

**Further Development of
Organic Farming Policy in Europe
with Particular Emphasis on EU Enlargement
QLK5-2002-00917**

**D17: Final report on organic farming policies
in EU15 and CH, including comparative analyses
and cost-effectiveness assessment**

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November 2007



This report has been carried out with financial support from the Commission of the European Community under Key Action 5 of the Fifth Framework Research and Technological Development Programme for the project "Further development of Organic Farming Policy in Europe, with Particular Emphasis on EU Enlargement". The views expressed are those of the authors and do not necessarily reflect the views of the European Commission, nor do they in any way anticipate the Commission's future policy in this area.



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Acknowledgements

The project team would like to thank the following people for their expert contribution to this document: David Frost, David Younie, Peter Crofts, Roger Unwin and Phil Stocker from the United Kingdom, Marjatta Kemppainen-Mäkelä, Jouni Kujala and Sampsa Heinonen from Finland, Johannes Michelsen, Anders Kloeker and Per Ahle from Denmark, Raffaele Zanolì and Roberto Pinton from Italy, Hiltrud Nieberg and Anna Haring from Germany, Markus Schermer, Thomas Rech and Alexandra Pohl from Austria, Anton Pinchof and Bertil Sylvander from France.

1 Introduction

1.1 Background

Since the early 1990s, European policies for organic farming have been developed on a number of levels. These include the EC Reg. 2092/91 defining organic production; support for organic production, processing and marketing through agri-environment, rural development and structural measures; support for research and information dissemination measures; the development of national and EU action plans for organic farming; and the continuing reforms of the main commodity elements of the Common Agricultural Policy.

The impacts and cost effectiveness of these policies is an issue of increasing importance as the size of the organic sector, and the consequent demand for resources, increases. There is in any case a formal requirement for ongoing monitoring and evaluation of policies at national and EU level (e.g. current mid-term review of rural development and structural programmes). Competing claims on the resources are likely to become louder, and there needs to be clear evidence of benefits to justify their continuing application to organic farming. However, the evaluation of these impacts is not simple, because organic farming works on a number of different levels, with multiple, sometimes conflicting, objectives and impacts. While the benefits from supporting organic farming with respect to one particular objective may be less than can be achieved by more targeted measures, the total benefit across all objectives of adopting a systems approach such as organic farming may be sufficient to more than justify the costs of the support compared with single-objective, single-measure schemes. However, current evaluation methodologies need further development in order to make a full assessment.

There have been a number of recent efforts to focus specifically on evaluation of organic farming policies at the European level. The EU-funded research project OFCAP¹ looked at policies implemented in the period 1993-1997, with the results reported in the *Organic Farming in Europe – Economics and Policy* series (Volumes 1-10) published by the University of Hohenheim². Of particular relevance is the overview of policies implemented (Lampkin et al., 1999) and the policy impact assessment of Häring (2003), with Dabbert *et al.* (2004) providing an overview of the whole project. More recently, Häring *et al.* (2004) have provided a first evaluation of the impacts of the Agenda 2000 reforms, in particular the main commodity measures and the rural development programme, on organic farming.

Since 2003, a new EU-funded project, EU-CEE-OFP³ has been in progress, which aims to analyse the:

- effectiveness of organic farming policies (OFPs) in the old EU member states and Switzerland (EU15/CH)
- regional and spatial impacts of existing and potential OFPs on farm structures and production in EU15/CH
- development of organic farming and the policy and regulatory environment in the new EU member states from Central and Eastern Europe (CEE8)

¹ Organic Farming and CAP Reform (FAIR3-CT96-1794, http://www.uni-hohenheim.de/~i410a/eu_org/Fair3_Index.htm)

² For details, see: <http://www.uni-hohenheim.de/~i410a/ofeurope> or e-mail ofeurope@uni-hohenheim.de

³ Further development of European organic farming policies, with particular emphasis on EU enlargement (QLK5-2002-00917, www.irs.aber.ac.uk/EUCEEOFP)

- development and implementation of organic farming regulations and markets in CEE8
- farm level economic impacts of OF policies, Agenda 2000 implementation and EU enlargement in selected countries
- policy networks for developing OF policies in selected countries, and
- involve policymakers and stakeholders in identifying parameters for further development of European OFPs

This paper reports on the progress made in the EU-CEE-OFP project with the evaluation of organic farming policy implementation at a member state and regional level. Indicators are being developed to reflect the range of policy objectives addressed in the multitude of policies that have been adopted or are available for member states to adopt to help foster the development of organic farming. This needs to take account not only the ability of organic farming policies to assist the development of the organic sector, but also in their ability to meet the broader environmental and social objectives of agri-environmental and rural development programmes. The first part of the analysis aims at identifying best practice in policy development for the organic sector, whilst the second part focuses on evaluating the benefits to society relative to the levels of support and the availability of resources to support the organic sector.

2 Evaluating effects of organic farming policies

2.1 The MEANS framework

The evaluation approach within the EU-CEE-OFPP project builds on the European Commission requirement for ongoing monitoring and evaluation of policies at both a national and European level, which feed into the process of reviewing rural development and structural fund programmes. As part of the ongoing concerns about the quality of programme monitoring and evaluation and the validity of outputs, DG XVI (Regional Policies and Cohesion) commissioned the MEANS⁴ programme (1994-1999), which developed a coherent set approaches and methods for future evaluations. The results (European Commission, 1999) provide a framework for evaluation as well as guidance on developing structures for collecting common indicator sets for monitoring and subsequent evaluation purposes. The EU-CEE-OFPP project relies heavily on the MEANS approach not only for developing a framework for identifying indicators but also in identifying appropriate analytical methodologies.

A key to adapting the MEANS framework for organic farming policy evaluation is the two key levels of analysis identified above:

1. the need to identify the immediate ability of organic farming policies to develop organic farming - this analysis focuses on all EU member states and Switzerland in two periods, 1997-1999 and 2000-2003, i.e. pre- and post- the Agenda 2000 reforms;
2. the identification of the wider effects of organic sector development with respect to agri-environmental and rural development policy goals and the relative cost effectiveness of using resources in this way. This part of the analysis refers to 8 case studies regions where it is believed that data is most likely to be available: UK (two regions), Germany (two regions), Italy (two regions), Denmark and Switzerland.

Figure 1 illustrates how the MEANS approach provides a structure that links closely to the requirements of organic farming policy evaluation in terms of meeting sector development (output and result indicators) as well as meeting rural development and agri-environmental policy objectives (impact indicators). In essence, the distinction between output, result and impact indicators reflects the control and effect of programme officers and managers, with output indicators being the direct consequence of operators' activity, Result indicators being the effect that this activity has on programme beneficiaries, and Impacts being the wider consequences of these activities on rural/social development and environmental quality.

⁴ Methods for Evaluation Actions of a Structural Nature

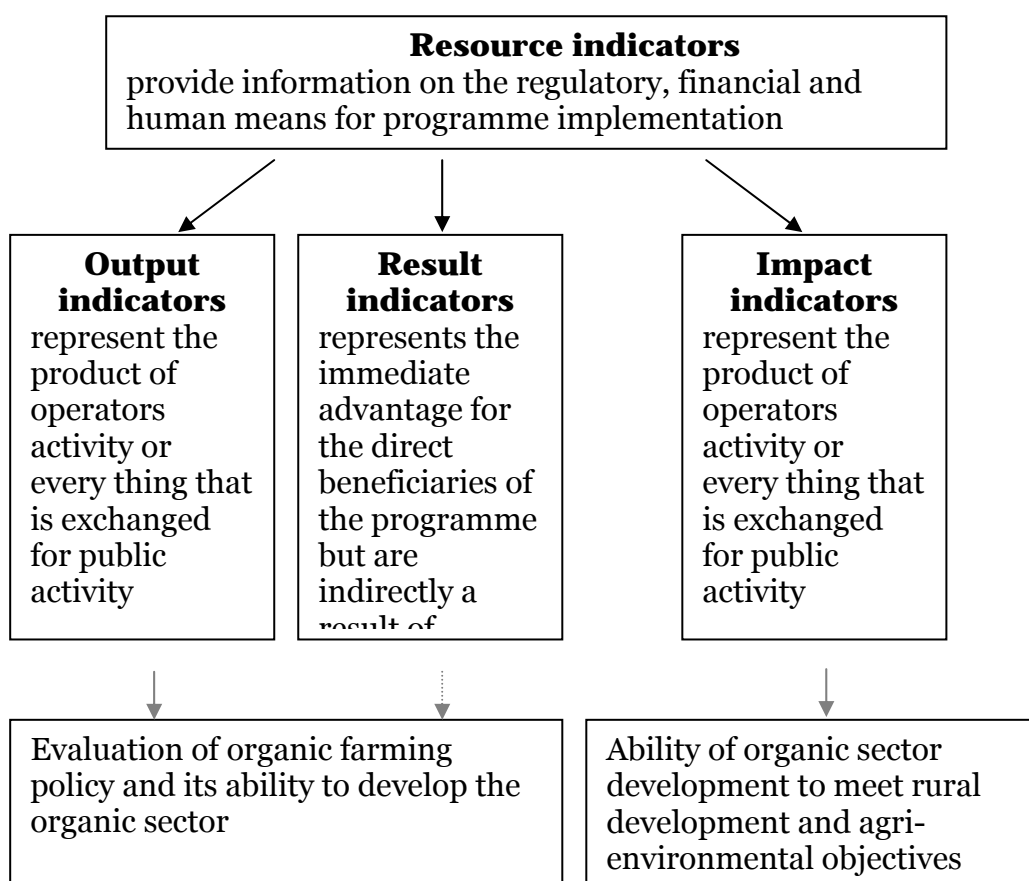


Figure 1: MEANS indicator framework and its relationship to the evaluation of organic farming policies

However, the structure presented so far is limited in detail, particularly with respect to endogenous changes within the organic sector that might guide future policy developments as well as exogenous developments especially in the conventional farming sector that might encourage or dissuade farmers or enterprises to change to organic systems. Within the MEANS approach, these endogenous changes are typified as programme indicators and within the EU-CEE-OFP analysis we can identify three specific characteristics of sector development that might aid or guide policy development:

- Business characteristics - farm type, economic/physical size of farm/enterprise
- Social characteristics - age, gender, education level, external income
- Environmental characteristics - less favoured area and other designations

Exogenous changes are akin to wider dynamics beyond specific organic farming policy as well as changes in the conventional agriculture sector but still have relevance to the development of the organic sector. These context indicators include trigger events such as gross changes in agricultural practices and consumer purchasing choices following previous food and farming scares such as foot and mouth disease and BSE, but also include slower changes such as over-supply and price collapses in the dairy sector.

2.2 Development of output and result indicators

Thus far this discussion has focussed on the framework for identification of indicators. Whilst resource and output indicators are theoretically simple in their design, the result indicators require association to specific policy objectives. With respect to the specific policy objectives for organic farming, three areas of policy to foster the development of the organic sector can be identified, and these are highlighted in Table 1 below.

Table 1: Intermediate and specific policy objectives of organic farming identified for the development of result indicators.

Supply push – increased net uptake/ volume of production	Demand pull – increased demand for organic products	Cross cutting – improve organic production and food systems
<ul style="list-style-type: none"> • Reduced barriers to conversion • Cost reductions • Increased farm incomes • Improved physical output/production systems • Risk reduction and sharing 	<ul style="list-style-type: none"> • Improved domestic self sufficiency • Increased consumption/ market size • Improved marketing systems • Cost reductions • Increased consumer confidence in organic food and food standards 	<ul style="list-style-type: none"> • Increased research/ training • Improved practices/ systems quality • Institutional/infra-structure development and capacity building

Having identified the potential policy objectives in fostering the development of the organic sector, these need to be related to the possible EU and national policy measures that are being employed in member states. There is a wide ranging and large list of possible policy measures that can be specifically adopted and targeted at the organic sector, which are highlighted in Table 2.

Table 2: Policy areas and potential organic policy instruments available to member states

Policy area	Specific measures
Agri-environmental schemes (EC Regs 2078/ 92, 1257/1999)	Organic farming schemes, advice and training
Rural development programme (EC Reg 1257/1999)	Less favoured areas, investment in agricultural holdings, young farmers, forestry, early retirement, processing and marketing, rural adaptation measures
Structural programmes (EC Reg. 1260/1999)	Wide range of market, information and environmental initiatives of possible in specific regions
Other agri-environmental measures	Environmental pollution control regulations and cross compliance
Information measures	Research, education, extension and consumer education
Common market organisation measures	Special conditions for set-aside, access to national quota reserve specific national envelopes
Others	Public procurement, certification and logos, tax incentives institutional capacity building

This list demonstrates an inherent problem in the approach being adopted, that we are only focussing on policies specifically adopted to support organic food and farming. Clearly organic farmers and processors are a sub-set of the wider agricultural and rural community and as such are able to draw on support or access schemes outside of specific organic farming support. This ability to access such “conventional sector” support may reveal extra contextual information about organic farming. Although not focussed upon in this framework, a farmer survey conducted

for another part of the EU-CEE-OFP project may reveal patterns of access to other funding.

Without reporting in detail the whole list of indicators developed under each of the policy measures, Table 3 below gives a flavour of the output and result indicators developed and their relationship to objectives, in this case focussing specifically on conversion and maintenance payments as well as advice and training initiatives.

Table 3: Overview of output and result indicator development

Policy Measure	Output indicator	Result indicator	Related objectives
Organic Conversion and maintenance payments (2078/92 and 1257/99)	Programme indicators Numbers converting Number/ areas leaving Context indicators Total number organic farms Number of farms and UAA total	Value per ha, per farm Value of payments as % of total subsidies Value as % of income forgone and relative to value of price premium	Supply (reduced barriers, increased farm income, risk reduction) Supply (increase farm incomes) Supply (increase in farm incomes)
Conversion advice and training (RDP 1257/ 1999: vocational training, 1260/1999 structural funds, National provisions)	Programme indicators Number of supported training events/courses and participants by type Numbers taking up organic advice Context indicators Number of training staff	Number of visits by extension advisors Number of days attending organic training events Number of farmers indicating improved systems as a result of training	Supply (Cost reductions, improved systems, risk reduction) Supply (Cost reductions, improved systems risk reduction) Supply (Reduced barriers to conversion, Cost reductions, improved systems and farm income, risk reduction) Cross cutting (increased research/ training, improved practices)

One important aspect in the development of indicators is that there is relevant data available to produce valid and comparable findings. The result and output indicators developed are all quantitative in nature and will be analysed using logistical regression methods to identify trends and patterns. In the case of this research, this limitation has frequently limited the scope of factors that can be addressed in the evaluation. Under rural development programming, member states are required to submit common indicator tables which will supply much of the data for resource and output indicators. FADN data on farm incomes and prices will provide information on the effects of schemes on farm finances, whilst Farm Structure Survey and administrative data supplied by EUROSTAT, DG Agri and certification bodies will go much of the way to understand changes in production patterns and systems. Where gaps have previously been identified, these are being supplemented by specific questions included in the farmer survey being undertaken as part of the EU-CEE-OFP project.

Even with these best of intentions, the scope and depth of indicators required in this evaluation provides a demanding task not only in terms of data retrieval, but also

analysis. It is not clear at this stage whether this detail will be available for all member states, regions and in appropriate detail for programme indicators. Fragmented data availability across member states is likely to make cross-country comparison difficult. System shocks and trigger events, whilst clearly observable, may have differing different effects on the organic sector – either in terms of the time-lag before the effect is detected, or because they may be masked by other inherent trends within the conventional or organic sector. Finally, and of most significance, is the synergy or lack of synergy between the various policy measures that are being adopted within the various member states and regions. It is not clear that the analysis in this form will allow for specific understanding of such effects – there may be a need for further qualitative assessment to address this.

2.3 Development of Impact Indicators

The appreciation of the role of organic farming sector development in meeting agri-environmental and rural development objectives presents other methodological and theoretical problems. In essence the approach is similar to the development of result indicators, but in this case the intermediate and specific objectives need to be supplemented by the impact that organic farming sector development has on those objectives. This should take the form of single causal statements that relate changes in particular environmental, economic or social variables to particular impacts. The initial identification of a wide range of objectives and impact statements has taken place in a series of workshops with policy-makers, stakeholders and researchers. The final list of impact statements will then be used in a form of cluster analysis to identify commonality and ranking of relative importance. It is at this stage that a further process will be needed to discuss the clusters and produce a list of policy relevant indicators. These indicators can either be quantitative or qualitative with the process of analysis dependant on the nature of the indicators, but multi-criteria analysis is a proposed approach, especially where synergistic effects are to be identified.

2.4 Conclusions

This work has highlighted the approach being employed to evaluate organic farming policies in an EU and national context within the EU-CEE-OFP project. In employing such an approach, many problems have been identified. Whilst in theory impact assessment is essentially straightforward, the multiplicity of policy objectives under rural development programming and organic farming policies adds a complexity to the analysis that may be lost in the final development of indicators. Furthermore, objectives in one member state or region may contradict or conflict with the objectives identified in another. The work undertaken so far by OECD in developing agri-environmental indicators (Jones, this volume) demonstrates some key problems of assessing environmental impacts, let alone the social and other impacts that need to be addressed. Developing the policy evaluation framework in a fully multi-functional, systems context is a challenge still to be addressed.

3 Comparative analysis of the effect of policy measures between 1997-1999 (CAP Reform) and 2000-2003 (Agenda 2000) on the uptake of organic farming in DK, DE, AU, FI, FR, CH, UK, IT, GR, NL

Phillipa Nicholas, Nic Lampkin, Sylvain Reallon

3.1 Introduction

Workpackage 1 was concerned with documenting, comparing and assessing the impact of specific policy measures on organic farming in EU-member states and Switzerland. Policies applied in the EU and Switzerland were documented (Tuson et al., 2005) and have fed into this comparative assessment of the development of organic farming between the periods 1997-1999 and 2000-2003 to determine the impact of organic farming policy measures implemented (including changes during these periods).

The proposed methodology was to conduct comparative analyses of policy measures between 1997-1999 (CAP reform) and 2000-2003 (Agenda 2000) for each EU state and CH, by integrating qualitative assessments, results of WP2 and data collected as part of a previous EU-funded project (OFCAP). A regional scoring system based on indicators was proposed to compare the effectiveness of policy on organic farming uptake across countries and regions, using expert judgement where qualitative/quantitative data were lacking. Result indicators for the policy measures were classified into three categories, those that pushed supply (e.g. OFS payments), those that pulled demand (e.g. Processing and Marketing expenditure) and those that were cross cutting measures (e.g. research and advice/training). A comprehensive list of these measures is outlined in Tuson et al. (2003). This scoring process proved problematic in that the type of result indicator data available from individual countries varied substantially (none being available in some countries) and data available on a regional level was very limited. This made it inappropriate to attempt to construct a score for each region and country. It was also proposed that an MSQA analysis be used to qualitatively assess the impact that different policies have had on the organic sector, but again this type of analysis was deemed inappropriate due to a lack of data across all countries, as was the use of standard techniques such as logit analysis to attempt to identify the interaction between policy measures and key trigger events (e.g. BSE, FMD) in stimulating the growth of organic farming. An alternative, more qualitative approach therefore needed to be developed.

In order to present a rounded overview of policy impacts on organic farming uptake pre and post Agenda 2000 and given the data constraints faced, a stepwise approach to the analysis was proposed. The first step involved constructing a brief summary of organic farming policy development for a sample of countries including AT, CH, DE, DK, FI, FR, GR, IT, NL and UK. In addition, a suite of graphs that provided data on the number of organic holdings and land area over time, the proportion of arable, grassland and permanent crops in each country and finally, where data was available, expenditure data on various organic farming support policies. Data on organic farming scheme expenditure was available for most countries, however, data on other measures such as research, training, processing and marketing and action plans was very difficult to obtain. All identifiable data was presented to the country experts (see step two). In addition to the suite of graphs, a key events table was developed which

indicated on the same time scale as the graphs when policy measures (specific organic and general agricultural) were introduced or changed in that country (month and year), and when exogenous trigger or barrier events occurred in the organic and general agricultural sectors that may have had an influence on the uptake of organic farming. This information was also presented to the country experts for interpretation and elaboration.

The second step in the process was getting country expert feedback on the information compiled in step one. The aim was to gather feedback from a range of experts including those from government, academia, organic lobbying and organic industry organisations. The experts were asked for their interpretation of the data with respect to how policy implementation and changes and exogenous events may have shaped organic farming uptake pre and post Agenda 2000.

Step three was the consolidation of the expert responses into a descriptive assessment of the factors responsible for the development of organic farming during the period 1997 to 2003 in their country. The key policies and influencing organic farming uptake were also incorporated into the contextual table for each country and included in this report.

The analysis presented in this chapter includes a country by country discussion of the key factors (policies, industry events and exogenous events) influencing the uptake of organic farming, a summary table highlighting when these factors acted or occurred, a cross country comparison of policies and events and their timing and finally discussion and conclusions.

3.2 Austria

3.2.1 Policy background

Support for Austrian farmers wishing to convert to organic management has been available in Austria since 1989/1990 and in 1992 support also became available for certified holdings. Austria became a Member State of the European Union in 1995. The European regulation (EC) 2078/92 was implemented in 1995 with ÖPUL (“Österreichisches Programm zur Förderung einer umweltgerechten, extensiven und den natürlichen Lebensraum schützenden Landwirtschaft“).

The main payment scheme for organic producers is the organic farming measure („Biologische Wirtschaftsweise“) of the Austrian agri-environmental scheme ÖPUL (BMLFUW 2000), 93 % of this measure can be combined with several of the other measures for increasing the payment rates. In the Niederösterreich region there is another payment scheme in place, which is part of the national ÖPUL programme (Ökopunkte Niederösterreich) (Niederösterreichische Agrarbezirksbehörde, 2000). The Ökopunkte scheme is an additional regional Agri-Environment and it is up to farmers to choose the standard ÖPUL scheme or Ökopunkte (2 % of the Austrian organic farms are supported by this scheme). Another 2 % of the Austrian organic farms are supported by other ÖPUL measures (BMLFUW 2003; BMLFUW 2004). Organic farming represents the highest level of the ÖPUL programme.

The government support for organic farming played a role in the boom occurring in the organic sector in the mid 1990's. The shift to organic farming systems was accompanied by intensive advertising by the large food chains and food processors, which first introduced organic brand names to their product ranges in 1994. These industries launched intensive promotional campaigns through the media, emphasizing not only the merits of organic products and their brand names, but also

successfully linking them to positive attributes such as "well-being", "pleasure" and "Austrian landscape and culture". This resulted in greater public awareness of organically produced foods and created a greater demand for organic products.

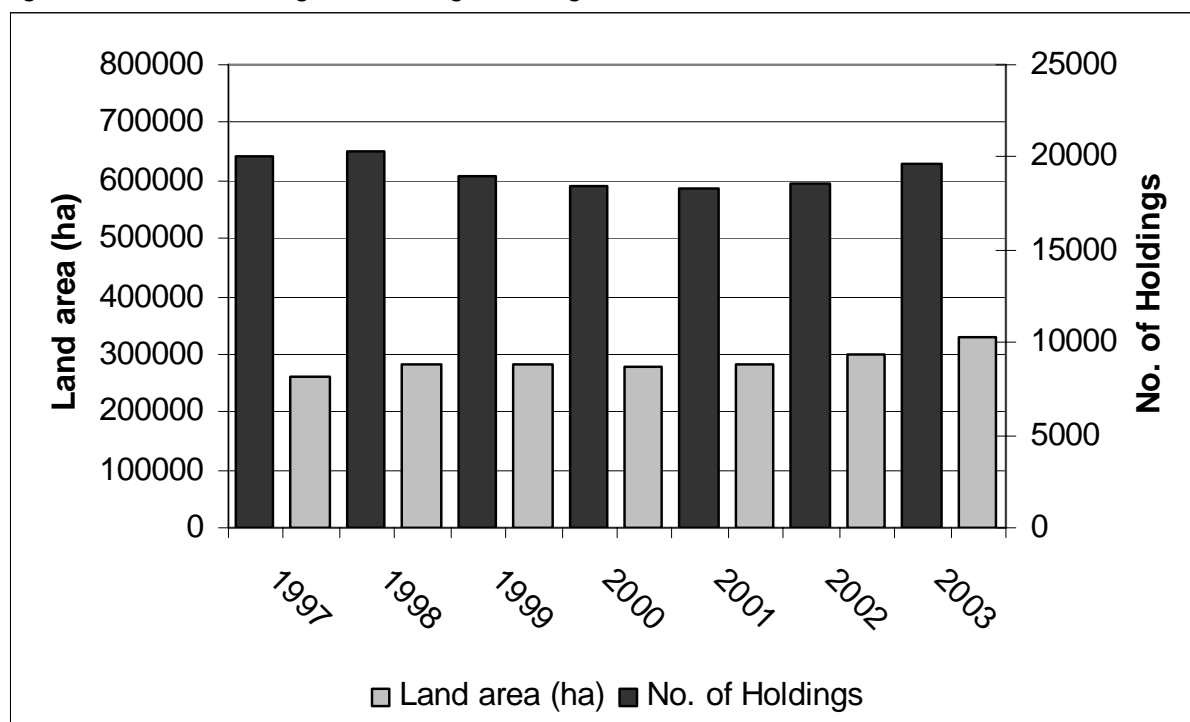
In February 2001 the Austrian Ministry of Agriculture presented the first Action Plan for Organic Farming and in July 2003 the second Action Plan.

Austria has its own national organic logo, called "AMA Biozeichen". The standards comply with the EU Regulations (EC) 2092/91 and EC1801/99, and with the Codex Alimentarius Austriacus and Codex Alimentarius for livestock and plants.

Table 3.1 Key events that may have impacted on organic farming uptake in Austria

Events	1997	1998	1999	2000	2001	2002	2003
Policy	Modulation rules		New payment rates				
Organic sector			Common organic label	Common livestock standards	1 st Action Plan	Development of BIO AUSTRIA began	2 nd Action Plan
General Agric. Sector	2 nd ÖPUL program started		Agenda 2000, 3 rd ÖPUL program started		1 st ÖPUL program ended	The new CAP, 2 nd ÖPUL program ended	
External events					2 nd BSE crisis, Foot & mouth		

Figure 3.1 Number of organic holdings and organic land area in Austria 1997 to 2003



Expert interpretation

Conversion to organic farming in Austria has been stimulated primarily by a combination of national and, starting in 1995, EU Agri-environmental support in the form of ÖPUL. The rapid development of organic farming coincided with the negotiation period for Austria's EU accession and that is likely to have contributed indirectly to the development of organic farming through a substantial re-orientation in agricultural policy in Austria, where many farmers were following extensive production practices. Additionally, in these years a successful market penetration occurred as food processing firms began to process organic baby food and important supermarket chains began to market organic food. (Michelsen et al. 2001). Austria has one of the highest organic market shares of plant and livestock products in Europe (Hamm and Gronefeld, 2004) and this forms an integral part in the success of supply push policies implemented in Austria to increase organic farming uptake. 1995 was a year of major change with the implementation of the EU regulation (EC) 2078/92. The alternative options under EC 2078/92 had the potential to be competitive or complementary to the organic farming scheme depending on eligibility criteria and payment levels - the most significant example of competitiveness was seen in Austria. At the start of 1995, 22,875 farms were actually registered as organic (a large increase on the previous year) due in part to accession to the EU. During the year, however, 6000 farms (mainly Codex registered farms in Salzburg and Tirol) withdrew – a key factor in their withdrawal being the availability of new agri-environmental schemes that did not require organic management of livestock (Lampkin, Foster, Padel and Midmore, 1999). By the end of 1995 the number of registered organic farms had recovered to 18,500. This may have been responsible for the slow down of the strong growth in early to mid 1990's. The slow down in the late 90's may have been due to the fact that the 5 year ÖPUL scheme started in 1995 was about to end and farmers were putting off conversion until they knew what the new support systems looked like. The EU certification standards (EC) 2092/91 were also introduced in 1995 in Austria, but it is uncertain whether it had negative impacts on the conversion dynamics or on the already certified farms.

The timing of the BSE crisis and other food scare events did not seriously impact on the uptake of organic farming because Austria was only peripherally touched by these events. Only two cases of BSE have been confirmed in Austria, the first in 1996 and the second in 2001, the latter having a significant positive effect on the market but not on conversion to organic farming.

The first ÖPUL programme finished in 2000/2001 giving farmers the opportunity to decide on their future participation in the scheme and this was responsible for the decrease in the number of organic farms around 2000, especially in the alpine regions in Western Austria. Many of these farmers had never joined an organic producer association and had therefore never developed an organic identity. This played a major role in their decision to leave the scheme. Approximately 1700 farmers dropped out in the Tyrol region, but this sharp drop was masked somewhat by the fact that they could drop out from early 2000 until 2001. Moreover the European regulations of 1999-2000 (the common organic label, the European livestock standards) may have had a positive as well as a negative impact on the organic sector size in 2000, in a European free trade context. Between 2001 and 2003 another period of increased conversion began. More than 700 farms and 50,000 hectares were converted, primarily in Eastern Austria, where producers of cereals and vegetables decided to change their way of agricultural production. These increases are due to the improved marketing structure for organic cereal at this time with the establishment of Biogetreideagentur (an Austrian wide acting trader of organic cereals) as well as increasing market possibilities through the strong

involvement of supermarket chains and discounters leading to more attractive prices. Many farmers who had previously considered conversion but had not done so because of poor organic cereal prices in relation to conventional began to convert at this time.

Strengths – as identified by country experts

- High proportion of converted land as % of total agricultural land (up to 40% in some regions).
- Political factors – until recently (after 2003) political support for organic has been strong and organic farming has always been used to show how environmentally friendly Austrian agriculture is. Austrian policy also strongly opposes GMO's.
- Organic Farming receives good financial support from the government.
- There are regional efforts to establish Organic Farming on a territorial scale as a model for rural development (Bioregionen). Austria is geographically well situated to take advantage of export opportunities for specialist organic products to surrounding countries.
- Organic Farming received regulatory support in some regional states concerning public procurement in the catering sector.
- Regional factors – in the alpine region (mountain area/grassland) it is fairly easy to convert to organic farming as conventional and organic systems are very similar.
- Organic farming has a good public image.
- Austria (along with Denmark and Switzerland) has one of the highest organic market shares of plant and livestock products in Europe.
- Virtually all supermarket chains operate organic brands.
- Well established market structures in processing and distribution of organic products.
- Marketing factors – the strong promotion of organic farming by supermarkets and the use of direct selling to increases the trust in the farmer and his/her products.

Weaknesses – as identified by country experts

- Even after unification of organic farmers associations the organic sector remains weak in its position against conventional agriculture.
- Organic sector is concentrating too much on internal reorganisation.
- Not yet a level of “creative conflict” reached, conventional agricultural policy is instrumentalizing Organic Farming for their interests.
- Financial and institutional dependence on the ministry of agriculture.
- Organic farmers themselves are sometimes more driven by subsidies than by organic identity, which leads to conflicts concerning the aggravated standards and control mechanisms in Organic Farming
- Some regions have a lack of processors (e.g. dairies and slaughterhouses), however this is a strength of other regions.

3.3 Switzerland

3.3.1 Policy background

The organic support scheme is based on the direct payments regulation (Direktzahlungsverordnung), Article 31b of the agricultural law of Switzerland. The national support scheme for organic farming was introduced in 1992 and is only an additional incentive added to the usual direct payments and other eco- and ethological support. In 1999, the payments underwent a major reform known as Agrarpolitik (AP) 2002. Support measures for organic farming in Switzerland operate at both national and cantonal level. At the national level, support is based around the following measures:

- Producer support payments introduced in 1992 and reformed in 1999;
- Promotional activities and public education through the Bio Suisse label;
- Public procurement initiatives;
- Research and statistics activities at FiBL: Forschungsinstitut für Biologischen Landbau (Research Institute for Organic Agriculture) and Agroscope;
- Extension advice.

At the cantonal level, support is based around the following:

- Conversion support payments;
- Vocational training;
- Support for certification costs;
- Support for milk transportation.

Since 1999, all organic farms must work according to certain ecological criteria, the so called ÖLN (Ökologischer Leistungsnachweis), in order to benefit from the direct payment scheme, including the organic farming scheme (BLW, 2004; Eidgenössisches Volkswirtschaftsdepartment (EVD) and BLW, 2004). Additionally to these criteria, they have to fulfil the specific rules for organic farming according to the Swiss organic farming regulation.

Since 1999, the Swiss direct payment scheme can be considered as an agri-environmental scheme in a way, since all payments are only available to those farms which fulfil the ÖLN integrated production standards. Additionally, organic products have to comply with the following ordinances (Arbeitsgruppe Direktzahlungen, 2001):

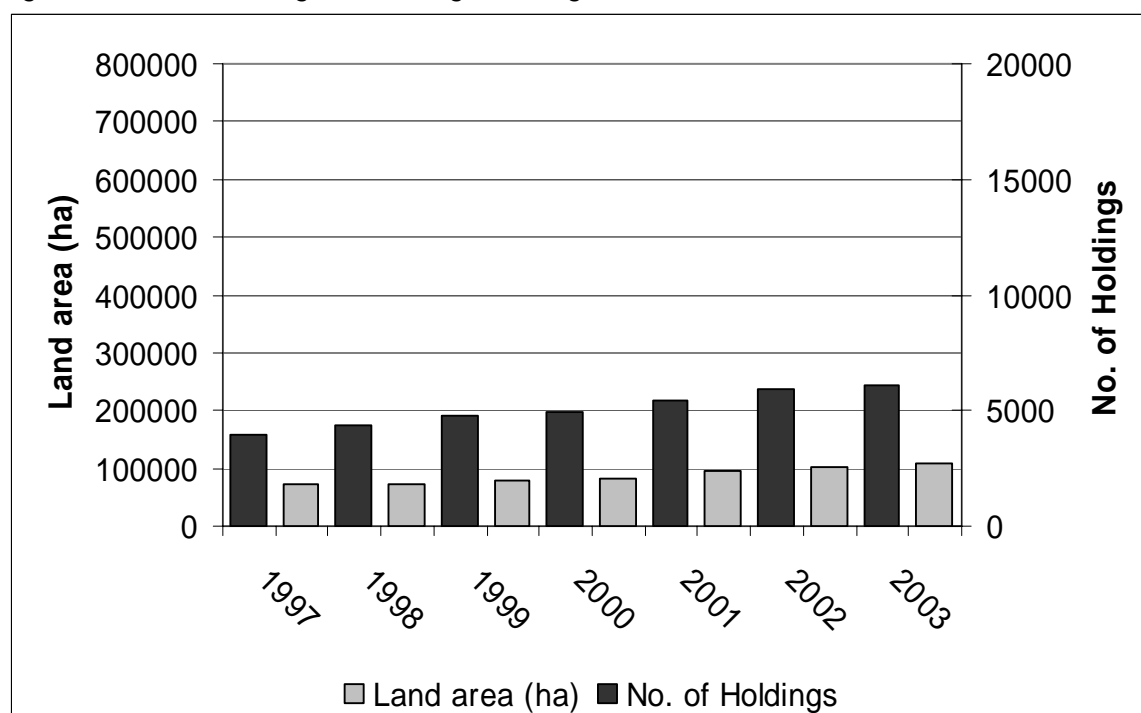
- Ordinance on animal protection
- Ordinance on protection of water resources and the aquatic environment
- Ordinance on outdoor access for livestock

The proportion of total direct payments dedicated to organic support is about 1% (7% of the total ecological direct payments). Considering that around 10% of the Swiss utilised agricultural area (UAA) was cultivated organically in 2002, this figure demonstrates that, by themselves, organic payments contribute only a small amount to the total support received by organic farms (BLW, 2003, 2004).

Table 3.2 Key events that may have impacted on organic farming uptake in Switzerland

Events	1997	1998	1999	2000	2001	2002	2003
Policy			Support payments reformed (Agrarpolitik)			Support payment reformed again	
Organic sector	Swiss regulation on organic farming introduced		BioSuisse public education and consumer campaign introduced	National livestock standard introduced			
General Agriculture Sector							
External events	BSE crisis	Avian flu crisis	Dioxin crisis			Foot & mouth crisis	

Figure 3.2 Number of organic holdings and organic land area in Switzerland 1997 to 2003



3.3.2 Expert interpretation

The area of organic land and the number of organic holdings has maintained relatively steady growth during the study period of 1997 and 2003, with few large fluctuations in the rate of growth. The exception to this was the period between 1998/99 and 2000/01 when there was a 7 percent decrease in the rate of growth for all the land types studied, followed by a 10 percent increase in the rate of growth for total area and grassland, but only a 5 percent increase for arable land. The most likely explanation for this change in growth rate is the implementation of reformed support payments under the Agrarpolitik banner. The uncertainty by farmers surrounding how the new payments worked and how to best adapt their farming systems to these new payments potentially resulted in the slowed growth in 1999/2000. The subsequent increase in the rate of growth in 2000/01, especially for

organic grassland, was most likely due to a greater understanding and knowledge of access to the new payments and due to the specific measures implemented in the reform (i.e. fulfilling the ÖLN requirements and additional ordinances (see Section 3.1) encouraging more ecological forms of farming and hence an increased emphasis on grassland, especially for livestock farming.

The introduction of the Swiss national livestock standard did not appear to affect the uptake of organic farming (as indicated by the number of organic holdings on a yearly basis), nor did the external events occurring elsewhere in Europe (e.g. BSE, Foot and Mouth etc).

Strengths – as identified by experts (Haring and Vairo, 2004)

- Switzerland (along with Austria and Denmark) has one of the highest organic market shares in plant and livestock products in Europe.
- Good support for organic farming research
- Federal Regulation for Organic Agriculture (Full farm conversion)
- Organic Agriculture has a standardised framework with the EU regulation 2092/91 and the Swiss regulation (Ordinance for Organic farming)
- Organic Farming is officially recognized
- Organic Agriculture = integrated part of all agricultural policy measures
- High societal acceptance of organic agriculture
- High acceptance of the population for direct payments for agriculture
- Direct payments for Organic Agriculture and for federal minimum ecological requirements have a broad support
- Strong protection against agricultural imports (until now)
- No product-related payments to farmers anymore
- Support for an ecological, animal-friendly and productive agriculture
- Rather simple financial support system, sufficient finances (until now)
- Conversion subsidies of some cantons for organic farming
- No state label for organic agriculture

Weaknesses – as identified by experts

- Deviation/difference of direct payments for organic production and the payments for ÖLN* minimum state requirements are too little
- Direct payments slow down structural change too strongly
- Declining requirements for ÖLN minimum state requirements (State programme for integrated production - as condition for all kind of direct payments - with minimum ecological requirements (cross-compliance principle))
- Concept of the whole farm conversion for Swiss organic farming
- Weak implementation of the CH regulation for organic farming
- Unclear political objectives regarding organic agriculture in CH
- Too little regional support for organic farming
- Support for research, education, and consulting too weak
- Focus on producers, no incentives for consumers

- Import protection (e.g. for cereals) is the same as for organic and conventional commodities
- GMO-tolerance threshold of 0,5 is too high for seeds

3.4 Finland

3.4.1 Policy background

Since agenda 2000 reforms, rural development planning in Finland has been based on a complex array of programming mechanisms. The horizontal rural development plan, deals with the whole of Finland apart from the Åland Islands, and sets out accompanying measures such as agri-environmental and less favoured area scheme details. Further to this mainland programme, other rural development measures are dealt with under the Regional rural development plan which covers the southern and western regions of Finland. Northern and Eastern Finland have separate objective 1 plans. The semi-autonomous Åland islands have a separate integrated rural development programme and as such has set a distinct agenda for organic farmer support. Alongside the European funded programmes National Rural Development Measures have also been installed. There have also been two Organic Action Plans in 1995 and 2001.

Support for organic farming in the reporting period was under the first Agri-environmental programme 1995-1999, which was reviewed in 1997 due to limited funds and reduced payment rates for the conversion period (Lampkin et al., 1999). The scheme was incorporated into the rural development programme in 2000 with some changes (MMM, 2000). The objectives of agri-environmental aid over both periods were to reduce the load on the environment, maintain biodiversity and manage the rural landscape, maintain and improve the production capacity of the land as well as compensate farmers for the costs and income losses and secure the possibilities for farmers to earn their livelihood in changing agricultural conditions.

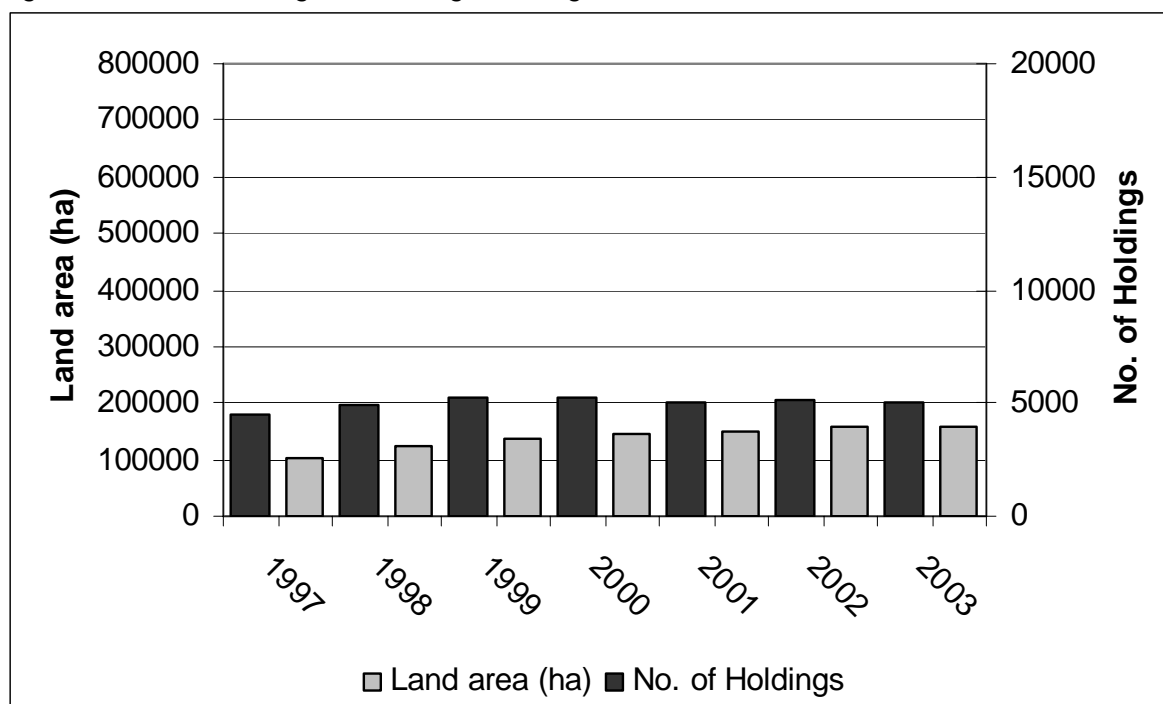
Table 3.3 Key events that may have impacted on organic farming uptake in Finland

Events	1997	1998	1999	2000	2001	2002	2003
Policy							
Organic sector	Agri-environmental programme reviewed – changes to OF support payments	State funded promotion organisation for organic food started (Finfood-Luomu)		OF support incorp. into RDP – changes to scheme	Org. Action Plan II		
General Agriculture Sector				Agenda 2000			CAP reform
External events	Avian flu		Dioxin crisis		Foot and mouth		

Agri-environmental support consists of a two tiered approach, all farmers had to comply with conditions laid out under the General Agricultural Environmental Protection Scheme, and more demanding compliance was required under the Supplementary Protection Scheme. In the period 1995-1997 Farmers in both schemes received both sources of funding up to a limit of €845/ha (horticultural

crops) and €423/ha for other crops, however, this upper ceiling does not apply to organic farmers as any amount above this limit was supported in full from national funds. In the 2000-2006 period, no payments could exceed the maximum amounts stated in the annex to Council Regulation 1257/1999 and no supplementary national aid was available.

Figure 3.4 Number of organic holdings and organic land area in Finland 1997 to 2003



3.4.2 Expert interpretation

One of the key things evident from the graphical presentation is that during the study period (1997-2003), the number of organic holdings has remained reasonably stable. The major growth in organic farming in Finland occurred before this time, with sharp increases observed in 1995/1996 due to the entry of Finland into the EU. At this time the producer price index fell by 26 percent, which caused serious problems especially in conventional grain production. Many farmers began to look for alternatives and organic farming was one of the most important ones. At this time organic markets were just establishing and demand for organic products exceeded supply, resulting in high prices for organic products. The general atmosphere in Finland at the time was positive towards organic and there was a lot of coverage in the media.

Another feature evident from the graphs is that total organic land area has continued to increase over time, whilst the number of holdings remains fairly steady. This suggests that the average organic farm size is increasing – this is supported by the fact that in 1990, the average farm size was 13.4 hectares (including farms in conversion) and in 2001, it was 29.7 hectares. Organic land area increased rapidly between 1997 and 1998, without a corresponding rapid increase in the number of organic holdings. This phenomenon is a general trend in the conventional sector as well and reflects an ageing of the farming population and associated consolidation of smaller farms as these older farmers leave the industry. There is also a general tendency in Finland to direct financial support to investment which also helps increase farm size. This type of support is a direct response to lowering producer prices and an attempt at making existing operations more efficient. Since the year 2000, changes in payment rates and in the market situation for organic cereals has

caused a major geographical shift in organic production in Finland, with more new farms converting in Eastern Finland (generally less intensive milk and beef production) and the largest decrease in organic farming seen in Southern and Western regions (more than 20% reduction since 1999). There has been a 15% decrease in the total number of organic farms in Finland since 1999 (Heinonen, pers comment).

Other factors for restricting the development of organic farming in Finland include the inflexibility of rules for support payments (e.g. getting new areas added to contracts under the contract period) and difficulties associated with getting new organic farming contracts (very much dependent on the State budget available for specific areas). Logistical problems associated with moving small amounts of raw organic product over long distances has also meant that the organic processing industry is very limited in Finland.

Another interesting point to note from is that the rate of change of organic grassland has remained fairly stable over the study period whereas the rate of change of total organic land, arable land and permanent crops has been variable and with a generally declining trend. In Finland it has been possible to keep conventional livestock and just convert the fields to organic, in fact for many dairy farms this has been the most economic way to farm due to the support payments received from grass and fodder. The market for organic meat has been very limited and in the study period of 1997-2003 there were many areas in Finland where no premium was available for organic milk. This therefore discouraged the conversion of more grassland to support organic livestock. In 2005 the situation changed due to the introduction of support for organic livestock production – this has encouraged many farmers to also convert their livestock to organic.

The period 1997-2003 can be broken up into two phases with respect to the organic market in Finland. 1997 to 2001 was a period of growth and organic had a very positive image. Many new product ranges were launched and many businesses developed organic lines to take advantage of the buoyant organic image. However, there were no well developed market structures for producers, demand exceeded supply and price fluctuations were high. In 2002, market growth ceased and market share for organic has continued to decline year on year since then. The main reason for this cessation of growth has been the high pricing strategy for organic products by the supermarkets resulting in a very negative price perception for organic products by consumers. Locally produced food is seen as high quality and safe and therefore the high price of organic food is not perceived to offer any greater benefit to consumers. Additionally, because of the high prices, demand for organic has not developed as initially expected so retailers are reducing product lines, hence reducing consumer choice and perpetuating a negative consumption cycle.

Food scares seen in Europe do not appear to have influenced either the uptake of organic farming in Finland or the consumption of organic produce. A slight economic recession in Finland in the early 2000's put consumers' emphasis on food prices rather than food quality – this also coincided with the arrival in Finland of the German multiple retailer Lidl which forced Finnish multiples to improve their own low-price schemes. This again highlighted how "expensive" organic products were to the average consumer.

The only expenditure data readily available for Finland, was direct organic farming scheme support. This has generally increased at a declining rate over the study period, with two exceptions, the first being in 1997/98 when new farming scheme payments were introduced, and the second in 2001/2002, directly after the second organic action plan was released.

Strengths – as identified by experts

- Most of the farmers now involved in organic production are skilled and motivated.
- Huge potential for increased organic animal production. Today almost half the organic (mostly cattle) farms do not market anything as organic.
- Easy access to financial support system – no requirement to convert animals to organic.
- Well established extension services in general. The quality of the extension service contributes to the number of farms converting.
- Inexpensive certification system for organic production. The organic logo is owned and well promoted by the state.
- Innovative organic development schemes such as the organic catering project “Stairs to organics” which promotes organics to restaurants and public catering establishments.
- A clean environment.

Weaknesses – as identified by experts

- Agricultural policy does not favour organic production – investment is focussed on functional foods and biotechnology and organic farming is seen as a threat to this strategy.
- On many farms it is not possible to combine plant and animal production resulting in very high fertilisation costs for plant only farms.
- The prices received by organic producers do not cover the extra cost of organic production. Many organically produced items are sold on the conventional market.
- Lack of clear economic incentives (support payments and market prices).
- Long distances and low population density means that farmers are dependent on supermarkets as their main point of sale.
- Small market for organic products.
- Undeveloped organic animal product market: The support scheme for organic animal production has taken a long time to establish and the domestic market for organic feed grain has remained underdeveloped.
- The processing capacity for organic raw materials is fragmented.
- Poor infrastructure (production and marketing) means a critical mass of organic farming and products has not been achieved.
- Finland’s wholesale and retail structure is too centralised. Professional buyers from supermarkets are almost in a monopoly situation and the negotiating power of the farmer is weak.
- A decrease in the market share for organic products has resulted in decreased funds for research and development.
- Public awareness issues: Organic products are still seen as healthy rather than environmentally friendly products and there has been a general lack of negative impacts from food scares in Finland.

3.5 United Kingdom

3.5.1 Policy Background

Organic farming policy was initially under central UK government control, however, the introduction of devolved administrations for Northern Ireland in 1998, and Scotland and Wales in 1999, led to organic farming policy becoming the responsibility of respective parliaments and assemblies for each of these regions. Action Plans were developed in Wales in 1999, Northern Ireland in 2001, England in 2002 and Scotland in 2003.

UK

The objectives and aims of the initial Organic Aid Scheme (1994-1999) was to promote the development of the organic sector with respect to increasing interest from producers and demand from consumers (MAFF, 1997). Support levels under the organic aid scheme (OAS) were low compared with other EU member states; however, the ability to combine the OAS with other agri-environmental schemes and the support for organic farmers from a variety of mainstream measures mitigated the relatively low level of payments under the scheme. The government funded Organic Conversion Information Service (OCIS) was introduced throughout the UK in 1996 (uniformly across England and Wales, but differently in Scotland and Northern Ireland) to provide farmers wishing to convert to organic with information to assist in the process.

England

Support for organic farming commenced in England in 1994 under the Organic Aid Scheme, (MAFF, 1997) the scheme was reviewed in 1998 with recommendations being adopted into The Organic Farming Scheme (MAFF, 1999) which opened in 1999. However, higher than expected numbers of applicant's meant funds were exhausted and the scheme closed in November 1999. More funds were agreed in November 2000 and the scheme re-opened in January 2001. Following recommendations within the English Action Plan the scheme was reviewed in 2003 with increased payments, the introduction of maintenance payments and targeting of fruit production (DEFRA, 2003). In 1999 Lump sum payments for conversion consultancy were introduced under the State Aid N 628/99 (EU, 2000).

Northern Ireland

Support for Organic farming commenced in Northern Ireland in 1995 under the Organic Farming Aid Scheme (MAFF, 1997). After the MAFF review in 1998, a revised Organic Farming Scheme with higher payment rates, as well as payments for training and advice was implemented in June 1999 (HMSO, 1999). The scheme was integrated unchanged into the Northern Ireland Rural development Plan in March 2001 (DARD, 2001). Supplementary measures include the introduction of the Organic Farming (Conversion of Animal Housing) Scheme in December 2003 (HMSO, 2003).

Scotland

Producer support in Scotland started under the UK Organic Aid Scheme in 1994. Unlike other parts of the UK, Scotland retained the Organic Aid Scheme following a review in 1999 (HMSO, 1999). The Scottish scheme was reviewed again in 2004 with increased conversion payment rates, payments for vegetable and fruit production as well as the introduction of maintenance payments (SEERAD, 2004).

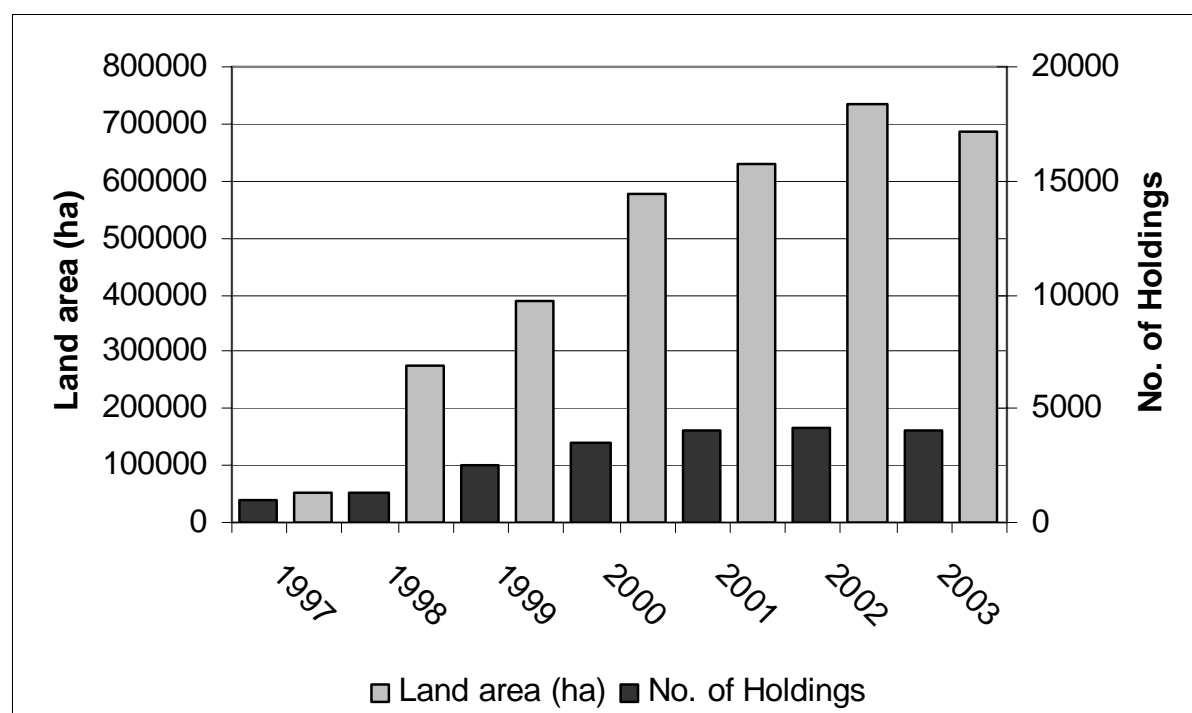
Wales

The Organic Farming Scheme in Wales opened in 1999, but closed by December of that year due to the need for EU- approval, only to re- open in November of 2000 with greater funds. In 2002 the National Assembly's Agriculture and Rural Development Committees reviewed the development of the organic sector in Wales and recommended a range of new policy initiatives that led to a subsequent review of the organic farming scheme in 2003 (HMSO, 2004) with the introduction of maintenance payments.

Figure 3.5 Key events that may have impacted on organic farming uptake in the United Kingdom

Events	1997	1998	1999	2000	2001	2002	2003
Policy	Labour Govt elected	OFS closed during review	DEFRA replaces MAFF; OFS in England, Wales, N. Ireland. OFS closed in England and Wales; Welsh Action plan	OFS re-opened in Wales	OFS re-opened in England; N. Ireland Action Plan	Eng. Action Plan	Maintenance payments in England and Wales. Conversion of animal housing scheme in N. Ireland; Scottish Action Plan
Organic sector				EU livestock standard			
General Agriculture Sector				Agenda 2000	The new CAP		
External events	Avian flu crisis	Dioxin crisis		Foot & mouth disease crisis			

Figure 3.6 Number of organic holdings and organic land area in the United Kingdom 1997 to 2003



3.5.2 Expert interpretation

There are a number of policy and industry drivers responsible for the large uptake of organic farming and increase in converting and fully organic land in the period 1997 to 1999. A new labour government in 1997 was more positive toward organic farming and this resulted in increased rates of support for organic farmers with the introduction of the Organic Farming Scheme in England, Wales and Northern Ireland in 1999. This change in government resulted in a stronger commitment to organic farming by the state and influenced organic farming development in two ways (Moschitz et al., 2004):

- 1) Government commitment to organic farming policy enabled access to policy development by organic farming organisations and necessitated these organisations to become more responsive to state activities,
- 2) State interest in organic farming led to greater acceptance of organic farming by mainstream institutions as the organic institutions increasing influence on policy development meant they needed to be taken seriously.

This state intervention therefore has been very beneficial for the development of organic farming in the United Kingdom in the study period.

The interest amongst consumers and market place actors in organic food increased in the late 1990's due to increased consumer concern about the use of pesticides in agriculture, poor animal welfare and a number of food scares including the dioxin scare, BSE and the use of genetically modified organisms. These in combination with a general downturn in the conventional agriculture sector in the late 1990's increased the attractiveness of conversion to organic farming

The BSE crisis preceded the rapid increase in OF uptake seen in the late 90's and may have been a contributing factor to increased conversion to organic farming, stimulated by an increased demand for organic food by consumers. This effect of BSE was seen for several years afterwards. The occurrence of foot and mouth in 2001 does not appear to have resulted in a significant change in organic farming uptake though a number did take the opportunity to restructure their farms after de-stocking and convert to organic farming in the process. Foot and Mouth failed to have the impact on organic farming uptake that BSE did because it brought about a general demoralisation to the whole agricultural industry.

The Curry Commission Report soon after FMD focussed very much on developing sustainable farming systems in the UK and this was the beginning of a change in the governments thinking towards agriculture and agricultural policy that has proved to be positive for organic farming. As early as 1997 the government began talk of decoupling support payments from production and rewarding farmers for good environmental practice. This has culminated in the introduction of Single Farm Payments in 2005. This change in attitude by the government also marked a change in the relationship between DEFRA and the Soil Association, with DEFRA beginning to pay attention to what the Soil Association was saying about the benefits of organic farming – especially environmental benefits. This was supported by the close relationship that the Soil Association had with respected environmental bodies such as English Nature and the Royal Society for the Protection of Birds. Well respected, traditionally conventional research bodies such as the Scottish Agricultural College, ADAS and the Institute for Grassland and Environmental Research also began to get involved in organic research at this time and this added credibility to organic farming in the eyes of government and the conventional farming sector.

The rapid expansion at the end of the 1990's was stimulated by changes to the OFS payment rates; low conventional farm prices due to BSE and exchange rate changes

(before 1997 the £ was significantly lower in value) and strong organic market demand (although prices did not increase substantially, most producers could get access and the differential between the organic and low conventional prices was much higher). It is debatable whether interest in conversion, especially in the dairy sector, was stimulated by high organic prices or by increased conversion payments. However a key issue is that the old Organic Aid Scheme was closed in 1998 and part of 1999, and producers were told that if they started conversion before the Organic Farming Scheme re-opened they would not qualify for new payments. Therefore a log jam developed with large numbers in the queue by the end of 1999 – which is why funds ran out in England. In Wales, administrative delays (Agenda 2000 registration took place in 2000) also caused problems although in Wales, unlike England, producers were told they could start converting and still qualify when the scheme re-opened.

As a result of large numbers converting in 1999/2000, they all achieved full organic status simultaneously in 2001/2002, which resulted in a vast increase in supply (four fold in Wales) and problems with marketing, particularly in the dairy sector. This, together with Foot and Mouth undermined confidence in conversion, although a steady but much lower level of conversion has continued. Many farmers had converted to organics in the late 1990's without sound business plans and this resulted in many struggling financially when the price for organic products decreased with the over supply in 2001/2002.

The main drivers for the explosion in growth in Scotland 1998-2001 were threefold:

- a) The increased conversion payment rates in the SEERAD OAS in 1999;
- b) the disastrous market prices for (conventional) store lambs in autumn 1998 and 1999 and
- c) the perception of strong premiums for organic products.

The outcome was that the vast majority of farmers who converted to organic farming in Scotland at that time were hill sheep producers producing store lambs. Whilst a relatively rapid expansion in conversion of lowland farms also occurred at that time, a considerable imbalance developed in the organic sector between the number and area of hill farms which converted, and the number of lowland farms which converted. This resulted in most of the store lambs from these organic hill farms being sold into the conventional marketplace. The problem was compounded by the marketing system for store lambs, with auction markets set on specific dates at specific locations and so farmers could not afford to hang on to lambs in the hope of selling them at some stage into the organic food chain.

The main drivers in Scotland for the drop in the rate of conversion from 2002 onwards were twofold:

- a) The growth in the market demand for organic produce could not cope with the very rapid expansion in supply of organic product from 2002 onwards. Price premiums therefore reduced significantly. This was particularly the case for potatoes, lamb and milk.
- b) Farm gate prices in the conventional sector had improved.

Strengths – as identified by experts

- Farms in Scotland are primarily mixed farms, with a bias towards livestock, and are often run fairly extensively, so are inherently very suitable for conversion to organic.

