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Multifunctional character of agriculture

Jussi Lankoski (ed.)



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Foreword

This report is about the multifunctional character of agriculture. The concept rises from the understanding that the role of agriculture is broader than that of simply producing food and fiber products; agriculture is multifunctional and has a fundamental role in the maintenance of the quality of nature, the environment and landscape, cultural identity and heritage, employment and viability of rural areas, and food security.

The concept of multifunctional character of agriculture is relevant in a number of global policy fora such as the WTO Millennium round, the Rio Earth Summit 1992 processes, and the Commission on Sustainable Development, created in 1992 within the UN. The concept is also relevant in the implementation of Agenda 2000 reform of the CAP (Rural Development Plans and cross-compliance in support) and in the planning of the next CAP reform, which will be closely linked to the EU enlargement and results of the WTO round.

The idea of multifunctionality is not novel. However, the concept provides an interpretative tool and policy-oriented analytical framework that has not been utilised very much. For that reason the study, undertaken by a group of researchers at the Agricultural Economics Research Institute and Department of Economics and Management of the University of Helsinki, has been an ambitious task.

In the first article, the multifunctional agriculture is analysed in the domestic policy and international trade contexts. As argued, due to the nature of the joint production process, involving both complementarities and trade-offs, sustaining the multifunctional character of agriculture provides a challenging task for domestic policy design. In the second article, differences in views between countries over the concept of multifunctionality is examined. As shown, the concept has raised conflicting views among the WTO members. Moreover, countries disagree on appropriate policy responses for enhancing the multifunctional character of agriculture. The third article is about the effects of multifunctional agriculture on food security and viability of rural areas. As argued, food security in Finland is based on the domestic resources, continuity of agricultural production, and supporting storage of farm products and inputs. For viability of rural areas, a rural policy which recognises the special characteristics of rural areas and creates non-agriculture jobs is needed. In the fourth article, the costs and benefits of multifunctional agriculture are defined qualitatively. A number of welfare effects of the reduction in agricultural support and producer prices are derived. The last article introduces European model of agriculture, a concept that is wider than multifunctional character of agriculture. As argued, the concept is a policy statement describing the current agriculture within Europe. At the same time, it is an ideal that is targeted at by the current and future policies.

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Helsinki, March 2000

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Contents

Multifunctional agriculture, non-trade concerns and the WTO <i>Jussi Lankoski</i>	5
Multifunctional character of agriculture: differences in views between the countries <i>Jussi Lankoski and Antti Miettinen</i>	13
On the effects of multifunctional agriculture on food security and viability of rural areas: review of current knowledge <i>Antti Miettinen</i>	23
Multifunctional agriculture: cost-benefit approach <i>Tapani Yrjölä and Jukka Kola</i>	39
European model of agriculture <i>Ilkka P. Laurila</i>	59
Selostus	77

Multifunctional agriculture, non-trade concerns and the WTO

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Abstract. While the term multifunctionality is new in the international trade debate, the concept of multifunctional agriculture is not novel in the domestic agricultural policy context, since for decades countries have pursued several non-food or non-economic goals through domestic agricultural policies. However, due to the nature of the joint production process, involving both complementarities and trade-offs, sustaining and enhancing the multifunctional character of agriculture provides a challenging task for domestic policy design. The green box of the Uruguay Round Agreement on Agriculture (AoA) seems to provide effective measures for addressing the non-trade concerns and multifunctional objectives through targeted policies. The flexibility of the domestic policy design is, however, influenced by the amber box commitments under the terms of the AoA. Countries whose amber box commitments are binding may have to rely solely on the green box measures for sustaining and enhancing multifunctional agriculture.

Index words: green box, multifunctionality, non-trade concerns, WTO

1. Introduction

The Uruguay Round Agreement on Agriculture (AoA), signed at the Marrakesh Ministerial Meeting in April 1994, established new international rules and constraints for domestic support, market access, and export competition. The AoA also established a "built-in" agenda to continue the process of multilateral reform in the agricultural sector before the implementation period (from 1995 to 2000) of the Uruguay Round comes to an end.

Article 20 of the Uruguay Round Agreement on Agriculture calls for continuation of the process of multilateral reform, while taking into account e.g. non-trade concerns (NTCs). At present, the only NTCs specifically referred to in the preamble of the AoA are environmental protection and food security. However, during the Uruguay Round, some countries also stressed the viability of rural areas as a vital NTC to be addressed in the reform process (Nersten and Prestegard 1999). Although not explicitly listed as NTCs, food safety, farm

animal welfare and the use of genetically modified organisms (GMOs) have important implications for international trade that are likely to be reflected in the international arena.

Environmental issues, food security and viability of rural areas (including economic and social functions) are the three most frequently cited *elements* or *functions* of multifunctional agriculture. Thus, it can be argued that the concept of multifunctional agriculture is covered by the NTCs listed in Article 20.

While multifunctionality as a term is new, the concept of multifunctional agriculture is not novel in the domestic agricultural policy context. Many countries have taken into account several non-food or non-economic effects of agriculture (e.g. rural and environmental amenities, rural settlement, food security, etc.). However, the implications of further liberalised agricultural trade on the multifunctional character of agriculture have surfaced recently in the international trade policy debate. Some countries fear that further commitments and constraints on domestic support would reduce the ability of the governments to pursue their domestic non-food objectives, whereas other countries consider multifunctionality being used as a pretext for maintaining high levels of production-linked agricultural support.

In the international debate, two primary approaches to multifunctional agriculture can be distinguished: (i) the agricultural and trade policy approach discussed within the WTO and the OECD, and (ii) the sustainable development approach discussed within the FAO.

The OECD/WTO approach consists of three central elements, which are environmental protection, food security, and viability of rural areas (including economic and social functions). The discussion within the OECD and the WTO mainly concentrates on the implications of multifunctionality on agricultural trade and domestic agricultural policy design. In this context, one of the central issues is whether multifunctionality provides a justification for agricultural support, and if it does, what kind of instruments countries can use for sustaining and enhancing the multifunctional character of agriculture.

The FAO (1999) has introduced its own concept "Multifunctional Character of Agriculture and Land" (MFCAL). The MFCAL has evolved from and builds upon the SARD concept (Sustainable Agriculture and Rural Development), which aims to foster sustainable development through promoting agricultural practices that are environmentally friendly, technically appropriate, economically viable, and socially acceptable. The MFCAL has three major functions: an environmental, economic, and social function. The MFCAL approach contributes to understanding the potential links, synergies and trade-offs necessary to achieve sustainable development. Thus, the MFCAL provides an analytical framework for achieving the SARD goals. (FAO 1999). The FAO has explicitly noted that the MFCAL approach is distinct (perhaps for political expediency) from the ongoing debates on multifunctionality within the WTO and the OECD.

Thus, the trade-related discussion on multifunctionality belongs to the mandate of the WTO.

In this paper the discussion follows the WTO and OECD framework for multifunctionality as the paper focuses on the implications of the WTO rules for domestic agricultural policy design. In this context the central issue is the commitments related to domestic support as agreed in the Uruguay Round Agreement on Agriculture.

From this point onwards the paper is organised as follows. The core concepts relating to multifunctional agriculture are discussed in Chapter 2. This is followed by an examination of the implications of joint production process and non-food outputs on domestic agricultural policy design in Chapter 3. Chapter 4 presents an analysis of the implications of the WTO domestic support commitments on the flexibility of domestic agricultural policy design, and conclusions and policy implications are provided in Chapter 5.

2. Definition of multifunctional agriculture and related concepts

Multifunctional agriculture can be defined as an economic activity which besides its primary function of producing food contributes to the well-being of society by producing multiple non-food benefits or costs jointly with food production.

From the economic theory point of view, these non-food benefits (costs) can be regarded as positive (negative) spill-over effects, that is, as positive (negative) externalities that are external to the market transaction and thus are not reflected in the prices of agricultural goods. An externality can be defined as an uncompensated cost (negative externality) or benefit (positive externality) to an economic agent due to production and consumption activities taken by other agents, or more formally, as an uncompensated effect in the utility function or production set.

Externalities are examples of market failures which arise when markets fail to reflect the true social costs and benefits of agricultural production, and market prices of exchanged agricultural goods and services fail to capture all the costs and benefits associated with a market transaction. Market failure is a necessary but not a sufficient condition for government intervention. The sufficient conditions required for government intervention are that the intervention outperforms the market outcome and that the benefits from the intervention exceed the costs (Panayotou 1993). Government intervention in the agricultural sector has sometimes reinforced rather than mitigated market failures (Runge 1993), resulting in policy failure, which occurs when government policies create, exacerbate or do not correct market failures.

Internalisation of externalities is relevant for the concept of multifunctional agriculture. Since the non-food benefits are joint products or joint outcomes of the agricultural production process, the level of their provision is determined by input use, technology and the supply level of marketable agricultural goods. Thus, the supply of these benefits may be less than the socially optimal amount (OECD 1998). The objective of internalisation is to incorporate the external costs and benefits into the optimisation calculus of economic agents. In the case of multifunctional agriculture, the internalisation of non-food benefits, or positive externalities, implies that the government should provide incentives for farmers to supply these benefits at the socially optimal level.

3. Multifunctional agriculture and domestic policy design

The multifunctional character of agriculture implies that there is a bundle of outputs, food and non-food, produced by agricultural activity. The relationship between the non-food effects (benefits or costs) produced and agricultural production is determined by the nature of the joint production process, which may involve both complementarities and trade-offs (OECD 1998). The joint production relationship between non-food effects and food production relates to the level of certain input use, farming technology, agricultural output, and the combinations of these factors, thus resulting in the complex linkages between food and non-food effects (AIE/68 1999). Hence, the nature of the joint production process has important implications for policy design.

The conventional wisdom is that the internalisation of externalities should take place at the source of the market failure, and that separate instruments or instrument mixes should be used for each policy objective (i.e. the principle of targeting policy measures to their specific objectives). Moreover, the policy measures (e.g. direct payments) should be targeted and coupled to the desired non-food outcome (e.g. environmental quality and landscape amenities), but decoupled from agricultural production in order to minimise production and trade distortions. Decoupled support means that the support payments are disconnected from production levels and prices. In the purest sense, decoupled support means that a farmer can receive payments irrespective of whether he produces agricultural products or not.

There are two main reasons why a general production-linked agricultural support (such as acreage payments based on reference yields) may fail in enhancing the multifunctional character of agriculture. First, depending on the degree of jointness and potential trade-offs in joint products, production-linked support may be inefficient in achieving specific non-food objectives. Secondly, production-linked support distorts resource allocation, both domestically and internationally, and thus results in production and trade distortions.

However, owing to the close connection of food production and the provision of non-food benefits, the decoupling of support from production might not always be feasible in terms of enhancing the multifunctional character of agriculture. Additional problems arise in high-cost countries, where the sales revenues at world market prices may not even cover the variable costs of production. Thus, in these countries decoupled support may not provide sufficient incentives for supplying the non-food benefits if the primary function of producing food is unprofitable. In other words, it may be the case that the supply of non-food benefits fall short of the social demand if food production is unprofitable irrespective of the amount of decoupled support provided for farmers.

Hence, it can be argued that the policy package for multifunctional agriculture differs between countries, not only owing to different weight given for different elements of multifunctionality, but also due to cost differences between countries. In low-cost countries targeted instruments coupled to non-food benefits and decoupled from production provide the sufficient incentives for sustaining and enhancing the multifunctionality. By contrast, some level of production linked support may be needed in the high-cost countries. The amount of production linked support is, however, dependent on the agreed WTO limits, which reduce the flexibility of domestic policy design in high-cost countries (see AIE/68 1999 for discussion on the case of Norway).

The multifunctional character of agriculture obviously constitutes a complex problem from an agricultural policy perspective. Enhancing multifunctionality may require the balancing of multiple objectives, food and non-food, and a policy mix that is able to achieve this balance may not be easily found. All this is further complicated by the domestic support constraints imposed by the WTO rules.

4. Multifunctional agriculture in the context of the WTO

From the WTO point of view individual countries have the sovereign right to pursue their domestic agricultural policy objectives, given that the instruments used for achieving the objectives do not distort trade. Hence, the objectives of agricultural policies are not a problem *per se*, but the policy instruments used to achieve these objectives may be.

Although there has been a broad consensus among the WTO members that NTCs are legitimate concerns, the consensus on the appropriate policy response for addressing NTCs is lacking among the WTO members (AIE/68 1999). Moreover, the concept of multifunctional agriculture has raised conflicting views. On the one hand, the proponents for multifunctionality (e.g. Norway, Switzerland, European Union, and Japan) fear that further reductions and constraints on domestic support would reduce the ability of the governments to pursue their

legitimate domestic non-food objectives. On the other hand, some countries (e.g. Cairns Group¹) see multifunctionality being used as a pretext for maintaining high levels of production related agricultural support. While the latter group of countries has stressed the green box measures as effective means for addressing the NTCs (and thus the elements of multifunctional agriculture), the former group has maintained that there is a need for more flexibility and room for domestic policy design (AIE/68 1999).

Hence, from the WTO point of view, multifunctional agriculture is mainly linked with domestic support issues. Commitments related to domestic support were one of the main elements of the Uruguay Round Agreement on Agriculture, in which a commitment was made to reduce the total Aggregate Measurement of Support (AMS) by 20 per cent in six years (using 1986-88 as a base period).

During the Uruguay Round, a traffic light analogy was used to refer to different groups (boxes) of domestic policies (Nelson et al. 1999). Clearly trade-distorting policies that needed to be discontinued immediately were listed in the red box. However, none of the domestic policies were prohibited or scheduled to be phased out under the AoA. Amber box includes policies that require limitations and reductions over time, such as market price support, direct payments, and input subsidies. Amber box policies are quantified through AMS and thus are subject to reductions under the terms of the AoA. Green box policies were considered to be only minimally trade distorting and thus were exempted from domestic support reduction commitments. As a political strategy to close the negotiations, a blue box was created for payments under production-limiting programmes (for the EU compensation payments and the U.S. deficiency payments). (Nelson et al. 1999).

Bohman et al. (1999) argue that the countries whose amber box commitments under the terms of the AoA are the most binding (e.g. Switzerland, Norway, Japan, and the European Union) have also been the biggest proponents for multifunctionality. Consequently, these countries have little room to increase their production-linked support for enhancing the multifunctional character of agriculture. Thus, these countries have to meet their multifunctionality objectives mainly through green box policies.

A fundamental criterion for a policy to be exempted from the domestic support reduction commitments and listed in the green box is that the policy has no or minimal distortions on production and trade. In addition to this general criterion, green box policies have to fulfil a number of policy-specific criteria. It

¹ The Cairns Group includes major food exporters from both developed and developing countries: Argentina, Australia, Brazil, Canada, Chile, Colombia, Hungary, Indonesia, Malaysia, New Zealand, the Philippines, Thailand, Uruguay and South Africa.

should be noted that the green box policies do indeed distort production decisions through e.g. reducing risk and increasing wealth. Green box policies include domestic food aid, environmental programs, decoupled income support, regional assistance, income insurance and income safety net programmes, investment aid, and food security public stockholding. Thus, it can be argued that the green box contains specific provisions for addressing non-trade concerns and the elements of multifunctional agriculture.

To conclude, comparing the provisions of the green box and the elements of multifunctional agriculture shows that countries can make use of the green box measures for addressing the non-trade concerns and multifunctional objectives through targeted policies, given that these policies are only minimally production and trade distorting.

5. Conclusions and policy implications

While the term multifunctionality is new in the international trade debate, the concept of multifunctional agriculture is not novel in the domestic agricultural policy context, since for decades countries have pursued several non-food or non-economic goals through domestic agricultural policies. Also the conceptual framework for analysing the multifunctional character of agriculture is primarily in place. Multiple non-food effects relating to food production can be analysed as positive and negative externalities, which arise when markets fail to reflect the true social costs and benefits of agricultural production. Market failure warrants government intervention through appropriate policy instruments for ensuring that the non-food effects are supplied at the socially desirable level. However, due to the nature of the joint production process, involving both complementarities and trade-offs, the domestic policy design for multifunctional agriculture is a challenging task that calls for further research and analysis.

The green box of the Uruguay Round Agreement on Agriculture seems to provide effective measures for addressing the non-trade concerns and multifunctional objectives through targeted policies. This is especially the case for WTO member countries whose amber box commitments are not binding under the terms of the AoA (Bohman et al. 1999). This is due to the fact that in addition to the green box measures these countries could also use some production-linked support for enhancing the multifunctional character of agriculture. However, those countries whose amber box commitments are binding have to rely solely on the green box measures for enhancing multifunctional agriculture, and thus they have less flexibility in the domestic policy design. Hence, these countries may want to expand the green box to contain also some production-linked support for non-trade concerns and multifunctional agriculture.

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Multifunctional character of agriculture: differences in views between the countries

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Abstract. The paper examines the differences between the developed countries in their attitude towards multifunctional agriculture, non-trade concerns and appropriate policy response for addressing multifunctional agriculture and non-trade concerns. The basic differences between the developed countries stem from the potential gains and losses countries face when agricultural trade is further liberalised. The proponents of multifunctionality fear that further liberalised trade reduces their ability to address non-trade concerns and multifunctional agriculture effectively, whereas export-oriented countries see multifunctionality as an excuse for retaining agricultural supports which may result in reduced export opportunities for them. There is a broad consensus among the WTO members that non-trade concerns such as food security, environmental issues, viability of rural areas and food safety are legitimate concerns, which have to be considered when agricultural trade is further liberalised. The concept of multifunctional agriculture, which covers many of the agriculture-related non-trade concerns, has raised conflicting views among the WTO members. Moreover, countries disagree on appropriate policy responses for sustaining and enhancing the multifunctional character of agriculture. The green box policies are the single most widely supported measures for addressing non-trade concerns and multifunctional agriculture. For the Cairns Group and the United States the green box policies represent effective and universal means, whereas for countries with higher production costs they may not be sufficient to sustain the multifunctional character of agriculture, especially in marginal areas. Thus, the high-cost countries are stressing the need to expand the green box to contain some production-linked support in order to address their non-trade concerns effectively.

