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Policies and Measures for Multifunctional Agriculture: Experts' Insight*

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Abstract

Multifunctionality of agriculture is with the growing importance in agricultural policies. The main argument behind multifunctionality is that agricultural production and thus, the whole agricultural sector has multiple roles, not just to produce food and fiber, but also to provide several non-market commodities. Although agricultural policies in Europe set more and more emphasis on the importance of these non-commodity outputs it is hard to find policy measures designed directly for multifunctionality. The aim of our study is to find out actual and preferred policy measures in order to improve and/or to maintain the multifunctional role of agriculture. We have interviewed 24 Finnish experts about multifunctional agriculture and agricultural policy related issues, by using applied policy Delphi method. The results show, that a wider role of agriculture is highly acknowledged among Finnish experts. However, in its broadest definition, no undivided acceptance for the concept of multifunctionality was found. The policy measures part gives evidence that also the current policy measures included in the EU's Common Agricultural Policy have elements that improve multifunctionality, especially those in the agri-environmental support scheme. Yet, there is a need for targeted measures based on different national, regional and local agricultural conditions. In addition, the implementation of these measures needs more cooperation between different sector policies as well as among the different operators in the whole supply chain.

Keywords: Multifunctional agriculture, agricultural policies, Policy Delphi, Finland

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Introduction

Multifunctional agriculture is considered to be a future way of agriculture, at least in Europe. The basic idea behind multifunctionality is that agricultural production provides not only food and fiber but also different non-market commodities, with characteristics of externalities and/or public goods. In the most broadest definition these non-market commodities or elements of multifunctional agriculture are: the impacts of agriculture on the environmental state of rural areas, rural landscape, biodiversity on and close to farm land, contribution of agriculture to the socio-economic viability of the countryside and rural employment, food safety, national food security, welfare of production animals and agricultures' cultural and historical heritage (EC 1999a, OECD 2001, Vatn et al. 2002, Yrjölä & Kola 2001, Lankoski 2003).

The OECD's (2001) working definition of multifunctional agriculture includes two core elements. These elements are: "the existence of multiple commodity and non-commodity-outputs that are jointly produced by agriculture; and the fact that some of the non-commodity outputs exhibit the characteristics of externalities or public-goods, with the result that markets for these goods do not exist or function poorly". In addition, the inclusion of rural employment and food security under the concept of multifunctionality was seen controversial by the OECD.

According to OECD (2001) "rural employment related to agriculture is an input either of commodity or production or wider agro-food industries, and cannot be considered as a non-commodity output of agriculture or as an externality". However, it has some impacts on society, which might be considered as externalities, for example having its effects in slowing the mitigation from rural to urban areas. In addition, there are several dimensions, in which food security can or can not be seen to be a part of multifunctional agriculture. One dimension is its tie to land use, e.g. domestic supply of food can be secured through maintenance of (low intensity) agricultural production and thus production capacity. On the other hand, reliance on domestic supplies only, and thus creating the lack in agricultural trade relationships, limits the source of supplies in the case of crisis. In that case, domestic food security may form an example of a public bad. Taken these aspects into account, food security should always be considered on the basis of national, regional and historical conditions. Anderson (2000) supports the view, that food security is an international public good, and thus, should be guaranteed domestically through domestic production and imports, in a way that domestic marginal social benefit equals the marginal social cost of intervention.

While the OECD (2003a) has strict borders for the definition of multifunctionality, e.g. pure jointness in production, clear market-failure and pure public good characteristic, the EU's statement of multifunctionality is wider. According to the European Commission (1999a), "agriculture is multifunctional because it is not

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limited to the sole function of producing food and fiber but it also has a number of other functions. At the same time it is the sector taken as whole which is multifunctional". Yet, in the EC's point of view, agriculture provides *land linked* services which are *mainly* of a public good character. Overall, agriculture must be able to respond consumer concerns for example those regarding food quality and safety.

In addition, the EC (1999b) sets three different functions for multifunctional agriculture: production of food, environmental function and rural function. The first function includes adequate supplies of food with reasonable prices, high quality and safety. It is stated, that the outputs of food production function are mainly of a private nature and thus the market forces should play an important role. Environmental function includes agricultural landscape, biodiversity as well as cultural and natural values. The environmental function should be taken care of through "good agricultural practices", which are ensured by public intervention. The rural function refers to maintenance of agricultural activities in remote or peripheral areas where there are only few other possibilities of gainful employment. More generally, agricultural activities and on- and off-farm diversification can contribute to the economic and social viability of rural areas and thus to balanced territorial development. Maintaining the viability of the rural areas is ensured by regionally and locally targeted measures designed so as not to increase agricultural production in these areas.

In the latest CAP reform, agreed on in the summer 2003, the EU took a clear step towards maintaining and improving the multifunctional role of agriculture. This refers mainly to cross-compliance and modulation. Cross-compliance means that the single farm payment scheme introduced in the reform is linked to environmental concerns, animal welfare, food safety and quality with a requirement of keeping the agricultural land in good farming condition. Correspondingly, the aim of modulation is to transfer funds from the first to the second pillar of the CAP and through that to strengthen rural development within the EU. (European Commission 2003.)

The reform reflects the view of the OECD (2003a) that "most of the non-commodity outputs can be linked to the existence of certain level of production, but not directly on the intensity level of production. If a non-commodity output is not linked to production intensity but is linked to the existence of a certain level of commodity production, a policy that stimulates production intensity beyond this level will not affect the provision of the non-commodity output". By decoupling its agricultural support, the EU emphasizes to maintain more extensive agricultural production, and thus to ensure the production of non-commodity outputs, whilst decreasing the market distortions due to the coupled agricultural support.

The CAP reform was acknowledged also in the WTO. The criteria agreed in the WTO General Council in the beginning of August 2004 for blue and green box

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measures for less trade-distorting support includes elements, which can be found already in the latest CAP reform. These elements include direct payments based on fixed area and/or yields or correspondingly on fixed livestock payments. The green box criteria respects the view about ensuring that green box measures have no, or at least minimal trade-distorting effects, or effects on production, and takes also non-trade concerns into account. (WTO 2004.)

Until now, research has mainly focused on the relevance of multifunctionality as an policy option and its definition (OECD 2001, 2003a, Yrjölä & Kola 2001), but also on environmental and biodiversity aspects. Lankoski (2003) and Lankoski and Ollikainen (2003) have created a model for the optimal provision of agri-environmental externalities in order to build up a framework for targeted agri-environmental policies. Peterson et al. (2002) have related environmental policies to agricultural trade in order to derive an efficient set of policies for multifunctional agriculture in open economy and Vatn (2002) has focused on the consequences of multifunctional agriculture for international trade regimes, e.g. when public goods are interrelated to trade policies. Moreover, Vatn et al. (2002), and OECD (2003b) have focused on transaction costs related to multifunctionally oriented policies

In their recent study Lankoski and Ollikainen (2004) have extended and re-examined their model by including rural viability valuation as a non-public good item in order to build up a general framework covering the broad definition of multifunctionality, and to show how agri-environmental policies should be reformed to include also the aspects of multifunctional agriculture, which can not be considered as pure public goods.

Guyomard et al. (2004) have analyzed and compared four agricultural income support programs, an output subsidy, a land subsidy, and a decoupled payment with and without mandatory production, with respect to their ability to respond multifunctional objectives of agricultural policies. The objectives considered were: the ability of agricultural policies to support farmers' incomes, increase the number of farmers, decrease negative externalities arising from non-land input use and minimize trade effects. Their analysis shows that the four policy goals considered can not be achieved using a single policy instrument and that there are trade-offs among policy targets. In addition, decoupled income transfers without mandatory production are preferable to more coupled measures for supporting farmers' incomes and minimizing trade effects. Yet, this income support instrument should be supplemented by other measures targeted to other policy objectives, if policy makers pursue additional domestic objectives other than agricultural income support.