- A long history of organic farming, although it does not have the level of popular appeal seen in other countries (e.g. Germany).
- Committed and enthusiastic farmers.
- Good technical information through OCIS and Farming Connect.
- Steady support for the sector by MAFF/Defra for some 15 years.
- Organic farming is well aligned with future agricultural policy as it delivers the social and environmental benefits required.
- UK consumers are increasingly interested in the food they eat and how it is produced.
- Supermarkets have embraced organic food and thus improved ease of purchase for consumers.
- High degree of market penetration for certain organic products (e.g. baby foods)
- Campaigning organisations such as the Soil Association.
- Good links with ethically traded goods.
- The press are mainly supportive of organic food and are extremely critical of risks associated with food generally.

Weaknesses – as identified by experts

- There is a high proportion of marginal land in Scotland and so beef and sheep meat are the most logical products to produce. Unfortunately these products are not always easy to find an organic market for, nor are the premiums particularly high.
- Organic farmers are not far enough ahead of conventional farmers in terms of providing social and environmental benefits – the gap between organic and conventional is closing all the time due to improvements in the conventional sector.
- Transport charges are a major issue both for sale of produce and for purchased inputs such as feed. Farms located in the south and east are in the most favourable situation, whilst farms in the northern and western isles are in the least favourable situation, and many of the latter have never sold any product into the organic food chain, even after five years of farming organically, because of these difficulties.
- The infrastructure on a lot of farms is not up to the regulatory requirements of the organic standards (particularly housing).
- Products have never been balanced in the UK (too much grass, due in part to the landscape and topography being more suited to pastoral farming) and this has caused problems both for practical organic farming (lack of crop rotations) and for marketing organic products.
- Impression that Scottish farmers take a less ideological, much more hard-nosed commercial approach towards organic farming compared to farmers in England, although this might be an erroneous impression gained largely as a result of mingling with ideological farmers at Soil Association conferences.
- Farmers possibly less market-oriented and less inclined to engage in cooperative activity than in some other EU countries.
- There is a serious shortage of registered organic processors, at least those with supermarket contracts (e.g. only one abattoir slaughtering large volumes of organic cattle and sheep).

- Whilst SEERAD have always had an OAS, their support could have been better, both in terms of payment rates and other support (e.g. they do not provide one and a half days of farm visit support to prospective converttees, as the other administrations in the UK do).
- Problems created by administrative delays in 1998-2000.
- Lack of maintenance payments at levels comparable to other EU countries.
- There has never been enough structural management of conversion in line with marketing opportunities.
- Supermarket sales useful in promoting organic food to a wide cross section of consumers but the strength of this retail sector may reduce returns to farmers and inhibit other forms of distribution.
- Relatively high price of organic food.
- There is a small population in Scotland and so the indigenous market for organic produce is limited. Most of the produce has to be exported to England.
- There is a degree of confusion as to what organic means.
- Lack of appreciation by consumers of the true cost of food.
- Consumers tend to be selfish rather than altruistic (i.e. perceived health benefits are more likely to motivate organic sales rather than ethical concerns for animal welfare of the environment). There is little data supporting the “selfish” benefits of organic food and health claims have been challenged by the Food Standards Agency.

3.6 France

3.6.1 Policy background

In the Action Plan of 1998 the key objective for organic production was to increase the area under organic management by 10 fold within 10 years (target: 1 million hectares of farmland and 25,000 producers in 2005). By 2004, however, organic farming represented only 540 000 ha and 11,000 holdings.

To try and achieve this ambitious target organic farming support was modified between 1997 and 2003. From 1997 to 1999 organic producers were mainly supported for only two years (payments during the conversion period). Although the organic farming scheme (CAB) was centrally co-ordinated, there were some significant regional differences in implementation (budget, period of support, eligibility criteria). In December 1998 new payment rates were implemented in order to enhance uptake by farmers. There was no support for the maintenance of organic farming in the study period 1997-2003.

The most significant change in the French organic producer support occurred in 1999 with the implementation of the EU regulation 1257/99 (Agenda 2000). A new generation of frameworks was then launched with the “Contrat Territorial d’Exploitation” (CTE) and a new CAB measure was drawn up. Organic producers were supported for 5 years with higher payment rates, especially for arable land. A rule of ponderation was introduced relative to the size of holdings (land area and labour force). This framework, which was announced in February 1999, entered into operation at the beginning of 2000. Due to political issues in France after the 2002 general election this framework was halted in October 2002 and no application was possible until November 2003. The framework is now called “Contrat d’Agriculture Durable” (CAD) but appears globally the same kind of framework as CTE, especially

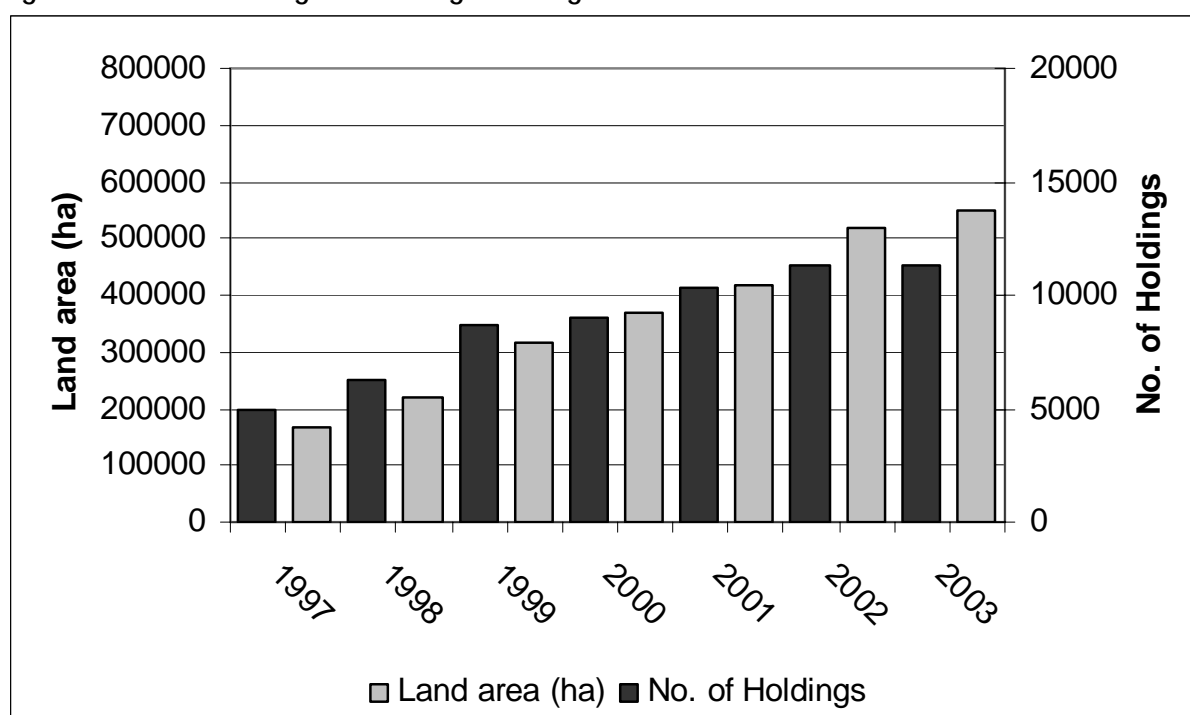
for the organic producer support (still called CAB) where no change in payment rates occurred. A budgetary envelope is now reserved specifically for the CAB measure.

Support for marketing of several types of organic product (wine, fruits, vegetable, cereal, oilseeds and cattle) has been increasing since 2001. Organic producer organisations are supported also in order to improve the global organisation of the organic sector. Information is also a key action area in France with the introduction in 2000 of a national organic event “Printemps Bio”. With respect to research, INRA is the key actor in organics and has developed research on specific organic issues since 1999.

Table 3.3 Key events that may have impacted on organic farming uptake in France

Events	1996	1997	1998	1999	2000	2001	2002	2003
Policy			New rates in Dec for CAB scheme.	CTE announced	CTE started		CTE ended in Oct.	Gap year for CTE
Organic sector		Action plan		Common organic label	European livestock standards	Agence Bio		
General Agriculture Sector					Agenda 2000			The new CAP
External events	BSE crisis	Avian flu crisis		Dioxin crisis	2 nd BSE crisis (specific to France)	Foot & mouth disease crisis		

Figure 3.7 Number of organic holdings and organic land area in France 1997 to 2003



3.6.2 Expert interpretation

When the key dates of the organic producers support (CAB) are crossed with the sector key dates, no relevant correlation appears clearly. But the new payment rates in 1998 and 2000 might have helped the strong growth of 1996-2002. Applicants to CAB were scarce at the end of 1999 and beginning of 2000 because farmers who had

planned to convert in 1999 preferred waiting for information about CTE which took time to be delivered. The French organic farming regulations are often stricter than the European regulation and in some instances, for example poultry production in 2000-2002 when farmers had to produce at least 40% of their feeds on farm, this may have contributed to a slowing down on uptake in these sectors. The different interpretations placed on the EU Regulation 2092/91 may also disadvantage French producers (for example how the conventional feed allowance derogation is interpreted in various countries) and discourage further uptake of organic farming in what is all ready quite a difficult economic environment.

The common market framework was also considered a hindrance to the development of the organic farming sector in France, especially for the producers of eggs, milk and cereals. This common market framework was thought to be beneficial for competing and expanding monopolies in the secondary and tertiary sectors (industry, services, transport and distribution), but not for the producers of food. Organic fruit and vegetable sectors appear to be developing better in France and this may be in part due to their reliance on local free markets. These points are also reflected in another issue that was felt to be important for the uptake of organic farming and the development of the organic sector, that of supply chain organisation. Short supply chains that rely on direct sales, box schemes and open markets for products such as fruit, vegetables and poultry meat are well organised and the sector is relative buoyant. Longer supply chains, however, for products such as milk, beef and cereals have experienced severe market problems. These supply chains are poorly organised and have high logistical costs (transport and storage) for the very low volumes of organic products. There have been no market regulation schemes such as marketing boards (more or less prohibited by Brussels anyway) or collective actions by organic producers to try and benefit from economies of scale. Several large co-operatives tried to collectively organise long supply chains and were criticised by the organic movement.

The market size has grown steadily over time in France, so the fluctuations in organic farming uptake do not appear to be related to the market. Retailers now report that the organic market is stable. The late 90's downturn in the conventional agriculture sector could have increased the attractiveness of conversion to organic farming so that farmers could achieve a higher price for their products. Moreover the European regulations of 1999-2000 (the common organic label, the European livestock standards) may have had a positive as well as a negative impact on the organic sector size in a European free trade context. There has been strategic behaviour in the past that may have distorted the market frame however and compounded the problems facing the organic fresh milk sector in particular. Large dairy companies have in the past imported organic milk from Germany instead of buying it from French organic collecting dairies (e.g. Biolait) in order to weaken these firms. The result of this type of behaviour and the issues outlined in the previous paragraph is that only 40% of organic milk is sold as organic.

The widespread BSE crisis is the major external event that occurs between 1995 and 2003 that had the potential to influence organic farming uptake. A possible correlation could be postulated because 1996 is also a key date for the increased uptake of organic farming. However, caution is recommended as the impacts of food scares would not normally be so immediate.

Strengths – as identified by experts

- New action plan produced after the Saddier Report (February 2003) and the CAD (Contrat D'agriculture Durable) in 2004 indicate on-going support for organic farming by the Ministry of Agriculture.

- Consumers trust organic products and 55% of consumers purchase an organic product at least once a year.
- Environmental concern and ethical trade is growing in France and organic farming is seen as a positive force in these areas.

Weaknesses – as identified by experts

- Poor co-operation between organic producers.
- High transport and storage costs for small volumes of organic produce.
- Lack of maintenance payments (according to some French actors, the lack of maintenance payment is one of the main reasons for the limited development of organic farming in France).
- EU organic farmers being disadvantaged in the common EU market framework.

3.7 Germany

3.7.1 Policy background

The BSE crisis and the ensuing doubts about the safety and quality of foods triggered a public debate in Germany about agricultural production, food processing and agricultural policy. In January 2001 Renate Künast was appointed as new minister for consumer protection, food and agriculture. She announced that by 2010, 20 % of Germany's agricultural area should be organic. This aim should be achieved with a whole set of measures, including increased support for farmers, the introduction of the state organic seal (Biosiegel) and the launch of the federal programme for organic farming.

Germany has promoted the introduction of organic farming with public funds since 1989. Until 1992 the conversion to organic farming had been promoted by a variant of the EU Extensification Scheme, banning the use of synthetically produced chemical fertilisers and plant protection products on the entire farm. In addition, animal husbandry had to meet basic rules of organic farming. The introduction of organic farming as well as its maintenance has been promoted since 1994 within the framework of the *Laender* agri-environmental schemes based on EU Council Regulation 2078/92 and since 1 January 2001 under Articles 22 to 24 of EU Regulation 1257/1999.

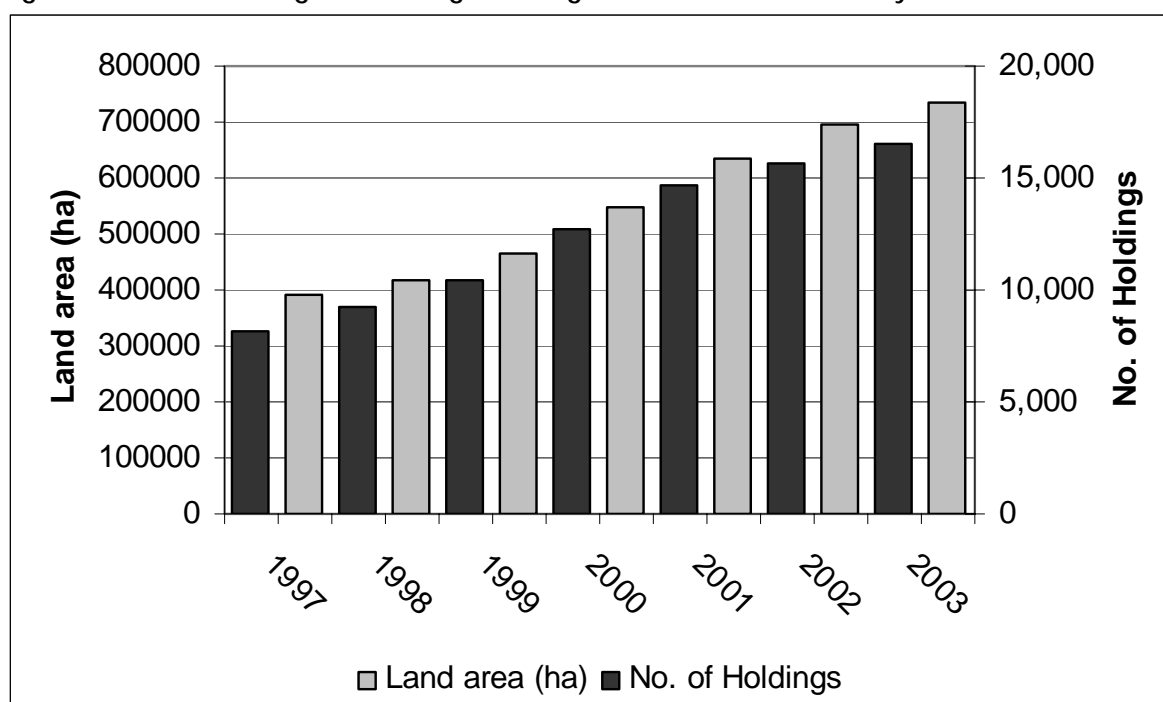
Responsible for implementation of EC Reg. 1257/99 are the *Länder* ministries and administration. The Federal Government co-finances the payments for organic farms if it is executed by the *Länder* in line with the principles governing the promotion of “market- and site-adapted land management” under the "Joint Task for the Improvement of Agricultural Structures and Coastal Protection" (Gemeinschaftsaufgabe Agrarstruktur und Küstenschutz-GAK). The European Union, the Federal Government and the *Laender* jointly fund the payments. In the old *Laender* the EU bears 50 % (2005-2006= maximum 60%), in the new *Laender* (East Germany) 75 % (2005-2006= maximum 85%) of the costs. The national share is either assumed by the respective *Laender* on its own or jointly by the Federal Government and *Laender* in a 60:40 ratio, if the respective *Laender* has recourse to Federal co-financing within the framework of GAK.

In 2001-2002 many programmes and measures for the promotion of organic farming were introduced and implemented on a federal and state level. Many *Laender* also increased payments in these years.

Table 3.4 Key events that may have impacted on organic farming uptake in Germany

Events	1997	1998	1999	2000	2001	2002	2003
Policy		Change of Federal Govt (coalition of SPD and Greens)			New ('green') Minister for Consumer Protection, Food and Agriculture (BMVEL) appointed	Federal Govt approved national sustainability strategy	
Organic sector		In most Laender policy support for certified land only	BMVEL established an independent Dept of organic farming	Most Laender increased the organic payments in 2000 and some in 2001	Eco-labelling Act (Biosiegel); Most Laender increased their budget for information campaigns, marketing and research for organic farming	Eco-labelling ordinance; Organic Farming Act (regulating info and inspection); 10 out of 16 Laender further increased the organic payments; Implementation of the federal programme for organic farming; Introduction of the programme "Regionen Aktiv" in which organic projects have also been supported; In Lower Saxony, establishment of a Competence Centre for organic farming; BÖLW established Improvement of scheme for processing and marketing of organic produce	
General Agric. Sector				Agenda 2000			First draft of the new CAP
External events					Foot & mouth disease crisis; German BSE crisis	Nitrofen scandal (organic sector)	

Figure 3.8 Number of organic holdings and organic land area in Germany 1997 to 2003



3.7.2 Expert interpretation

The area of certified organic land and the number of certified organic holdings has steadily increased from 1990 to 2003. This type of land peaked in area and number of holdings in 1994 and then declined until 1997 when this type of policy support ended and a new organic farming scheme came into being. The end of this scheme does not appear to have substantially changed the growth of organic farming uptake or land area.

The change in Federal Government in 1998 resulted in a stronger commitment to organic farming by the state and influenced organic farming development in two ways (Moschitz et al., 2004):

- 1) Government commitment to organic farming policy enabled access to policy development by organic farming organisations and necessitated these organisations to become more responsive to state activities,
- 2) State interest in organic farming led to greater acceptance of organic farming by mainstream institutions as the organic institutions increasing influence on policy development meant they needed to be taken seriously.

This state intervention therefore has been very beneficial for the development of organic farming in Germany in the study period.

Other factors that may have resulted in continued growth from 2001 onward are as follows. The BSE crisis and the ensuing doubts about the safety and quality of food triggered a political debate in Germany about agricultural production, food processing and agricultural policy resulting in an increasing demand for organic produce and substantial policy changes which are outlined below.

Since 1990 GAK has promoted the processing and marketing of organic produce under the “principles encouraging the processing and marketing of organically produced agricultural products”. Under this support programme applicants were eligible for support for start-up expenses for producer groups, the developing of marketing concepts, the introduction of quality and ecological management systems

as well as investments by producer groups or processing and marketing businesses that co-operate with them or with individual organic farmers on a contractual basis. As of 2002, public aid in this field has been improved by the following:

- 1) raised ceilings for support of start-up expenses;
- 2) eased contractual co-operation between processing and marketing enterprises and producer groups as a condition for granting aid. Contractual co-operation with individual producers will now also suffice;
- 3) introduction and initial certification of environmental and quality management systems has been included as a specific eligibility criteria for support. Support covers up to 50% of the costs up to a maximum of €100,000 within a three year period;
- 4) the level of support for developing marketing concepts has been raised;
- 5) investment aid has been increased by up to 40% to reach the EU-authorised maximum rate.

Other factors that may have stimulated the uptake of organic farming, especially post Agenda 2000 were that most Laender increased organic support payments in 2000/01 and 10 of the 16 further increased payments in 2002. Also, most Laender increased their budget for information campaigns, marketing and research for organic farming in 2001 and 2002.

The Eco-label (Biosiegel) marks an important step in the development of the organic market. The underlying standard is set by the EU Regulation on Organic Farming, as well as the waiving of further procedural steps such as the award of licensing procedures, allowing a broad use of the label (including products from other EU states and third countries). Community law does not allow a state label that goes beyond the EU Regulation on Organic Farming. The label may be used on a voluntary basis. On 15 December 2001 and Eco-labelling Act took effect to legally protect the Eco-label. The Eco-labelling Ordinance (based on the Eco-labelling Act) took effect on 16 February 2002 and lays down detailed rules regarding the use of the Eco-label. The Eco-labelling Ordinance expressly opens up the opportunity of affixing national or regional indications of origin in the immediate vicinity of the Eco-label on packaging.

To further improve the overall conditions for organic farming, a Federal Organic Farming Scheme (Bundesprogramm Okolandbau) was implemented in 2002. The Federal Scheme incorporates various measures in line with a supply chain concept in the following sectors: agricultural production, processing, trade, marketing, consumers, development and transfer of technologies and accompanying measures such as research and development. To implement the Federal Scheme, the BMVEL budget earmarked around €35 million for 2002 and €36 million for 2003. The Federal Government intends to continue with the scheme (with a smaller annual budget) until 2009.

Strengths – as identified by experts

- Long tradition of organic farming in Germany.
- Good technical expertise and advice availability.
- Strong policy support for organic farming since 2001/02.
- Nearly every town has a specialist organic food shop or farmers market with organic produce on sale. In recent years especially, organic supermarkets have shown the greatest growth in sales.

- Supermarkets offering organic food at lower prices is good for consumers.
- Organic food also now available in big multiple retailers such as Aldi and Lidl)
- Consumer campaigns have lead to increased public recognition of organics

Weaknesses – as identified by experts

- Insufficient difference between organic farming area payments and area payments for low input farming systems in some Laender.
- High variance of policy support (design and level) across the Laender.
- Support for organic farming is highly dependent on one government party (Green Party).
- More supermarkets offering organic food at low prices increases the competition for German farmers because products may be imported in bulk from other countries more cheaply. This makes farm gate prices very dynamic.
- High competition between different supermarkets, resulting in very low consumer prices. With the German consumer being accustomed to low food prices; it is very difficult to get them to purchase organic produce as the price differential between organic and conventional is too high.
- A high unemployment rate and a budget deficit mean people are less likely to pay higher prices for organic food.
- Many producer organisations and other market actors have different ideas about organic farming resulting in them being at least partly in competition with each other.

3.8 Italy

3.8.1 Policy background

Italy has a comparatively large organic sector which has grown rapidly since 1992. This growth coincided with the implementation of Regulation (EC) 2092/91 on certification which began in 1992 and was finalized in 1995, and also the implementation of EC Reg. 2078/92 for the support of environmentally friendly farming (including organic) between 1993 and 1996. In Italy, agricultural policy has been devolved to Regional Governments since 1972. This resulted in the notable heterogeneity in the implementation of the aforementioned EU Regulations across Italy. Supports both for converting and fully organic farmers exist in Italy, but schemes vary drastically across the territories due to the differing regional implementations and definition of preferential areas. Support did in fact cease in some regions in 2002. Regional differences also occur for eligibility criteria and the level of subsidies for the different crops.

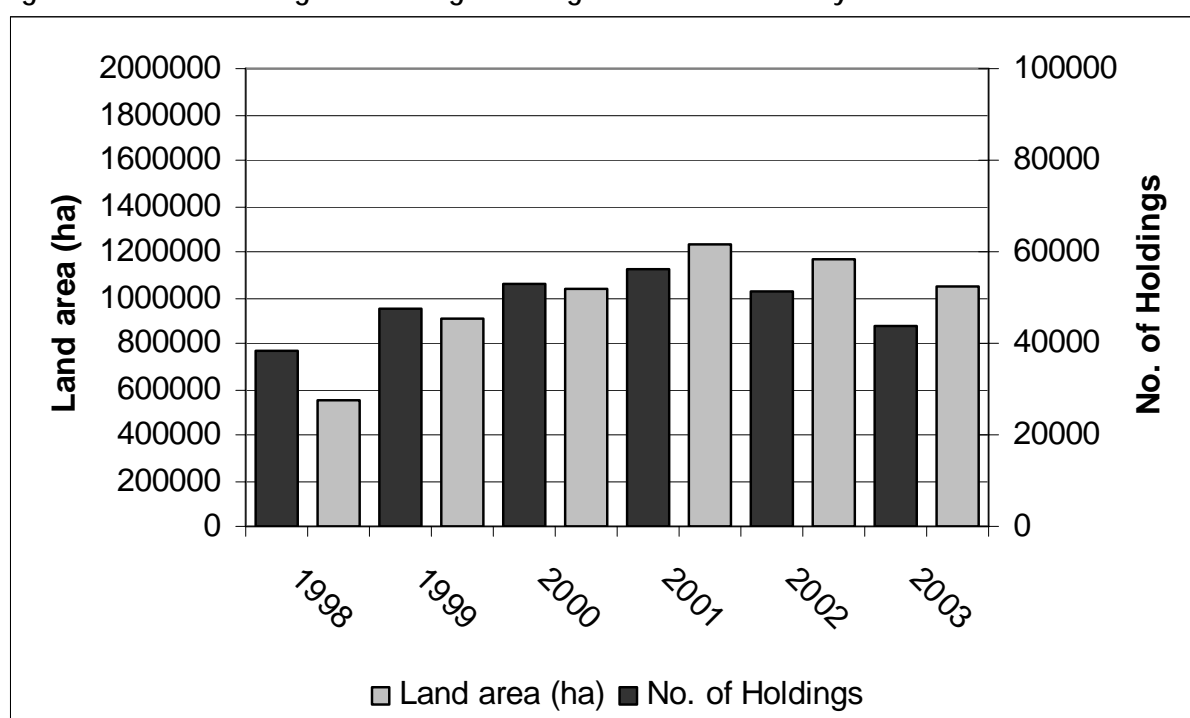
In a some regions, organic farmers are the priority receivers of all types of grants and agricultural credit; whereas in other regions they receive points for being organic producers which moves them higher up the application list.

Several LEADER projects throughout Italy (not all regions) supported organic farming through supporting applied experimental activities, extension, grants for small scale processing plants and even for specialised organic grocery shops. Since 1999 laws have compelled municipalities and hospitals to use some organic food daily in their catering services. This has lead to many municipalities financially supporting the introduction of organic ingredients into the menu composition of schools and other community bodies.

Table 3.5 Key events that may have impacted on organic farming uptake in Italy

Events	1997	1998	1999	2000	2001	2002	2003	2004
Policy			Regional rural develop. plans established					
Organic sector			Common organic label	European livestock standards; National committee for Organic and Ecological farming				Action plan; New national bill on organic farming comes into force
General Agric. Sector				Agenda 2000			The new CAP	
External events	Avian flu crisis		Dioxin crisis		Foot & mouth disease crisis			

Figure 3.9 Number of organic holdings and organic land area in Italy 1998 to 2003



3.8.2 Expert interpretation

In the 1990s the increase in organic farming uptake was all policy driven with the push based on higher support payments for organic schemes compared to other agri-environmental schemes in most regions. In addition to this, organic farming was more appealing than other agri-environment schemes because there was a promising market for organic goods that could attract producer premiums.

In the early years of the new century, there are two possible explanations for the decrease in uptake of organic farming and the actual reductions in organic farm numbers and hectares. The first was Agenda 2000 and the new Rural Development

Plans. The reduced funding for organic under these policy initiatives meant that many regions put a quota on the number of holdings that could benefit from organic subsidies and in many cases the actual payment levels changed. This substantially reduced the advantages for converting cereal and grassland (the majority of total organic land area and the sectors less prone to having demand pull). In some cases the lags in introducing and approving the new RDP's caused a number of organic farmers to drop out. A recent survival analysis undertaken in the Marche Region showed that the factors explaining withdrawal from organic farming, apart from reduced support payments, were age of the farmer, farm size and crop type. The older and smaller farmers are more likely to abandon organic production as are those that are less specialised, produce cereals or have a large share of grassland. Those that remained in organic farming after the policy changes in the early 2000's were those larger holdings managed by young farmers and crops were more market orientated.

The second explanation for the reduction in uptake of organic farming between 2001 and 2003 was that smaller, less competitive holdings specialising in highly market demanded crops (e.g. olives, wine grapes, fruit and vegetables) could not achieve the price premiums they had previously received due to a downturn in market demand. If a price premium still existed at all, it was often too small to compensate for transport costs of small quantities of produce, especially in marginal areas. In many areas, organic cereal producers were being paid conventional prices for their crops.

The overriding factor determining organic farming uptake, however, appears to be the percentage of total agri-environmental support payments that goes directly to the organic farming scheme. Data indicates that there is a 0.83 correlation between the percentage of agri-environmental subsidy that goes into the organic farming scheme and the percentage of organic UAA (Zanoli, pers. comment).

The conversion to organic of many farmers was not driven by market consideration, nor ethical and ideological concerns about health, the environment or animal welfare, but by support payments (especially in the southern regions and islands) or by the misinformed perception that organic was the pot of gold at the end of the rainbow. A good example of this is Sardinia. In 2001 there was a peak of 8,000 organic farmers accounting for 23.5% and 40% of Sardinia's total UAA and sheep producers, respectively. However, only about 200 Sardinian organic farmers sold their product as organic, the rest was sold into conventional markets. With the reduction of support payments post Agenda 2000 and with the new RDP's, the number of organic farmers in Sardinia was down to 1,754 by 2004. Similar situations arose in Sicily, Calabria and Apulia. Together, these regions accounted for some 60% of organic farmers in Italy in 2001 and when organic farming in these regions collapsed with the removal of subsidies, it appeared that the whole Italian organic farming industry had collapsed. This is misleading however, as in other regions, organic holding numbers dropped by as little as 3.5% and the number of processors and traders actually increased.

Very little investment other than direct support payments was made in Italy to support and develop the organic sector. If half the money contributed to producer support payments was spent on long-term information campaigns, promoting partnership amongst farmers, in product development, in using more organic products in public food service, in an effective advisory service, in home and foreign market analysis and in research and development, it would have been very unlikely that the huge withdrawals from organic farming would have occurred with the removal of direct support payments.

Since 2000 the Italian government has tried to encourage increased consumption of organic food through making the use of some organic food compulsory in school and hospital meals. The law has been relatively ineffective however because whilst town councils have to serve organic food, mayors infringing the law are not prosecuted. Therefore only a minority of “green” municipalities regularly serves organic food in schools (and even fewer in hospitals). Out of 8,100 municipalities, only 1,000 use organic ingredients, however, in law abiding Rome, 140,000 school pupils have only organic food served to them in school every day.

The development of a domestic market for organic food is a recent phenomenon as Italy is mainly oriented to exportation for the organic market. Therefore the increased uptake in the late 90’s is linked to the growth of the European market and not of the domestic one. Food scares, linked to the behaviour of European consumers, are well positioned on the time scale to explain some of the large increase in organic farming uptake in the late 90’s. With its reliance on an export market, the recent downturn in organic holdings and land area may be due to more competitive EU countries entering the trade in organic produce and putting increasing financial pressure on Italian organic farmers – the result being, many have withdrawn from organic farming.

Strengths – as identified by experts

- Positive political and media environment.
- Natural endowment for high added value production requested by the market (fruit, vegetables, olives and wine).
- An increasing internal demand, despite the general low awareness and product knowledge among consumers.
- In some areas, lower production costs than other parts of the EU, though this comparative advantage is declining and is possibly all ready nul.

Weaknesses

- Lack of co-ordination among policy makers at regional and national level
- Lack of national (ministry level) co-ordination of organic farming policy: the ministry’s organic office has changed its leading manager three times in the last four years.
- Organic Action Plan very general and not officially approved.
- Large regional differences in policy.
- Highly bureaucratic payment systems at regional level.
- High bureaucratic burdens for importers.
- Low general public awareness. No national organic logo familiar enough for the general public and consumers.
- Skilled professional figures are lacking – need for more professional training courses.
- Low R&D investment.

3.9 Denmark

3.9.1 Policy background

In January 1999, the Danish Directorate for Development published Action Plan II – Development in organic farming (Danish Directorate for Development, 1999). This was a follow-up on Action Plan I, which had been published in 1995.

In the period 1997-2005 there have been different sources of public funding for the organic sector:

- Area payment as a part of the RDP.
- Development and innovation projects.
- Funding for research and development.
- Organic farming using programs not specifically targeted to organic farming e.g. the general innovation programs for product development and the regional distributed funding under the rural district programme.

The area payment has been ongoing since 1987 for both converting and converted land. The levels have varied and in periods there have been extra high levels of support for production areas needing a boost to follow general organic development.

Besides the area payment, establishing market led development and research and development have been priority areas for organic farming expenditure. Often major initiatives to support organic farming have been cobbled to larger policy initiatives such as the aquatic environment action plans and the pesticide action plans.

In 1999, new support payment rates were introduced which were considerably lower than previously and the conversion period was extended from 5 to 8 years for the whole farm to be converted, depending on when the last field was converted into organic management. In 2000 Denmark adopted an Order (Danish Plant Directorate, 2000) that stipulated stricter production requirements than those set out in the 1999 EU livestock standards (1807/99), though prior to 2002 all Danish organic dairy producers applied private standards on top of the EU regulation so this change was not seen as a major influence on the uptake of organic farming.

In 2003 the support payments changed again (Denmark, 2003) and organic conversion payments became unavailable for dairy farmers. One of the arguments for the change was that many dairy farmers would have had to make a 5 year commitment to the programme but as the market was stagnating this was perceived to be a significant risk. The risk was therefore reduced by the new scheme where they were only committed to the conversion of the fields; these were not as expensive as livestock to keep organic if they could not get new marketing contracts for their milk. Existing organic farmers were supported by on-going funding from the agri-environmental scheme.

Organic farmers now can combine the organic subsidies with subsidies under other environmental schemes, such as:

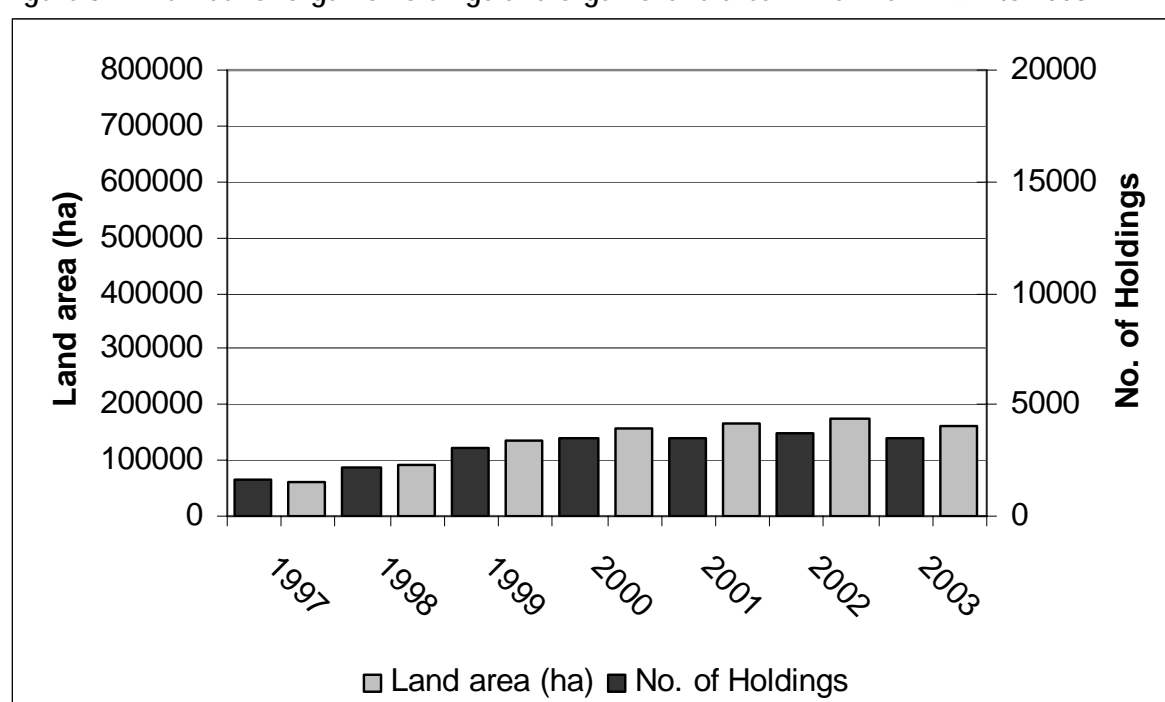
1. Measures for which subsidies are only granted for areas placed in Sensitive Agricultural Areas: Level of nitrogen reduced to 60% of specified need; Use of catch crops; Extensive grassland; Extensive zones along water courses, lakes and landscape elements and Establishment of wetlands
2. Green accounts
3. Demonstration projects

4. Pilot- and demonstration projects (Grassland and Nature Plans)
5. Extensive production on agricultural land
6. Conversion to organic farming (Only one obligation period of 5 years)

Table 3.10 Key events that may have impacted on organic farming uptake in Denmark

Events	1997	1998	1999	2000	2001	2002	2003
Policy	High support payment for organic crops and pigs		Lower support payments introduced; OFC role strengthened	Very pro-organic Minister of Food (from February)	OFC roles diminish with change of Govt.		Change in support payment
Organic sector			Organic Action Plan II; The introduction of the House of Organics;	Danish Plant Directorate Order adopted that stipulated stricter livestock production standards than 1807/99		Existing organisations merge into DO (Danish Assn. For Organic Farming) formed	
General Agric. Sector			OLC became a member of the Danish Agriculture Council			General Farmers Unions merged into Danish Agriculture	
External events			Dioxin crisis	National BSE crisis			

Figure 3.11 Number of organic holdings and organic land area in Denmark 1997 to 2003



3.9.2 Expert interpretation

The number of organic holdings and total organic and in conversion land area in Denmark generally increased between 1997 and 2002, respectively, followed by a downturn in both between 2002 and 2003. In 1997, the rate of uptake of organic farming increased due to the introduction of higher support for organic pig and crop production. Stagnation has characterised the uptake of organic farming in Denmark since 2000 and this may be due to an overloading of the Danish market with home produced (particularly milk) and imported organic products since the massive conversion drive of the late 90's. Many new farmers entered organic milk production in particular between 1997 and 2000 and as the supply of milk increased, premium prices diminished and much organic milk was sold on the conventional market. The decline in the number of organic farms from 2002 could be due in some part to these farmers leaving organic production at the end of their 5 year OFS contracts.

Another feature of the mid to late 90's organic farming uptake pattern was the increase in the proportion of organic land that was grassland between 95/96 and 99/00. This was due to the introduction of Recommendation No. 51 in the Organic Action Plan for Denmark, released in 1995. This recommendation proposed to increase the area of organic forage available, and this, in conjunction with the sudden increase in organic dairy farms as described above resulted in a rapid increase in the proportion of organic grassland in Denmark. Since 1999/2000, the rate of change of land use and total land area has been reasonably stable, however the % change in grassland decreased in 02/03 and this is likely to be related directly to the oversupply of organic milk in Denmark and the subsequent reduction in the total number of organic and in conversion holdings observed in the same time period.

Data on expenditure related to supporting organic agriculture is relatively limited for Denmark with only OFS and Industry and Advice training data available over the whole study period. Organic farming scheme payments declined sharply between 1998 and 1999 due to lower support payments being introduced in Denmark in 1999, however total OFS expenditure rose again in 2000 with the growth in the number of farmers converting between 1999 and 2000. Total OFS payments have declined steadily from 2001 onwards and this is due to a reduction in the number of farmers converting. Area support payments in Denmark are not seen as an incentive for conversion, but rather they make it less risky to convert. The most important financial incentive to Danish organic farmers is price premium, therefore maintaining high consumer demand is very important. In periods of relatively low uptake of organic farming (e.g. between 2000 and 2003) it has been a conscious policy decision in Denmark to increase funding for development projects both aimed at the market and research activities related to farmers as well as production innovation. The aim of this is to stimulate market growth and therefore encourage more farmers to convert to organic.

Other factor highlighted as being a barrier to market development, and ultimately therefore to organic farming uptake, have been international trade barriers. Export from Denmark is hampered by lack of acknowledgement of the Danish control-system among private certifiers in a range of countries – first and foremost the UK and Sweden. In order to allow export trade to develop, the OFC, supported by the government devised an export strategy in June 2002 which was recently evaluated in 2005.

Strengths – as identified by experts

- Denmark (along with Austria and Switzerland) has one of the highest organic market shares in plant and livestock products in Europe.

- The farmers converting to organic farming are among the most skilled farmers - for many it is seen as a professional challenge to convert.
- Denmark has a very good advisory system which from the beginning included organic farming in their activities. Farmers could therefore get advice from the same office (often another person) before and after conversion to organic farming.
- Early support from the state and an integrated approach with more emphasis on adapting to market demand than to the level of public subsidies.
- Inside as well as outside the Organic Food Council, cooperation between the organic sector and the state, between the organic and conventional farming sectors as well as within the organic sector.
- Organic farming used as an environmental tool in several large political agreements.
- Organic farming gets some support from and co-operation with general consumer organisations, environmental organisations and animal welfare organisations.
- Support for information to consumers, product innovation, extension service, conversion of public kitchens - carried out by or with large involvement of the organic farming sector itself.
- High profile for organic in the media – bad publicity responded to swiftly by organic organisations, often supported by other organisations and sometimes the ministry.
- Political attention - relates also to the media attention.
- Large targeted research programs with involvement from the sector (including the action plans) concerning target areas.
- Organic food and farming stands as a fully professionalized business sector able to compete with conventional food and farming organisations on the domestic market and ready to meet major export challenges.
- The current stagnation in the organic sector has helped it to consolidate, in a way that only the most committed initiatives survive, and make adaptations to the new conditions and for development of new initiatives.
- All stakeholders including governmental bodies, farmer's organisation and supermarkets have made a co-ordinated approach to activities like promotion campaigns.
- A public inspection system with high credibility among consumers, which has also been used successfully to avoid confusion about different labels.

Weaknesses – as identified by experts

- Some dependence on the political climate.
- Unclear interrelationships with conventional agriculture organisations.
- Danish agriculture is in general a large exporter, but major attempts to increase exports of Danish organic products have not been successful.
- The current stagnation period has not been used as much for developmental efforts as the first stagnation period was which preceded the booming growth period in the mid 1990s.
- One dairy company with a market share of around 90% of the Danish milk (Arla) which accepted organic milk from the beginning but who see it as an additional product rather than being dedicated to organic farming.

3.10 Greece

3.10.1 Policy background

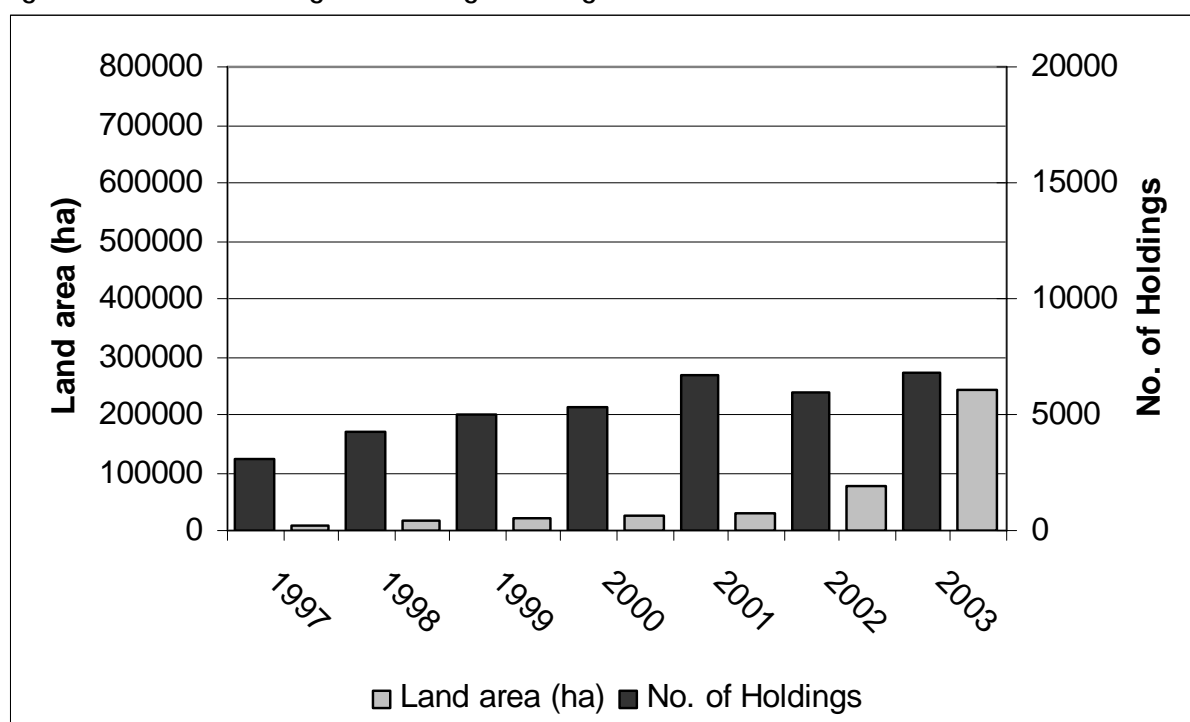
Organic farming has been supported by the Greek state since 1996. The current support payments scheme is based on the Rural Development Programming Document 2000-2006– reg. 1257/1999 adopted by the Greek government in 2001 and revised subsequently in 2004. In Greece, a distinction is made between organic crop area payments and livestock farming. Crop area payments commenced in 1996, with the livestock scheme being introduced in 2001. The structure of Greek organic farming before the introduction of the livestock scheme was very different from the EU average. For example in 1998, 88% of the organic area in Greece was in horticulture and perennial crops such as olives, compared to just over an average of 12% of organic area for the rest of the EU.

According to the 2001 co-ministerial decisions, organic farming support was to be managed through prefectural schemes. The importance of geographical concentration was pointed out, aiming at achieving clusters of organic farming areas. Since the 2004, however, the programme is managed horizontally in the whole country (implementing the amendments of the 2003 EPAA Revision). In 2004, small scale revisions took place including amongst others the introduction of minimum holding size. The stated aims of organic farming support in the 2001 were given as: The sustainable use of rural land; the reduction of pollution caused by agriculture; the protection of wild flora and fauna; the protection of public health; sustain biodiversity of agricultural ecosystems; creation of organic zones and equally distributed growth of the organic sector at a prefecture level. By 2004 the stated aims of support for organic farming had changed to: The sustainable use of rural land; the reduction of pollution caused by agriculture; sustain biodiversity of agricultural ecosystems; improving measures for the protection of farmers'/growers' health and the production of competitive, quality products.

Table 3.6: Key events that may have impacted on organic farming uptake in Greece

Table 3.6. Key events that may have impacted on organic farming uptake in Greece									
	1996	1997	1998	1999	2000	2001	2002	2003	2004
Policy						EU Reg. 1257/99 adopted in Greece			
Organic Sector	Org. farming support began				Implement EU Reg. 1804/99	OFS payments within RDP			OFS payment within RDP revised
General Agric. Sector	Agenda 2000							The new CAP	
External Events	BSE crisis	Dioxin crisis			Foot and mouth crisis				

Figure 3.12 Number of organic holdings and organic land area in Greece 1997 to 2003



3.10.2 Expert interpretation

The increase in organic farming from 1996 onwards was primarily due to the introduction of organic farming support payments for crops in 1996. The main development in Greek organic farming occurred in the late 1990's following the implementation of EC Regs. 2092/91 and 2078/92. The main driving force behind this development was the promise of subsidies available through EC Reg. 2078/92 combined with a general crisis in agriculture that included very low prices being paid for some products (Johannes et al, 2001). EC Reg. 2092/91 had a significant influence on the supply of organic produce because it stimulated the development of a Greek certification system. Previously Greek organic producers had been certified by Dutch or German certification bodies specifically for the export market. Not all those converting to organic production methods received government support due to limitations of the scheme; therefore the availability of subsidies could not have been the only reason for farmers converting. The expectation of subsidies in the future combined with the effect of EU measures to promote the option of organic farming may have also played a role in increased uptake of organic farming in the late 90's.

A very important increase in organically-managed land took place in Greece between 2001 and 2003 – from 30,196 ha to 244,457 ha – after increasing steadily from 1997. The increase can be partly explained by the fact that the EU Reg. 1804/99 for organic animal husbandry began to be implemented in Greece in the autumn of 2001 and by the implementation of the program on “Organic Husbandry” (measure 2.3 – 2000 - 2006) of the Greek Ministry of Rural Development and Food. As beneficiaries of the program are livestock producers that have entered pasture land in the program, the increase in land area (particularly grassland) can be largely explained by this policy development. Livestock numbers also increased considerably during the 2001-2003 period. The number of registered organic holdings, on the other hand, hit 6710 in 2001 – decreasing slightly in 2002 and then rising again in 2003 to peak at 6816.

Strengths – as identified by experts

- High agricultural population percentage.
- Diverse geomorphology which favours the development of organic zones.
- A large percentage of Greek farmland is considered LFA with a fair number of remaining traditional systems which brings extra support payments and could favour agri-tourism solutions in combination with organic farming.
- A lot of conventional products such as cotton and wheat were heavily dependant on EU subsidies which means that with the introduction of single payments they will become a lot less attractive. Also, given the fact that the OFS payments have increased sharply since the 567 co Ministerial Decision of 2004, more farmers are expected to have strong financial reasons to think of the organic farming alternative.

Weaknesses – as identified by experts

- Small farm size is also a burden as it does not allow economies of scale to be developed and because farmers usually have to have an income outside the farm to make it possible to farm at all.
- Low diversity of crop products. Most crop farming area is dedicated to olive groves with some vineyards, citrus and cereal (the most convenient crops for conversion). The rest of the crop products are underrepresented. This also poses a problem for livestock farming due to low feed availability
- Technical support and information about organic farming are both very rare. As a consequence, farmers are scared to convert and if they do convert and enter the OFS they get fined because they lack the know how to manage an organic farm. Many farmers lack ideological commitment and the OFS is seen as a means to add to their single farm payments rather than as a good business alternative.
- Investment and marketing interest from farmers is rather low (from past experience, it seems that organic processing units are one of the main reasons for neighbouring farmland to convert).
- The bureaucracy surrounding the OFS scheme and the certification process in combination with the fact that the Ministry and the public authorities are slow in implementing the bureaucratic steps, puts off a lot of the potential organic farmers.
- The fact that the OFS has opening and closing dates seems to suit the public authorities but makes life difficult for farmers since the cropping periods of each crop varies and the opening periods do not facilitate their farm management at all.
- The above burdens apply especially to remote areas that always lag behind in keeping up with the publications, proclamations and bureaucratic developments.
- Supply chains are rather inefficient with many intermediaries (adding service VAT to the cost of the product) and a lot of food mileage to and from the intermediary stores. Fresh produce is particularly expensive because the local producers and their co-operatives are not well developed in supply and product diversity services and the fresh produce has to travel from distant sources in refrigerated lorries.

3.11 The Netherlands

3.11.1 Policy background

In the Netherlands, as in all European countries, Council Regulation (EEC) No. 2092/91 is in force for organic plant production and processing and from August 2000 also Council Regulation (EC) No. 1804/99 for animal production.

The Action Plan for 1997-2000 identified that the uptake of organic agriculture in the Netherlands had stagnated and concluded that subsidies should be increased for farmers in conversion. This did happen, but only starting from 1999. In 1999 several changes in policy occurred in rapid succession, including opening an application period of two months with maximum funds available of €4.54 million. Within a few weeks, further applications were declined as this maximum fund limit had been met. By the time the two month application period was up, the maximum funds available was increased by 50 percent to cover remaining applications.

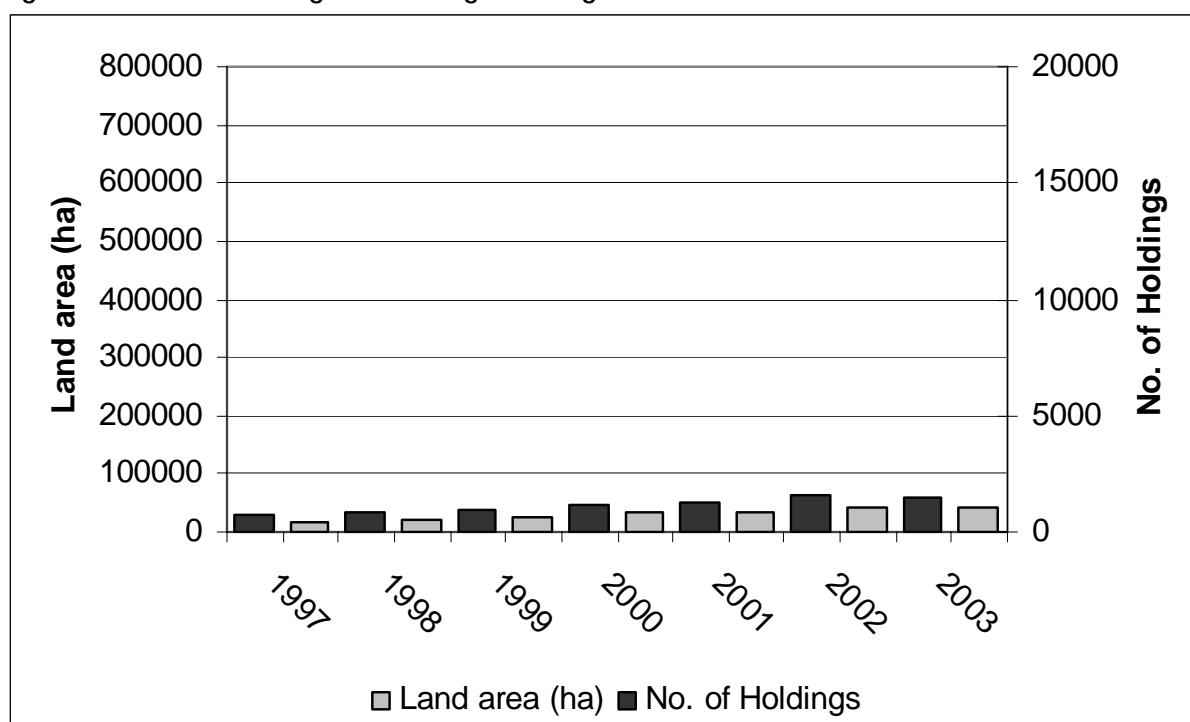
The second Action Plan (2001-2004) shifted the focus towards the supply chain and producer subsidies decreased considerably. The funds that were available were focussed on the conversion years to alleviate some of the lost income farmers faced during those years. The rate was set at 65 percent of the 1999 rates (less for fruit producers) and with a maximum amount that could be claimed. The treatment of 'continuing' organic producers changed at that time as well. Originally, a last payment was envisaged for 2002, however, in practice subsidies have continued until present, though only for those who have not received subsidies for conversion before. The rationale for these continued payments is that subsidies to farmers in conversion affect the market situation for other organic farmers – hence some compensation is due.

In the third Plan of Action, the Dutch Ministry for Agriculture has announced that it will change the arrangements for 2005-2007, abolishing payments for conversion per se, but instead allowing all organic farmers to make use of them.

Table 3.7 Key events that may have impacted on organic farming uptake in the Netherlands

	1997	1998	1999	2000	2001	2002	2003
Policy			Changes to organic support policy; Dutch Ministry presented new RDP to EU	Council Regulation (EC) No. 1804/99; Tax breaks for sustainable producers			
Organic Sector	First organic action plan				Second organic action plan		
General Agricultural Sector				Agenda 2000			The new CAP
External Events			Dioxin Crisis				

Figure 3.13 Number of organic holdings and organic land area in the Netherlands, 1997 to 2003



3.11.2 Expert interpretation

The total area of organic land increased between 1997 and 2003, though this was characterised a slight decrease in organic land area and number of holdings in 2003., one in 1999 and the other in 2002. The relatively large increase in organic and in-conversion land area between 1999 and 2000 may be due to the changes implemented in organic support payments in 1999 and also the implementation of EC Reg 1804/99.

Other reasons for the fairly steady growth of organic farming include the introduction of conversion subsidies in 1992 and the issues of food surpluses, manure problems, swine-fever, various food scandals (BSE, dioxin etc.) and falling prices in conventional agriculture. This resulted in more and more conventional farmers becoming interested in organic farming and in consumers demanding safe products.

Strengths – as identified by experts

In a review of the 1997-99 Action Plan carried out in 2000, the following strength and improvements were identified in the organic sector:

- a large increase had taken place in number of points of sales and an improvement in choice of products;
- supply chain had professionalized further, and some shortages on the domestic market were occurring;
- a high percentage of area under organic management received subsidies;
- the infrastructure of knowledge and information about organic agriculture had increased dramatically. Research into organic agriculture now has its own place, and is not any longer part of conventional agriculture. The same is valid for the educational sector.

Weaknesses – as identified by experts (Stolz and Stolze, 2006)

- High price of organic goods restricts market development

- Unbalanced expansion of supply and demand
- insufficient consumer information, awareness building and trust
- problems in market development
- lack of research and development

3.12 Discussion

This study was designed to identify what the key drivers to the uptake of organic farming were between 1997 and 2003 (immediately pre and post Agenda 2000 implementation) for 9 EU countries and Switzerland. In this discussion the key drivers for each country will be highlighted and comparisons drawn between countries to identify whether there were common policy or external drivers influencing the uptake of organic farming in this period, or whether the rate of uptake has in fact been very country specific. The principle on which the following data is presented, builds on the earlier work of Michelsen and Søgaaard (1999).

3.12.1 France, United Kingdom, Denmark and the Netherlands

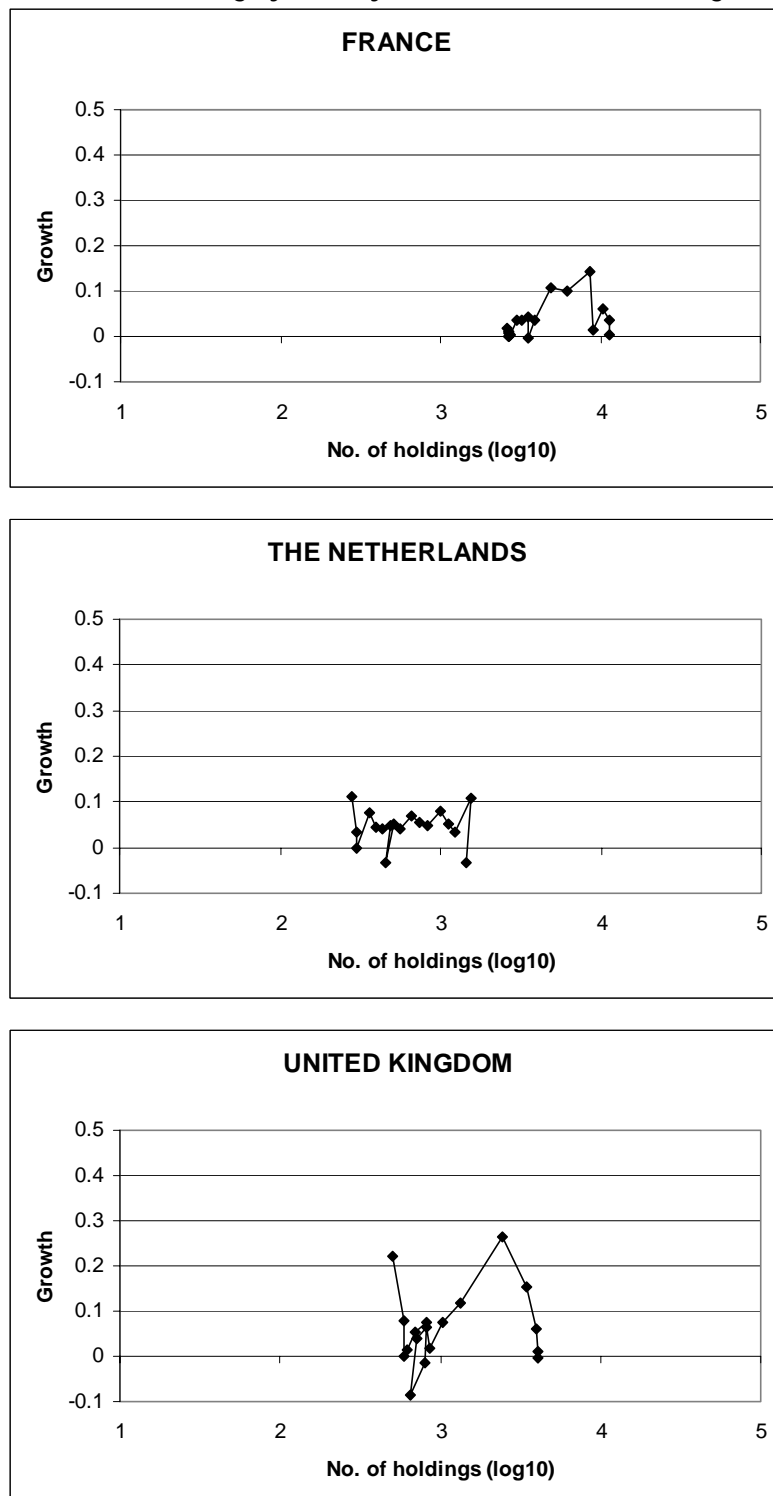
These four countries have been grouped together on the basis of the pattern of uptake illustrated in Figure 11.1. From the mid 90's to 1998 these four countries exhibited relatively large increases in the number of organic holdings and in the case of France and the United Kingdom in particular, this was a period of very fast growth. Experts from all four countries identified poor conventional prices for agricultural products and the potential to receive organic premiums as being one of the key drivers to the uptake of organic farming in this period. New payment rates in existing OFS schemes in Denmark and the United Kingdom were also thought to stimulate uptake in this periods, and BSE was thought to be a driver in the UK and France.