Index words: decoupled support, green box, multifunctionality, non-trade concerns, production-linked support

1. Introduction

The aim of this study is to describe the differences between the European Union, Australia, Japan, Norway, Switzerland and the United States in their attitude towards the multifunctional character of agriculture and appropriate

domestic policy response for addressing multifunctionality and non-trade concerns. The most cited elements of multifunctional agriculture are food security, environmental issues and viability of rural areas. In addition to these, farm animal welfare and food safety can also be regarded as important non-trade concerns relating to the multifunctional character of agriculture.

The differences in the views of the countries views follow from the fact that agriculture plays several roles in the societies and the value different states place on particular functions of agriculture diverge. Actually it is quite natural that there are controversial opinions, since the climatic and geographical differences in agriculture among European countries alone are huge. Furthermore, the employment effects of agriculture vary from country to country and the significance of agriculture in foreign trade differs between the countries. The distinctions are also reflected in the trade liberalisation matters.

Non-trade concerns and multifunctional agriculture have been discussed in the AIE process (Analysis and Information Exchange) of the World Trade Organisation (WTO). Although there has been a broad consensus among the WTO members that non-trade concerns are legitimate concerns, the consensus on the appropriate policy response for addressing them is lacking within the WTO (AIE/68 1999). Moreover, the multifunctional character of agriculture has been a more controversial topic than the other non-trade concerns, perhaps owing to the fact that some countries (especially the 18-nation Cairns Group of agricultural free traders) see multifunctionality being used as a pretext for maintaining the high levels of production-linked support.

The paper is organised as follows. In Chapter 2 we will consider the reasons why differences arise in the positions of the countries regarding trade liberalisation questions and multifunctionality. A summary of the views of the countries on multifunctional agriculture and appropriate policy measures for sustaining and enhancing the multifunctional character of agriculture is then provided in Chapter 3. Chapter 4 concludes the paper.

2. Why differences appear in attitudes for trade liberalisation issues and perceptions of multifunctionality issues?

The limitations on the trade-distorting domestic agricultural policies were agreed on in the Uruguay Round Agreement of Agriculture. Distorting policies were placed in the so-called amber box, and reductions in those policies were agreed on. Only domestic support measures (so-called green box policies) which at most distort production and trade only minimally can be provided without limits. During the multilateral trade talks in 1986-1994, the emphasis was on setting up the framework for future negotiations and reductions in trade distor-

tions. Part of the final agreement of the Uruguay Round led to the establishment of the World Trade Organisation to replace the General Agreement on Tariffs and Trade (GATT). The next Round of World Trade Organisation talks, the Millennium Round, will have the task of continuing the liberalisation of global agricultural markets.

The developed countries can be divided into two main categories in terms their attitude towards farm trade liberalisation, although we have to admit that the positions of the countries are not always unambiguous owing to diverse natural conditions, farming practices, competitiveness of different production lines and conflicting domestic policy goals. The first category consists of the export-oriented low-support countries that promote strong liberalisation of agricultural trade, including e.g. Australia and New Zealand, which are members of the Cairns Group. These countries want to improve market access and eliminate export subsidies. The high-support counterparts of the first category, such as the European Union, Japan, Norway and Switzerland, favour freer trade, but they also want to protect their domestic agricultural production, at least some of its production lines. For the Japanese, for instance, assuring available food supplies through domestic production is of particular importance.

The key agricultural indicators according to the country are presented in Table 1. Australia, New Zealand and the United States as well as some European countries, such as Denmark, France, Ireland and the Netherlands, are more export-oriented in food and agricultural raw materials trade than the others. The share of agricultural exports is by far the largest in New Zealand: nearly half of the value of all export. In Greece farm products also play a major role in the foreign trade, although the value of agricultural trade both in New Zealand and Greece is modest compared to major agricultural producers and exporters. The European Union as a whole is a net importer, whereas the United States is a net exporter of food and agricultural raw materials. In addition to the United States, the exporter countries with the largest volumes are France and the Netherlands. The value of the imported farm products is the greatest in Germany and Japan. Japan is also distinctly the most dependent on imported food.

The share of agriculture in total employment has been diminishing in all the examined countries during the 1990s. The reduction has been considerable in Ireland, Portugal, Greece and Spain, but agriculture is still an important employer in all of these. Instead, in the Great Britain, the share of agriculture of total civilian employment is the smallest: only 1.9%. The share of agriculture in the gross domestic product at market prices is the largest in Greece. The significance of agriculture is considerable also in Ireland, New Zealand, Spain and Portugal, but only in New Zealand the share of agriculture in GDP has increased in the 1990s. The relative reduction has been the biggest in Greece, Ireland, Finland and Austria. In Finland and Austria the weakening follows from the decrease of the agricultural product prices due to the EU membership.

Table 1. Key agricultural indicators.

	Share of agriculture in total employment (A)		Gross value added % of GDP (B)		Agricultural trade (C)		Value of agricultural (D)	
	1990	1997	1990	1996	Exports	Imports	Exports	Imports
					% of total	% of total	\$10,000	\$10,000
Australia	5.6	5.2	3.0	2.8	17.8	4.5	1,608,548	278,949
Austria	7.9	6.8	2.4	1.0	4.7	6.6	263,134	431,684
Belgium	2.7	2.3	1.8	1.1	10.4	10.6	1,899,793	1,703,227
Denmark	5.6	3.7	3.5	2.5	21.6	10.7	1,041,170	442,710
Finland	8.4	7.1	2.6	0.8	3.9	7.0	154,631	214,973
France	5.6	4.5	2.9	2.0	14.1	10.1	4,040,240	2,761,910
Germany	3.5	3.2	1.4	0.8	5.2	10.1	2,645,740	4,476,300
Greece	23.9	20.3	10.8	6.0	32.6	14.4	365,731	386,733
Ireland	15.0	10.4	6.9	4.1	15.3	8.5	732,786	301,620
Italy	8.8	6.8	3.0	2.7	6.8	12.4	1,688,940	2,557,140
Japan	7.2	5.3	1.8	1.6	0.4	12.0	158,230	4,178,970
Luxembourg	3.2	2.6	1.7	0.8	10.4	10.6	1,899,793	1,703,227
Netherlands	4.6	3.7	3.8	2.7	23.2	13.7	3,730,760	2,066,320
New Zealand	10.6	8.5	4.3	5.4	49.0	7.7	660,281	118,685
Norway	6.5	4.8	1.9	0.9	1.1	5.6	52,340	201,058
Portugal	17.9	13.7	3.6	3.3	6.2	12.9	148,739	431,532
Spain	11.8	8.4	4.0	3.5	14.5	10.7	1,496,419	1,315,980
Sweden	3.4	2.8	1.1	0.5	2.2	6.8	182,234	431,223
Switzerland	5.6	4.7	1.9	1.2	3.1	6.9	251,121	546,190
United Kingdom	2.1	1.9	1.2	0.9	6.2	9.8	1,539,840	2,668,000
United States	2.8	2.7	1.7	1.5	11.2	4.6	6,625,640	3,789,290
EU-15		5.0		2.7	9.7	10.5	19,930,157	20,189,352
Max	23.9	20.3	10.8	6.0	49.0	14.4	19,930,157	20,189,352
Min	2.1	1.9	1.1	0.5	0.4	4.5	52,340	118,685

(A) Employment in agriculture, forestry and fishing as percentage of total civilian employment.

(B) Percentage of agriculture in GDP in 1990 and 1996, except Japan in 1990 and 1994. The figure of the United States in 1996 contains forestry.

(C) Food and agricultural raw materials as percentage of total merchandise trade in 1996. The figures of Belgium and Luxembourg are the same because of the economic union (BLEU).

(D) Value of agricultural trade in 1996. The figures of Belgium and Luxembourg are the same because of the economic union (BLEU).

Sources: FAO. 1998. Trade Yearbook 1996 - Vol. 50.

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OECD. 1999. OECD in Figures. Statistics on the Member Countries.

The essential point in the multifunctional agriculture is the fact that agriculture also produces non-food outcomes along with the conventional food outcome as agricultural production affects the landscape, environment, food safety and viability of rural communities. Due to different technology and farming practices as well as natural and economic conditions, the food outcomes and the effects of non-food outcomes of agriculture are not the same everywhere. This, along with the differences on the demand side, leads to the fact that countries emphasise special non-food outputs and, hence, different dimensions of multifunctionality. (OECD 1998, p. 6). For example, on the supply side, conventional agriculture produces a different combination of agricultural products along with the environmental benefits and costs than organic farming. Similarly, on the demand side, consumers' preferences with regard to agricultural products and the environment are likely to differ between the countries. The trouble is that the non-food effects do not have separate markets or market prices, although it is possible to value the effects, using for example, the contingent valuation method. Since the market mechanism is missing, government intervention is usually needed to allocate resources. Without the incentives set by the government, too little benefits would probably be produced from the social point of view.

As mentioned above, many countries have committed themselves to reductions in agricultural support. Lowering market price support and production-linked direct payments affect not only the level of agricultural production but also the non-food effects. This will create a need for re-assessment with respect to the domestic non-food objectives. Because of the integrated nature of all outputs, some non-food outcomes may rise and others may decrease as a result of a policy reform. Due to constraints on the use of production-linked support, the non-food objectives have to be addressed increasingly through measures that are decoupled from production, while coupled to specific non-food outputs.

The multifunctional character of agriculture is also reflected in the European model of agriculture (EMA). The main lines of the model include an internationally competitive agricultural sector gradually capable of meeting the world market without being over-subsidised, but, distinct from many other countries, agriculture in the European Union is not purely food output-oriented. The non-food effects are also included into the EMA, and agriculture seeks to maintain the amenities of the countryside, such as agricultural landscape, promote environmentally friendly and sustainable production methods, generate and maintain employment and, thus, keep rural communities active. European taxpayers and consumers must naturally accept the costs of agriculture and the chosen agricultural policy. Hence, the expenses must be in line with all the services farmers are expected to provide. The difference between the European model and other countries' approaches (cf. the American Model of Agriculture or any other model which require deregulation and cost-competitive production) lies in

the multifunctional nature of agriculture and the role it plays in the European societies at large. The economic and social cohesion in the Community is strengthening as farmers' incomes are supported to maintain farming throughout the EU. (The European Commission 1999).

3. Comparison of the views of countries on multifunctional agriculture

Non-trade concerns such as food security and environmental issues were already discussed during the Uruguay Round of multilateral trade talks. As a result, Article 20 of the Agreement on Agriculture provides for non-trade concerns to be taken into account when agricultural trade is further liberalised in the future negotiations. During the preparations for the Millennium Round of multilateral trade talks the concept of multifunctional agriculture was developed to cover many of the non-trade concerns relating to agriculture. The multifunctional agriculture and non-trade concerns have been discussed in the AIE process of the WTO. Member countries have submitted several papers that reflect their views on the elements of multifunctional agriculture and appropriate policy measures for sustaining and enhancing the multifunctional character of agriculture. The views of the countries on multifunctionality and appropriate policy responses are summarised in Table 2. It should be noted that the ranking is based on the authors' subjective judgements and individual countries may not fully agree with it.

It can be seen from Table 2 that environmental issues and the economic and social viability of rural areas are the most supported elements of multifunctional agriculture. They have also been the least controversial ones, since none of the countries has resisted the inclusion of them as elements of multifunctional agriculture or as a legitimate non-trade concern.

Food security, however, has been a somewhat more controversial element of multifunctionality. In general countries view food security as a legitimate non-trade concern, but there have been conflicting views on the importance of domestic food production for ensuring the national food security. Some countries (especially Japan and Norway) have argued that some degree of domestic food production is essential for ensuring the national food security, whereas some other countries see food security as a joint-product of international trade rather than as a joint-product of domestic production. Moreover, some countries have questioned the public good aspect of food security (Bohman et al. 1999).

The EU has been the biggest proponent for including food safety and farm animal welfare into the concept of multifunctional agriculture. Thus, these issues are frequently listed as elements of multifunctional agriculture when

Table 2. Summary of the views of the countries on multifunctional agriculture and appropriate policy measures for enhancing the multifunctional character of agriculture.

	Elements of multifunctional agriculture					Instruments for enhancing multifunctional agriculture			
	Food security	Environment	Viability of rural areas	Animal welfare	Food safety	Green box policies	Production-linked support	Price support	Labeling policies
The EU	+	+++	+++	++	++	++	++	?	+
Norway	+++	+++	+++	?	?	+	+++	+	?
The U.S.	+	+++	++	?	?	+++	--	---	?
Japan	+++	+++	+++	?	+	++	+++	?	?
Switzerland	+++	+++	+++	?	+	++	+	?	+
Australia	-	+++	+	?	?	+++	---	---	?

Symbols used: Support to an element or policy measure from weak (+) to strong (+++) support. Resistance to an element or policy measure from weak (-) to strong (---) resistance. Country has not taken position for or against the element or policy measure (?).

Sources: Bohman et al. (1999) and country papers submitted to the AIE process of the WTO. AIE 73 (the European Union), AIE 60 (Japan), AIE 64 (the United States), AIE 67 (Switzerland), AIE 68 (Norway).

referring to multifunctional agriculture as a cornerstone of the European Model of Agriculture. Since food safety and farm animal welfare are considered to be important issues for European consumers and taxpayers, they also have to be reflected in the European Model of Agriculture. Hence, the European Union has promoted the inclusion of food safety and farm animal welfare into the concept of multifunctional agriculture.

During the WTO Ministerial meeting in Seattle the EU succeeded in including food safety (in addition to food security, environment, and the viability of rural areas) as a non-trade concern in the draft text on agriculture. However, farm animal welfare was not included in the list of non-trade concerns (see *Agra Europe*, December 10, 1999). The draft text on agriculture did not mention multifunctionality at all, which could be expected due to the strong resistance of the Cairns Group during the AIE process. It should be noted, however, that multifunctional agriculture is well covered by the agreed list of non-trade concerns mentioned above. Due to the failure of the WTO Ministerial meeting in Seattle to agree on the agenda for the Millennium Round of multilateral trade talks, it remains to be seen what kind of status the draft text on agriculture has when the discussions on agriculture continue this year.

During the AIE process countries have also expressed their views on appropriate policy measures for addressing multifunctional agriculture and non-trade

concerns. The discussion on appropriate policy response has been more conflicting than that concerning the elements of multifunctionality. On the one hand, the Cairns Group and the United States have stressed that green box policies, i.e. policies that are decoupled from production levels and prices, are effective means for addressing the non-trade concerns. Moreover, they maintain that the current green box provisions of the Uruguay Round Agreement on Agriculture provide a broad range of measures for countries to address non-trade concerns with the least distortions on trade. Thus, in their view there is no need for opening and redefining the green box.

On the other hand, the proponents of multifunctionality (e.g. the European Union, Japan, Norway, and Switzerland) have argued that countries should have more flexibility in the domestic policy design than provided by the current green box provisions. From their point of view additional scope for domestic policy design could be achieved through e.g. expanding the green box to also contain some production-linked support. In practice this could mean that the green box should adjust to cover the full range of policy measures – distorting and non-distorting – that countries view necessary for addressing their non-trade concerns effectively.

It can be seen from Table 2 that of the alternative policy instruments for enhancing multifunctional agriculture and addressing non-trade concerns the green box policies (decoupled support) are the most widely supported. While the United States and Australia view green box policies as effective and universal means for addressing the non-trade concerns, the European Union, Japan, Norway and Switzerland view them as necessary but not sufficient means for sustaining the multifunctional character of agriculture, especially in marginal areas. Thus, these countries have given strong support (in different degrees) for the use of production-linked support.

Production-linked support and price support are strongly resisted (in different degrees) by the United States and Australia. Norway has given a slight hint (see footnote 17 of the AIE 68/1999) for examining the rationale of a certain level of regionally differentiated price support.

The labelling schemes have been put forward mainly by the EU to address consumer concerns relating to animal welfare and food safety. In addition to consumer information through labelling schemes (either voluntary or compulsory), the EU may want to address animal welfare issues through support policies that compensate for the extra costs involved in complying with the higher animal welfare standards. Whether this kind of support is compatible with the green box is still an open question.

4. Conclusions

There is a broad consensus among the WTO members that non-trade concerns, such as food security, environmental issues, viability of rural areas and food safety, are legitimate concerns, which have to be accounted for when agricultural trade is further liberalised. The concept of multifunctional agriculture, which covers many of the agriculture-related non-trade concerns, raised conflicting views during the AIE process of the WTO and thus did not achieve a formal status during the WTO Ministerial meeting in Seattle. However, the agreed list of non-trade concerns in the draft text on agriculture covers the elements of multifunctional agriculture quite well. Of the proposed elements of multifunctional agriculture, only farm animal welfare was not included in the list of non-trade concerns. Although the agreed list of non-trade concerns does not have any formal status due to the failure to reach overall agreement on the agenda for the next WTO round, the list of non-trade concerns, however, reflects the consensus on their legitimacy. Consequently, the next step is to reach consensus on appropriate policy response for addressing non-trade concerns.

There have been conflicting views among the WTO members on appropriate policy responses for sustaining and enhancing the multifunctional character of agriculture and for addressing non-trade concerns. The green box policies are the most widely supported measures for addressing non-trade concerns and multifunctional agriculture. While for the Cairns Group and the United States the green box policies represent effective and universal means for addressing non-trade concerns, for countries with higher production costs they may not be sufficient to sustain the multifunctional character of agriculture, especially in marginal areas. Thus, the high-cost countries are striving to expand the green box to contain some production-linked support in order to address their non-trade concerns effectively. Whether there will be enough pressure to redefine the green box also depends on the amber box commitments as well as the future of the blue box.