In their recent study Yrjölä and Kola (2004) have studied consumers' preferences and willingness to pay with respect to multifunctional agriculture. In their study, Finnish citizens were asked about the relative importance of the different elements of multifunctional agriculture, when multifunctionality was introduced by its

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broadest definition. Food safety and welfare of production animals were most often considered as very important issues. On the other hand, the state of the rural environment was the second least often regarded as very important, and maintaining rural landscape is seen to be the least important element of multifunctional agriculture. Yet, in the society at large, ensuring the viability and permanent settlement in rural areas and sufficient production of wholesome and high quality food products were regarded as the key roles of agriculture. In reference to the EU (1999a), agricultural policies should be implemented in a way that they are able to respond to consumers' demand. As a follow-up for the consumer survey, our aim is to find actual and relevant policy measures, in order to create policies for multifunctional agriculture in a way that satisfies consumers' preferences.

There are three main dimensions in this paper. First, considering the differences between the OECD's (2001) and the EU's (1999a, 1999b) definition of multifunctional agriculture, our aim is to find out, whether Finnish experts support the view of either the OECD or the EU or neither one of those. Second, we have asked the experts to evaluate how well the current CAP, including the national agricultural policy measures in Finland, is responding to objectives set for multifunctionality. Third, considering the results of Yrjölä and Kola (2004), we asked what kind of policy measures would be most efficient, and how should they be implemented in order to fully benefit and enhance multifunctional agriculture, keeping the consumers' preferences in mind. Our paper is structured as follows. In the second section we will introduce the multifunctional elements and measures of the current CAP as well as national measures in Finland. The third section represents methodological background, and the results are presented in the fourth section. The last section discusses major findings and policy implications.

The Common Agricultural Policy with Respect to Multifunctionality

The EU's Common Agricultural policy has undergone some minor but also major changes since its establishment in the late 1950s. The causes for reforms and changes in the CAP have been due to both internal pressures and external demands. According to El-Agraa (2001) the need to save on costs and to protect the environment was the major causes of internal pressure. The external demands were directed mainly against the high use of export subsidies and border protection of the EU markets, especially during the Uruguay Round of the GATT (currently WTO) negotiations.

Until now, two major reforms of the CAP have been made and a third one was decided in the summer 2003. The direction of these reforms, MacSharry in 1992 and Agenda 2000, has been a shift from coupled, mainly price support, to decoupled direct income support (namely CAP support). These payments have been acreage based, meaning an input (land) tied subsidy based on historical production.

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Consequently, these direct payments have had a tie to production with respect to different support levels for different products implicating their nature as compensation payments due to lower price levels.

According to Koester and El-Agraa (2004) "the CAP has become a very complicated system, since it retains the original system for certain products while applying new methods for others and/or building them on top of the old". A close look at the CAP supports this view. The reformed CAP and its subsidies are still based on historical production and support levels. The measures introduced in the reform are mainly the same as before. Thus, the CAP-reform does not actually include anything new in terms of a more direct relationship to multifunctional agriculture.

Multifunctional Elements of the CAP

Although multifunctional agriculture has not been widely discussed until mid 1990s, there have been some elements in the CAP since 1970s that can be regarded multifunctionality improving. However, instead of being targeted directly on the basis of multifunctionality, these measures have been created in order to respond to the growing diversification of agricultural conditions through the enlargements (from EU6 to EU15) and growing environmental concerns. Some national support systems have also been implemented in order to equalize different agricultural conditions.

LFA Support

In order to respond to growing differences in agricultural conditions, a support for Less Favoured Areas (LFA) was introduced already in 1975. It was the first measure introduced directly on the basis of equalizing the differences between different agricultural regions. It was also the first acreage based direct payment introduced in the CAP, although it includes also headage based payments for livestock. The LFA support is under the Second Pillar of the CAP, e.g. it is considered as structural development measure. The LFA scheme is targeted in particular to hilly and mountainous areas, Nordic zones, small islands but also in zones, under strict criteria, where traditional farming plays a predominant role. The aim of the LFA scheme is to guarantee the continuation of farming in the areas, where natural conditions are less sufficient for agricultural production and through this, to maintain the rural population (EC 950/97). According to Lowe and Whitby (1997) LFA support may have helped some farmers in low intensity farming to stay in business while its effects on environmental aspects are less clear. Yet, in their evaluation Agra CEAS (2003) points out that LFA support scheme has failed to fully achieve its objectives. This is mainly because of partially political nature of the definition of less favored areas. Poor criteria and inconsistent definition may have led to under-compensation in the most severely disadvantaged areas, while areas where the disadvantage compared to non-LFAs is minimal or non-existent, may

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have received over-compensation. On the other hand, the LFA scheme has its effects on the provision of public goods concerning the countryside and the environment. However, these effects are indirect and thus an insufficient base for the scheme as such.

Environmental Support Scheme

The agri-environmental regulation, currently known as the agri-environmental support scheme, was introduced in the MacSharry reform in 1992. In order to have positive effects on the environment and the countryside, the aim of the scheme was to encourage lower fertilizer use and plant protection, to organic and overall more extensive farming practices, to reduce the proportion of sheep and cattle per forage area, to ensure the upkeep of abandoned farmland and to promote long-term set-aside of agricultural land. (EEC 2078/92). The main emphasis is on water protection, but efforts are also made to reduce the emissions into the air and risks due to a use of pesticides and to take care of rural landscapes. The main purpose of the environmental support is to compensate the producers for the increased production costs and decrease in the production on farms, which undertake measures aimed at reducing the environmental load due to agriculture (EC 1999b, Lowe and Whitby 1997).

The implementation of the agri-environmental payments is made through a series of programs. There are five basic mandatory measures for all farms, which have committed to environmental support: environmental planning and monitoring of farming, fertilizer base levels for arable crops, plant protection, headlands and filter strips and maintenance of biodiversity and landscape management. For livestock farms, there is a sixth basic measure concerning the handling of animal manure (including the storage conditions, taking nutrient in manure into account in fertilization and detailed instructions for manure spreading). The farmers commit themselves to the scheme for five years at a time. (EEC 2078/92, MTT 2004.)

In addition to the mandatory basic measures, each farmer has to select one additional measure. The measures available for crop farms are more accurate fertilization, plant cover during winter and reduced tillage on arable land, and farm biodiversity. Livestock farms have to select either one of these or one of the following: reducing ammonia emissions from manure, promoting the welfare of production animals and treatment of washing water from the milking room. Farmers have to implement the additional measure selected in the first year after making the commitment to agri-environmental support for five years. (MTT 2004.)

The agri-environmental support scheme includes also special measures. Farmers can made contracts concerning establishment and management of riparian zones, establishment and management of wetlands and sedimentation ponds, other methods for treating run-off water, organic production, arable farming in

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groundwater areas, increased efficiency in the use of animal manure, traditional biotypes, promoting of biodiversity, development and management of landscapes, raising of local breeds, cultivation of local crops, and reduction of acidity in certain regions. These contracts for special measures are made for five to ten years (MTT 2004).

CAP Reform 2003

Until the Agenda 2000 Mid-Term Review (or CAP reform 2003) it has been clearly stated, that direct payments are compensation for farmers' losses due to lower prices. Yet, in the latest CAP reform, a single farm payment scheme was introduced. The single farm payment is based on a reference amount covering payments for as many products as possible, including, e.g. arable crops, beef and veal, and dairy, in a reference period. The single farm payment will be broken down into payment entitlements in order to facilitate their transfer and each entitlement will be calculated by dividing the reference amount by the number of hectares. Farmers may use this agricultural land for any agricultural activity except permanent crops, having a possibility to adjust production with respect to market situation (European Commission 2003.)

The two other major parts of the reform are cross-compliance and modulation. Compulsory cross-compliance will apply in order to achieve the goals to be set in the fields of environment, food safety, animal health and welfare and occupational safety related to the farm level. Yet, to avoid land abandonment and environmental problems due to decoupling, all farms entitled to direct payments are also to be obligated to maintain all agricultural land in good agricultural conditions. Farmers, receiving single farm payment or other payments under the CAP, who fail to comply with these standards, will be subject to a system of sanctions. These sanctions can take the form of partial or full reduction of the aid, depending on the severity of the case. (European Commission 2003.)