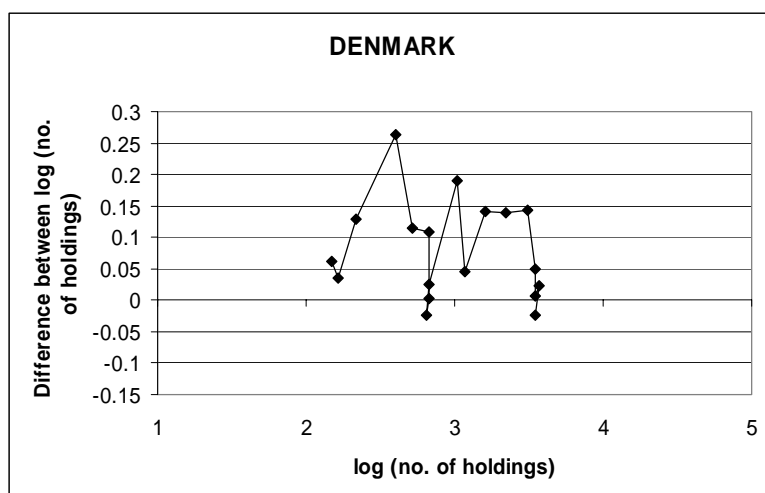
Between 1998 and 2003 there was a yearly decrease in the rate of uptake for both The Netherlands and France. The United Kingdom and Denmark followed a very similar pattern but exhibited very slight increases in growth between 2001 and 2002. In the UK this was due to a back log of farmers completing conversion post the re-opening of the OFS scheme and in Denmark due to investment by the government to stimulate market demand and therefore increase the uptake of organic farming via the availability of organic premiums.

The biggest decrease in growth for all these countries was between 1999 and 2000. In the UK and France this was due to changes in organic farming support. In the UK the OFS closed at this time and farmers did not convert until the new scheme was introduced in late 1999 - this resulted in a large number of holdings converting at once. This is shown in figure 11.1 as a slight increase in growth when all these farmers became fully certified between 2001 and 2002. A similar situation occurred in France, with farmers holding back from conversion until the new CTE scheme started in late 2000. In Denmark this large decrease in growth was not due to organic farming scheme issue but to an overloading of the market with home produced organic goods, particularly milk, which subsequently resulted in losses of premiums to farmers. All four showed a decrease in the total number of holdings in 2003. In Denmark this was attributed to the large group of mainly organic dairy farmers that converted in the late 90's, coming to the end of their 5 year organic farming scheme contracts and choosing to withdraw from organic farming due to the low availability of premiums. In the UK this decreased growth is due both to an imbalance between demand and supply putting downward pressure on organic price premiums and due to a general price improvement in the conventional agriculture

sector. The reasons for the decrease in France and The Netherlands were not specified.

Figure 3.14 Changes in organic holdings between 1985 and 2003 in France, The Netherlands, Denmark and United Kingdom. Growth rates (difference between number of holdings year on year) and number of holdings, logarithmic scales (\log_{10})

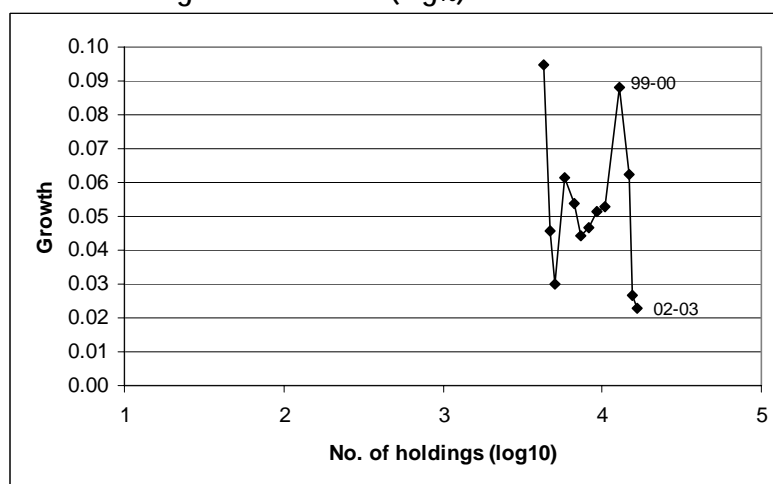




3.12.2 Germany

Germany had a slightly different growth pattern to the countries above, with steady growth from the mid 1990's until 1999 and then rapid growth for one year between 1999 and 2000 (Figure 11.2). Most Laender increased organic farming support payments in 2000 with a few more doing so in 2001. This may have stimulated the growth between 1999 and 2000. This was followed by a rapid decrease in growth until 2002 and the number of holdings increased again between 2002 and 2003 (by 849 holdings). There was nothing in the expert interpretation to suggest a reason for the downturn in growth between 2000 and 2002 but the strong policy support identified from 2001/02 onwards is clearly a reason for the increase observed in the following year. In 2001/02 the budget for information, marketing and research was increased and Biosiegel (Eco-label) was introduced. In 2002 the Federal Organic Farming Scheme was introduced to further support the organic supply chain and 10 of the 16 Laender further increase organic farming support payments.

Figure 3.15 Changes in organic holdings between 1985 and 2003 in Germany. Growth rates (difference between number of holdings year on year) and number of holdings, logarithmic scales (\log_{10})



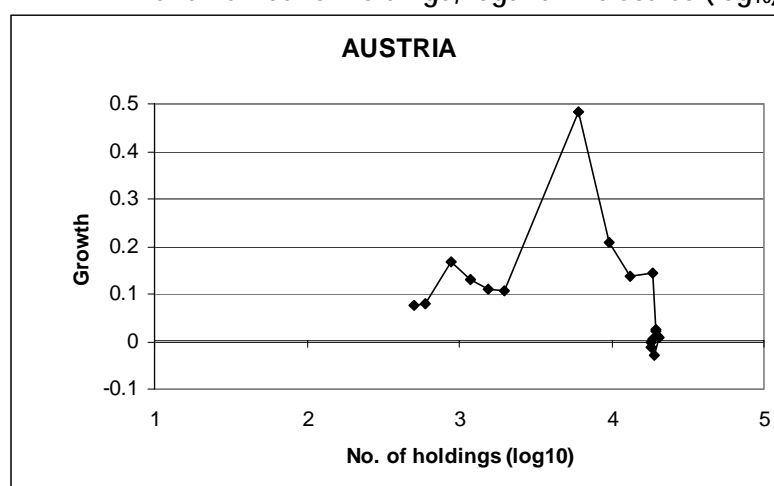
3.12.3 Austria, Finland and Switzerland

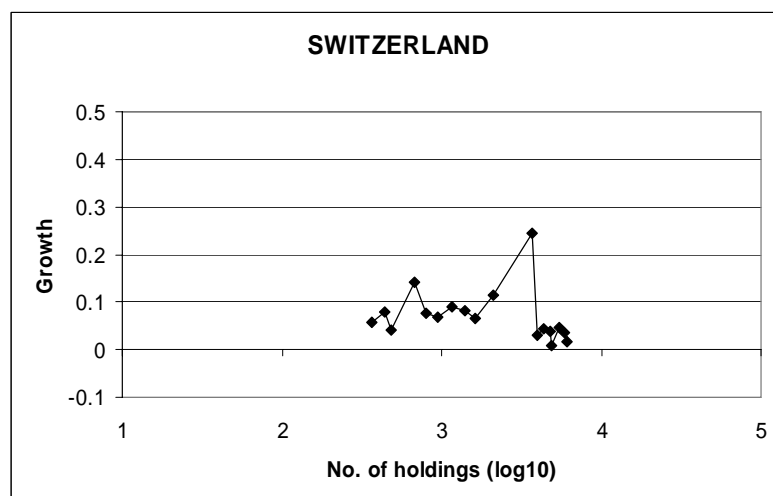
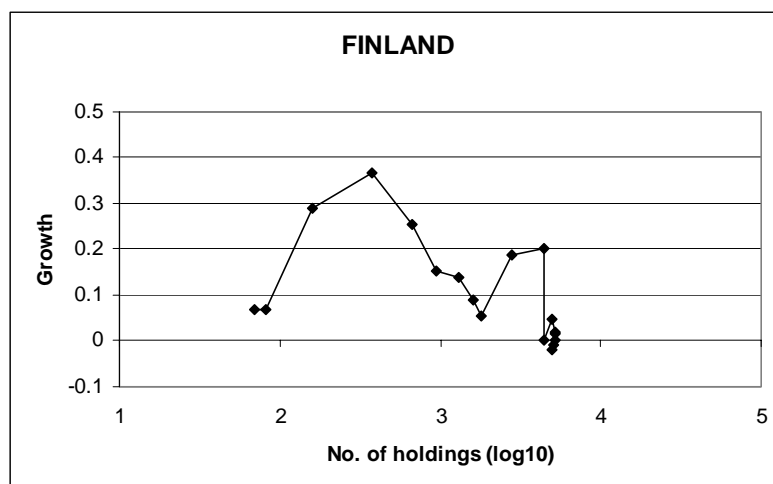
Austria, Finland and Switzerland have been grouped on the basis of very similar patterns of development, though the pattern begins one year earlier in Austria than either Finland or Switzerland. The growth is characterised by a sharp decrease in

growth rate from 1996 to 1997 (1994 to 1995 in Austria) followed by a relatively static situation with comparatively small fluctuations in the total number of holdings for the remainder of the period. In Austria 1995 was a year of major change with the implementation of the EU regulation (EC) 2078/92. The alternative options under EC 2078/92 had the potential to be competitive or complementary to the organic farming scheme depending on eligibility criteria and payment levels - the most significant example of competitiveness was seen in Austria. At the start of 1995, 22,875 farms were actually registered as organic (a large increase on the previous year) due in part to accession to the EU. During the year, however, 6,000 farms (mainly Codex registered farms in Salzburg and Tirol) withdrew – a key factor in their withdrawal being the availability of new agri-environmental schemes that did not require organic management of the livestock (Lampkin, Foster, Padel and Midmore, 1999). This caused the rapid decrease in growth and reduction in holding numbers between 1995 and 1996. There was another slow down in growth and number of organic holdings in the late 1990's and this was due to the first 5 year ÖPUL contracts coming to an end and farmers waiting to see what the structure of the new scheme would be like before carrying on with organic farming or converting. Between 2001 and 2003 growth was stimulated again, mainly in the organic cereal sector, with the established of an organic cereal trader making market access easier.

Finland is similar to Austria in that the bulk of organic farming development took place before 1997. Organic farming development in Finland is the most static of any of the countries studied. There was a small increase in organic farming uptake between 1997 and 1998 when new support payment rates were introduced, but since the peak of organic holdings in 2000, total organic farm numbers decreased by 3% to 2003. Reasons given by the experts for this restricted development included the inflexibility of the organic farming scheme rules, difficulties getting new organic farming scheme contracts due to insufficient government funding and finally logistical problems resulting in limited organic processing. There was market growth in Finland between 1997 and 2001, but in 2002 this ceased and has been declining year on year since.

Figure 3.16 Changes in organic holdings between 1985 and 2003 in Austria, Finland and Switzerland. Growth rates (difference between number of holdings year on year) and number of holdings, logarithmic scales (\log_{10})





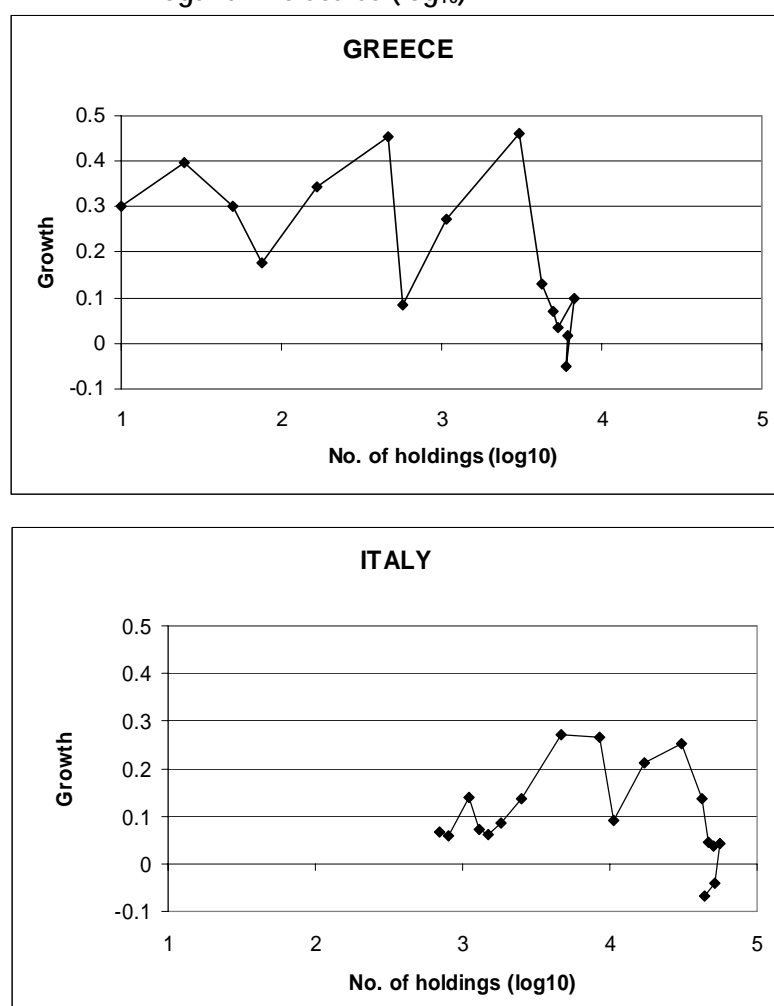
3.12.4 Italy and Greece

Italy and Greece not only share the fact that they are the only two southern European countries in the study, but they also have very similar patterns of organic farming development. From 1997 to 2000, both showed decreased rates of uptake organic farming, but holding numbers did increase during this period. Between 2000 and 2001 the rate of uptake increased slightly for both countries and then between 2001 and 2003 both rate of uptake and total holding numbers decreased for Italy.

For Greece rate of uptake and number of holdings decreased between 2001 and 2002, but then recovered again in 2003, though not to 2001 levels. The increase in total organic holdings post 1996 is explained by the introduction of organic farming support for crops at this time. Whilst there were not enough funds to support all those wishing to convert to organic, the expectation of support in the future and EU measures to promote organic farming, lead to continued uptake of organic farming into the late 90's – though at a declining rate. In 2000 and 2001, the rate of uptake increased in Greece at a time that EU Regs 1804/99 and 1257/99 were being introduced. Between 2001 and 2003 there was an 8-fold increase in the amount of organic land in Greece, most of it pastureland. This was not associated with an increase in the number of organic holdings, in fact, holding numbers decreased between 2001 and 2003. The reasons for the increase in land area were the introduction of the organic livestock farming regulation and an “Organic Husbandry” measure from the Greek Ministry of Rural Development and Agriculture which resulted in large areas of grassland being entered into conversion on farms that had previously only had certified livestock.

In Italy, growth in the 1990's was linked almost entirely to support through the Organic Farming Scheme and the fact that this support was higher than that in any other agri-environmental scheme. This growth was further encouraged by a strong EU market for organic products resulting in high price premia for organic producers. Post Agenda 2000 and the implementation of the Rural Development Plan however, the situation changed. There were decreased funds for organic farming, quotas were set on the number of organic holdings and payment rates decreased in some areas. This resulted in the decreased rate of uptake and number of holdings between 2001 and 2003. There was also a market downturn at this time which resulted in many small high value crop producers being forced out of business. Expert assessment revealed that in Italy, the proportion of agri-environment support going to organic farming is highly correlated and it is fact the overriding determinant of the number of organic farms.

Figure 3.17 Changes in organic holdings between 1985 and 2003 in Greece and Italy. Growth rates (difference between number of holdings year on year) and number of holdings, logarithmic scales (\log_{10})



3.13 Summary and Conclusions

Though these groupings of countries exhibit similar patterns of growth rate and changes in organic holding numbers, the discussion above highlights that the factors determining these changes in organic farming uptake vary from country to country. There are very few determining factors that carry across all countries within the groupings. Within the first grouping of France, the UK, Denmark and The

Netherlands the only driver for organic farming uptake pre-Agenda 2000 that cut across all four countries was the poor performance of the conventional agricultural sector at this time. This was identified as having a positive influence on organic farming uptake. Other drivers acting pre-Agenda 2000 to increase the uptake of organic farming included the introduction of higher OFS rates in the late 90's in the UK and Denmark, and BSE in the UK and France. Administration difficulties associated with organic farming schemes in the late 90's had a negative effect on organic farming uptake in the UK and Denmark. Post Agenda 2000, organic farming uptake in the UK and France was driven by the re-opening of the existing OFS scheme and the opening of the new CTE scheme, respectively. In Denmark the oversupply of the local market with organic product was a key barrier to conversion in the early 2000's. The Danish Government countered this problem by investing to stimulate market growth and this was found to have a positive influence on organic farming uptake.

In Germany, the key driver for organic farming uptake pre-Agenda 2000 was the existence of an organic farming scheme and its associated support payments. Post Agenda 2000, strong policy support for organic farming including increased OFS payments in many Laender, investment in marketing and research and the establishment of a Federal organic farming scheme were all seen as key drivers to the uptake of organic farming. The establishment of the Eco-label (Biosiegel) in 2001 was also a key driver for organic farming development in Germany.

The key events determining organic farming uptake in the next group, Finland, Austria and Switzerland, differed for each country. Pre-Agenda 2000, an increase in OFS payments stimulated organic farming uptake in Finland, but the imminent ending of the first 5-year ÖPUL contracts in Austria (in 2001) and the uncertainty over the content of the new ÖPUL programme had a negative impact on organic farming uptake there in the late 1990's. Post Agenda-2000 the inflexibility of existing OFS contracts and the inability to get new contracts had a negative effect on organic farming uptake in Finland. In Austria, the establishment of the Biogetreideagentur (an Austrian wide acting trader of organic cereals) as well as increasing market possibilities through the strong involvement of supermarket chains and discounters leading to more attractive prices, was seen as a key driver to conversion, especially for cereal producers.

In Greece and Italy, the existence of organic farming support payments (and the fact that they were higher in Italy than any of the other agri-environment schemes) were seen as the key drivers to organic farming uptake pre-Agenda 2000. The availability of price premia for organic products was also seen as a key driver in Italy. Post Agenda 2000, support payments for organic farming decreased in Italy and the downturn in the organic market, resulting in reduced price premiums for specific products, both had a negative impact on organic farming uptake. In Greece, the introduction of the national Organic Husbandry Regulation in combination with the implementation of EU Reg 1804/99 resulted in huge areas of land being converted to organic and the number of organic livestock increasing, but the total number of holdings remained the same.

In summary, it appears that pre-Agenda 2000, the existence of organic farming schemes and associated support payments, the poor performance of the conventional agriculture sector, the availability of price premia and BSE were the key drivers to organic farming uptake. The focus pre-Agenda 2000 on supply push policies such as the establishment of organic farming schemes (Hamm and Gronefeld, 2004) was successful in terms of increasing organic farming uptake in the short term. However for some products (e.g. organic milk in the UK and Denmark) this supply push was

not balanced with market development, resulting in oversupply, loss of price premia and consequently the exit of some organic farmers from the industry. Key inhibitors of organic farming conversion at this time appeared to be farmer uncertainty surrounding what organic farming schemes might look like and what support payments could be expected after the implementation of Agenda 2000. Post Agenda 2000, there appears to be a wider range of drivers responsible for the uptake of organic farming, and both supply push and demand pull policy measures were implemented (Hamm and Gronefeld, 2004). New organic farming schemes began, or existing ones re-opened (sometimes with increased support payments), additional investment from governments for market development, research and information specifically for organic was made to stimulate demand and improve production efficiency, and organic organisations and labelling were established to aid in the marketing of organic products. Decreased direct support payments for organic farming and inflexibility of organic farming contracts, and difficulty securing new organic farming contracts were identified as key inhibitors of organic farming uptake.

4 Methods for assessing the impacts and cost effectiveness of organic farming policies on broader policy goals

4.1 Introduction

This chapter presents a preliminary assessment of cost effectiveness of European organic farming plans with respect to agri-environmental and rural development policy objectives. This assessment includes six case studies (two in the UK, two in Germany, one in Switzerland and one in Italy) undertaken using various modes of data collection. Issues regarding data collection and data availability will feature heavily in this report, as data is highly limited regarding the utility of these policies in respect to agri-environmental and rural development objectives.

Methodological issues relating to assessing the combined total utility of organic farming will also be discussed. These discussions will address issues concerning the validity of calculating total utility of a scheme as the sum of the combined utility concerning a number of performance measures. This is especially important given the potential limits in data availability.

This chapter builds on the discussions of indicator development presented in Chapter 2.

4.2 The evaluation process

This section presents the process used for assessing the cost effectiveness of the organic farming and agri-environment schemes considering agri-environment and rural development objectives. The process for evaluating a preliminary measure of the cost effectiveness of these schemes contains four key steps. These being:

1. Identify and define the evaluation criteria
2. Identify the options that are being considered
3. Acquire the data and knowledge required to complete the evaluations
4. Aggregate the data to produce the preliminary measure of cost effectiveness

These four steps will now be addressed, in turn, in sections 5.2.1 to 5.2.4 below.

4.2.1 Identifying and defining evaluation criteria

This section presents the process used to identify a set of evaluation criteria using the objectives and impact statements. The set of objectives and impact statements was defined using the approach defined in the MEANS framework (European Commission, 1999 and Tuson and Lampkin, 2004). The initial identification of a wide range of objectives and impact statements was undertaken (as described in chapter 2) in a series of workshops with policy-makers, stakeholders and researchers. In addition a review of EU regulations and policy was undertaken to identify further indicators. The results of the stakeholder workshops and the literature review can be found in appendix x.1. This process identified 142 objectives and 521 related impact statements. From these, a small set of evaluation criteria (ideally 25 or fewer) was defined. A process of coding and clustering was used to group similar objectives and impacts. The evaluation criteria were then defined around these groups. Members of

the Aberystwyth team and other experts local to Aberystwyth undertook the coding tasks.

The process of coding and clustering involved the following tasks:

1. Identify potential indicators
2. Identify keywords
3. Code objectives against identified indicators
4. Code objectives against the new codes
5. Cluster indicators regarding relevance to objectives combine indicators where possible

Eleven initial indicators and 70 text codes were identified. The full list of indicators and text codes can be found in appendix [x.2](#).

Identify initial indicators

By their nature, these are less easy to obtain directly and may need to be calculated, modelled, or rely on expert judgement. The indicators presented below are the initial set used for coding the objectives and impact statements.

1. Farm Nutrient balances
2. Energy use
3. Carbon balance
4. Biodiversity impacts
5. Landscape impacts
6. Animal welfare impacts
7. Rural employment (jobs and labour incomes)
8. Food quality and safety
9. Public health impacts
10. Social justice and equality
11. Demographic impacts (rural - urban migration, early retirement, young farmer development)

Identify key words

One or more keywords were identified for each impact statement and objective. These keywords were then sorted and grouped. Seventy keywords or groups of keywords were defined. Keyword groups were used when a number of similar variations were present, these occurred when keywords were defined around the same concept in the impact statements using different language. For example transgenic, genetic modification and GMO were considered to be the same text code as was fragmented and split holdings. The list presented in appendix X.2 is the list used in the analysis. For many key words a number of variations are presents, these all represent the same concept using slightly different language.

Coding objectives and impact statements

The indicators should be coded according to their relevance to an objective. Relevance should be rated a three-point scale 0 - Not Relevant, 1 - Limited Relevance, and 2 - Highly Relevant. The coding should be undertaken by a number of persons. It is not strictly necessary for there to be common understanding of the objectives or indicators at this point, however each person needs to consistent within their own coding. Coding against the key words was completed using a two-point scale using 0 and 1 to indicate the absence or presence of key words.

Clustering the objectives and impact statement

The patterns in the code will be sought using the hierarchical cluster analysis function in SPSS using the Squared Euclidean distance (Clatworthy *et al.* 2005). The Squared Euclidean distance was considered the most appropriate for these codes as they contained both binary data and three-point ordinal data. The Squared Euclidean distance method of Hierarchical Cluster analysis calculates difference using the sum of the squared differences between the values for each item. In this example the values received by the objective and impact statement pair against a particular code. Further details of clustering methods can be found in Clatworthy *et al.* (2005).

It is assumed that objectives and impact statements with similar patterns in the codes relate to similar impacts and objectives. If two or more are closely related the performance of a policy measure against these objectives can be measured using the same indicator or criteria. In this way indicators are assigned to the different clusters. The clusters are represented using a dendrogram, these are charts in which similar items are placed adjacent in a list of items and are bracketed together. The brackets are used to present the size and extend of the related group. A small section of the dendrogram is presented in figure 5.1. The body of figure 5.1 shows the Main objective, Sub-objective and Impact Statement. The in right of the figure the brackets indicating the extent of similarity are displayed, the impacts statement that are most closely bracketed received the same codes, with similarity diminishing as the brackets are further to the right. There are three groups of impact statements, the first group all relate to capital investments on farm, the second group farm structural issues and the last group farm diversification. From these groups the criteria “Capital investment on-farm”, “Diversification of farm enterprises” and “Fragmentation and other farm structure issues” where derived.

Figure 5.1, Extract from the dendrogram displaying clusters of objectives and impact statements

Improve farm viability	increase spending on on-farm capital expenditure on farm			
Improve OF incomes	increase spending on on-farm capital expenditure on farm			
OF Risk reduction	increased capital investment			
Encourage modernisation of agricultural holdings	increased investment in agricultural holdings			
Increase production efficiency	Increased capital investment			
Improve farm/business viability	Increased on farm capital investments			
Increase market orientation, opportunities and efficiency	Increased expenditure on capital investments			
Arresting fragmentation of land	fragmentation of land ceases			
Encourage and support reparcelling	reduce number of split holdings			
Alternative subsidy income following decoupling	increased farm diversification			
Enhance income stability	more diverse enterprises			

A revised impact indicator list

After undertaking the clustering process a list criteria was developed. The following list of criteria represents the clusters identified in the clustering process. A full list of the criteria including the objectives from which they were drawn can be found in appendix X.1 and comments and discussions (from the NGT workshops) can be found

in appendix X.3. The list below presents the criteria split into the economic, social and environmental groups with a brief description.

Economic criteria

1. Capital investment on-farm
To what extent has the scheme contributed to a direct or indirect increase in investment in on-farm capital works?
2. Diversification of farm enterprises
To what extent has the scheme contributed to the diversification of farm enterprises?
3. Diversification of rural economy
To what extent has the scheme contributed to the diversification of the rural economy (into non-agricultural activities)?
4. Fragmentation and other farm structure issues
To what extent has the scheme contributed to reducing fragmentation and addressed other farm structure issues seen as problematic?
5. Farm income
To what extent has the scheme contributed to an increase in farm income?
6. Uptake of regulated production systems
To what extent has the scheme contributed to the uptake of regulated production systems (e.g. organic, PDO, PGI, zero pesticide, other defined environmental/animal welfare/food quality systems (defined at national or EU level)?

Environmental criteria

7. GM traceability
To what extent has the scheme contributed to the differentiation of genetically modified products from non-genetically modified products at all points in the supply chain?
8. Energy use
To what extent has the scheme contributed to the reduction in fossil fuels and/or increased the use of renewable and locally produced energy?
9. Control of climate change
To what extent has the scheme contributed to a reduction in the net release of potential climate altering gases?
10. Control of pollutants
To what extent has the scheme contributed to the reduction in the release of environmentally harmful substances?
11. Natural resource conservation
To what extent has the scheme contributed to the conservation of natural resources, including soil, water and other natural resources?
12. Biodiversity impacts
To what extent has the scheme contributed to an increase in the biodiversity of the area under?
13. Landscape impacts
To what extent has the scheme contributed to the landscape amenity, including agri-environmental, visual and cultural considerations?
14. Forestry

To what extent has the scheme contributed to the increase in the forest area to the benefit of environmental, social and economic enhancement?

Social criteria

15. Employment

To what extent has the scheme contributed to increased employment in agriculture and related processing?

16. Food quality and safety

To what extent has the scheme contributed to an increase in food safety and quality?

17. Animal welfare

To what extent has the scheme contributed to an increase in animal health and welfare?

18. Occupational Health impacts

To what extent has the scheme contributed to an improvement in occupational health and safety?

19. Public Health impacts

To what extent has the scheme contributed to an improvement in public health?

20. Agricultural demographic

To what extent has the scheme contributed to changes in the farming population in terms of age and gender (with particular reference to young entrants, early retirement and women in the workforce)?

21. Rural community wellbeing

To what extent has the scheme contributed to an improvement in rural community wellbeing?

22. Knowledge and skills development

To what extent has the scheme contributed to the knowledge and skills base of the agricultural community and increase in research in to rural and agricultural issues?

23. Social justice and equality (gender, intergenerational, international)

To what extent has the scheme contributed to an increase in social justice and equality in terms of gender, intergenerational and international equality, this also includes distribution of profit in the supply chain?

24. Rural infrastructure (including transport, housing)

To what extent has the scheme contributed to the preservation and development of rural infrastructure?

25. Local marketing, processing and consumption

To what extent has the scheme contributed to an increase in local processing, marketing and consumption of agricultural products?

These criteria were evaluated using expert opinion in three case studies and using evidence based evaluation in three case studies.

4.2.2 Identify the options that are being considered

To be able to address the cost effectiveness issue, an alternative policy against which the organic 'outputs' and costs can be compared was defined. An assessment was also made for the alternative policy – the definition of this alternative policy depended on

local circumstances in the case study regions. In this section the policies for the different case studies will be presented. In each case these represent the organic farming option and a non-organic farming option. These options were evaluated relative to current best conventional practice. The following schemes were evaluating in the different case studies

Wales – UK

Two schemes were considered in the Wales case study, namely:

- Tir Gofal – agri-environment scheme
- Organic Farming Scheme

These schemes were evaluated against current best conventional practice.

North East England – UK

Two schemes were considered in the North East England case study, namely:

- Countryside Stewardship Scheme
- Organic Farming Scheme

These schemes were evaluated against current best conventional practice.

Canton Aargau – CH

The two options considered in the Canton Aargau study were comprised of measures from the Swiss agri-environment scheme

- Organic option (*BIO Variante*) - including the following measures of the Swiss agri-environment scheme
 - Meeting organic standards (*Einhaltung der Biorichtlinien*)
 - Extensive permanent pasture (*Extensive Wiesen*)
 - Extensive fruit production (*Hochstamm-Feldobstbau*)
 - Regular access to free-range (*RAUS*)
 - Animal friendly housing systems (*BTS*)
- Integrated production option (*IP Variante*) - including the following measures of the Swiss agri-environment scheme
 - Meeting ecological requirements (*Einhaltung des ÖLN*)
 - Extensive permanent pasture (*Extensive Wiesen*)
 - Extensive fruit production (*Hochstamm-Feldobstbau*)
 - Regular access to free-range (*RAUS*)
 - Animal friendly housing systems (*BTS*)

In Canton Aargau farming conforming to some of the measures in the agri-environment scheme is considered best current practice, with 90% of farms engaged in the scheme. Those farms not engaged in the schemes tend to practice intensive animal production. Therefore no model of current best practice external to the agri-environment scheme was available for comparison. To evaluate the options a hypothetical farming model was considered, this model involved using an historic land-use model from before the introduction of the agri-environment and projecting it's development to the present.

Lower Saxony – DE

The two options considered in the Lower Saxony study were comprised of measures from the Lower Saxony agri-environment scheme NAU (Niedersächsisches Agrarumweltprogramm), details of this scheme presented in table 5.1. The organic

option only considered measure f2-C only. The non-organic option considered the other measure in the NAU scheme as a whole.

Table 5.1: Description of agri-environment measures of PROLAND in Lower Saxony⁵

Measure	Description of measure
f1	Securing of endangered domestic animal breeds (Gefährdete Haustierrassen)
f2	Agri-environmental programme of Lower Saxony (Niedersächsisches Agrarumweltprogramm, NAU)
f2-A1	Renunciation of herbicide use in orchards (Herbizidverzicht bei Obstkulturen) Renunciation of herbicide use in orchards with green cover crops (Herbizidverzicht bei Obstkulturen mit Begrünung)
f2-A2	Mulch and direct seeding (conservation tillage) (Anwendung von Mulch- oder Direktsaat oder Mulchpflanzverfahren im Ackerbau)
f2-A3	Environmentally friendly application of liquid manure (Umweltfreundliche Gülleausbringung)
f2-A4	Field parcels with specific flowering plants on set-aside land (Anlage von Blühflächen auf Stilllegungsflächen)
f2-A5	Field margins with specific flowering plants (Anlage von Blühstreifen außerhalb von Stilllegungsflächen)
f2-A6	Field margins/buffer strips (Anlage von Schonstreifen außerhalb von Stilllegungsflächen)
f2-B	Extensive grassland use Extensive Grünlandnutzung
f2-C	Organic farming (Ökologische Anbauverfahren)
f2-D	Long term set-aside (10-years) Zehnjährige Stilllegung Long term set-aside (10-years) combined with the establishment and maintenance of hedges (Zehnjährige Stilllegung mit Anlage und Pflege von Hecken)
F3	Nature conservation programme in specific areas (Schutz und Entwicklung von Lebensräumen von Tier- und Pflanzenarten in bestimmten Gebieten)
f3-A	Maintenance of biotopes/habitats (Biotoppflege)
f3-B	Wet pastures (Feuchtgrünland)
f3-C	Permanent pasture (Dauergrünland)
f3-D	Nordic migratory birds (Nordische Gastvögel)
f3-E	Field margins/buffer strips on arable land (Ackerrandstreifen)
f4	Specific measures in water protection zones - water friendly land management (Trinkwasserschutz in Wasservorranggebieten durch gewässerschonende landwirtschaftliche Flächenbewirtschaftung)
f4-A	Extensive grassland use and maintenance of extensive grassland use (Extensive Bewirtschaftung und Beibehaltung der Nutzung von Grünland)
f4-B	Conversion of arable land to low-input grassland (Umwandlung von Ackerflächen in extensiv bewirtschaftetes Grünland)
f4-C	Groundwater friendly management of set-aside arable land (Grundwasserschonende Bewirtschaftung gem. VO (EG) Nr. 1251/1999 stillgelegter Ackerflächen)
f4-D	Organic farming with additional obligations for water protection (Bewirtschaftung eines Betriebsteils nach den Grundsätzen des Ökologischen Landbaus)
f4-E	Specific cultivation measures for water protection on organic land (Bewirtschaftungsmaßnahmen zur gewässerschonenden ökologischen Bewirtschaftung)

⁵ Table reproduced from Reiter and Roggendorf (2005)

Baden-Württemberg – DE

The two options considered in the Baden-Württemberg study were comprised of measures from the Baden-Württemberg agri-environment scheme MEKA (Markt Entlastungs- und Kulturlandschaftsausgleich), details of this scheme presented in table 5.2. The organic option only considered measure D2 only. The non-organic option considered the other measure in the MEKA scheme as a whole.

Table 5.2 Description of the measures listed under MEKA⁶

Measure	Description of measure
A	Environmentally friendly management
B	Preservation and maintenance of cultural landscape (including extensive grassland use)
C	Securing of landscape-maintaining, especially endangered land uses
D	No use of chemic-synthetic means of production (including Organic Farming under D2)
E	Extensive and environmentally sound plant production
F	Application of biological or biotechnological means of fighting pests and diseases
G	Preservation of especially endangered habitats

Marche – IT

The study in Marche considered measures under the Marche rural development plan. Measure F of the plan (detailed in Table 5.3) address agri-environment considerations. This measure comprised for four sub-measures (detailed in Table 5.4), of these F1 and F2 addressed issues of low environmental impact and organic farming respectively.

Table 5.3 Description of the measures listed under the Marche Rural Development Plan⁷

Measure	Description of the measure
Priority 1	Improvement of the competitiveness of agricultural and agri-industrial systems
A	Investments in agricultural farms
B	Support for young farmers
C	Formation
D	Early retirement
G	Improvement of transformation and commercialisation
K	Land reparcelling
L	Support for farm management
M	Marketing of agricultural products
V	Financial engineering
Priority 2	Protection and development of the landscape and the environment
E	Less Favoured Areas
F	Agri-environmental measures
H	Afforestation of agricultural land
I	Other forestry measures
Q	Water resource management in agriculture
T	Agri-environment protection, arboriculture, animal welfare
Priority 3	Support for integrated development in rural areas
N	Essential services for the economy and the rural population
O	Renewal and improvement of the villages and protection of the rural heritage
P	Diversification activity in the agricultural sector and analogous
R	Development and enhancement of the rural infrastructure
S	Support for tourism and artisan activity

⁶ Table reproduced from Dabbert and Vilei (2006)

⁷ Table reproduced from Zanolli and Vairo (2006)

Table 5.4 Description of the sub-measures measures of Measure F in the Marche Rural Development Plan

Measure	Description of the measure
F1	Low environmental impact farming
F2	Organic farming
F3	Safeguard of rural landscape and of the typical agricultural land structure
F4	Improvement of environment for wildlife purposes

Data collection

This section will present the techniques used to acquire knowledge regarding the performances of the options against the criteria. Two methods were used to acquire the knowledge needed to undertake the analyses. The first method was a judgement-based approach, the second an evidence based approach. Three studies were undertaken using the judgement based approach namely; Wales – UK, North East England – UK and Canton Aargau – CH. Three studies were undertaken using the evidence based approach namely; Wales –UK, Lower Saxony – DE and Baden-Württemberg – DE. In addition to judgement-based and evidence-based expert review data regarding the extent and costs of the scheme was gathered, these related to the context indicators.

The evidence based studies draw heavily on the Mid-Term Review of each regions Rural Development Plan. These evaluations were designed to assess the effectiveness of the plans in achieving the goals of the plan. These assessments then influenced the process of reforming the CAP. In evaluating the agri-environment schemes in Wales Agra CEAS (2003a) addressed six questions posed by the EC.

Question 1.1 To what extent have natural resources been protected (or enhanced) in terms of soil quality, as influenced by agri-environmental measures?

Question 1.2: To what extent have natural resources been protected (or enhanced)...in terms of the quality of ground and surface water, as influenced by agri-environment measures?

Question 1.3: To what extent have natural resources been protected (or enhanced).in terms of the quantity of water resources, as influenced by agri-environment measures?

Question 2.1: To what extent has biodiversity (species diversity) been maintained or enhanced thanks to agri-environment measures through the protection of flora and fauna on farmland?

Question 2.2: To what extent has biodiversity been maintained or enhanced thanks to agri-environmental measures – through the conservation of high nature value farmland habitats, protection or enhancement of environmental infrastructure or the protection of wetland or aquatic habitats adjacent to agricultural land (habitat diversity?)

Question 2.3: To what extent has biodiversity been maintained or enhanced thanks to agri-environmental measures - through the safe guarding of endangered animal breeds or plant varieties?

Question 3: To what extent have landscapes been maintained or enhanced by agri-environmental measures?

This study was typical of the Mid-Term Review of agri-environment policy. The questions are heavily focused on the Biophysical and ecological impacts of the scheme as these were the primary objectives of the schemes. They do not address

other impacts, social and economic impacts, as were not stated as objectives of the schemes or the Mid-Term Review of the schemes. Relying on these reviews and other relevant assessments of the schemes do not cover all the evaluation criteria identified. An alternative method was required to assess the schemes against the other criteria. The Nominal Group Technique (NGT) was chosen as a sound and effective method for eliciting expert judgements regarding the performance of the scheme against the entire criteria set.

4.2.3 The judgement-based studies

The judgement-based knowledge acquisition process drew on the knowledge of a group of experts. This was undertaken using the Nominal Group Technique (NGT) in expert panel workshops. NGT is also known as 'estimate-talk-estimate' and uses the same basic structure as the Delphi method in a group situation. Estimates are taken anonymously and presented to the group for discussion and estimates are retaken and represented. The process involves the following steps (Delbecq *et al* 1975 p.8):

1. Silent and individual (nominal) generation of ideas in writing.
2. Presentation of a brief summary of all ideas, and round-robin feedback on ideas.
3. Discussion of each recorded idea for clarification and evaluation
4. Individual voting on the relative priority of the ideas by rank-order or rating judgements - the group's final decision is based on the aggregation of the evaluations.

The workshops used a computer based group decision support system (GDSS) to aid the NGT process. This system allowed the experts to privately record their opinion regarding the performance of a policy measure against a criterion, the system then aggregated the opinion of all the experts and presented these to the whole group. The system highlighted areas where there was a divergent opinion amongst the experts. In these case studies divergent opinion was defined as more than one point of difference on a seven-point scale. These areas were then discussed, discussions started with experts stating their assumptions in making the assessment. When the assumptions differed a common set of assumptions was discussed and agreed upon. The differences in the evaluations were then discussed and points of differing opinion regarding impacts of the policy measures regarding the indicators. After the discussions were completed a second private evaluation was undertaken. A second round of discussions was undertaken followed by a third round of evaluations. In cases where there was still a difference of opinion amongst the experts. In cases where opinion was still divided after the third round of evaluations it was assumed that opinion was stable and would not change. In these cases the divergent opinion was accepted and particular attention would be placed on the discussions in the analysis. In addition to the evaluation of performance the experts were asked to make a self-assessed evaluation of their expertise and knowledge level in making the assessments. Their expertise was rated on a five-scale, one indicating unfamiliar with the subject and five indicating a high level of understanding as defined by Loveridge (2001) (the description of the expertise levels can be found in appendix x.4). The output of the workshops was a range of evaluations and an associated assessment of expertise.

In making the evaluation experts were asked to consider current best conventional practice as a baseline to evaluate the options against. The with or without principle was used to aid these evaluations, the experts were asked to consider a situation with and without the scheme being considered, regarding a specific criteria the situation

improved a positive score would be given for that scheme and likewise if the situation deteriorated.

4.2.4 The evidence-based studies

The second group of evaluations were undertaken considering evidence regarding the performance of the schemes. This task involved an expert assessment by the project partners, based on documented evidence wherever possible, of the extent to which organic farming and agri-environment schemes achieved (or otherwise) the specified objectives defined in the criteria. The scoring was based on a seven-point scale (equivalent to no effect plus or minus up to 3 points). In terms of documented evidence, the major source was the mid-term review of the regional Rural Development Plans. This data was supplemented by data from other evaluations or relevant research studies, including comparisons of different farming systems.

4.2.5 Aggregating data to measure cost effectiveness

The final stage of the evaluation was to resolve the effects table in to an overall measure of performance. This process involved aggregating the evaluations collected using the judgement-based and evidence-based acquisition processes. This was completed using a simple Multi-Criteria Analysis technique – the weighted summation technique. This was used in conjunction with the risk analysis tool @RISK (Palisade Corporation, 2002a). The scores that the options receive against each criterion judging their performance against that criterion were combined to create an overall score for each option. This was completed using three different groupings of criteria. The first group included criteria relating to economic considerations, the second environmental consideration and the third social considerations. In addition to these all the criteria were considered as a whole. With in the three groups each criterion was given an equal weight in the analysis. In the overall analysis considering all the criteria each group was given equal weighting. This system was used give equal weight and importance to the three considerations regardless of the number of criteria in the group. This was used because the number of criteria in each group varies. There are seven economic criteria, eight environmental and eleven social criteria.

The weighted summation used in this study is one of many Multi-Attribute Utility Models (Keeney and Raffia 1976), and whilst other models have a stronger theoretical basis they are rarely used being complicated and time consuming to calculate (Winterfeldt and Edwards 1986). The weighted summation is presented in equation 1.

The weighted summation takes the form:

$$V(w,v) = \sum_i w_i v_i$$

Equation 1

where V = the weighted value or overall score for a given option
 w_i = the weight for a given criterion i
 v_i = the value or score for criterion i for a given option

Whilst the individual criteria were not weighted, that is no criterion was identified as being a greater or lesser importance in the evaluation, the variable w_i was not equal for all the criteria. The criteria were split in to three groups (economic, social and environmental) and these groups were given equal weighting in the analysis. As a whole each group received a third of the overall weight or 33.3%. As the groups

contain different numbers of the criteria the weight of the individual criteria changed according to which group they belong. The economic group contained six criteria and therefore each was given a sixth share of the weight for the group and therefore a total weight of 5.55% each, social group contained eight criteria each weighted as 4.17% and environmental contained 11 criteria each weighted as 3.03%.

The final stage of the analysis was to compare the performance of the schemes evaluated against the cost per hectare of the schemes to produce a measure of cost effectiveness. It was intended that this would be calculated on the transaction costs (e.g. number of days of project officer time needed to process an application or monitor annual changes). However this data was readily available and the preliminary measure of cost effectiveness has been calculated on payments made to farmers. The cost effectiveness is defined in equation 2.

The cost effectiveness measure takes the form:

$$CE = V(w,v) * C/A$$

Equation 2

where CE = Cost Effectiveness measure

V = the weighted value or overall score for a given option

C = total expenditure on the scheme, this being the sum of the compensation and incentive payments, and the transaction costs (the sum of the administration and inspection costs)

A = area farmed under the scheme

Thus the cost effectiveness of the organic farming and agri-environmental policies was defined.

In the case studies completed using the judgement-based approach a range of values was often reported for the performance of an option against a criterion. A probability density function was defined around these evaluations. The probability of was defined according to the experts self assessment of expertise. The risk analysis tool @RISK was used in aggregating these evaluations as it allowed a PDF to be assigned to each evaluation rather than a single value. @RISK samples values from the assigned PDF and iteratively recalculates the functions in the spreadsheet. @RISK monitors three statistics during the calculations and calculations end when the variations in these statistics until they converge or change less than a set percentage threshold (Palisade Corporation, 2002b).

The convergence value was set at 0.25% in all the analyses and the statistic monitored where; the average percentage change in the interquartile range; the mean; and the standard deviation. The output of the risk analysis was a range of possible levels of performance for each policy option; these are now presented in the following sections.

4.2.6 Case studies

This section presents the findings from the individual case studies. The section will start with a discussion on the different measures presented in the case studies and how they can be interpreted. The first study to be considered is the case study in Wales. This study was completed using the judgement-based and the evidence-based approaches. Other studies were completed using either the judgement-based approach (North East England, and Canton Aargau presented second and third) or

the evidence-based approach (Lower Saxony and Baden-Württemberg presented fourth and fifth).

Interpreting the results of the case studies

Four measures will be used to assess the performance of the schemes in Wales and subsequently in the other case-study areas. All four measures are used in the Welsh study, but in the other studies lack of data prevented all the measures being used. The four measures are:

- Aggregated performance measure
- Dominance and high scoring criteria
- High and low scoring criteria
- Cost Effectiveness measure

The 'aggregated performance measure' is the measure of the overall performance of the scheme (as calculated using equation 1). The performance of the scheme is judged firstly considering all the criteria together then the economic, social or environmental criteria separately. This should be considered the most important of the analyses. Most weight will be attached to these results in the subsequent discussions.

Next the dominant and high scoring criteria will be presented. This is a group of measures that represent the strengths of the first scheme relative to the second scheme. In the Welsh study, this looks at the strengths of Tir Gofal relative to the Organic Farming scheme, or vice versa. Dominance measures how many experts scored one scheme higher than the other, for a given criterion. Three levels of dominance are presented in this analysis. The first measure is strong dominance-this is when all the experts scored the performance of the first scheme as greater than the second scheme. Criteria presented in this group should be considered to represent the greatest strengths of that scheme. The second measure is that of weak dominance, the average expert score of the first scheme must be greater than the highest expert score for the second scheme. This allows for some, albeit a minority, of experts to rate the schemes differently. Again this identifies the strengths of the schemes but using a lesser measure. The final measure in this group is the measure of the high scoring criteria. This measure considers the average scores provided by the experts and which scheme has the highest average score. This list will contain all the criteria unless both schemes received the same score. This should be considered as weakest measure in this group.

The measure of 'High and low scoring criteria' assesses the absolute levels of performance of each scheme independent to each other. In this way the strengths and weaknesses of the two schemes compared to current best conventional practice is assessed. Again three levels of performance are measured. Firstly the criteria for which the average expert score is in the top quarter of the range of scores. That is an average score of greater than 1.5. These criteria should be considered to represent a strength compared to current best conventional practice. The next measure is the middle of the range of possible scores. This was defined as an average score of +/- 0.6. A scheme with an average score in this range, against a given criterion, is deemed to have little or no benefit compared to current best practice. Finally the criteria for which the average expert score is in the top quarter of the range of scores. That is an average score of less than -1.5. This should be considered a weakness compared to current best conventional practice. It should be noted that no scheme received a score in this range against any criterion or in any case study.

The final measure is the 'Cost Effectiveness measure'. This is a more speculative measure and at this time should be considered as a proof of concept rather than a definitive evaluation of the performance of the schemes. This measure takes the overall measure of performance compared to the total area of land engaged in the scheme and total expenditure on the scheme. The cost effectiveness is measured as the scheme's utility and the scheme's cost per hectare (as described previously in equation 2). This measure is presented as compared to all the criteria as a whole and the economic, social and environmental groups individually. The validity of each of these measures is uncertain. The cost effectiveness ideally is a measure of the effectiveness of the provision of public goods compared to public expenditure. It could be contested that all the criteria represent public goods and should be measured in this way. It is more clear that the environment and social criteria present public goods and less clear that the economic criteria present public goods. In considering the cost effectiveness measure the decision-maker must consider their opinion regarding this argument and weight the findings accordingly.

4.3 Analysis of the Wales (UK) case study

This section presents the outcomes of the case studies in Wales using the judgement-based approach and the evidence based approach. Firstly the judgement-based is presented followed by the evidence-based approach. Further details of the judgement and evidence based Wales case studies are presented in appendix x.5.

4.3.1 Analysis of the Wales case study using the judgement-based approach

Aggregated performance measures

Figure 5.2 displays a graphical representation of the performance of the Tir Gofal scheme and the Organic Farming Scheme. The performance of the schemes is the aggregated value of the performance against the individual criteria, as presented in equation 1. In figure 5.2 the average performance of the options are represented by the solid grey bars, around these grey bars are a whisker plot indicating the 95th percentile of variation as calculated using the risk analysis. In this figure larger bars indicate a greater level of performance. The data present in figure 5.2 is represented in table 5.4 and 5.5 for Tir Gofal and the organic farming scheme respectively

To test the difference between the performances of the schemes a one-tailed t test was run using the output of the risk analyses. In all cases the results was zero indicating that a statistically large difference between the groups.

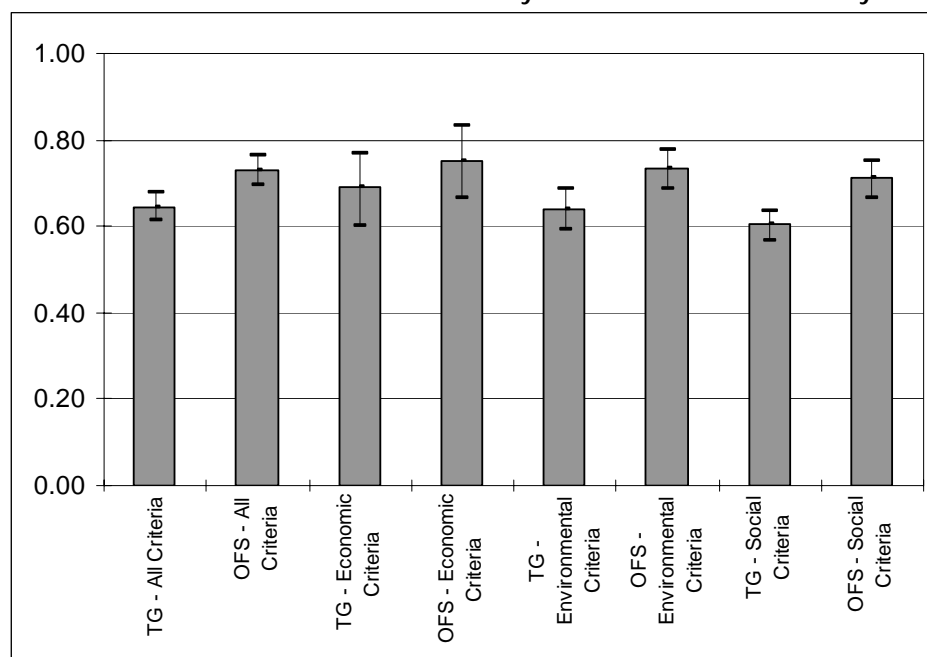
Table 5.5: Performance of the Tir Gofal scheme

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.57	0.61	0.64	0.68	0.71
Economic criteria	0.53	0.60	0.69	0.77	0.83
Environmental criteria	0.56	0.59	0.64	0.69	0.72
Social criteria	0.52	0.57	0.60	0.63	0.68

Table 5.6: Performance of the Organic Farming Scheme

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.67	0.70	0.73	0.76	0.80
Economic criteria	0.63	0.67	0.75	0.83	0.87
Environmental criteria	0.63	0.69	0.73	0.78	0.83
Social criteria	0.60	0.67	0.71	0.75	0.80

Figure 5.2: Performance of the two schemes against all the criteria, the economic criteria only, the environmental criteria only and the social criteria only.



Dominance and high scores

Dominance is defined as the case where all an option out perform the second option for all criteria. In this case dominance is defined at two levels first is strong dominance this is when all the expert opinion for and option was greater than the second option and when the minimum score for an option is greater than the average score for the second option. In addition to dominance this section also reports which option achieved the highest weighted average score against each criterion. Table 5.6 presents the strong dominance group, table 5.7 the weak dominance group and table 5.8 the higher scoring option. In these tables the criteria against which the Organic Farming Scheme is dominant or performs more highly are list in the left hand column and the criteria against which Tir Gofal is dominant or performs more highly are list in the right hand column

Table 5.7: List of criteria in which an option strongly dominates the other option

Organic Farming Scheme	Tir Gofal
GM traceability	

Table 5.8: List of criteria in which an option weakly dominates the other option

Organic Farming Scheme	Tir Gofal
Implementation costs (scheme)	
Uptake of regulated production systems	
Control of pollutants	
Energy use	
GM traceability	
Food quality and safety	
Agricultural demographic	
Occupational health impacts	
Public health impacts	
Rural community wellbeing	
Rural infrastructure (including transport, housing)	
Local consumption	

Table 5.9, List of the highest performing option against all the criteria

Organic Farming Scheme	Tir Gofal
Diversification of farm practice and products	Capital investment on-farm
Farm income	Fragmentation and other farm structure issues
Uptake of regulated production systems	Biodiversity impacts
Control of climate change	Forestry
Control of pollutants	Landscape impacts
Natural resource conservation	
Energy use	
GM traceability	
Animal welfare	
Employment	
Food quality and safety	
Agricultural demographic	
Occupational health impacts	
Public health impacts	
Skills and Knowledge	
Rural community wellbeing	
Social justice and equality (gender, intergenerational, international)	
Rural infrastructure (including transport, housing)	
Local consumption	

High and low scoring criteria

Table 5.9 presents the criteria against which each option achieves a weighted average score in the top 25% of the score range, that is a score of 1.5 or greater.

Table 5.9, Criteria with average scores in the top 25% of the score range

Organic Farming Scheme	Tir Gofal
GM traceability	Landscape impacts
Uptake of regulated production systems	Capital investment on-farm
Control of pollutants	Biodiversity impacts
Natural resource conservation	Farm income
Diversification of farm practice and products	
Farm income	
Food quality and safety	
Biodiversity impacts	
Skills and Knowledge	
Occupational health impacts	

Table 5.10 presents the criteria against which each option achieves a weighted average score closer to zero. This indicates that the scheme has no impact compared to current best practice. This indicates that other factors may be more important in affecting change in these areas. No criteria scored within this range in the Wales case study.

Table 5.10, Criteria with average scores in the middle (sixth) of the score range

Organic Farming Scheme	Tir Gofal

Cost Effectiveness

When assessing the cost effectiveness of Tir Gofal and the Organic farming Schemes due to limited data only the years 2002 and 2003 were considered. Table 5.11 and

5.12 presents the area of land farmed under TIR GOFAL and ORGANIC FARMING SCHEME agreements in Wales and the total payments made to these farms (this data includes some estimates regarding total expenditure on the schemes). Table 5.11 and 5.12 contain extracts from Table 11.2 and 11.3 From Defra's "Agriculture in the UK 2004" report (Defra 2004). Figure 5.3 and 5.4 present the measures of cost effectiveness for 2002 and 2003. The grey bars presented in these figures represent the cost effectiveness of the scheme, larger bars indicate a greater level of cost effectiveness. The whisker plots on these bars present the fifth and ninety-fifth percentile in the range of possible measures of cost effectiveness. The scale of these figures is the single dimensionless measure of performance per £/ha (the total scheme expenditure per hectare). These measures are specific to this case study and cannot be directly compared to the other case studies. Table 5.13, 5.14, 5.15 and 5.16 represent the data from figure 5.3 and 5.4 in tabular form.

Table 5.11, Total expenditure on the scheme in Wales

Total expenditure in £ x10 ⁶ (includes some estimates)	2002	2003
Tir Gofal	8	12
Organic farming schemes	3	3

Source: Defra (2004)

Table 5.12, Total land area under the scheme in Wales

Area in ha	2002	2003
Tir Gofal	97000	174000
Organic farming schemes	49000	52000

Source: Defra (2004)

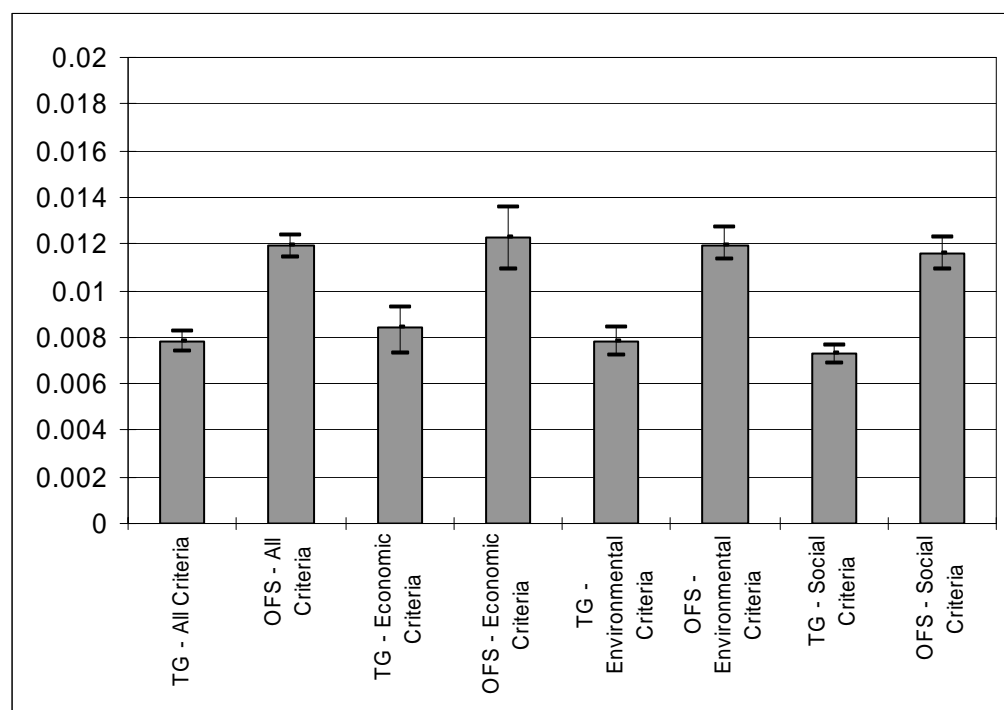


Figure 5.3, Cost effectiveness of the two schemes considering all the criteria, the economic criteria only, the environmental criteria only and the social criteria only using 2002 data

Table 5.13, Cost Effectiveness of the Tir Gofal in 2002

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0069	0.0074	0.0078	0.0082	0.0086
Economic criteria	0.0064	0.0073	0.0084	0.0093	0.0101
Environmental criteria	0.0068	0.0072	0.0078	0.0084	0.0087
Social criteria	0.0063	0.0069	0.0073	0.0076	0.0082

Table 5.14, Cost Effectiveness of the Organic Farming Scheme in 2002

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0083	0.0088	0.0093	0.0099	0.0103
Economic criteria	0.0077	0.0087	0.01	0.0112	0.012
Environmental criteria	0.0081	0.0086	0.0093	0.01	0.0104
Social criteria	0.0075	0.0083	0.0087	0.0091	0.0099

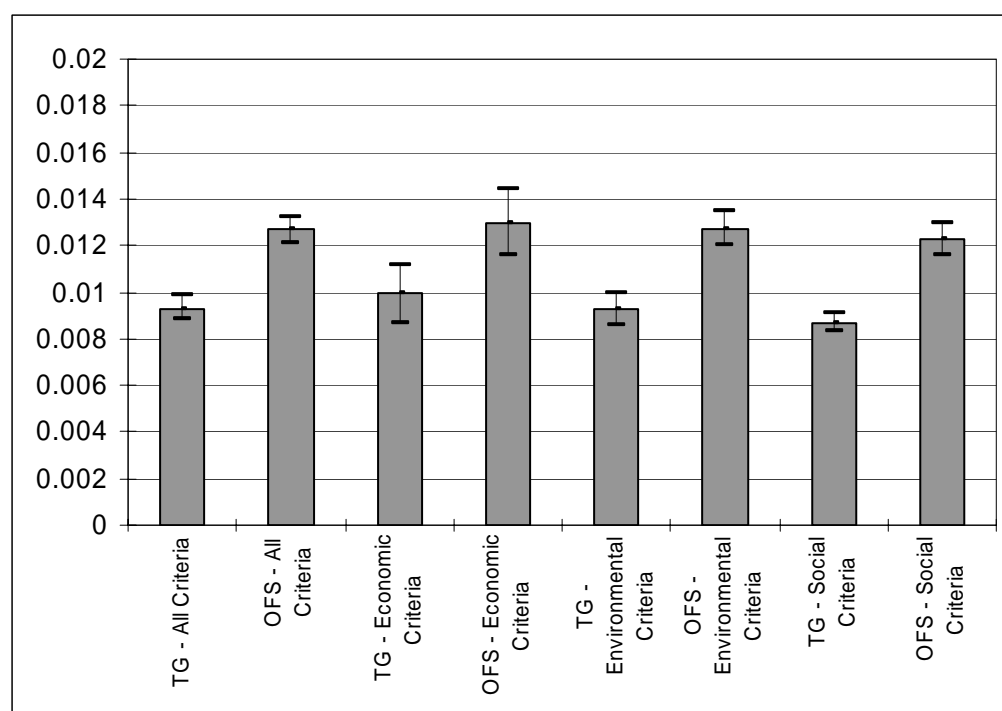


Figure 5.4, Cost effectiveness of the two schemes considering all the criteria, the economic criteria only, the environmental criteria only and the social criteria only using 2003 data

Table 5.15, Cost Effectiveness of the Tir Gofal in 2003

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0109	0.0114	0.0119	0.0124	0.0131
Economic criteria	0.0103	0.0109	0.0123	0.0136	0.0142
Environmental criteria	0.0103	0.0113	0.0119	0.0127	0.0136
Social criteria	0.0098	0.0109	0.0116	0.0123	0.0131

Table 5.16, Cost Effectiveness of the Organic Farming Scheme in 2003

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0116	0.0121	0.0127	0.0132	0.0139
Economic criteria	0.0109	0.0116	0.013	0.0144	0.0151
Environmental criteria	0.0109	0.012	0.0127	0.0135	0.0144
Social criteria	0.0104	0.0116	0.0123	0.013	0.0139

Conclusion from the judgement-based evaluations in Wales

The first observations from the Judgement-based evaluations of Tir Gofal and the Organic Farming scheme in Wales are as follows: Considering all the criteria the Organic Farming Scheme out performs Tir Gofal, the fifth percentile (most pessimistic) value of performance for Organic Farming Scheme is greater than the Ninety fifth percentile (most optimistic) value of performance. The situation is the same when considering the environmental and social groups of criteria. Considering the economic group of criteria the situation is less clear. Organic Farming Scheme out performs Tir Gofal considering the mean values but there is a high degree of overlap considering the range of possible values.