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On the effects of multifunctional agriculture on food security and viability of rural areas: review of current knowledge

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Abstract. Agriculture produces multiple benefits and costs to societies. In most cases, a policy focusing on one particular benefit or cost influences also the supply of the others. This study is concerned with the contribution of agriculture to food security and rural welfare. Food security in Finland serves mainly as a precautionary measure against supply shocks by means of adequate domestic production and public security storage. The significance of agriculture in the rural areas is still substantial, even if the employment opportunities in agriculture have declined for a long time. Several other lines of business offer better prospects for future growth than agriculture. Therefore, it is important to pursue diversifying structural policy and promote also other sources of living than agriculture in the rural areas. To create and attain multiple benefits, rural policy should be directed to spatial development and nature conservancy.

Index words: food security, multifunctionality, rural welfare

1. Introduction

In addition to its primary function of producing food, agriculture has a number of other functions. These other functions (so-called non-food functions of agriculture) can create benefits or costs elsewhere in the economy, but the resulting non-food benefits and costs do not usually have direct markets. According to OECD (1998, p. 5), multifunctionality in an agricultural context refers to the multiple goods and services provided by agriculture, and the contribution these goods and services make to the achievement of domestic non-food objectives. Because of the nature of the phenomenon, there is no clearly defined list of the non-food effects, which should be included in the concept of multifunctionality. The significance of different non-food factors varies between the countries depending e.g. on the economic and environmental conditions as well as farming practises and technology. Three most commonly cited elements are the environmental benefits generated by agriculture, effects of agriculture on rural economy (especially rural employment) and food security (OECD 1998, p. 4

and 6). This paper concentrates on the latter two. The other elements of multifunctionality include farm animal welfare and food safety.

The issue of multifunctionality is not a new one; it has been reinvented in the 1990s because of an agricultural policy reform. According to Agenda 2000 reform of the Common Agricultural Policy of the European Union, the reduction of the prices of agricultural products on the single market will continue. The concern about the multifunctional character of agriculture may be justifiable as farm incomes will be secured increasingly through direct income support, rather than market price support. New negotiations within the World Trade Organisation (WTO) on further liberalisation of trade started at the WTO Ministerial Conference in Seattle, USA in November 1999. In spite of the unsuccessful beginning, the reduction in tariffs, export subsidies and domestic agricultural support will become issues in the Millennium Round of global trade talks in the early 2000.

Chapter 2 of this study introduces some theoretical concepts. The non-food effects of agriculture are a result of a joint production process. The resulting benefits or costs are typically externalities or public goods in nature. The intervention of the government and the need for agricultural support are considered justified because of the positive non-food implications of agriculture. Chapter 3 concentrates on food security issues. Although Finland is a member of the European Union, the security of supply in times of unusual conditions is mainly a national matter. The two most important topics discussed are self-sufficiency and strategic stockpiles of food. Chapter 4 contemplates the significance of agriculture and rural development issues. According to Kola and Nokkala (1999), in structural policies in Finland the emphasis has been on agricultural and farm-related policy measures, while the development of other rural industries has been neglected. Agriculture is by no means the only economic activity that supplies multiple benefits. Therefore, sometimes the relevant question is whether non-agricultural activities can generate the same non-food objectives as agriculture at lower cost. Concluding remarks are presented in Chapter 5.

2. Joint outcomes, externalities and public goods

When an agricultural activity uses land, labour, capital and intermediate products as inputs and transforms them into food, various integrated non-food outputs are produced at the same time. The bundle of outputs is a result of a joint production process. The non-food outputs of agriculture that can create benefits and costs elsewhere in the economy are not outputs in the conventional sense (OECD 1998, p. 6 and 12). One distinctive feature which causes practical problems is the fact that such non-food outputs (or services) do not usually have

separate markets or market prices. Only marketable agricultural products have a market price, which may not reflect the non-marketable outcomes. Furthermore, the relationship between a food product and a non-food outcome varies. If the level of food production changes e.g. as a result of a price change, some non-food outputs may increase, while supply of others may decrease. Food security, for instance, is positively related to the amount of food produced. Whereas the employment effect of agriculture is associated with the level of labour input use (OECD 1998, p. 12). It should also be noted that, if the amount or price of marketable product changes as a result of a practised policy, this has welfare effects to the producers and consumers, too.

Some non-food effects may depend on the climatic and environmental conditions, commodity composition, farm structures, farming practises, technology or the intensity of used inputs (OECD 1998, p. 5). A change in farming practise or investment in new technology result a different output bundle and new relationships among all outputs (OECD 1998, p. 14).

The joint production process has important policy implications: a policy focusing on one particular output almost necessary influences the provision of the others. Furthermore, a distorting agricultural policy provides the non-food objectives indirectly through the food market via production-linked support payments. Instead, a targeted policy utilises the fact that some non-agricultural activities or decoupled support can also produce non-food outcomes with a minor impact on food production. Decoupling means that the measure is dissociated from the level of food output or inputs used in food production. As long as payments for multifunctionality are not trade distorting, there is in principle no restriction on their use under international trade rules. (OECD 1998, p. 12 and 18).

Some non-food services provided by agriculture are externalities. They are not sold on the market, and even though externalities affect people's utility or firms' profit, they are beyond their control. In the case of agricultural production, a positive externality results when part of the benefit of producing a non-food service accrues to a consumer or firm other than the one producing it. An example of a positive externality is landscape, since people tend to obtain pleasure from agricultural landscape. Accordingly, a negative externality exists when part of the cost of producing a good or service is borne by a consumer or firm other than the producer. Surface water pollution from nutrient runoffs is an example of a negative externality.

If externalities are present, the market will not necessarily result in an efficient allocation of the externality, because private and social benefits (or costs) may diverge. Consider an example involving two farms. The first farm practises agriculture, and the second practises both agriculture and farm tourism. We assume that agricultural landscape has a positive impact on farm tourism. If farmer 1 captures no benefits in generating a beautiful landscape, too little of

this positive externality will be produced from the social point of view. However, it is sometimes possible to internalise the externality. The two farms could merge, and this combined farm could control all production. Alternatively, we could create a market for the externality. Farm 2 could buy a certain amount of landscape from farm 1, i.e. the second farmer would pay to the first farmer for managing his own farm in a way that creates more positive landscape benefits. In a case of a negative externality, such as pollution, it is possible to impose a tax to make sure that the polluters face the social costs of their actions.

Externalities like air pollution, which everyone has to consume the same amount, are public goods. The government provides many public goods, such as roads and national defence. Food security also possesses the aspects of a public good. People may value it differently, but they have to decide a common amount of domestic food production or the level of public food security storage. According to Bohman et al. (1999, p. 18), some countries see that food security is not a non-food product of agriculture rather than a joint product of international agricultural trade. Therefore its position is controversial.

3. Food security

This chapter deals with food security, which is a domestic non-food objective and an important aspect of multifunctional agriculture. The focus is on the national policy level. Food security in Finland serves mainly as a provision against supply shocks. Questions such as the global food availability and world hunger are outside the scope of this study. Besides the national and global levels, food security can be approached at the individual or household level.

3.1. Some dimensions of food security

No exhaustive definition of the term ‘food security’ exists. According to Bredahl et al. (1999, p. 3), food security is nowadays a complex multidimensional concept, and some of the dimensions overlap. One dimension is access to food (Bredahl et al. 1999, p. 3-4 and 8-11). Every individual should have access to nutritionally adequate food. At the national level, food security ensures conditions in which citizens’ risk of falling below a minimum level of food consumption is low (Reutlinger and Knapp 1980). Consequently, in most countries a high degree of food self-sufficiency is often a policy objective as a safeguard against supply and price shocks, although the desired level of self-sufficiency and food security typically includes both imports and exports (Bredahl et al. 1999, p. 5-7). Self-sufficiency means that a country produces enough for its own consumption. Because of seasonal variation in agricultural production, total self-sufficiency would require a national food supply larger than domestic con-

sumption (Kettunen 1992, p. 41). Furthermore, when the advantages obtained from foreign trade are lost, autarky may result in higher food prices.

When producers act as price takers, lowering of food prices through the reduction of market price support reduces the supply and domestic agricultural production. The outcome is, however, an efficient allocation of producers' resources, and if the level of domestic supply is still high enough, no government action is needed. The problem arises only if the domestic production is not at a socially acceptable level. An individual producer has no incentive to produce more to change the market outcome, and thus the government has to intervene since it places a value on self-sufficiency. One implication of this situation is that it may be politically difficult to secure a nation's self-sufficiency in food, i.e. to increase domestic supply to the socially optimal level, since this necessarily increases food production in a particular country and distorts international trade. Since food imports and domestic supply are not perfect substitutes, one solution to this problem is to maintain production potential reserve that can be activated in times of crisis (OECD 1998, p. 16).

Ensuring the stability of production and, especially, stable food consumption is a necessary dimension of food security, particularly at the individual and household level (Bredahl et al. 1999, p. 11). Both food storage and imports stabilise domestic prices and smooth consumption, for example, between harvests, but the reserve stocks also have a food security role. The stockpiles can be seen as an insurance against food supply uncertainties (See Bredahl et al. 1999, p. 12). At the national level, the authorities must evaluate risks such as poor harvests, embargoes and war when determining the level of food security storage of the state. The insurance premium consists of the opportunity costs of the funds invested in stockpiles. Thus, the social costs of the insurance comprise the interest payments of the capital tied-up to food security storage. Along with the growth of food inventories, the domestic price level is likely to rise since the demand for food increases. In this case, social costs increase, but the risk-averse society will give up some of its citizens' purchasing power to avoid a food shortage situation, which would unavoidably lead to even higher prices and, possibly, to political crisis. The maintenance of reserve stocks does not necessarily require domestic production, and countries that buy most of the food abroad are likely to diversify their imports to reduce supply uncertainty risks.

3.2. Security of supply in Finland

Security of supply aims to meet the basic needs in times of unusual conditions. The most important safeguarded functions in the society are the continuity of food supply, energy supply and health care services, together with the operation of industry and infrastructure. A serious threat, in addition to war, is radioactive fallout due to a nuclear power plant accident. Other threats are, for example,

poor harvests, natural disasters, uncertain world food markets or uncontrolled immigration. Security of supply is needed because Finland is geographically far from its trading partners and our production is dependent on imported raw materials. A lot of foreign trade takes place as shipments through the Baltic Sea.

Security of supply is mainly a national matter, and therefore it does not belong to the jurisdiction of the European Union. The storage of oil is an exception of this, and thus there is Community legislation on this. Each member country is obliged to a keep reserve stock corresponding to 90 days' oil consumption. Apart from the membership in the European union, the national preparation in Finland is facilitated by other international agreements, such as the Agreement on International Energy Agency (IAE) and the emergency supply agreement between Finland and Sweden. Most of the EU countries are members of NATO, which is responsible for their economic safety. In Finland, the Government sets the targets for the emergency supply. According to these targets, our country should survive an international crisis, lasting 12 months and including operations on Finnish territory, mainly with our own resources (Valtioneuvoston päätös huoltovarmuuden tavoitteista (1440/95)).

In Finland, the state administration makes sure that the operations of the society are secured. The development and maintenance of the security of supply is the task of the National Emergency Supply Agency, founded in 1993 (Laki huoltovarmuuden turvaamisesta (1390/92) and Asetus Huoltovarmuuskeskuksesta (1391/92)). This agency operates under the Ministry of Trade and Industry, and it acquires strategic stockpiles of necessary materials. The planning and coordination of supply concerns rest with the National Board of Economic Defence. This board is a committee appointed by the Finnish Government for four years at a time. Commercial companies are not obliged to be prepared for unusual conditions; their preparing is voluntary. The maintenance and development of the security of supply is financed primarily through supply security charges collected, among other things, from electricity, coal, natural gas, petrol, diesel oil, as well as domestic heating oil and industrial fuel oil (Laki varmuusvarastointimaksusta (1105/83)). The National Emergency Supply Agency allocates the funding outside the government budget system.

Reaching of food self-sufficiency has been a central objective of the agricultural policy in Finland. However, when production technology became dependent on the availability of oil, chemical industry products and other imported inputs, the traditional self-sufficiency examination proved to be an imperfect indicator of food security. Since the 1970s, in addition to self-sufficiency, the whole food supply chain has been examined from the point of view of food security and ability to supply. The food supply in Finland is based on the domestic resources and continuity of food production at all times as well as on the supporting storage of farm products and inputs. Due to the changes in the production conditions and, partly, in the consumption structure, our food self-

Table 1. Self-sufficiency in livestock products, cereals and sugar (%).

	1995	1996	1997	1998	Average
Pork	101	102	109	105	104
Beef	99	98	100	95	98
Meat, total	99	100	103	101	101
Eggs	124	125	124	120	123
Milk and milk products					
Liquid	111	106	109	108	109
Fat	125	126	128	127	127
Wheat	74	78	79	68	75
Rye	62	88	48	45	61
Bread grain, total	72	79	74	65	73
Sugar	74	75	76	70	74

The figures for bread grain and sugar are calculated as the ratio of yields to domestic consumption (consumption at domestic market price + consumption at world market price).

Source: Elintarviketieto Oy 1999. Elintarviketalous 1999, p. 58-59.

sufficiency has varied annually. Table 1 shows that the production of most staple foods, except beef, cereals and sugar, has been larger than domestic consumption during the EU membership. The averages of the years from 1995 to 1998 are given in the right column.

Land is a crucial resource of agriculture, and maintaining the domestic production also depends on the availability of fuels and fertilisers. In exceptional conditions, a larger arable area is needed because of the uncertainty of fertiliser availability. In 1996 the arable area under cultivation in Finland was 2.15 million hectares (TIKE 1998, p. 55). The cultivated area has declined a little during the 1990s.

Raw materials and products needed in unusual conditions are stored in stockpiles. The most significant storage items are fuels, industrial raw materials and crops. Supply security objectives determine the quantities to be stored. The strategic stockpiles of the crops protect against supply shocks, and the intervention storage is mainly intended to stabilise the price level on the single market. The Intervention Unit of the Ministry of Agriculture and Forestry administers the intervention stocks. Avena Siilot Oy is a state-owned company specialised in the storage of grain.

In the arctic conditions of Finland, food security demands special arrangements, such as national supports and reserve stocks of crops and seed grain, which supplement the Common Agricultural Policy of the European Union. The storage of seed grain is essential because seeds suitable for the Finnish conditions are difficult to obtain elsewhere. The aim is to guarantee food supply in

case of two consecutive seasons of crop failure. Crops used for human consumption are stored in separate units for a year's need. Furthermore, a sufficient cattle feed supply is needed. Therefore, 80,000 tons of seed grain and 900 tons of grass seeds are kept in security supplies, and a sufficient amount of other food production inputs should be available. (Valtioneuvoston päätös huoltovarmuuden tavoitteista (1440/95)) Under unusual conditions, imported foodstuffs are the first ones to be omitted from the diet. Reserve stocks of bread grain, cattle feed and seed grain give additional security to our own food production. These supplies are usable when domestic production does not meet the demand because of a crop failure and it is not possible to get replenishment from the international market.

4. On impacts of agriculture on social and economic viability of rural areas

The rural areas in both Europe and Finland are facing some major problems, such as the decline in primary industries (particularly agriculture), rural depopulation and ageing of the population. These problems are recognised by the European Union, and the Community has a specific rural development policy. In addition to the general and similar problems, each area in Europe has its own special problems. Moreover, due to diversity of rural areas, the pursued policies have different effects in different regions.

Competitive agriculture has an essential role in the rural development process, although it is also important to promote new economic activities to find new sources of income. The effect of agriculture on the social and economic viability of rural areas is also a significant and extensive element of multifunctionality. This chapter presents a number of measures contributing to rural development.

Finland has been a member of the European Union since 1995. From the viewpoint of the countryside, there are two main sectors in the economic policy of the EU. The first is agricultural policy and the second is regional and structural policy. This chapter deals with all the above mentioned policies. At the end of the chapter, estimates of the significance of Finnish agriculture and rural industries will be made.

4.1. Agricultural policy and policy instruments

Agricultural policy falls within the exclusive jurisdiction of the European Union. The objectives of the Common Agricultural Policy (CAP) are determined in the Treaty of Rome of 1957. The common market system of agricultural products, which includes the price system, is an essential device in order to reach the

objectives of the CAP. The market system covers 19 agricultural products or product groups for which administered prices are decided annually by the Commission and the member states. To prevent overproduction, the market arrangements for milk and sugar also include a quota system. The prices of agricultural products on the single market are kept above world market prices by means of import duties and public intervention purchases from member states. Duties and other impediments of trade are prohibited between the member states. Different titles are used for the administered prices of the different products. Intervention price is applied for cereals (except oats) and beef. National intervention bodies are obligated to purchase all products at this price. In the case of beef, intervention purchases are launched if the market price falls clearly below the intervention price. Therefore administered prices are not guaranteed prices. Despite the single market, the relation of domestic production and consumption also affects the market prices of agricultural products in an individual country. Intervention stocks are either exported outside the EU by means of export subsidies or discharged on the single market if market prices exceed intervention prices. (MTTL 1999, p. 25-26).

The common agricultural policy fitted quite well the deficit situation prevailing in the 1960s, but the CAP structures showed serious weakness in the 1980s. The high administered prices and production aids led to costly surpluses. In the 1992 CAP reform the prices in the arable crops and beef sectors were reduced closer to the world market levels, and the farmers received compensatory payments in order to safeguard their incomes. Important innovations in the new CAP were the accompanying measures, which covered agri-environment, afforestation and early retirement measures.