The aim of the modulation is to strengthen rural development by extending the scope of currently available instruments for rural development. This means, to promote food quality, meet higher standards and foster animal welfare by introducing a menu of measures available under the second pillar of the CAP. These measures include e.g. incentive payments to improve quality of agricultural products and the production process, and support for producer group activities intended to inform consumers about quality schemes supported. Member countries can choose, whether they wish to take these measures within their rural development programs. (European Commission 2003.)

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Agricultural Support and National Measures in Finland

Although Finland is a part of the EU and its common agricultural policy, the less favorable agricultural conditions have forced Finland to use some national measures to support its agriculture. About 58 per cent from the total spending on agricultural support in Finland is paid from the national budget while the EU finances 42 per cent. The CAP-support is fully paid by the EU, while the LFA and the environmental support are paid only partly, 32 per cent and 55 per cent respectively, by the EU. Since 2000, the whole agricultural area in Finland was defined as less favored agricultural area (85% since 1995). Yet, at the end of 2002 the environmental support covered 92 per cent of the arable area of active farms in Finland.

The aids paid totally from the Finnish national funds include northern aid, national aid for Southern Finland, national supplement to environmental support and certain other measures (Table 1). These measures are implemented in order to secure the preconditions for Finnish agriculture in the different sectors and regions. The principles for establishment the level and regional distribution of the national aid were agreed in the accession treaty. The aid may not be used to increase production and the total amount of aid may not exceed the total support level before the EU membership.

The northern aid is targeted on the areas lying north of the 62nd parallel and in adjacent areas. Northern aid consists of milk production aids, aid based on the number of animals and aid based on cultivated area. Yet, in order to alleviate

Table 1: Agricultural Support in Finland 1995-2004 (million euros) (MTTL 1998, 2001, MTT 2004)

	1995	1999	2000	2001	2003	2004*
CAP-support	263	276	382	435	456	502
LFA						
EU share	81	101	128	131	137	137
National share	192	195	286	291	286	286
Environmental support						
EU share	119	135	155	157	167	171
National share	120	135	121	124	139	141
National measures						
Northern support	136	280	354	355	359	389
National aid for Southern Finland			141	141	133	129
National aid for crop production		59	76	81	100	
National supplement to environmental support						60
Transitional aid	724	213				
Other national aid	34	20	19	13	16	16
EU share of total support	463	512	665	721	760	810
National share of total support	1206	902	997	997	1033	1018
Total support	1669	1414	1662	1718	1793	1828

*estimate

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serious difficulties resulting from the accession to the EU, Finland has had a possibility to apply national aids for Southern Finland. However, these difficulties are not specified in any more detailed, but having the idea, that due to improving competitiveness and increased farm size this type of national aid would not be needed in the future. Finland must negotiate with the Commission every few years on the use of this aid. The next review of the national southern aid scheme will be done during 2006. The national aid for crop production was paid from 1997 until 2003. This aid was area based, targeted namely for the most important arable crops and vegetables grown in the open in Southern Finland. Since 2004, this aid is paid as a national supplement to environmental support and is established relative (per cent) to the environmental support for the crop concerned, and this share must be the same during the whole commitment period. The total amount of the supplement may not exceed certain level. (MTT 2004.)

In Finland, agricultural support is more significant in agricultural income when compared to any other EU member country. Yet, the total amount of agricultural support in Finland in year 2003 was 1 800 million euros, meaning 44 per cent of the total return in agriculture.

Methodology

Experts were interviewed by using an applied policy Delphi method. Delphi methods are, in general, used to study the opinions of experts. However, there are quite significant differences between policy Delphi and other Delphi methods. According to Turoff (1975) "the policy Delphi seeks to generate the strongest opposing views on the potential resolutions of a major policy issue". While a conventional Delphi can be regarded as a method for making policy decision, the policy Delphi is a tool for the analysis of policy issues. Raynes and Hahn (2000) introduce the policy Delphi as a systematic method for obtaining, exchanging and developing informed opinion of an issue. However, they suggest that the policy Delphi should be used to develop consensus either for or against policy issues, while Turoff (1975) and de Loe (1995) argue that finding of consensus is not appropriate for the policy Delphi.

According to de Loe (1995) the policy Delphi and conventional Delphi have very little in common. In addition to their very different purposes, they expect very vastly different things from their subjects. When conventional Delphi seeks to generate consensus among experts, the policy Delphi seeks to find information and options available for future policy decisions.

The purpose of the policy Delphi method is to find out different opinions, which are due to different interests and background of the experts interviewed (Turoff 1975). A Delphi typically consists of one to several rounds of questionnaires providing a group of experts with information and questions. If the experts are interviewed

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more than once, the results from the previous Delphi rounds are used in designing the questionnaire for the latter rounds.

Turoff (1975) suggests six different steps for designing the policy Delphi:

1. Formulation of the issues. What is the issue that really should be under consideration? How should it be stated?
2. Exposing the options. Given the issue, what are the policy options available?
3. Determining initial positions on the issues. Which are the ones everyone already agrees upon and which are the unimportant ones to be discarded? Which are the ones exhibiting disagreement among the respondents?
4. Exploring and obtaining the reasons for disagreements. What underlying assumptions, views or facts are being used by the individuals to support their respective positions?
5. Evaluating the underlying reasons. How does the group view the separate arguments used to defend various positions and how do they compare to one another on a relative basis?
6. Re-evaluating the options. Re-evaluation is based upon views of the underlying evidence and the assessment of its relevance to each position taken.

Turoff argues that these six steps could be collapsed into a few rounds. However, i.e. de Loe (1995) collapsed these into a two rounds, by dropping out the fifth step from the process.

Delphi methods have been used in several fields of study. Rikkonen (2003) has evaluated future alternatives of Finnish agriculture. Horst et al. (1998) and van der Fels-Klerx et al. (2000) have assessed risk factors for various animal diseases using Delphi methods together with conjoint analysis. Wilenius and Tirkkonen (1997) have used Delphi in evaluating the future of Finnish climate policy and Tapio (2002) in evaluating the prospects of climate and traffic in Finland. Moreover, Crithcer and Gladstone (1998) have utilized the Delphi technique in the British electricity supply industry, in order to find consensus among people who would not normally cooperate.

Design of the Survey and the Interviews

Considering the many different frameworks in which Delphi and policy Delphi methods have been used, we decided to combine two essential parts in a one round policy Delphi i.e. by sending a questionnaire beforehand and by interviewing the respondents at the same time when collecting it.

We used informative and structured questionnaire, which included also open questions. Due to a variation of the level of expertise with respect to multifunctional

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agriculture, and different backgrounds of the experts interviewed, the same background information was provided to every respondent. The questionnaire was pre-tested and modified after comments and suggestions received.

We introduced multifunctionality by its broadest definition and asked experts to agree or disagree with every non-commodity output or element, which is included in the concept of multifunctionality. After defining the concept, we asked about the importance of different elements and also their relevance as policy options. In the open questions we asked experts to introduce policy options for every element they regarded as being a part of multifunctionality.

Interviews were set beforehand and the questionnaire was sent at least a week before the interview. In the interview we asked more precise reasoning for respondent's answers and discussed about the relevance of multifunctional agriculture. The interviews were made between December 2003 and March 2004.

Expert Selection

The experts interviewed were selected on basis of multifunctionality. This means, an attempt to cover expertise with respect to every aspect included in the concept of multifunctional agriculture. Yet, the areas of expertise covered agriculture, rural, environment, animal welfare and consumer issues (Table 2).

Table 2: Background of Respondent

	N	Percent
Agriculture	15	62,5
Environment	3	12,5
Rural	2	8,3
Consumer	2	8,3
Animal welfare	2	8,3
Total	**24**	**100,0**

Respondents included people involved in research, administration, political parties and interest groups (Table 3). The total sample of experts interviewed was 24.

Table 3: Substance of Respondent

	N	Percent
Research	10	41,7
Administration	5	20,8
Interest groups	4	16,7
Politics	5	20,8
Total	**24**	**100,0**

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Due to the fact that multifunctionality is still quite a wide concept and different people consider it in different ways, we asked first how familiar experts consider themselves to be with multifunctionality. Seven of the experts interviewed thought that they are well aware about multifunctionality and that they had also worked with the concept (Table 4). However, 13 of the interviewed people thought that they are familiar with multifunctionality to some degree, but they did not have worked with it. Four of our experts thought that they are unfamiliar with multifunctionality.