Considering the criteria in which one option dominates the other. Organic Farming Scheme strongly dominates Tir Gofal in the criterion *GM traceability* and weakly dominates Tir Gofal in many environmental and social criteria. Similarly Organic Farming Scheme out performs Tir Gofal looking at the mean value of performance, with a few notable exceptions. Namely, *Capital investment on-farm, Fragmentation and other farm structure issues, Biodiversity impacts, Forestry and Landscape impacts*.

The strengths of the Organic Farming Scheme are related to the criteria:

- GM traceability
- Uptake of regulated production systems
- Control of pollutants
- Natural resource conservation
- Diversification of farm practice and products
- Farm income
- Food quality and safety
- Biodiversity impacts
- Skills and Knowledge development
- Occupational health impacts

The strengths of Tir Gofal are in:

- Landscape impacts
- Capital investment on-farm
- Biodiversity impacts
- Farm income

The Welsh Organic Farming Scheme performs strongly compared to Tir Gofal considering the all the criteria together and the social and environmental group separately. It is likely to out perform Tir Gofal considering the economic consideration but the findings of this study were inconclusive.

When the measures of cost effectiveness are considered the situation is more clear. Considering both the 2002 and the 2003 analyses the Organic Farming Scheme out performs Tir Gofal for all the criteria and for each group of criteria. However the degree of dominance diminishes slightly in 2003 compared to 2002.

4.3.2 Analysis of the Wales case study using the evidence-based approach

The evidence based analysis in the Wales case study drew largely on the Mid-Term Evaluation Of The Rural Development Plan For Wales, Appendix 7 – Agri-

Environment and Appendix 9 – Cross-Cutting Issues (Agra CEAS Consulting Ltd, 2003a and 2003b). Other sources were Jackson and Lampkin (2005) Organic farm incomes in England and Wales 2002/03. Further details of the evidence-based as well as the evidence-based Wales case studies are presented in appendix 5.6.

From these sources evaluations for the following 11 criteria of the 26 identified:

- Diversification of farm enterprises
- Diversification of rural economy
- Farm income
- Employment
- Uptake of regulated production systems
- Rural infrastructure (including transport, housing)
- Local marketing, processing and consumption
- Control of pollutants
- Natural resource conservation
- Biodiversity impacts
- Landscape impacts

These evaluations were aggregated using the same MCA technique used in the judgement-based approach. Risk analysis was not required in the Wales case study as each evaluation was a single value. Figure 5.5 presents the result considering all the criteria, the economic criteria only, the environmental and the social groups of criteria. These results are represented in a tabular form in tables 5.17 and 5.18. The grey bars presented in figure 5.5 (and 5.6) represent the cost effectiveness of the scheme, larger bars indicate a greater level of cost effectiveness

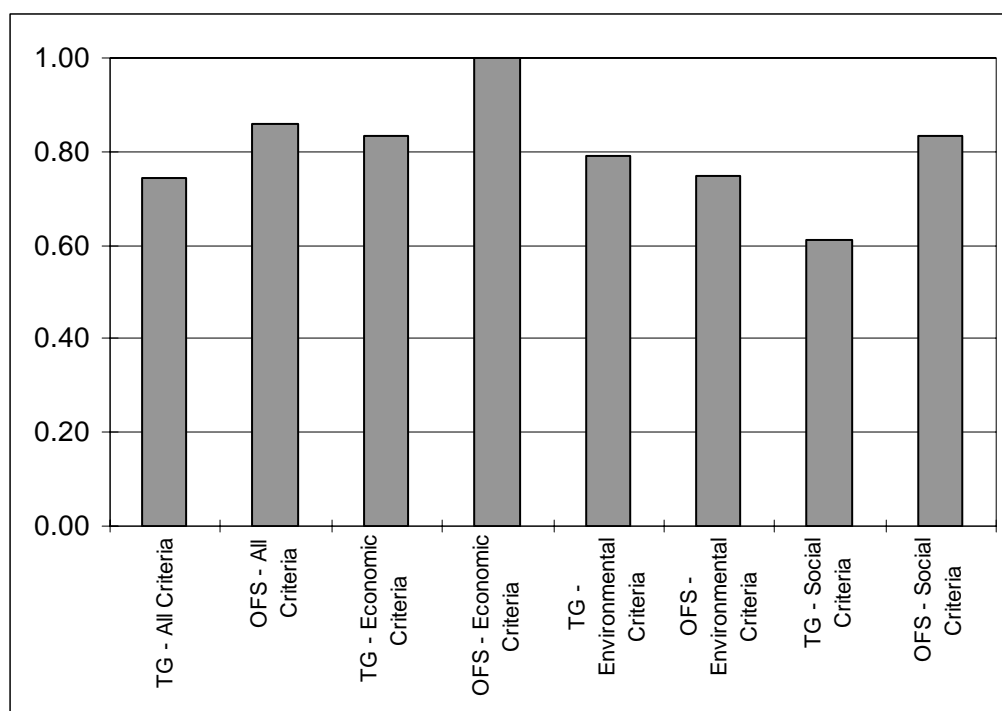


Figure 5.5, Performance of the two schemes against all the criteria, the economic criteria only, the environmental criteria only and the social criteria only.

Table 5.17, Performance of the Tir Gofal scheme

Name	Performance
All criteria	0.75
Economic criteria	0.83
Environmental criteria	0.79
Social criteria	0.61

Table 5.18, Performance of the Organic Farming Scheme

Name	Performance
All criteria	0.86
Economic criteria	1.00
Environmental criteria	0.75
Social criteria	0.83

Figure 5.6 presents the cost effectiveness measure for all and all the groups of criteria using the 2002 data. These results are represented in tables 5.19 and 5.20. the results using the 2003 data are represented in figure 5.7 and tables 5.21 and 5.22.

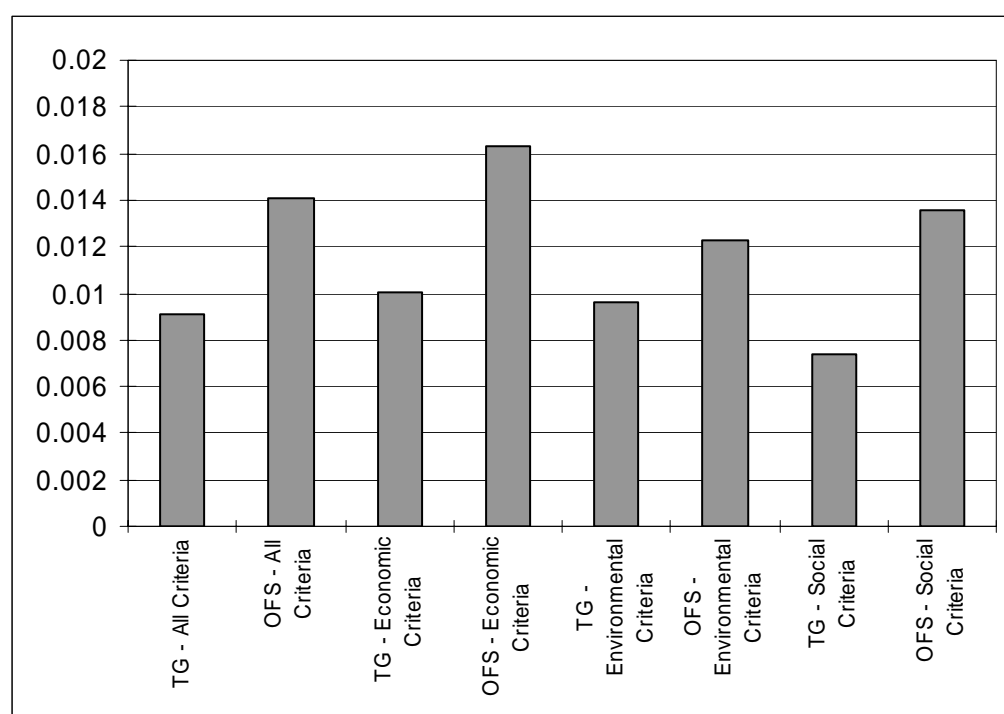


Figure 5.6 Cost effectiveness of the two schemes considering all the criteria, the economic criteria only, the environmental criteria only and the social criteria only using 2002 data using the evidence based review

Table 5.19 Cost effectiveness of the Tir Gofal scheme in 2002

Name	Performance
All criteria	0.0091
Economic criteria	0.0101
Environmental criteria	0.0096
Social criteria	0.0074

Table 5.20 Cost effectiveness of the Organic Farming Scheme in 2002

Name	Performance
All criteria	0.0141
Economic criteria	0.0163
Environmental criteria	0.0123
Social criteria	0.0136

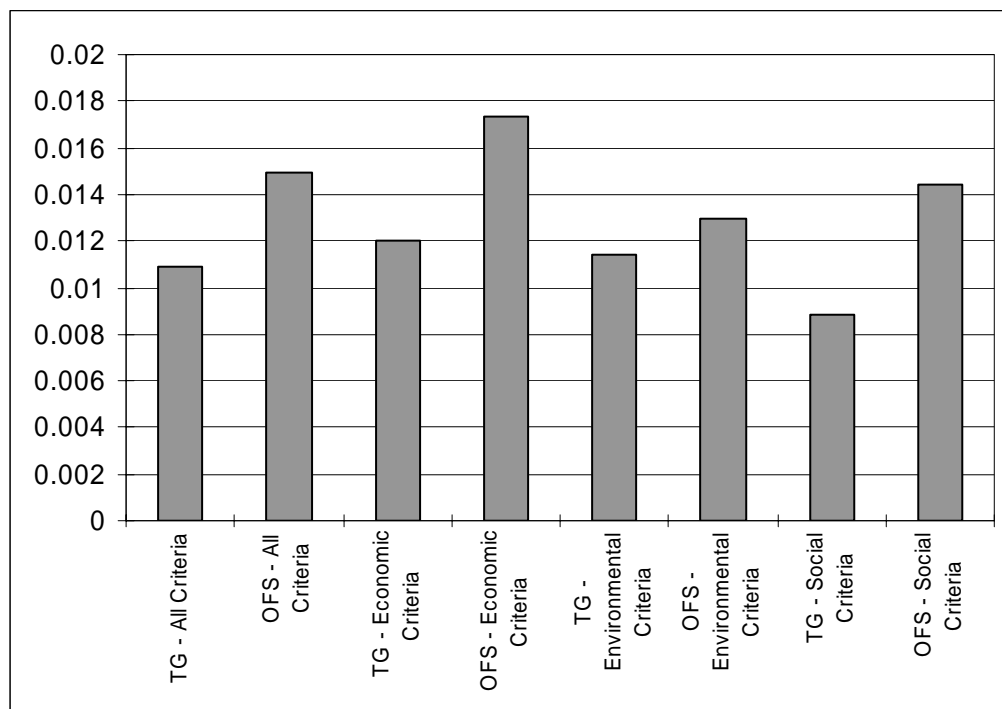


Figure 5.7 Cost effectiveness of the two schemes considering all the criteria, the economic criteria only, the environmental criteria only and the social criteria only using 2003 data using the evidence based review

Table 5.21 Cost effectiveness of the Tir Gofal scheme in 2003

Name	Performance
All criteria	0.0109
Economic criteria	0.012
Environmental criteria	0.0114
Social criteria	0.0088

Table 5.22 Cost effectiveness of the Organic Farming Scheme in 2003

Name	Performance
All criteria	0.0149
Economic criteria	0.0173
Environmental criteria	0.013
Social criteria	0.0144

Conclusion from the evidence-based review

The evidence-based analysis largely supports the conclusion drawn from the judgement-based analysis. There is however one notable exception; that is considering the performance of the environmental group of criteria Tir Gofal outperforms the Organic Farming Scheme. When the evaluations for the individual

criterion are considered the evidence-based analysis produces similar evaluations to those from the judgement-based analysis. However an evaluation for the criteria *GM traceability*, *Energy use* and *Control of Greenhouse gases* was not completed because no data was available in Wales. The Organic Farming Scheme in Wales outperformed Tir Gofal, often to a large degree, against all of these criteria. This is the likely cause of the apparent drop in performance.

4.4 Analysis of the North East England (UK) case study

This section presents the outcomes of the case studies in North East England using the judgement-based approach further details of the judgement based North East England case study are presented in appendix 5.7.

4.4.1 Analysis of the North East England case study using the judgement-based approach

Aggregated performance measures

Figure 5.7 displays a graphical representation of the performance of the Countryside Stewardship Scheme and the Organic Farming Scheme. In figure 5.7 the weighted average performance of the options are represented by the solid grey bars, around these grey bars are a whisker plot indicating the 95th percentile of variation as calculated using the risk analysis. In this figure larger bars indicate a greater level of performance. The data present in figure 5.7 is represented in table 5.23 and 5.24 for Countryside Stewardship Scheme and the Organic Farming Scheme respectively

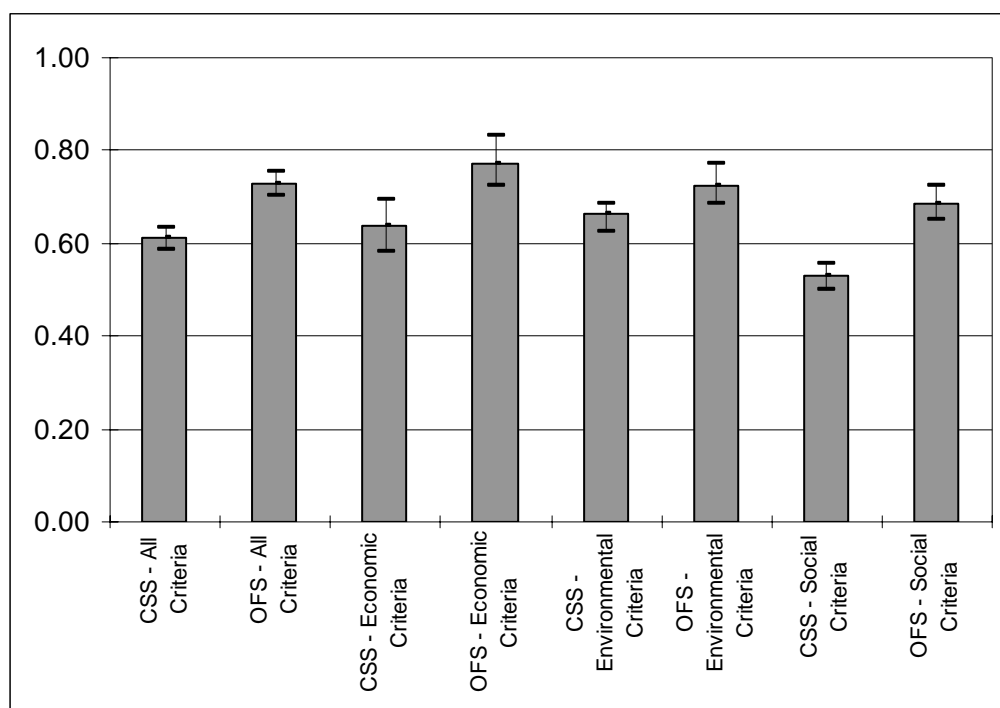


Figure 5.7, Performance of the two schemes against all the criteria, the economic criteria only, the environmental criteria only and the social criteria only.

Table 5.23, Performance of the Countryside Stewardship Scheme

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.56	0.59	0.61	0.63	0.66
Economic criteria	0.56	0.58	0.64	0.69	0.72
Environmental criteria	0.63	0.63	0.66	0.69	0.71
Social criteria	0.47	0.50	0.53	0.56	0.58

Table 5.24, Performance of the Organic Farming Scheme

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.67	0.70	0.73	0.75	0.78
Economic criteria	0.64	0.72	0.77	0.83	0.83
Environmental criteria	0.63	0.69	0.73	0.77	0.79
Social criteria	0.61	0.65	0.69	0.72	0.76

In all cases the results of the one-tailed t test was zero indicating that a statistically large difference between the groups.

Dominance and high scores

Dominance is defined as the case where all an option out performs the second option for all criteria. In this case dominance is defined at two levels first is strong dominance this is when all the expert opinion for an option was greater than the second option and when the minimum score for an option is greater than the average score for the second option. In addition to dominance this section also reports which option achieved the highest weighted average score against each criterion. Table 5.25 presents the strong dominance group, table 5.26 the weak dominance group and table 5.27 the higher scoring option. In these tables the criteria against which the Organic Farming Scheme is dominant or performs more highly are list in the left hand column and the criteria against which Countryside Stewardship Scheme is dominant or performs more highly are list in the right hand column

Table 5.25, List of criteria in which an option strongly dominates the other option

Organic Farming Scheme	Countryside Stewardship Scheme
Food quality and safety	Forestry
GM traceability	

Table 5.26, List of criteria in which an option weakly dominates the other option

Organic Farming Scheme	Countryside Stewardship Scheme
Capital investment on-farm	Landscape impacts
Diversification of farm enterprises	Forestry
Farm income	
Employment	
Food quality and safety	
GM traceability	
Animal welfare	
Public Health impacts	
Local consumption	
Control of pollutants	
Biodiversity impacts	
Research development	

Table 5.27, List of the highest performing option against all the criteria

Organic Farming Scheme	Countryside Stewardship Scheme
Capital investment on-farm	Energy use
Diversification of farm enterprises	Landscape impacts
Diversification of rural economy	Forestry
Fragmentation and other farm structure issues	
Farm income	
Employment	
Uptake of regulated production systems	
Food quality and safety	
GM traceability	
Animal welfare	
Occupational health	
Public Health impacts	
Agricultural demographic	
Knowledge and skills development	
Social justice and equality (gender, intergenerational, international)	
Rural infrastructure (including transport, housing)	
Local consumption	
Greenhouse gas emissions	
Control of pollutants	
Natural resource conservation	
Biodiversity impacts	
Research development	

High and low scoring criteria

Table 5.28 presents the criteria against which each option achieves a weighted average score in the top 25% of the score range, that is a score of 1.5 or greater.

Table 5.28, Criteria with average scores in the top 25% of the score range

Organic Farming Scheme	Countryside Stewardship Scheme
Capital investment on-farm	Diversification of farm enterprises
Diversification of farm enterprises	Biodiversity impacts
Diversification of rural economy	Landscape impacts
Employment	Research development
Food quality and safety	
GM traceability	
Local consumption	
Control of pollutants	
Natural resource conservation	
Biodiversity impacts	
Research development	

Table 5.29 presents the criteria against which each option achieves a weighted average score closer to zero. This indicates that the scheme has no impact compared to current best practice. This indicates that other factors may be more important in affecting change in these areas.

Table 5.29, Criteria with average scores in the middle (sixth) of the score range

Organic Farming Scheme	Countryside Stewardship Scheme
Agricultural demographic	Capital investment on-farm
Knowledge and skills development	Fragmentation and other farm structure issues
Social justice and equality (gender, intergenerational, international)	Farm income
Energy use	Food quality and safety
Forestry	GM traceability
	Animal welfare
	Occupational health
	Agricultural demographic
	Knowledge and skills development
	Social justice and equality (gender, intergenerational, international)
	Rural infrastructure (including transport, housing)
	Energy use

Cost effectiveness Countryside Stewardship Scheme and Organic Farming Scheme in North East England

When assessing the cost effectiveness of Countryside Stewardship Scheme and the Organic farming Schemes data was available for the years 1997 to 2003. The years 1998 and 2002 were chosen for this analysis. Table 5.30 and 5.31 presents the area of land farmed under Countryside Stewardship Scheme and Organic Farming Scheme agreements in England and the total payments made to these farms (this data is the whole of England, it is assumed that North East England is representative of the whole country). Table 5.30 and 5.31 contain extracts from Table 11.2 and 11.3 From Defra's "Agriculture in the UK 2004" report (Defra 2004). Figure 5.8 and 5.9 present the measures of cost effectiveness for 1997 and 2002. The grey bars presented in these figures represent the cost effectiveness of the scheme, larger bars indicate a greater level of cost effectiveness. The whisker plots on these bars present the fifth and ninety fifth percentile in the range of possible measures of cost effectiveness. The scale of these figures is the single dimensionless measure of performance per £/ha (the total scheme expenditure per hectare). These measures are specific to this case study and cannot be directly compared to the other case studies. Table 5.32, 5.33, 5.34 and 5.35 represent the data from figure 5.8 and 5.9 in tabular form.

Table 5.30, Total expenditure on the scheme in England

Total expenditure in £ x10 ⁶	1997	1998	1999	2000	2001	2002	2003
Countryside Stewardship	16	20	23	30	41	56	70
Organic farming schemes	1	1	2	15	26	15	10

Source: Defra (2004)

Table 5.31, Total land area under the scheme in England

Area in ha	1997	1998	1999	2000	2001	2002	2003
Countryside Stewardship	108000	129000	183000	259000	341000	426000	527000
Organic farming schemes	6000	11000	16000	96000	138000	157000	17400

Source: Defra (2004)

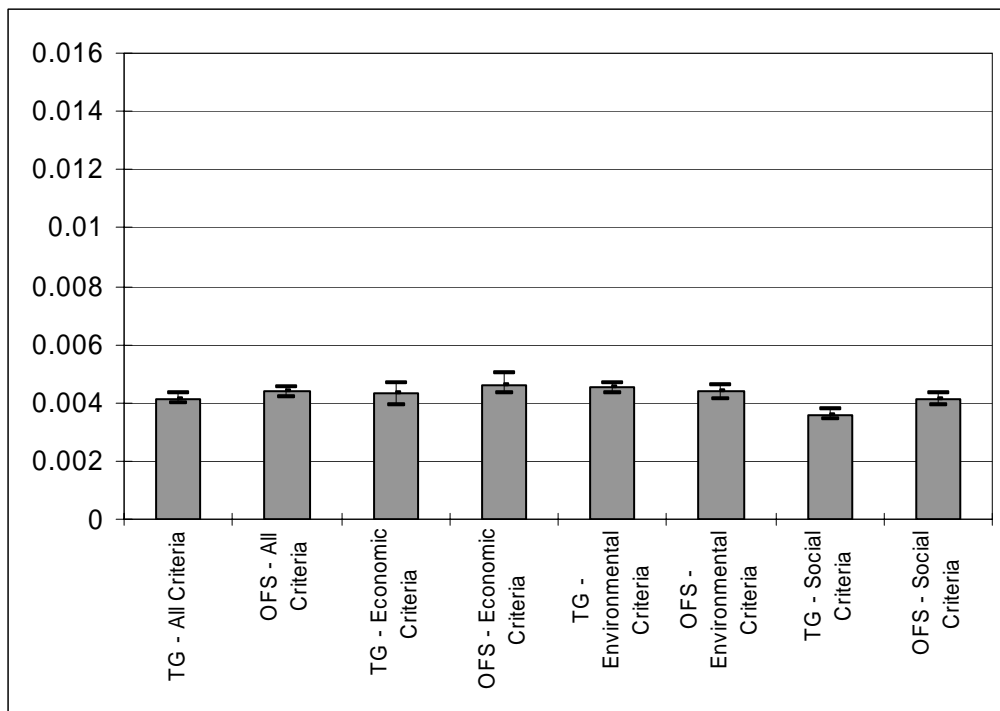


Figure 5.8 Cost effectiveness of the two schemes considering all the criteria, the economic criteria only, the environmental criteria only and the social criteria only using 2002 data

Table 5.32 Cost Effectiveness of the Countryside Stewardship Scheme in 1997

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0038	0.004	0.0041	0.0043	0.0045
Economic criteria	0.0038	0.0039	0.0043	0.0047	0.0049
Environmental criteria	0.0043	0.0043	0.0045	0.0047	0.0048
Social criteria	0.0032	0.0034	0.0036	0.0038	0.0039

Table 5.33 Cost Effectiveness of the Organic Farming Scheme in 1997

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.004	0.0042	0.0044	0.0045	0.0047
Economic criteria	0.0038	0.0043	0.0046	0.005	0.005
Environmental criteria	0.0038	0.0041	0.0044	0.0046	0.0047
Social criteria	0.0037	0.0039	0.0041	0.0043	0.0046

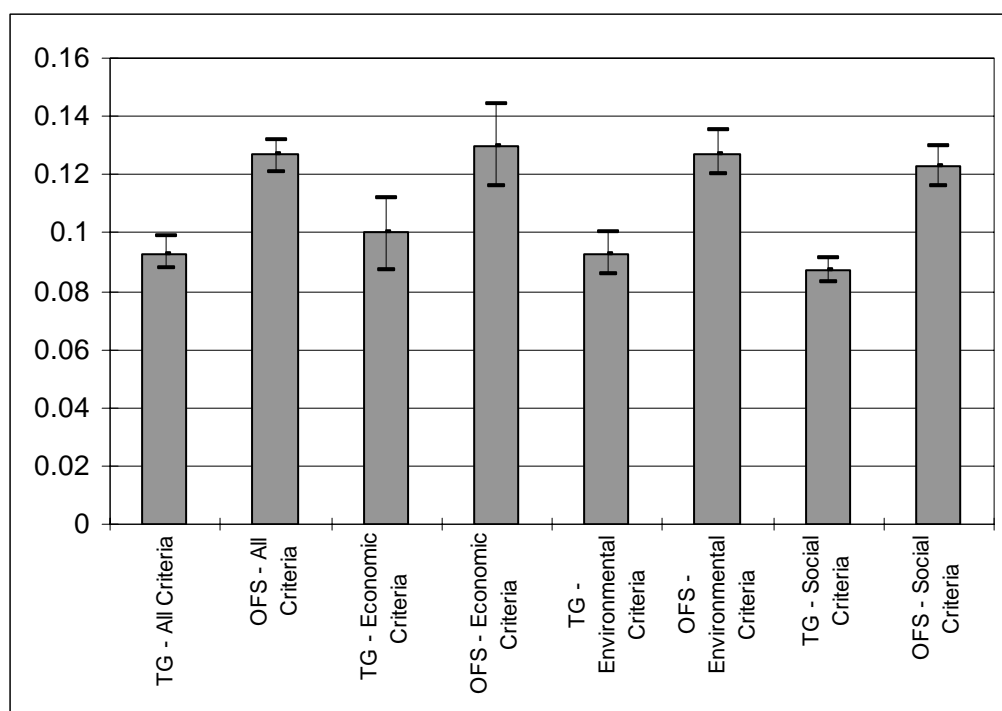


Figure 5.9 Cost effectiveness of the two schemes considering all the criteria, the economic criteria only, the environmental criteria only and the social criteria only using 2003 data

Table 5.34, Cost Effectiveness of the Countryside Stewardship Scheme in 2003

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0042	0.0044	0.0046	0.0047	0.005
Economic criteria	0.0042	0.0044	0.0048	0.0052	0.0054
Environmental criteria	0.0047	0.0047	0.005	0.0052	0.0053
Social criteria	0.0035	0.0038	0.004	0.0042	0.0044

Table 5.35, Cost Effectiveness of the Organic Farming Scheme in 2003

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.0117	0.0122	0.0127	0.0131	0.0136
Economic criteria	0.0111	0.0125	0.0134	0.0144	0.0144
Environmental criteria	0.011	0.012	0.0127	0.0134	0.0137
Social criteria	0.0106	0.0113	0.012	0.0125	0.0132

Conclusion from the Judgement-based evaluations in the Judgement-based evaluations in North East England

The first observations from the Judgement-based evaluations of the Countryside Stewardship scheme and the Organic Farming scheme in North East England are as follows: Considering all the criteria and all the groups of criteria the Organic Farming scheme out performs Countryside Stewardship scheme, the fifth percentile (most pessimistic) value of performance for Organic Farming scheme is greater than the Ninety fifth percentile (most optimistic) value of performance.

Considering the criteria in which one option dominates the other. The Organic Farming scheme strongly dominates Countryside Stewardship scheme in the criterion *GM traceability* and *Food quality and safety* but is dominated by the Organic Farming scheme in the criterion forestry. The Organic Farming scheme and weakly dominants Countryside Stewardship scheme in some economic

environmental and social criteria, whereas Countryside Stewardship scheme weakly out performs the Organic Farming scheme in the *Landscape* criterion.

Similarly Organic Farming scheme out performs Countryside Stewardship scheme looking at the mean value of performance, with a few notable exceptions. Namely, *Biodiversity impacts, Forestry and Landscape impacts*.

The strengths of the Organic Farming scheme are related to the criteria:

- Capital investment on-farm
- Diversification of farm enterprises
- Diversification of rural economy
- Employment
- Food quality and safety
- GM traceability
- Local consumption
- Control of pollutants
- Natural resource conservation
- Biodiversity impacts
- Research development

The strengths of Countryside Stewardship scheme are in:

- Diversification of farm enterprises
- Biodiversity impacts
- Landscape impacts
- Research development

There were several criteria for which either scheme received a score close to zero. In the criteria, *Agricultural demographic, Knowledge and skills development, Social justice and equality (gender, intergenerational, international)* and *Energy use* both scheme received a score close to zero. To achieve change in these criteria and their related objectives the two scheme schemes under consideration were not useful in North East England. Other instruments would need to be used or the scheme would need to be adjusted to affect change in these areas

The Organic Farming scheme performs strongly compared to Countryside Stewardship scheme considering the all the criteria together and the economic, social and environmental group separately. It is likely to out perform Countryside Stewardship scheme considering the economic consideration but the findings of this study were inconclusive.

When the measures of cost effectiveness are considered the situation is less clear in 1997 analysis but more clear in 2003 analysis. Considering the 1997 analysis there is a high degree of overlap between the performance of the Organic Farming Scheme and the Countryside Stewardship scheme, however in the 2003 analysis the Countryside Stewardship scheme strongly out performs Countryside Stewardship scheme. This large change in relative performance is due to a large change in total cost per hectare in the two schemes. The cost of the Organic Farming scheme drops from 166.67 £/ha in 1997 to 57.47 £/ha in 2003, where as the cost of Countryside Stewardship scheme changes only slightly from 148.15 £/ha in 1997 to 132.83 £/ha in 2003.

The Organic Farming Scheme out performs the Countryside Stewardship scheme in North East England when considering only the performance against the criteria.

When considering the cost effectiveness there was little difference between the two schemes in 1997. However the Organic Farming Scheme strongly out performs the Countryside Stewardship scheme in 2003, this is largely due a significant lower cost per hectare of the Organic Farming Scheme.

4.5 Analysis of the Canton Aargau – CH case study

This section presents the outcomes of the case studies in Canton Aargau, Switzerland using the judgement-based approach. Further details of the judgement based Canton Aargau, Switzerland case study is presented in appendix 5.8.

4.5.1 Analysis of the Canton Aargau case study using the judgement-based approach

Aggregated performance measures

Figure 5.10 displays a graphical representation of the performance of the Integrated production option (IP variante) and the Organic option (BIO variante). In figure 5.10 the weighted average performance of the options are represented by the solid grey bars, around these grey bars are a whisker plot indicating the 95th percentile of variation as calculated using the risk analysis. In this figure larger bars indicate a greater level of performance. The data present in figure 5.10 is represented in table 5.36 and 5.37 for Integrated production option and the Organic option respectively.

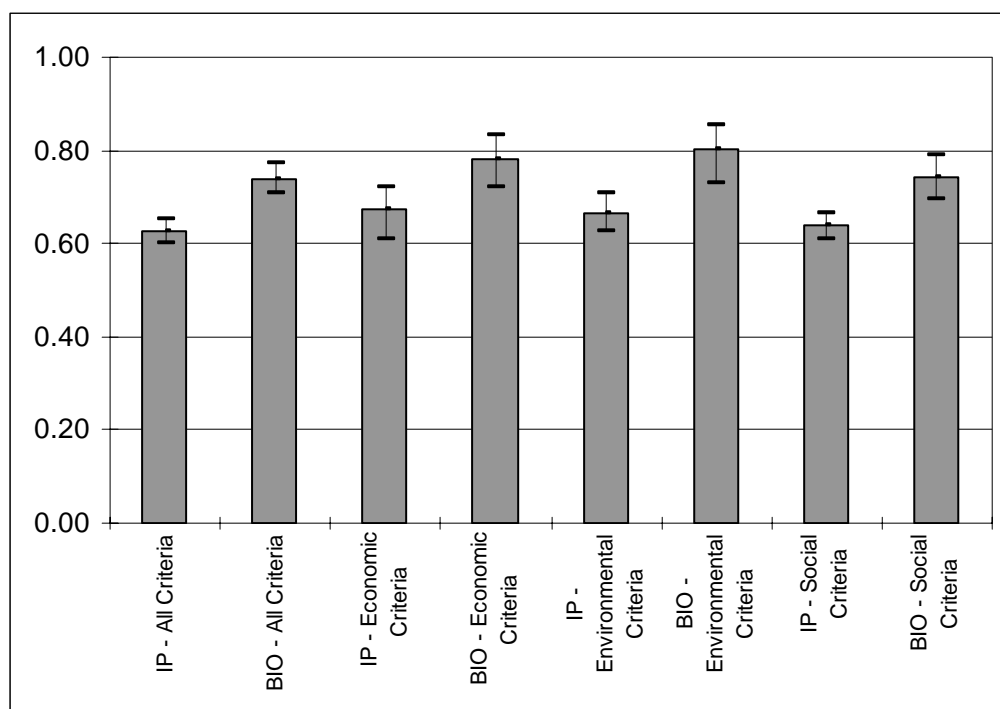


Figure 5.10 Performance of the two schemes against all the criteria, the economic criteria only, the environmental criteria only and the social criteria only.

Table 5.36 Performance of the Integrated production option

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.57	0.6	0.63	0.65	0.68
Economic criteria	0.56	0.61	0.67	0.72	0.75
Environmental criteria	0.57	0.61	0.64	0.67	0.71
Social criteria	0.47	0.50	0.53	0.56	0.58

Table 5.37 Performance of the Organic option

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.67	0.71	0.74	0.77	0.81
Economic criteria	0.67	0.72	0.78	0.83	0.89
Environmental criteria	0.65	0.73	0.8	0.85	0.92
Social criteria	0.65	0.69	0.74	0.79	0.85

In all cases the results of the one-tailed t test was zero indicating that a statistically large difference between the groups.

Dominance and high scores

Dominance is defined as the case where all an option out performs the second option for all criteria. In this case dominance is defined at two levels first is strong dominance this is when all the expert opinion for an option was greater than the second option and when the minimum score for an option is greater than the average score for the second option. In addition to dominance this section also reports which option achieved the highest weighted average score against each criterion. Table 5.38 presents the strong dominance group, table 5.39 the weak dominance group and table 5.40 the higher scoring option. In these tables the criteria against which the Organic option is dominant or performs more highly are list in the left hand column and the criteria against which Integrated production option is dominant or performs more highly are list in the right hand column

Table 5.38 List of criteria in which an option strongly dominates the other option

Organic option	Integrated production option

Table 5.39 List of criteria in which an option weakly dominates the other option

Organic option	Integrated production option
Capital investment on-farm	
Farm income	
Employment	
Uptake of regulated production systems	
Food quality and safety	
GM traceability	
Knowledge and skills development	
Natural resource conservation	

Table 5.40 List of the highest performing option against all the criteria

Organic option	Integrated production option
Capital investment on-farm	
Diversification of farm enterprises	
Diversification of rural economy	
Fragmentation and other farm structure issues	
Farm income	
Employment	
Uptake of regulated production systems	
Food quality and safety	
GM traceability	
Animal welfare	
Occupational health	
Public Health impacts	
Agricultural demographic	
Rural community well-being	

Knowledge and skills development	
Research development	
Social justice and equality (gender, intergenerational, international)	
Rural infrastructure (including transport, housing)	
Local consumption	
Energy use	
Greenhouse gas emissions	
Control of pollutants	
Natural resource conservation	
Biodiversity impacts	
Landscape impacts	
Forestry	

High and low scoring criteria

Table 5.41 presents the criteria against which each option achieves a weighted average score in the top 25% of the score range, that is a score of 1.5 or greater.

Table 5.41 Criteria with average scores in the top 25% of the score range

Organic option	Integrated production option
Capital investment on-farm	Farm income
Diversification of farm enterprises	Uptake of regulated production systems
Farm income	Food quality and safety
Uptake of regulated production systems	Animal welfare
Food quality and safety	Knowledge and skills development
GM traceability	Research development
Animal welfare	
Knowledge and skills development	
Research development	
Local consumption	
Greenhouse gas emissions	
Control of pollutants	
Natural resource conservation	
Biodiversity impacts	
Landscape impacts	

Table 5.42 presents the criteria against which each option achieves a weighted average score closer to zero. This indicates that the scheme has no impact compared to current best practice. This indicates that other factors may be more important in affecting change in these areas.

Table 5.42 Criteria with average scores in the middle (sixth) of the score range

Organic option	Integrated production option
Fragmentation and other farm structure issues	Diversification of rural economy
Social justice and equality (gender, intergenerational, international)	Fragmentation and other farm structure issues
Rural infrastructure (including transport, housing)	Employment
Forestry	Agricultural demographic
	Rural community well-being
	Social justice and equality (gender, intergenerational, international)
	Rural infrastructure (including transport, housing)
	Energy use
	Forestry

Conclusion from the Judgement-based evaluations in Canton Aargau

The first observations from the Judgement-based evaluations of the IP Option and the BIO option in Canton Aargau are as follows: Considering all the criteria and all the groups of criteria the BIO option out performs the IP option, that is the fifth percentile (most pessimistic) value of performance for the IP option is greater than the ninety fifth percentile (most optimistic) value of performance for the BIO option.

Considering the criteria in which one option dominates the other. There are no criteria in which one option strongly dominates the others. The BIO option and weakly dominates the IP option in some economic environmental and social criteria, and one environmental criterion, whereas the IP option does not out perform the BIO option in any criteria. The BIO option out performs the IP option (or receives the same score) looking at the mean value of performance for ever criterion.

The strengths of the BIO option are related to the criteria:

- Capital investment on-farm
- Diversification of farm enterprises
- Farm income
- Uptake of regulated production systems
- Food quality and safety
- GM traceability
- Animal welfare
- Knowledge and skills development
- Research development
- Local consumption
- Greenhouse gas emissions
- Control of pollutants
- Natural resource conservation
- Biodiversity impacts
- Landscape impacts

The strengths of the IP option are in:

- Farm income
- Uptake of regulated production systems
- Food quality and safety
- Animal welfare
- Knowledge and skills development
- Research development

There were several criteria for which either scheme received a score close to zero. In the criteria, *Fragmentation and other farm structure issues*, *Social justice and equality (gender, intergenerational, international)*, *Rural infrastructure (including transport, housing)* and *Forestry* both scheme received a score close to zero. To achieve change in these criteria and their related objectives the two scheme schemes under consideration were not useful in Canton Aargau. Other instruments would need to be used or the scheme would need to be adjusted to affect change in these areas

The BIO option performs strongly compared to the IP option considering the all the criteria together and the economic, social and environmental group separately.

4.6 Analysis of the Lower Saxony (DE) case study

The evidence based analysis in the Lower Saxony case study was completed by Reiter and Roggendorf (2006) of the Institute of Rural Studies, Federal Agricultural Research Centre (FAL), Braunschweig. Reiter and Roggendorf's report can be found in appendix x.9.

Reiter and Roggendorf present evaluations for the following 16 criteria of the 26 identified:

- Fragmentation and other farm structure issues
- Farm income
- Employment
- Uptake of regulated production systems
- GM traceability
- Animal welfare
- Public Health impacts
- Agricultural demographic
- Rural infrastructure (including transport, housing)
- Local marketing, processing and consumption
- Energy use
- Control of climate change
- Control of pollutants
- Natural resource conservation
- Biodiversity impacts
- Landscape impacts

Aggregated performance measures

Figure 5.11 displays a graphical representation of the performance of the Organic measures and the other measures. In figure 5.11 the weighted average performance of the options are represented by the solid grey bars, around these grey bars are a whisker plot indicating the 95th percentile of variation as calculated using the risk analysis. In this figure larger bars indicate a greater level of performance. The data present in figure 5.11 is represented in table 5.43 and 5.44.

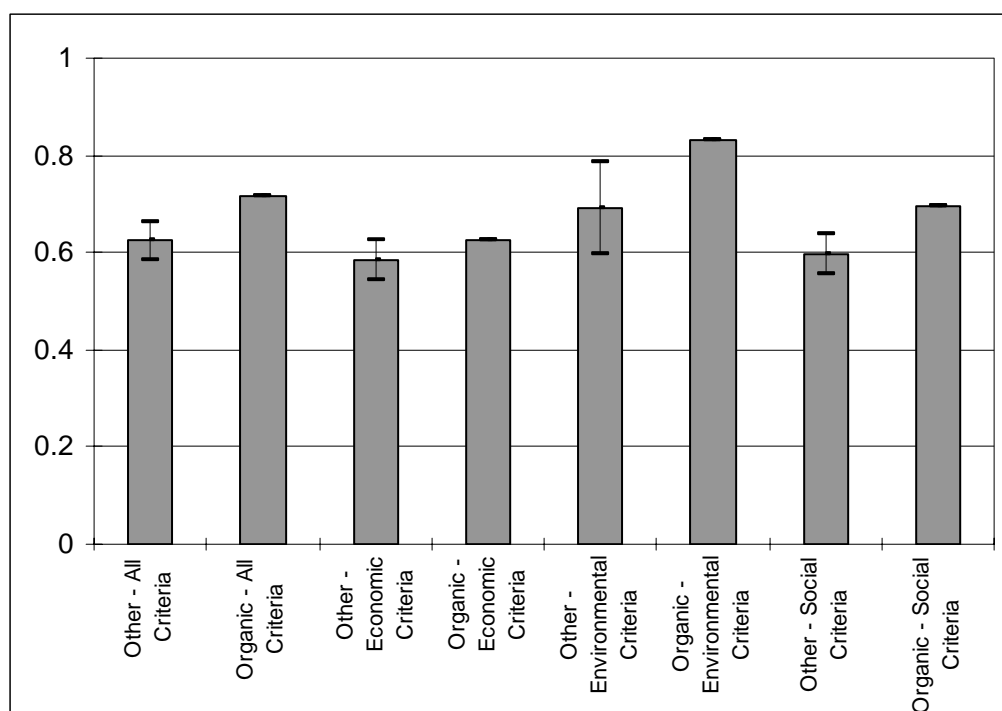


Figure 5.11

Table 5.43 Performance of the other measures of the NAU scheme

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.55	0.58	0.62	0.66	0.69
Economic criteria	0.54	0.54	0.58	0.63	0.63
Environmental criteria	0.55	0.6	0.69	0.79	0.83
Social criteria	0.56	0.56	0.6	0.64	0.64

Table 5.44 Performance of the Organic measures

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.72	0.72	0.72	0.72	0.72
Economic criteria	0.63	0.63	0.63	0.63	0.63
Environmental criteria	0.83	0.83	0.83	0.83	0.83
Social criteria	0.69	0.69	0.69	0.69	0.69

Dominance and high scores

Dominance is defined as the case where all an option out performs the second option for all criteria. In this case dominance is defined at two levels first is strong dominance this is when all the evaluations for an option was greater than the second option and when the minimum score for an option is greater than the average score for the second option. In addition to dominance this section also reports which option achieved the highest weighted average score against each criterion. Table 5.45 presents the strong dominance group, table 5. 46 the weak dominance group and table 5.47 the higher scoring option. In these tables the criteria against which the Organic option is dominant or performs more highly are list in the left hand column and the criteria against which Integrated production option is dominant or performs more highly are list in the right hand column

Table 5.45 List of criteria in which an option strongly dominates the other option

Organic measures	Other measures
Fragmentation and other farm structure issues	
GM traceability	
Animal welfare	
Energy use	

Table 5.46 List of criteria in which an option weakly dominates the other option

Organic measures	Other measures
Fragmentation and other farm structure issues	
GM traceability	
Animal welfare	
Public Health impacts	
Energy use	
Control of climate change	
Control of pollutants	
Natural resource conservation	
Biodiversity impacts	

Table 5.47, List of the highest performing option against all the criteria

Organic measures	Other measures
Fragmentation and other farm structure issues	Landscape impacts
GM traceability	
Animal welfare	
Public Health impacts	
Energy use	
Control of climate change	
Control of pollutants	
Natural resource conservation	
Biodiversity impacts	

High and low scoring criteria

Table 5.48 presents the criteria against which each option receives an evaluation in the top 25% of the score range, that is a score of 1.5 or greater.

Table 5.48 Criteria with average scores in the top 25% of the score range

Organic measures	Other measures
GM traceability	Landscape impacts
Uptake of regulated production systems	Capital investment on-farm
Control of pollutants	Biodiversity impacts
Natural resource conservation	Farm income
Diversification of farm practice and products	
Farm income	
Food quality and safety	
Biodiversity impacts	
Skills and Knowledge	
Occupational health impacts	

Table 5.49 presents the criteria against which each option receives an evaluation closer to zero. This indicates that the group of measures have no impact compared to

current best practice and that other factors may be more important in affecting change in these areas.

Table 5.49 Criteria with average scores in the middle (sixth) of the score range

Organic measures	Other measures
Employment	Employment
Local marketing, processing and consumption	GM traceability
	Animal welfare
	Local marketing, processing and consumption

Conclusion from the Judgement-based evaluations in Lower Saxony

The first observations from the evaluations of the Organic measures and the Other measures in Lower Saxony are as follows: Considering all the criteria, the social group of criteria and the environmental group the Organic measures out performs the other measures, that is the fifth percentile (most pessimistic) value of performance for the Organic measures is greater than the ninety fifth percentile (most optimistic) value of performance for the other measures. Considering only the economic group the performance of the organic measure (which do not vary) is the same as the ninety fifth percentile of the other measures. It is likely that the Organic measures out perform the other measures, but some measures in the other group may perform at the same level as organic.

The Organic measures strongly dominants the other measures in some environmental and one economic criterion, and weakly in many (predominantly environmental) criteria. The Organic measures out perform the other measures in all criteria except *Landscape impacts*.

The strengths of Organic measures are related to the criteria:

- GM traceability
- Uptake of regulated production systems
- Control of pollutants
- Natural resource conservation
- Diversification of farm practice and products
- Farm income
- Food quality and safety
- Biodiversity impacts
- Skills and Knowledge
- Occupational health impacts

The strengths of the other measures are in:

- Capital investment on-farm
- Biodiversity impacts
- Farm income

There were several criteria for which both groups of measures received a score close to zero. In the criteria, *Employment* and *Local marketing, processing and consumption* both measures received a score close to zero. To achieve change in these criteria and their related objectives the two measures under consideration were

not useful in Lower Saxony. Other instruments would need to be used or the measures would need to be adjusted to affect change in these areas

The Organic measures performs well compared to the other measures considering the all the criteria together and the social and environmental group separately. Performance against the economic group is higher or at least equal to the other measures.

4.7 Analysis of the Baden-Württemberg – DE case study

The evidence based analysis in the Baden-Württemberg case study was completed by Dabbert and Vilei (2006) of the Institute of Farm Management, University of Hohenheim, Stuttgart. Dabbert and Vilei's report can be found in appendix x.10.

Dabbert and Vilei present evaluations for the following 11 criteria of the 26 identified:

- Diversification of rural economy
- Farm income
- Employment
- Public Health impacts
- Rural community wellbeing
- Local marketing, processing and consumption
- Control of climate change
- Control of pollutants
- Natural resource conservation
- Biodiversity impacts
- Landscape impacts

Aggregated performance measures

Figure 5.12 displays a graphical representation of the performance of the Organic measures and the other measures. In figure 5.12 the weighted average performance of the options are represented by the solid grey bars, around these grey bars are a whisker plot indicating the 95th percentile of variation as calculated using the risk analysis. In this figure larger bars indicate a greater level of performance. The data present in figure 5.12 is represented in table 5.50 and 5.51.

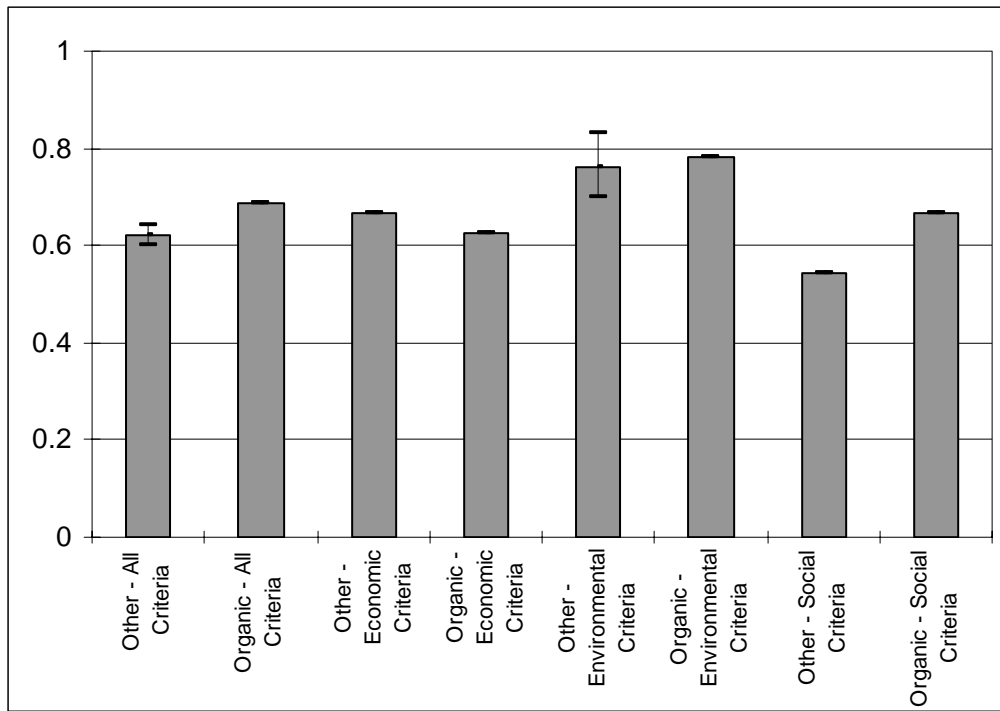


Figure 5.12

Table 5.50 Performance of the other measures

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.6	0.6	0.62	0.64	0.64
Economic criteria	0.61	0.61	0.61	0.61	0.61
Environmental criteria	0.7	0.7	0.76	0.83	0.83
Social criteria	0.54	0.54	0.54	0.54	0.54

Table 5.51 Performance of the organic measures

Name	Minimum	5% Perc	Mean	95% Perc	Maximum
All criteria	0.69	0.69	0.69	0.69	0.69
Economic criteria	0.67	0.67	0.67	0.67	0.67
Environmental criteria	0.78	0.78	0.78	0.78	0.78
Social criteria	0.67	0.67	0.67	0.67	0.67

Dominance and high scores

Dominance is defined as the case where all an option out performs the second option for all criteria. In this case dominance is defined at two levels first is strong dominance this is when all the evaluations for an option was greater than the second option and when the minimum score for an option is greater than the average score for the second option. In addition to dominance this section also reports which option achieved the highest evaluation against each criterion. Table 5.52 presents the strong dominance group, table 5.53 the weak dominance group and table 5.54 the higher scoring option. In these tables the criteria against which the Organic measures is dominant or performs more highly are list in the left hand column and the criteria against which other measures are dominant or performs more highly are list in the right hand column

Table 5.52 List of criteria in which an option strongly dominates the other option

Organic measures	Other measures
Public Health impacts	
Local marketing, processing and consumption	

Table 5.53 List of criteria in which an option weakly dominates the other option

Organic measures	Other measures
Public Health impacts	
Local marketing, processing and consumption	
Natural resource conservation	
Biodiversity impacts	

Table 5.54 List of the highest performing option against all the criteria

Organic measures	Other measures
Public Health impacts	
Local marketing, processing and consumption	
Natural resource conservation	
Biodiversity impacts	

High and low scoring criteria

Table 5.55 presents the criteria against which each option receives an evaluation in the top 25% of the score range, that is a score of 1.5 or greater.

Table 5.55 Criteria with average scores in the top 25% of the score range

Organic measures	Other measures
Local marketing, processing and consumption	Control of climate change
Control of climate change	
Natural resource conservation	
Biodiversity impacts	

Table 5.56 presents the criteria against which each option receives an evaluation closer to zero. This indicates that the group of measures have no impact compared to current best practice. This indicates that other factors may be more important in affecting change in these areas. No criteria scored within this range in the Wales case study.

Table 5.56 Criteria with average scores in the middle (sixth) of the score range

Organic measures	Other measures
Employment	Employment
	Public Health impacts
	Local marketing, processing and consumption

Conclusion from the Judgement-based evaluations in Baden-Württemberg

The first observations from the evaluations of the Organic measures and the other measures in Baden-Württemberg are as follows: Considering all the criteria, the social group of criteria the Organic measures out performs the other measures. Considering only the economic group the performance of the other measures is

greater than that of the Organic measures. Considering only the environmental group the performance of the organic measure (which does not vary) is greater than the mean performance of the other measures but less than the ninety-fifth percentile. It is possible that the Organic measures outperform the other measures, but some measures in the other group may outperform the organic measure.

The Organic measures strongly dominate the other measures in two criteria (*Public Health impacts* and *Local marketing, processing and consumption*), and weakly in two more criteria (*Natural resource conservation* and *Biodiversity impacts*). The other measures do not dominate in any criteria.

The strengths of Organic measures are related to the criteria:

- Local marketing, processing and consumption
- Control of climate change
- Natural resource conservation
- Biodiversity impacts

The strengths of the other measures are in:

- Control of climate change

Both groups of measures received a score close to zero in the criterion, *Employment*. To achieve change in these criteria and their related objectives the two measures under consideration were not useful in Baden-Württemberg. Other instruments would need to be used or the measures would need to be adjusted to affect change in these areas.

The Organic measures perform well compared to the other measures considering all the criteria together and the social group separately. The other measures have the highest performance against the economic criteria. Considering the environmental group it is unclear which option has the highest level of performance.

4.8 Analysis of the Marche – IT case study

No information was available regarding the performance of the Agri-environment measures and other measures of the Marche Rural Development Plan. The report on the cost effectiveness of the Organic measures of the Marche Rural Development Plan can be found in appendix x.11.

Zanoli and Vairo (2006) made the following conclusions regarding the cost effectiveness of the agri-environment measures:

“Measure F (agri-environmental measures) showed a high spending power related to appropriations concerning the previous year. Sub-measures F1 (Low environmental impact farming) and F2 (Organic farming) presented a good financial performance even constrained by resources availability which did not enable to finance all admissible applications.

The implementation of measure F is coherent with the specific measure and priority objectives.”

4.9 Discussions of case studies

In this section the performance of the different schemes and measures will be discussed, as well as the performance of the analysis processes presented.

4.9.1 Discussions of the performance of the schemes

Most of the organic schemes or organic measures outperformed the other agri-environment measures, the only exception was in Baden-Württemberg regarding economics and environmental considerations. Although the Baden-Württemberg analysis was undertaken using an incomplete set of evaluations which may affect the outcome of the evaluation.

In the considering cost effectiveness the organic schemes and measures outperformed the other agri-environment measures in most cases. This was due to the relatively low expenditure per hectare of the organic schemes. The only example where performance was similar to the other measures and schemes were in the North East England study in 1997 where the expenditure per hectare was similar to the Countryside Steward Scheme. This may be due to higher payments being made in the conversion period as expenditure dropped dramatically in the 2003 period.

Data availability limited the evidenced-based analyses. In these studies evaluation could only be completed for some of the criteria. This varied between the studies with 11 of 26 criteria being evaluated in Baden-Württemberg, 16 in Lower Saxony and 11 in Wales. It may be possible to use some of these criteria as proxy criteria. To assess the utility of proxy criteria further study would be required.

Only in Wales was the study completed using both methods and there was broad agreement between the two methods, as this was only one study limited conclusion can be drawn from this finding. Further studies would be required to test a correlation of outputs in the two evaluation processes.

4.9.2 Discussions of the performance of the analysis process

In the study where an evidence and judgement based evaluation was completed both methods produced similar results. As this was only observed in one study it is not possible to draw firm conclusion from this finding.

Regarding feedback from panellists the judgement-based process was well received. The degree to which a true consensus was achieved is still uncertain as there was an increase in consensus in the workshop but no measure that represented a long-term change of opinion, a follow-up questionnaire that asked the same questions again could be used to assess this change.

4.9.3 Revised criteria set

This will include an analysis that matches groups of correlated criteria (according to the evaluations they received in the NGT workshops) to criteria for which there was data available. This aims to produce a set of proxy criteria that will be measurable for future evaluation avoiding the need for judgement based approaches. This section will also include revised definitions of the criteria in light of the discussions in the workshops.

Table 5.57 presents the proxy criteria and the criteria to which they are related. The output of the cluster analyses used to develop these proxies is presented in appendix x.12.

Table 5.57 Possible proxy criteria

Proxy Criteria	Criteria
Employment	Diversification of rural economy Rural community well-being Employment
Greenhouse gas emissions	Energy use Greenhouse gas emissions
Rural infrastructure (including transport, housing)	Agricultural demographic Rural infrastructure (including transport, housing) Social justice and equality Fragmentation and other farm structure issues Rural infrastructure (including transport, housing)
Control of pollutants	GM traceability Control of pollutants Food quality and safety Local consumption
Public Health impacts	Occupational health Public Health impacts Animal welfare Knowledge and skills development
Farm income	Uptake of regulated production systems Farm income Capital investment on-farm
Natural resource conservation	Research development Natural resource conservation
Biodiversity impacts	Diversification of farm enterprises Biodiversity impacts
Landscape impacts	Landscape impacts

4.9.4 Feedback from the judgement-based case studies

In the judgement-based evaluation the experience of the panellists involved was assessed using a feedback questionnaire. The responses from this questionnaire are presented in appendix x.12. The panellists were asked to answer the following ten questions. In question one to five the panelists were asked to rate their experience of the workshop on a five-point scale, one indicating a negative experience and five indicating positive experience regarding the question. Panellists were also asked for comments regarding these question and the five further questions

In response to the ten questions panellists made the following evaluations and comments:

Question 1 - Did you find the process useful for building consensus?

Panellists gave an average score of 4.1 and commented that the process helped to gain a common understanding. They also thought that the process might give too much weight to non-expert opinion. They also stated that it was a useful way of acquiring knowledge from a large group.