Since 1995 the support measures in Finland have been based on the general support system of the EU as well as on the Accession Treaty which, among other things, allows the nationally financed transfer payments to agriculture. The significance of support in the income formation of agriculture is greater in Finland than in the other EU countries. Due to unfavourable natural conditions compared, for example, to the central European countries, it would be unprofitable to practise agriculture in Finland without any support. Therefore the main purpose of the different kinds of income support measures is to maintain the income level of the farm population. The structure of agriculture is developed by means of structural aid. Efforts are also made to reduce pollution caused by agriculture using agri-environmental aid. (MTTL 1999, p. 48).

The most important one of the present supports are the CAP aid for arable crops and animals, the aid for less-favoured areas (LFA), agri-environmental aid and national support measures. The CAP support, LFA aid and agri-environmental aid are used throughout the Community, and the EU pays the whole CAP support, half of the agri-environmental aid and a third of LFA allowances. The CAP support for arable crops is paid for cereals, oilseed plants, protein crops,

oil flax and set-aside. The CAP support for animals consists of the bull, suckler cow and ewe premiums. The so-called LFA aid, i.e. the aid for the natural handicap, is a structural aid measure intended to secure the continuation of rural industries and preserve the rural population in less-favoured areas. The agri-environmental aid of agriculture covers almost 90% of the active farms in Finland. The aid system pursues environmental objectives and a farmer must draw up an environmental management programme, which regulates e.g. the use of fertilisers and pesticides. Agri-environmental aid compensates producers for the increase in the production costs and income losses due to the restrictions imposed by the terms of the aid. National support measures in Finland comprise, among other things, northern aid, aid for serious difficulties and national aid for crop production. (MTTL 1999, p. 48, 50-53).

Finland is divided into three main areas for the distribution of agricultural support. Aid paid in the whole country consists of the CAP aid and agri-environmental aid. LFA aid is paid in areas B and C. According to the Accession Treaty, 85% of the area of Finland is eligible for the LFA aid. Support area C is further divided into five areas for the payment of the northern aid, and the total amount of support per unit increases from the south to the north. Since Southern Finland is excluded from national northern aid, support areas A and B have received the so-called aid for serious difficulties from the beginning of 1997, which was agreed on the basis of article 141 of the Accession Treaty. The national aid for crop production was introduced as part of the aid for serious difficulties. (MTTL 1999, p. 48, 52 and 54).

The total amount of support paid in Finland and financed in full or partly by the EU has stayed at about the same level since 1995. Instead, national support has decreased gradually. Reduction in the total amount of agricultural support is in accordance with the view that when the Finnish agriculture has adjusted to the new market environment and the common agricultural policy, the aid can be lowered to the level that only compensates farmers for permanent competitive disadvantage due to the natural conditions. (MTTL 1999, p. 49).

The forthcoming Agenda 2000 agricultural policy reform lowers the administered price level of agricultural products and increases decoupled direct support. The farmers will receive a larger share of their income in the form of CAP aid based on the area or number of animals. Restrictions will be imposed on the use of export subsidies. The reform is also extended to the dairy sector. Efforts will be made to integrate the agricultural and structural policy more tightly. One important objective is to extend the social tasks of agriculture to cover environmental management and preservation of the structures of the rural regions. Thus, regional policy will supplement the market policy of agriculture. The objectives of the regional policy are to promote the competitiveness as well as to preserve and create jobs in the rural regions. (Kola 1999, p. 31 and MTTL 1999, p. 64).

4.2. Regional and structural policy

The purpose of regional policy is to balance regional development and reduce disparities between different regions. Aid is therefore mainly directed to the weakest and declining areas. The development of infrastructure has been a significant objective for regional policy in Finland already before the membership in the European Union. In the 1980s, emphasis shifted to projects aiming at diversifying the economic structure of the regions and rural policy became a part of the regional policy. The own activity of the regions has been stressed since the beginning of the 1990s, and regional policy became programme-based along with the innovation policy measures and support for small-scale industries. (Säynätmäki 1999, p. 26 and 33-34).

An important objective of the EU's structural policy is to improve the structure and competitiveness of agriculture. In Finland the objective is to increase the farm size. During the EU membership, the average arable area and herd size have increased considerably, but the Finnish farms should be even larger to compete successfully with farms in other EU states. As the increase in the efficiency of agricultural production reduces jobs, another structural policy objective is to alleviate the resulting negative effects. Thus, as the possibilities offered by agriculture are diminishing, a policy aiming at creating new chances for earning the livelihood is needed in order to preserve the viability of the rural areas. (MTTL 1999, p. 57).

The central tools in the rural development are the Structural Funds of the European Union; the financial assistance to address structural economic and social problems is channelled through these funds. The purpose of the European Agricultural Guidance and Guarantee Fund (EAGGF) is to provide market support and promote structural adjustment in agriculture. The EAGGF is divided into two sections: the Guarantee Section finances price support measures and export subsidies to guarantee stable prices of agricultural products, while the Guidance Section grants subsidies for rationalisation schemes, modernisation and structural improvements in farming. The EAGGF's resources are provided jointly by the member states. The European Regional Development Fund (ERDF) finances structural aid through regional development programmes targeted at the most disadvantaged regions of the Union. The European Social Fund (ESF) is the main instrument of the Community social policy. It provides financial assistance for vocational training, retraining and job-creation schemes, which are targeted particularly at unemployed youth, the long-term unemployed, socially disadvantaged groups and women. The fourth structural fund is the Financial Instrument for Fisheries Guidance (FIFG).

Aid granted from the structural funds consists of the so-called horizontal aid, regional measures and programmes based on the community initiatives. Structural funds supplement national expenditures, which are allowed despite the EU

membership if they do not distort competition or influence trade between the member states. The use of funds is based on the Objective Programmes, listed in Table 4.1. Objectives 1, 2, 5(b) and 6 were intended particularly for the regional development during the years 1994-1999. The others were Community-wide horizontal objectives. In the second Community Support Framework, the regional policy in Finland was implemented through Objectives 2, 5(b) and 6. The most important programmes for rural areas were Objectives 5(b) and 6. Rural areas in Southern and Central Finland were classified under Objective 5(b) areas. Objective 6 regions were areas of very low population density in Northern and Eastern Finland. Objective 6 included Objectives 3, 4 and 5(a). The measures of the programmes covered, among other things, the development of diversified agriculture, promoting the use and management of forests along with the use of timber for energy production and small-scale wood processing, and technology projects on farms as well as promotion of farm tourism. This year the Structural Funds' priority objectives will be cut from seven to three, as Table 2 also indicates. Of the Community Initiatives, LEADER II is directed at the development of rural areas and INTERREG II at the co-operation across

Table 2. Objective Programmes.

Objectives in 1994-1999	Objectives in 2000-2006
Objective 1: Promoting of development and structural adjustment of the least developed regions	Objective 1: Development of regions lagging behind in development
Objective 2: Assisting regions affected by industrial decline	
Objective 3: Reduction of long-term unemployment and alleviation of the entry of young people and those outside the labour market to working life	Objective 2: Development of rural and urban regions with structural difficulties and in need of economic and social restructuring
Objective 4: Adjustment of workers to the structural change of industries	
Objective 5(a): Alleviation of structural problems in agriculture, forestry and fisheries	Objective 3: Development of human resources, including e.g. promotion of local employment initiatives, lifelong education, and combating social exclusion
Objective 5(b): Development and structural adjustment of rural regions	
Objective 6: Development and structural adjustment of northern, very sparsely populated regions	

Source: MTTL 1999, p. 63

borders. In addition, there is a national rural programme called POMO, which is comparable to LEADER. (MTTL 1999, p. 57 and 62-63 and Säynätmäki 1999, p. 34-36).

The structural aid for agriculture consists of aid part-financed by the EU through the above-mentioned Objective Programmes and national aid. In addition to the EAGGF the most important source of structural policy funding in Finland is the Development Fund of Agriculture. The most significant tool in the structural policy is investment aid. The aid may not increase the production quantities at the national level. Therefore, giving up agriculture is encouraged by means of aid for giving up agricultural production, early retirement scheme and afforestation aid. In addition to investment aid, young farmers are eligible for start-up subsidies for the purchasing of their first farm or the agricultural movables of a leased farm. (MTTL 1999, p. 57-58).

4.3. Finnish agriculture and rural industries

Depending on the definition of countryside, from 1.2 to 1.6 million Finns live in rural areas. This comprises 23-32% of the population of Finland. In fact, Finland is the most rural country in the European Union. The arable area in Finland is 1.7% of the total arable area in the EU, and 1.2% of the farms in the EU are located in Finland. In 1998 the area under cultivation was 2.17 million hectares, including 0.17 million hectares set-aside area. During the previous year, the number of farms with over one hectare arable land practising farming or other entrepreneurial activity was 90,203, and the average size of these farms was 24 hectares. (MTTL 1999, p. 11 and 20).

Finnish agriculture rests on family farms. In 1996 the main production line on 32% of the farms was dairy husbandry, 31% of farms produced cereals and 15% practised other crop production. Climatic conditions influence the use of arable land and location of the different production lines within the country. Plant producing farms are mainly located in Southern Finland, whereas most of the cattle farms are in the central, eastern and northern parts of the country. Pig and poultry husbandry is concentrated to the western and southern parts of Finland, and almost all of the farms producing bread cereals are in Southern and Southwestern Finland. Fodder cereals can be cultivated in the whole country, except in the northernmost parts. (MTTL 1999, p. 7 and 21).

The significance of agriculture in the Finnish economy has decreased continuously. In economic terms, milk production is the most important production line. The share of agriculture in GDP was only 1.3% in 1997. However, the significance of agriculture is greater than that, since most of the input, transportation and processing industries related to agriculture are closely connected to the extent and operations of domestic agriculture. Furthermore, the gross value of the production of the food industry in 1997 was about FIM 49 billion. In

terms of the value added the most important sectors of the food industry are meat processing, manufacturing of bakery products and milk processing. (MTTL 1999, p. 23) Altogether, agriculture will continue to affect rural life through its impact on the quality and diversity of the environment and landscape (Kola 1999, p. 30).

Agriculture is nowadays a capital-intensive industry. The share of agriculture in the investments of the whole national economy was 3.3% in 1997. (MTTL 1999, p. 23). As late as in 1984, the share of agriculture in the employed labour force was 10%. The corresponding proportion in 1998 was 5.4%, which corresponds to 120,000 employed persons. (MTTL 1999, p. 84). The number of the people working in agriculture has decreased for several years, and at the same time the significance of the other sources of livelihood has been increasing. The income structures of farm families have diversified, because more of the members of the farm households work outside the farm. Today less than half of the total income of farmers and spouses comes from agriculture and forestry (MTTL 1999, p. 11). In 1997 rural industries in Finland employed altogether nearly 10% of the employed labour force. About 6% were employed in agriculture, and a little under 4% in other rural business activities. (MTTL 1999, p. 6-7).

Although the number of farms and employment opportunities in agriculture are declining, agriculture is still the most important rural industry measured by the number of enterprises. Furthermore, forests and forestry are an integral part of Finnish farms. Based on the data of 1996 and 1997, there were about 142,000 enterprises in the rural areas. The number of farms practising only agriculture and forestry was estimated at about 65,000, and in addition to this there were about 23,000 pluriactive farms. Pluriactive farms practise traditional agriculture and forestry along with small-scale entrepreneurial activity, often connected to agriculture, forestry or fishing. In addition to pluriactive farms, about 53,000 small enterprises were located in the countryside. Thus, the share of small enterprises not connected to farms was 38%. The most common sectors in which the small rural enterprises operate were road transportation, building and retail trade. (MTTL 1999, p. 11-14).

The demands made upon the competitiveness of agriculture are increasing because of the liberalisation of the world trade in agricultural products along with constraints of the EU budget. Central means for improving the competitiveness of agricultural products are technical change, improving the quality and safety of products as well as increasing the size of farm enterprises. (MTTL 1999, p. 57).

5. Concluding remarks

In addition to domestic food supply, the need for domestic agricultural production and agricultural support can be justified by non-food benefits produced jointly with food production. Non-food benefits such as food security and viability of rural areas increase social welfare and should be included into agricultural and rural policy. The other non-food benefits produced also speak in favour of government intervention in order to secure adequate supply of these benefits.

Food security in Finland serves mainly as a provision against supply shocks via public stockpiles and sufficient domestic production. Attention should be directed to security of supply questions widely at all stages of the preparing. Also in future, the food supply in Finland in the case of emergency will be based on the domestic resources, continuity of agricultural production and supporting storage of farm products and inputs.

Rural development measures concern, in particular, support for structural adjustment of the farming sector and remuneration for agri-environmental activities. It seems apparent that traditional agriculture alone cannot maintain rural forms of livelihood. Nevertheless, it is important to retain the level of multiple benefits created by agriculture also in the future when the amount of domestic food production in Finland is likely to concentrate on fewer farms. The employment opportunities in rural areas are of particular importance, since they abate depopulation. Pluriactive farms offer new sources of livelihood to the farm family members, but the number of jobs is limited. Therefore, a rural policy which recognises the special characteristics of rural areas and creates non-agriculture jobs is also needed. In theory, supporting agricultural employment is worthwhile only if it is cheaper than creating new jobs outside of agriculture.

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Multifunctional agriculture: cost-benefit approach

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Abstract. This paper identifies and defines qualitatively the costs and benefits of multifunctional agriculture. The multifunctionality of agriculture consists of non-tradable goods produced jointly in the agricultural production process. Such goods are food security, environmental benefits and viability of rural areas. In addition, farm animal welfare and food safety have been included in the concept of multifunctional agriculture, mainly by the European Union. These issues are also regarded as the so-called non-trade concerns in association to the liberalisation of international agricultural trade, especially with regard to the WTO negotiations. Cost-benefit analysis (CBA) is a research method which can be used to determine the social welfare effects of changes in the production of the main elements of multifunctional agriculture. As a consequence of a reduction in agricultural support or agricultural producer prices both agricultural production volume and the amount of farms will decline. This will result in deterioration of food security. In order to safeguard the food security and adequate supply of food for consumers, the amount of imported food will increase. Farmers' willingness to pursue pro-environmental farming practices will also change and, consequently, the state of the rural environment will change. Another obvious result from the cut in agricultural support is the reduction in the number of agricultural employees. This will inevitably cause higher unemployment, but also higher costs to society because the migration away from rural areas requires construction of new infrastructure in the growth areas. Furthermore, in the worst case scenario, the decline in agricultural support and farm income will possibly lower farmers' willingness and ability to maintain farm animal welfare at the present high level, such as e.g. in Finland. This together with the increased food imports, may increase the amount of diseases caused by impurity of food.

Index words: agricultural policy, cost-benefit analysis, multifunctionality, non-trade concerns

1. Introduction

Agriculture is still highly dependent on public support, especially in the European Union (EU). A reform of the agricultural policy is needed due to both

internal and external pressures. Within the EU such pressures are due to, among other things, budgetary discipline, negative externalities of agriculture, eastern enlargement and the negotiation round of the WTO. The reform of the agricultural policy is characterised by the wish to emphasize that, if supports are still being use, they may not distort the market or international trade. Consequently, price supports have to an increasing extent been replaced by direct payments, which should not lead to any increase in the production volumes (decoupled support). This means that, in addition to the traditional objective of increasing the production, there is a need to find new significance and content for agricultural support, preferably based on widely approved objectives. This is why the EU has introduced the new concept of multifunctional agriculture to the discussion on agricultural policy.

The multifunctionality of agriculture consists of non-market goods produced by agriculture. The most widely accepted aspects of the multifunctionality of agriculture are food security, environmental considerations and securing the viability of rural areas. In connection with multifunctional agriculture environmental issues are taken in a wide sense, including besides e.g. restricting nutrient emissions and issues such as the maintenance of rural landscapes. The EU has also included animal welfare and food safety in the discussion on multifunctional agriculture.

This paper identifies and describes at a general level the costs and benefits of multifunctional agriculture. The qualitative, let alone quantitative, definition of these is a very challenging task, where the choice of an appropriate method is decisive for guaranteeing the reliability and robustness of the result. Cost-benefit analysis is a method that can be used to establish the effects of non-market goods produced by agriculture on the total welfare of society. In cost-benefit analysis efforts are made to value the costs and benefits due to different policy measures in monetary terms.

A policy should be profitable, i.e. the benefits produced by a policy should be higher or at least the same as the costs. The social profitability of a project can be deduced from the difference between the benefits and costs, i.e. the so-called net present value. Cost-benefit analysis is usually applied to compare different policy options, and the results of the analysis give the decision-makers quantitative, economic grounds for the selection of new policies and policy means. This paper assesses the applicability of cost-benefit analysis to the different dimensions of multifunctional agriculture and the establishment of the effects of these.¹

¹ This will later on be followed by a quantitative cost-benefit analysis, which will be published in the publication series of the Department of Economics and Management of the University of Helsinki.

Chapter 2 presents a description of cost-benefit analysis as well as a brief discussion on its limitations and the impacts of these on the use and applicability of cost-benefit analysis. The chapter also reviews a number of studies in agricultural economics where cost-benefit analysis has been used as the research method. Chapter 3 presents a brief account of agricultural support in Finland. Chapter 4 deals with the costs and benefits due to the different aspects of multifunctional agriculture in qualitative terms, and Chapter 5 summarises the essential points presented in this paper.

2. Cost-benefit analysis

Cost-benefit analysis measures the economic changes due to changes in the use of resources. In connection with public finances, cost-benefit analysis is generally used to determine the changes in net social benefit due to a government measure (Broadway and Wildasin 1984, pp. 187-188). Thus cost-benefit analysis provides additional information to the political decision-makers in a situation where there is a choice of several alternative models of action. Cost-benefit analysis helps to find out which alternative is the best from the perspective of society, i.e. which alternative produces the highest benefit at the total level (Dasgupta and Pearce 1978, p. 20).