Table 4: Familiarity with the Concept of Multifunctional Agriculture

	N	Percent
Familiar	7	29,2
Familiar at some point	13	54,2
Not familiar	4	16,7
Total	**24**	**100,0**

However, it became clear during the interviews that also those who had not worked with multifunctionality had adequate knowledge about different aspects related to multifunctional role of agriculture, e.g. indicating that the wider role of agriculture was widely acknowledged. Nevertheless, not all the experts agreed with the definition and principles introduced.

Results

In the questionnaire we introduced multifunctionality by its broadest definition. This means, the inclusion of environmental aspects, biodiversity on and close to farm land, rural landscape, contribution of agriculture on socio-economic viability and rural employment, welfare of production animals, food safety and quality, and food security. The results presented in this section are a combination from the structured questionnaire and the interviews.

Multifunctionality as a Concept

The multifunctional role of agriculture was highly acknowledged among respondents. However, there was a lot of variation in the attitudes towards conceptualizing these non-commodity outputs of agriculture under a one single definition. Although any of the elements introduced were seen hard to be left out (Figure 1), it was argued that the relative power of multifunctionality as policy option declines, if trying to cover everything. Those, who were not so familiar with the concept, argued that the provided definition is quite a clear step in order to make multifunctionality more concrete also in the public debate. In addition, these respondents found a close relationship between the concepts of multifunctionality and sustainable agriculture, the latter being considered more familiar. Respondents

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identified also other aspects and elements, which should be taken into account. These elements were cultural and historical heritage, effects of agriculture and food production to human health, recreational values and everyman's right[1], the efficient use of (renewable) natural resources in agriculture as well as non-farm activities. While there was a slight consensus for these elements, respondents being most familiar with the concept and background of multifunctionality, considered that food security should not be included in the concept.

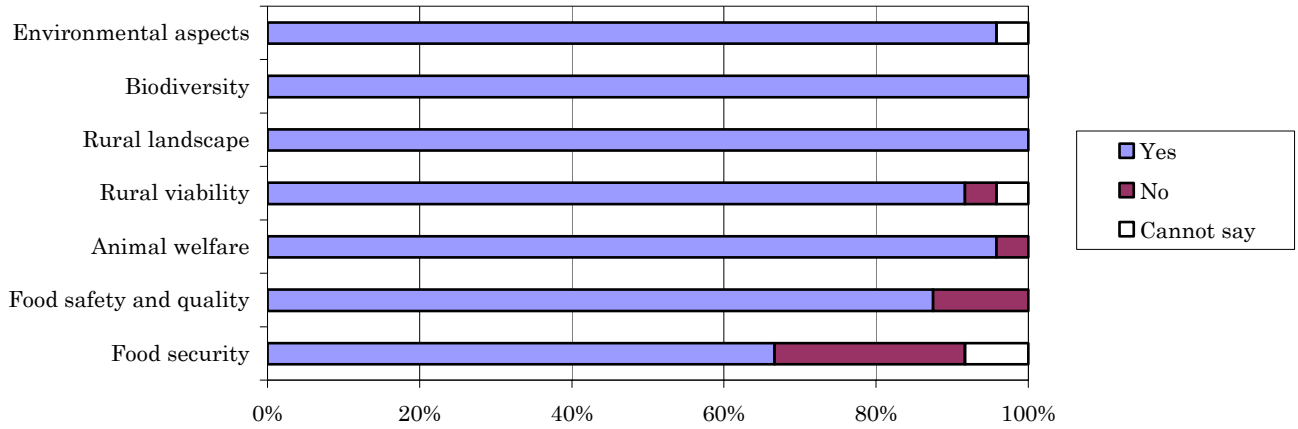

Figure 1: Can these Non-commodity Outputs be Included in the Concept of Multifunctional Agriculture?

Few respondents, mainly those with the expertise in rural and consumer issues, argued that instead of defining rural viability to be a part of multifunctional agriculture, and thus agricultural policies, more emphasis should be put on overall rural policies. Agriculture is a part of rural viability and policies, but rural viability is much more than agriculture. Yet, instead of pure sector policies, wider policies for rural areas are needed. This policy should cover sub-sector policies, such as agricultural, rural, labor and environmental policies as well as rural industries. Overall, multifunctionality was considered as a desirable step towards integrated sector policies.

The production or provision of these non-commodity outputs was assessed important as a whole, while environmental aspects, animal welfare, and food safety and quality being the most important (Figure 2). However, an issue of clear measurement of these elements arises. The most common example was how to measure the desired rural landscape, while there can be found several types of landscapes, which are desirable on the basis of historical, cultural or national

[1] In Finland, everyman's right allows free access to the land and waterways, and the right to collect natural products such as wild berries and mushrooms, no matter who owns the land.

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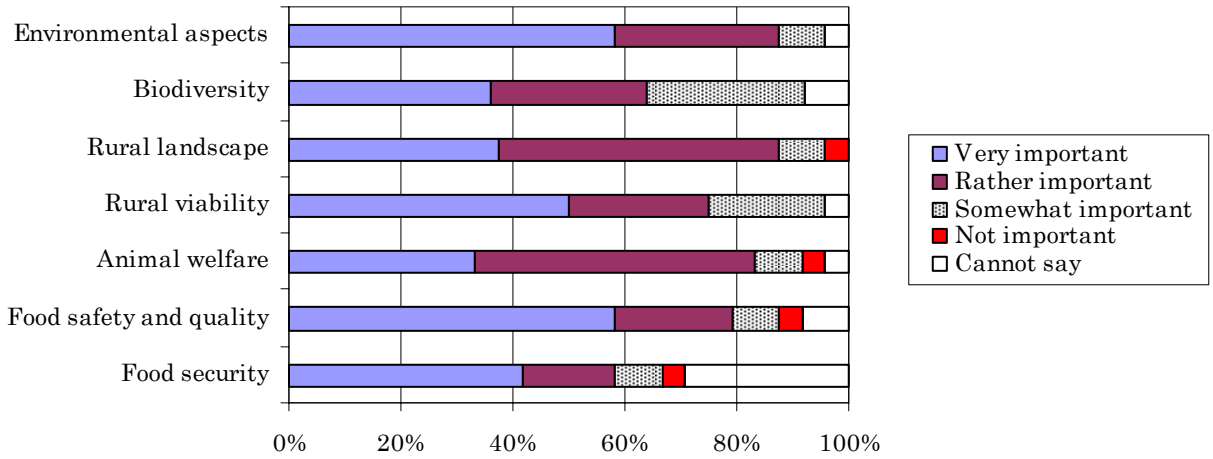

Figure 2: How Important is it to Guarantee the Production of these Non-commodity Outputs?

conditions. The provision of food security was also considered important, but it can be ensured by the combination of domestic production and international trade.

As can be seen in Figure 3, rural landscape and biodiversity on and close to farm land are most often regarded as pure elements of multifunctionality. However, besides agriculture, environmental aspects and rural viability are also due to other rural industries. Food safety and quality is, to a large extent, guaranteed already in the primary production, but it is at least an equally important issue for the processing stage. Welfare of production animals is an issue at the farm level, but transportation of animals may have even more harmful effects on animal welfare.

