

Strategic Review of Organic Farming in Jersey

by Mark Measures

on behalf of Jersey Organic Farmers and Growers

Mark Measures BSc (Hons) Agric.

Mark Measures Associates

Cow Hall

Newcastle

Craven Arms

Shropshire SY7 8PG

01588 640118

mark@organicadvice.org.uk

Objective and remit of the Review

The objective of the Review is to “help, inform and develop future organic farming strategy in Jersey within the confines of the current and future Rural Economy Strategy”.

The Review undertakes an assessment of the current organic farming production, markets and support in Jersey and reviews the environmental and social impact of organic farming in the context of the island’s particular conditions. It assesses the potential role of organic farming in the future and accordingly identifies the measures needed for any such development.

Executive summary

The management of land in the most sustainable way is becoming the most critical issue in a world of growing population, environmental problems and finite resources. It is becoming increasingly important that farm land delivers the multiple services of quality food in the necessary quantities, clean water, thriving wildlife, recreational facilities, employment and successful business, all while ensuring resource protection, high standards of animal welfare and avoidance of pollution and minimising climate change. There is polarised debate in the UK about “land sparing” and “land sharing”, use of genetic engineering and the roles of agri business versus family farms. Organic farming is a means of addressing these questions through systems and practices which seek to integrate farming, the environment and society, to secure benefits through maximising diversity, use of legumes, recycling of nutrients and minimising the use of finite resources.

This report has reviewed the literature, particularly the information available for Jersey, considered the state of the environment in Jersey, surveyed organic farming and consulted with the Department of the Environment, producers and retailers of organic food. It has looked at the market for organic produce at home and abroad and compared the support for organic farming provided in Jersey and elsewhere in Europe. It has assessed the evidence on the environmental impact of organic farming. The following summarises the findings:

1. The intensive nature of the principal conventional farming enterprises in Jersey, Jersey Royals and dairying, has resulted in significant environmental problems, particularly in terms of water quality and wildlife.
2. Organic farming in Jersey has a very good base with an active producer group, range of retailers and some very good producers with resilient businesses, but their margins are low.
3. Support for organic farming in Jersey has been principally, and is now focused solely, on conversion area support and that support is now not readily available. This level of support during conversion is similar to that which is available to producers in other EU countries, but it has not been well enough focused to secure the long-term development of organic farming on the island.

4. The absence of on-going maintenance support for organic farming in Jersey contrasts with virtually all EU countries, where maintenance support varies between £60 and £425/ha. This puts Jersey producers at a significant disadvantage.
5. There is overwhelming international research evidence that organic farming is beneficial to the environment compared with conventional farming, for example in terms of biodiversity, water quality and climate change. There is no evidence that this would not also be the case in Jersey despite its particular conditions, such as small and dispersed fields. Indeed the lack of enterprise diversity and the type and level of inputs used in conventional farming in Jersey might mean that organic farming would deliver more in comparison with conventional than has been found elsewhere.
6. The role of organic farming in society, the “social services” or “public goods” arise out of the principles of organic farming and the nature of the farming systems and practices which make it particularly conducive to playing a role beyond food production. This is not exclusive to organic farming, but it is a natural fit which means that organic farming elsewhere and to some extent in Jersey has been at the forefront in provision of school visits, care farming, tourism and community supported agriculture, as well as providing a safer working environment, greater employment and minimising pesticides in food. There is particular potential development in Jersey in terms of school education, CSAs and eco-tourism, with more limited, but none-the-less real, potential for care farming.
7. The local market for organic food is relatively undeveloped but there is potential to increase and broaden it provided the necessary support and development is put in place.
8. There continue to be export opportunities for specialist vegetables to the UK, which will need to be developed in concert with the UK market as it emerges from the recession.
9. Organic farming has a future in Jersey, as it has in other countries in Europe and elsewhere. If it is to develop to at least 10% of farmland, as has already been achieved in some countries, appropriate policy and ongoing support will be needed.
10. Three focus areas for the development of organic farming have been identified. Although this is not an exclusive list, it does indicate some of the more tangible drivers:
 - 10.1. Sustainable food production
 - 10.2. Biodiversity
 - 10.3. Water quality
11. In order to progress the development of organic farming effectively, it is recommended that a comprehensive strategic policy is established by developing an

Organic Action Plan, which will include:

- 11.1. Definition of relevant goals
- 11.2. Identification of current constraints
- 11.3. Integration of market and public support
- 11.4. Integration of stakeholders and public institutions in a partnership approach
- 11.5. Integration of policy measures (supply 'push' and demand 'pull'), including production support (area maintenance payments), market support and public purchasing policy
- 11.6. Focus on specific, local issues that need to be addressed, such as the National Park and market development, with tailored measures
- 11.7. Provision of advice, training and information
- 11.8. Establishing appropriate links with organic research undertaken elsewhere in the UK and Europe.