Question 2 - Do you feel the process captured how well the policy options perform on ground?

Panellists gave an average score of 3.6 and commented that the many panellists had limited knowledge of how the scheme performed on farm in the UK examples. In the Swiss example where options were measures from within a wider agri-environment scheme panellists commented that the options required better definition.

Question 3 - Do you feel your ideas were adequately incorporated in to the discussions?

a. In general?

b. When you assessed your level of expertise as high?

c. When you assessed your level of expertise as low?

Panellists gave an average score for question 3a of 4.1, 3b of 4.2 and 3c of 3.5 and commented that they felt every person had some input but time limitation often impacted on discussions.

Question 4 - Did the workshop cover an adequate range of farming policy?

Panellists gave an average score of 4.1 and commented that the options were adequate but it would have been interesting to include other policies. It was also noted that evaluating criteria that addressed objectives that the policy was not designed to address increased the speculative nature of the evaluation.

Question 5 - Were the criteria used adequate to evaluate the policy options?

Panellists gave an average score of 3.6 and commented that the criteria were well suited for the UK but may need adaptation for the wider European context, this was also noted in the Swiss study that the criteria needed to better reflect the local situation.

Question 6 - Are there any criteria that should be added or removed from the evaluation?

Panellists commented generally there was adequate coverage; Swiss panellists commented that they felt the criteria were focused on crop production and that the Forestry criterion was not relevant to the Swiss situation. Other comments included the need to further and more closely define the criteria. Suggested additions were limited to criterion that assessed the level of interactions between city and country dwellers and public participation in agriculture.

Question 7 - What do you see as the strengths of this process?

Panellists commented that the process provided a quick and efficient method of developing a common understanding, resolving opinion and gaining consensus. It provided a dynamic forum for discussion and education providing a wide range of input from persons with various backgrounds and expertise.

Question 8 - What do you see as the weaknesses of this process?

Panellists for the first workshop commented that the workshop was too short and the computer system too slow (this was addressed in subsequent workshops). Intransigent panellists would not change their opinion although this was addressed and dealt with by the system and evaluation process. The system could be influenced by political and strategic scoring. "Strong" individuals could still influence the process after the first discussions and therefore did not address all the power issues that occur in groups. In the Swiss example the reference value was unclear.

Question 9 - How could we improve that process in the future?

Panellists commented that more time should be given for the workshop; the criteria should be more precisely described; that a wider range of persons should be included in the workshops especially including farmers into the panel. Improvements could be made in the group decision support system by placing the evaluations in random order on the display.

Question 10 - Do you have any other comments?

Further comments from were generally positive about the workshop.

4.10 Conclusions and policy implications

The analyses undertaken in this study have analysed highly complex policies with multiple impacts on many sections of the community and the natural environment. The overall effects of these multiple objectives have been resolved in to a single measure of performance considering all the objectives and sub-groups within these objectives. The study identified 142 objectives and 521 related impact statements. From these set of 26 evaluation criteria was defined and evaluated in three judgement-based case studies with between 11 and 16 being evaluated in the evidence-based studies.

The expert-judgement studies were used to test this as an alternative assessment method as evidence was not available to assess all the evaluation criteria. The lack of data was highlighted in the evidence-based studies with the Wales and Baden-Württemberg studies each finding evidence for 11 criteria and the Lower Saxony study finding evidence for 16 criteria. It was possible to develop a set of proxy criteria that matched groups of similar performing criteria from the judgement-based studies. The absence of relevant data sources and identification of suitable indicators and criteria are issues that are identified in the ORGAP⁸ project.

The use expert judgement-based was use as an alternative to evidence-based review encountered problems regarding panellist recruitment and expertise coverage. Panellists were not available with a high level of expertise in all areas required to make the assessments, this was especially noticeable when assessing the social criteria. The areas lacking in expertise availability were often the same criteria in which there is a lack of evidence-based evaluations. It may be that there is a lack of understanding and research in to the wider impacts of land-use and land-use support policies on many of the objectives under consideration in this study.

In the light of this study it would be useful in further studies to revisit the relative cost and benefits of the Delphi process compared to the NGT. One of the clear advantages of Delphi is removing the need for all the panellists to attend a workshop. Other benefits may lie in an improved group process as the output of the NGT in these case studies could be greatly influenced by stronger and dominate individuals in the workshop. It is also unclear whether a true consensus was achieved or panellists complied with a précised group view to complete the process or please the facilitator. This could be assessed by a series of follow-up questionnaires asking the panellist to repeat the assessments. These would then be compared with the early and final assessments from the NGT workshop. If these new assessments were more similar to the first NGT assessment than to the final NGT assessment it could be concluded that the NGT failed to achieve a true consensus. This issue would be equally relevant to Delphi study.

In these studies the cost effectiveness measure was based on total expenditure not transaction costs. With out further study it is difficult to draw firm conclusions regarding the cost effectiveness of the schemes and measures. In the Welsh situation the agri-environment scheme – Tir Gofal is likely to have high transaction costs, as each agreement requires intensive engagement with a project officer. This engagement includes a number of farm visits, during which the measures to be employed are discussed and agreements made. These costs are not necessarily

⁸ ORGAP - European Action Plan of Organic Food and Farming: Development of criteria and procedures for the evaluation of the EU Action Plan for Organic Agriculture

covered in the total expenditure on the scheme. In contrast the Organic farming scheme does not require a similar level of engagement with the project officer. The potential public good benefits provided by organic farms are related to achieving and adhering to the organic standards. As these are and would continue to be administered by the local certification bodies a project officer is not required to replicate this work. Therefore the transaction costs of the Organic Farming scheme are likely to be lower. For this system to work the public good benefits of adherence to organic standards and the competency of the certification bodies to enforcing and applying these standards must be assessed and accepted by government. Combining the process of organic certification and adherence to measures in an agri-environment scheme could streamline the process and reduce transaction costs.

The durability of engagement with practices after the end of a scheme also needs to be assessed as part of the effectiveness of the scheme. It may be that farms engaged in an organic support scheme will continue organic practices after the scheme ends as they are engaged in the organic food market. Whereas farms engaged with other agri-environment schemes may end the associated practices after support payments ends as there is currently, in the UK, no associated market for these goods.

The extent to which If organic farming would have grown to the extent it has without the support schemes, if so the support schemes are not required and not an effective use of the funds.

The analyses presented in this study cannot conclude that Organic support scheme or other agri-environment support schemes perform best or are more cost effective. Also this study could not draw conclusions on the relative the strengths and weaknesses of scheme in different regions. This study has highlighted some of the issues related to such evaluations and the benefits of these schemes. The main issue is identified is the need to collect a wider range of data reflecting the wide range of objectives in rural development and agri-environment policy.

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6 Appendices

6.1 Appendix 1: Criteria, Impact Statements and Criteria

Table x.A1 presents the groups objectives and impact statements from which criterion were derived. These groups are grouped according using the Hierarchical clustering process using the codes in appendix x.2. Some of the objectives and impact statements in a group may not be directly relevant to the criteria they are listed under.

Table x.A1, Objectives and Impact statements related to the evaluation criteria

Capital investment on-farm					
To what extent has the scheme contributed to a direct or indirect increase in investment in on-farm capital works					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is033-so013	Agricultural policy	Market-oriented agriculture	Improve farm viability	Increase spending on on-farm capital expenditure on farm	1257/1999 - Justification
is188-so049	Organic food/ farming policy	Increase extent of OF	Improve OF incomes	Increase spending on on-farm capital expenditure on farm	
is226-so057	Organic food/ farming policy	Increase extent of OF	OF Risk reduction	Increased capital investment	
is274-so074	Rural economic/ development policy	Economic development of rural areas	Encourage modernisation of agricultural holdings	Increased investment in agricultural holdings	1257/1999 - Justification
is326-so087	Rural economic/ development policy	Economic development of rural areas	Improve farm/business viability	Increased on farm capital investments	1257/1999 - Justification
is353-so095	Rural economic/ development policy	Economic development of rural areas	Increase market orientation, opportunities and efficiency	Increased expenditure on capital investments	1257/1999 - 1.00, 1257/1999 - 2.07, com (2000) 20 final, com (2002) 394 final; 1750/1999 ann8.0
is359-so097	Rural economic/ development policy	Economic development of rural areas	Increase production efficiency	Increased capital investment	

Diversification of farm enterprises

To what extent has the scheme contributed to the diversification of farm enterprises

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is002-so001	Agricultural policy	Improve agricultural training and skills	Improve agricultural training and skills	Better professionally qualified farmers	1257/1999 - 2.03
is012-so004	Agricultural policy	Improved policy design and implementation	Improve evaluation and control	Improved monitoring and evaluation systems	Com (2000) 20 final
is017-so006	Agricultural policy	Improved policy design and implementation	Improve WTO/international treaty compliance	Increased monitoring of treaty compliance	Com (2000) 20 final
is029-so011	Agricultural policy	Maintain farm incomes	Enhance income stability	More diverse enterprises	Com (2002) 394 final; 1750/1999 ann8.0
is035-so013	Agricultural policy	Market-oriented agriculture	Improve farm viability	Increased spending on training and education	1257/1999 - Justification
is135-so037	Food/health policy	Ensure food security	Ensure food security	Increased self-sufficiency	
is154-so042	Organic food/ farming policy	Improve OF systems	Improve OF inspection and certification procedures	Reduce non-compliance / infringements events	
is157-so042	Organic food/ farming policy	Improve OF systems	Improve OF inspection and certification procedures	No price barrier to cert.	
is163-so043	Organic food/ farming policy	Improve OF systems	Improve OF institutional infrastructure	Increased availability of OF training courses at all levels	
is164-so043	Organic food/ farming policy	Improve OF systems	Improve OF institutional infrastructure	Existence of OF professional qualifications, accreditation and training	
is166-so044	Organic food/ farming policy	Improve OF systems	Improve OF public good recognition	Increased policy support	
is175-so046	Organic food/ farming policy	Improve OF systems	Increase OF research and information dissemination	Better OF extension services	
is176-so046	Organic food/ farming policy	Improve OF systems	Increase OF research and information dissemination	Increased awareness of research	
is178-so046	Organic food/ farming policy	Improve OF systems	Increase OF research and information dissemination	Greater producer participation in research	
is179-so047	Organic food/ farming policy	Increase extent of OF	Develop organic food market	Increased market share	1257/1999 - Justification; com (2000) 20 final
is181-so047	Organic food/ farming policy	Increase extent of OF	Develop organic food market	Decreased reliance on supermarkets	1257/1999 - Justification; com(2000) 20 final

is184-so048	Organic food/ farming policy	Increase extent of OF	Improve attitudes in agricultural industry towards OF	Increased inclusion of OF modules in tertiary level courses	
is190-so049	Organic food/ farming policy	Increase extent of OF	Improve OF incomes	Increased spending on training and education	
is195-so050	Organic food/ farming policy	Increase extent of OF	Improve OF productivity	Change in supply to market	
is199-so052	Organic food/ farming policy	Increase extent of OF	Increase competitiveness of organic farming in market place	Reduction in price premia	
is202-so052	Organic food/ farming policy	Increase extent of OF	Increase competitiveness of organic agricultural system	Increased volumes	
is204-so052	Organic food/ farming policy	Increase extent of OF	Increase competitiveness of organic agricultural system	Decreased withdrawals from OF	
is205-so053	Organic food/ farming policy	Increase extent of OF	Increase consumer confidence in OF	Greater acceptance of price premia	
is212-so054	Organic food/ farming policy	Increase extent of OF	Increase OF market self-sufficiency (local)	Increased value adding at point of production	
is252-so066	Rural economic/ development policy	Economic development of rural areas	Alternative subsidy income following decoupling	Increased uptake of agri-environment schemes	
is253-so066	Rural economic/ development policy	Economic development of rural areas	Alternative subsidy income following decoupling	Increased farm diversification	
is255-so066	Rural economic/ development policy	Economic development of rural areas	Alternative subsidy income following decoupling	Decreased commodity production	
is270-so072	Rural economic/ development policy	Economic development of rural areas	Encourage efficient resource use	Increased use of innovative methods and systems	1257/1999 - 2.08
is275-so074	Rural economic/ development policy	Economic development of rural areas	Encourage modernisation of agricultural holdings	Increased diversification of traditional outbuilding usage	1257/1999 - Justification
is279-so075	Rural economic/ development policy	Economic development of rural areas	Encourage rural vibrancy	Increased number of innovative businesses	
is280-so076	Rural economic/ development policy	Economic development of rural areas	Encourage stable, transparent and responsive market structures	Increased stability of prices paid to farmers	
is295-so080	Rural economic/ development policy	Economic development of rural areas	Enhance market stability	Increased stability of prices received by farmers	1257/1999 - 1.00 ref. ToR; com(2002) 394 final; 1750/1999 ann8.0
is296-so080	Rural economic/ development policy	Economic development of rural areas	Enhance market stability	Increased stability of supply and demand relationship	1257/1999 - 1.00 ref. ToR; com(2002) 394 final; 1750/1999 ann8.0
is299-so081	Rural economic/ development policy	Economic development of rural areas	Enhance marketing structures	Increased profit margin for producers	1257/1999 - Justification
is313-so084	Rural economic/ development policy	Economic development of rural areas	Enhance the marketing of quality agricultural products	More direct marketing	1750/1999 ann8.0

is317-so085	Rural economic/ development policy	Economic development of rural areas	Improve consistency with other EU law and policy	Increased support for on farm processing facilities	
is325-so087	Rural economic/ development policy	Economic development of rural areas	Improve farm/business viability	Increased attendance at training courses	1257/1999 - Justification
is339-so090	Rural economic/ development policy	Economic development of rural areas	Improved marketing through encouragement of investment	More direct marketing	
is350-so094	Rural economic/ development policy	Economic development of rural areas	Increase market orientation, opportunities and efficiency	More mixed farming	1257/1999 - 1.00, 1257/1999 - 2.07, com (2000) 20 final, com (2002) 394 final; 1750/1999 ann8.0
is357-so096	Rural economic/ development policy	Economic development of rural areas	Increase number of processors/actors	Reduced policy support per actor	
is369-so099	Rural economic/ development policy	Economic development of rural areas	Maintain regional cultural/social heritage and resources	Increased training of traditional food and farming systems	
is376-so101	Rural economic/ development policy	Economic development of rural areas	Promote aid in transitional periods between schemes	No break in continuity of programmes	
is380-so102	Rural economic/ development policy	Economic development of rural areas	Promote appropriate and integrated development instruments	Greater use of appropriate indicators for evaluating schemes	1257/1999 - Justification
is383-so103	Rural economic/ development policy	Economic development of rural areas	Promote competitive and economically sustainable agricultural sector	Increased agricultural production	
is393-so106	Rural economic/ development policy	Economic development of rural areas	Promote good, best and innovative farming practice	Increased range of farming enterprises	1257/1999 - 2.07
is395-so106	Rural economic/ development policy	Economic development of rural areas	Promote good, best and innovative farming practice	Increased number of farm visits and exchanges	1257/1999 - 2.07
is401-so108	Rural economic/ development policy	Economic development of rural areas	Promote local production/ local consumption	Increased number of direct marketing outlets	1257/1999 - 1.00
is423-so113	Rural economic/ development policy	Economic development of rural areas	Protect and develop a diverse agri-food sector	Increased range of farm products	1257/1999 - 2.04
is424-so113	Rural economic/ development policy	Economic development of rural areas	Protect and develop a diverse agri-food sector	Higher levels of on-farm processing	1257/1999 - 2.04
is432-so115	Rural economic/ development policy	Economic development of rural areas	Rationalise or diversify farm and processing activities	Higher levels of on-farm processing	
is433-so115	Rural economic/ development policy	Economic development of rural areas	Rationalise or diversify farm and processing activities	Increased range of farm products	
is434-so115	Rural economic/ development policy	Economic development of rural areas	Rationalise or diversify farm and processing activities	Increased employment in on-farm processing	
is440-so117	Rural economic/ development policy	Economic development of rural areas	Reduce land abandonment/encourage continuation of agriculture	Higher levels of farming activity	1257/1999 - 2.05
is441-so117	Rural economic/ development policy	Economic development of rural areas	Reduce land abandonment/encourage continuation of agriculture	More land in production	1257/1999 - 2.05

is442-so117	Rural economic/ development policy	Economic development of rural areas	Reduce land abandonment/encourage continuation of agriculture	Greater innovation in use of marginal land for agriculture	1257/1999 - 2.05
is444-so117	Rural economic/ development policy	Economic development of rural areas	Reduce land abandonment/encourage continuation of agriculture	High take-up of agri-environment schemes	1257/1999 - 2.05

Diversification of rural economy

To what extent has the scheme contributed to the diversification of the rural economy (into non-agricultural activities)

Developed in response to apparent gap in criteria identified in a workshop

Fragmentation and other farm structure issues

To what extent has the scheme contributed to reducing fragmentation and address other farm structure issues seen as problematic

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is006-so002	Agricultural policy	Improved policy design and implementation	Encourage and support reparation	Reduce number of split holdings	1257/1999 - 2.06
is256-so067	Rural economic/ development policy	Economic development of rural areas	Arresting fragmentation of land	Fragmentation of land ceases	

Implementation costs (scheme)

What are the cost of administering and implementing the scheme

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is013-so004	Agricultural policy	Improved policy design and implementation	Improve evaluation and control	Increased enforcement powers	com(2000) 20 final
is022-so008	Agricultural policy	Improved policy design and implementation	Reduce bureaucracy	Fewer officials	
is023-so008	Agricultural policy	Improved policy design and implementation	Reduce bureaucracy	More efficient officials	
is024-so008	Agricultural policy	Improved policy design and implementation	Reduce bureaucracy	More efficient systems	
is156-so042	Organic food/ farming policy	Improve OF systems	Improve OF inspection and certification procedures	Consistent decisions across competent authorities / cert bodies	

Farm income					
To what extent has the scheme contributed to an increase in farm income					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is030-so012	Agricultural policy	Maintain farm incomes	Maintain farm incomes	No growth in farm incomes	
is031-so012	Agricultural policy	Maintain farm incomes	Maintain farm incomes	No fall in farm incomes	
is191-so049	Organic food/ farming policy	Increase extent of OF	Improve OF incomes	Reduction farming family dependency on second income	
is196-so050	Organic food/ farming policy	Increase extent of OF	Improve OF productivity	Change in on-farm net margins	
is276-so074	Rural economic/ development policy	Economic development of rural areas	Encourage modernisation of agricultural holdings	Increased labour use efficiency	1257/1999 - Justification
is344-so091	Rural economic/ development policy	Economic development of rural areas	Increase agricultural productivity	Increase in farm incomes	1257/1999 - 1.00 ref. ToR
is390-so105	Rural economic/ development policy	Economic development of rural areas	Promote equality / social justice	Decreased income differentials	1257/1999 - Justification
is439-so116	Rural economic/ development policy	Economic development of rural areas	Reduce average age of farmers and fall in farmer numbers	Improvement in farm incomes results in lowers hours worked on farm	
is507-so139	Social policy	Social and cultural development of rural areas	Improving quality of life	Improved incomes to farming families	
Employment					
To what extent has the scheme contributed to increased employment					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is032-so013	Agricultural policy	Market-oriented agriculture	Improve farm viability	Increase employment	
is410-so111	Rural economic/ development policy	Economic development of rural areas	Promote structural readjustment measures	Increased no of measures directed to create employment	
is411-so111	Rural economic/ development policy	Economic development of rural areas	Promote structural readjustment measures	Decline in unemployment	
is435-so115	Rural economic/ development policy	Economic development of rural areas	Rationalise or diversify farm and processing activities	Increased employment in diversified activities	

is446-so118	Rural economic/ development policy	Economic development of rural areas	Reducing pressure of urban expansion	More employment opportunities for a range of occupations in rural economies
is459-so121	Rural economic/ development policy	Economic development of rural areas	Risk reduction	Unemployment rates reduced
is488-so134	Social policy	Social and cultural development of rural areas	Address social decline	Reduced intervention activity
is493-so135	Social policy	Social and cultural development of rural areas	Encourage rural vibrancy	Decrease in unemployment
is494-so136	Social policy	Social and cultural development of rural areas	Encourage urban-rural migration	Increased employment in rural areas
is511-so139	Social policy	Social and cultural development of rural areas	Improving quality of life	Reduced unemployment in rural areas
is515-so140	Social policy	Social and cultural development of rural areas	Promote social cohesion	Decrease in unemployment

Uptake of regulated production systems

To what extent has the scheme contributed to the uptake of regulated production systems (e.g. organic, PDO, PGI, zero pesticide, other defined environmental/animal welfare/food quality systems (defined at national or EU level))

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is004-so001	Agricultural policy	Improve agricultural training and skills	Improve agricultural training and skills	Proven competency in livestock husbandry	1257/1999 - 2.03
is050-so017	Agricultural policy	Protection and recovery from natural disasters	Assist recovery	Increased speed of recovery to steady state	1750/1999 ann8.0
is066-so022	Agricultural policy	Sustainable use of agricultural resources	Promote sustainable development/food and farming systems	Increased uptake of OF	1257/1999 - 1.00; 1257/1999 - 2.08; 1257/1999 - 2.05; 1257/1999 - Justification, com(2000) 20 final; 1257/1999 - Justification, com(2000) 20 final
is115-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Decreased consumption of factory farmed product	
is155-so042	Organic food/ farming policy	Improve OF systems	Improve OF inspection and certification procedures	Increased certification of small-scale producers	
is165-so044	Organic food/ farming policy	Improve OF systems	Improve OF public good recognition	Increased consumption of OF produce	
is170-so045	Organic food/ farming policy	Improve OF systems	Improve OF standards	Reduced intervention activity	
is185-so048	Organic food/ farming policy	Increase extent of OF	Improve attitudes in agricultural industry towards OF	Increased in OF conversion rates	

is186-so048	Organic food/ farming policy	Increase extent of OF	Improve attitudes in agricultural industry towards OF	Increased uptake of OF techniques	
is203-so052	Organic food/ farming policy	Increase extent of OF	Increase competitiveness of organic agricultural system	Increased number of conversions to OF systems	
is224-so057	Organic food/ farming policy	Increase extent of OF	OF Risk reduction	Increase in conversion rate to OF	
is225-so057	Organic food/ farming policy	Increase extent of OF	OF Risk reduction	Increased conversion rates of late adopters	
is229-so058	Organic food/ farming policy	Increase extent of OF	Promotion of OF	Increased conversion rates	1257/1999 - Justification
is233-so059	Organic food/ farming policy	Increase extent of OF	Reduce barriers to OF conversion	Increased conversion rates	
is242-so062	Organic food/ farming policy	Increase extent of OF	Support access to OF for small landholders	Increased numbers of certified small land area producers	
is243-so063	Research policy	Support agricultural R&D	Developing new/ improved methods and practices	Increased efficiency of production in agricultural systems	
is248-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Increased uptake of organic farming practices	
is249-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Decreased use of agri-chemicals (including fertilisers)	
is332-so089	Rural economic/ development policy	Economic development of rural areas	Improve inspection systems	Increased compliance with environmental standards	
is333-so089	Rural economic/ development policy	Economic development of rural areas	Improve inspection systems	Increased compliance with production standards	
is396-so106	Rural economic/ development policy	Economic development of rural areas	Promote good, best and innovative farming practice	Higher levels of crop and livestock husbandry	
is417-so112	Rural economic/ development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Increased uptake of organic farming	
is425-so113	Rural economic/ development policy	Economic development of rural areas	Protect and develop a diverse agri-food sector	Increased uptake of organic farming	1257/1999 - 2.04
is427-so113	Rural economic/ development policy	Economic development of rural areas	Protect and develop a diverse agri-food sector	Increase in farm diversification	1257/1999 - 2.04
is516-so141	Trade policy	Harmonise trade policies and regulations	Harmonise policies and regulations to reduce costs and trade barriers	Increased application of polluter pays principle	

Food quality and safety

To what extent has the scheme contributed to an increase in food safety and quality

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is104-so031	Animal health/ welfare policy	Improve farm animal health and welfare	Improve food quality and safety	Increased nutritional quality of farm products	
is118-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased advertising expenditure on quality products	
is128-so036	Food/health policy	Develop quality/regional food culture	Develop quality/regional food culture	More farmers markets	
is131-so036	Food/health policy	Develop quality/regional food culture	Develop quality/regional food culture	More specialist food shops	
is132-so036	Food/health policy	Develop quality/regional food culture	Develop quality/regional food culture	More public procurement / institutional support for specialist regional produce	
is141-so039	Food/health policy	Improve public health	Improve food quality	Reduced incidence of diet related illness	1782/2003 0.00
is142-so039	Food/health policy	Improve public health	Improve food quality	Fewer product recalls	1782/2003 0.00
is145-so039	Food/health policy	Improve public health	Improve food quality	Reduce incidence of food poisoning	1782/2003 0.00
is146-so039	Food/health policy	Improve public health	Improve food quality	Fewer product recalls	1782/2003 0.00
is147-so039	Food/health policy	Improve public health	Improve food quality	Reduced pesticide residues	1782/2003 0.00
is153-so041	Food/health policy	Improve public health	Reduce food poverty/improve access/affordability	Reduction in demand for 'empty' foods	1257/1999 - 1.00 ref. ToR
is172-so045	Organic food/ farming policy	Improve OF systems	Improve OF standards	Reduce derogations in line with sector development	
is228-so058	Organic food/ farming policy	Increase extent of OF	Promotion of OF	Reduced intervention activity	1257/1999 - Justification
is232-so059	Organic food/ farming policy	Increase extent of OF	Reduce barriers to OF conversion	Greater adoption of OF across all enterprise types	
is237-so060	Organic food/ farming policy	Increase extent of OF	Reduce relative costs of OF production	Greater adoption of OF techniques	
is272-so073	Rural economic/ development policy	Economic development of rural areas	Encourage market reorientation	Changed product quality attributes	

is308-so083	Rural economic/development policy	Economic development of rural areas	Enhance responsiveness to market change	More quality goods available over longer season	
is310-so084	Rural economic/development policy	Economic development of rural areas	Enhance the marketing of quality agricultural products	More retail outlets for quality goods	1750/1999 ann8.0
is312-so084	Rural economic/development policy	Economic development of rural areas	Enhance the marketing of quality agricultural products	Increased number of Small & Medium size Enterprises processing/marketing quality goods	1750/1999 ann8.0
is319-so086	Rural economic/development policy	Economic development of rural areas	Improve consumer information	Greater demand for quality foods	
is331-so088	Rural economic/development policy	Economic development of rural areas	Improve food quality and increase market share of whole food	More fruit and veg sold to consumer	
is342-so090	Rural economic/development policy	Economic development of rural areas	Improved marketing through encouragement of investment	Increase in quality processed foods	
is345-so092	Rural economic/development policy	Economic development of rural areas	Increase confidence/knowledge of actors and consumers to validate quality products	Improved acceptance (promotion) of quality food systems by farm advisors	
is347-so092	Rural economic/development policy	Economic development of rural areas	Increase confidence/knowledge of actors and consumers to validate quality products	Increased recognition of quality labels	
is348-so092	Rural economic/development policy	Economic development of rural areas	Increase confidence/knowledge of actors and consumers to validate quality products	Increased willingness to pay premiums for 'quality' products	
is351-so094	Rural economic/development policy	Economic development of rural areas	Increase market orientation, opportunities and efficiency	More smaller retailers supplying quality goods	1257/1999 - 1.00, 1257/1999 - 2.07, com(2000) 20 final, com(2002) 394 final; 1750/1999 ann8.0
is430-so114	Rural economic/development policy	Economic development of rural areas	Protect rural/cultural heritage	Increased interest in traditional crafts & skills	

GM traceability

To what extent has the scheme contributed to the differentiation of genetically modified products from non-genetically modified products at all points in the supply chain

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is077-so024	Agricultural policy	Sustainable use of agricultural resources	Protect and improve genetic resources/diversity	No transgenic contamination	1257/1999 - Justification; 1257/1999 - 2.06
is136-so038	Food/health policy	GMO co-existence	GMO co-existence	Increased separation and identification of all GM produce	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com(2002) 394 final
is137-so038	Food/health policy	GMO co-existence	GMO co-existence	Increased traceability of all food products	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com(2002) 394 final
is138-so038	Food/health policy	GMO co-existence	GMO co-existence	Increased traceability of all non-food products	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com(2002) 394 final

Animal welfare

To what extent has the scheme contributed to an increase in animal health and welfare

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is100-so030	Animal health/ welfare policy	Improve farm animal health and welfare	Improve animal production systems	Reduced suffering of farm animals	1257/1999 - 2.0; com(2002) 394 final; 1750/1999 ann8.0; 1257/1999 - 2.01
is101-so030	Animal health/ welfare policy	Improve farm animal health and welfare	Improve animal production systems	Reduced disease incidence	1257/1999 - 2.0; com(2002) 394 final; 1750/1999 ann8.0; 1257/1999 - 2.01
is102-so030	Animal health/ welfare policy	Improve farm animal health and welfare	Improve animal production systems	Increased numbers of animals meeting farm animal welfare council 5 freedoms	1257/1999 - 2.0; com(2002) 394 final; 1750/1999 ann8.0; 1257/1999 - 2.01
is103-so030	Animal health/ welfare policy	Improve farm animal health and welfare	Improve animal production systems	Reduced incidence of zoonoses	1257/1999 - 2.0; com(2002) 394 final; 1750/1999 ann8.0; 1257/1999 - 2.01
is104-so031	Animal health/ welfare policy	Improve farm animal health and welfare	Improve food quality and safety	Increased nutritional quality of farm products	
is105-so031	Animal health/ welfare policy	Improve farm animal health and welfare	Improve food quality and safety	Reduce incidence of contamination by veterinary residues	
is106-so031	Animal health/ welfare policy	Improve farm animal health and welfare	Improve food quality and safety	Reduced incidence of zoonoses	
is107-so031	Animal health/ welfare policy	Improve farm animal health and welfare	Improve food quality and safety	Reduce incidence of contamination by GM feed	
is108-so032	Animal health/ welfare policy	Improve farm animal health and welfare	Improve slaughter house welfare	Improved small animal killing process	
is109-so032	Animal health/ welfare policy	Improve farm animal health and welfare	Improve slaughter house welfare	Reduced waiting times for slaughter	
is110-so033	Animal health/ welfare policy	Improve farm animal health and welfare	Reduce live animal transport	More species appropriate management of transported animals	
is111-so033	Animal health/ welfare policy	Improve farm animal health and welfare	Reduce live animal transport	Reduction in live animal transport miles	
is112-so033	Animal health/ welfare policy	Improve farm animal health and welfare	Reduce live animal transport	Improved bio-security	
is114-so033	Animal health/ welfare policy	Improve farm animal health and welfare	Reduce live animal transport	More transport of carcasses	
is371-so100	Rural economic/ development policy	Economic development of rural areas	Modernisation of farm holdings	Improved animal welfare	1257/1999 - 2.07
is404-so108	Rural economic/ development policy	Economic development of rural areas	Promote local production/ local consumption	Increased number of farms producing for local markets	1257/1999 - 1.00

Occupational Health impacts					
To what extent has the scheme contributed to an improvement in occupational health and safety					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is461-so123	Social policy	Improved working place health and safety	Enhance occupational health	Reduced accident rates	
Public Health impacts					
To what extent has the scheme contributed to an improvement in public health					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is328-so088	Rural economic/ development policy	Economic development of rural areas	Improve food quality and increase market share of whole food	Improvement in personal health	
is143-so039	Food/health policy	Improve public health	Improve food quality	Increase in infant viability	1782/2003 0.00
is144-so039	Food/health policy	Improve public health	Improve food quality	Reduced health care expenditure	1782/2003 0.00
is140-so039	Food/health policy	Improve public health	Improve food quality	Reduced health care expenditure	1782/2003 0.00
is329-so088	Rural economic/ development policy	Economic development of rural areas	Improve food quality and increase market share of whole food	Reduced health care costs	
Agricultural demographic					
To what extent has the scheme contributed to changes in the farming population in terms of age and gender (with particular reference to young entrants, early retirement and women in the workforce)					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is174-so046	Organic food/ farming policy	Improve OF systems	Increase OF research and information dissemination	Increased funding of OF extension services	
is192-so049	Organic food/ farming policy	Increase extent of OF	Improve OF incomes	Retention of viable family farms	
is230-so058	Organic food/ farming policy	Increase extent of OF	Promotion of OF	Increased number of new entrants	1257/1999 - Justification
is258-so068	Rural economic/ development policy	Economic development of rural areas	Economic development of rural areas	Increased rural incomes	

is260-so069	Rural economic/development policy	Economic development of rural areas	Encourage and support young/new farmers	Increased numbers of young people entering farming	
is261-so069	Rural economic/development policy	Economic development of rural areas	Encourage and support young/new farmers	Reduced intervention activity	1257/1999 - Justification; com(2000) 20 final; 1257/1999 - 2.02; 1750/1999 ann8.0
is262-so069	Rural economic/development policy	Economic development of rural areas	Encourage and support young/new farmers	Increased membership of Young Farmers Clubs.	
is271-so073	Rural economic/development policy	Economic development of rural areas	Encourage market reorientation	Increased number of customer surveys to identify product requirements	
is285-so077	Rural economic/development policy	Economic development of rural areas	Encourage the development of farm relief and farm management services;	Increased farm labour costs	
is304-so082	Rural economic/development policy	Economic development of rural areas	Enhance monitoring and evaluation of support	Increased bureaucracy	
is305-so082	Rural economic/development policy	Economic development of rural areas	Enhance monitoring and evaluation of support	Reduced support to beneficiaries	
is307-so083	Rural economic/development policy	Economic development of rural areas	Enhance responsiveness to market change	Increased producer/processor confidence	
is322-so087	Rural economic/development policy	Economic development of rural areas	Improve farm/business viability	Increased on farm employment	1257/1999 - Justification
is323-so087	Rural economic/development policy	Economic development of rural areas	Improve farm/business viability	Improve farmer confidence	1257/1999 - Justification
is327-so087	Rural economic/development policy	Economic development of rural areas	Improve farm/business viability	Increase in family farming	1257/1999 - Justification
is352-so094	Rural economic/development policy	Economic development of rural areas	Increase market orientation, opportunities and efficiency	Greater reliance on co-operatives	1257/1999 - 1.00, 1257/1999 - 2.07, com(2000) 20 final, com(2002) 394 final; 1750/1999 ann8.0
is362-so098	Rural economic/development policy	Economic development of rural areas	Increase rural and agricultural employment	Increased rural incomes	1257/1999 - 1.00; 1257/1999 - Justification; 1782/2003 1.02
is378-so102	Rural economic/development policy	Economic development of rural areas	Promote appropriate and integrated development instruments	Greater integration of development programmes	1257/1999 - Justification
is379-so102	Rural economic/development policy	Economic development of rural areas	Promote appropriate and integrated development instruments	Improved communication & co-operation between programmes	com(2002) 394 final
is382-so103	Rural economic/development policy	Economic development of rural areas	Promote competitive and economically sustainable agricultural sector	Growth in size of agriculture sector in rural economy	
is386-so103	Rural economic/development policy	Economic development of rural areas	Promote competitive and economically sustainable agricultural sector	Growth of agriculture's external economies	
is391-so105	Rural economic/development policy	Economic development of rural areas	Promote equality / social justice	More socially balanced communities	1257/1999 - Justification; 1257/1999 - 1.00 ref. ToR
is397-so106	Rural economic/development policy	Economic development of rural areas	Promote good, best and innovative farming practice	Improved extension services	1257/1999 - 1.00

is399-so107	Rural economic/development policy	Economic development of rural areas	Promote income diversification	Greater variation in employment market	
is400-so107	Rural economic/development policy	Economic development of rural areas	Promote income diversification	More balance in business structures (self employed/partnership/Ltd etc)	
is436-so116	Rural economic/development policy	Economic development of rural areas	Reduce average age of farmers and fall in farmer numbers	More new entrants to farming	
is438-so116	Rural economic/development policy	Economic development of rural areas	Reduce average age of farmers and fall in farmer numbers	More farmers retiring at normal retirement age	
is445-so118	Rural economic/development policy	Economic development of rural areas	Reducing pressure of urban expansion	More young people stay in rural areas	
is452-so119	Rural economic/development policy	Economic development of rural areas	Restoration of agricultural potential	Revival of agricultural markets & shows	
is456-so120	Rural economic/development policy	Economic development of rural areas	Review and discontinue support as appropriate	Support programmes effective & of short duration	
is480-so133	Social policy	Social and cultural development of rural areas	Address depopulation	Rural Depopulation ceases	1257/1999 - Justification
is484-so134	Social policy	Social and cultural development of rural areas	Address social decline	Rural crime rates reduce	1257/1999 - Justification
is489-so135	Social policy	Social and cultural development of rural areas	Encourage rural vibrancy	Higher numbers of young people in rural populations	

Rural community well-being

To what extent has the scheme contributed to an improvement in rural community well-being

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is016-so005	Agricultural policy	Improved policy design and implementation	Improve policy integration	More cross-checks and communication between policy departments	
is019-so007	Agricultural policy	Improved policy design and implementation	Promote and address concerns of developing countries	Increased food security in developing nations	com(2000) 20 final
is038-so014	Agricultural policy	Market-oriented agriculture	Reduce surpluses	Reduced surpluses	
is055-so018	Agricultural policy	Protection and recovery from natural disasters	Risk reduction	Adoption of preventative farming practices	com(2002) 394 final
is120-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased availability of quality labelled products	
is138-so038	Food/health policy	GMO co-existence	GMO co-existence	Increased traceability of all non-food products	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com (2002) 394 final

is159-so043	Organic food/ farming policy	Improve OF systems	Improve OF institutional capacity	Increased institutional capacity to manage increased number of producers	
is160-so043	Organic food/ farming policy	Improve OF systems	Improve OF institutional capacity	Increased institutional capacity to manage change	
is161-so043	Organic food/ farming policy	Improve OF systems	Improve OF institutional capacity	Increase EU capacity to respond appropriately to feedback and make appropriate (derogation) decisions	
is162-so043	Organic food/ farming policy	Improve OF systems	Improve OF institutional capacity	Increase capacity to extend contact with stakeholders	
is182-so048	Organic food/ farming policy	Increase extent of OF	Improve attitudes in agricultural industry towards OF	Reduction in adverse editorial in CF press	
is183-so048	Organic food/ farming policy	Increase extent of OF	Improve attitudes in agricultural industry towards OF	Greater representation of OF on farmer bodies (unions)	
is200-so052	Organic food/ farming policy	Increase extent of OF	Increase competitiveness of organic farming in market place	Improved continuity of supply	
is201-so052	Organic food/ farming policy	Increase extent of OF	Increase competitiveness of organic farming in market place	Reduced effects of seasonality	
is207-so053	Organic food/ farming policy	Increase extent of OF	Increase consumer confidence in OF	Greater consumer understanding of wider benefits of OF	
is208-so053	Organic food/ farming policy	Increase extent of OF	Increase consumer confidence in OF	Improved farmer PR	
is217-so055	Organic food/ farming policy	Increase extent of OF	Increase organic land area	Reduction in farmer suicide	
is219-so056	Organic food/ farming policy	Increase extent of OF	Increase supply of OF products (range)	Greater opportunity to adopt organic lifestyle	
is221-so056	Organic food/ farming policy	Increase extent of OF	Increase supply of OF products (range)	Increased levels of organic trade	
is227-so057	Organic food/ farming policy	Increase extent of OF	OF Risk reduction	Greater credit availability	
is231-so058	Organic food/ farming policy	Increase extent of OF	Promotion of OF	Wider understanding of OF benefits	1257/1999 - Justification
is235-so060	Organic food/ farming policy	Increase extent of OF	Reduce relative costs of OF production	Reduce or elimination of price premia	
is251-so065	Research policy	Support agricultural R&D	More appropriate role for science in public decision making	More scientific institutions consulted in the process of public decision making	
is267-so071	Rural economic/ development policy	Economic development of rural areas	Encourage efficient allocation of allowances (social support)	Increased efficiency in allowance allocation	

is283-so077	Rural economic/development policy	Economic development of rural areas	Encourage the development of farm relief and farm management services;	Fewer farmers suffering from stress and depression	
is298-so081	Rural economic/development policy	Economic development of rural areas	Enhance marketing structures	Increased support for promotion	1257/1999 - Justification
is302-so082	Rural economic/development policy	Economic development of rural areas	Enhance monitoring and evaluation of support	Improved data on policy effects	
is303-so082	Rural economic/development policy	Economic development of rural areas	Enhance monitoring and evaluation of support	Improved market data	
is306-so083	Rural economic/development policy	Economic development of rural areas	Enhance responsiveness to market change	Smaller price fluctuations	
is346-so092	Rural economic/development policy	Economic development of rural areas	Increase confidence/knowledge of actors and consumers to validate quality products	Improved promotion of marketing possibilities by farm advisors	
is354-so096	Rural economic/development policy	Economic development of rural areas	Increase number of processors/actors	Greater recognition of rural issues	
is356-so096	Rural economic/development policy	Economic development of rural areas	Increase number of processors/actors	Improved delivery of policy	
is363-so098	Rural economic/development policy	Economic development of rural areas	Increase rural and agricultural employment	Improved welfare and services	1257/1999 - 1.00; 1257/1999 - Justification; 1782/2003 1.02
is365-so099	Rural economic/development policy	Economic development of rural areas	Maintain regional cultural/social heritage and resources	Increased awareness of rural socio cultural conditions	
is377-so101	Rural economic/development policy	Economic development of rural areas	Promote aid in transitional periods between schemes	Schemes not subject to 'stop/start'	
is381-so103	Rural economic/development policy	Economic development of rural areas	Promote competitive and economically sustainable agricultural sector	Effective benchmarking for all crop and livestock enterprises	
is389-so104	Rural economic/development policy	Economic development of rural areas	Promote economic development	Increased number of business start-ups	
is394-so106	Rural economic/development policy	Economic development of rural areas	Promote good, best and innovative farming practice	Increase in number of prize and award winning enterprises	1257/1999 - 2.06
is407-so110	Rural economic/development policy	Economic development of rural areas	Promote rural economic cohesion	Maintenance & development of regional business & administrative infrastructure	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com(2002) 394 final; 1782/2003 1.02
is408-so110	Rural economic/development policy	Economic development of rural areas	Promote rural economic cohesion	Development of external economies for key industries	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com(2002) 394 final; 1782/2003 1.02
is415-so112	Rural economic/development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Increased activity to promote public good	
is426-so113	Rural economic/development policy	Economic development of rural areas	Protect and develop a diverse agri-food sector	Increased rate of farm business start-up	1257/1999 - 2.04

is450-so119	Rural economic/development policy	Economic development of rural areas	Restoration of agricultural potential	Agriculture increasingly important in rural economy (% of GDP)	
is453-so119	Rural economic/development policy	Economic development of rural areas	Restoration of agricultural potential	Farmers have greater status in rural community	
is455-so120	Rural economic/development policy	Economic development of rural areas	Review and discontinue support as appropriate	Support directed to key development areas	
is457-so120	Rural economic/development policy	Economic development of rural areas	Review and discontinue support as appropriate	Reduced dependency on support programmes	
is458-so121	Rural economic/development policy	Economic development of rural areas	Risk reduction	Reduced business failures	
is460-so122	Rural economic/development policy	Economic development of rural areas	Sustain social fabric	Well-being index of rural population increased	
is462-so124	Social policy	Improved working place health and safety	Improved working environment	Reduced pollution (noise)	
is464-so124	Social policy	Improved working place health and safety	Improved working environment	Increased variety of tasks	
is467-so127	Social policy	Promote social justice/equality	Encourage early retirement	Reduced average age of farmers	
is468-so127	Social policy	Promote social justice/equality	Encourage early retirement	Increased new entrants to agriculture	
is476-so131	Social policy	Protect and develop a diverse agri-food sector	Make agriculture a respected profession and valued sector	Improved confidence by farmers	
is481-so133	Social policy	Social and cultural development of rural areas	Address depopulation	Numbers of holiday homes decreases	1257/1999 - Justification
is483-so133	Social policy	Social and cultural development of rural areas	Address depopulation	Rural demography matches national	1257/1999 - Justification
is485-so134	Social policy	Social and cultural development of rural areas	Address social decline	Increase in community activities	1257/1999 - Justification
is486-so134	Social policy	Social and cultural development of rural areas	Address social decline	Increase in well-being	1257/1999 - Justification
is490-so135	Social policy	Social and cultural development of rural areas	Encourage rural vibrancy	Increase in community activities	
is491-so135	Social policy	Social and cultural development of rural areas	Encourage rural vibrancy	Increase in well-being	
is503-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Free access to broadband for greater numbers of people	
is505-so138	Social policy	Social and cultural development of rural areas	Enhance rural social and cultural development	Increased cultural activities	com(2000) 20 final, 1750/1999 ann8.0., 1257/1999 - Justification

is506-so139	Social policy	Social and cultural development of rural areas	Improving quality of life	Increased well-being index in greater proportion of rural population	
is509-so139	Social policy	Social and cultural development of rural areas	Improving quality of life	Reduced working hours	
is510-so139	Social policy	Social and cultural development of rural areas	Improving quality of life	Reduced crime rates	
is512-so140	Social policy	Social and cultural development of rural areas	Promote social cohesion	Reduced intervention activity	1257/1999 - Justification; com(2002) 394 final
is513-so140	Social policy	Social and cultural development of rural areas	Promote social cohesion	Increase in well-being	1257/1999 - Justification; com(2002) 394 final
is514-so140	Social policy	Social and cultural development of rural areas	Promote social cohesion	Increased interactions between elderly and youth	1257/1999 - Justification; com(2002) 394 final

Knowledge and skills development

To what extent has the scheme contributed to the knowledge and skills base of the agricultural community and increase in research in to rural and agricultural issues

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is115-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Decreased consumption of factory farmed product	
is116-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased understanding of food - health relationships	
is117-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased willingness to pay premiums for 'quality' products	
is118-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased advertising expenditure on quality products	
is119-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased expenditure on local products	
is120-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased availability of quality labelled products	
is121-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Reduced market demand for highly processed products	
is122-so035	Education policy	Increase public understanding of agriculture and food issues	Improving school education on food and agriculture	Increased number of farm visits by school children	
is123-so035	Education policy	Increase public understanding of agriculture and food issues	Improving school education on food and agriculture	More fruit sold in schools	
is124-so035	Education policy	Increase public understanding of agriculture and food issues	Improving school education on food and agriculture	Better food choices in schools by school children	

is125-so035	Education policy	Increase public understanding of agriculture and food issues	Improving school education on food and agriculture	Increased numbers of school gardens
is126-so035	Education policy	Increase public understanding of agriculture and food issues	Improving school education on food and agriculture	increased understanding of food production
is243-so063	Research policy	Support agricultural R&D	Developing new/ improved methods and practices	Increased efficiency of production in agricultural systems
is244-so063	Research policy	Support agricultural R&D	Developing new/ improved methods and practices	More innovative products
is245-so063	Research policy	Support agricultural R&D	Developing new/ improved methods and practices	Decreased negative impacts of farming practices on the environment
is246-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Reduction in nutrient losses from farm systems
is247-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Improved nutrient and organic matter status of soils
is248-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Increased uptake of organic farming practices
is249-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Decreased use of agri-chemicals (including fertilisers)
is250-so065	Research policy	Support agricultural R&D	More appropriate role for science in public decision making	Public decision making increasingly based on sound scientific evidence
is251-so065	Research policy	Support agricultural R&D	More appropriate role for science in public decision making	More scientific institutions consulted in the process of public decision making

Social justice and equality (gender, intergenerational, international)

To what extent has the scheme contributed to an increase in social justice and equality in terms of gender, intergenerational and international equality, this also includes distribution of profit in the supply chain

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is282-so076	Rural economic/ development policy	Economic development of rural areas	Encourage stable, transparent and responsive market structures	Fairer allocation of profit along the supply chain	
is467-so127	Social policy	Promote social justice/equality	Encourage early retirement	Reduced average age of farmers	
is468-so127	Social policy	Promote social justice/equality	Encourage early retirement	Increased new entrants to agriculture	
is469-so128	Social policy	Promote social justice/equality	Encourage gender equality	Increased numbers of women in agriculture	1257/1999 - 1.00; 1257/1999 - Justification

is470-so128	Social policy	Promote social justice/equality	Encourage gender equality	Increased numbers of women running businesses	1257/1999 - 1.00; 1257/1999 - Justification
is471-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Improved housing conditions	1257/1999 - Justification
is471-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Improved housing conditions	1257/1999 - Justification
is472-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Reduced travelling to work times	1257/1999 - Justification
is473-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Reduced distance to schools	1257/1999 - Justification
is474-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Reduced distance to shops/access to shops	1257/1999 - Justification

Rural infrastructure (including transport, housing)

To what extent has the scheme contributed to the preservation and development of rural infrastructure

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is001-so001	Agricultural policy	Improve agricultural training and skills	Improve agricultural training and skills	More appropriate environmental training	1257/1999 - 2.03
is009-so003	Agricultural policy	Improved policy design and implementation	Encourage decentralisation of responsibilities (EU to member state)	Reduction in blanket prescriptions in agri / rural dev policy	com(2000) 20 final
is025-so009	Agricultural policy	Improved policy design and implementation	Reduce costs of agricultural policy	Less expenditure on ag. policy	
is052-so018	Agricultural policy	Protection and recovery from natural disasters	Risk reduction	Reduced occurrence and severity of events	com(2002) 394 final
is168-so044	Organic food/ farming policy	Improve OF systems	Improve OF public good recognition	Wider documentation and recognition of other impacts (rural dev, landscape, culture, sustainable dev)	
is193-so049	Organic food/ farming policy	Increase extent of OF	Improve OF incomes	Increased spending on public goods	
is244-so063	Research policy	Support agricultural R&D	Developing new/ improved methods and practices	More innovative products	
is259-so068	Rural economic/ development policy	Economic development of rural areas	Economic development of rural areas	Increased standard of living in rural areas	
is265-so070	Rural economic/ development policy	Economic development of rural areas	Encourage community support for sustainable rural development	Increased rural tourism	1257/1999 - Justification
is277-so075	Rural economic/ development policy	Economic development of rural areas	Encourage rural vibrancy	Increased investment in rural areas	

is286-so078	Rural economic/development policy	Economic development of rural areas	Encourage tourism and craft activities	Increased diversification by farmers into tourism and craft activities	1750/1999 ann8.0
is287-so078	Rural economic/development policy	Economic development of rural areas	Encourage tourism and craft activities	Increased numbers of visitors to rural areas	1750/1999 ann8.0
is288-so078	Rural economic/development policy	Economic development of rural areas	Encourage tourism and craft activities	Increased spending in rural areas	1750/1999 ann8.0
is289-so078	Rural economic/development policy	Economic development of rural areas	Encourage tourism and craft activities	Increased investment in tourism infrastructure	1750/1999 ann8.0
is290-so078	Rural economic/development policy	Economic development of rural areas	Encourage tourism and craft activities	Increased number of tourism and craft businesses in rural areas	1750/1999 ann8.0
is291-so079	Rural economic/development policy	Economic development of rural areas	Enhance agricultural and farm infrastructure	Improved information and communication networks	
is292-so079	Rural economic/development policy	Economic development of rural areas	Enhance agricultural and farm infrastructure	Increases in the number of facilitated farmer discussion groups	
is368-so099	Rural economic/development policy	Economic development of rural areas	Maintain regional cultural/social heritage and resources	Increased awareness of regional foods	
is370-so099	Rural economic/development policy	Economic development of rural areas	Maintain regional cultural/social heritage and resources	Increased traditional varieties	
is392-so105	Rural economic/development policy	Economic development of rural areas	Promote equality / social justice	Increased access to housing market	1257/1999 - 1.00 ref. ToR
is413-so111	Rural economic/development policy	Economic development of rural areas	Promote structural readjustment measures	Improvement in local transport & communications networks	1257/1999 - 1.00; com(2002) 394 final; 1257/1999 - Justification
is414-so111	Rural economic/development policy	Economic development of rural areas	Promote structural readjustment measures	Increased access to housing market	1257/1999 - 1.00; com(2002) 394 final; 1257/1999 - Justification
is418-so112	Rural economic/development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Increase in sustainable tourism	
is422-so112	Rural economic/development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Improved public transport systems	
is428-so114	Rural economic/development policy	Economic development of rural areas	Protect rural/cultural heritage	Increase in sustainable tourism	
is473-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Reduced distance to schools	1257/1999 - Justification
is474-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Reduced distance to shops/access to shops	1257/1999 - Justification
is482-so133	Social policy	Social and cultural development of rural areas	Address depopulation	Reduced intervention activity	1257/1999 - Justification
is487-so134	Social policy	Social and cultural development of rural areas	Address social decline	Increase in investment in homes	1257/1999 - Justification

is492-so135	Social policy	Social and cultural development of rural areas	Encourage rural vibrancy	Increase in investment in homes
is496-so136	Social policy	Social and cultural development of rural areas	Encourage urban-rural migration	Increase in rural facilities
is497-so136	Social policy	Social and cultural development of rural areas	Encourage urban-rural migration	Increase in rural public transport facilities
is499-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Reduced distance to schools
is501-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Increased free transport to nearest schools for all school children
is502-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Increase in rural facilities
is504-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Increase in rural public transport facilities
is519-so142	Transport policy	Sustainable transport	Reduce food miles/limit traffic growth	Increased free transport to nearest schools for all school children
is520-so142	Transport policy	Sustainable transport	Reduce food miles/limit traffic growth	Improved public transport for travelling to work
is521-so142	Transport policy	Sustainable transport	Reduce food miles/limit traffic growth	Reduced distance to schools

Local marketing, processing and consumption

To what extent has the scheme contributed to an increase in local processing, marketing and consumption of agricultural products

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is034-so013	Agricultural policy	Market-oriented agriculture	Improve farm viability	Increased contribution to local economy	1257/1999 - Justification
is039-so014	Agricultural policy	Market-oriented agriculture	Reduce surpluses	Reduced intervention activity	
is119-so034	Education policy	Increase public understanding of agriculture and food issues	Consumer promotion and awareness raising	Increased expenditure on local products	
is127-so036	Food/health policy	Develop quality/regional food culture	Develop quality/regional food culture	Increased purchases of local produce	
is189-so049	Organic food/ farming policy	Increase extent of OF	Improve OF incomes	Increased contribution to local economy	
is197-so050	Organic food/ farming policy	Increase extent of OF	Improve OF productivity	Reduction of imported OF food	

is264-so070	Rural economic/development policy	Economic development of rural areas	Encourage community support for sustainable rural development	Increased purchasing of local produce	1257/1999 - Justification
is266-so070	Rural economic/development policy	Economic development of rural areas	Encourage community support for sustainable rural development	Increased local food procurement initiatives for public bodies (e.g. local hospitals)	1257/1999 - Justification
is273-so073	Rural economic/development policy	Economic development of rural areas	Encourage market reorientation	Increased direct supply contracts between farmers and retailers	
is293-so079	Rural economic/development policy	Economic development of rural areas	Enhance agricultural and farm infrastructure	Increased machinery sharing/machinery rings	
is321-so086	Rural economic/development policy	Economic development of rural areas	Improve consumer information	Increased purchasing of local foods	
is341-so090	Rural economic/development policy	Economic development of rural areas	Improved marketing through encouragement of investment	Increase in local processed foods	
is343-so091	Rural economic/development policy	Economic development of rural areas	Increase agricultural productivity	Greater home produced food	1257/1999 - 1.00 ref. ToR
is402-so108	Rural economic/development policy	Economic development of rural areas	Promote local production/ local consumption	Greater range of local products available	1257/1999 - 1.00
is409-so110	Rural economic/development policy	Economic development of rural areas	Promote rural economic cohesion	Development of local markets linked to local production	1257/1999 - Justification; 1257/1999 - 2.08; 1782/2003 1.02; com(2002) 394 final; 1782/2003 1.02
is412-so111	Rural economic/development policy	Economic development of rural areas	Promote structural readjustment measures	Greater levels of economic activity for all groups	1257/1999 - 1.00; com(2002) 394 final; 1257/1999 - Justification
is429-so114	Rural economic/development policy	Economic development of rural areas	Protect rural/cultural heritage	Increase no of local cultural festivals	
is454-so119	Rural economic/development policy	Economic development of rural areas	Restoration of agricultural potential	Wider range of key commodities produced locally	
is500-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Increased access to shops or access to goods (home deliveries)	

Energy use

To what extent has the scheme contributed to the reduction in fossil fuels and/or increased the use of renewable and locally produced energy

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is020-so007	Agricultural policy	Improved policy design and implementation	Promote and address concerns of developing countries	Increased processing of primary product in developing countries	com(2000) 20 final
is056-so019	Agricultural policy	Sustainable use of agricultural resources	Encourage better use of bi/waste products	Reduced bi/waste products to landfill	

is059-so020	Agricultural policy	Sustainable use of agricultural resources	Energy conservation	Reduced use of fossil fuel energy	
is061-so020	Agricultural policy	Sustainable use of agricultural resources	Energy conservation	Reduced expenditure on fuels on farms	
is063-so021	Agricultural policy	Sustainable use of agricultural resources	Promote renewable energy	Reduced use of fossil fuel energy	
is065-so021	Agricultural policy	Sustainable use of agricultural resources	Promote renewable energy	Reduced intervention activity	
is088-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Reduced expenditure on removing pollutants	com(2000) 20 final; 1750/1999 ann8.0
is152-so041	Food/health policy	Improve public health	Reduce food poverty/improve access/affordability	Reduction in distance to fresh food and vegetables	1257/1999 - 1.00 ref. ToR
is239-so061	Organic food/ farming policy	Increase extent of OF	Reduce costs of processing and distribution of OF	Increased centralisation of distribution	
is268-so072	Rural economic/ development policy	Economic development of rural areas	Encourage efficient resource use	Fewer resources wasted/lost	1257/1999 - 2.08
is358-so097	Rural economic/ development policy	Economic development of rural areas	Increase production efficiency	Reduced food miles (less expenditure) on primary and processed goods	
is360-so097	Rural economic/ development policy	Economic development of rural areas	Increase production efficiency	Reduced energy use	1257/1999 - 2.01
is361-so097	Rural economic/ development policy	Economic development of rural areas	Increase production efficiency	Less waste	1257/1999 - 2.01
is374-so100	Rural economic/ development policy	Economic development of rural areas	Modernisation of farm holdings	Improved energy efficiency	1257/1999 - 2.07
is416-so112	Rural economic/ development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Increased numbers of recycling centres	
is419-so112	Rural economic/ development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Increased production and use of renewable energy	
is420-so112	Rural economic/ development policy	Economic development of rural areas	Promote sustainable development/food and farming systems	Decrease in food miles	
is472-so129	Social policy	Promote social justice/equality	Fair living conditions for farm families	Reduced travelling to work times	1257/1999 - Justification
is498-so137	Social policy	Social and cultural development of rural areas	Enhance basic services for the rural economy and population;	Reduced travelling to work times	

Control of climate change

To what extent has the scheme contributed to a reduction in the net release of potential climate altering gases

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is068-so022	Agricultural policy	Sustainable use of agricultural resources	Promote sustainable development/food and farming systems	Adapting farming systems to climate change	1257/1999 - 1.00; 1257/1999 - 2.08; 1257/1999 - 2.05; 1257/1999 - Justification, com(2000) 20 final; 1257/1999 - Justification, com(2000) 20 final
Control of pollutants					
To what extent has the scheme contributed to the reduction in the release of environmentally harmful substances					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is085-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Reduced diffuse pollution	com(2000) 20 final; 1750/1999 ann8.0
is086-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Reduced point pollution	com(2000) 20 final; 1750/1999 ann8.0
is223-so057	Organic food/ farming policy	Increase extent of OF	OF Risk reduction	Reversion to conventional reduced	
Natural resource conservation					
To what extent has the scheme contributed to the conservation of natural resources, including soil, water and other natural resources					
ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is040-so015	Agricultural policy	Promote integration of forestry/afforestation	Maintain and improve Ecological Sustainable Dev of forests for multiple objectives	Less downstream flooding	com(2000) 20 final; 1257/1999 - 2.08
is041-so015	Agricultural policy	Promote integration of forestry/afforestation	Maintain and improve Ecological Sustainable Dev of forests for multiple objectives	Less erosion	com(2000) 20 final; 1257/1999 - 2.08
is051-so017	Agricultural policy	Protection and recovery from natural disasters	Assist recovery	Increased use of bio-remediation	1750/1999 ann8.0
is058-so019	Agricultural policy	Sustainable use of agricultural resources	Encourage better use of bi/waste products	Increased development of compost systems	
is060-so020	Agricultural policy	Sustainable use of agricultural resources	Energy conservation	Reduction in use of N fertiliser	
is069-so022	Agricultural policy	Sustainable use of agricultural resources	Promote sustainable development/food and farming systems	Use of appropriate crop varieties and livestock breeds	1257/1999 - 1.00; 1257/1999 - 2.08; 1257/1999 - 2.05; 1257/1999 - Justification, com(2000) 20 final; 1257/1999 - Justification, com(2000) 20 final

is079-so025	Agricultural policy	Sustainable use of agricultural resources	Protect and improve (efficiency of use of) mineral resources	Reduced intervention activity	
is080-so026	Agricultural policy	Sustainable use of agricultural resources	Protect and improve soil resources	No mining of soil mineral resources	1257/1999 & GAEP
is082-so026	Agricultural policy	Sustainable use of agricultural resources	Protect and improve soil resources	Reduced water sediment loading	1257/1999 & GAEP
is083-so026	Agricultural policy	Sustainable use of agricultural resources	Protect and improve soil resources	Improved efficiency in nutrient cycling	1257/1999 & GAEP
is087-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Improved water-holding capacity of land	com(2000) 20 final; 1750/1999 ann8.0
is090-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Reduced lowering of water table	com(2000) 20 final; 1750/1999 ann8.0
is092-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Increased use of harvested water for irrigation	com(2000) 20 final; 1750/1999 ann8.0
is246-so064	Research policy	Support agricultural R&D	Improve understanding of biological processes	Reduction in nutrient losses from farm systems	
is324-so087	Rural economic/development policy	Economic development of rural areas	Improve farm/business viability	Increase adoption of innovations	1257/1999 - Justification

Biodiversity impacts

To what extent has the scheme contributed to an increase in the biodiversity of the area under

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is042-so015	Agricultural policy	Promote integration of forestry/afforestation	Maintain and improve Ecological Sustainable Dev of forests for multiple objectives	More wildlife habitats	com(2000) 20 final; 1257/1999 - 2.08
is073-so024	Agricultural policy	Sustainable use of agricultural resources	Protect and improve genetic resources/diversity	Reduced loss of species	1257/1999 - Justification; 1257/1999 - 2.06
is074-so024	Agricultural policy	Sustainable use of agricultural resources	Protect and improve genetic resources/diversity	Conservation of rare agricultural breeds	1257/1999 - Justification; 1257/1999 - 2.06
is075-so024	Agricultural policy	Sustainable use of agricultural resources	Protect and improve genetic resources/diversity	Reduced intervention activity	1257/1999 - Justification; 1257/1999 - 2.06
is076-so024	Agricultural policy	Sustainable use of agricultural resources	Protect and improve genetic resources/diversity	Greater use of 'locally adapted' breeds and varieties	1257/1999 - Justification; 1257/1999 - 2.06
is078-so024	Agricultural policy	Sustainable use of agricultural resources	Protect and improve genetic resources/diversity	Reduced dependency on narrow genetic pools	1257/1999 - Justification; 1257/1999 - 2.06
is089-so027	Agricultural policy	Sustainable use of agricultural resources	Protect and improve water resource	Increased diversity of aquatic flora and fauna	com(2000) 20 final; 1750/1999 ann8.0

is094-so028	Agricultural policy	Sustainable use of agricultural resources	Protect indigenous and historic animal breeds (genetic resource)	Conservation of rare agricultural breeds	1257/1999 - 2.06
is095-so028	Agricultural policy	Sustainable use of agricultural resources	Protect indigenous and historic animal breeds (genetic resource)	Greater use of 'locally adapted' breeds and varieties	1257/1999 - 2.06
is096-so028	Agricultural policy	Sustainable use of agricultural resources	Protect indigenous and historic animal breeds (genetic resource)	Reduced dependency on narrow genetic pools	1257/1999 - 2.06
is097-so028	Agricultural policy	Sustainable use of agricultural resources	Protect indigenous and historic animal breeds (genetic resource)	Increased market demand for different quality attributes	1257/1999 - 2.06
is216-so055	Organic food/ farming policy	Increase extent of OF	Increase organic land area	Greater diversity of farming enterprises in regions	
is367-so099	Rural economic/ development policy	Economic development of rural areas	Maintain regional cultural/social heritage and resources	Greater diversity of rural production systems	
is042-so015	Agricultural policy	Promote integration of forestry/afforestation	Maintain and improve Ecological Sustainable Dev of forests for multiple objectives	More wildlife habitats	com(2000) 20 final; 1257/1999 - 2.08

Landscape impacts

To what extent has the scheme contributed to the landscape amenity, including agri-environmental, visual and cultural considerations.