Pareto improvement occurs when the welfare of at least one individual improves without any deterioration in the welfare of others. Pareto optimum is reached when no more Pareto improvements can be made (Varian 1993, p. 15). According to Mishan (1976, p. 14), cost-benefit analysis is based on potential Pareto improvement. By potential Pareto improvement Mishan refers to a situation where the beneficiaries benefit more than the sufferers lose and thus the beneficiaries are capable of compensating for the losses while still remaining at a higher level of welfare than earlier. In the case of a Pareto improvement where no compensations are in fact paid even if the beneficiaries gain more than the losers lose we are concerned with the Kaldor-Hicks compensation principle (Just et al. 1982).

The objective of cost-benefit analysis is to maximise the difference between the benefits and costs. This difference, called net benefit, indicates the efficiency of the measures applied. The greater the net benefit, the greater is the benefit produced by the measures (Brent 1996, pp. 6-7). Pareto improvement occurs if the benefits from a project are higher than the costs. Pareto optimum is reached when the net benefit of any possible measure is no longer positive. Society is continuously striving to achieve Pareto improvements and to reach a situation that is as close as possible to Pareto optimum. If Pareto optimum is reached, the public policy has been fully successful. However, due to the continuously changing operating environment and the inability of the theory to

capture the real world, reaching Pareto optimum is possible only in theory.

Cost-benefit analysis is a research method that has not established its position in Finland in the same way as in other parts of the world (Matero and Saastamoinen 1993, p. 7), and in agricultural economics cost-benefit analysis has been used very little. In Finland cost-benefit analysis has been applied e.g. in forestry and medicine as well as in the planning of education and road and water construction.

Cost-effect analysis is a modification of cost-benefit analysis, and it is used when it is very difficult or impossible to value the benefits in monetary terms (Layard and Glaister 1994, p. 21). In cost-effect analysis monetary values are established for costs only, while benefits are taken as an entity. Cost-effect analysis may also be applied when efforts are made to minimise the necessary costs for achieving certain benefits (Sassone and Schaffer 1978, pp. 36-37).

Hanley and Spash (1993, pp. 21-22) list the problems involved in the application of cost-benefit analysis to environmental issues as follows:

- The valuation of non-market goods, such as wildlife and landscape. How should this be done, and how much reliance should society place on estimates so generated? Are we acting immorally by placing money values on such things?
- Ecosystem complexity: how can society accurately predict the effects on an aquatic ecosystem of effluent inputs?
- Discounting and the discount rate: should society discount? If so, what rate should be used? Does discounting violate the rights of future generations?
- Institutional capture: is CBA a truly objective way of making decisions, or can institutions capture it for their own ends?
- Uncertainty and irreversibility. How will these aspects be included in a CBA?

Even if the problems presented above concern in the first place cost-benefit analysis directed at environmental issues, except for the complexity of ecosystem they can be generalised to any cost-benefit analysis.

According to Mishan (1976, pp. 11-12), the use of cost-benefit analysis is justified because it provides a means for examining the impacts on the whole operating environment caused by a single actor. This is why cost-benefit analysis is particularly well suited for the study of the environmental effects of agriculture. The production of goods that have no price on the market requires support. Such goods include the positive environmental effects of agriculture and securing the viability of rural regions as well as maintaining food security. Without any support the production quantities remain at the level reached in normal production activity, which is not always the optimal outcome from the

perspective of society. If production remains at too low a level, public support is needed. The externalities may also be negative, and according to the theory the producers should pay for the production of negative externalities to society. One such negative externality of agriculture is water pollution. In practice society often tries to reduce the production of negative externalities. One example of a policy measure aimed at reducing the negative externalities of agriculture, such as nutrient leaching, is environmental support.

Vehkasalo (1999) has examined the profitability of environmental support in respect of the whole society by means of cost-benefit analysis. Vehkasalo notes that the environmental support scheme has been a socially profitable measure. The so-called averting expenditures valuation method, which is based on the calculation of opportunity cost, is applied for the valuation of externalities caused by environmental support in monetary terms. The benefit to consumers due to the reduction in the nutrient emissions from agriculture is valued to correspond to the costs of a similar reduction in the load in the treatment of community waste. He estimated the benefits produced by environmental support at altogether FIM 11.6-17.6 billion at current value, but he points out that the system is profitable for society even without any environmental benefits, because the EU contribution to the support covers the costs due to the terms of the environmental support to the Finnish society. This result cannot, however, be considered very positive in terms of the environment. Vehkasalo also notes that the values for the benefits due to the reduction in nutrient emissions used in the analysis are rough approximations of consumers' real willingness to pay. Benefits related to the rural landscape, biodiversity and reduction of air pollution from agriculture are not taken into account in the study. If these were included, the profitability of the support for society would probably improve to some extent.

Koester and Tangermann (1977) have used cost-benefit analysis to examine the effects of the direct payments used in the price policy of agriculture on the national economy. According to the study, reduction in price support increases the benefit. Based on the study, the financing of direct payments should be arranged by collecting the difference between the price before the change and the new price resulting from the policy from the taxpayers. In the long run the income collected would exceed the need of the producers for compensation, because the adjustment to the new producer price level lowers the net reduction in incomes compared to the losses in the support payments and the number of producers who need compensation in the form of income support decreases. However, the study does not suggest any actual procedures to be followed, as the large number of assumptions used in the study weaken the capability of the model to explain reality.

Hanley (1991) has compared the efficiency of different measures for reducing nitrogen emissions by means of cost-benefit analysis. According to Hanley,

direct restrictions on the use of nitrogen do not produce any benefit, because the demand for nitrogen is quite inelastic. Thus the direct restrictions should be quite high to achieve the desired changes. A lower marginal cost on the reduction can be achieved through distribution of tradable nitrogen use rights than in the case of direct restrictions because producers who do not use the amount of nitrogen they are entitled to in full can sell the remaining share to producers who need this. Obvious benefits can be achieved through nitrogen use rights, nitrogen taxes and riparian zones as well as different combinations of these. Hanley could not find one single solution that would be generally applicable as the optimal combination of the above-mentioned measures depends on the local conditions.

The examples presented above show that the results obtained by means of cost-benefit analysis usually involve a great deal of uncertainty. The researchers often point out that an optimal solution that could be generalised could not be found, and that it should be kept in mind that the results should be interpreted with caution due to the large number of assumptions included in the analysis. However, according to the researchers the results provide useful information for the political decision-making.

The limitations due to the large number of assumptions made in cost-benefit analysis should also be taken into account when using the analysis. Due to the limitations, even at its best cost-benefit analysis is only a tool that may assist in the decision-making (Randall 1999). However, its use is well justified as the analysis aims at systematic compilation and use of data (Barker and Button 1974, pp. 4-5).

3. Agricultural support in Finland

Cost-benefit analysis is used to examine the effects of the reduction in agricultural support on the production of the different aspects of multifunctional agriculture. This chapter presents a brief account of agricultural support in Finland. Finland became a member of the European Union in the beginning of 1995, and since then the common agricultural policy of the EU (CAP) has been followed in Finland. Prior to the EU memberships price support constituted the most important form of agricultural support. According to CAP, price support is paid at the guaranteed so-called intervention price, which is the minimum price a farmer gets for the products. However, not all agricultural products have an intervention price, and the prices of these products are more clearly determined on the market. Compared to the earlier price support system in Finland, fewer price supports are being applied through the intervention system of the EU. Within the EU most of the support to agriculture is paid as direct income support. The most important support measures in the CAP of the EU are income

support based on the arable area or livestock units, agri-environmental support and compensatory allowances.

Income support from the EU is financed from the EU funds in full, while environmental support and compensatory allowances are part-financed by the EU. In addition to the support financed fully or in part by the EU, during the EU membership Finland has applied national support, based on the authorisation from the EU Commission. National support includes transitional aid, national northern aid, national aid for arable crops and other national aid as well as special income support expenditure. Transitional aid has been paid in the whole country for all of the main agricultural products (VM 1998).

In the budget proposal for 2000 (VM 1999), FIM 9.502 billion were allocated for direct income support to agriculture, and the EU contributes 40% of this, i.e. FIM 3.843 billion. Thus the share of the state of Finland is FIM 5.659 billion, including 3.5 billion of national support and FIM 2.159 billion of the national shares of support measures part-financed by the EU. FIM 2.172 billion of the EU contribution is paid as income support from the EU, i.e. the so-called CAP support, which is financed from the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF). The total amount of funds used for environmental support is FIM 1.287 billion, including FIM 719 million of EU financing through the Guarantee Section of the EAGGF and a national financing share of FIM 568 million from the state budget. Compensatory allowances, i.e. the so-called LFA aid, total FIM 2.543 billion. The EU finances FIM 952 million of this, and the share of Finland is FIM 1.59 billion. After the reform of the common agricultural policy in the programming period 2000-2006 the EU financing for the compensatory allowances also comes through the Guarantee Section of the EAGGF, while in 1994-1999 these were financed from the Guidance Section of the EAGGF (European Commission 1999).

4. Costs and benefits of reducing agricultural support

Cost-benefit analysis can be used to find out the benefits and costs of agricultural policy. In most cases the analysis is concerned with the different kinds of effects of a policy change or reform on society as a whole and among the different interest groups in the country in question or internationally (e.g. agricultural producers, food industry, consumers and taxpayers). Instead of the absolute total welfare levels, more sensible and concrete results can be achieved in the study of the effects of a certain policy change. Such a change can be e.g. the change in the focus of agricultural support from the prohibited, so-called amber box, (price) supports towards the so-called green box supports in connection with the CAP reform introduced in Agenda 2000 or due to the pressures caused by the WTO negotiations. As in the case of the Uruguay round of

negotiations, the WTO round is likely to result in demands directed at reducing agricultural support.

Consequently, in order to illustrate the issues involved at a more concrete level, the example presented in this paper concentrates on the effect of the reduction in agricultural support on the production of the different aspects of multifunctional agriculture and the possible social welfare changes in Finland. Let us assume that agricultural support is reduced by 30% so that the domestic payment shares would be large enough to guarantee that the share of the EU in the payments would not change. Thus the reduction would be directed in full at the national support. The resulting amount of support would be FIM 6.651 billion and the share of Finland in agricultural support would be FIM 2.808 billion, i.e. about 42%. In Sweden only support financed in full or partly by the EU is applied, and Sweden accounts for about a fifth of the financing of agricultural support (Jordbruksdepartmentet 1999). The Swedish model provides a concrete alternative to the Finnish agricultural support system as well as justifies the assumption concerning the reduction of support made in the study.

If less money than earlier were used for agricultural support, the income level of farmers would fall, and the production of non-market goods, i.e. multifunctional agriculture, would also be affected. The production of certain aspects of multifunctionality might actually increase as a result of the reduction in the support, but as a whole the production of non-market goods would decline.

The reduction of agricultural support would have various kinds of repercussions in the welfare of society. The most obvious direct impact would be the decrease in the costs to society by the amount of the reduction in the support. This benefit can be considered to be fully directed at taxpayers, if it is assumed that the amount in question or part of it is not used to cover any other social costs. Correspondingly, the welfare of farmers would decline by the amount of the reduction in agricultural support. The increase in welfare achieved by taxpayers is the same as the welfare loss suffered by farmers, and thus the policy change is socially acceptable.

The reduction in agricultural support would also lead to a considerable increase in the EU contribution to the financing of the support. As a result of this, public opinion might become more favourable to the agriculture, which could make it easier to reach agreement in agricultural policy issues in the future. This effect is, however, impossible to value, and thus it may be taken into account as a qualitative variable only. In addition to the above-mentioned impacts, the reduction in agricultural support would have a number of repercussions, which are described below in this chapter.

Let us assume that the producer prices of agricultural products would stay at the same level despite the policy change, or at least they would not rise enough to compensate the farmers for the income losses due to the reduction in the

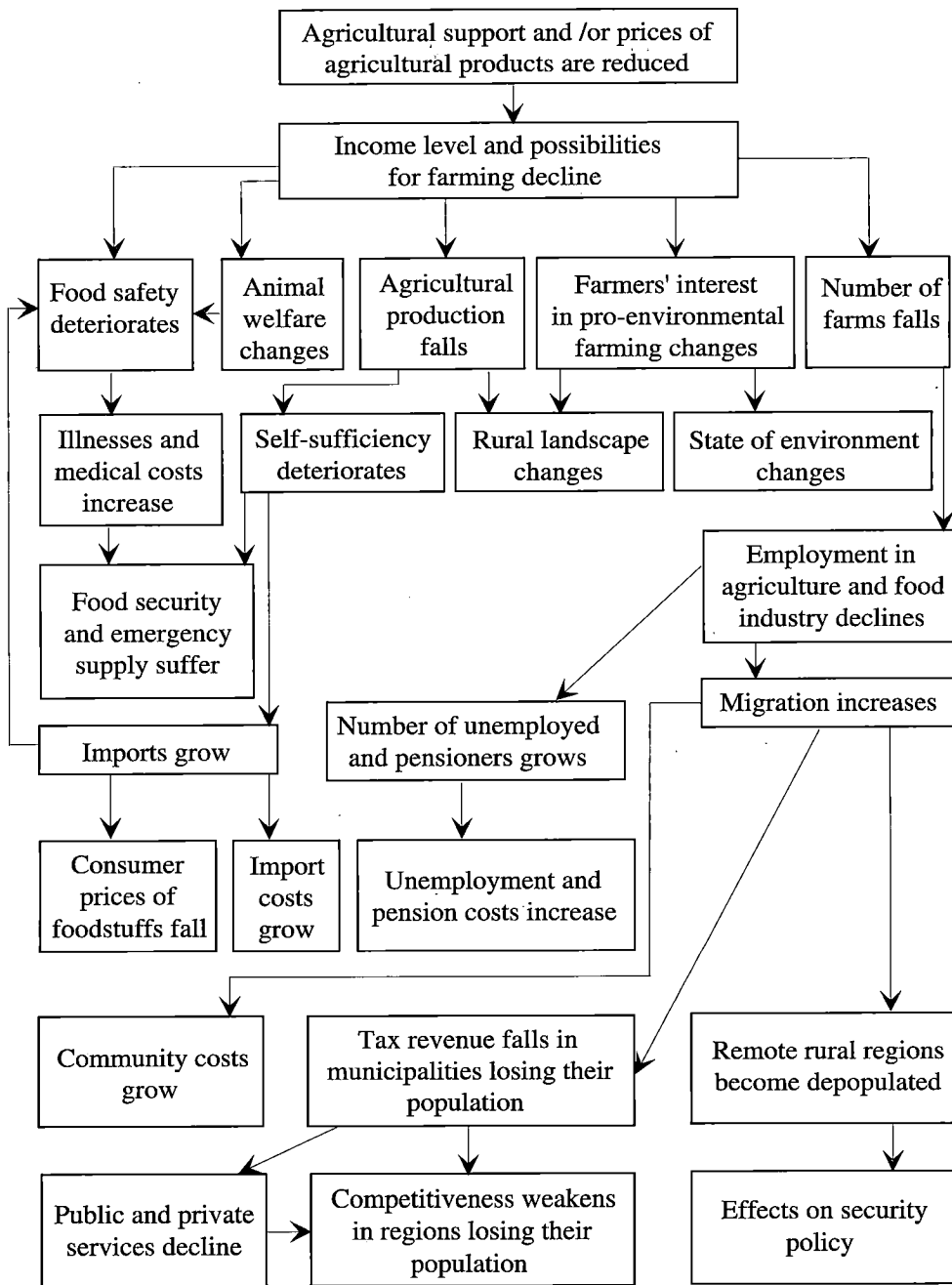


Figure 1. Welfare effects of the reduction in agricultural support and/or prices of agricultural products.

support, which would thus lead to a considerable decrease in the income of farms. This would in turn lead to a reduction in the number of farms, decrease in the cultivated area, as well as reduction of agricultural production. It would also weaken the interest of farmers in environmental issues and possibilities to act in favour of the environment unless support were to an increasing extent based on environmental measures.

4.1. Decrease in agricultural production

The decrease in the cultivated area and number of animals due to the weakening of the profitability of agriculture would lead to a reduction of the production, because a smaller area would inevitably yield smaller quantities of agricultural products. The reduction in the production would to some extent be slowed down by the increased efficiency. The yields of both crops and animals per production unit are expected to continue to grow, which means that agricultural production would fall, but not as rapidly as the cultivated area. In the long run, however, a considerable reduction in support would also lead to a considerable reduction in the production, because the decrease in the number of production factors would be more rapid than the increase in efficiency. The structure of production might also change due to the changes in the relative profitability of the different production lines.

In terms of foreign trade it should be noted that even at present there is a need to import certain foodstuffs in order to satisfy the domestic demand. For example, the production of mutton and today also beef in Finland is far too small to meet the consumption. As a result of a decrease in the production, the domestic production of some of the products in which Finland is at present self-sufficient might fall to such a low level that it would no longer satisfy the domestic demand. Especially in the case of production lines with the lowest profitability self-sufficiency might decline to a level that could be considered a risk to food security. Thus maintaining food security would require increasing imports from the current levels.

The Planning Committee for National Defence (Puolustustaloudellinen suunnittelukunta 1992) notes that, in peacetime conditions, the need for arable land at the 100% self-sufficiency level would be 1.425 million ha in 2000. The number of cows needed would be 329,000, that of pigs 2,222,000 and chickens 3,126,000. In 1999 the cultivated area was 1.976 million (TIKE 1999a). In 1998 the number of dairy cows in Finland was 381,700, that of pigs 1,521,500 and chickens 3,685,800 (TIKE 1999).