CONTENTS

Objective and remit of the Review	ii
Executive summary	ii
Abbreviations	vii
Conversion rates	viii
Principle contacts	viii
Method of undertaking the review	viii
1 Jersey	1
1.1 Farm Type and Structure	1
1.2 Environmental Issues	2
1.3 Agricultural Policy	3
1.4 Organic Farming in Jersey	3
2 Organic farming policy and support in the EU and Jersey	6
2.1 EU Support for Organic Farming	6
2.2 Organic Action Plans	10
2.3 Organic Farming Policy and Support in Jersey	11
2.4 The Future	12
3 Evaluation of the environmental, social and financial performance of organic farming in the context of Jersey	15
3.1 Environmental Performance	15
3.1.1 Research Evidence	15
3.1.2 Biodiversity	15
3.1.3 Water Quality	16
3.1.4 Greenhouse Gases	16
3.1.5 Environmental Impact of Organic Farming in Jersey	17
3.2 Social Performance	19
3.2.1 Organic Principles	19
3.2.2 Education and School Visits	19
3.2.3 Health	19
3.2.4 Employment	20

3.2.5	Community Supported Agriculture (CSA)	21
3.2.6	Access	21
3.2.7	Tourism	21
3.2.8	Care Farming	22
3.3	Financial Performance	23
3.3.1	Current Financial Performance	23
3.3.2	Future Financial Performance	24
3.3.3	Conversion Costs	24
3.4	Benefits of RES Organic Expenditure	25
4	Organic Market	28
4.1	Jersey Organic Market	28
4.2	Export Opportunities	30
4.3	Summary of the organic market	32
5	Future Research and Development Priorities	33
6	Summary of the Opportunities for Organic Farming in Jersey	35
6.1	Sustainable Food Production	35
6.2	Water Quality	35
6.3	Wildlife Enhancement	35
7	Priorities and Actions for the Development of Organic Farming in Jersey	37

Appendices

I.	Water Quality Monitoring
II.	Organic Areas
III.	EU Support for Organic Farming
IV.	CRS Organic Production Guidelines
V.	Organic Production Measures fiche
VI.	Environmental Impact of Organic Farming
VII.	IFOAM Principles
VIII.	Organic Funding under CRS 2013

Abbreviations

Common Agricultural Policy	CAP
Consumer Supported Agriculture	CSA
Countryside Enhancement Scheme	CES
Countryside Renewal Scheme	CRS
Countryside Management Scheme	CMS
The Department of the Environment	The Department
Diffuse Pollution Project	DPP
Environmentally Sensitive Areas	ESA
European Union	EU
European Agricultural Fund for Rural Development	EAFRD
European Agricultural Guarantee Fund	EAGF
International Federation of Agricultural Movements	IFOAM
Jersey Organic Association	JOA
Jersey Organic Farmers and Growers	JOFG
Mark Measures	MM
Organic Conversion Information Service	OCIS
Organic Research Centre	ORC
Research Institute of Organic Agriculture	FiBL
Rural Economy Strategy	RES
Rural Development Programme	RDP
Rural Incentive Scheme	RIS
Single Area Payment scheme	SAP
Soil Association	SA
Water Framework Directive	WFD

Conversion rates

5.56 verges (vg.) = 1.00 hectares (ha.)

1 unit fertiliser = 0.5 kg

1 £ = 1.18 Euro (August 2013)

Principle contacts: Brian Adair, Sarah Johnson, Julia Quenault, Iain Norris, John Jackson and Daniel Houseago.