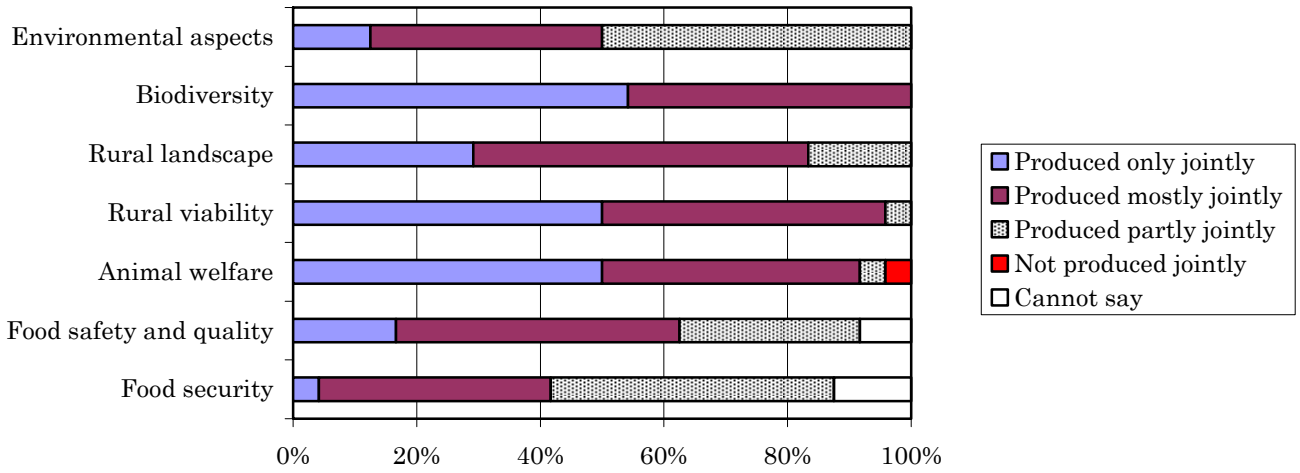

Figure 3: Are these Elements Produced Jointly with Agricultural Production?

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Food security has a clear tie to agricultural land and production capacity, but it can not be guaranteed only through agricultural production.

There was a clear correlation between respondents' background and answer, e.g. between those who had background in agriculture, research and interest groups and those with the background other than agriculture, or agriculture related research. At the one end, it was argued that these outputs are not provided at all without agricultural production and at the other end, that some other sectors might be more efficient providers for most of these outputs.

Policies for Multifunctional Agriculture

One of the most often noted argument during the interviews was that while agriculture clearly has multiple roles, these roles differ between nations, regions and areas. Within the European Union, there can be found at least as many different aspects for multifunctionality as there are member countries, not to mention global differences. Moreover, it should be realized that no effective and common policy measures can be easily found. Yet, there is a need to design and target policies based on different local conditions and needs, to fully benefit from and to enhance multifunctionality. The main objective for these targeted policies should be in directing agriculture from intensive production to more extensive production practices, and thus to ensure sustainability in food production. While there can not be found consensus among the respondents, there can neither be found substantial correlations between respondents' background or substance and their answers.

Policy measures currently used in the Common Agricultural Policy were not considered multifunctionality improving, environmental support scheme being an exception (Figure 4). While it was noted that current policy measures, both common and national, have their effects in maintaining agricultural production in the less favored agricultural areas, they are inefficient in the provision of multifunctionality. This can be seen also from Figure 5.

Measures targeted to environmental concerns, especially additional and special measures in the current environmental support scheme were considered efficient with respect to multifunctionality (Figure 5). In the current environmental support scheme these special measures include i.e. wetland establishment, establishment and management of the riparian zones, and biodiversity enhancing measures. Overall, coupled support measures, as well as input-tied subsidies, were regarded inefficient. It can be concluded that the more targeted the measure is, the more efficient it is considered. These results indicates, that efficient use of different agricultural policy measures needs clear targeting in order to achieve the objectives set.

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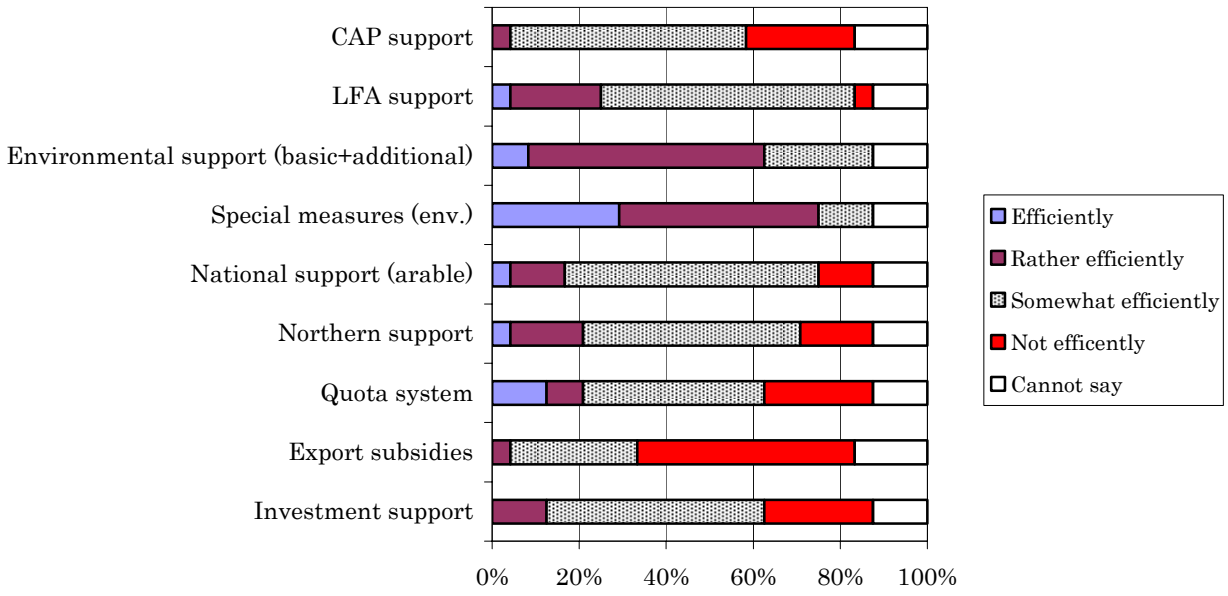

Figure 4: How Efficiently do Current Policy Measures Enhance Multifunctionality?

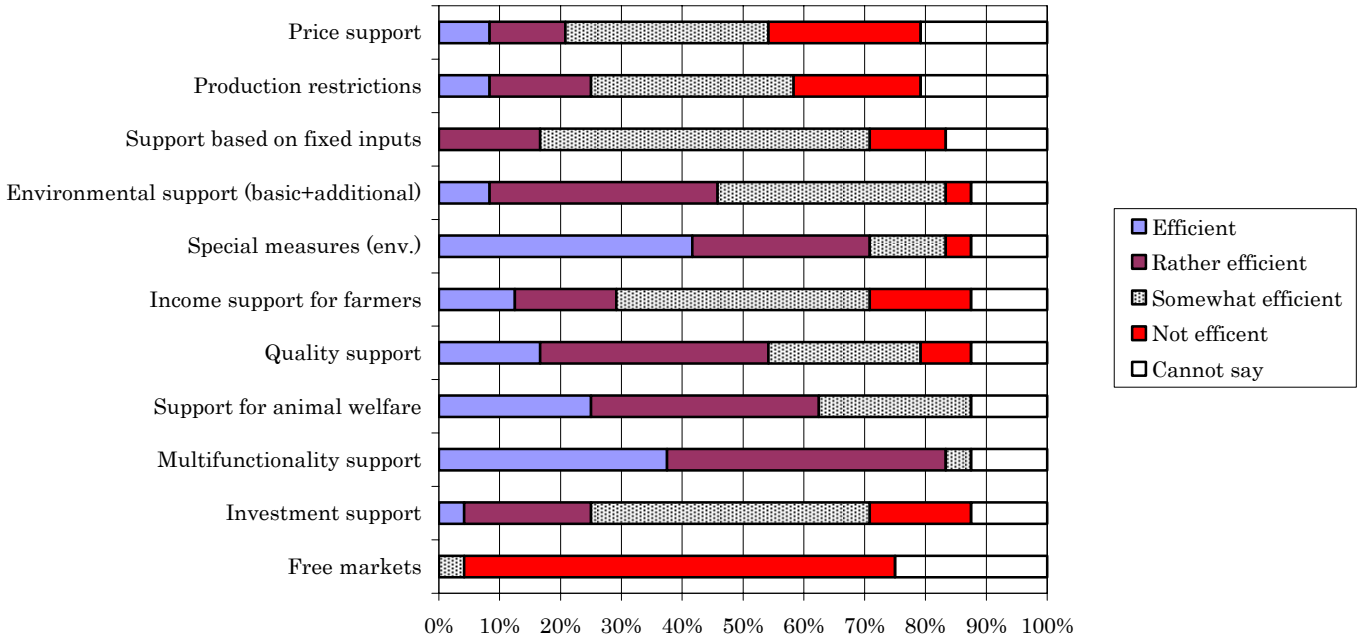

Figure 5: How Efficient would Different Policy Measures be in Enhancing Multifunctionality as a Whole?