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is053-so018	Agricultural policy	Protection and recovery from natural disasters	Risk reduction	Reduction in vulnerable land area	com(2002) 394 final
is443-so117	Rural economic/ development policy	Economic development of rural areas	Reduce land abandonment/encourage continuation of agriculture	Higher value placed on farmed landscapes & ecosystems	1257/1999 - 2.05

Forestry

To what extent has the scheme contributed to the increase in the forest area to the benefit of environmental, social and economic enhancement

ID#	Policy area	Main objective	Sub-objective	Impact Statements	Leg. Source
is045-so015	Agricultural policy	Promote integration of forestry/afforestation	Maintain and improve Ecological Sustainable Dev of forests for multiple objectives	Increase recreation use of forests	com(2000) 20 final; 1257/1999 - 2.08
is047-so016	Agricultural policy	Promote integration of forestry/afforestation	Promote integration of forestry/afforestation	More farm woodlands	

6.2 Appendix 2: Initial indicators and text codes

Table X.A2, List of initial indicators used in the cluster analysis

1. Farm Nutrient balances	8. Food quality and safety
2. Energy use	9. Public health impacts
3. Carbon balance	10. Social justice and equality
4. Biodiversity impacts	11. Demographic impacts (rural - urban migration, early retirement, young farmer development)
5. Landscape impacts	
6. Animal welfare impacts	
7. Rural employment (jobs and labour incomes)	

Table X.A3, List of test codes used in the cluster analysis

1. Animal or livestock	37. Residues
2. Accident	38. Schools
3. Agri-environment	39. Shows
4. Attitude	40. Small (scale)
5. Authenticity	41. Soil
6. Biodiversity	42. Specialty foods
7. Certification	43. Splitting/fragmentation
8. Community	44. Business re/structure
9. Conservation (wildlife)	45. Sustainable
10. Contamination	46. Training/education/qualification
11. Conversion	47. Urban
12. Cost	48. Value
13. Diversity	49. Waste
14. Efficiency/efficient	50. Water
15. Employment	51. Transport
16. Festival	52. Business
17. Food	53. Husbandry
18. Forest/woodland	54. Environment
19. GM/transgenic	55. Animal welfare
20. Growth	56. Distance travel
21. Health (zoonoses/disease)	57. Expenditure
22. Historic/al	58. Investment
23. House/housing	59. Capital
24. Income (profit/revenue/margin)	60. Nutrient
25. Inspection	61. Social welfare, benefit payments/allowances
26. Irrigation	62. Decision
27. Broadband/internet	63. Policy
28. Landscape	64. Monitoring and evaluation
29. Local	65. Enforcement and compliance
30. Market	66. Equality ethical fair-trade
31. On-farm	67. Official bureaucratic/bureaucracy intervention
32. Process/processing	68. Diversity
33. Public procurement	69. Viability
34. Quality	70. Energy
35. Region	
36. Renewable	

6.3 Appendix 3: Criteria and discussions of criteria from the expert panel workshops

In table EX01, EX02 ... refers the experts in the individual case studies. EX01 in Wales column is a different person than the EX01 in the Canton Aargau or NE England columns.

Table x.A4, Comments on the performance of the schemes against the criteria in the NGT workshops for Wales – UK, Canton Aargau – CH and North East England -UK

Capital investment on-farm – Round 1		
Wales	Canton Aargau	NE England
<p>EX04 rated 3 on Tir Gofal – felt that there was less investment than in OFS.</p> <p>EX05: can understand this.</p> <p>EX03: may not be conventional capital investment in agricultural terms, more in fencing etc rather than more conventional terms.</p> <p>EX06: 2 different effects – one relating to capital works of this kind. Development of contract work – many farmers have invested in machinery for this sort of work.</p> <p>EX07: gave OFS a lower score because it doesn't support capital investment in Wales.</p> <p>EX06: are we talking about the very narrow impact or the impact of various forms of support which encourage farmers to take on new capital works?</p> <p>EX07: not convinced OFS provides enough support to promote capital investment.</p> <p>EX06: should not confine ourselves to direct effects of subsidising capital expenditure.</p> <p>EX07: raises question of indirect financial processing.</p> <p>EX01: incentive to convert to organic might alter view.</p> <p>Timescale under consideration? Need also to decide on direct or downstream effects. Make assumption that we are only talking about direct effects.</p> <p>EX01: would have thought that the project would be looking at the longer term impacts since these are more interesting.</p> <p>EX06: discussion has thrown up important issues which should be taken</p>	<p>EX07: has valued 0, because no investments due to this special OELN</p> <p>EX04: but there was an indirect income effect, that stimulates investments</p> <p>EX10: compared farms rather than policies</p> <p>FAC.: you have to consider two scenarios: with and without the scheme</p> <p>EX02: I don't understand why there should be a different evaluation for IP and organic</p> <p>EX05: Machineries</p> <p>EX07: those who converted to organic had a lot of investments (example Graubuenden). Example Naturabeef</p> <p>EX02: naturabeef is not only organic</p>	<p>EX03: I felt that the CSS does not provide for further investment</p> <p>EX06: CSS is very much about what already is there, not to stimulate people to invest. If that was involved. Many times</p> <p>EX02: in CSS no initial capital is required.</p> <p>EX03: is that not related to conversion in itself?</p> <p>EX05: what we are comparing is the same farm before and after conversion or the practices related to the scheme.</p> <p>EX03: certification can occur without the scheme</p> <p>FAC.: it is important to know whether if the scheme would not have been there the investment still would have been made.</p> <p>EX01: the University's farm has recently converted. Without the scheme they might not have done it. The scheme tipped them over the head. That is why I put the score 2</p>

<p>into account.</p> <p>EX07: have had to narrow process down to these two schemes and this excludes lots of other measures.</p> <p>EX06: tricky part of policy evaluation is to sort out the inter-dependencies of various measures.</p> <p>EX07: taking OFS on its own, no measure is taken of organic marketing schemes etc.</p> <p>EX06: true, could move his 6 to 5.</p> <p>EX08: need to have some timescale attached, particularly in issues such as climate change.</p> <p>FAC.: can't examine various timescales, but can set one range.</p> <p>EX07: would suggest 5-10 year period for evaluating the process.</p> <p>FAC.: assumption therefore that all criteria are being assessed for 5-10 year period.</p> <p>EX01: is hedging, fencing included in capital investment?</p> <p>FAC.: yes, if that is what was decided although they weren't covered in the notes. Part of process is to improve the set of indicators being used.</p> <p>EX03: capital investment in agri environment schemes has to cover things such as hedging, as well as perhaps equipment. Desired output is improved environmental quality of the farm so in this context hedging and walling should be in capital investment.</p> <p>EX05: no, this is maintenance.</p> <p>FAC.: including hedging and fencing as capital investment in second assessment.</p>		
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Capital investment on-farm – Round 2		
Wales	Canton Aargau	NE England
<p>EX04: discount 3 from EX04, but still not convinced that farmers do more than property investment. Farmers wouldn't say fencing and hedging were capital items because of tax situation.</p> <p>EX02: agrees that this is not really 'capital works' though Tir Gofal calls it this.</p> <p>EX06: is one of the issues whether these are additional fences and hedges? But also, repairs might not have been carried out without</p>		

<p>Tir Gofal assistance.</p> <p>EX01: if you are replacing a fence with two fences and a hedge in between, this wouldn't happen otherwise. EX03: issue is one of definition.</p> <p>FAC.: can we agree a definition?</p> <p>EX02: tax definition may help. A capital expense offers an ongoing benefit, but the tax difficulty is how long this lasts.</p> <p>EX07: restoration of traditional farm buildings is also included.</p> <p>EX02: fair to say that a lot of the work would not have taken place without Tir Gofal.</p> <p>EX05: 7 is also a problem.</p> <p>EX03: message from socio economic study is that there is a significant increase in capital works from this.</p> <p>EX06: slender capital assistance but significant in its effects in this context.</p>		
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Diversification of farm enterprises – Round 1		
Wales	Canton Aargau	NE England
<p>EX01: means enterprises.</p> <p>EX06: felt effect of TG was to encourage maintenance of mixed farming systems, keeping some cattle on farms where they might otherwise have gone. OF presents adventitious diversification opportunities.</p> <p>EX01: gave TG a 6 for encouraging arable. OFS is a timescale thing – might be more conservative in early stages and diversify later.</p> <p>EX02: TG more likely to simplify so gave a slight decrease, gave 6 to OFS.</p> <p>EX01: one difference is changing type of cattle rather than keeping cattle but this is not diversification, just a change.</p>	<p>EX05: ip scheme prevented a further specialisation (rotation)</p> <p>EX04: agrees. But also the neutral nutrient balance caused diversification with ecology as a farm branch</p>	<p>EX05: I was not sure about what the definition was.</p> <p>EX05: diversification within the typical farm activities?</p> <p>EX06: I disagree with that</p> <p>EX05: the definition is important</p> <p>EX02: I scored 1 because neither CSS or OFS does not stimulate diversification. CSS still does it a little bit more, but not really</p> <p>EX06: from the ground/field I see that the CSS really stimulated people to diversify and then afterwards to turn to organic.</p> <p>EX05: diversification is than about diversifying also to non agric. Activities!</p> <p>EX06: going into organic is a major diversification of the farm. Difference between before and the new format schemes exists. Stewardship always has been a big stimulance for people to move into organics.</p> <p>EX01: I would keep it farm related for the scheme only; work related to farm enterprises</p>

Diversification of farm enterprises – Round 2		
Wales	Canton Aargau	NE England
<p>EX01: would like to hear a defence of 7 for OFS.</p> <p>EX07: in many cases range of support allows diversification of both practices and enterprises, and a group of farms do change substantially though others don't.</p> <p>EX01: how to score this?</p> <p>EX06: OFS has adverse selection attraction.</p> <p>EX03: OFS does open the door to marketing, as a by-product of the scheme.</p> <p>EX07: there is an argument between upland and lowland systems, but taking into account changes in say, weed control, there is a whole range of effects.</p> <p>EX03: TG is not trying to influence this in same way as OFS. Uptake of arable on TG farms is relatively small compared to the fact that product from OF is going into a different market.</p>	<p>EX10: voted 1 for both, because many farmers gave up their second animal type (<i>EX10 is not getting along with the evaluation situation</i>)</p> <p>EX02: but maybe it would have happened even stronger if there would be no measure</p>	<p>EX02: can I compare CSS with OFS:</p> <p>EX01: There is only one who scores differently.</p> <p>EX04: I put 2 because as a result of CSS I have seen a lot of people go into beef instead of only sheep. This is already big.</p> <p>EX06: CSS has moved people to organics</p> <p>EX01: how can you put a 3 for only 10% making this change to organics.</p> <p>EX05: I did not understand from your argument why somebody directly entering into the OFS would diversify less.</p> <p>EX06: I have a different background> I work in the field and see what really happens</p> <p>EX04: I put 3 for OFS because when changing in its own right, whether coming via CSS or directly, does not matter.</p>

Diversification of rural economy– Round 1		
Wales	Canton Aargau	NE England
	<p>EX02: voted minus1. what is rural economy? Is bad for diversification, because it prevents farmers from giving up farming</p> <p>EX07: we are talking about non-agricultural activities. What do we compare? Situation with or without schemes</p> <p>Organic farmers have an incentive to do other activities, because they have not enough money otherwise</p> <p>EX02: it is basically about the mind set of the farmer. Has nothing to do with the scheme</p>	<p>EX04: I thought of tourism access land when thinking about Rural economy</p> <p>FAC.: we talk about the whole economy not the farm economy</p>

Diversification of rural economy – Round 2		
Wales	Canton Aargau	NE England
	<p>EX05: Difficult question. But there is a certain impact (refers to OMIaRD) contribution to rural economy is often over estimated</p> <p>EX07: non-agricultural income is about 30%</p> <p>EX08: agrees with EX02. Without the schemes the pressure would be higher leading to unemployment or a diversification of rural economy but could lead to farm abandonment</p> <p>EX05: right for canton Aargau, and effects are overestimated. Ag may have a small impact on rural development</p> <p>EX08: both ways are possible. Negative and positive effects</p>	<p>EX02: I do not think that CSS per se is a major drive for rural enterprise diversification. Enterprises like bed and breakfast and that sort of thing.</p> <p>EX06: it comes down to the individual</p> <p>EX05: I think that an the schemes will not stimulate an individual farmer to change, but CSS can to stimulate a certain process within a certain region, that area will become more attractive to people interested in that certain change/activity and attract these people to move over there.</p> <p>EX06: I do not think that you can have people do that.</p> <p>EX06: I think that at the end of the day you can try to sell a change/activity but it depends on the individual whether they do it or not.</p>
Fragmentation and other farm structure issues – Round 1		
Wales	Canton Aargau	NE England
	<p>Clarification: e.g. number of parcels</p> <p>EX07: No effect of schemes</p> <p>EX05: structural change would have happened quicker</p> <p>EX07: special law in CH: only farmers can buy and sell land</p>	<p>EX05: would we look at the difference in money both schemes give for a certain activity?</p> <p>EX05: the score two is mine. But my expertise on this topic is low. It is based on the observation that some farmers try to survive in this manner.</p> <p>EX01: the OFS might have saved some small tenant farms.</p> <p>EX06: fragmentation appears to be related to the state and be defined by them</p> <p>EX03: but it is not sustainable to do this on the long term.</p>

Farm income – Round 1		
Wales	Canton Aargau	NE England
<p>No comments except EX07 surprised that OFS has a lower impact than TG since organic farms are generally doing better.</p> <p>EX06: 2 elements, one the perception that the organic market isn't doing so well now, and the other is the scoring system.</p> <p>EX07 has advantage of set of data for OFS, but not for TG. Perception on markets,</p>		<p>EX06: people will go to the OFS to increase farm income. CSS is more to preserve/conservate a certain income.</p> <p>EX07: I do not agree, on the ground a lot of costs are related to achieving that extra income.</p> <p>EX01: the activities of CSS for implementation cost more than what</p>

<p>now back into shortage of organic milk – markets volatile.</p> <p>EX06: should we do a second assessment?</p> <p>EX02: lower OFS score because farmers have chosen TG projects carefully and would therefore think that TG has boosted farm incomes more.</p> <p>EX01: TG is often a lump sum of guaranteed income, but OFS has higher potential benefits.</p>		<p>they bring.</p> <p>Some discussion on the money you get for the schemes and what you need to pay.</p>
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Employment – Round 1		
Wales	Canton Aargau	NE England
<p>EX07: have had a long debate about marginal increase in employment on OF but primarily associated with ventures like vegetables. OF is typically seen as employing more people.</p> <p>EX06: employing migrant workers means economic impact is lessened because they spend their income at home.</p> <p>EX01: interested in 6 in TG –</p> <p>EX08: whole gamut of rural skills associated with this.</p> <p>EX02 also gave 6.</p> <p>EX01 gave a 5.</p> <p>EX04: destocking means less sheep shearing etc.</p> <p>EX03: doesn't free up sufficient time and an overall increase in employment is shown in socio-economic study.</p>	<p>Clarification: farm employment, instead of regional employment</p>	<p>EX02: an organic enterprise needs more labour on farm and also additional labour from SA and promotion, etc. OFS stimulates promotion of products</p> <p>EX03: they go further down the supply chain, do more marketing etc for which they need more labour.</p> <p>EX05: both schemes demand more employment.</p>

Uptake of regulated production systems – Round 1		
Wales	Canton Aargau	NE England
<p>EX03 has a definition problem – didn't understand what this meant – notes clarified this but title was misleading.</p> <p>EX07: if this is purely an uptake issue, then we can get</p>	<p>Clarification necessary: participation in labelled production (above and beyond the standards)</p> <p>EX01: voted for minus1, because it reduced ip labelling</p>	<p>EX03: OF is by definition one of the more regulated scheme</p> <p>...: how can you change something that is already regulated. So I marked one</p> <p>EX07: it is not only related to the organic farms</p> <p>EX06: organic is automatically the top of the tree</p> <p>EX03: do you need to meet all the criteria for having a high score.</p>

quantitative data – unsure whether this should be in as an impact indicator or an output indicator. FAC.: will be using a second set of indicators for output.	EX02: ip Suisse is working well EX05: without oeln the private labels would not have increased as much	FAC.: I would say it is going one step further. ...: added to the certification you can do other things to improve certain criteria we evaluate now. EX05: it is only one criteria you can compare between the schemes. The two figures cannot be compared EX02: you might stimulate all the participating farms Or does it have an effect on the not participating farm. Additional to the organic certification you can adopt other regulations FAC.: The definition: a broader spectrum of farms is taken into account.
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Food quality and safety – Round 1		
Wales	Canton Aargau	NE England
		EX04: I think that I have been a little mean with my score of 1 for organic farming

Food quality and safety – Round 2		
Wales	Canton Aargau	NE England
		EX07: I could easily give a lecture on this

GM traceability – Round 1		
Wales	Canton Aargau	NE England
EX03: comment on how it is presented – not sure crop origins should appear in the definition here. EX07: quite difficult to define. EX06: GM status? EX01: GM traceability instead of co-existence. EX07: how to put this in policy terms? Scale may be from no GM through to GM widely used.	EX05: only IP Suisse standards cover gmo restrictions EX04: both schemes contributed to gmo traceability	EX05: we work on the assumption that GM is not there in organics. Is that right? EX04: if people do follow the rules of the schemes it should be easy to trace EX01: there is so much publicity through OF on GM that everything should be clear.

EX03: isn't traceability different?		
EX06: too many issues for one indicator?		
EX01: prefer not to add another indicator.		
FAC.: rename this indicator as traceability? Yes.		

Animal welfare – Round 1		
Wales	Canton Aargau	NE England
<p>EX02: TG generally reduces livestock nos., OFS lack of preventative approach .</p> <p>EX06: without recourse to artificial fertilizers, variable nutrition for livestock (Moore Collyer claims evidence for this).</p> <p>EX07: can argue back and forward on nutrition – no artificial fertilizers can benefit animals. Animal welfare – OF has specific standards which cover wider issues than just animal health. Would take EX02's point about benefits from TG.</p> <p>EX06: could have too much late grass for the numbers of animals –</p> <p>EX01: this is not a welfare issue. Lack of blanket preventatives means that more care must be taken with promoting animal health.</p> <p>EX06: observation effect.</p> <p>EX02 will change rating but still not convinced that the standard of animal husbandry is necessarily higher on organic farms.</p>	<p>EX03: there are significant impacts of both schemes, but still problems to solve</p> <p>EX07: uptake depends on the type of animal</p> <p>EX07: animal health on organic farms is better</p> <p>EX03: lot of farmers try their own medicine</p>	<p>EX02: I put negative for OFS because there are several occasions in which the animal welfare declines with OF. free range is in some cases negative for animal welfare. But my knowledge on animal husbandry is limited</p> <p>EX05: if the availability of medication is low you need more labour to run a system</p> <p>EX07: the conventional farms have less overview over the animals so I scored OFS positive.</p> <p>EX03: some times you hear of negative aspects of OF, but other aspects outbalance it to the pos side. Some time the CSS does not provide enough food for the animals</p> <p>EX06: in the CSS intensive systems move to less intensive so this is pos. But there are both pros and cons. Make me score 0. I think it depends more on the person managing the farm than on the scheme.</p> <p>EX05: would personal preferences have influenced the performance of a farm without the scheme having influenced the farm or do the schemes really influence the personal behaviour.</p> <p>Does the scheme facilitate people to continue the increase in animal welfare</p>

Occupational Health impacts – Round 1		
Wales	Canton Aargau	NE England
7 from EX06 for OFS – perhaps over optimistic. So many farmers give this as a reason for conversion (I'm not sure that	EX10: the safety is higher on organic farms, but not	EX02: I am concerned about the physical health within OF, back

EX06 wasn't talking about public health for this one, FAC., which would affect his scoring too). (If different level of expertise, record two for this section)	the health (two different criteria) FAC.: Changes in safety are not considered	pains, stress EX01: but this does not outbalance the neg. aspects of chemicals# EX05: farmers seem to get a pos physiological feedback from the OFS by going to markets and more direct contact with consumers
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Occupational Health impacts – Round 2		
Wales	Canton Aargau	NE England
	EX03 votes for O, because ten years ago, farmers would have adapted to their situation. The factor human being is the biggest problem	

Public Health impacts – Round 1			
Wales	Canton Aargau	NE England	
EX03: don't think OFS has a big enough impact on public health to be highly rated, eg no increase in infant viability. EX07: also issues of health and safety, pesticides. EX03: wasn't thinking of this. FAC.: add in H&S issues. EX06: origins of food awareness in environmental concerns of 70s – to some extent availability of OF alternative has driven this. EX03: public health seems to be staying the same – no evidence on overall level of any improvement. EX06: ambiguity over watching cookery programmes and buying chilled meals. EX07: less directly targeted at public health. FAC.: Use second assessment column to score impact on occupational health? EX07: use third assessment for this and second assessment for public health impacts. EX01: was including access to land and familiarity with it, farm visits, within TG as beneficial to public	EX07: Difficult question. Organic farmers smoke EX02: eating habits are most relevant EX04: there is no difference but small increases compared to conventional because of ban of pesticides EX04: are eating habits a cause of the policy? EX07 and EX09: no data, difficult to assess EX01: small increase because of nutrient balance	EX04: I thought a lack of pesticides to be positive EX01: it is a tricky one. You hear about less pesticides, but also about more bugs in organic food. EX06: there is difference between processed and fresh food.	

health. EX08: also the influence of landscape on mental health and wellbeing.		
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Agricultural demographic – Round 1		
Wales	Canton Aargau	NE England
<p>FAC.: scoring scheme – might be better to talk about an ideal demographic rather than the national demographic –</p> <p>EX07: demographic skewed towards older age group.</p> <p>EX03: might be better to re-phrase this?</p> <p>FAC.: notes show lots of points brought into this.</p> <p>EX03: farming has a very small impact on the rural demographic.</p> <p>EX07: looking at agricultural employment and whether workers are younger or older.</p> <p>FAC.: change heading, positive effect would be to make it more balanced.</p> <p>EX06: dynamics of rural demography are complex and varied – no one knows much about it.</p>	<p>EX10: The less expert you are on a topic, the more you tend to vote for O</p>	<p>EX06: I gave neg. for OFS because people continue farming much longer before going bankrupt. People hang around longer which prevents youngsters to come forward.</p> <p>EX03: I think that more new people come in by the OFS</p> <p>EX05: we are looking at a specific period in which happens what SP said</p> <p>EX03: hard labour coming in with OF is more attractive to young people</p> <p>EX02: I believe that more young women are involved in OF which is positive</p>

Agricultural demographic – Round 2		
Wales	Canton Aargau	NE England
<p>EX01: quite a lot of OF farmers are new entrants and younger.</p> <p>EX06: demography of farming may be positively affected but this is not the right policy impact to focus on. OF does not have a major impact.</p> <p>EX07: agreed to focus on the agricultural population.</p> <p>EX02: since ag. pop. is very small, have to focus on this.</p> <p>FAC.: agree this will have small impact on rural demographic.</p>		

EX06: should change label to agricultural demographic. Second assessment as agricultural demographic on both:		
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Rural community wellbeing – Round 1		
Wales	Canton Aargau	NE England
<p>EX01: optimistic 6s relate to greater sense of pride and involvement, better wellbeing and more positive community feeling towards farms.</p> <p>EX03: no evidence to show schemes have made a difference.</p> <p>EX01: farmers feel more positive and this has an effect on the whole community.</p> <p>EX06: very slender evidence so far of groups of OF farmers having a positive benefit to the community, sometimes communities of interest.</p> <p>EX03: could say about TG that they get lots of money and others don't – those who can't apply may be unhappy.</p> <p>EX06: hasn't come across much negative feeling about TG in his research.</p>	<p>EX07: organic farmers drop out out of the social set easily, because it is unlikely to have people with the same mind</p> <p>EX04: slight improvement, because organic farmers may attract people to the region</p>	<p>EX04: I find it difficult to judge because it involves a lot.</p> <p>EX05: I find it slightly pos. for both schemes because people get means/ money to do things they like to do</p> <p>EX06: our job is to let the schemes have a beneficial effect on general well being. We inform people on how well their environment is protected, etc. the general public is informed about how there tax money is spend</p> <p>EX01: the people of your council might feel so, but they do not represent very well the rural community</p> <p>EX03: OFS does not have a big effect, because organic farmers are a small percentage of the total rural community</p>

Knowledge and skills development – Round 1		
Wales	Canton Aargau	NE England
<p>Comments on the combined criteria - Knowledge and skills development and Research</p> <p>EX07: to some extent this is a policy tool for improving the systems, but encouragement for training under both schemes made it hard to differentiate between them.</p> <p>EX08: lack of awareness as much as anything – this would be going on anyway.</p> <p>EX03: rated as 5 because both schemes have specific training opportunities for farmers but hard to relate to the notes. Training opportunities for farmers are</p>	<p>Clarification: two different points. Agreed to use a combination of both</p> <p>EX10: Research is something different.</p> <p>FAC.: Both will be evaluated separately (second and third assessment)</p>	<p>EX04: I work for the CSS to give results in this area.</p> <p>EX06: the people who use the scheme do not know how to benefit the schemes and their business.</p> <p>EX05: you must increase knowledge in order to be able to do OF. Farmers are definitely interested in why they are paid to make certain changes</p> <p>FAC.: I am separating second half (research) of to</p>

<p>positive under both schemes, and perhaps encouraging for research.</p> <p>EX07: change to knowledge and skills development.</p> <p>EX06: positive response was because of the opening up effect.</p> <p>EX03: wider than just farmers in farming community.</p> <p>EX07: school visits in both offer wider social awareness.</p> <p>EX03: notes don't help.</p> <p>EX01: notes conflict with scoring system.</p> <p>FAC.: looking for clarification.</p> <p>EX03: not specific enough in notes.</p> <p>EX08: these people would be undertaking training and research anyway so couldn't say that the schemes have had a positive effect.</p> <p>EX07: being part of the schemes engenders a training need, offers the driver to push this forward.</p> <p>EX08: this is also related to the demographic.</p> <p>EX07: if we were to re-define this as a significant increase in agricultural and environmental knowledge and skills this would be more appropriate.</p>		a separate criteria
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Research development – Round 1		
Wales	Canton Aargau	NE England
	<p>EX02: Research has shifted to ip and much more to organic</p> <p>Research is voted again due to big differences</p>	<p>EX04: we try to find out what CSS could do.</p> <p>EX03: a lot of research is done but it does not mean that the schemes work well</p> <p>EX04: we get the money because the scheme is not working.</p> <p>EX05: there is a trend in Europe that when public institutes get money for schemes more research is needed to clarify the schemes.</p> <p>EX06: monitoring will help to evaluate the effect of research, but research shows many times different results. Research, many times, lacks monitoring.</p> <p>...: Yes, I agree with that .Little monitoring is done these days. I think that the money for monitoring could also be used for comparing and using controls in research</p> <p>EX02: I was modest scoring the OFS it as one. Yes there was an increase. Put perhaps I was focussing more on the amount of money than on the research compared to everything else. This however maybe be on whether the research focussed on implementation of OFS</p>

		methodology. But my secondary response would be high.
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Social justice and equality (gender, intergenerational, international)– Round 1		
Wales	Canton Aargau	NE England
EX07: stronger female involvement in OF than in TG.	EX07: more fair-trade, so there is an impact EX04: canton Aargau as a scale	EX05: OF is more and more interested in the production side (fair trade) EX03: this is not related to the scheme but to OF

Rural infrastructure (including transport, housing)– Round 1		
Wales	Canton Aargau	NE England
o pod TG; 2 pod for OFS. EX09 put in 6 because of transport networks – willing to change to 5.	Still evaluation question difficult. Descriptor says: maintain current level. But experts could expect that without the scheme there was a decrease	EX06: I scored 2; more slaughter houses are being kept because of OF. More farmer markets and outlets have occurred as a result of OF EX03: that is a small proportion EX03: the points you mention are taken up in the next criteria.

Local marketing, processing and consumption – Round 1		
Wales	Canton Aargau	NE England
	EX07: more direct sales on organic farms EX04: international trade of organic products is a big issue EX07: but on average, there is a higher percentage of farms in Aargau, which have direct sales than on conventional or ip farms	EX06: I think that the organic FS has increased strongly the local marketing. EX01: farmers market do not have that many OF products as you think EX07: I know a case in which an enterprise in this area dropped OF because of the difficulty of handling and marketing the products EX03: the faith is very much diluted EX07: in media and press, the policy people think that the influence of OF is much higher than it really is.

Energy use – Round 1		
Wales	Canton Aargau	NE England
<p>EX02 gave OFS a 3 because monoculture more efficient.</p> <p>EX08: input levels.</p> <p>EX06: need to tidy up definition.</p> <p>EX07: gave 6 because of data he has access to. Monocultures tend to be more energy intensive because benefits of biodiversity are removed.</p> <p>EX02: gave TG 3 because tasks wouldn't be carried out without TG involvement.</p> <p>EX08 – (inaudible)</p> <p>FAC.: keep this as efficiency rather than energy use.</p> <p>EX06: need to be highly techEX07ally qualified to judge energy efficiency.</p> <p>EX03: this is incidental to the scheme rather than the main objective and there is little information about them. Will be more variation in later issues which are scheme objectives.</p> <p>EX01: notes describe less techEX07al view of efficiency.</p> <p>FAC.: use 4 points in notes to provide a second assessment?</p> <p>EX07: concern is the efficiency of converting fossil energy into food. Also, TG issue is that activities are very marginal.</p> <p>EX02: if link is to food production, then the output is the same whether the wall or hedge is there or not.</p> <p>EX02: cf issue of disposable nappies – if all costs are taken into account, then disposable nappies cost the same as cloth.</p> <p>EX06: different forms of fossil energy have different impacts too.</p> <p>EX01: don't have data for actual energy use, so just providing and expert opinion on energy use.</p>	<p>EX07: in general slightly better utilisation</p> <p>EX10: compared to 1993.. (doesn't understand evaluation situation)</p> <p>EX01: more energy for tillage</p> <p>EX07: but in general it is a better utilisation</p> <p>(per area or per product / not discussed)</p>	<p>EX01: I put a 1 for CSS because it does take some land out of production</p> <p>In the OFS you replace pesticide with machines so it is negative in reduction of energy</p> <p>EX03: in OF less energy is however used by less use of N</p> <p>EX06: less energy is used for production of N and pesticides</p> <p>EX03: but more energy is used for transport</p>

Energy use – Round 2		
Wales	Canton Aargau	NE England
		EX02: I think that none of us in knowledgeable to see how much energy which processes cost and whether they balance each other out

		EX03: I think it also depends on your farming system.
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Control of climate change – Round 1		
Wales	Canton Aargau	NE England
<p>7 from EX01 for OFS because of impact of fertilizers and pesticides.</p> <p>EX02: OF is not a substantial part of farming so how could its impact be so high?</p> <p>EX01: talking about impact on the farm not on the global scale.</p> <p>FAC.: looking at reduction per hectare not total reduction for the scheme.</p> <p>EX09: felt fertilizer issue was outside the farm gate.</p> <p>EX06: must think about greater impact, eg cars used more as they become more fuel efficient. Gave 3 – predicts more use of energy on OF farms.</p> <p>EX07: studies show life cycle assessment reduces carbon emissions, but beef and sheep differences are low, higher for dairy. In Welsh framework doesn't have large impact.</p> <p>EX01: was also bearing in mind requirement for self sufficiency reducing transport impact.</p> <p>EX05: increased costs for sewage sludge because of no go areas for sludge spreading, for instance.</p>	<p>EX06: several sources... use of manure, ruminants, trace gases</p> <p>EX03: is it an effect on climate change > better name it emission of green house gases</p>	<p>EX01: mine was the -1, but during the discussion on the previous criteria I already changed my mind</p> <p>EX03: organic farms are a huge carbon sink.</p> <p>.....: What about the increased time needed for meat production which is central to an organic farming system.</p> <p>EX03: Yes, but your average stocking rate decreases.</p> <p>the diet might produce more because of more roughage and less concentrates. But as a result of reduced stocking rate this will outbalance this result.</p> <p>EX04: the CSS stimulates people of the uplands change to beef production</p> <p>EX06: on the arable organic side there is clearly an improvement because of the organic matter which clears carbon dioxide. It think that there is certainly a positive influence, but whether this is slight or moderate I do not know</p>

Control of pollutants – Round 1		
Wales	Canton Aargau	NE England
<p>Why does OFS score highly?</p> <p>EX09: less use of chemicals on farm, likewise EX06.</p>		

EX02: restrictions on overgrazing etc, so gave it a 6.		
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Natural resource conservation – Round 1		
Wales	Canton Aargau	NE England
		<p>EX06: there is a lot of contradictory evidence from the ground about the functioning of the scheme. Plenty examples about where it has worked but also plenty agreements which have not worked.</p> <p>EX05: I have seen more radical activities done in Denmark where you still haven't seen a big impact of application of the scheme.</p>

Biodiversity impacts – Round 1		
Wales	Canton Aargau	NE England
<p>EX08: latest CCW review shows decrease in biodiversity – has not had the impact expected. Not sure that we can limit this to the farms under the two schemes – not comfortable looking at this on the farms only.</p> <p>EX03: content to look at it on the farm scale particularly because of large number of farms in TG; provides reinforced networks, better management – definite positive benefit.</p> <p>EX09: gave 7 because she included soil level.</p> <p>EX03: we don't know much about OF impact on upland systems.</p> <p>EX07: feel because TG is directly targeting sensitive habitats and hoping that this has a positive result.</p> <p>EX06: case of having to run fast to stay still?</p> <p>EX03: one of major elements is large areas of over grazing.</p> <p>EX08: would be a lot worse without the scheme.</p>	<p>EX09: leads to improvement (organic more than ip)</p> <p>EX02: the biodiversity has not increased since the introduction of oeln</p> <p>EX09: very clear (refers to ecological compensation areas)</p> <p>EX08: there is no exact baseline</p> <p>EX02: maybe I was a little bit pessimistic</p>	<p>EX04: what has happened with CSS over the last years is that where things have not already changed and it has gone into stewardship scheme we have been quite successful. But the problem is that we have never really looked at the time scale of the impact of activities done in order to improve biodiversity. We have made progress, but what happened the previous years has had a lot more influence than what is happening now.</p> <p>EX05: both schemes have the same influence. Biodiversity of crop varieties has increased in OFS and biodiversity of natural species have increased as well</p> <p>EX02: OF does more then conventional, because increased crop varieties again results in more insectlife and birdlife.</p> <p>EX03: we have to realize that a lot of land in this region, is highland. In the high lands not a lot changes with the introduction of the schemes. This happens much more in the lowlands.</p> <p>EX06: mixed farming system CSS have biodiversity specifically as a target, but there are specific bits of biodiversity like haymeadows and moorland or a specific bird. But is difficult to see whether total of changes have overall positive effect. Biodiversity is a vehicle which leads people into agreements but it is very difficult to see the final effects of the activities done.</p>

Biodiversity impacts – Round 2		
Wales	Canton Aargau	NE England
EX07: not prepared to change it.		

Landscape impacts – Round 1		
Wales	Canton Aargau	NE England
		EX06: from the ground: from defra's point of view: it is hard to sell that you have really enhanced the landscape, but I think that the schemes have contributed greatly

Forestry – Round 1		
Wales	Canton Aargau	NE England
<p>EX03: forestry is outside the remit of both schemes.</p> <p>FAC.: RD objective is to deliver this.</p> <p>EX03: impact less under schemes. TG should ensure grazing is at an appropriate level - large herbivores would occur naturally.</p> <p>EX02: some TG schemes do include tree planting so scored it relatively highly.</p> <p>FAC.: clarify that we are talking about tree area rather than commercial forestry.</p>		<p>EX02: I thought that CSS was about planting trees in corners of agr. Land</p> <p>EX06: this was however not for increasing woodland, but for landscape areas.</p> <p>CSS has made more woodland to be fenced.</p>

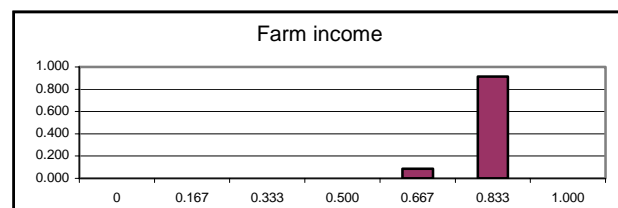
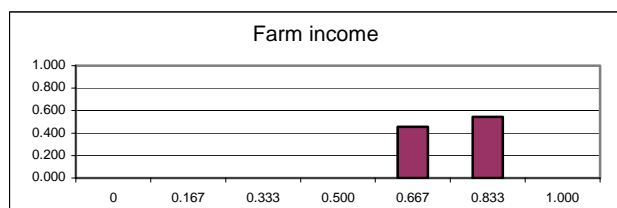
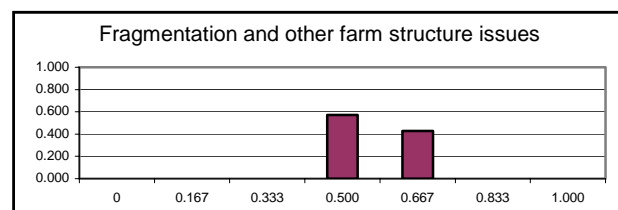
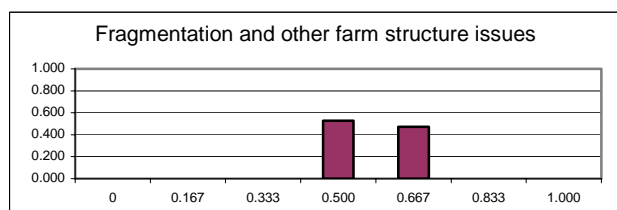
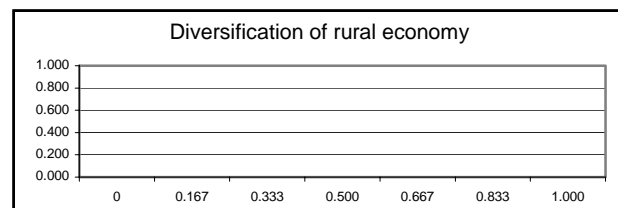
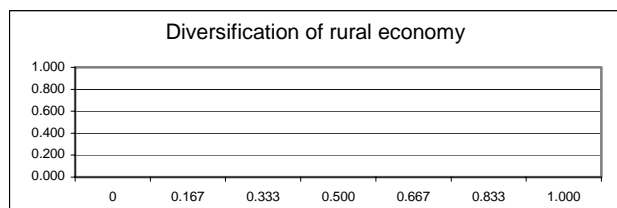
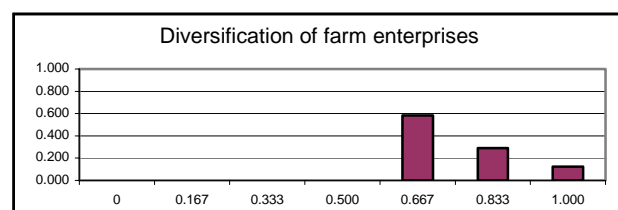
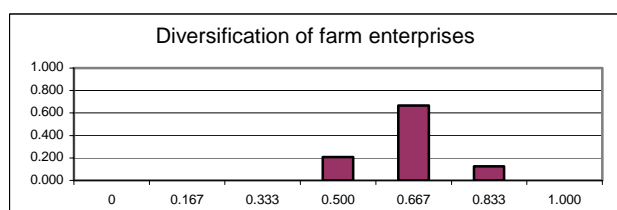
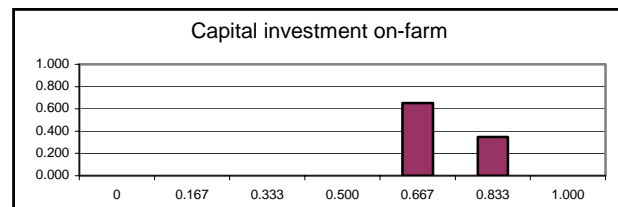
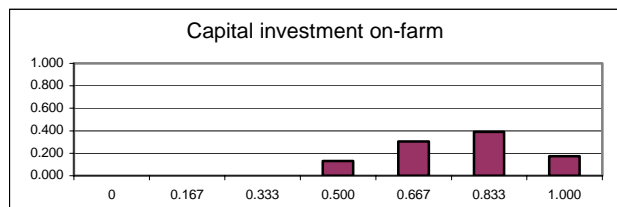
6.4 Appendix 4: Self assessment of knowledge and expertise

The workshop panelists were asked to provide a self-assessment of their knowledge and experience in evaluating each indicator against each of the decision criteria according to the following ratings. These ratings have been adapted from those developed by Lovebridge (2001).

1. **Unfamiliar** with the topic.
2. **Casually acquainted**; you have read or heard about the topic in the popular media or other popular presentations.
3. **Familiar** with the topic; you know most of the arguments advanced for and against some of the issues surrounding it and you have read about it and have formed some opinions about the topic.
4. **Knowledgeable** in the topic
 - (a) if you understand this topic and use this knowledge in land-use or farm management;
 - (b) if you are in the process of becoming an expert, but still have some way to go to achieve mastery of the topic;
 - (c) if you work in a neighbouring field and occasionally draw upon or contribute to the development of this topic; or
 - (d) if you were an expert in it some time ago but feel somewhat rusty now.
5. **Expert** if you consider yourself to belong to that community of people who currently dedicate themselves to the topic matter and if you are in the technical field you are likely to have presented, written up and published the outcomes of your work.

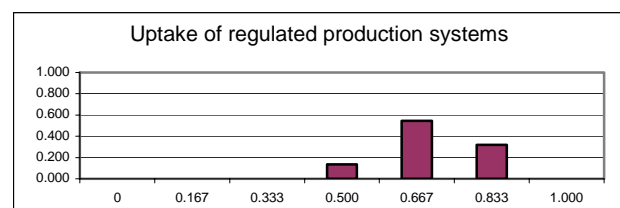
6.5 Appendix 5: Distributions of evaluation in the judgement-based analysis in the Wales –UK case study

Figure xA.1 Probability Distributions of Evaluations for the Tir Gofal Scheme in Wales
Organic Farming Scheme

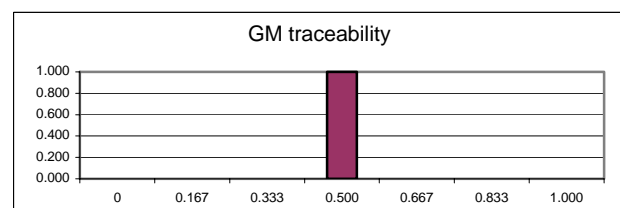


Probability Distributions of Evaluations for the Tir Gofal Scheme in Wales

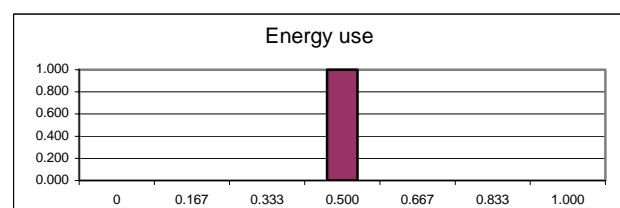
Tir Gofal



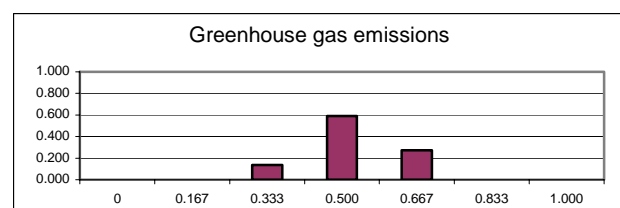
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.136	0.545	0.318	0.000



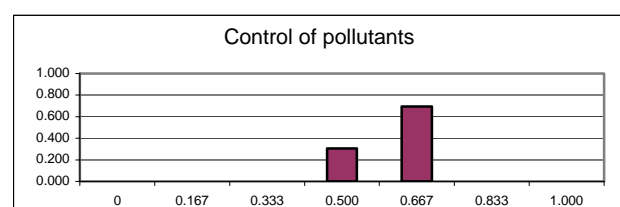
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

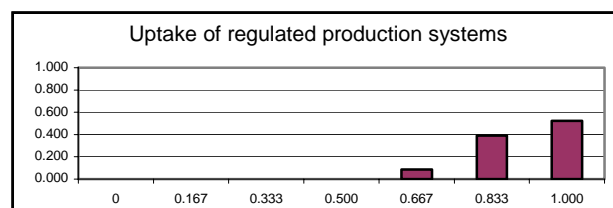


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.136	0.591	0.273	0.000	0.000

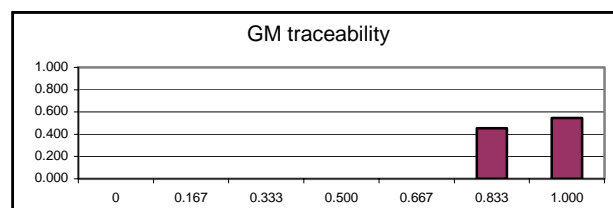


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.304	0.696	0.000	0.000

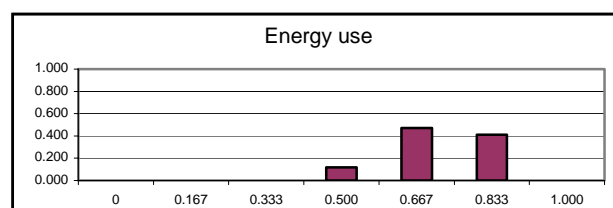
Organic Farming Scheme



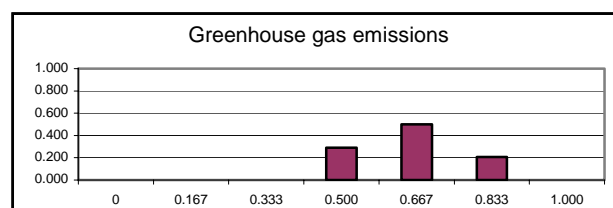
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.087	0.391	0.522



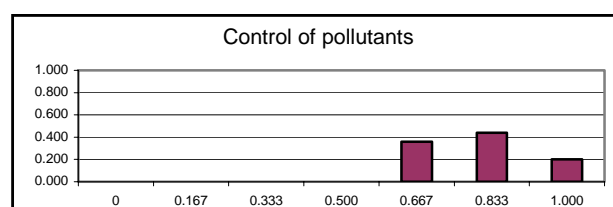
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.455	0.545



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.118	0.471	0.412	0.000



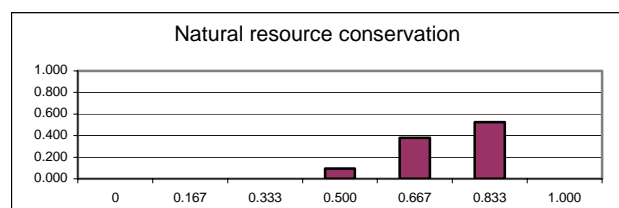
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.292	0.500	0.208	0.000



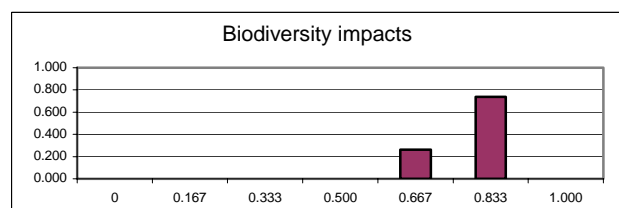
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.360	0.440	0.200

Probability Distributions of Evaluations for the Tir Gofal Scheme in Wales

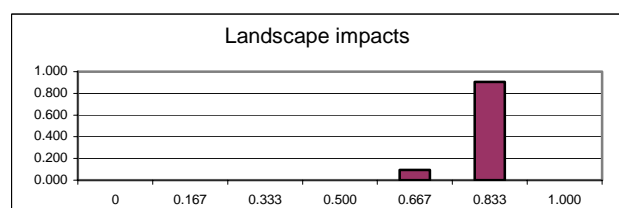
Tir Gofal



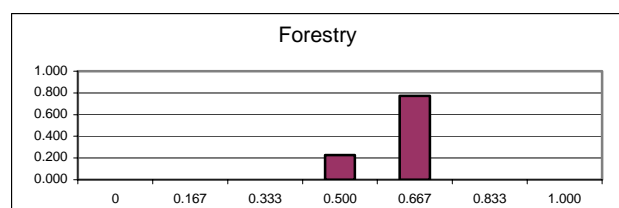
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.095	0.381	0.524	0.000



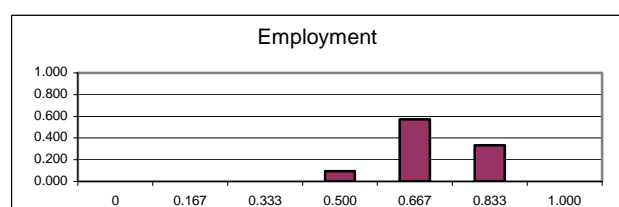
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.261	0.739	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.095	0.905	0.000

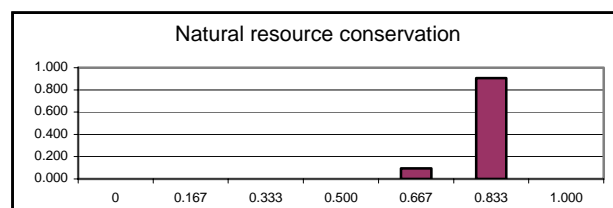


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.227	0.773	0.000	0.000

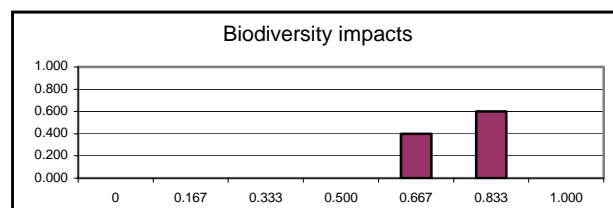


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.095	0.571	0.333	0.000

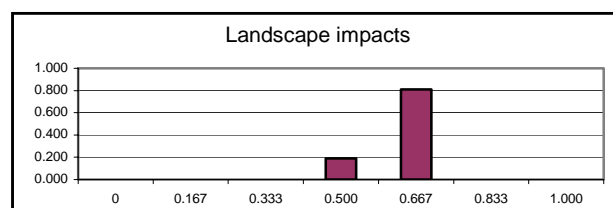
Organic Farming Scheme



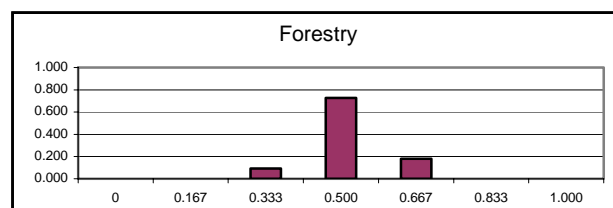
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Frequency	0.000	0.000	0.000	0.000	0.095	0.905	0.000



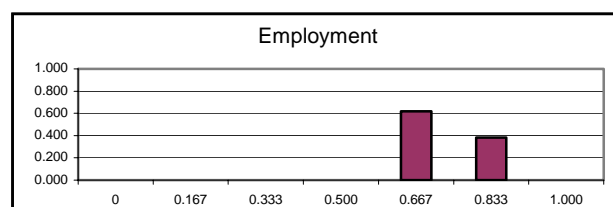
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.400	0.600	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.190	0.810	0.000	0.000



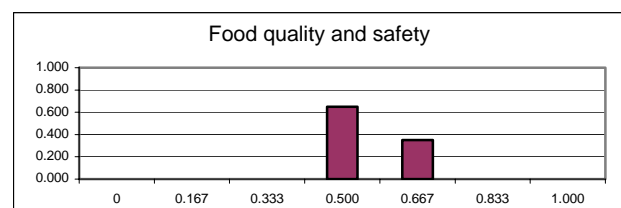
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Frequency	0.000	0.000	0.091	0.727	0.182	0.000	0.000



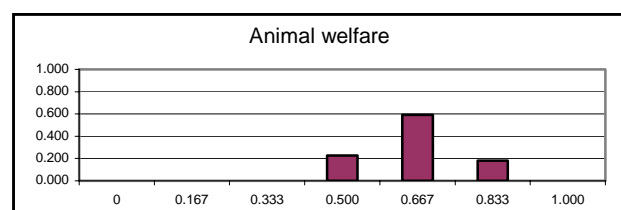
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.619	0.381	0.000

Probability Distributions of Evaluations for the Tir Gofal Scheme in Wales

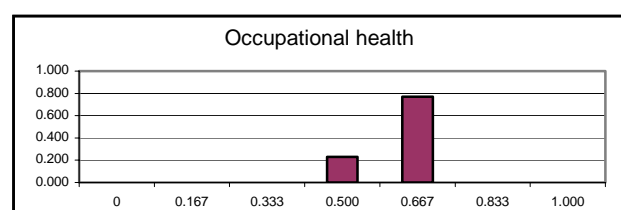
Tir Gofal



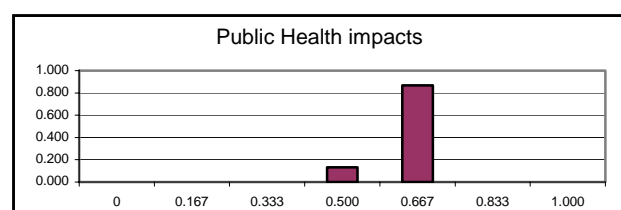
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.650	0.350	0.000	0.000



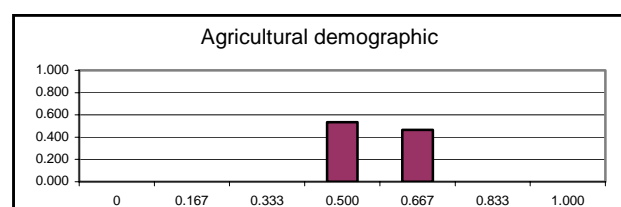
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.227	0.591	0.182	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.231	0.769	0.000	0.000

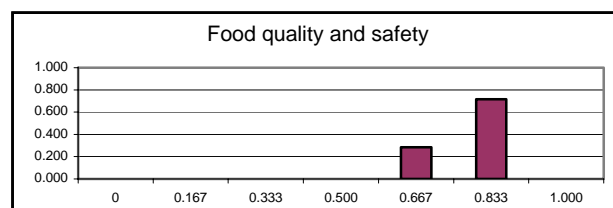


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.133	0.867	0.000	0.000

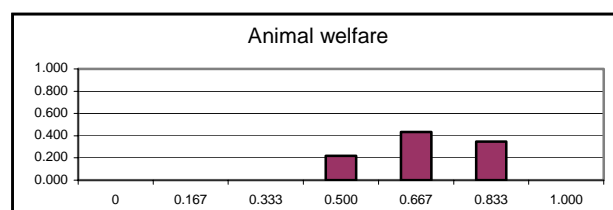


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.533	0.467	0.000	0.000

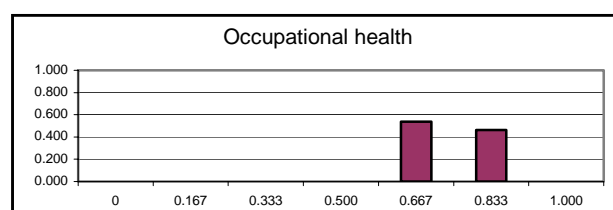
Organic Farming Scheme



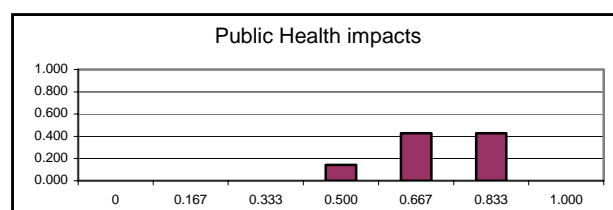
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.286	0.714	0.000



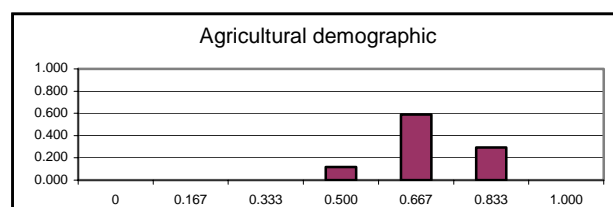
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.217	0.435	0.348	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.538	0.462	0.000



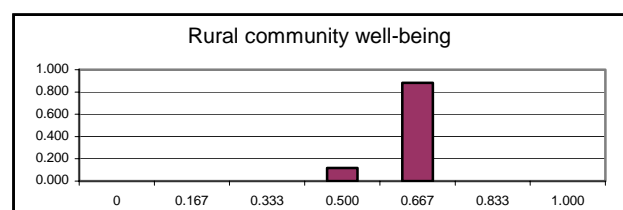
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.143	0.429	0.429	0.000



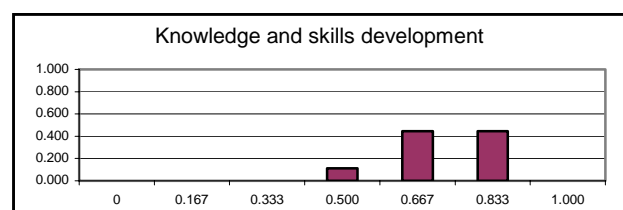
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.118	0.588	0.294	0.000

