support of the farming industry does not improve the incomes of those in farming, as both economic logic and history show. Farming incomes continue to be dependent on what can be earned in alternative occupations, not on the additional spending on farm products. The additional spending simply encourages additional resources into the industry (especially

⁵ This, incidentally, creates an especially difficult and largely unrecognised problem for the European Union and the intended enlargement to include the Central European countries (CECs). These countries are now in very similar economic and political conditions to those experienced in Western Europe at the time of the development of the Common Agricultural Policy. The political-economic imperative is to provide some obvious and needed support to a declining industry, and the most obvious support is via product prices and market protection, which is also easiest to deliver. Unless an equally obvious and easy to deliver support system is devised for the CECs, it is difficult to see how their political imperatives can be squared with the supposed economic realities of both the present EU or the WTO.

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from the manufacturing sectors) and additional competition for the industry-specific assets, especially land, whose prices (and thus costs) rise. Farm incomes do not improve.⁶

To the extent that farmers own the industry-specific assets, their wealth does improve. However, newcomers to the industry are obliged to pay up front for their continued support in the form of increased prices of the assets necessary to farm. The same applies to those existing farmers expanding their operations. The consequence is that elimination of conventional support would substantially undermine the viability of the present farming industry. Furthermore, since the payers (the consumers and taxpayers) are very many, while the recipients of the support (the farmers) are increasingly few, the gains per head substantially outweigh the losses per head. The political calculus on the effort worth spending on policy change clearly favours the *status quo*. Nevertheless, the economic welfare calculus clearly shows that society could be better off without such support – the paymasters (consumers and taxpayers) lose more than the beneficiaries (the farming sector) gains. The losers from agricultural liberalisation could be fully compensated for their losses by the gainers while leaving society as a whole better off.⁷

⁶ Incomes per head (per farm) can only improve through the total sector income being shared amongst fewer people.

⁷ Here is not the appropriate place to explore this argument in all its detail (see, e.g. Ritson and Harvey, (eds.) 1997, especially chapters 7 and 8). It is true that substitution of direct payments to farmers for market intervention improves the economic efficiency of the transfers from taxpayers to farmers. In the limit, there is no conventional partial equilibrium welfare cost to a direct and fully decoupled transfer payment from taxpayers to farmers. However, such calculus ignores the substantial transactions costs associated with such transfers, which almost certainly exceed 10% of the transfer (for example, Ballard *et al.*, 1985 and Fullerton, 1991 suggest that the marginal costs of taxation, necessary to finance these transfers, exceeds 10%, over and above the direct administrative costs of making the transactions). Such arithmetic also ignores the social rationale for such specific transfers.

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While the prescription of trust provision of care goods might meet the new and growing needs for a multifunctional agriculture, there is no reason why either the levels or the distribution of public support for the farm sector would remain as it has been. Almost certainly, institution of such a system of care provision, or even the use of a more conventional system of direct government payments properly conditional on care provision, would result in substantial changes in the flows of public funds to particular people and groups. In particular, commercial farming (having already paid for its continuing support) is unlikely to find that care provision can possibly justify present asset prices and investment rates. Nor is this fact lost on the several and extended suppliers of inputs to the protected industry. A dependency culture is born, which takes a particular and unlikely political determination to dissolve, as is presently being witnessed in the development of US farm policy. Following the 1995 FAIR Act, which appeared to decouple support from production, and limit its continuance to a finite term, the passing 2002 Farm bill is both substantially more generous and a substantial return to coupled support.⁸ The unmistakable signal to the European Union in the context of the WTO Doha Round is that continued and even increased support is legitimate. This legitimacy can be further increased for the EU if it can persuade its major negotiating partners of the multi-functional justification.

It is clear that there is a fundamental conflict between the political and the economic costs and benefits of farm policy liberalisation, independent of any arguments about

⁸ The 2002 US Farm Bill appears as a rather naked political response to depressed farm markets and the need for sustained political support, coupled with the means to pay provided by a better budget position than anticipated in 1995 (see, e.g., Paarlberg, 2001). The additional support, and the reinforced expectation that future depressed prices will lead to further support, merely exacerbates the likelihood of over-supplied markets and depressed prices in the future (see also, Swinbank and Ayer, 2002).