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The multifunctionality support (Figure 5) was introduced as a measure, which could be designed directly on the basis of the elements of multifunctionality. This kind of measure or combination of multiple measures was seen efficient, if the actual basis would be in the objectives set for multifunctionality.

Policy Measures for Multifunctional Agriculture

In order to design multifunctionality enhancing policies, we asked respondents to freely introduce measures on the basis of every different aspect of multifunctionality, in order to form combinations of measures to be considered as future policy options. A vast variety of measures were introduced. Yet, there can be found similarities between different responses and also same measures introduced by different respondents. These measures are presented in Table 5, and described in the same form as they were introduced.

The results in Table 5 show that contracting, targeting, and thus creating incentives for more extensive farming practices form the basis for multifunctionality oriented policies. Farm territorial contracts were often considered to be most efficient in improving the multifunctional agriculture as a whole. These contracts could be designed directly on the basis of functions and services needed, and could be differentiated with respect to production structures and conditions in specific areas. Support based on ethical production is closely related to these contracts. The idea is that if a farm fails to fulfill clearly defined terms and conditions related to environmental, animal welfare, food quality and safety issues, it will not be entitled to agricultural support. At the same time, there could be an incentive to improve production conditions over the level stated in these terms.

In addition, there can be found several combinations of measures, not directly involved in contracting. An overall base support, with cross-compliance, would ensure a base income on agriculture in the less favored agricultural areas, and thus would secure the provision of non-commodity outputs. Yet, restrictions for fertilizer and pesticides use, and grazing were also often considered to be one element of the most efficient combination of multifunctionally oriented policy measures.

However, opposing views can also be found. Few respondents argued that multifunctionality can most efficiently be improved by using coupled support measures such as price support. Price support would most efficiently maintain at least current production levels, and would help farmers to compensate the growing production costs. Wider support for rural industries, thus improving new services in rural areas, was regarded preferable. Creating local markets for these services, and thus also for agricultural products were considered preferable with respect to overall rural viability, food safety and quality.

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Table 5: Suggested Policy Measures for Multifunctional Agriculture*

Environmental Load

- Directed support for targeted fertilizer use
- Decoupled support with cross-compliance e.g. keeping the agricultural land in good farming conditions
- Specialized treatment for sensitive areas e.g. leaching areas
- Farm territorial contracts
- Improving organic farming
- Giving up from monotonic farming by e.g. improving rotation
- Extensive farming
- Border strips
- Improving new environmentally friendly technologies

Biodiversity

- Targeted measures for sensitive areas
- Setting more freedom for individual judgment
- Improving organic farming in the sensitive areas e.g. near the largest water areas
- Special measures in the environmental support scheme
- Improving the efficiency of the current measures by having larger integrated areas in the environmental support scheme
- Auction methods
- Improving contracting in the non-commodity output production
- Regionally differentiated measures
- Compensation payments for taking care of the agricultural landscape
- Maintenance of diversified agricultural production
- Production which equals consumption
- Ban on GMO-products
- Regulations for pesticide use
- Organic farming
- Border strips

Rural Viability

- Decoupled base support for every farm
- Support for less favored areas based on grassland and arable land
- Targeted measures improving quality, environment and animal welfare
- National measures to compensate for growing production costs
- Integrating different sector policies
- Farm territorial contracts
- Differentiating measures for a single farm, i.e., taking the differences between areas, small and large farms into account
- Taking into account the structural conditions on every farm and area
- Single farm payments
- Creating wider rural policies
- Ensuring operational preconditions for continuing farms
- Allowing structural adjustment in the whole agricultural sector
- By guaranteeing high prices for agricultural products
- Support for production ethics
- Improving secondary industries in the rural areas
- Tax privileges directed in agriculture
- Tax privileges for off-farm labor use
- Increasing the types of services in the rural areas

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Animal welfare

- Terms for decoupled support
- Incentives created through agricultural policy
- Investment support
- Giving up the maximum efficiency goals
- Focusing on animal welfare when directing investment supports
- Education, advising, enlightenment, guidance
- Markets
- Animal units per farm
- Labor per animal
- Supporting grazing
- Improving animal healthcare systems
- Regulations
- Restrictions on farm size
- Allowing free area and movement for animals

Food safety and quality

- Cross-compliance
- Quality policy
- Controlling
- Incentives
- Controlling in the processing stage
- Farm level self-controlling; failure leads to sanctions
- Quality instead of low price
- Regulations for good farming practices
- Traceability
- Controlling in the feed processing
- Domestic production
- Quality pricing

Food security

- Keeping the agricultural land in the good farming conditions
- Maintaining agricultural production
- Stockpiles for agricultural products
- Supporting non-food production
- Hand-to-hand markets for agricultural products
- Assuring profitable agriculture
- Maintaining as many farms as possible

*Agricultural landscape and measures introduced are integrated in other aspects

There was also distinction in views with respect to restrictions and controlling and incentives. While others saw that allowing structural adjustment in the agricultural sector is needed in order to ensure the provision of the elements of multifunctionality, others argued that maintaining structure with as many farms as possible would be in evitable. In addition, while others suggested incentives and individual judgment, others were more in favor of restrictions and controlling. Overall, an incentive with clearly justified restrictions and efficient controlling were regarded preferable in designing policies.

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The Role of Agricultural Policy

The role of agricultural policy in the provision of these non-commodity outputs was assessed important as a whole. However, there is a considerable distinction between the results presented above and results presented in Figure 6. It was widely argued that the role of a pure sector policy is declining, and that more cooperation between the operators in the whole supply chain is needed. For example, food safety and quality was, as such, considered to be an issue of the whole food chain. Yet, the role of agricultural policy is still evaluated very important with respect to safety and quality aspects. However, most of the policy measures introduced include wider controlling measures and incentives, which could be implemented through markets, but having its background in policies. One example could be quality systems and controlling. Quality systems could be designed and implemented in the co-operation between feed processors, farmers, food processors and regulators. Yet, incentives for these schemes could be provided in the markets, but controlling and regulation is an issue of the legislation and government. This kind of a statement clearly raises the role of pure sector policies.

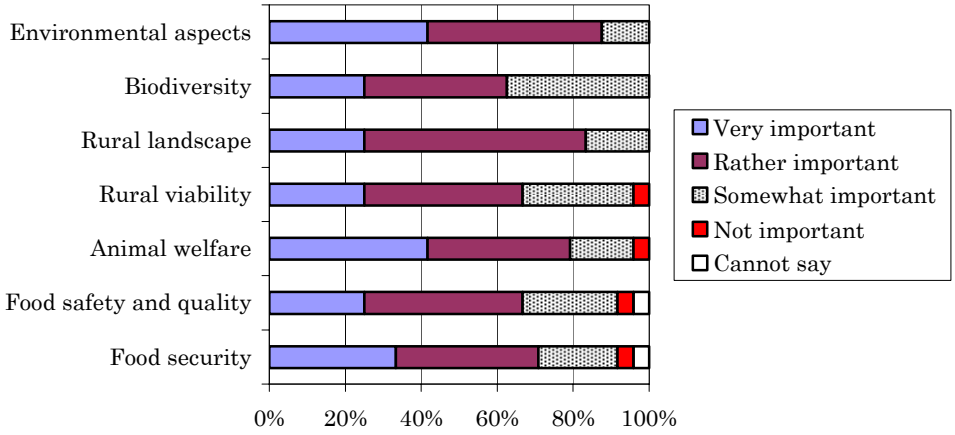

Figure 6: How Important a Role does Agricultural Policy have on the Provision of these Non-commodity Outputs?