Probability Distributions of Evaluations for the Tir Gofal Scheme in Wales

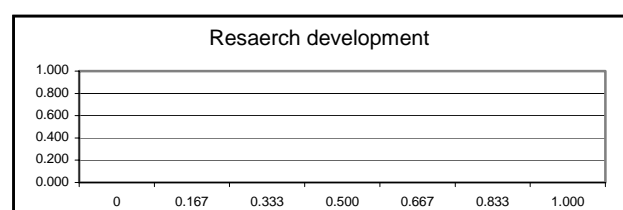
Tir Gofal



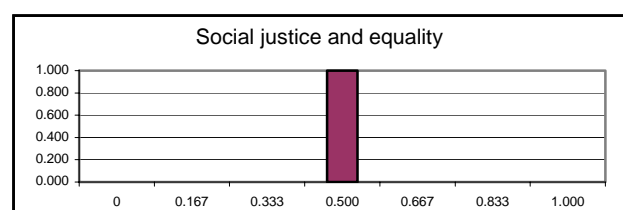
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.118	0.882	0.000	0.000



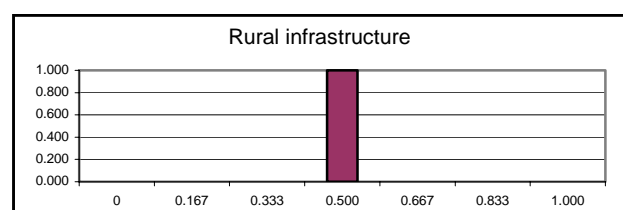
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.111	0.444	0.444	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.000	0.000

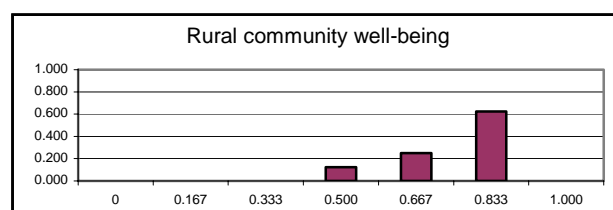


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

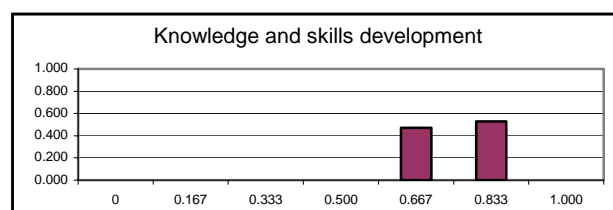


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

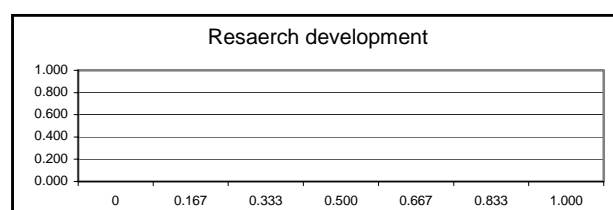
Organic Farming Scheme



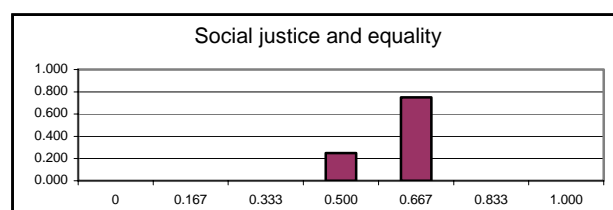
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.125	0.250	0.625	0.000



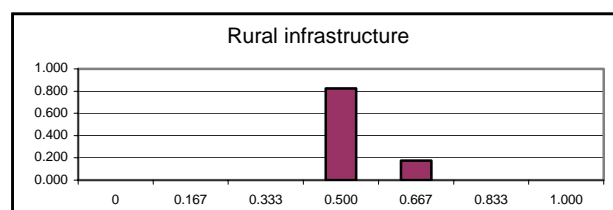
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.471	0.529	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.000	0.000



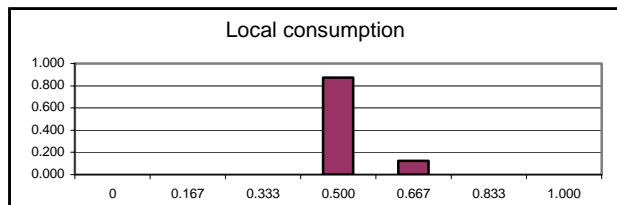
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.250	0.750	0.000	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.824	0.176	0.000	0.000

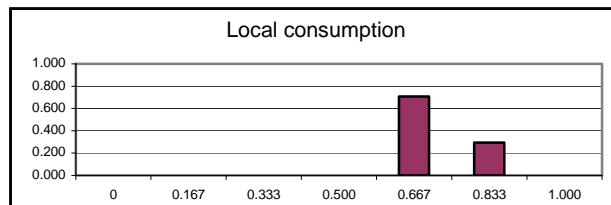
Probability Distributions of Evaluations for the Tir Gofal Scheme in Wales

Tir Gofal



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.875	0.125	0.000	0.000

Organic Farming Scheme



Value	0.000	0	0.167	0.333	0.500	0.667	0.833
Frequency	0.000	0.000	0.000	0.000	0.000	0.706	0.294

6.6 Appendix 6: Evaluations in the evidence-based analysis in the Wales –UK case study

Table x.A5, Evidence-based evaluation for the Wales – UK case study

Criteria	Rating (+3 to -3)	Evaluation		Raw data		Notes
		Tir Gofal	OFS	Tir Gofal	OFS	
Capital investment on-farm To what extent has the scheme contributed to a direct or indirect increase in investment in on-farm capital works	Substantial increase / decrease in the level of capital investment					
Diversification of farm enterprises To what extent has the scheme contributed to the diversification of farm enterprises	Substantial increase / decrease in the mix and range of farm enterprises	3	3	2 (out of -/+2 scale)	2 (out of -/+2 scale)	These evaluations were taken for the criteria "To help families to adapt, to take informed decisions on the future of family members, and to diversify sources of income. " In this instance the focus was on the second clause in this indicator. The initial criterion was scored on a 5-point scale these have been re-standardised to the 7-point scale. These evaluations were under taken by the scheme managers. Source: Mid-term review, Appendix 9 pp 111-116
Diversification of rural economy To what extent has the scheme contributed to the diversification of the rural economy (into non-agricultural activities)	Substantial increase / decrease in the diversity of the rural economy	1.5	3	1 (out of -/+2 scale)	2 (out of -/+2 scale)	These evaluation were taken for the criteria "broaden the economic base of rural Wales" the initial criteria was scored on a 5-point scale these have been re-standardised to the 7-point scale, these evaluation were under taken by the scheme managers. Source: Mid-term review, Appendix 9 pp 111-116
Fragmentation and other farm structure issues To what extent has the scheme contributed to reducing fragmentation and address other farm structure issues seen as problematic	Substantial improvement / decrease in farm structural issues					
Implementation costs (scheme) Costs substantially less than other rural development and agri-						

What are the cost of administering environment schemes and implementing the scheme						
Farm income	Substantial increase / decrease in the level of farm income	1 - 2	3	Average NFI (excl BLSA) 2002/03		*A note on the calculation of TG NFI. Assuming a 25% reduction in NFI due to Tir Gofal compliance, TG payments are income forgone plus 20%. The increase in NFI for TG is calculated as CF NFI minus 25% plus TG payment of (0.25 * CF NFI) plus 20 % incentive payment. This equates to an overall increase of 5%. Source: Jackson and Lampkin 2005 pp13 table 7 - this only deals with OF verse CF and for England and Wales. These values are the average NFI considering all farm types
To what extent has the scheme contributed to an increase in farm income				TG * - £188 per ha	OF - £238 per ha	
Employment	Substantial increase / decrease in quantity of employment (FTEs)	2	3	Jobs created per farm after joining scheme		Both schemes create similar numbers of full-time positions. OFS creates more part-time and casual positions. Source: Mid-term review app. 7 p82 Table A7.80/81. Farmer survey regarding change in employment. Source: Mid-term review app. 7 p82 Table A7.80/81. Farmer survey regarding change in employment
To what extent has the scheme contributed to increased employment				1 - full-time, 1.8 - part-time, 2 - casual	1 - full-time, 2 - part-time, 3.6 - casual	
Uptake of regulated production systems	Substantial increase / decrease in the level of uptake of regulated production systems	3	1			Uptake of TG has exceeded targets. Uptake of OFS has faltered (due market conditions not scheme) and is unlikely to achieve. Source: Mid-term review app. 7 p74.
To what extent has the scheme contributed to the uptake of regulated production systems (e.g. organic, PDO, PGI, zero pesticide, other defined environmental/animal welfare/food quality systems (defined at national or EU level))						
Food quality and safety	Substantial increase / decrease in food quality and safety					
To what extent has the scheme contributed to an increase in food safety and quality						
GM traceability	Complete / no					

To what extent has the scheme contributed to the differentiation of genetically modified products from non-genetically modified products at all points in the supply chain	traceability of crop origins and GM status					
Animal welfare To what extent has the scheme contributed to an increase in animal health and welfare	Substantial increase / decrease in quality of animal welfare					
Occupational Health impacts To what extent has the scheme contributed to an improvement in occupational health and safety	Substantial increase / decrease in occupational health					
Public Health impacts To what extent has the scheme contributed to an improvement in public health	Substantial increase / decrease in public health					
Agricultural demographic To what extent has the scheme contributed to changes in the farming population in terms of age and gender (with particular reference to young entrants, early retirement and women in the workforce)	Substantial positive change / negative change in agricultural demographic in terms of age and gender					
Rural community wellbeing To what extent has the scheme contributed to an improvement in rural community wellbeing	Substantial increase in rural community wellbeing					
Knowledge and skills development	Substantial increase / decrease in					

To what extent has the scheme contributed to the knowledge and skills base of the agricultural community and increase in research in to rural and agricultural issues	agricultural and environmental knowledge and skills					
Social justice and equality (gender, intergenerational, international) To what extent has the scheme contributed to an increase in social justice and equality in terms of gender, intergenerational and international equality, this also includes distribution of profit in the supply chain	Substantial increase in social justice and equality					
Rural infrastructure (including transport, housing) To what extent has the scheme contributed to the preservation and development of rural infrastructure	Substantial increase / decrease in expenditure on infrastructure development	0	0	0 (out of - /+2 scale)	0 (out of - /+2 scale)	Improving access to services, supporting community regeneration and promoting social inclusion in rural communities. These evaluations were under taken by the scheme managers. Source: Mid-term review, appendix 9 pp 111-116
Local marketing, processing and consumption To what extent has the scheme contributed to an increase in local processing, marketing and consumption of agricultural products	Substantial increase in local produce processed, marketed and consumed locally	0	3	0 (out of - /+2 scale)	2 (out of - /+2 scale)	To improve market links by promoting collaboration among producers and co-operation between producers and processors. These evaluation were under taken by the scheme managers
Energy use To what extent has the scheme contributed to the reduction in fossil fuels and/or increased the use of renewable and locally produced energy	Substantial improvement / degradation in energy utilisation					

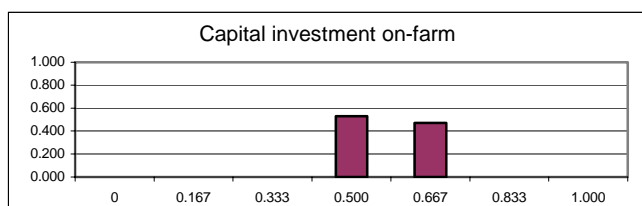
Control of climate change	Substantial decrease / increase in emission levels of climate change gases					
To what extent has the scheme contributed to a reduction in the net release of potential climate altering gases						
Control of pollutants	Substantial decrease / increase in emission levels of pollutants	2	3			From the conclusions presented in the mid-term review app. 7 it appears both schemes have a moderate to high reduction in the use of agri-chemicals. Both include measures to reduce contamination of surface water and soil. Including creating riparian buffer zones and reduction in stocking rates. On balance it appears that OFS slightly outperforms TG, therefore they receive a score of three and two respectively. Please the sheet "pollutants data" for further details (a link can be found to the right). Source: mid-term review, appendix 9 pp 11-37
To what extent has the scheme contributed to the reduction in the release of environmentally harmful substances						
Natural resource conservation	Substantial increase / decrease in quality of natural resources	1	1			From the conclusions presented in the mid-term review app. 7 it appears both schemes have a slight impact on natural resource conservation. No firm conclusions are drawn in favour of either scheme and it is considered that the evidence to accurately quantify the impact is not present. Therefore both scheme receive a score of one. Source: mid-term review, appendix 9 pp 11-37
To what extent has the scheme contributed to the conservation of natural resources, including soil, water and other natural resources						
Biodiversity impacts	Substantial increase / decrease in the level of biodiversity	2	1			From the conclusions presented in the mid-term review app. 7 it appears both schemes have a slight to moderate increase in Biodiversity. TG appears to slightly out perform the OFS, thus the schemes receive a score of two and one respectively. Source: mid-term review, appendix 9 pp 38-60
To what extent has the scheme contributed to an increase in the biodiversity of the area under						
Landscape impacts	Substantial increase / decrease in landscape amenity	2	1			From the conclusions presented in the mid-term review app. 7 it appears both schemes have a slight to moderate increase in Landscape amenity. TG appears to slightly out perform the

To what extent has the scheme contributed to the landscape amenity, including agri-environmental, visual and cultural considerations.					OFS, TG supports and pays for maintenance of landscape feature, historic buildings, hedges and walls. OFS is likely to produce a more diverse land-use pattern (although not specifically stated in the scheme. Therefore TG and OFS receive a score of two and one respectively. Source: mid-term review, appendix 9 pp 60-61
Forestry To what extent has the scheme contributed to the increase in the forest area to the benefit of environmental, social and economic enhancement	Substantial increase / decrease in the size of forested area				

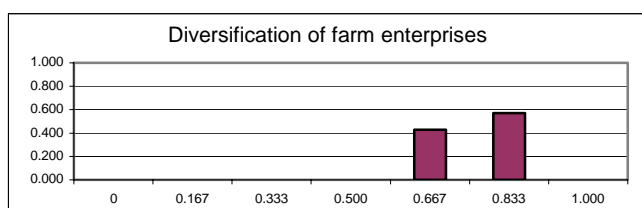
6.7 Appendix 7: Distributions of evaluation in the judgement-based analysis in the North East England –UK case study

Figure x.A2 Probability Distributions of Evaluations for the Countryside Stewardship Scheme in North East England

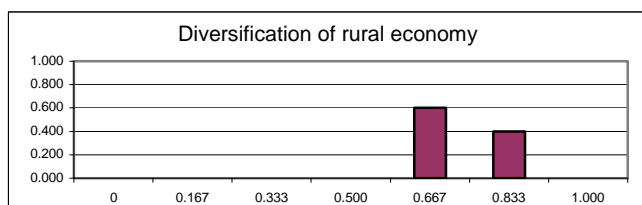
Countryside Stewardship Scheme



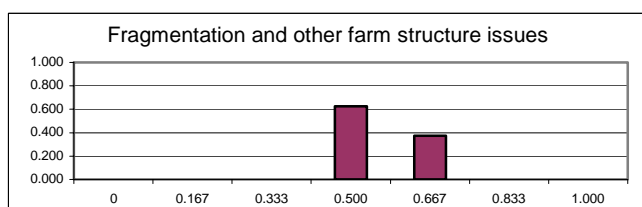
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.529	0.471	0.000	0.000



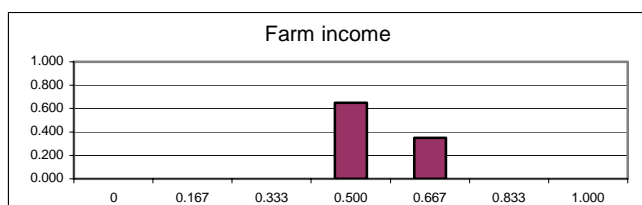
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.429	0.571	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.600	0.400	0.000

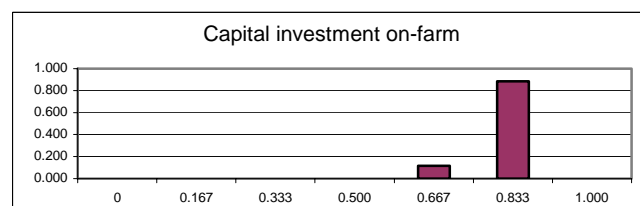


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.625	0.375	0.000	0.000

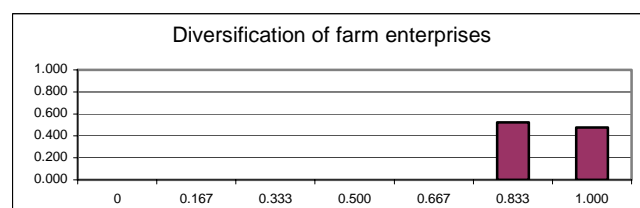


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.650	0.350	0.000	0.000

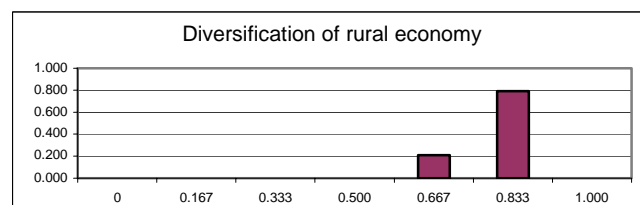
Organic Farming Scheme



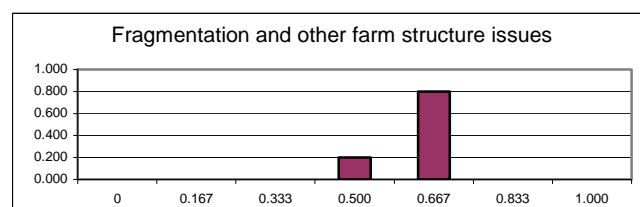
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.118	0.882	0.000



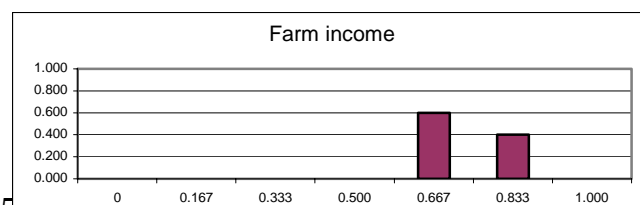
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.524	0.476



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.211	0.789	0.000



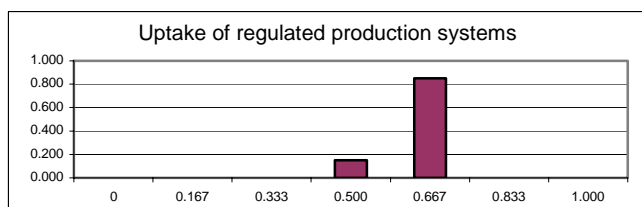
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.200	0.800	0.000	0.000



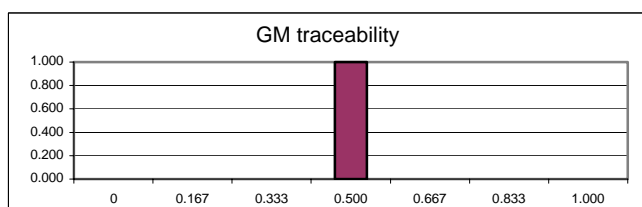
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.600	0.400	0.000

Probability Distributions of Evaluations for the Countryside Stewardship Scheme in North East England

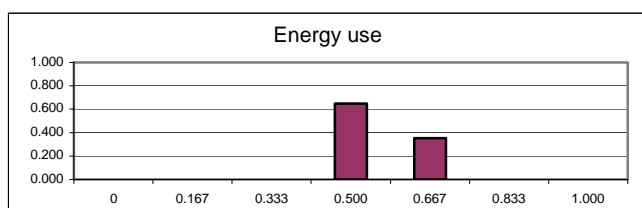
Countryside Stewardship Scheme



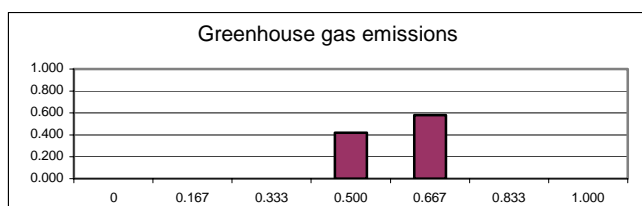
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.150	0.850	0.000	0.000



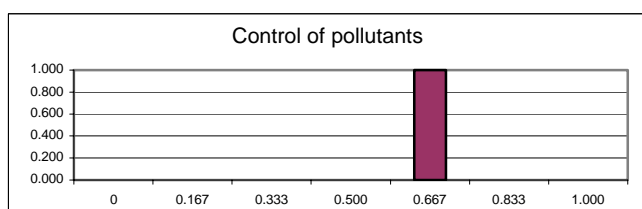
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.647	0.353	0.000	0.000

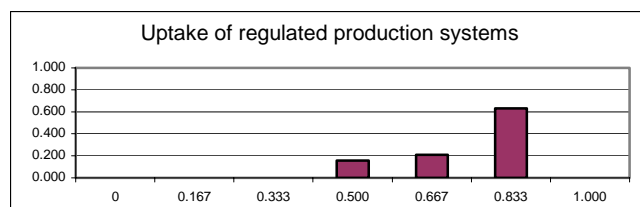


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.421	0.579	0.000	0.000

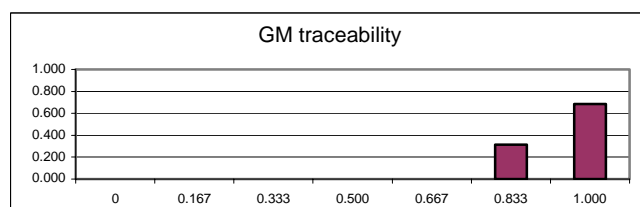


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	1.000	0.000	0.000

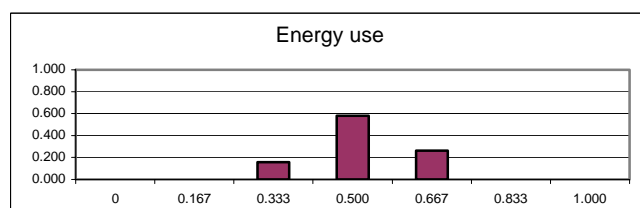
Organic Farming Scheme



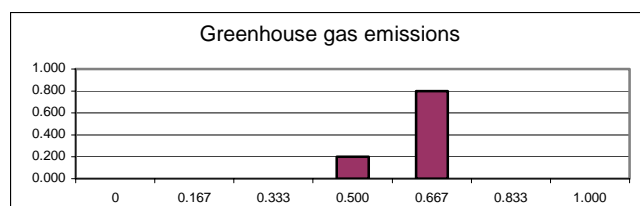
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.158	0.211	0.632	0.000



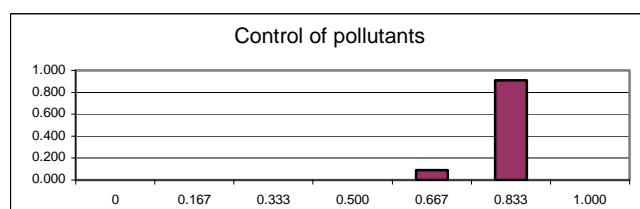
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.316	0.684



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.158	0.579	0.263	0.000	0.000



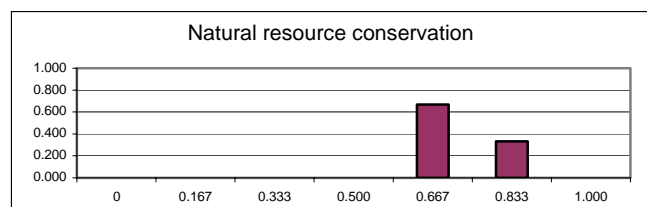
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.200	0.800	0.000	0.000



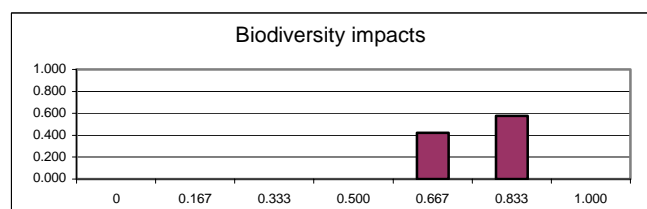
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.091	0.909	0.000

Probability Distributions of Evaluations for the Countryside Stewardship Scheme in North East England

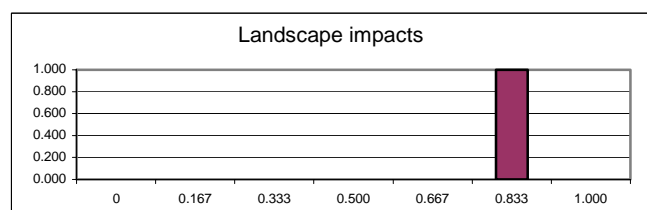
Countryside Stewardship Scheme



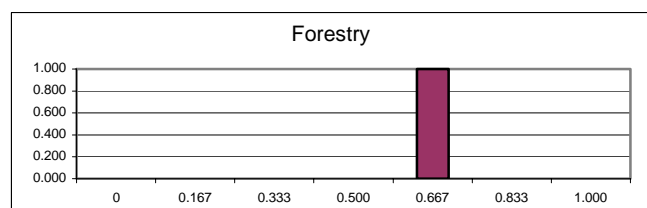
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.667	0.333	0.000



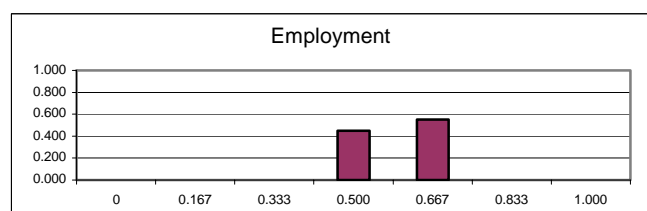
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.423	0.577	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	1.000	0.000

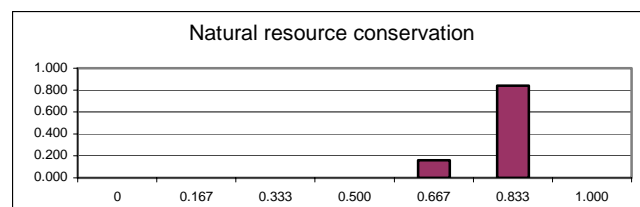


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	1.000	0.000	0.000

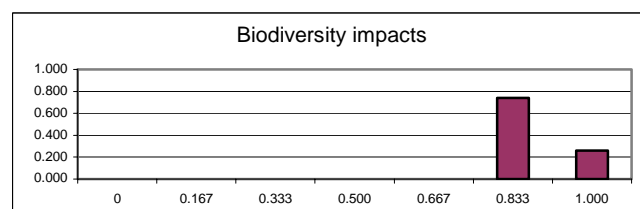


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.450	0.550	0.000	0.000

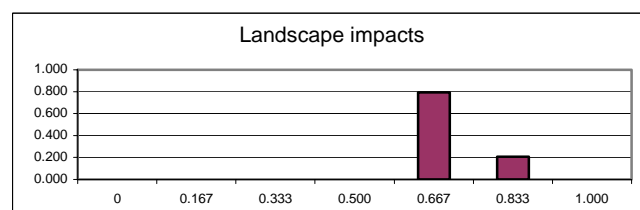
Organic Farming Scheme



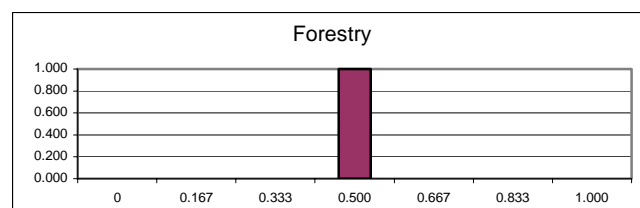
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.160	0.840	0.000



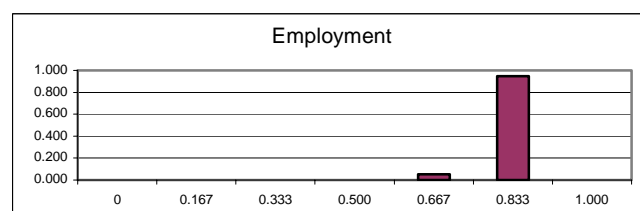
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.741	0.259



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.792	0.208	0.000



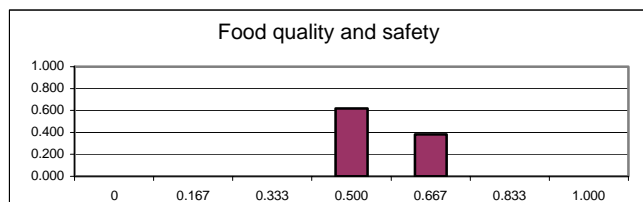
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000



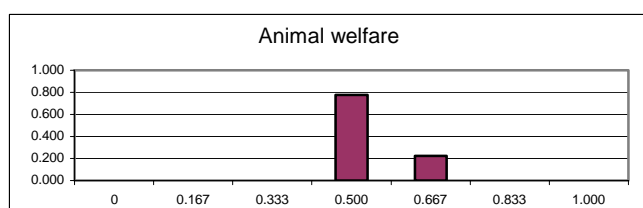
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.053	0.947	0.000

Probability Distributions of Evaluations for the Countryside Stewardship Scheme in North East England

Countryside Stewardship Scheme



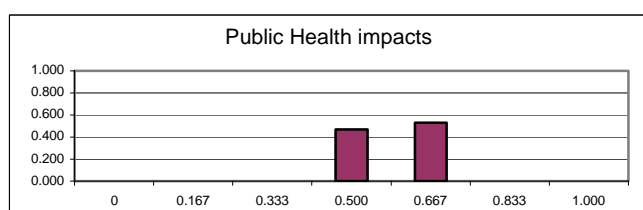
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.619	0.381	0.000	0.000



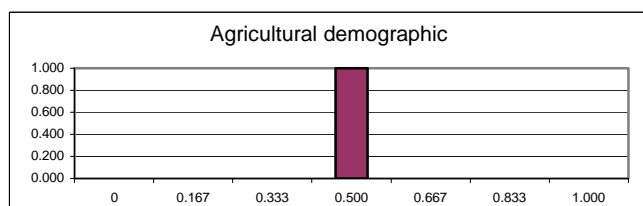
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.778	0.222	0.000	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

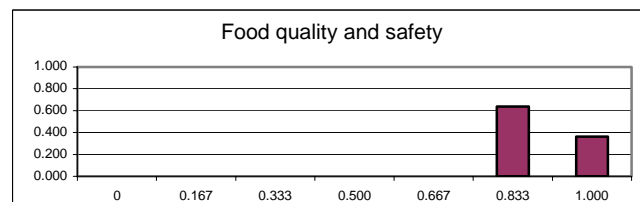


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.471	0.529	0.000	0.000

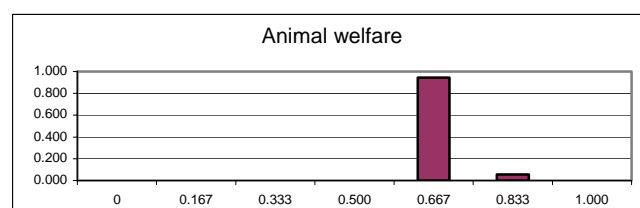


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

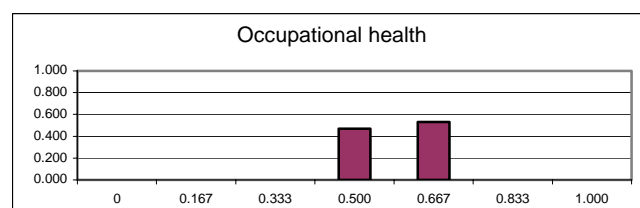
Organic Farming Scheme



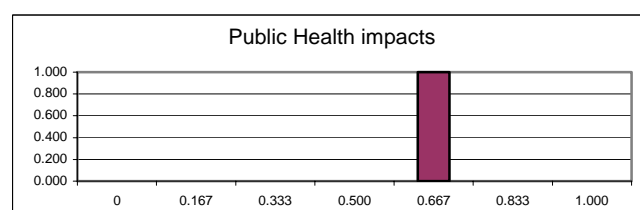
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.636	0.364



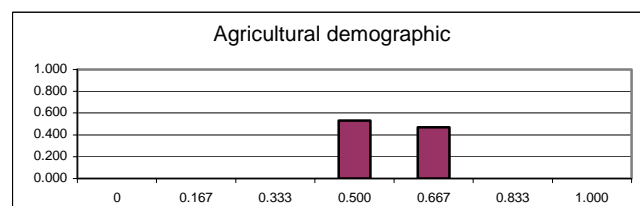
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.944	0.056	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.471	0.529	0.000	0.000



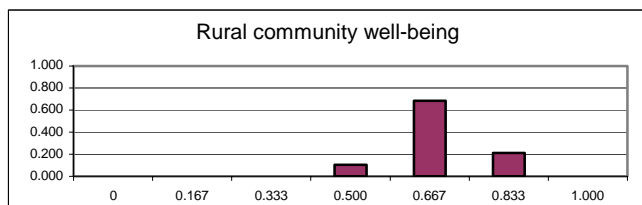
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	1.000	0.000	0.000



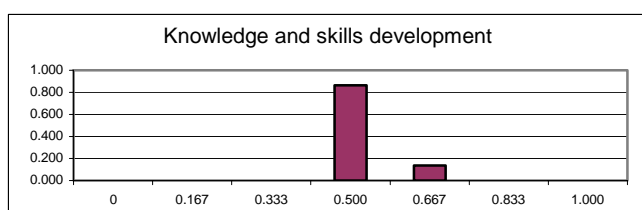
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.529	0.471	0.000	0.000

Probability Distributions of Evaluations for the Countryside Stewardship Scheme in North East England

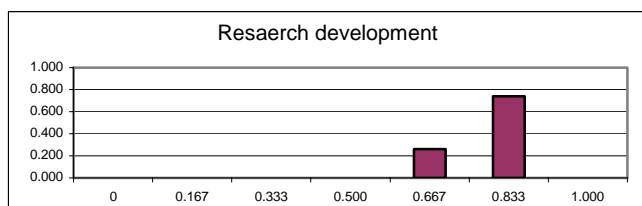
Countryside Stewardship Scheme



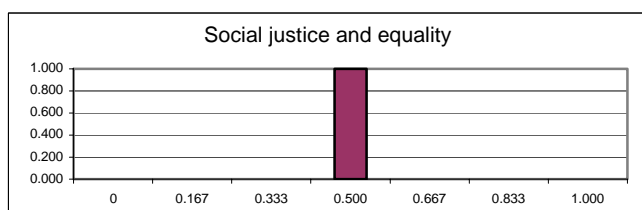
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.105	0.684	0.211	0.000



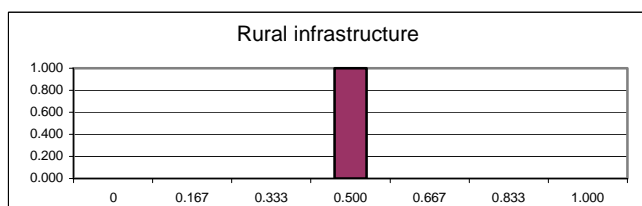
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.864	0.136	0.000	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.261	0.739	0.000

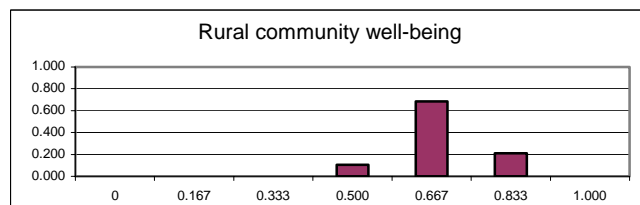


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

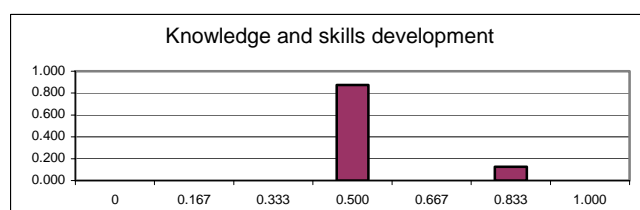


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

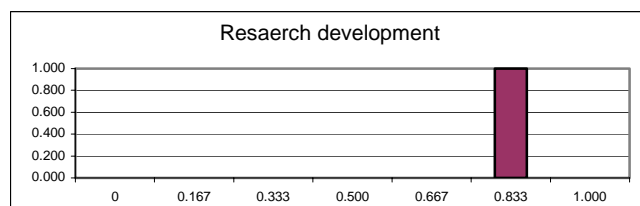
Organic Farming Scheme



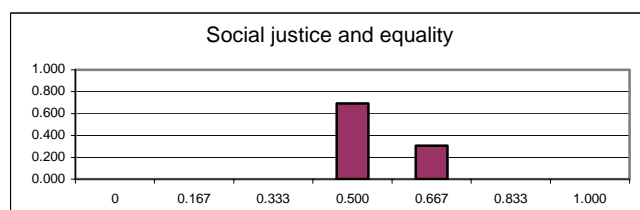
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.105	0.684	0.211	0.000



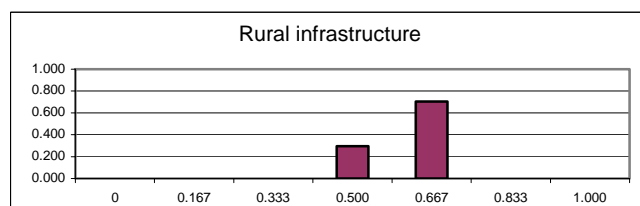
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.875	0.000	0.125	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	1.000	0.000



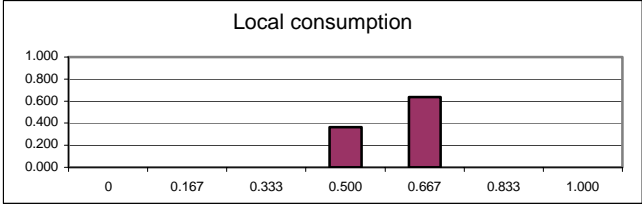
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.692	0.308	0.000	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.294	0.706	0.000	0.000

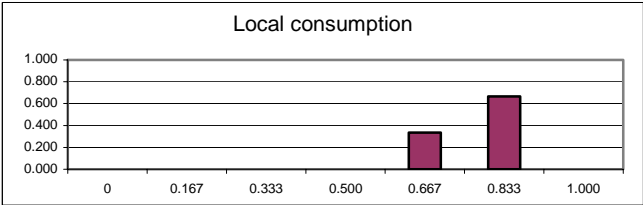
Probability Distributions of Evaluations for the Countryside Stewardship Scheme in North East England

Countryside Stewardship Scheme



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.364	0.636	0.000	0.000

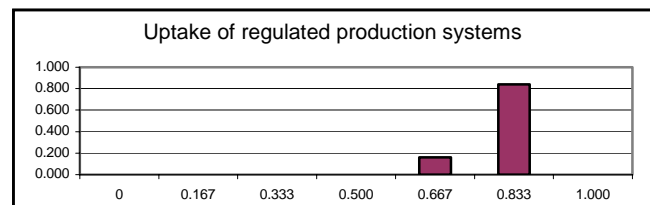
Organic Farming Scheme



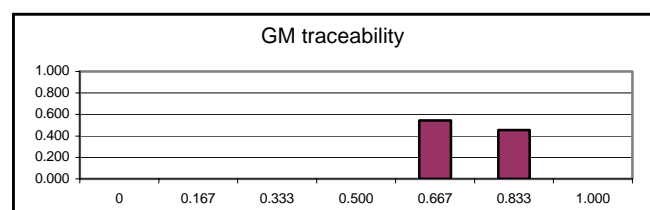
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.333	0.667	0.000

Probability Distributions of Evaluations for the Integrated Production Option (IP-Variante) in Canton Aargau, Switzerland

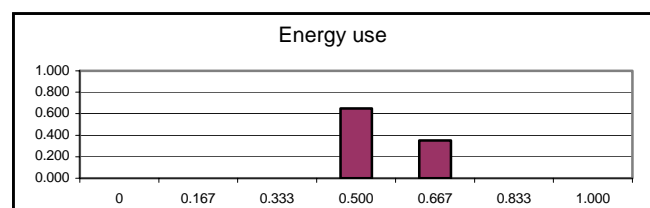
IP Variante



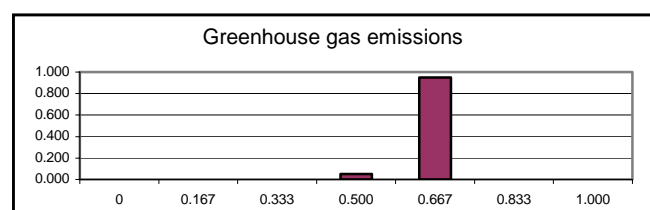
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.160	0.840	0.000



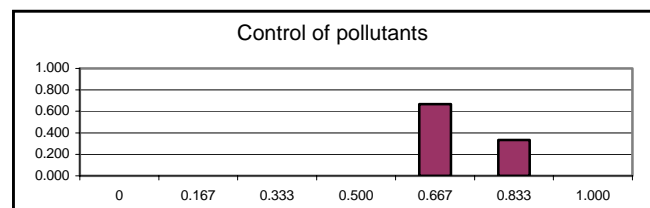
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.545	0.455	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.650	0.350	0.000	0.000

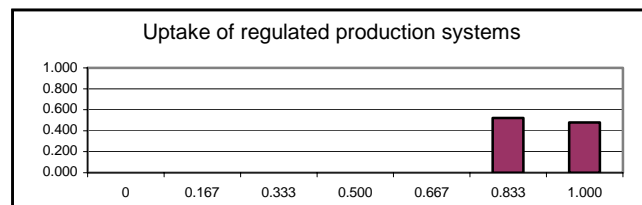


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.050	0.950	0.000	0.000

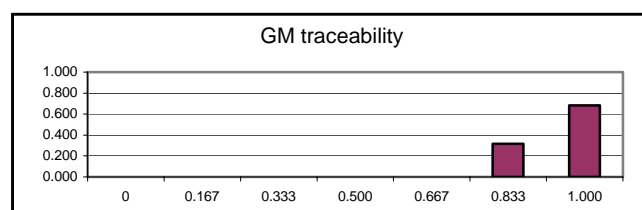


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.667	0.333	0.000

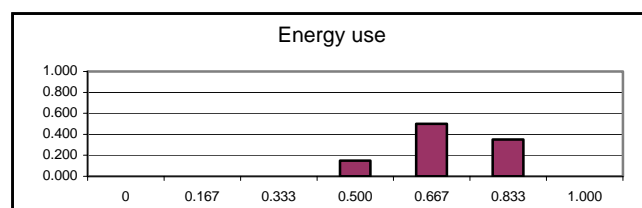
BIO Variante



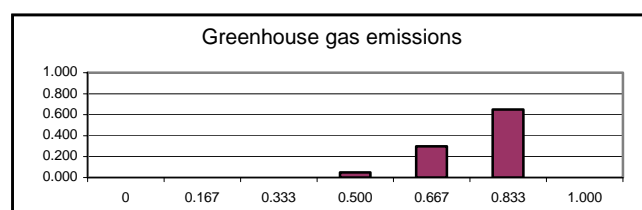
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.520	0.480



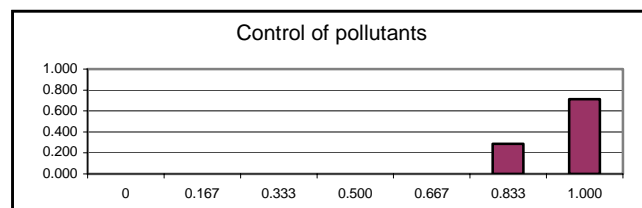
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.318	0.682



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.150	0.500	0.350	0.000



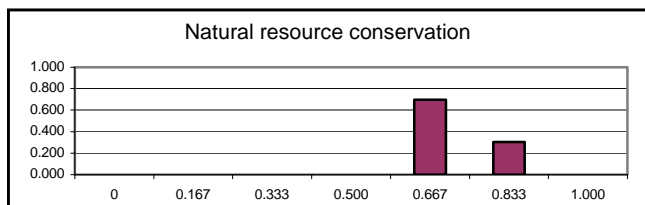
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.050	0.300	0.650	0.000



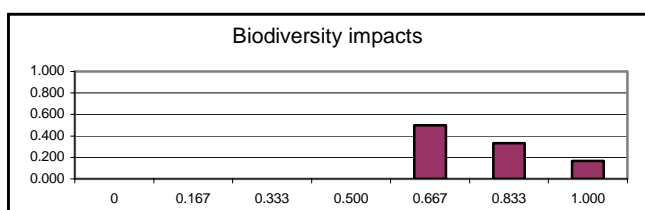
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.286	0.714

Probability Distributions of Evaluations for the Integrated Production Option (IP-Variante) in Canton Aargau, Switzerland

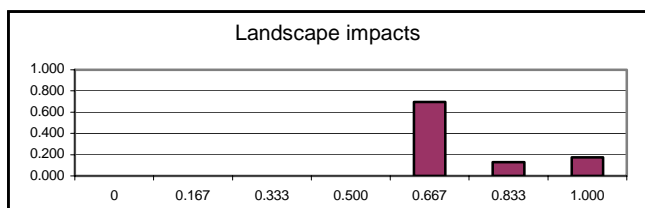
IP Variante



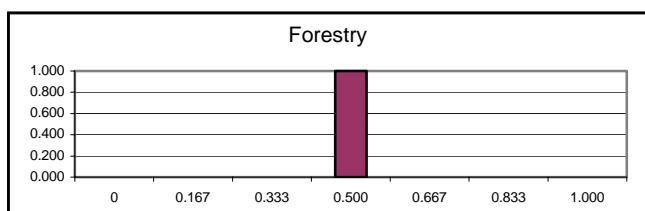
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.696	0.304	0.000



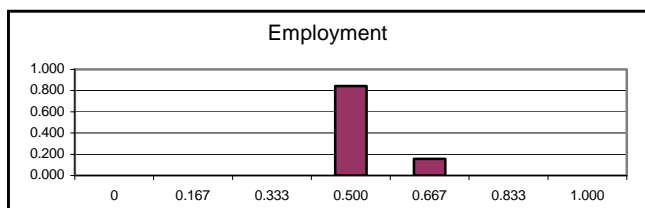
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.500	0.333	0.167



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.696	0.130	0.174

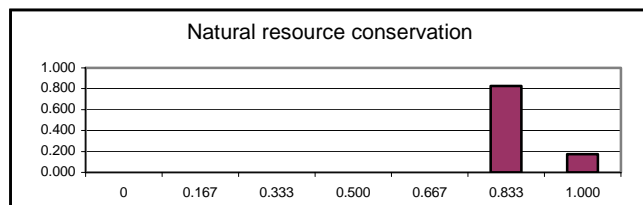


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000

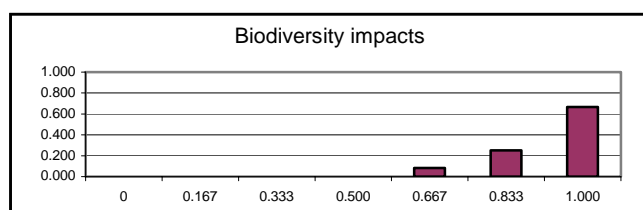


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.842	0.158	0.000	0.000

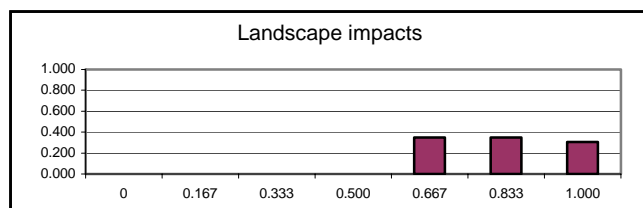
BIO Variante



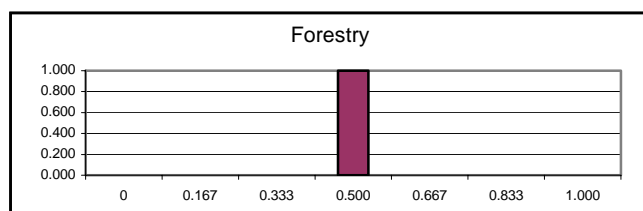
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.826	0.174



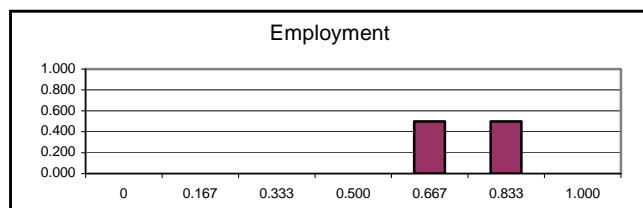
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.083	0.250	0.667



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.348	0.348	0.304



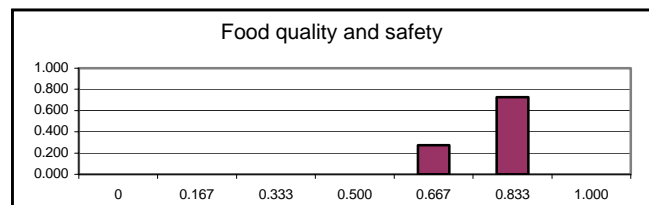
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	1.000	0.000	0.000	0.000



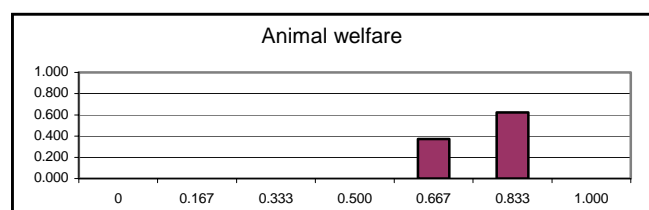
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.500	0.500	0.000

Probability Distributions of Evaluations for the Integrated Production Option (IP-Variante) in Canton Aargau, Switzerland

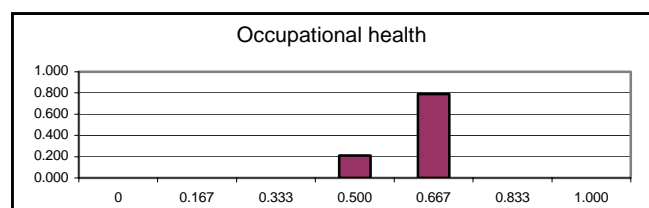
IP Variante



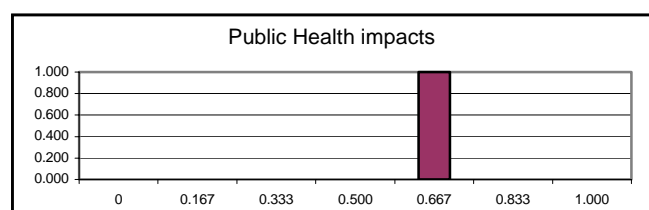
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.273	0.727	0.000



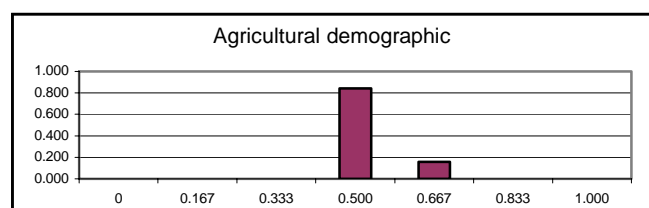
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.375	0.625	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.211	0.789	0.000	0.000

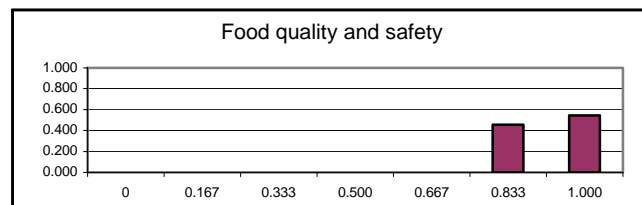


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	1.000	0.000	0.000

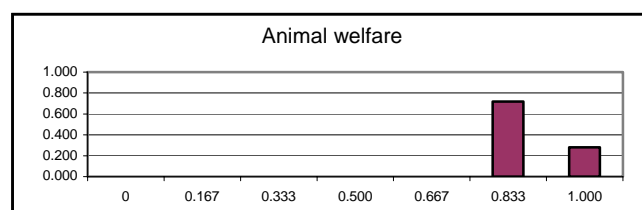


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.842	0.158	0.000	0.000

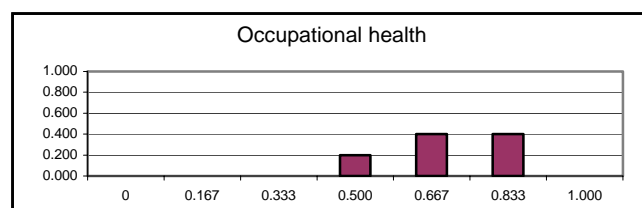
BIO Variante



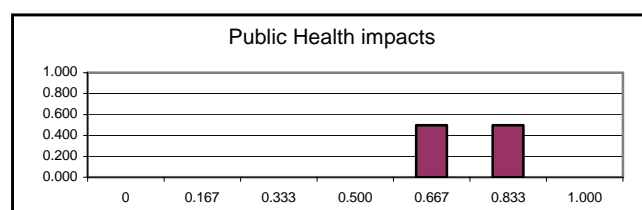
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.455	0.545



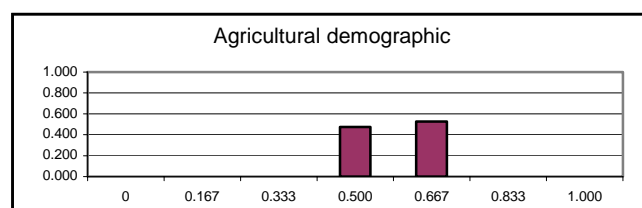
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.720	0.280



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.200	0.400	0.400	0.000



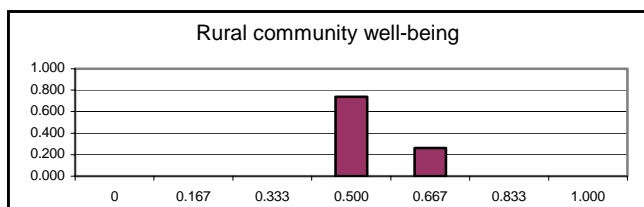
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.500	0.500	0.000



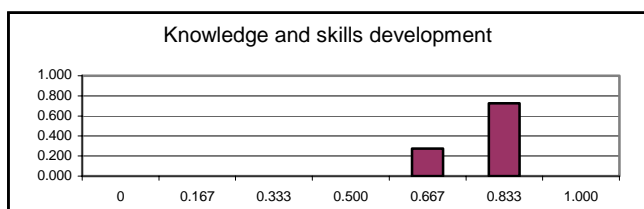
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.474	0.526	0.000	0.000

Probability Distributions of Evaluations for the Integrated Production Option (IP-Variante) in Canton Aargau, Switzerland

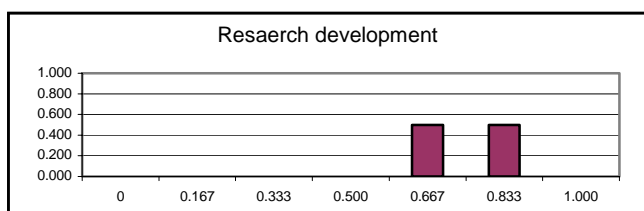
IP Variante



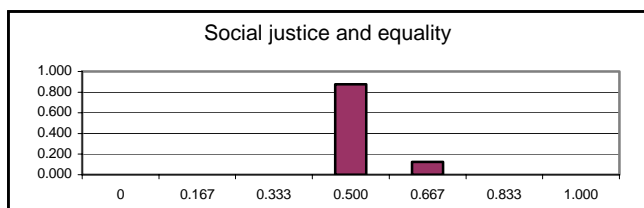
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.737	0.263	0.000	0.000



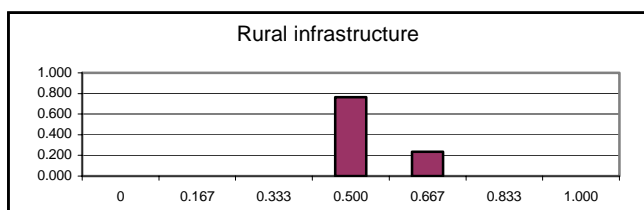
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.273	0.727	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.500	0.500	0.000

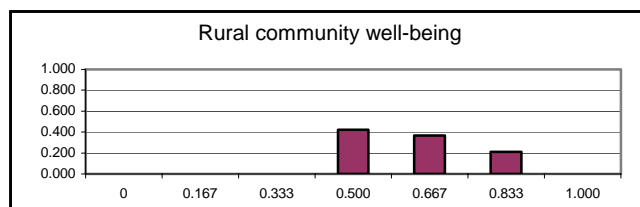


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.875	0.125	0.000	0.000

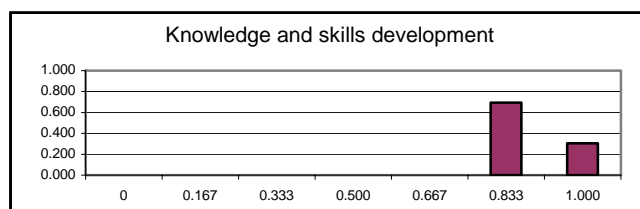


Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.765	0.235	0.000	0.000

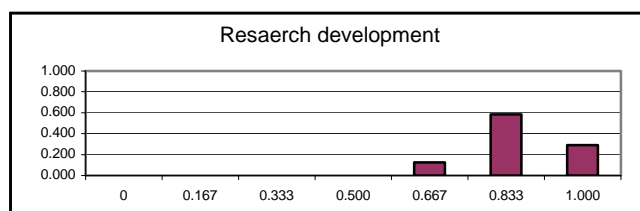
BIO Variante



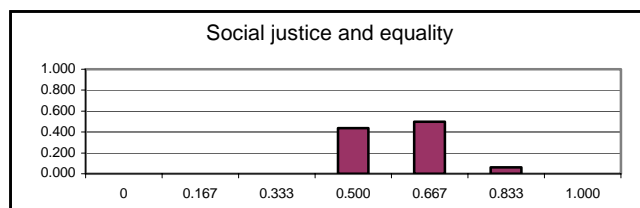
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.421	0.368	0.211	0.000



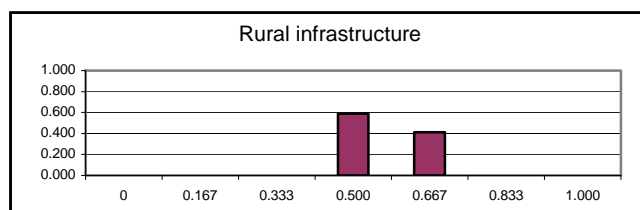
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	0.696	0.304



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.125	0.583	0.292



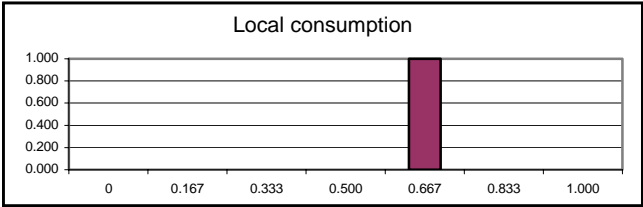
Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.438	0.500	0.063	0.000



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.588	0.412	0.000	0.000

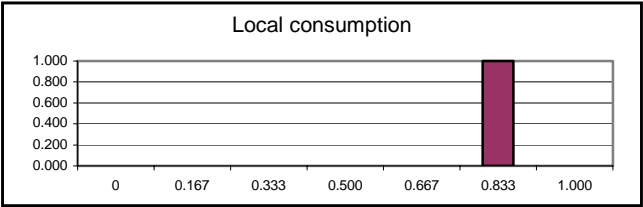
Probability Distributions of Evaluations for the Integrated Production Option (IP-Variante) in Canton Aargau, Switzerland

IP Variante



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	1.000	0.000	0.000

BIO Variante



Value	0	0.167	0.333	0.500	0.667	0.833	1.000
Frequency	0.000	0.000	0.000	0.000	0.000	1.000	0.000

6.9 Appendix 9: Evaluations in the evidence-based analysis in the Lower Saxony - Germany case study

Authors: Karin Reiter, Wolfgang Roggendorf (Institute of Rural Studies, Federal Agricultural Research Centre (FAL) Braunschweig (Germany) in collaboration with Dr. Hiltrud Nieberg, Institute of Farm Economics, Federal Agricultural Research Centre (FAL), Braunschweig (Germany)

Background

As part of the work package 1.4 it was agreed to compare the cost-effectiveness of agri-environmental policies in several countries in relation to Organic Farming policies. This paper informs about the assessment of agri-environment measures in the context of Proland in Lower Saxony, Germany. The programme structure of the agri-environment measures is differentiated in the **agri-environmental programme** (NAU = Niedersächsisches Agrarumweltprogramm), in a **programme with specific measures in water protection zones** (Trinkwasserschutz in Wasserschutzgebieten) and the **nature conservation programme in specific areas** (Schutz und Entwicklung von Lebensräumen von Tier- und Pflanzenarten in bestimmten Gebieten). The NAU includes measures focussing on input reduction und protection of abiotic resources on farmed land, they are offered in all parts of Lower Saxony. The programme “Trinkwasserschutz in Wasserschutzgebieten” is a special offer for farmers working in water protection areas. The nature conservation programme is targeting on the preservation of especially endangered habitats on farmed land, concentrating on biotic resources. The measures of this programme are restricted to areas with environmental restrictions. An overview is given in Table 1. Organic Farming is included in NAU under measure f2-C.