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multi-functionality. The latter may be seen as entering the debate by the back door – as a new justification for the continued support of farming – continuing the dependency culture. However, even given that a sensible system of instruments and incentives can be introduced to promote genuine multi-functionality, there remain two major problems for would-be agricultural policy reformers. First, farmers need to be convinced of their potential for survival and prosperity in a competitive market. Second, they need to be appropriately recompensed for giving up historic and embedded “rights to support”, even if these rights are only squatters rights.

Conviction of the farming sector of its successful future under free trade is beyond the scope of this article. However, it is difficult to argue (as the European Commission does, *op cit.*) that the EU, for example, suffers any natural constraint or disadvantage in being able to supply the very substantial and rich markets for food within and near to the EU, even if not further afield. It is also difficult to counter the very substantial literature on the effects of trade liberalisation (see INEA, 2002 for a recent and comprehensive review of trade liberalisation and the EU). There is, however, no doubt that individual farmers would find it difficult to survive the transition to free markets. There would be substantial adjustment costs.

Responsible policy recommendations need to take these adjustment costs seriously. The major effect of removal of conventional support is to reduce the value of the assets currently employed in farming, as illustrated in Figure 2 above. This decline in asset value would substantially restrict the adjustment capacities of the people involved in the industry. Many of these people have clearly decided that their own comparative advantage lies in being farmers rather than doing other things. Uncompensated removal

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of existing support would simply result in a number of these people spending considerable time and effort trying to recover their previous niches in the economic sphere, as farmers. It cannot be sensible to make this re-adjustment more difficult than it need be.

A lump-sum compensation payment (e.g. Swinbank and Tangermann, 2001, or Harvey, 1997) would provide substantial capacity to adjust, not only to the market realities for agricultural products, but also to effective and expressed demands for the multifunctional attributes of farming. Not only is this solution entirely warranted according to the provisions of welfare economics and practical politics. Compensation, independent of multi-functionality considerations, also represents an efficient solution in the context of wider world economy, since liberalisation cannot be expected without some compensation. Lump-sum compensation, which is as close to being resource and production neutral as is possible in the real world, also provides for a more efficient transition to a liberalised world.

6. Conclusions

Multi-functionality is a currently fashionable argument, at least within the EU, for continued support of the farming sector. However, there is a very substantial danger that this argument will be used, and be seen to being used, as a façade for traditional support and protection. If so, then the current trend towards liberalised agricultural markets, on which much of the developing world depends, will be frustrated, at least *de facto* of not *de jure*. Nevertheless, there is a substantial kernel of truth in multifunctional argument – farming does matter to many cultures and communities over and above its marketable surplus and the incomes so generated. It follows that any negotiations aimed at

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liberalising agricultural trade have to take these arguments seriously. To do so requires that the critical elements of the debate be widely understood.

This paper has outlined these critical elements. Despite the apparent attraction, the policy of production-related payments to farmers cannot be justified as payments for multi-functional provision. Indeed, such payments are just as likely to reduce the multi-functional performance of the industry.

The paper argues that there are ways in which quasi-market systems can be employed to correct for the market failures and deficiencies implicit in the notion of multi-functionality. In particular, conservation, amenity and recreation trusts can be used effectively to resolve the twin difficulties of proper public valuation of agriculture's provision of public goods and externalities and of appropriate and effective delivery of care (conservation, amenity, recreational and environmental) goods.

The paper further argues that proper compensation to existing supported farmers is a necessary, justified and separate condition for policy reform. To muddle and confuse multi-functionality with compensation, as is apparent in much of the rhetoric, if not analysis surrounding multi-functional reform proposals, is to seriously threaten agricultural trade liberalisation, without any offsetting benefits of improving the multi-functional performance of the industry. It would be a pity if the trend towards more liberal trade in agriculture is frustrated by ill-considered attempts to cope with the obvious and legitimate multi-functional aspects of the industry, and by confusion between this requirement and the requirement for proper compensation for policy-induced losses in asset values.