The CAP Reform 2003 and Multifunctionality

The CAP reform 2003 was seen to have at least some multifunctionality improving elements, as shown in Figure 7. This was referred mainly to cross-compliance. However, the reform does not include any actual measures, designed directly on the basis of multifunctional agriculture. Yet, the comparison and evaluation of the two types of single farm payments were considered difficult. This was mainly due to the fact that during the interviews there were no final decisions about final contents and implementation of these payment schemes.

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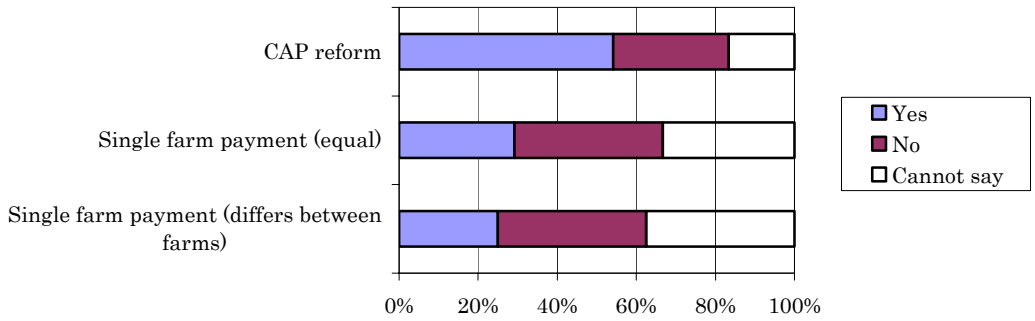

Figure 7: Is the EU CAP Reform a Direct Step towards Multifunctionality Improving Agricultural Policy?

The overall supports for non-commodity output provision were considered justified (Figure 8). Yet, this support should only be directed through agricultural production as such. The total amount spent on agricultural support was regarded reasonable, but it was argued that this level should decrease at least in real terms.

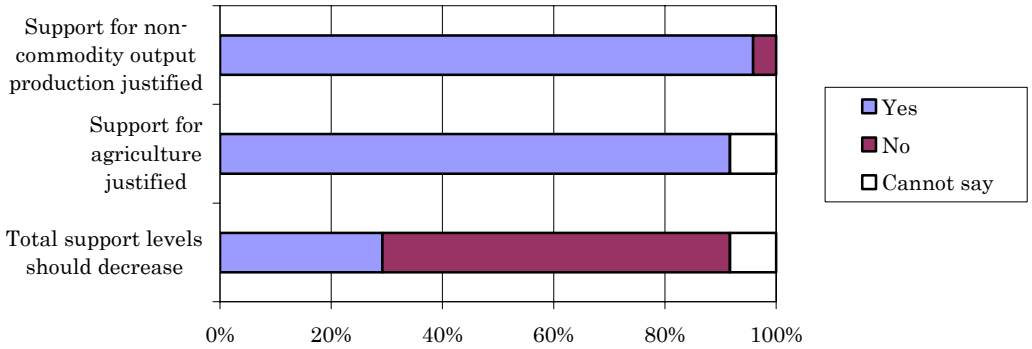

Figure 8: Agricultural Support and Support Levels

After the CAP reform, the total spending on agricultural support was expected to remain at the current level (Figure 9). Those expecting decreasing amount in total support argued that the decrease would be mainly due to lower support levels introduced in the CAP reform. However, some respondents also argued that the total expenditures would increase. Although the budget ceiling for CAP expenditures is fixed until 2013, the EU enlargement of 2004 was evaluated to put severe pressure on this decided ceiling.

Transaction Costs

Transaction costs part was considered rather difficult. More than half of our experts argued that they do not have enough expertise to evaluate different aspects related

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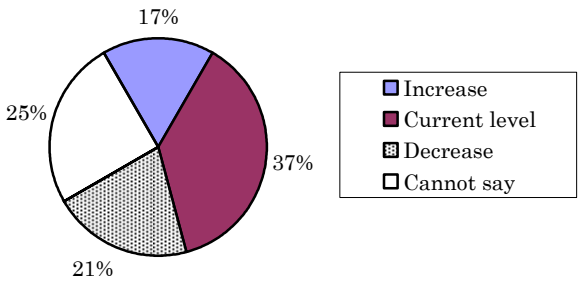

Figure 9: In what Direction will the Total Spending on Agricultural Support Change after the CAP Reform?

to transaction costs. While 24 experts in total were interviewed, we only received answers to transaction costs from 11 people, which had background mainly in research and administration. In addition, neither the interviews brought any additional information related to transaction costs.

Controlling and system conduct and management were regarded as the most essential cause for transaction costs in current agricultural policy (Figure 10). Applying process and fulfilling the terms and conditions were also evaluated to incur these costs. Controlling and information gathering and delivering incur transaction costs to both farmers and administration, while costs from system conduct and management are mainly incurred only to administration. High bureaucracy and detailed controlling were most often considered to be the overall causes for transaction costs, affecting both farmers and administration. Yet, the applying process was regarded to be most costly in farmers' point of view.

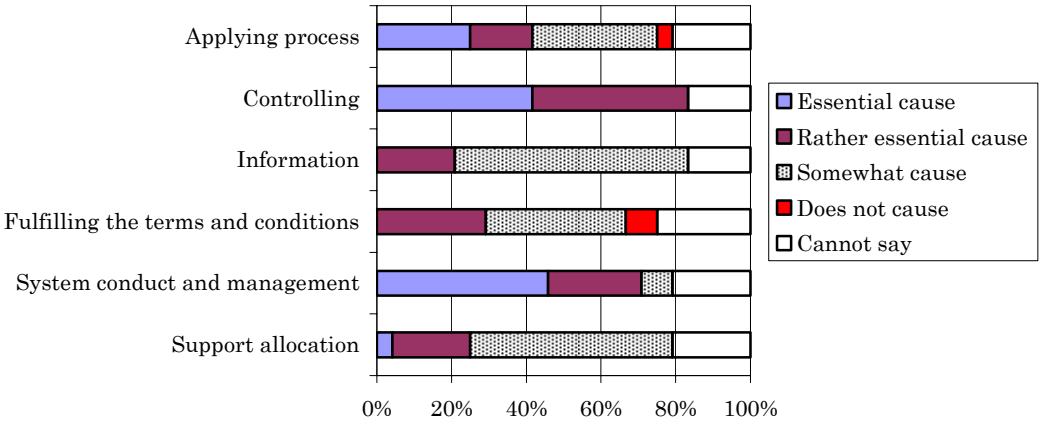

Figure 10: What does cause Transaction Costs in the Current Policy System?

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The environmental support scheme and the additional and special measures included are considered to incur more transaction costs than the other current policy measures (Figure 11). When scaled from 1 to 9, (1 is high transaction cost and 9 is low transaction cost), the mean for environmental support scheme is 2,2 and 3,2 for special measures. Also CAP support (4,1) and export subsidies (4,4) were seen to incur remarkable transaction costs. However, national support measures received rather high values indicating low transaction costs.

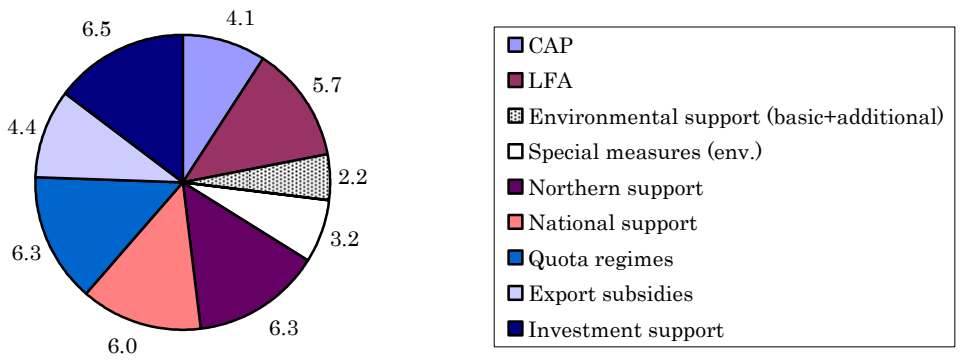

Figure 11: What Elements of the Current Support Scheme does cause Transaction Costs Most?