Table x.1 List of agri-environmental measures of PROLAND in Lower Saxony

f1	Securing of endangered domestic animal breeds (Gefährdete Haustierrassen)
f2	Agri-environmental programme of Lower Saxony <i>(Niedersächsisches Agrarumweltprogramm, NAU)</i>
f2-A1	Renunciation of herbicide use in orchards <i>(Herbizidverzicht bei Obstkulturen)</i> Renunciation of herbicide use in orchards with green cover crops <i>(Herbizidverzicht bei Obstkulturen mit Begrünung)</i>
f2-A2	Mulch and direct seeding (conservation tillage) <i>(Anwendung von Mulch- oder Direktsaat oder Mulchpflanzverfahren im Ackerbau)</i>
f2-A3	Environmentally friendly application of liquid manure <i>(Umweltfreundliche Gülleausbringung)</i>
f2-A4	Field parcels with specific flowering plants on set-aside land <i>(Anlage von Blühflächen auf Stilllegungsflächen)</i>
f2-A5	Field margins with specific flowering plants <i>(Anlage von Blühstreifen außerhalb von Stilllegungsflächen)</i>
f2-A6	Field margins/buffer strips <i>(Anlage von Schonstreifen außerhalb von Stilllegungsflächen)</i>
f2-B	Extensive grassland use <i>(Extensive Grünlandnutzung)</i>
f2-C	Organic farming <i>(Ökologische Anbauverfahren)</i>
f2-D	Long term set-aside (10-years) <i>(Zehnjährige Stilllegung)</i> Long term set-aside (10-years) combined with the establishment and maintenance of hedges <i>(Zehnjährige Stilllegung mit Anlage und Pflege von Hecken)</i>
f3	Nature conservation programme in specific areas <i>(Schutz und Entwicklung von Lebensräumen von Tier- und Pflanzenarten in bestimmten Gebieten)</i>
f3-a	Maintenance of biotops/habitats <i>(Biotoppflege)</i>
f3-b	Wet pastures <i>(Feuchtgrünland)</i>
f3-c	Permanent pasture <i>(Dauergrünland)</i>
f3-d	Nordic migratory birds <i>(Nordische Gastvögel)</i>
f3-e	Field margins/buffer strips on arable land <i>(Ackerrandstreifen)</i>
f4	Specific measures in water protection zones - water friendly land management <i>(Trinkwasserschutz in Wasservorranggebieten durch gewässerschonende landwirtschaftliche Flächenbewirtschaftung)</i>
f4-a	Extensive grassland use and maintenance of extensive grassland use <i>(Extensive Bewirtschaftung und Beibehaltung der Nutzung von Grünland)</i>
f4-b	Conversion of arable land to low-input grassland <i>(Umwandlung von Ackerflächen in extensiv bewirtschaftetes Grünland)</i>
f4-c	Groundwater friendly management of set-aside arable land <i>(Grundwasserschonende Bewirtschaftung gem. VO (EG) Nr. 1251/1999 stillgelegter Ackerflächen)</i>
f4-d	Organic farming with additional obligations for water protection <i>(Bewirtschaftung eines Betriebsteils nach den Grundsätzen des Ökologischen Landbaus)</i>
f4-e	Specific cultivation measures for water protection on organic land <i>(Bewirtschaftungsmaßnahmen zur gewässerschonenden ökologischen Bewirtschaftung)</i>

Methodology and problems encountered

The assessment carried out relied mainly on the evaluation reports of the rural development programme of Lower Saxony 2000 – 2006, especially for the agri-environment measures, published in 2005 by *REITER et al* and by *FÄHRMANN et al*. The reports are based on the common Evaluation Questions with Criteria and Indicators (Doc. VI/2004/00 Final). The Evaluation Questions are composed of chapter specific and cross cutting questions. The evaluation questions for the agri-environment measures focus upon the benefits of the measures for the natural resources, there are no questions concerning economic criteria. The answers of the cross cutting questions deal with the whole EPLR with regard to its strategy and synergy. Information on single measures like organic farming is in general not provided. Furthermore the report provides a differentiation between NAU, nature conservation programme and programme with specific measures in water protection zones but does not compare organic farming with other measures. This follows the structure of the agri-environmental programme of Lower Saxony. If the report does outline differences between single measures, they are named by shortcuts in Table 2. If no specific measures were mentioned, the rating applies to all agri-environmental measures, including organic farming.

It proved quite difficult to rate the different indicators based on this mid-term review. Only for sixteen out of the twenty-six indicators the assessment could be carried out, because there were no data derived from the mid-term review regarding the missing indicators.

Another problem is the rating. Not all rating had been done by the researchers. As far as possible the ratings were adapted to the scale used in the given framework in Table 2. For the remaining indicators, rating had to be based on information of rather qualitative nature, and is therefore quite subjective. The original texts translated are listed in the table besides the rating as background information.

When having a look at the following assessment of the scheme in Table 2, the problems mentioned above should be kept in mind.

Table 2. Evaluation of PROLAND-AEM and Organic Farming (OF, f2-C) in Lower Saxony.

No.	Indicator	Rating (+3 to -3)	Other AEM	OF (f2-C)	Notes if not indicated otherwise, the source was the, Chapter 6 – Agrarumweltmaßnahmen (AEM) by REITER et al. and chapter X – Kapitelübergreifende Fragen (cross cutting questions) by <i>FÄHRMANN et. al.</i> IN: “Aktualisierung der Halbzeitbewertung von PROLAND Niedersachsen” by <i>GRAJEWSI et al.</i> 2005
1	Capital investment on-farm To what extent has the scheme contributed to a direct or indirect increase in investment in on-farm capital works.	Substantial increase/ decrease in the level of capital investment			
2	Diversification of farm enterprises To what extent has the scheme contributed to the diversification of farm enterprises.	Substantial increase/ decrease in the mix and range of farm enterprises			
3	Diversification of rural economy To what extent has the scheme contributed to the diversification of the rural economy (into non-agricultural activities).	Substantial increase/ decrease in the diversity of the rural economy			
4	Fragmentation and other farm structure issues To what extent has the scheme contributed to reducing fragmentation and addresses other farm structure issues seen as problematic?	Substantial improvement/ degrading in farm structure	+1	+2	The evaluation is based on the development of the average farm sizes, divided according to support measures (See Table 5 in the Appendix). The clearly greatest growth in the land areas both at the time of the mid term evaluation (See Reiter et al 2003, Chapter XI Agric-Environment measures, material volume) as well as in both previous support years (2002 to 2004) was seen on the part of organic farming participants. The participants in other agri environmental measures in Lower Saxony were also characterized by significantly stronger farm growth in comparison to non-participants, even if not as clearly defined as in organic farming.
5	Implementation costs (scheme) What are the cost of administering and implementing the scheme?	Costs substantially less/more than other rural development and agri-environment schemes	(-1)		Difficult to compare. The only information founded (rough estimates), is a master thesis written by Martin Meyer (2004). He calculated the administration costs (related to ha AEM and Expenditure). Expenditure related to the administration costs: NAU 1:0.35 – 1:0.40, Nature conservation programme 1:0.49, payments for areas with environmental restrictions 1:1.29. Administration costs / ha AEM: NAU 25 EURO/ha AEM, Nature conservation programme 110 EURO/ha AEM.
6	Farm income To what extent has the scheme contributed to an increase in farm income.	Substantial increase/ decrease in the level of farm income	(+1)		Update of the Midterm Evaluation TB-X, p. 23 (vgl. No.6 -Tab.):
7	Employment To what extent has the scheme contributed to increased employment.	Substantial increase/ decrease in quantity of employment (FTEs)	0		Update of the Midterm Evaluation TB-X, p. 14 (vgl. No. 7 – Tab.):
8	Uptake of regulated production systems To what extent has the scheme contributed to the uptake of regulated production systems (e.g. organic,	Substantial increase/ decrease in the level of uptake of regulated production systems	0 +1 +2	+1	Of all the offered agric environmental measures, only organic farming can be classified as a comprehensive all-embracing production system on the total farm area with diverse environmental protection impacts. All other measures are addressed to partial areas of the farms with limited management requirements, which follow in part only specific resource

	PDO, PGI, zero pesticide, other defined environmental/animal welfare/food quality systems (defined at national or EU level)).				protection goals (i.e., erosion protection). But in a range of measures there are in part significant limitations of the use of fertilizers and pesticides (See Tab. No. 13). As Table 4 in the Appendix shows, the area growth in organic farming continued in the last support period, but the number of participating farms is less significantly increased. In comparison, the number of participants in the measures with less difficult requirements increased in part much more strongly (i.e., mulch seeding).
9	Food quality and safety To what extent has the scheme contributed to an increase in food safety and quality.	Substantial increase/ decrease in food quality and safety			

Table 2 (contd.). Evaluation of PROLAND-AEM and Organic Farming (OF, f2-C) in lower Saxony.

No.	Indicator	Rating (+3 to -3)	Other AEM	OF (f2-C)	Notes
					if not indicated otherwise, the source was the, Chapter 6 – Agrarumweltmaßnahmen (AEM) by REITER et al. and chapter X – Kapitelübergreifende Fragen (cross cutting questions) by FÄHRMANN et. al. IN: "Aktualisierung der Halbzeitbewertung von PROLAND Niedersachsen" by GRAJEWSI et al. 2005
10	GM traceability To what extent has the scheme contributed to the differentiation of genetically modified products from non-genetically modified products at all points in the supply chain.	Complete traceability/ no traceability of crop origins and GM status	(0)	(+3)	Until 2004 no GE crop varieties took place in Germany. Even OF is the only AEM with a ban on the use of GMOs.
11	Animal welfare To what extent has the scheme contributed to an increase in animal health and welfare.	Substantial increase/ decrease in quality of animal welfare	0	+1	In case of livestock husbandry regulations organic farming is the only scheme in Lower Saxony improving the animal welfare conditions (above best practise). The share of assisted holdings with livestock husbandry and the number of supported animals are unknown.
12	Occupational Health impacts To what extent has the scheme contributed to an improvement in occupational health and safety.	Substantial increase/ decrease in occupational health			
13	Public Health impacts To what extent has the scheme contributed to an improvement in public health.	Substantial increase/ decrease in public health	0 +1 +2 +3	+3	Only with regard to pesticides!! Update of the Midterm Evaluation MB-XI, p. 109 "Here a reduction of the pesticide use on arable land in organic farming, at set aside land, on field margins as well as through conversion of arable land to low input grassland (including the comparable measures in water protection zones) are to be estimated as having a particularly positive impact, since in the reference system a comparably high intensity of pesticide use reigns on arable land. With about 4.9 percent of the UAA in Lower Saxony, the portion of effective supported areas has risen slightly since the mid term evaluation (4.4 %) but now, as then, can be estimated as relatively low overall." +1: f2A1, +2: f2A5, f2A6, f2B, f3b, f3c, f3d, f4a, +3: f2D, f3e, f4b, f4c, f4d, f4e

14	Agricultural demographic To what extent has the scheme contributed to changes in the farming population in terms of age and gender (with particular reference to young entrants, early retirement and women in the workforce).	Substantial positive/negative change in agricultural demographic in terms of age and gender	+ 1	Update of the Midterm Evaluation TB-X, p. 7f (vgl. No. 10.4-Tab): An above average number of young farmers and foresters participate in agri-environmental measures. Young farmers who wish to continue to practice their occupation in the future must either give impulses for a further development of the farm or find new income and occupation possibilities, in some cases apart from the original agricultural production. Qualification and agri-environmental measures can be used for both development strategies.
15	Rural community wellbeing To what extent has the scheme contributed to an improvement in rural community wellbeing.	Substantial increase/decrease in rural community wellbeing		
16	Knowledge and skills development To what extent has the scheme contributed to the knowledge and skills base of the agricultural community and increase in research in to rural and agricultural issues.	Substantial increase/decrease in agricultural and environmental knowledge and skills		
17	Social justice and equality (gender, intergenerational, international) To what extent has the scheme contributed to an increase in social justice and equality in terms of gender, intergenerational and international equality, this also includes distribution of profit in the supply chain.	Substantial increase/decrease in social justice and equality		

Table 2 (contd.). Evaluation of PROLAND-AEM and Organic Farming (OF, f2-C) in Lower Saxony.

No.	Indicator	Rating (+3 to -3)	Other AEM	OF (f2-C)	Notes
					if not indicated otherwise, the source was the, Chapter 6 – Agrarumweltmaßnahmen (AEM) by REITER et al. and chapter X – Kapitelübergreifende Fragen (cross cutting questions) by FÄHRMANN et. al. IN: “Aktualisierung der Halbzeitbewertung von PROLAND Niedersachsen” by GRAJEWSKI et al. 2005
18	<p>Rural infrastructure (including transport, housing)</p> <p>To what extent has the scheme contributed to the preservation and development of rural infrastructure.</p>	Substantial increase/ decrease in expenditure on infrastructure development	+1		<p>Update of the Midterm Evaluation TB-X, p. 9: Improvement of Living and Recreational Functions:</p> <p>Through the contractual natural conservation as a part of the agri-environmental measures (f3), the maintenance of primarily low input, locally-adapted agricultural management is supported. Typical for Lower Saxony is the farming of wet grassland and heath farming. Farms participating in contractual nature conservation are generally in tourist regions, for example in the Luneburg Heath and the Lowland Moor Areas (Dümmer). The traditional farm animal breeds maintained with the help of agri-environmental measures are used in landscape conservation and contribute to a great extent to the maintenance of endangered habitats/biotops. Examples are the small heath sheep (small white horned and non-horned moor sheep) which graze on the wetlands of the Diephold Moor Basin or on heath and sandy grassland in the Luneburg Heath (small grey horned heath sheep).</p>

19	Local marketing, processing and consumption To what extent has the scheme contributed to an increase in local processing, marketing and consumption of agricultural products.	Substantial increase/ decrease in local produce processed, marketed and consumed locally	0		Update of the Midterm Evaluation TB-X, p. 35, S. No. 18 -Tab.: .
20	Energy use To what extent has the scheme contributed to the reduction in fossil fuels and/or increased the use of renewable and locally produced energy.	Substantial improvement/ deterioration in energy utilisation	+1	+2	Update of the Midterm Evaluation, MB VI, p. 195: In addition to the evaluation criteria considered in MB-VI Chapter 6.6, further positive effects for environmental protection: less use of fossil energy per hectare. In conventional systems higher energy use primarily due to the high energy use to produce mineral N fertilizer, pesticides and feedstuffs. (Köpke, 2002)
21	Control of climate change To what extent has the scheme contributed to a reduction in the net release of potential climate altering gases.	Substantial decrease/ increase in emission levels of climate change gases	+1	+2	Update of the Midterm Evaluation TB-X, p. 53ff (see No. 23 –Tab.): Overall about roughly estimated 144000 t CO2 equivalents are saved each year (as far as it is quantifiable). This means 0.17 percent of the 86.4 million tons CO2 emitted in the year 2000 (Iak energy balance, 2005). Quantified targets are not included in PROLAND. The expansion of the organic land area is quite advanced in comparison to the interim evaluation, but with 2.5% of the UAA, is well behind the federal goal of 20 percent. The same holds for the afforestation. A reduction of ammonia emissions can be expected particularly through the promotion of environmentally friendly (closer to the soil) slurry distribution of a total of 3400 t/a. In addition, through the reduction of the use of mineral fertilizers in organic farming, the ammonia emissions can be reduced by 1180 t/a.
22	Control of pollutants To what extent has the scheme contributed to the reduction in the release of environmentally harmful substances.	Substantial decrease/ increase in emission levels of pollutants	0, +1, +2, +3	+2	+3=f2A5,f2D,f4b,f4b; +2=f2A1,f2A6,f2B,f3b,f3c,f3e,f4a,f4d,f4e; +1=f2A3,f3d, OF (+2) : 50.641 ha Other AEM: +3 = 7.332 ha, +2 = 65.766 ha, +1= 93.896 ha Total= 217.635 ha

Table 2 (contd.). Evaluation of PROLAND-AEM and Organic Farming (OF, f2-C) in Lower Saxony.

No.	Indicator	Rating (+3 to -3)	Other AEM	OF (f2-C)	Notes
					if not indicated otherwise, the source was the, Chapter 6 – Agrarumweltmaßnahmen (AEM) by REITER et al. and chapter X – Kapitelübergreifende Fragen (cross cutting questions) by <i>FÄHRMANN et. al.</i> IN: "Aktualisierung der Halbezeitbewertung von PROLAND Niedersachsen" by <i>GRAJEWSKI et al.</i> 2005
23 ¹	Natural resource conservation To what extent has the scheme contributed to the conservation of natural resources, including soil, water and other natural resources?	Substantial increase/ decrease in quality of natural resources	0, +1, +2, +3	+2	+3=f2A5,f2D,f4b,f4c; +2=f2A1,f2A2,f2A6,f2B,f3b,f3c,f3e,f4a,f4d,f4e; +1=f2A3,f3d,

					OF (+2) : 50.641 ha Other AEM: +3 = 7.332 ha, +2 = 134.040 ha, +1 = 93.896 ha Total= 285.909 ha
24 ⁹	Biodiversity impacts To what extent has the scheme contributed to an increase in the biodiversity.		0, +1, +2, +3	+2	+3=f3a,f3b,f3c,f3d,f3e; +2=f2A1,f2A6,f2D,f4b,f4d,f4e; +1=f2A5,f4a,f4c; OF (+2) : 50.641 ha Other AEM: +3 = 7.559 ha, +2 = 22.967 ha, +1 = 58.568 ha Total= 139.735 ha
25 ²	Landscape impacts To what extent has the scheme contributed to the landscape amenity, including agri-environmental, visual and cultural considerations.	Substantial increase/decrease in landscape amenity	0, +1, +2, +3	+1	+3=f2A5,f3a; +2=f2A4,f2D,f3b,f3c,f3d,f3e,f4b; +1=f2A6,f2B,f4a,f4c,f4d,f4e; OF (+1) : 50.641 ha Other AEM: +3 = 27.939 ha, +2 = 5.334 ha, +1 = 7.925 ha Total= 91.839 ha
26	Forestry To what extent has the scheme contributed to the increase in the forest area to the benefit of environmental, social and economic enhancement?	Substantial increase/decrease in the size of forested area			Environmental forest production are never a part of the Chapter VI 1257/1999. They belong to Chapter VIII.

⁹ The report by Fährmann et al. (2005); Chapter X – cross cutting: ranked indicators on the following scale: positive effect: "+" = low; "++" = middle; "+++" = high, "0" no effect but target, negative effect: "--" = low, "---" = middle, "---" = strong, brackets (): existing effects could not be quantified. The report by Reiter et al. ranged indicators on the same positive scale but used only one negative and "0" = no effect.: This scale was transformed to the scale used in this table from +3 to -3.

Context Indicators

Table 3. Public Expenditure for agri-environmental measures (f) of PROLAND 2000 – 2004

Public Expenditure	F1 Endangered animal races	MSL within VO (EWG) Nr. 2078/1992	Nature Conservation VO (EWG) Nr. 2078/1992	F2 - NAU	F3 Nature Conser- vation	F4 Trinkwasserschutz Water protection areas	AEM total
	Mio. Euro	Mio. Euro	Mio. Euro	Mio. Euro	Mio. Euro	Mio. Euro	Mio. Euro
2000	0,000	10,205	0,000	0,000	1,025	0,626	11,855
2001	0,131	0,894	0,112	0,000	2,399	1,570	5,106
2002	0,148	6,837	0,065	5,812	4,158	2,198	19,218
2003	0,157	1,402	0,063	4,248	4,245	2,323	12,437
2004	0,155	1,782	0,003	9,548	5,279	2,260	19,028
2005							
2006							
Insgesamt							

1) The share of EU-participation on public expenditure is 50%
in EU financial years

Quelle: Reiter et al. (2005) : Chapter 6 – Agrarumweltmaßnahmen (AEM), p. 22

Table 3b: Public expenditure in **Lower Saxony** (estate + federation +EU) in 1000 Euro.

Year	Agri-environment total	Organic Farming	Organic in % total
2000	-	5,549	-
2001	15,684	7,399	47.2
2002	22,527	8,711	38.7
2003	24,235	8,740	36.1
2004	34,294	8,588	25.0

Source: BMELV (2005). Department 526 and notices in writing from the responsible Ministry of Lower Saxony; compilation by H Nieberg (FAL-BW)

Table 3c: Certified organic and in-conversion land area according Reg. (EU) 2092/91 in Lower Saxony

Year	hectare
2000	34,761
2001	43,175
2002	51,989
2003	55,959
2004	61,172

Source: BLE (div. years). Department 512; compilation by H NIEBERG (FAL-BW)

Table 4. Number of holdings participating in the schemes and the related supported land area

Maßnahme	2000		2001				2002				2003				2004			
	Betriebe n	Fläche ha	Betriebe n	% ³⁾	Fläche ha	% ³⁾	Betriebe n	% ³⁾	Fläche ha	% ³⁾	Betriebe n	% ³⁾	Fläche ha	% ³⁾	Betriebe n	% ³⁾	Fläche ha	% ³⁾
f1 Gefährdete Haustierrassen	76 ¹⁾	814 ²⁾	167 ¹⁾	120	4.492 ²⁾	452	224 ¹⁾	34	6859 ²⁾	53	k.A.		6862	0	197	-12	6787	-1
f2 Niedersächsisches Agrarumweltprogramm (NAU)																		
f2-A1 Förderung Herbizidverzicht bei Obstkulturen	0	0	4		714		2	-50	666	-7	1	-50	2	-100	1	0	2	0
Förderung Herbizidverzicht bei Obstkulturen mit Begrünung	0	0	1		0		1	0	21		1	0	21	0	1	0	21	-1
f2-A2 Anwendung von Mulch- oder Direktsaat oder Mulchpflanzverfahren im Ackerbau (MDM)															1.928		68.274	
f2-A3 Umweltfreundliche Gülleausbringung ³⁾															1.296		86.525	
f2-A4 Förderung der Anlage von Blühflächen auf Stilllegungsflächen (Blühflächen)															179		1.129	
f2-A5 Förderung der Anlage von Blühstreifen außerhalb von Stilllegungsflächen (Blühstreifen)															6		6	
f2-A6 Förderung der Anlage von Schonstreifen außerhalb von Stilllegungsflächen (Schonstreifen)															5		33	
f2-B Förderung extensiver Grünlandnutzung	949	34.602	1.020	7	37.668	9	1.069	5	39.380	5	1.174	10	41.981	7	1.370	17	46.791	11
f2-C Förderung ökologischer Anbauverfahren	1.039	40.310	1.068	3	43.846	9	1.205	13	47.445	8	1.066	-12	49.855	5	1.058	-1	50.641	2
f2-D Förderung der zehnjährigen Stilllegung	18	32	30	67	58	77	37	23	74	29	40	8	80	8	42	5	99	23
Förderung der zehnjährigen Stilllegung mit Anlage und Pflege von Hecken	3	2	5	67	5	132	8	60	8	46	12	50	10	24	15	25	19	101
f3 Schutz und Entwicklung von Lebensräumen von Tier- und Pflanzenarten in bestimmten Gebieten																		
f3-a Biotoppflege	0	0	31		4.356		42	35	5.338	23	54	29	7.124	33	59	9	7.253	2
f3-b Feuchtgrünland	341	3.353	371	9	3.829	14	451	22	4.955	29	504	12	5.554	12	523	4	6.081	9
f3-c Dauergrünland	376	3.401	492	31	4.153	22	577	17	4.595	11	630	9	5.439	18	651	3	5.861	8
f3-d Nordische Gastvögel	58	1.420	110	90	5.476	286	139	26	6.554	20	139	0	5.931	-10	146	5	7.371	24
f3-e Ackerrandstreifen	43	287	145	237	751	162	169	17	916	22	175	4	979	7	176	1	1.073	10
f4 Trinkwasserschutz in Wasservorranggebieten durch gewässerschonende landwirtschaftliche Flächenbewirtschaftung																		
f4-a Extensive Bewirtschaftung und Beibehaltung der Nutzung von Grünland	102	739	172	69	1.456	97	233	35	2.010	38	250	7	2.027	1	252	1	2.045	1
f4-b Umwandlung von Ackerflächen in extensiv bewirtschaftetes Grünland	36	208	109	203	688	231	153	40	1.090	58	179	17	1.340	23	182	2	1.353	1
f4-c Grundwasserschonende Bewirtschaftung gem. VO (EG) Nr. 1251/1999 stillgelegter Ackerflächen	287	1.758	695	142	4.198	139	891	28	5.500	31	943	6	5.932	8	944	0	5.874	-1
f4-d Bewirtschaftung eines Betriebsteils nach den Grundsätzen des Ökologischen Landbaus	4	32	9	125	104	221	10	11	85	-18	8	-20	73	-15	7	-13	64	-11
f4-e Bewirtschaftungsmaßnahmen zur gewässerschonenden ökologischen Bewirtschaftung	51	1.961	65	27	2.443	25	81	25	3.294	35	102	26	3.835	16	103	1	3.794	-1

1) Anzahl Verträge. 2) Anzahl Tiere 3) Prozentuale Veränderung gegenüber dem Vorjahr.

Anmerkung: Die Auswertungen basieren auf den Eintragungen der Landwirte in den Flächen- und Nutzungsnachweisen für die Teilnahme an den AUM im jeweiligen Antragsjahr.

Bei den f3 und f4-Maßnahmen entsprechen diese der Verpflichtung im laufenden Kalenderjahr, seit 2004 auch bei f2-Maßnahmen. Für die Maßnahmen des NAU wurden bis 2003

sowohl die Flächen der laufenden Verpflichtung aus dem Vorjahr als auch neubewilligte Flächen, deren Verpflichtungszeitraum im Juli des Antragsjahres begann, in den FNN eingetragen.

Diese sind Datensatz nicht unterscheidbar. Weitere Erläuterungen zu den Datensätzen im MB-VI-Kapitel 6.1.

Fläche = land area ; Betriebe = holdings

Quelle: Reiter et al. (2005) : Chapter 6 – Agrarumweltmaßnahmen (AEM), p. 25

No.5 -Tab. : **Farm development of participants in agri-environmental measures in comparison to the average of all farms in Lower Saxony, Support Year 2004 (only farms that received support in 2002 were**

Measure		UAA 2002	UAA 2004	Change 2004 vs. 2002	Number of analysed holdings
		hectare	hectare	percent	
Organic farming	f2-C	62.66	68.71	9.6	904
Extensive grassland use	f2-B	73.10	76.09	4.1	1017
Nature conservation programme	f3	75.13	78.56	4.6	2225
Measures in water protection zones	f4	101.38	107.29	5.8	1124
Mulch and direct seeding	f2-A2	134.74	140.61	4.4	1862
All holdings		53.89	55.15	2.3	44448

evaluated)

Source: Roggendorf (2006), own calculations

	Priority axes	I: Improvement of production structure				II: Rural development						III: Agri environment, less-favoured areas and areas with environmental restrictions, Measures to support environment					
	Chapter of (EC) No 1257/1999	I	III	VII		IX						V	VI	VII		XI	
	Measure abbr.	a1	c1	g1	il, i2, h	k1	n1	o1	r1	s1	u1, u2	e	f	m	t1	t2/ t3	t4
support of income	on farm holdings	++	+	(+)	+	+					0	+	(+)				
	off farm holdings		0	(+)	0			0			0						
Directions of action	positiv effects: low = +, middle = ++, high = +++ no effects, but target: 0 negative effects: low = -, middle = --, high = --- brackets (): existing effects could not be quantified																

No.6 -Tab.: **Effects of PROLAND on income**

Source: Fährmann et. al. : Kapitelübergreifende Fragestellungen, Textband-X, S. 23: In: Grajewski et al. (2005)Aktualisierung der Halbzeitbewertung von PROLAND NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des ländlichen Raumes .

	Priority axes	I: Improvement of production structure				II: Rural development						III: Agri environment, less-favoured areas and areas with environmental restrictions, Measures to support environment					
	Chapter of (EC) No 1257/1999	I	III	VII		IX						V	VI	VII		XI	
	Measure abbr.	a1	c1	g1	i1, i2, h	k1	n1	o1	r1	s1	u1, u2	e	f	m	t1	t2/ t3	t4
Support of employment	on farm holdings	+	+	0	0	+					0						
	off farm holdings		0	+	0		0	+			0						
Directions of action	positiv effects: low = +, middle = ++, high = +++ no effects, but target: 0 negative effects: low = -, middle = --, high = ---																

No. 7 – Tab.: **Occupational impacts of PROLAND**

Source: Fährmann et. al. : Kapitelübergreifende Fragestellungen, Textband-X, S. 14:
 In: Grajewski et al. (2005): Aktualisierung der Halbzeitbewertung von PROLAND
 NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des ländlichen Raumes .

No. 18 -Tab.: **Effects of PROLAND on the improvement of the market**

	Priority axes	I: Improvement of production structure				II: Rural development						III: Agri environment, less-favoured areas and areas with environmental restrictions, Measures to support environment					
	Chapter of (EC) No 1257/1999	I	III	VII		IX						V	VI	VII	XI		
	Measure abbr.	a1	c1	g1	i1, i2, h	k1	n1	o1	r1	s1	u1, u2	e	f	m	t1	t2/t3	t4
Improvement of market situation for basic agricultural/ forestry products	Productivity / cost reduction	++		+	+	+			0					0			0
	Market positioning (quality etc.)/ added value	+	(+)	+	+									+			0
	positive development in the turnover and prices		(+)	+	0								0 ¹⁾	+			0
Directions of action:	positiv effects: low = +, middle = ++, high = +++ no effects, but target: 0 negative effects: low = -, middle = --, high = --- brackets (): existing effects could not be quantified ¹⁾ (1) only for OF, if price of organic farming products is higher then non org. farming products																

position of agricultural and forestry products

Source: Fährmann et. al. : Kapitelübergreifende Fragestellungen, Textband-X, S. 14:
 In: Grajewski et al. (2005): Aktualisierung der Halbzeitbewertung von PROLAND
 NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des ländlichen Raumes .

No. 10.4-Tab.: **Age and gender profile of the supported agricultural population**

	Number	Sample	Share of age group			Share of sex	
			< 35	35 - 44	> 45	male	female
Background							
Employees in Lower Saxony	3,325,300		29	31	39	56	44
Farmer in Lower Saxony	57,588		12	32	56 ¹⁾	91	9 ¹⁾
Family employees in Lower Saxony	110,072		18	26	56	65	35
Measure	Beneficiaries						
Investments in agricultural holdings (a)	4,460 ²⁾	36	42	18	3	70	30
Training (c)	13,607 ²⁾	6,711	41	33	26	64	36
Areas with environmental restrictions (e)	1,813 ³⁾	0	...	...	...	...	...
Agri environmental (f)	7,465 ³⁾	267	41	47	11	...	...
Forestry (h, i)	7,895 ²⁾	200	6	16	79	male > female	
Processing and marketing (g)	64 ²⁾	19	...	...	...	59	41

1) Germany 2003. 2) Beneficiaries 2000-2004. 3) Beneficiaries 2004. ...= not applicable.

Source: Fährmann et. al. : Kapitelübergreifende Fragestellungen, Textband-X, S. 8:
In: Grajewski et al. (2005): Aktualisierung der Halbzeitbewertung von PROLAND
NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des
ländlichen Raumes .

No. 23 –Tab.: **Measures contributing to a reduction of greenhouse gases and ammonia**

Measure	Kind of action	Reduction in greenhouse gas emission (in t carbon equivalents / a)			t/a
		CO ₂	N ₂ O	CH ₄	NH ₃
Reduction of agricultural emissions and energy use					
a	Reduction of energy use in horticulture	9.137			
	Support of 43 photovoltaic plants	x			
	Support of approx. 30 biogas plants	37.800		x	
	Emission-reduced turnout of liquid manure (approx. 90 machines)		x		260
f	Organic farming, Extensive grassland use, Nature conservation programme (grassland)	97.200	x	x	1.180
	Environmentally friendly application of liquid manure				3.140
Sum ¹⁾		144.137	x	x	4.320

1) Measures of k, h, i, o have positive effects, but are not quantifiable

Source: Fährmann et. al. : Kapitelübergreifende Fragestellungen, Textband-X, S. 54:
In: Grajewski et al. (2005): Aktualisierung der Halbzeitbewertung von PROLAND NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des ländlichen Raumes .

6.9.1.1 References

Grajewski et al. (2005): Aktualisierung der Halbzeitbewertung von PROLAND NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des ländlichen Raumes .

mit Einzelberichten zu einzelnen Fragestellungen:

Reiter et al. (2005): Kapitel VI - Agrarumweltmaßnahmen

Fährmann et. al. (2005): Kapitelübergreifende Fragestellungen, Textband X

Grajewski et al. (2003): Halbzeitbewertung von PROLAND NIEDERSACHSEN, Programm zur Entwicklung der Landwirtschaft und des ländlichen Raumes .

Köpke, U. (2002): Umweltleistungen des Ökologischen Landbaus. Ökologie und Landbau 122, H. 2, S. 6-18.

6.10 Appendix 10 Evaluations in the evidence-based analysis in the Baden-Württemberg - Germany case study

EU-CEEOPF, Work package 1.4 Assessment of the cost-effectiveness of Organic Farming (MEKA D2) and other measures of MEKA in Baden-Württemberg

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6.10.1.1 Background

As part of the work package 1.4 it was agreed to compare the cost-effectiveness of agrienvironmental policies in several countries with relation to Organic Farming policies. This paper reports about the assessment of the MEKA programme (MEKA = Markt Entlastungs- und Kulturlandschaftsausgleich) in Baden-Württemberg, Germany. MEKA includes several measures, details of which are given in Table 1. Organic Farming is included in MEKA under measure D2.

Table 1. Description of the measures listed under MEKA.

Description of Measure	
A	Environmentally friendly management
B	Preservation and maintenance of cultural landscape (including extensive grassland use)
C	Securing of landscape-maintaining, especially endangered land uses
D	No use of chemic-synthetic means of production (including Organic Farming under D2)
E	Extensive and environmentally sound plant production
F	Application of biological or biotechnological means of fighting pests and diseases
G	Preservation of especially endangered habitats

6.10.1.2 Methodology and Problems encountered

The assessment carried out relied mainly on the report by DOLUSCHITZ et al.: “Halbzeitbewertung des EPLR – Baden Württembergs 2000-2003”, published in October 2003. It proved quite difficult to rate the different indicators based on this mid-term review. Only for twelve out of the twenty-six indicators the assessment could be carried out, since there was no data to be acquired from the mid-term review regarding the missing indicators.

Another problem concerns the rating. Only for three indicators (no. 23, 24 and 25 in Table 2) rating had been done by the researchers and was adapted to the scale used in the given framework in Table 2. For the remaining nine indicators, rating had to be based on remarks of rather qualitative nature, and is therefore quite subjective. The original remarks are listed in the table besides the rating as background information.

Furthermore it proved difficult to compare the MEKA measure D2, namely Organic Farming, with other MEKA measures, since this was not a focus of the mid-term review. Where the report does outline any differences between single measures, they are named by capital letter (A-G) in Table 2. If no specific measures were mentioned, the rating applies to all measures listed under MEKA, including Organic Farming.

When having a look at the following assessment of the scheme in Table 2, the problems mentioned above should be kept in mind.

Table 2. Evaluation of MEKA and Organic Farming (OF, MEKA D2) in Baden-Württemberg.

No.	Indicator	Rating (+3 to -3)	MEKA	OF (MEKA-D2)	Notes (if not indicated otherwise, the source was the "Halbzeitbewertung des EPLR Baden-Württemberg" by DOLUSCHITZ et al. 2003)
1	Capital investment on-farm To what extent has the scheme contributed to a direct or indirect increase in investment in on-farm capital works.	Substantial increase/decrease in the level of capital investment			
2	Diversification of farm enterprises To what extent has the scheme contributed to the diversification of farm enterprises.	Substantial increase/decrease in the mix and range of farm enterprises			
3	Diversification of rural economy To what extent has the scheme contributed to the diversification of the rural economy (into non-agricultural activities).	Substantial increase/decrease in the diversity of the rural economy		1	p. 310: „Positive Einkommenseffekte innerhalb der Landwirtschaft schaffen Kaufkraft und lösen Konsum und damit Einkommens- und Beschäftigungseffekte auch außerhalb der Landwirtschaft in o.g. Umfang aus.“ p. 309: „Außerhalb der Landwirtschaft (...) wird [indirekt] durch den Einkommenstransfer in die Landwirtschaft und durch die Nutzung der Fördermittel zur Deckung auflagenbedingter Kosten Kaufkraft geschaffen, die mit 70%iger Wirksamkeit außerlandwirtschaftliche Beschäftigungsmöglichkeiten erhält.“
4	Fragmentation and other farm structure issues To what extent has the scheme contributed to reducing fragmentation and addresses other farm structure issues seen as problematic?	Substantial improvement/degrading in farm structure			
5	Implementation costs (scheme) What are the cost of administering and implementing the scheme?	Costs substantially less/more than other rural development and agri-environment schemes	0	1	Difficult to compare. In the study done by HAGEDORN et al. (2003) Organic Agriculture (MEKA D) was compared against a suitable combination of other measures of MEKA in terms of case studies concerning transactions and administration costs (by both the government and the farmer). A general conclusion cannot be made though, since it depends on several factors, such as size of farm, type of farm etc. Generally it seemed though that organic agriculture can be cheaper in reaching environmental goals in Baden-Württemberg.
6	Farm income To what extent has the scheme contributed to an increase in farm income.	Substantial increase/decrease in the level of farm income		1	p.310: „Im Durchschnitt handelt es sich bei max. 20% der MEKA-Förderung um Einkommenseffekte mit Anreizwirkung, die damit nicht der Deckung zusätzlicher Kosten dienen.“
7	Employment To what extent has the scheme contributed to increased employment.	Substantial increase/decrease in quantity of employment (FTEs)		0	p. 309: "(...) ist nicht davon auszugehen, dass zusätzliche Beschäftigung in landwirtschaftlichen Betrieben geschaffen wurde.“ „Außerhalb der Landwirtschaft ist weder von direkten konjunkturellen noch von strukturellen Beschäftigungseffekten (...) auszugehen.“
8	Uptake of regulated production systems To what extent has the scheme contributed to the uptake of regulated production systems (e.g. organic, PDO, PGI, zero pesticide, other defined environmental/animal welfare/food quality systems (defined at national or EU level)).	Substantial increase/decrease in the level of uptake of regulated production systems			
9	Food quality and safety To what extent has the scheme contributed to an increase in food safety and quality.	Substantial increase/decrease in food quality and safety			
10	GM traceability To what extent has the scheme contributed to the differentiation of genetically modified products from non-genetically modified products at all points in the supply chain.	Complete traceability/ no traceability of crop origins and GM status			

Table 2 (contd.). Evaluation of MEKA and Organic Farming (OF, MEKA D2) in Baden-Württemberg.

No.	Indicator	Rating (+3 to -3)	MEKA	OF (MEKA-D2)	Notes (if not indicated otherwise, the source was the "Halbzeitbewertung des EPLR Baden-Württemberg" by DOLUSCHITZ et al. 2003.)
11	Animal welfare To what extent has the scheme contributed to an increase in animal health and welfare.	Substantial increase/decrease in quality of animal welfare			
12	Occupational Health impacts To what extent has the scheme contributed to an improvement in occupational health and safety.	Substantial increase/decrease in occupational health			
13	Public Health impacts To what extent has the scheme contributed to an improvement in public health.	Substantial increase/decrease in public health	0	1	Only with regard to pesticides!! p. 306: "Pflanzenschutzmittel: Keine Änderung feststellbar." P. 240, figure 6.14.
14	Agricultural demographic To what extent has the scheme contributed to changes in the farming population in terms of age and gender (with particular reference to young entrants, early retirement and women in the workforce).	Substantial positive/negative change in agricultural demographic in terms of age and gender			
15	Rural community wellbeing To what extent has the scheme contributed to an improvement in rural community wellbeing.	Substantial increase/decrease in rural community wellbeing	1		p.309: "Alle Maßnahmen des MEKA/LPR stärken über direkte und indirekte Einkommenseffekte die Kauf- und Wirtschaftskraft der ländlichen Räume und vermindern damit die Abwanderung; teilweise kommt es durch Steigerung der Attraktivität als Wohnort zu Zuwanderungen."
16	Knowledge and skills development To what extent has the scheme contributed to the knowledge and skills base of the agricultural community and increase in research in to rural and agricultural issues.	Substantial increase/decrease in agricultural and environmental knowledge and skills			
17	Social justice and equality (gender, intergenerational, international) To what extent has the scheme contributed to an increase in social justice and equality in terms of gender, intergenerational and international equality, this also includes distribution of profit in the supply chain.	Substantial increase/decrease in social justice and equality			
18	Rural infrastructure (including transport, housing) To what extent has the scheme contributed to the preservation and development of rural infrastructure.	Substantial increase/decrease in expenditure on infrastructure development			
19	Local marketing, processing and consumption To what extent has the scheme contributed to an increase in local processing, marketing and consumption of agricultural products.	Substantial increase/decrease in local produce processed, marketed and consumed locally	0	2	Referring to Marketing only and on a regional scale only! p. 310: "Während (...) ökologische Anbauverfahren (...) zur Verbesserung der regionalen Marktposition beitragen, ist nicht davon auszugehen, dass sich die überregionale Marktposition verbessert." „Im Sinne der o.g. Stärkung der Marktposition ist im regionalen Umfeld mit positiven Umsatz- und Preiseffekten zu rechnen; der Ökologische Landbau mag hier als Beispiel dienen; im überregionalen Umfeld ist mit solchen Effekten nicht zu rechnen."
20	Energy use To what extent has the scheme contributed to the reduction in fossil fuels and/or increased the use of renewable and locally produced energy.	Substantial improvement/deterioration in energy utilisation			
21	Control of climate change To what extent has the scheme contributed to a reduction in the net release of potential climate altering gases.	Substantial decrease/increase in emission levels of climate change gases	2		p. 311: "[Alle Maßnahmenbereiche] (...) haben direkt oder indirekt auch positive Wirkungen im Bereich klimarelevanter Gasemissionen seitens der Landwirtschaft.

Table 2 (contd.). Evaluation of MEKA and Organic Farming (OF, MEKA D2) in Baden-Württemberg.

No.	Indicator	Rating (+3 to -3)	MEKA	OF (MEKA-D2)	Notes (if not indicated otherwise, the source was the "Halbzeitbewertung des EPLR Baden-Württemberg" by DOLUSCHITZ et al. 2003.)
22	Control of pollutants To what extent has the scheme contributed to the reduction in the release of environmentally harmful substances.	Substantial decrease/ Increase in emission levels of pollutants	1 (B,E,F)	1	p. 311: "Die Maßnahmenbereiche B, D, E und F [wirken] in den Bereichen Verunreinigung von Böden und Gewässern (...)."
23 ¹	Natural resource conservation To what extent has the scheme contributed to the conservation of natural resources, including soil, water and other natural resources?	Substantial increase/ decrease in quality of natural resources	1 (A,C) 1,5 (B) 2 (E, F)	2	p. 311: "Die Maßnahmenbereiche A, D, E und F zielen direkt auf den Schutz der Umwelt im Rahmen der Erzeugung ab." „Die Maßnahmenbereiche A (breite Fruchtfolgen auf Ackerland), B (Grünland) und D (ökologischer Landbau) des MEKA haben [bezüglich der Erhaltung oder umweltfreundlichen Entwicklung von Bodennutzungsformen] direkte Wirkungsmuster.“ „Die Maßnahmenbereiche A, B und C wirken direkt im Bereich Bodenerosion, die Maßnahmenbereiche B, D, E und F in den Bereichen Verunreinigung von Böden und Gewässern (...)."
24 ¹	Biodiversity impacts To what extent has the scheme contributed to an increase in the biodiversity.		2 (G) 1(A,B)	2	Appendix, p. 629-634
25 ¹	Landscape impacts To what extent has the scheme contributed to the landscape amenity, including agri-environmental, visual and cultural considerations.	Substantial increase/ decrease in landscape amenity	3 (C,G) 1,5 (F) 1 (A6,B)	1,5	p. 311: "Die Erhaltung gefährdeter Nutzungsformen der Landschaft wird im Rahmen von MEKA schwerpunktmäßig mit den Maßnahmenbereichen C und G direkt gefördert; insbesondere die Extensive Grünlandnutzung (Maßnahmenbereich B) trägt (...) zur Offenhaltung der Landschaft bei; die Erweiterung von Fruchtfolgen (Maßnahme A6) und die Förderung des ökologischen Landbaus (Maßnahme D2) fördern ein vielfältigeres Landschaftsbild." Regarding measure F (not mentioned above): see also appendix, p.634
26	Forestry To what extent has the scheme contributed to the increase in the forest area to the benefit of environmental, social and economic enhancement?	Substantial increase/ decrease in the size of forested area			

1: The report by DOLUSCHITZ et al. (2003) ranked these indicators on the following scale: "++" = directly positive; "+" = indirectly positive; "o" = indifferent; "-" = negative. This scale was transformed to the scale used in this table from +3 to -3.

6.10.1.3 Context Indicators

All figures and numbers in the following table refer to the year 2001. In the year 2001 72.749 holdings were participating in the scheme, covering a total land area of 2.193.694 ha.

Table 3. Expenditure for MEKA (MEKA I and II) with relation to the different measures in Baden-Württemberg in the year 2001 in 1000 Euro.

Measures of MEKA II			MEKA II	MEKA I
Expenditure on scheme in total			87.080	43.206
Expenditure on scheme in administration			-	-
Expenditure on scheme by activity:	A	Environmentally friendly management	8.746	
	B	Preservation and maintenance of cultural landscape	31.603	11.575
	C	Securing of landscape-maintaining, especially endangered land uses	895	5.695
	D	No use of chemic-synthetic means of production	10.012	20.050
	E	Extensive and environmentally sound plant production	34.374	3.884
	F	Application of biological or biotechnological means of fighting pests and diseases	630	1.731
	G	Preservation of especially endangered habitats	820	271

Source: MEKA application data as reported in DOLUSCHITZ *et al.* (2003).

Table 4. Public expenditure in **Baden-Württemberg** (estate + federation + EU) in 1000 Euro.

Year	Agri-environment (MEKA) total	Organic Farming (MEKA D2)	Organic in % total
2000	-	8,600	-
2001	109.494	9,900	9.0
2002	149.858	10,600	7.1
2003	145.856	11,200	7.7
2004	146.701	11,200	7.6

BMELV (2005). Department 526 and notices in writing from the responsible Ministry of Baden-Württemberg; compilation by H NIEBERG (FAL-BW).

6.10.1.4 References

BMELV (2005). Department 526; compilation by H NIEBERG (FAL-BW).

DOLUSCHITZ R, W GROSSKOPF, B KAISER, K-H KAPPELMANN, R LENZ and A TSCHMARKE (2003). Halbzeitbewertung des EPLR - Baden-Württembergs 2000-2003. Report from October 2003. Available online under [http://www.landwirtschaft-bw.info/servlet/PB/-s/td7ve715nrxwnuhhb1h6ce01k5x1is1/show/1112095_l1/ZBBWOkto3.pdf] in December 2005.

HAGEDORN K, V BECKMANN, S TIEMANN and K REUTER (2003). Kosten der Erreichung von Umweltqualitätszielen in ausgewählten Regionen durch Umstellung auf Ökologischen Landbau im Vergleich zu anderen Agrarumweltmaßnahmen unter besonderer Berücksichtigung von Administrations- und Kontrollkosten. Forschungsprojekt 02OE227 im Bundesprogramm Ökologischer Landbau, Landwirtschaftlich-Gärtnerische Fakultät der Humboldt-Universität zu Berlin, Institut für Wirtschafts- und Sozialwissenschaften des Landbaus im Fachgebiet Ressourcenökonomie.

6.11 Appendix 11 Evaluations in the Evidence-based analysis in the Marche - Italy case study

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Background

This paper presents the results of the mid-term assessment of the Marche Rural Development Plan concerning the programming period 2000-2006, based on the report prepared by Ecoter/Resco/Unicab. This paper only focuses on Organic Farming.

The mid-term assessment report originally included several measures grouped in 3 priorities, details of which are given in Table 1. Organic Farming is included under measure F.

Table 1. Description of the measures

Description of the measure	
Priority 1 – Improvement of the competitiveness of agricultural and agri-industrial system	
A	Investments in agricultural farms
B	Support for young farmers
C	Formation
D	Preretirement
G	Improvement of transformation and commercialisation
K	Land reparation
L	Support for farm management
M	Marketing of agricultural products
V	Financial engineering
Priority 2 – Protection and development of the landscape and the environment	
E	Less Favoured Areas
F	Agri-environmental measures
H	Afforestation of agricultural land

I	Other forestry measures
Q	Water resource management in agriculture
T	Agri-environment protection, arboriculture, animal welfare
Priority 3 – Support for integrated development in rural areas	
N	Essential services for the economy and the rural population
O	Renewal and improvement of the villages and protection of the rural heritage
P	Diversification activity in the agricultural sector and analogous
R	Development and enhancement of the rural infrastructure
S	Support for touristic and artisanal activity

6.11.1.1 Methodology

The assessment was carried out mainly relying on the monitoring report done by Ecoter/Resco/Unicab (2003). The methodological approach used for the mid-term assessment is based on:

-SWOT analysis

-Multicriteria analysis (MCA)

-Measure forms Through the SWOT analysis, strengths and weaknesses of the Marche territory were identified and compared with the ex-ante assessment.

The multicriteria analysis has been used to cross the results of the SWOT analysis with the strategic priorities defined in the Rural Development Plan. In this way it was possible to identify a wide range of significant criteria and to assign scores on the basis of their performances.

In order to analyse and to assess the implementation of single measures, a measure form was defined and filled in thanks to the contributions obtained by each Measures' Coordinator through a personal interview. Each measure form includes a short presentation of the Measure characteristics, its implementation performances (in financial, administrative and physical terms) and its ability to reach the objectives.

Other techniques, such as focus groups and case studies, are foreseen in the next future.

6.11.1.2 Measure F – Agro-environmental measures

Agro-environmental measures are jointly reported in Measure F of the second priority area and refer to the protection and improvement of the environment through the widespread use of agricultural production methods with less environmental impact in general and activities contributing to the conservation and improvement of the landscape and environmental resources.

Measure F comprises 4 sub-measures:

Sub-measure F1): Low environmental impact farming

Sub-measure F2): Organic farming Sub-measure F3): Safeguard of rural landscape and of the typical agricultural land structure

Sub-measure F4): Improvement of environment for wildlife purposes

Specific support concerning organic farming was considered in the Sub-measure F2, while Sub-measure F1 refers to integrated farming. The other two sub-measures have not received significant attention, and therefore have not been activated anymore after 2001.

6.11.1.3 Financial progress of measure F at 15/10/2003

On the basis of financial plan approved by the Commission, the total cost of Measure F for the whole period 2000-2006 is 127,97 Million Euro. Financial performance of Measure F is given in the Table 2

Table 2. Financial performance of Measure F

	Total cost 2000/06	Appropriation Years 2000- 2003	Allocation at 15/10/2003	Estimate of expenditure 15/10/2004	Appropriation power/capacity	Financial progress
	(a)	(b)	(c)	(d)	b/a	c/a
	000 Euro				%	
Measure F	61.690	29.942	15.960	nd	48,5	25,9
Reg. CE 2078/92	66.277		66.277		-	100

6.11.1.4 Administrative progress

In table 3 and 4 the number of presented, admissible and financed applications for Measure F1 and F2 are showed. The difference between admissible applications and number of financed projects shows how the foreseen financial supplies were not sufficient to face all accepted projects requirements.

Table 3. Number of applications and payments for Measure F1 (integrated farming)

	Calls year 2001-2002	Call 2003
Presented applications	660	893
Admissible applications	660	891
Financed projects	660	216
Total payments (000 Euro)	3.308	1.274

Table 4. Number of applications and payments for Measure F2 (organic farming)

	Calls year 20002001	Call year 2001-2002	Call year 20022003
Presented applications	447	601	840
Admissible applications	421	601	835
Financed projects	421	353	254
Total payments (000 Euro)	3.395	2.231	3.127

6.11.1.5 Output indicators

Accepted applications for Measure F1 were 876 and for Measure F2 1.028. For Measure F2, in 607 cases demands concerned new contracts (Table 5).

Table 5. Number of applications and financed hectares per year and per sub-measure

Actions		Year 2001				Year 2002			
		Number of contracts	Of which new contracts	Number of hectares		Number of contracts	Of which new contracts	Number of hectares	
				Under contract	Of which news			Under contract	Of which news
Organic farming	Annual crops	170	170	6.108	6.108	363	193	13.076	6.968
	Permanent specialized crops	135	135	3.399	3.399	205	70	4.251	852
	Others	116	116	5.641	5.641	460	344	31.286	25.645
	Total	421	421	15.148	15.148	1.028	607	48.612	33.464
Other input reduction (include integrated farming)	Annual crops					300	300	10.850	10.850
	Permanent specialized crops					460	460	6.522	6.522
	Others					116	116	5.553	5.553
	Total					876	876	22.956	22.956

6.11.1.6 Conclusion

Measure F showed a high spending power related to appropriations concerning the previous year. Sub-measures F1 and F2 presented a good financial performance even constrained by resources availability which did not enable to finance all admissible applications.

The implementation of measure F is coherent with the specific measure and priority objectives.

6.11.1.7 References

Ecoter-Resco-Unicab (2003): Rural Development Plan - mid term assessment report (Part I & II), Marche Regional Govt. , Ancona.

6.12 Appendix 12 Feedback questionnaire responses

This appendix presents the responses to the feedback questionnaires from the Wales – UK, Canton Aargau – CH and the North East England – UK case studies. In question one to five the panelists were asked to rate their experience of the workshop on a five-point scale, one indicating a poor level of performance and five indicating a high level of performance regarding the question. Panellists were also asked for comments regarding these question and five further questions

1. Did you find the process useful for building consensus?

Wales - Average score: 4

- Some of the questions had numerous possible interpretations so consensus depended on firstly accepting an interpretation.
- The process helped to refine definitions and interpretations. Participants will not always agree, but it did make a difference to be able to see where different participants were coming from. In some cases this changed scores when participants better understood what the issue was, or gained information from other participants.

Canton Aargau - Average score: 4.1

- Too high impact of experts to non-experts?

NE England - Average score: 4.2

- Good way of drawing upon a wide range of knowledge and experience of a group of individuals

2. Do you feel the process captured how well the policy options perform on ground?

Wales - Average score: 3

- The policy options have an impact beyond those holdings in Tir Gofal or OFS. In assessing performance on the ground this should be reflected.
- Lack of knowledge / monitoring data probably resulted in understatement of impacts
- Depends on how much people know about schemes / rural development issues, where their information has come from, and how accurate that information is. There is an element of 'best guess' and wishful thinking, especially on topics on which participants don't have firm information on, so there will inevitably be an element of bias. This can be reduced by using the 'expertise' scores to weight results, but this will not entirely overcome bias.

Canton Aargau - Average score: 3.6

- Questions should be asked in still more specific way

NE England - Average score: 4

- Performance as assessed by group maybe coloured by perception

3a. Do you feel your ideas were adequately incorporated in to the discussions (in general)?

Wales - Average score: 4

- Limited time was a factor here

Canton Aargau - Average score: 3.8

NE England - Average score: 4.4

- Everyone has an opportunity to make their point irrespective of their knowledge/expertise

3b. Do you feel your ideas were adequately incorporated in to the discussions (high expertise)?

Wales - Average score: 3.8

Canton Aargau - Average score: 4

NE England - Average score: 4.7

3c. Do you feel your ideas were adequately incorporated in to the discussions (low expertise)?

Wales - Average score: 3.2

Canton Aargau - Average score: 3.3

NE England - Average score: 4

4. Did the workshop cover an adequate range of farming policy?

Wales - Average score: 4.2

- The range of indicators seemed to adequately cover the range of policy objectives in the RDR. As mentioned elsewhere, it is important that anyone doing the analysis is aware of the context (ie. Looking at schemes from a perspective of both direct and indirect outcomes). The indirect effects (ie. those issues that the schemes are not specifically designed to deliver) will be more difficult to judge, and may not have been formally assessed – so information on them will be more speculative

Canton Aargau - Average score: 3.9

- For Canton Aargau – yes. But in general there probably must incorporate different policies too.
- More adapted “questions” to the farming situation would be useful

NE England - Average score: 4.1

- Specific to two schemes with some commonality of objectives
- Useful development of clarification of the questions

5. Were the criteria used adequate to evaluate the policy options?

Wales - Average score: 3.4

- Needs more knowledge of purpose to judge! Needs more time than I have to properly assess this question.
- Well being of farmer family could be more specific target
- The indicators seemed to work well for the UK schemes – though some further refinement may be needed (as per discussion at the workshop) and consistency between topic, question and notes needs to be checked. At the EU-wide level some further checking may be required to see that the indicators are compatible.

Canton Aargau - Average score: 3.4

- Criteria should be more specific
- Sometimes difficult to find the right level (positive and negative level difficult)

NE England - Average score: 3.9

- Can't think of others. Questions might be formulated more clearly but recognise the difficulty
- Some appeared to need considerable discussion to define accurately the scope for consideration in the question

6. Are there any criteria that should be added or removed from the evaluation?

Wales

- Lack of time
- Some re-wording needed

Canton Aargau

- Be more precise in formulation of the criteria
- For some criteria (knowledge/research; climate change) a more differentiated view would be required
- Natural resources, Biodiversity, Landscape could be more specified
- Focus of this evaluation is put on crop production
- Remove Forestry

NE England

- Seems OK to me
- No
- No, but clearer definition in response to question five
- Contact between cities and rural areas
- Public participation in agriculture

7. What do you see as the strengths of this process?

Wales

- Rapid assessment, diverse respondents
- Sharing of expertise
- The strength was the ability to discuss differences and then to re-score, this definitely helped where the differences were as a result of different understanding of the issues. It worked well for a small group, but would be more difficult with a larger group.

Canton Aargau

- Group dynamic
- Consensus
- Efficient
- To find a consensus and to get to a common understanding of the point asked
- Change of votings after discussions more reasons for change to be monitored
- Consensus finding
- Repetition of assessment as a process of decision making
- Dynamic process
- Discussion and readaption of scoring

NE England

- Involvement of wide range of individuals / expertise. PC based - quick feedback
- Resolved opinion
- Need to have a wider range of interests
- Provides a good quantitative comparison
- Evolution of an informed assessment
- Allows you to comment and judge on areas even if initial knowledge is limited

8. What do you see as the weaknesses of this process?

Wales

- Technology took a long time
- Lack of time – another 30 minutes would have made a difference
- Time consuming (number of people * hours)
- Not all issues can be resolved, so aiming for consensus on all issues will not be possible. In a very diverse group, especially where there are entrenched opinions, it may be impossible to get consensus. In itself, consensus perhaps should not always be the aim. Recording the range of views and explaining opposing viewpoints, may be valid. Politically motivated opinions may be difficult to accommodate through the process.

Canton Aargau

- Balance of participants
- Sample size
- Pressure on extreme values to adopt the group consensus
- Criteria dependent on regional/national circumstance
- Questions sometimes not that clear
- Sometimes no experts for certain questions [illegible]
- Number of participants
- Questions still too general
- More precise criteria
- No reference values
- Unclear reference values

NE England

- If there are “intransigent” group members
- Strong individual may “lead” the discussions and therefore the second assessment
- Dependant on the expertise present. Dependant on precise formulation of questions
- Did not explore participant knowledge before selecting
- May not voice an opinion if unsure of topic

9. *How could we improve that process in the future?*

Wales

- Ensure participants are willing to share thought processes on enrolment
- Web / phone conference option?
- Perhaps where no consensus is reached (ie differences in scores of 3 or more points), there should be a sub-process that explores and classifies the reasons why these differences occur. An example from the workshop was a difference in opinion on capital funding – at least one participant felt that Tir Gofal payments were largely for management options, and not for capital items. Others agreed that they were justifiably capital works. Being able to record this in the analysis might be helpful.

Canton Aargau

- Time frame – more time
- Level of preciseness
- Adapt criteria to different situations in different countries
- Signs to show that people have finished questions
- Precise questions and explanations
- Discussion of points of reference before the process to homogenise the team
- Making another column with the range of options

NE England

- Involve scheme participants ie. Farmers, but understand the problems
- Should arrange respondents to “appear” on the projected spreadsheet in different positions for each question
- Improve exploration of participant knowledge before selecting
- Possibly more information on how data will be used and interpreted

10. Do you have any other comments?

Wales

- It was interesting and enjoyable.
- On balance a worthwhile exercise.
- Thanks

Canton Aargau

- Interesting method
- Thanks for this good method implementation
- Interesting exercise

NE England

- Enjoyable, learning experience
- Well run and to time, Well done
- Well managed workshop
- Enjoyable and informative afternoon

6.13 Appendix 13 Clusters of indicators compared to evidence availability

Figure x: Clusters of indicators compared to evidence availability