Almost without exception, the domestic producer price of foodstuffs is higher than the EU price. However, import of foodstuffs may also lead to additional costs to food industry. The import expenditure would grow, and these might be higher than the domestic freight costs. In the case of imports transportation

within Finland is often also needed as the food industry is not always located near the harbours. The change in the amount of domestic transportation and the resulting welfare effects are difficult to estimate, because the changes in the multiplier effects are very complicated.

Another alternative would be that the production plants of food industry would move close to the most important harbours, but this would also lead to considerable costs. It should be noted that food industry would also decline because the import of processed foodstuffs would probably increase more than that of raw materials.

The increase in imports would raise the import expenditure and weaken the trade balance. The reduction in the production of agriculture and food industry would also have significant multiplier effects on the national economy, e.g. the employment and tax income. The increase in food imports might lead to a slight reduction in the consumer prices of foodstuffs, which would increase the welfare of consumers. According to the Swedish Competition Authority (KKV 2000), increased food imports may also reduce the food prices due to the increase in competition. However, growth in food imports would also have considerable negative impacts on the national economy.

4.2. Reduction in the number of farms

The decrease in the profitability of agricultural production resulting from the fall in the levels of support would also lead to a reduction in the number of farms. This, together with the decrease in the production, would result in a decrease in agricultural labour. This would be caused by a number of factors. First, the cultivated area and the number of animals fall, resulting in a decrease in the need for agricultural labour. Secondly, because of the more highly developed production technology in agriculture, less human labour and, thus, fewer people, are needed (Lehtonen et al. 1998). A third factor is the increase in the average farm size, but this may also slow down the decrease in the number of people employed in agriculture. On the one hand the increase in the average farm size results from the decrease in the number of farms, which might simply be assumed to reduce the number of people working in agriculture. On the other hand, if the cultivated area of farms grows considerably, the farms may have the need as well as adequate resources to hire outside labour for agricultural work. Part of the people employed in food processing and agricultural input industries as well as in transportation might also be left unemployed as a result of the reduction in agricultural support.

Labour released from agriculture and food industry might retire, remain unemployed, or migrate to population centres to find employment opportunities. All of these alternatives would cause costs to society. Society pays unemployment benefits to those who are out of work, and an increase in the number of

unemployed would lead to an increase in the compensations to be paid. Similarly, the growing number of pensioners results in increasing costs to the society. Both unemployment and pension payments are made at the cost of taxpayers.

The migration of the labour released from agriculture to population centres also causes costs to society. Many of these would be so-called externalities. For example, the concentration of the population leads to increased congestion of traffic, and the valuation of this in monetary terms is almost impossible (Kangasharju et al. 1999, p. 3).

The concentration causes direct so-called community costs to the municipalities. Houses and traffic networks have to be constructed for the people moving to the area, and public and private services and their production capacity have to be expanded. Costs are also due to the corresponding infrastructure that remains unused in municipalities suffering from population loss. Despite their temporary nature the community costs may be considerable (Kangasharju et al. 1999, p. 3).

Community costs have been studied by Littow (1989), Martamo and Littow (1992), Lahti and Koski (1993) as well as Lankinen (1998). The studies have aimed at determining the community costs due to increase in the population in growing population centres and adjacent areas. Based on the studies it can be estimated that the community costs caused by one person moving to the Helsinki region amount to about FIM 0.5 million at the value of money in 1998 (Kangasharju 1999, p. 5). About half of these costs are due to the building of housing. In other urban centres the building and travel costs are lower than in the Helsinki region, and thus the costs due to a person moving into these are about FIM 100,000 smaller.

Municipalities losing their population to the growing centres naturally also suffer from the migration. Private services become unprofitable because there are not enough customers, which results in a decline in the private service network. For example, the number of banks in the rural areas has fallen rapidly in the past few years.

Loss of population leads to considerable reductions in the public services as well. In the case of schools, for example, this may be due to the small number of children at the school age, which makes it unprofitable for the municipalities to maintain the schools. The decrease in the tax revenue of municipalities as a result of the population loss may also cause pressures to terminate or cut some public services.

Keeping the whole Finnish territory inhabited has been considered important for the national security policy. Traditionally regional defence has been considered one of the cornerstones of the military defence of Finland. In such a regional defence system knowledge of the local conditions is vital, and the system is constructed on a certain regional population basis. The chief of the defence forces, General Gustav Häggglund has noted that the migration affects

the national defence in two opposite ways. Information and rapid reaction during crisis becomes easier, but society becomes much more vulnerable. However, even the defence forces do not consider it justified to slow down the development and keep the whole country inhabited for reasons based on the defence policy only (EVA 1999).

The difficulties caused by the population loss and problems faced by the defence policy are very difficult to value in monetary terms. However, these cannot be completely ignored in the discussion on the role of agriculture in the socio-economic development of the rural areas.

4.3. Rural environment

The decrease in the profitability of agriculture may also be reflected in the attitudes of farmers to environmental issues. Environmental support, which is partly financed by the EU, would stay at the present level despite a reduction in the national agricultural support. However, due to the decrease in the profitability of agriculture the willingness of farmers to influence their environment might be restricted to the measures necessary to meet the eligibility criteria for environmental support. If economic benefit could be achieved by evading the terms for environmental support, the willingness to comply with the terms might also suffer. This could be called a moral hazard. Pentimäki (1999) has studied the possible moral hazard involved in the different types of contracts aimed at securing the production of environmental goods.

The rural environment produced by agriculture consists of a number of different aspects, such as the rural landscape, bio-chemical processes maintaining the life of ecosystems, as well as economic, socio-cultural and ecological factors (Aakkula 1999). Aspects of multifunctional agriculture produced by pro-environmental agriculture include at least the rural landscape, maintaining biodiversity as well as, at least partly, socio-economic factors in rural areas. The decline in the production of these as a result of the weakening of the profitability of agriculture and change in the environmental attitudes of farmers would also be reflected in the state of the rural environment.

Consequently, a reduction in agricultural support would affect the state of the environment in rural regions, but it is very difficult to estimate the magnitude or even direction of the change. Similarly, the assessment of the welfare effects of the changes in monetary terms would be difficult, or even impossible. The reduction of agricultural production might lead to a decrease in nutrient leaching, but due to the possible loss of morality the decrease could be smaller than expected.

It is also very difficult to estimate the effects of a reduction in agricultural production on biodiversity, because due to the complexity of the ecosystem the number of factors involved at the same time is large. It is extremely difficult to

find out to what extent a change in biodiversity or the state of the nature is caused by changes in agricultural production.

Reduction in agricultural support would lead to significant changes in rural landscape. Due to the decline and increased efficiency in agricultural production, the cultivated arable area would decrease, and in general the cultivated landscape is considered more attractive than one that is completely in its natural state. Thus the benefit from rural landscape experience by consumers would be smaller if agricultural support were reduced from the current levels.

As pointed out above, the assessment of the effects of agriculture on the environment in an accurate and detailed manner is extremely difficult. Thus it is justified to use the consumers' willingness to pay for pro-environmental agriculture as a whole as an indicator for the welfare changes from the consumer perspective in the cost-benefit analysis, too. Aakkula (1999) has assessed consumers' willingness to pay for pro-environmental agriculture by the contingent valuation method. Willingness to pay represents the amount of money a consumer is willing to give up in order to reach a change, while himself remaining at the same welfare level as earlier or better off than earlier. Willingness to pay aims at describing the change in welfare experienced by consumers as a result of a certain measure. The change may be either positive, i.e. benefit or negative, i.e. disadvantage.

Aakkula (1999) estimates consumers' willingness to pay for pro-environmental agriculture to vary between FIM 150 and FIM 615 per person per year. The lowest willingness to pay was the lowest median of the results obtained by different methods and the highest willingness to pay was the highest result of the averages. The medians ranged from FIM 150 to 379 and averages from FIM 290 to 615. Cost-benefit analysis can be applied to examine the benefit from pro-environmental agriculture experienced by consumers by assuming that the willingness to pay depends on the cultivated area. The willingness to pay decreases relative to the cultivated area. Thus the decrease in the cultivated area resulting from the reduction in agricultural support would reduce the benefit from the rural environment experienced by consumers, and thus it would cause costs to the consumers.

4.4. Food safety, animal welfare and production ethics

The fall in the income level of farmers might weaken their interest in the production of high-quality, pure and safe foodstuffs. This could result in an increase in various kinds of residues and pathogens in foodstuffs, which would be reflected as an increase in the diseases caused by foodstuffs in Finland. Growth in the number and cases of diseases caused by food would increase the medical costs.

In Finland the situation in terms of the safety and purity of foodstuffs is very good. For example, the number of cases of salmonella per year is 60 per 100,000 persons, while in most European countries this is much higher. In the Netherlands the number of cases of salmonella per 100,000 persons per year is 600-1,100 and in the Czech Republic this is 500. In Denmark the number of salmonella cases per 100,000 persons was 82 in 1994 (MMM 1998). Based on this, the growth in imports might also increase the diseases caused by foodstuffs in Finland.

The public awareness of food safety issues has increased considerably in recent years due to e.g. the so-called mad cow disease or BSE disease and the dioxin scandal. Consequently, the EU is establishing a food authority for the risk assessment and scientific advice. The white book of the EU Commission dealing with food safety also puts forward a number of proposals for measures aimed at harmonizing the legislation on foodstuffs in the Member States in order to improve food safety. It is also pointed out in the white book that information distributed to consumers is decisive in the food safety issues (European Commission 2000). The Swedish Competition Authority also proposes that the information directed at consumers should be improved in order to increase competition in Sweden (KKV 2000).

The medical expenses due to the increase in the diseases that can be traced back to foodstuffs would largely be borne by society and, through this, by taxpayers. Thus the welfare of taxpayers can be considered to decrease by the amount of the increase in the medical expenses.

Animal welfare might also suffer and the production ethics in general might develop in a more negative direction as a result of a decrease in the income level in agriculture. It seems that after Finland joined the EU there has been some increase in the cases of cruelty to production animals, and the fall in the farmers' income level has been put forward as one possible cause of this. The weakening of animal welfare may also be reflected in lower food safety. However, it is very difficult to estimate the welfare effects of the changes in the welfare of production animals.

5. Summary

This paper is concerned with the impact of the reduction in agricultural support on the effects of multifunctional agriculture, i.e. the production of non-market goods in connection with agriculture. Through this, efforts were also made to assess whose welfare is affected and to what extent.

Fall in agricultural support can be expected to accelerate the reduction in both agricultural production and the number of farms. The self-sufficiency in

food and, thus, food security in Finland would suffer considerably from a decrease in agricultural production. Increased imports of foodstuffs and agricultural products from abroad would be needed to secure the food security and to meet the domestic demand.

The number of people employed in agriculture would decrease as a result of the reduction in the production and number of farms, and the increased import of foodstuffs and agricultural products would also leave a large number of people unemployed in food industry. Unemployment and pension costs would grow more rapidly than in the case of the current support policy, and the migration directed at the growing population centres would accelerate. This would lead to an increase in the community costs.

A reduction in agricultural support would have various kinds of impacts on the state of the rural environment. First of all, the decrease in the cultivated area would increase the share of natural, often less attractive landscapes in the rural areas. Second, a decrease in the income level would reduce the possibilities and willingness of farmers to take care of their buildings. And third, the lower income level might lead to the deterioration of the state of the environment as it would not be possible for farmers to take environmental considerations into account in farming.

Decrease in the support level would also be reflected in food safety, animal welfare and production ethics. The welfare of the production animals might not be considered as important as today if the incomes were reduced. This, together with the increased food imports, could lead to an increase in the numbers of diseases caused by foodstuffs in Finland.

Cost-benefit analysis that takes all the possible effects into account becomes very complicated and it will necessarily include several assumptions and estimates concerning the valuation of the benefits and disadvantages. It is very likely that all effects cannot be valued in a cost-benefit analysis. These effects are not directly reflected in the results, but still they have to be taken into account in the interpretation of the results. The results will obviously be open to various interpretations in respect of the single values in monetary terms. However, the results are indicative for agricultural policy-making and provide a basis for further quantitative analyses.

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European model of agriculture

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Abstract. The nucleus of the European model of agriculture (EMA) is a sector consisting of family farms producing, in an acceptable way, a wide set of public goods in addition to food and fibre. Because of the regional diversity and varying societal values and needs within Europe, the concept of EMA varies by region. The concept is closely linked to the concepts of multifunctional character of agriculture, and sustainable agriculture and rural development. In the discussions of agricultural trade, the EMA is linked to the non-trade concerns.

The EMA is a policy theme and political statement that is currently used in agricultural, rural, environmental and trade discussions. The EMA is relevant in a number of global policy processes such as the WTO round and Rio UN Earth Summit 1992 processes (Convention on Biodiversity, and Agenda 21 on sustainable development), the Framework Convention on Climate Change signed in the Rio Summit, and the Commission on Sustainable Development, created in 1992 within the UN organisation. The EMA is also relevant in the implementation of Agenda 2000 reform of the CAP (Rural Development Plans, cross-compliance in support) and in the planning of the next CAP reform, which will be closely linked to the EU enlargement and results of the WTO round. The concept of EMA will be relevant in specifying future policies that shape the cultural landscape of Europe, viability of countryside, the city-countryside relationship, and agricultural production systems and their environmental effects. In the future, the EMA may become used more generally in the discussions on the future orientation of societies.

Index words: Agenda 2007, agri-environmental policies, family farm, landscape, multifunctional character of agriculture, non-trade concerns, public good, rural development plans, SARD, viability of countryside, WTO

1. Introduction

Agriculture has traditionally been a central source of the viability of the countryside. Fast technological development and changes in agricultural policies, forcing agriculture to become more and more market-oriented, is decreasing the profitability of agriculture and, consequently, decreasing the farm population.

Countryside, especially in less favourable parts of Europe, suffers from depopulation. Finland is a good example of this. The number of farms is decreasing annually by some 5%. The development is negative in terms of the viability of the countryside, quality of landscape and the ability of the agricultural sector to serve society by producing public goods.

The negative development of agriculture which may be intensified by possible policy reforms made because of the EU enlargement and WTO round, is a dread for the type of agriculture and unity between society, landscape and agriculture that is titled as the European model of agriculture (EMA). The concept is still first of all a political statement adopted at a high level at the European Council in Luxembourg in 1997:

“The Union is determined to continue developing the present European model of agriculture while seeking greater internal and external competitiveness. European agriculture must, as an economic sector, be versatile, sustainable, competitive and spread throughout European territory, including regions with specific problems. [...] The [Agenda 2000] reform should lead to economically sound, viable solutions which are socially acceptable and make it possible to ensure fair income, to strike a fair balance between production sectors, producers and regions and to avoid distortion of competition.” (Council 1997).

Since 1997, the concept of EMA has become important when it comes to the justification of agricultural policies and, more currently, when it comes to EU's position in the trade negotiations. While principally pro-free trade, the EU wants to keep certain degrees of freedom in agricultural policies in order to preserve the type of farming that is, as argued, supported by a large share of European public. According to a common argumentation, the EMA defines the agricultural sector that is desired in order to meet the societal demands in the 21st century Europe.

2. The history of EMA

The concept of EMA entered the discussion in Autumn 1997, when the Agenda 2000 reform was introduced by the European Commission. The initiator was the COPA, an extension of agricultural unions from the EU countries, who criticised especially the decreases in administrative producer prices (Ukkonen and Kola 1998, p. 62). The COPA argued that the Agenda 2000 proposal jeopardises the EMA.

The concept of EMA is, however, older than from the year 1997. If not further, one has to go to the origin of the CAP. In 1956, while preparing the foundation of the European Economic Community, the special characteristics of European agriculture were stressed. The common market was prepared in a conference of foreign ministers of the six founding members of the EU in Messina, Sicily, in June 1955. The preparation continued, and next year a report was introduced which formed the basis on which the Treaty establishing the EEC was built (Fearne 1997, p. 14). The report known as Spaak Report (chairman) pointed out that a common market without agriculture was inconceivable. The special character of the European agriculture were defined as:

- the social structure of the family farm;
- the need for stable supplies;
- the problems resulting from climatic conditions; and
- the inelastic demand for food (Fearne 1997, p. 14).

The Spaak Report defined a number of objectives for future agricultural policy. The report was a basis for the Treaty of Rome, signed in 1957, where the objectives of CAP were stated:

- to increase agricultural productivity through the rational development of agriculture towards the optimum utilisation of the factors of production;
- to ensure a fair standard of living for agricultural producers;
- to stabilise agricultural markets;
- to guarantee regular supplies of food to consumers; and
- to ensure reasonable prices of food to consumers (CAP Monitor 1999).

The planning of CAP continued in 1958 in Stresa, Italy, between delegations from each member state, including farming organisations and the food industry. Tools to reach the objectives of the CAP were planned. However, the proposals were not precise enough to be implemented (Fearne 1997, p. 16). In the Stresa conference, especially for the farming representatives, the most important issue covered was the principle that the family farm should remain the foundation of agriculture in the Community. (Fearne 1997, p. 17). The view was probably widely adopted, because the closing words by chairman Sicco Mansholt read as follows:

“...it is particularly encouraging that the conference has provided the opportunity for a frank discussion on doctrine and on the goals of our agricultural policy, that is to say, on the need to guide

agriculture in the direction of sound family farms...In my view this must be so because...there can be no structural policy, or market policy, if we lose sight of this starting point, which in the long run is our final destination as well.” (Commission 1958, ref. Fearne 1997, p. 17).