The terms and methodology of the Review were initially discussed and agreed with Jersey Organic Farmers and Growers (JOFG) in consultation with the Department of the Environment (The Department)

Method of undertaking the review

The Review is based on the information available from the parties involved and a four-day fact-finding visit to the island. Initially a comprehensive list of the information needed was requested, and some of this was made available during the visit and subsequently. However, there is a significant lack of information in the following areas in relation to Jersey: soil organic matter levels, organic exports and imports, the financial performance of organic farming, the food quality and social and environmental impact of organic farming compared to conventional farming in Jersey, current consumer survey data and organic research priorities. In the absence of this requested information the Report has been based on data from other sources elsewhere and interpreted accordingly.

The four day visit to Jersey provided opportunity for meetings with seven officers of The Department of the Environment, six key organic producers representing the dairy, field vegetable and intensive vegetable sectors, some of whom were also selling direct, one environmentalist, the Jersey produce buyers from Waitrose and the Coop and one specialist organic retailer.

On the first day of the visit an open meeting was held for all interested parties, which provided opportunity to discuss issues, the market, research and support needs.



Photo 1: Public consultation on the future for organic farming in Jersey

1 JERSEY

1.1 FARM TYPE AND STRUCTURE

Jersey farm size across the island averages 68 verges (12.2 ha), which is small compared to the UK (84 ha.), but typical of the EU27 at 14 ha. and larger than Italy at 9 ha., with a high proportion (75%) of land rented, often including off-lying parcels of land on short rental terms (often only 2 or 3 years).

Reference Jersey Agricultural statistics for 2011:

<http://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=823>

Farming is currently overwhelmingly dominated by just two enterprises: Jersey Royal Potatoes, mainly earlies largely for export (19,000 vg. of potatoes accounting for 90% of agricultural exports) and 2,890 Jersey dairy cows in average herd size of 107 cows, for local fresh milk consumption. Smaller enterprises comprise protected cropping including tomatoes, beef and 972 sheep. There is very little cereal cropping and a small percentage of permanent pasture.

Conventional potatoes have become a very profitable crop and expanded significantly during the last 10 years. They pose a number of problems:

- Routine use of approximately 175kg/ha N, has nitrate leaching implications, particularly with the short crop growing period.
- Routine use of pesticides including Azoxystrosin, with aquatic toxicity implications and Metribuzin, a known reproductive toxicant.
- Phosphate fertiliser is reportedly used routinely despite soil indexes of 4 and 5, with leaching implications.
- The lack of rotation results in very high soil nematode levels which requires, for the production of seed potatoes, the routine use of Vydate, which has neurotoxicity side effects.

(Reference: Pesticide Action Network for toxicity information

<http://www.pesticideinfo.org>).

These unsustainable methods and experience with mono-cropping elsewhere, plus high dependence on UK supermarkets would suggest that the long-term viability of this method of production is uncertain. The control of potato nematodes is an ongoing issue. A local agronomist stated that a “PCN car crash” is expected and that, with the reduction in Maximum Residue Levels in potatoes from 0.05 to 0.01 mg/kg of Vydate, failures are being found, requiring a “positive release” system for those producers still using it in ware crops. Currently when nitrate contamination of ground water reaches the maximum permitted 50mg/kg currently, seawater desalination is introduced – an expensive process.

Conventional dairy production is relatively intensive with stocking rates and fertiliser use on a par with the UK.

Compared with the UK, average fertiliser and pesticide use is higher, mainly due to the crop type, production intensity and lack of low input grassland. Jersey field size is generally significantly smaller and domestic dwellings more closely integrated into the farmland.

1.2 ENVIRONMENTAL ISSUES

There are a wide range of environmental issues facing Jersey, many directly related to farming. These are identified in **The State of Jersey - A report on the condition of Jersey's environment 2005**

<http://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=333> , it points out that “Government support is likely to shift from supporting production to delivering greater environmental benefits”

Water quality, (see Appendix 1 Water Quality Monitoring) is a major problem with nitrate levels failing to consistently meet the EU Water Framework Directive for drinking water of 50 mg/litre, also the target 25 mg/litre. The principal problems associated with such high nitrate levels are human health, particularly babies' and also biodiversity impacts.

Pesticide contamination is reported by The Department, evidenced in Appendix 1. Water Quality, including 24D herbicide (WHO level two carcinogen: <http://www.pan-uk.org/pestnews/Actives/24d.htm>) and PCB, reported to be “highly toxic” for some wildlife.

A Jersey environmental specialist states that the use of nitrogen fertiliser, particularly on potatoes, where liming is avoided, is resulting in both nitrate leaching and acidification of the soils causing poor phosphate availability, high phosphate use and leaching, and acid ground water with algal blooms in the sea.