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References

- Ballard, C.L., Shoven, J.B. and Whalley, J. (1985) 'General equilibrium computations of the marginal welfare cost of taxation', *American Economic Review*, 75, (March), 128 - 138
- Bjornstad D.J. and Kahn J.R. (eds.), (1996) *The Contingent Valuation of Environmental Resources* (Edward Elgar, Cheltenham)
- Buckwell, A. (1996) *A Common Agricultural and Rural Policy for Europe*, Report of an Independent Working Group to the European Commission, http://europa.eu.int/comm/agriculture/publi/buck_en/index.htm
- DEFRA (2002) Policy Commission report on the *Future of Farming and Food* (the Curry Commission), available at: <http://www.defra.gov.uk/farm/sustain/default.htm>
- Dwyer, J.C. and Hodge, I, (1996) *Countryside in Trust*, (Wiley, Chichester)
- European Commission (1998) *Explanatory Memorandum: The future of European Agriculture* (Brussels)
- Falconer, K.; Whitby, M. (1999) The Invisible Costs of Scheme Implementation and Administration. In: Van Huylenbroeck, G.; Whitby, M. (eds): *Countryside Stewardship: Farmers, Policies and Markets.*, pp. 67-88 (Pergamon)
- Fullerton, D. (1991) "Reconciling Recent estimates of the marginal welfare cost of taxation", *American Economic Review*, 81 (March) 302 – 308.
- Latacz-Lohmann, U. (2000) 'Beyond the Green Box: the economics of agri-environmental policy and free trade' *Agrarwirtschaft* 49 (9/10) (September/October), pp. 342-348.
- Harvey, D.R. (1991) 'Agriculture and the Environment: The Way Ahead?' Chapter 15, *Farming and the Countryside: An Economic Analysis of External Costs and Benefits*, ed. N. Hanley (C.A.B. International, Wallingford)
- Harvey, D. R. (1995) "European Union Cereals Policy: an Evolutionary Interpretation", *Australian Journal of Agricultural Economics*, **35** (3), December, 193 – 217
- Harvey, D.R. (1997) 'The CAP and the 21st Century', Chapter 18, *The Common Agricultural Policy*, 2nd. Edition, (Ritson, C and Harvey, D.R. (eds.), (CAB International, Wallingford)
- Hodge, I, (2000) 'Agri-environmental Relationships', *The World Economy*, 23, 2, February, 257 – 273
- INEA (2002) Series of *Working Papers on trade modelling of CAP reform*, available at: <http://www.inea.it/opaue/work.html>

Agri-Environmental Relationships & Multi-functionality: Further Considerations

- McInerney, J.P. (1986) 'Agricultural Policy at the Crossroads' Gilg, A.W. (ed.), *Countryside Planning Yearbook, Volume 7*, 44 – 75 (Geo Books, London)
- OECD (2001) *Multifunctionality: Towards an Analytical Framework*, (Paris)
- Paarlberg, R. (2001) 'The Political Climate for the Farm Bill Debate', paper for a *US Farm Bill Conference "Fixing the Farm Bill"* (National Press Club, Washington) available at: <http://www.econ.iastate.edu/faculty/harl/FFB/papers.htm>
- Ritson, C. and Harvey, D.R. (1997) *The Common Agricultural Policy*, 2nd. Edition, (CAB International, Wallingford)
- Shogren, J.F. (2002) 'Rational Choice and Environmental Policy', paper to the *Agricultural Economics Society Conference*, Aberystwyth, (forthcoming, *Journal of Agricultural Economics*)
- Swinbank, A (1999) 'EU Agriculture, Agenda 2000 and the WTO', *The World Economy*, 22, 1, 41 – 54
- Swinbank, A. and Tangermann, S. (2001) 'The Future of Direct Payments under the CAP: A Proposal', *EuroChoices*, Premier Issue, Spring: 28-29,32-34.
- Swinbank, A. and Ayre, H. (2002) 'The US Farm Bill: help or harm for CAP and WTO reform?' *AgraEurope*, May 24, A/1 – A/2.
- Traill, B. (1988) 'The Rural Environment: What Role for Europe', in Whitby, M and Ollerenshaw, J, (eds.), *Land Use and the European Environment*, 78 – 86 (Bellhaven, London)
- Vatn, A. (2002), 'Multifunctional agriculture: some consequences for international trade regimes', *European Review of Agricultural Economics*, 29 (3), 309 – 327.
- Whitby, M. (ed.) (1994) *Incentives for Countryside Management*, (CAB International, Wallingford)
- Willis, K.G. and Corkindale J.T. (eds.) (1995) *Environmental Valuation New Perspectives*, (CAB International, Wallingford)