The CAP reform introduced in 2003 is also evaluated to have its effects on transaction costs. As a whole, transaction costs are approximated to increase due to the reform (Figure 12).

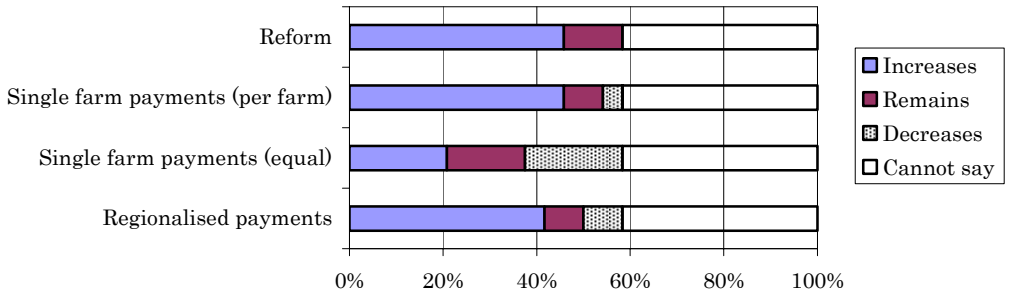

Figure 12: What does happen to the Transaction Costs due to the CAP Reform?

However, single farm payments differentiated between farms, would incur more transaction costs compared to single farm payment equal between farms. If regionally differentiated measures are also included, the transaction costs will increase.

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Transaction costs incurred in applying process were seen to remain at the current level or even increase after implementation of the CAP reform (Figure 13). However, the gathering and production of information as well as controlling were evaluated to become more costly. Although the transaction costs were considered to increase due the reform, it was argued that in the long run, the reformed CAP may become less costly compared to current CAP.

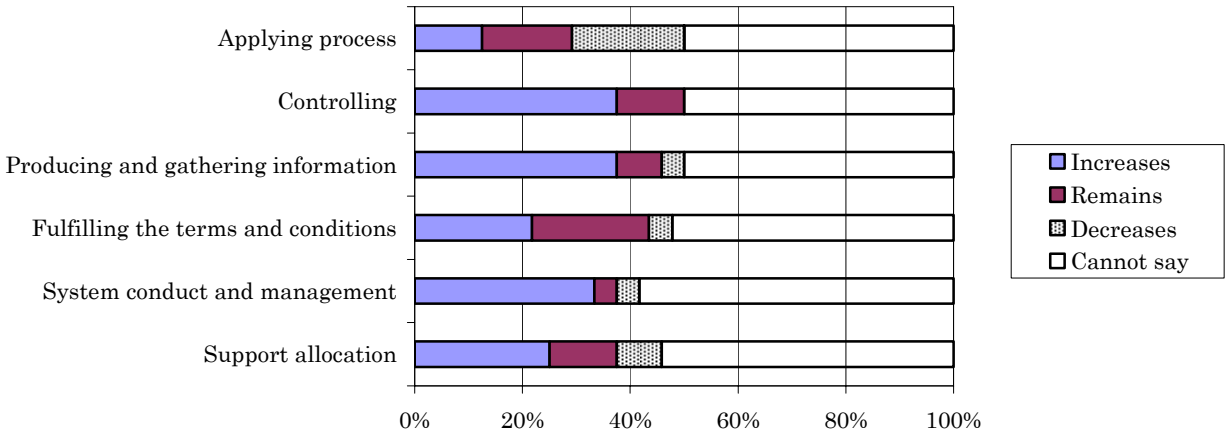

Figure 13: What does Happen to Transaction Costs after Reform 2003?

Because more than half of the respondents were unable or unwilling to define causes for transaction costs, only few conclusions can be made. It was quite well realized that targeting and differentiation of policies increases transaction costs. This increase is due to increased implementation, controlling and monitoring of policies. However, respondents were unable to evaluate to whom these costs would incur, e.g. farmers or administration or both. While comparing these results to the policy measures section presented earlier, it can be stated that while willing to introduce more targeted and differentiated measures, the experts interviewed may not be aware of the costs these policies might cause.

Discussion and Policy Implications

Our results show that multifunctionality of agriculture is regarded as an important element for agricultural policies in the future. However, in order to fully benefit from and to enhance multifunctionality, wider co-operation between different sector policies and consequently, co-operation between all actors in the whole supply are needed. Environmental aspects of multifunctionality are more an issue in agri-environmental policies, rural viability and employment broadens the scope to rural policies and vice versa, while food safety and quality is more an issue for the whole supply chain. The role of agriculture in the provision of these non-commodity

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outputs was regarded overall important. However, it is not self-evident, that agriculture is the most efficient provider for these outputs.

According to our results, Finnish experts share the view of the EU rather than the OECD, in the definition of multifunctionality. However, not a clear generalization either for or against these two definitions can be made. All the aspects of multifunctionality have a quite clear tie to agricultural production, and they are mostly produced jointly with agriculture. However, this jointness may not always be considered pure. Some experts argued that agricultural production is multifunctional as such, indicating that there is no need to design policies according to multifunctionality perspectives, but on the contrary on the basis of ensuring and maintaining agricultural production itself.

In order to fully benefit from multifunctional agriculture, regionally and locally targeted measures are needed. Farm territorial contracts were most often regarded to be efficient policy measures to enhance multifunctionality. Overall, different combinations of measures, having one targeted measure for one object, seem to be a preferred option. However, also some coupled support measures were considered to be efficient, indicating that the elements of multifunctional agriculture were considered to be closely tied to agricultural production. More targeting incurs more transaction costs. Our experts were not familiar enough with transaction costs and, consequently, they were incapable of evaluating these costs of more targeted policy measures. In general however, it is quite clear that targeted measures will be more efficient in achieving the clearly defined policy objectives.

Current CAP and its measures, while including some multifunctionality improving elements, are inefficient to ensure the full benefits of multifunctionality, neither in the EU nor nationally in Finland. The reformed CAP does not meet the objectives set for multifunctionality, with the exception of cross-compliance. Moreover, the measures included in the CAP should be redesigned on the basis of different agricultural, regional and local conditions within the EU.

There can not be found clear correlations between experts' answers and opinions with their background and substance. Moreover, respondents' opinions seem to arise from personal interests, rather than the interests of their organisations. Yet, those with the background clearly in agriculture were more conservative and detailed in their answers compared to those with the background other than agriculture, but not a clear distinction between respondents can be made. Politicians seem to be more unanimous than the others, though having somewhat totally different backgrounds, while researchers and administrators seem to have somewhat different opinions. In order to find consensus or more detailed background information of expert's opinions, another Policy Delphi round could be done. However, the results presented in this paper were used in the farmer survey, carried out during the summer 2004. After comparing these results to those

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received from the farmer survey, and to those from the consumer survey presented by Yrjölä & Kola (2004), we will have comprehensive information about preferences of different groups in society with respect to multifunctional agriculture. This forms the basis to design policies in a way that the overall welfare in society could be improved. More effective policies are needed, indeed, to truly enhance multifunctionality, provided that it represents a widely accepted policy goal in both Finland and the EU, as well as in relation to the WTO negotiations.

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Appendix 1: Institutions of Experts Interviewed

Administration

Department of Agriculture, Ministry of Agriculture and Forestry
Department of Food and Health, Ministry of Agriculture and Forestry
International Affairs Unit, Ministry of Agriculture and Forestry
Ministry of the Environment

Research

Department of Economics and Management, University of Helsinki
Faculty of Veterinary Science, University of Helsinki
Finnish Environment Institute
Government Institute for Economic Research
MTT Economic Research, Agrifood Research Finland
National Consumer Research Centre
Pellervo Economic Research Institute
Department of Regional Studies, University of Vaasa

Interest Groups

Finnish Food and Drink Industries' Federation
The Central Union of Agricultural Producers and Forest Owners
The Finnish Consumers' Association

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Political Parties (five largest), Members of the Agriculture and Forestry Committee

Finnish Centre Party
Finnish Social Democratic Party
National Coalition Party
Left Alliance
Green League of Finland

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