Another local environmental specialist stated that Jersey Royals are “devastating for wildlife”.

Farmland bird populations in Jersey are in serious decline just as they are in the UK. Of the farmland, garden and woodland birds, ten regularly nesting species including the cuckoo and the yellowhammer have died out in the last few years. Of the 40 current species, 42% are threatened. Reference Conservation Status of Jersey's Birds, Durrell Wildlife Conservation Trust 2011: [http://www.durrell.org/library/Document/Conservation status of Jerseys birds 2011 WEB.pdf](http://www.durrell.org/library/Document/Conservation%20status%20of%20Jerseys%20birds%202011%20WEB.pdf)

This indicates a crisis of habitat, food sources and pollution for all biodiversity on the island, including birds, similar to that experienced in the UK and recently reported by the RSPB's State of Nature report (2013):

<http://www.rspb.org.uk/ourwork/science/stateofnature/index.aspx> . This is a factor of both the non-farmed habitat around fields and the in-field management practices.

There is no information available on soil organic matter changes, however continuous cropping and minimal use of leys and green manures is likely to be depleting organic matter levels, resulting in release of greenhouse gases and poorer nutrient and water retention. Soil erosion on steep cotees is a known problem and was observed during the visit to Jersey.

1.3 AGRICULTURAL POLICY

The Rural Economy Strategy (RES) is a five-year strategy for the period 2006 – 2010, reviewed in 2009 for the period 2009 – 2015 and is set out in the

<http://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=529> and

<http://www.gov.je/Government/Pages/StatesReports.aspx?ShowMonth=1&ReportYear=2011>

<http://www.gov.je/SiteCollectionDocuments/Industry%20and%20finance/R%20Rural%20economy%20strategy%2020110118%20SW.pdf>

Environmental policy in Jersey takes account of the EU CAP and the EU environmental regulations including the Water Framework Directive. National regulations are in place which aim to meet those schemes in terms of environmental performance and to provide support to producers in order to ensure that the local constraints to production are compensated for and that they are not disadvantaged compared to EU producers.

The Countryside Renewal Scheme (CRS) and the proposed future changes (Reference: CRS Recommendations and Proposals, February 2012) are aimed at a whole farm approach, long term strategy and planning, targeted priorities such as the Diffuse Pollution Project (DPP), identifying priority habitats and wildlife corridors, and providing environmental monitoring and provision of training to applicants. Climate change is an over-arching theme. The CRS review has proposed that organic farming is in future supported through the Rural Incentive Scheme (RIS) or Single Area Payment Scheme (SAP).

The concept of eco-system services from agriculture, delivering multiple “public goods” is embedded in the reforms and food security is an important element in this.

1.4 ORGANIC FARMING IN JERSEY

The area of organic and conversion land in Jersey, reference: Appendix 2 Organic Area increased from 1,300 vg. in 2005 to a peak of 2,379 vg. in 2008 and then declined to 1,380 vg. in 2011 and currently stands at 1,444 vg. organic plus 12,713 m² protected cropping. This is approximately 3.7% of SAP land, 2% of total land area.

The organic farm type and enterprise mix represents a cross section of farming in Jersey, ranging from intensive, small-scale vegetable production, through to field-scale vegetables and two dairy farms. Protected cropping is limited to the integration of

tunnels into the vegetable-producing units and there is some smaller scale poultry production. Specialist potato production is of course not represented due to the need for diverse rotations in organic farming. There is little organic arable, beef or sheep, which reflects to some extent the conventional sector. There is no organic management of land associated with biodiversity or water management objectives.

Several of the farms visited are involved in some form of direct selling, either through CSA, box schemes or farm shops. One is currently developing a care-farming project.

Most farms are certified by the Soil Association but all certifiers operating in Jersey will meet the EU Regulation on organic farming.

The existing organic producers are operating at a medium to high level of technical expertise; while weeds are a constant challenge, with the use of either considerable hand labour or in some cases the latest mechanical equipment, adequate control is being achieved by these farms. High cow health is being maintained with lower than conventional use of veterinary medicines. Good forage management is achieving good stocking rates comparable to the UK, with no use of agrochemicals. The farming systems are physically sustainable as demonstrated by the 10 or 20 years over which some of the farms have been operating.