The Spaak Report and the Stresa Conference clearly pointed out that the future agricultural policy, among other things, will be targeted to safeguard the family farm. Thinking about the EMA, family farm or, as put by Mansholt, “sound family farm” is the central content of the concept that separates Europe from other countries. In a reaction to the Agenda 2000 proposal, Risto Volanen, Secretary General of COPA, put it as follows:

“...We are witnessing the birth of a bio-industry that is, in the American conditions, replacing the present structures of agriculture production. The US has already made its choice - to combine and transform classical family enterprises into bases for industrial raw material production. We in Europe are still at the cross-roads. We still have the choice before us.” (Canada Grains Council 1998).

3. The concept of EMA

The EMA became the cornerstone for the EU agricultural policy in the Luxembourg European Council in 1997. The concept is somewhat vague in the sense that it consists of a wide set descriptions and aims that are difficult to measure and quantify. The EMA is closely linked with the concepts of *multifunctional character of agriculture, sustainable agriculture and rural development (SARD)*, *shared goals* of the OECD (1998), and *non-trade concerns (NTCs)* as referred to in Article 20 of the Uruguay Round Agreement on Agriculture. It is probably correct to say that multifunctionality approach provides a policy-oriented analytical framework for the achievement of SARD goals (FAO 1999).¹ Multifunctionality is a kind of interpretative tool, rather than a new normative framework or a new set of goals and objectives (FAO 1999). The EMA is a wider concept than multifunctional character of agriculture, SARD and NTCs. The EMA is about the unity between society, landscape and agriculture; the EMA is a policy statement which may become an important excuse for agricultural and rural policies in the future.

¹ FAO (1999) makes reference to the concept MFCAL, which is not exactly the same as OECD's concept of multifunctionality.

Because the EMA is such a broad concept, it is difficult to define. Currently, before having been elaborated and agreed in a systematic way, the definition varies somewhat depending on the speaker. The following definition of the concept EMA is based on political statements by EU Council (1999b), EU Commission (1999a,b), EU Farm Commissioner Franz Fischler (1999a), and Dr Risto Volanen (1998), Secretary General of the COPA. Most of the aspects are included in all referred documents. If that is not the case, the reference is mentioned separately. Let's make a special reference to the Council (1999). The multifunctionality and EMA are in a central position in the strategy paper on Environmental Integration and Sustainable Development of the CAP (Council 1999). The strategy, adopted in the Helsinki European Council in December 1999, for example, emphasises the efforts of the Agenda 2000 reform in the sustainable development of agriculture, outlines the EMA by stressing "...the multifunctional role of agriculture from production of food and renewable raw materials to the stewardship of rural landscapes and the protection of the environment. Agriculture's contribution to the viability of rural areas is also indisputable."

The EMA consists of and takes into account the following aspects of agriculture.

1. Sustainability

Sustainable agriculture is based on managing the land and other resources so that they can continue to be used in the future. Sustainable agriculture ensures that agriculture's natural base remains productive and agricultural production can be competitive in the future and that farming works to promote positive environmental impacts. Sustainability is understood to cover economic performance and social equilibrium whilst at the same time maintaining and improving the quality of nature and environment and cultural heritage.

2. Multifunctionality

Farming in Europe performs a range of additional tasks. It supports and safeguards "...our unique countryside and a stable environment." (Fischler 1999). The role of agriculture is broader than that of simply producing food and non-food products; agriculture is multifunctional and has a fundamental role in the maintenance of the quality of nature, the environment and landscape, cultural heritage and employment and viability of rural areas. Further objective of agriculture, although seldom mentioned, may be the preservation of cultural identity. In addition to rural development and environmental aspects, food security is meaningful for the EU, although not often manifested.

3. Consumer concerns

Agriculture responds to the increasing consumer concern about food safety as well as food and environment quality. European farmers are careful in adopting new production methods such as GMO seeds and growth promoters.

4. Animal welfare

Production systems safeguard animal welfare.

5. Coverage

Good agricultural practices will be further developed and respected and agriculture will be maintained throughout Europe, including regions facing particular difficulties.

6. Diversity

European agriculture is highly diversified, and agricultural policies take that diversity into account.

7. Special circumstances (Fischler)

As a result of the high population density, the EU must produce public services in addition to actual farm produce itself. The EU cannot afford to confine nature and the environment to reservations.

8. Competitiveness

Agriculture should achieve competitiveness on a worldwide scale and give farmers a fair living. This aspect points out that agriculture, after all, is an economic sector.

9. Compensation

According to Fischler (1999a), the EU standards in the areas of food safety, quality, and environmental and animal protection, lead to higher costs for farmers and therefore harm competitiveness. Logically, farmers should be compensated for these costs (or border protection should be maintained). While farmers are committed to making greater use of sustainable farming methods, society is convinced that farming is more and more an activity which takes care of the

rural environment, and provides valuable services to the society. Economic, environmental, social and cultural services provided by farmers are recognised. For these services farmers receive compensation. In particular, when farmers provide services for the benefit of the environment beyond the reference level of good agricultural practices and environmental legislation, they should be adequately compensated, for example, through agri-environmental measures implemented on a voluntary basis.

10. Social structure of the family farms

Although not explicitly mentioned in the referred EU documents, the EMA is bound into the social structure of the family farms. Volanen (1998) states that the EMA is made up of family farm enterprises. The CAP, implemented since 1962, has obviously supported the institution of family farms to stay alive. However, this is done indirectly, for example, by making family-size holdings economically viable and supporting the setting-up of farmers.

There are a number of emerging policy challenges that may be included in the policy principles of the EMA in the future. First, the city-countryside relationship in the sense of closed material cycles may become important. Second, agricultural sector may be needed to fulfil the requirements of the Kyoto protocol, an international treaty to control global warming, signed in 1997 and presumably finally agreed at the end of this year. The ways to do this are to restrict greenhouse-gas emissions and draw carbon dioxine out of the air into biomass (sinks). Third, agricultural sector is essential to fulfil the requirements of the Convention on Biological Diversity, result of the UN conference on environment and development in Rio de Janeiro in 1992. Accordingly, conservation and sustainable use of biodiversity, and preservation of ecosystems, animal and plant species will be integrated into all national and economic decision-making.

The concept of EMA is far from agreed. Critical comments on the concept vary from “hazy” and “very vague” to “means anything and nothing” (Agra Europe 1999). It may be argued that the debate on the non-economic objectives of agriculture is only old wine in new bottles (Rabinowicz 1999, Winters 1988). Some aspects and characteristics of the EMA are contradictory (for example, the objective of competitiveness clashes with many other objectives). However, the reality is that strategies and policies of the EU in the agricultural sector are to maintain and promote the EMA. Probably in the future CAP reforms, the ideal of EMA will be even more important (Section 6).

4. Policies to support the EMA

From policy perspective, the EMA is a description of the current agriculture within Europe. At the same time, the EMA is an ideal that is targeted at by the current and future policies. Referring to the Council (1999b): “Based on the model of European agriculture the content of the CAP reform aims to ensure that European agriculture is multifunctional and sustainable throughout Europe, including regions with specific problems, and achieves competitiveness on a worldwide scale. Agenda 2000 CAP reform provides many means to achieve agriculture’s environmental objectives.”

It is agreed by the EU governments that the special character of agriculture in the economic and social structure requires special treatment. According to Fischler (1999a), the Agenda 2000 reform provides the EMA with a sustainable future. As the argumentation goes, the second pillar of the CAP, i.e. rural development policy, supports the production of renewable raw materials and environmental services, and protects the countryside and maintains the viability of rural regions.

The EMA will probably remain an important concept in the EU. The Council (1999b) made references to the EU enlargement and WTO negotiations while discussing the future strategies of the European agriculture. The ministers stressed that during the enlargement process, the positive development of rural environment and sustainable agriculture in the acceding countries must be ensured. They also stressed that during the next WTO negotiation round, an appropriate balance has to be found in the outcome of the negotiations between trade and non-trade issues. This applies in particular to the multifunctional role of agriculture including environmental protection, safety and quality of food and animal welfare. The next WTO round represents a major challenge so as to ensure that the European sustainable agriculture is defended and promoted.

The MacSharry reform of the CAP in 1992 was a move towards policies to support multifunctional character of agriculture and, consequently, the EMA. Measures to encourage less intensive production accompanied by agri-environmental measures were introduced. The trend towards income support and agri-environmental support, instead of price support, discourages the production of private goods and encourages the production of public goods.

The Agenda 2000 reform was a further step in the line of the 1992 reform and, consequently, supports the EMA. In particular, rural development policy (Council Regulation (EC) No 1257/1999) contributes to the achievement of the objectives described in the EMA. Rural development policy acknowledges the rural development as an integral part of the CAP and as a key element of supporting the EMA and, especially, the multifunctional and environmental aspects of the EMA. Implementation of the rural development varies between countries and regions. Agri-environmental measures form a compulsory part of

all rural development programmes applied in the member states. The measures encourage farmers to introduce, continue or improve farming practices compatible with protecting the environment, biodiversity, natural resources, soil and genetic diversity and to maintain the landscape and the countryside. The payments, paid on a voluntary and contractual basis, are made for measures that go beyond the application of good agricultural practice.

Compensatory allowances, made on an area basis in less-favoured areas (LFA) and areas with environmental restrictions aim to ensure the continuation of agricultural production. Especially in sparsely populated areas, such as most of Finland, the LFA allowances are central in maintaining viable rural communities and, thus, making it possible for the EMA to continue in Finland.

In the investments aid programmes, some of the objectives that the investment will pursue relate to the preservation and improvement of the natural environment, hygiene conditions and animal welfare standards. Setting-up aid for young farmers is essential to vitalise rural communities. Training programmes prepare farmers for the qualitative reorientation of production, application of production practices compatible with the maintenance and enhancement of the landscape, protection of the environment, hygiene standards and animal welfare, and acquisition of the skills needed to enable them to manage an economically viable farm.

The horizontal regulation of the Agenda 2000 reform may be used to support the EMA. The member states are allowed to draw up national schemes based on so-called 'cross-compliance' and 'modulation.' Cross-compliance means a link between the receipt of direct payments and respect of certain environmental standards. If farmers do not meet the minimum standards for pro-environmental farming, their direct payments can be cut. Modulation allows member states to decide to cut aid payments according to labour force used or the prosperity of the farmer. It is also possible simply to cut annual payments if they exceed limits to be decided. The cut cannot exceed 20% of a farmer's total payments in a calendar year. The member states may keep the money saved through horizontal measures and re-channel it into additional rural development measures. An elaboration of employing the modulation scheme is given in Section 6.

What are the policies to support the EMA? Applying and modifying the principles of agri-environmental measures stated in the Council (1999b), the principle of policies to support the EMA should be as follows:

1. There is a general reference level of good agricultural practices (the EMA) as a precondition of general support mechanisms.
2. Additional services beyond the reference level should be adequately compensated for by society, for example, through environmental and cultural landscape payments.

3. Remembering the diversity of European agriculture, the subsidiarity principle in the development of measures and regulations implies that support measures vary between countries and regions. To develop efficient policies requires co-operation and dialogue between actors (authorities, non-governmental organisations, farmers' organisations and public actors).
4. In areas where there is a serious discrepancy between the ideal type of agriculture (the EMA), temporary government intervention might be needed to improve the sustainability up to the reference level.
5. Sustainable development of agriculture, for example investments to support the EMA, requires that policies are reliable and predictable.
6. Promotion of the EMA requires an integrated agricultural and rural policy, implying that the rural development policies will become an increasingly important second pillar of the CAP.

5. The EMA and WTO

The first major test for the EMA will be the forthcoming multilateral WTO negotiations within the World Trade Organisation (WTO). In the previous round finalised in 1994, the WTO countries agreed that progress on agricultural trade liberalisation is to be reviewed before 2000. In December 1999, the Seattle ministerial meeting did not succeed in agreeing on the agenda for the Millennium Round trade negotiations. However, the agricultural negotiations will take place anyway. Before the Seattle meeting, the EU Agriculture Council stressed that

“...safeguarding the future of the European model of agriculture, as an economic sector and as a basis for sustainable development, is of fundamental importance because of the multifunctional nature of Europe's agriculture and the part agriculture plays in the economy, the environment and landscape as well as for society. Thus the contribution of agriculture remains vital to the European economy and society.” (Council 1999a).

Referring to the Council (1999a) and Fischler (1999a), the EU's position in the WTO negotiations will be as follows:

- The EU will continue developing the existing European model of agriculture based on its multifunctional character, and to act to assert its identity both inside and outside the EU.

- European agriculture as an economic sector must be versatile, sustainable, competitive and spread throughout Europe, including the regions with specific problems. It must be capable of maintaining the countryside, conserving nature and making a key contribution to the vitality of rural life. It must also be able to respond to consumer concerns and demands regarding food quality and safety, environmental protection and the safeguarding of animal welfare.
- The WTO should ensure that “...greater attention is paid to the justified interests of consumers and that the WTO is not used as a pretext for placing products on the market where there are legitimate concerns about their safety.” (Fischler 1999a). Biotechnology and gene technology are examples of food safety issues. The precautionary principle of the EU requires improved risk assessment techniques and greater consumer information in order to prevent harmful effects on health and the environment.
- The EU standards on food safety, quality, and environmental and animal protection, lead to higher costs for farmers and therefore harm competitiveness. For the sake of fair conditions of trade, the EU should either have a right to compensate for the additional services or retain certain trade barriers. Fischler (1999a) prefers the compensation policy for costs incurred above and beyond normal production costs.
- The Agenda 2000 reform constitutes essential elements of the EU’s position for the WTO negotiations. The Agenda 2000 is meant to be “...a clear signal to the EU’s trading partners that the EU is committed to the model of European agriculture.” (Council 1999b).
- The negotiations on agriculture will be based on Article 20 of the Agreement on Agriculture. This implies that, for example, non-trade concerns must be taken into account.
- The aim of the WTO negotiations is to take “...full advantage of the expansion in world trade while maintaining and developing the European model of agriculture with its multifunctional characteristics and with high quality and safety standards; placing market liberalisation in a setting which brings international recognition of the constraints imposed on European farmers and agricultural products and does not call into question the principle of the Community preference.” (Council 1999a).
- The outcome of the negotiations should not “...damage the ability of those employed in agriculture to supply public goods, in particular as regards the environment and the sustained vitality of rural areas.” (Council 1999a).

- In order to “...ensure equal conditions of competition between European Union and third country producers, [...] international acknowledgement of animal welfare rules must be one of the key points [in the negotiations].” (Council 1999a).

To sum up, in the WTO negotiations the EU will protect the EMA by addressing non-trade issues, in particular the need to strengthen the multi-functional role of agriculture as a means of ensuring that the EU will benefit from the EMA also in the future.

The WTO Ministerial meeting in Seattle failed to reach a consensus on defining the agenda of the Millennium Round. Generally speaking, in Seattle the positions of trade powers were clear. The USA and Cairns group² stood firm behind the requirement that trade in agricultural products is similar to trade in any other products. This implies that the Millennium Round should eliminate export subsidies and border protection. Also, the USA and Cairns group require that any production-linked subsidies should be abolished in order to make food suppliers equally competitive everywhere.

Contrary to the USA and Cairns group, the EU and some other countries stressed that trade in agricultural products is different from trade in industrial products. This is justified by the multifunctional character of agriculture. Although no conclusion was attained in Seattle, the wording in the last drafts will be relevant when talks continue in Geneva in Spring 2000. According to the texts on agriculture,

- the talks in agriculture will base on Article 20 of the Uruguay Round Agreement on Agriculture (WTO 1993);
- the developing countries will achieve special treatment;
- the negotiations shall cover market access, export competition, domestic support, and rules and disciplines (proposals for negotiations should have been submitted by 1 July 2000);
- the negotiations shall take into account non-trade concerns and other objectives and concerns, including making commitments in an equitable way among all Members; and
- the negotiations shall be concluded before 15 December 2002 (Agra Focus 1999).

The term multifunctionality was also employed in the discussions in Seattle, although it was excluded from the final drafts of the meeting. After the talks, the

² Australia, Argentina, Brazil, Canada, Chile, Colombia, Fiji, Indonesia, Malaysia, New Zealand, Paraguay, the Philippines, South Africa, Thailand, and Uruguay.

EU Farm Commissioner Franz Fischler interpreted that the word multifunctionality was left out of the documents but included as a concept. In Seattle, a group calling itself as the Friends of Multifunctionality,³ stressed the need to cover non-trade concerns in agriculture and include the word multifunctionality, whereas the USA and Cairns group wanted to exclude the word multifunctionality (Agra Focus 1999). The term multifunctionality does not appear in the final documents, but it is probably fair to say that the concept “non-trade concerns” refers to the same thing.

From the EU’s point of view, one of the most striking points was, quoted from Fischler’s (1999b) speech, “...the European wish for the multifunctional role of agriculture to be recognised, i.e. its role in preserving the environment and conserving the landscape and in rural development and food safety.” The reason for Fischler to interpret that the concept multifunctionality was included in the draft documents is because the text on non-trade concerns reads as follows: “[The non-trade concerns] include, in particular, the need to protect the environment, food security, the economic viability and development of rural areas, and food safety, without prejudice to the Agreement on the Application of Sanitary and Phytosanitary measures. Non-trade concerns shall be addressed through targeted, transparent and non-trade distorting measures.” The EU wanted to include animal welfare considerations into the non-trade concerns but was left alone (Agra Focus 1999).

It is probable that the negotiations on agriculture will start in 2000 as agreed at the end of the Uruguay Round. The negotiations will be based on Article 20 of the WTO Agreement on Agriculture and consist of things that were already included in the drafts in Seattle. The non-trade issues or multifunctional character of agriculture will be taken into account. This implies that to a certain degree, it is up to each country to decide what kind of production technology is adapted. The EU has described the desired type of agriculture as the EMA.

6. The EMA and Agenda 2007

The targets manifested in the EMA will probably become more important in the future CAP reforms. The reasons for this are both internal and external. As the wealth of European consumers and voters increases, the demand for public goods provided by agriculture will probably increase as well. The utility function of European consumers does not consist merely of food but also certain quality and safety attributes in it, awareness of acceptable production systems

³ The EU, Hungary, Switzerland, Japan, South Korea and Turkey.

(environment and animal welfare), high quality landscapes, and sustainable development of the society, including rural areas.

The enlargement of the EU will lead to an increase in the diversity of farm sectors within EU, and so do the needs of societies. Simultaneously, the pressure to get rid of trade distorting policies diminishes the number of available tools in agricultural and rural policies. Many driving forces force the EU to seek new methods to support the supply of desired goods. Because the demand for services varies between areas, the policies are likely to be regionalised. The subsidiarity principle in decision-making will probably give rise to increasing regionalised financing. This will occur parallel to the EU enlargement.

Increasing demand for public goods, diversity in needs and diversity in farming conditions, enforced by the EU enlargement, and pressure of the WTO negotiations make it more difficult to have a common policy all over the EU. The policies will be targeted to support the EMA, but the concept of EMA varies by region. The concept has to be defined first of all by the demand side, or consumers and taxpayers and other stakeholders. There is a remarkable difference between conditions in densely and sparsely populated areas. In densely populated areas, the viability of societies is less dependent on agriculture. Agriculture is competing with other land users, but, for example, farming is supported for the sake of cultural landscapes, environment and local food supply chain. On the other hand, in sparsely populated areas, agriculture may be crucial for the viability of societies. There agriculture may be supported for the sake of societal demands such as sustainable development of rural areas and for maintaining landscape and biodiversity.

Agenda 2007 will probably be a move towards contracting with farmers on taking care of the landscape, countryside and cities (through a new relationship), and maintaining and improving the resources like soil, water and fauna. The work has to be done in a sustainable way, which implies, for example, that biodiversity and sustainability have to be taken into account. Agriculture may also assume new tasks such as contributing to the general target of reducing the gas emissions.

Agenda 2007 may increase the polarisation in farming systems. Part of the farms will be oriented to an international market with only a basic responsibility for characteristics and values described by the EMA. The rest of the farms will be oriented to managing the countryside and natural resources under the rules of the EMA.

Although the Agenda 2000 reform can be seen as a move of the CAP to support the EMA, what did not happen was a great step towards subsidiarity in the implementation of policy measures by national or regional legislation. The adjustment of supports by modulation provides member states the possibility of reallocating supports towards rural development programmes. However, the

steps towards regionalisation are so small that the CAP still remains a common Community policy.

It is foreseen that in Agenda 2007 environmental and cultural landscape payments and rural development incentives will become more important, while the importance of compensation payments and market support will decrease (as suggested by Buckwell Report 1997). The rural development regulation will be targeted to encourage farmers to introduce, continue or improve farming practices compatible with protecting the environment, biodiversity, natural resources, soil and genetic diversity and to maintain the landscape and sustainable development of rural areas and to combat the greenhouse effect and absorb carbon dioxide.

The consumer point of view will become increasingly important. This implies, for example, that agricultural and rural policies will be targeted to respond to society's increasing demand for environmental services. The farmers orient to serve society as a whole by improving farming practices compatible with the society's wish. The production of public goods will probably be based on contracts, in a similar way as the production of environmental goods in the current system. The measures offer payments to farmers who, on a voluntary basis, provide services to support the ideals defined in the concept of EMA. The payments according to the contracts will only be made for measures that go beyond the application of good agricultural practices, which implies that the farmer already respects minimum environmental requirements.

An elaboration of future policies that agree with many ideas presented above has been given by France. France is employing the modulation scheme of the horizontal regulation of the Agenda 2000 reform so that subsidies are cut from large farms, which approximately means cereal farms larger than 100 hectares. The cut is progressive in the range of 5-20%. In addition to the received area payments, the cut depends on the labour requirements of the farm. The savings will be allocated to rural contracts (in French, Contrat Territorial d'Exploitation, CTE) that will be made farm by farm. The contents of the contracts depend on regionally-decided demand for public goods and the willingness of local farmers to provide them. The cuts in CAP payments are so small that the CTE system cannot rely solely on this financing. Additional funds are allocated from the LFA, agri-environmental, and domestic support programmes.

The CTE system is interesting from the EMA point of view. First, the system supports directly the production of public goods, rather than indirectly by encouraging the production of private goods. Second, the system follows the subsidiarity principle, which is particularly important in the production of public goods. Third, the system is transparent as it shows the taxpayers exactly how their money is spent. Fourth, the CTE is green-box compatible in the WTO negotiations.

The CTE and its implementation in France is a good experience for the EU when planning the next CAP reform. If adapted as an EU policy, the subsidiarity principle of the CTE probably implies a large share of domestic co-financing. This aspect may become important when deciding on the agricultural policies in the enlarged EU. It is possible that member states are allowed to tailor CTE programmes as they wish (probably within a certain range), but recognising that they have to pay for it by themselves.

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SELOSTUS

Maatalouden monivaikutteisuus

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Julkaisun tavoitteena on luoda katsaus uuden maatalous- ja kauppapoliittisen käsitteen monivaikutteinen maatalous keskeiseen sisältöön ja merkitykseen maatalous-, kauppaa-, ja ympäristöpoliittisessa päätöksenteossa. Maatalouden monivaikutteisuus on tullut kansainväliseen keskusteluun maailman kauppajärjestön WTO:n ns. ”Millennium” -neuvottelukierroksen kynnyksellä. WTO/GATT:n Uruguayn kierroksen maataloussopimuksen artiklassa 20 todetaan, että kansainvälisen kaupan vapauttamista maataloussektorilla tulee jatkaa Uruguayn kierroksen toimeenpanokauden loppuessa vuonna 2000. Lisäksi artiklassa todetaan, että kauppaa edelleen vapautettaessa täytyy ottaa huomioon muun muassa ns. ei-kaupalliset kysymykset (non-trade concerns). Näistä ei-kaupallisista kysymyksistä on kansainvälisessä keskustelussa erityisesti nostettu esille ympäristö ja huoltovarmuus (food security). Lisäksi Uruguayn kierroksella useat valtiot ottivat esille maaseutualueiden elinvoimaisuuden yhtenä tärkeänä ei-kaupallisenä kysymyksenä. Mainittujen ei-kaupallisten kysymysten voidaankin nähdä edustavan keskeisiä elementtejä maatalouden monivaikutteisuusajattelussa. Lisäksi elintarviketurvallisuus (food safety) ja kotieläinten hyvinvointi ja tuotanto-olot ovat olleet esillä ei-kaupallisina kysymyksinä. Ne on nähty osana monivaikutteisuuskäsitettä erityisesti silloin, kun monivaikutteisuudesta on puhuttu keskeisenä osana maatalouden eurooppalaista mallia (the European Model of Agriculture).

Maatalouden monivaikutteinen rooli ei sinällään ole uusi asia kansallisessa maatalouspolitiikassa. Monet valtiot ovat asettaneet maataloudelle muitakin tehtäviä kuin ruoan (ja kuitujen) tuotanto, kuten ympäristö- ja maaseutuhyödykkeiden tuottaminen, maaseutualueiden asuttuna ja elinvoimaisena pitäminen, elintarvikkeisiin liittyvä huoltovarmuus ja omavaraisuus. Monivaikutteisuudesta puhuttaessa pyritäänkin ottamaan aikaisempaa kattavammin huomioon maatalouden tuottamien erilaisten ulkoisvaikutusten ja julkishyödykkeiden koko kirjo. Siten monivaikutteisuus useampia hyötylähteitä tietoisesti yhdistäessään pakottaa ottamaan huomioon laajemman maatalouspoliittisen kokonaisuuden silloin, kun pohditaan yhteiskunnan kannalta tarkoituksenmukaista tukipolitiikkaa.

Uuteen kauppaneuvottelukierrokseen lähdetessä monivaikutteisuus jakaa eri maiden kannanotot siten, että osa valtioista kokee sisäisen tuen lisärajoitteiden ja vähentämisvelvoitteiden heikentävän niiden mahdollisuuksia ottaa huomioon monivaikutteista maataloutta, kun taas osa valtioista näkee monivaikutteisuuden keinotekoisena yrityksenä ylläpitää maatalouden korkeaa tukitasoa.

Julkaisun ensimmäisessä artikkelissa "Multifunctional agriculture, non-trade concerns and the WTO" Jussi Lankoski analysoi maatalouden monivaikutteisuutta taloustieteellisenä käsitteenä ja maatalouden monivaikutteisen roolin merkitystä kotimaisen politiikan suunnittelussa sekä WTO-säädösten näkökulmasta. Monivaikutteinen maatalous voidaan määritellä aktiviteetiksi, joka perusmaatalouden ja elintarviketuotannon ohessa tuottaa yhteiskunnan hyvinvointia lisääviä maaseutu- ja ympäristöhyödykkeitä. Talousteorian näkökulmasta nämä maaseutu- ja ympäristöhyödykkeet voidaan nähdä ulkoisvaikutuksina, jotka jäävät markkinamekanismin ulkopuolelle ja näin ollen eivät sisälly maataloustuotteiden tuotantokustannuksiin ja hintoihin. Maatalouden monivaikutteisen roolin huomioonottaminen politiikkatoimenpiteitä suunniteltaessa voidaankin nähdä toimenpiteenä, joka korjaa markkinoiden kyvyttömyyttä hinnoitella maataloustuotantoon liittyviä ulkoisvaikutuksia. Monivaikutteisen maatalouden edistäminen vaatisi periaatteessa politiikkayhdistelmää, jossa tarkennetut, ympäristö- ja maaseutuhyödykkeiden tuottamiseen sidotut toimenpiteet on samanaikaisesti irrotettu perusmaataloustuotannosta ja maataloustuotteiden hinnoista, niin että ne mahdollisimman vähän vääristävät tuotantoa ja sitä kautta kansainvälistä kauppaa. Kyseisen politiikkayhdistelmän löytäminen voi olla vaikeaa, koska tarkennettuja toimenpiteitä ympäristö- ja maaseutuhyödykkeiden tuottamiseen ei aina ole helppo irrottaa perusmaataloustuotannosta johtuen yhteistuotosprosessista.

WTO:ssa monivaikutteisuus on periaatteessa keskustelua maatalouden tukipolitiikasta ja sen vaikutuksesta kansainväliseen kauppaan. Olennaisin kysymys on, tarjoaako maatalouden monivaikutteisuus valtioille oikeutetun perusteen maatalouden tukemiselle. Monivaikutteisuus liittyykin läheisesti nimenomaan sisäiseen tukeen eikä niinkään rajasuojaan. Sisäisestä tuesta keskusteltaessa nousee esille se, onko monivaikutteisuuteen kohdennettu tuki hyväksyttävissä ns. vihreään laatikkoon, jonne sijoitetut tukimuodot eivät ole sisäisen tuen vähentämisvelvoitteen alaista tukea. Vihreään laatikkoon voidaan sijoittaa ne tukimuodot, joiden katsotaan olevan hinnoista, tuotantopanoksista ja tuotannon tasosta irrotettuja (decoupled) ja näin ollen ovat kansainvälistä kauppaa vain vähän tai ei lainkaan vääristäviä. Vihreän laatikon tukimuodot periaatteessa kattavat monivaikutteisuuden keskeiset elementit ja voidaankin sanoa, että alhaisen kustannustason maille vihreät tuet tarjoavat riittävän keinovalikoiman monivaikutteisuuden edistämiseen. Korkeamman kustannustason maille kuten Suomelle vihreän laatikon tuet eivät välttämättä yksistään riitä ja siten monivaikutteisuuden tehokkaaseen ylläpitämiseen ja edistämiseen saatetaan tarvita myös tuotantoon sidottua tukea.

Julkaisun toisessa artikkelissa "Multifunctional character of agriculture: differences in views between the countries" Jussi Lankoski ja Antti Miettinen vertailevat kehittyneiden maiden asenteita maatalouden monivaikutteisuuteen, ei-kaupallisiin kysymyksiin ja ehdotettuihin politiikkatoimenpiteisiin. Maiden väliset suhtautumiserot syntyvät pääasiassa maatalouskaupan vapauttamisen

mukanaan tuomista taloudellisista hyödyistä ja tappioista kullekin maalle. Korkeampien tuotantokustannusten maat kokevat sisäisen tuen lisärajoitteiden ja vähentämisvelvoitteiden heikentävän niiden mahdollisuuksia ottaa huomioon monivaikutteista maataloutta, kun taas vientiin suuntautuneet kustannuskilpailukykyiset maat näkevät monivaikutteisuuden keinotekoisena yrityksenä ylläpitää tuotantoon sidottua tukea ja sitä kautta tuotantoa niillä alueilla joiden kilpailukyky on heikko ilman tukia. WTO:n jäsenmaiden keskuudessa vallitsee laaja konsensus siitä, että ei-kaupalliset kysymykset kuten huoltovarmuus, ympäristö ja maaseutualueiden elinvoimaisuus ovat oikeutettuja huolenaiheita, jotka pitää ottaa huomioon kun maatalouskauppaa edelleen vapautetaan. Monivaikutteinen maatalous, joka pitää sisällään keskeiset maatalouteen liittyvät ei-kaupalliset kysymykset, on kuitenkin saanut ristiriitaisen vastaanoton WTO:n jäsenmaiden keskuudessa. Lisäksi jäsenmaat eivät ole saavuttaneet yksimielisyyttä politiikkatoimenpiteistä, joilla ei-kaupalliset kysymykset otettaisiin huomioon. Kuitenkin voidaan todeta, että vihreän laatikon toimenpiteet ovat saaneet laajimman kannatuksen jäsenmaiden keskuudessa. Cairns Groupille ja Yhdysvalloille vihreän laatikon toimenpiteet edustavat tehokkaita ja yleispäteviä toimenpiteitä, kun taas korkeamman kustannustason maille ne eivät välttämättä yksistään riitä ja ne haluaisivatkin laajentaa vihreän laatikon sisältämään myös tuotantoon sidottuja tukitoimenpiteitä.

Julkaisun kolmannessa artikkelissa ”On the effects of multifunctional agriculture on food security and viability of rural areas: review of current knowledge” Antti Miettinen analysoi maatalouden merkitystä huoltovarmuuden ja maaseudun elinvoimaisuuden ylläpitäjänä. Kotimaisen tuotannon tason varmistaminen ja julkinen varmuusvarastointi ovat toimenpiteitä, joilla Suomen huoltovarmuutta pääasiassa ylläpidetään suurten tarjonnanvaihteluiden varalta. Maataloudella on yhä merkittävä rooli maaseutualueilla vaikka maatalouden työllistävä vaikutus on jo pitkään ollut laskusuunnassa. Uudet maaseutuyrittämisen muodot tarjoavat tällä hetkellä usein paremmat mahdollisuudet maaseutualueiden elinvoimaisena pitämiseksi kuin perusmaatalous ja näin ollen rakennepoliittisilla toimenpiteillä tulisi edistää myös muita maaseutuyrittämisen muotoja.

Julkaisun neljännessä artikkelissa ”Multifunctional agriculture: cost-benefit approach” Tapani Yrjölä ja Jukka Kola analysoivat kvalitatiivisesti monivaikutteisen maatalouden hyötyjä ja kustannuksia Suomessa. Kustannus-hyöty-analyysejä voidaan hyödyntää arvioitaessa yhteiskunnallisia hyvinvointimuutoksia, kun maatalouden monivaikutteisuusyödyt muuttuvat politiikkatoimenpiteiden seurauksena. Lähtökohtana analyysissä on maataloustuen vähennys 30 prosentilla siten että vähennys kohdistuu kokonaan kansalliseen tukeen. Tuen vähentämisen seurauksena sekä tuotannon että maatilojen määrä vähenee mikä heikentää huoltovarmuutta. Huoltovarmuuden ja tarjonnan ylläpitämiseksi tuonnin osuus kulutuksesta kasvaa. Maatalouden työllisyysvaikutukset pienenevät mikä lisää

työttömyyttä ja maaltamuuttoa ja sitä kautta yhteiskuntakustannuksia kasvu-keskuksissa. Lisäksi viljelijöiden tulotason lasku saattaa heikentää heidän motivaatiotaan huolehtia ympäristöstä, tuotantoeläinten hyvinvoinnista ja tuotantohygieniasta millä saattaa olla vaikutuksia elintarviketurvallisuuteen.

Julkaisun viimeisessä artikkelissa ”European model of agriculture” Ilkka P. Laurila luo katsauksen maatalouden eurooppalaisen mallin keskeiseen sisältöön ja historialliseen kehittymiseen. Maatalouden eurooppalaisen mallin (EMA) ytimenä ovat perheviljelmät, jotka ruoan tuotannon ohessa tuottavat monia julkishyödykkeitä. EMA liittyy läheisesti maatalouden monivaikutteisuuteen, ei-kaupallisiin kysymyksiin ja kestäväen maatalouden ja maaseutukehityksen käsitteeseen (SARD). EMA:lla on keskeinen rooli sekä Unionin ulkopuolisissa (esimerkiksi WTO, YK:n ympäristö- ja kehityskokous Riossa 1992 ja sen seuranta sekä YK:n kestäväen kehityksen toimikunta) että sisäisissä politiikka-prosesseissa (Agenda 2000, itälaajentuminen ja Agenda 2007). EMA tulee olemaan keskeisesti esillä kun EU:n maatalouden ja maaseutualueiden tulevaisuutta muokkaavia politiikkatoimenpiteitä suunnitellaan. Tulevaisuudessa EMA saattaa olla esillä myös kun puhutaan yleisesti eurooppalaisten yhteiskuntien kehitysuunnista.

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