Photo 2: Classic Herd Jersey cow

The fact that organic farming is fundamentally a farming “system”, one requiring fertility building and whole farm system management is important. The early stage of development of organic farming and marketing in Jersey means that this aspect is not fully developed; stock farms are reliant on bought-in feedstuffs and the lack of organic livestock markets means that others are reliant on grazing with conventional stock or use of conventional manures.

The increase in area under organic production 2006 – 2010 has been largely a result of the stimulus from conversion grants, with some influence from the UK market signals prior to 2008. The reconversion to conventional of some land has called into question the validity of conversion support. A provisional analysis by The Department of the land

that received conversion grants and subsequently reverted to conventional farming shows that reconversion is a consequence of the farmer losing the tenancy in two cases and of retirement in another. Two other factors need to be considered when reviewing the reconversion of land: firstly the effect of the recession in 2009 which resulted in a significant decline in the UK organic market and which impacted on the peak organic area in Jersey. One farmer supplying the UK market interviewed by MM reported that some of their land reverted to conventional due to the lack of capacity in the market. However another farmer supplying local outlets stated that reconversion did not generally happen because of lack of a market. Secondly rental values for land for conventional potatoes have increased substantially during the last 8 years, attracting land away from organic production.



Photo 3: Protected cropping

A relatively small area of land has converted since 2009 but none has received the conversion grant. One farm visited clearly needed additional land in order to grow cereals for stock feed but there is no suitable land available at an affordable rent.

Organic producers in Jersey have the great advantage of an active local group, Jersey Organic Association (JOA), providing a range of services and support
<http://www.joa.org.je>

2 ORGANIC FARMING POLICY AND SUPPORT IN THE EU AND JERSEY

2.1 EU SUPPORT FOR ORGANIC FARMING

There has been a policy for organic farming in the EU since the early 1990s, which has been implemented at national and/or regional level in all countries. This has taken the form of an Organic Action Plan in several countries including Germany, Austria and Denmark and in some countries notably Sweden and Austria organic farming now makes up more than 10% of the farm area. Scotland has a live action plan, launched in March 2011, which can be found

at:<http://www.scotland.gov.uk/Publications/2011/03/14093552/0>

Ireland has just launched an Organic Action Plan in August 2013:

<http://www.agriculture.gov.ie/media/migration/farmingsectors/organicfarming/OrganicFarmingActionPlan230813.pdf> which emphasises the importance of on-going maintenance area payments, public procurement and advice and training.

The International Federation of Organic Agricultural Movements' EU Group report, *The Future of Organic Farming in Europe: How do European Rural Development Programmes support Organic Farming?* can be found here:

http://eu.ifoam.org/sites/default/files/page/files/ifoameu_policy_rdporganic_dossier_2009_en.pdf . This report summarises the various mechanisms and levels of support currently offered throughout the EU.

Support for organic farming has been in place in most EU countries, provided through a mix of area grants, capital grants, organic standards supervision, research, advice and support for the food chain, including market development. The area payments have been funded through the RDP in most cases and are paid in recognition of the environmental benefits of organic farming for wildlife, resource protection, water quality and climate change. Uniquely, the delivery of environmental enhancement is achieved through a combination of government support and consumers paying a premium price for the product.

The level of government support is in principle calculated on the basis of the profits foregone per hectare by the farmer in producing organically compared with producing conventionally. It recognises that these environmental goods and services benefit the public at large and should be paid for by the state, with consumers contributing an organic premium in recognition of the food attributes perceived, including taste and freedom from pesticides. A review of the payment rates in 2011 has been undertaken in Use and efficiency of EU public policy measures for organic farming, Padel et al 2012 Organic Research Centre (ORC) reference: Appendix 3 EU Support for Organic Farming also on <http://orgprints.org/21017/> . Further detail is provided in the reference: http://ec.europa.eu/agriculture/external-studies/2012/organic-farming-support/full_text_en.pdf .

Table 1 provides examples of 6 six nations payment rates.

Organic Farming Scheme Payments (E/ha)		Arable	Grass	Veg	Fruit
England yr 1-2	Conv.	285	285	285	800
	Maint.	73	73	73	73
Wales yr 1-2	Conv.	182	182	182	242
	Maint.	73	44	242	242
Scotland yr 1-2	Conv.	266	128	363	
	Maint.	73	61	73	
Austria yr 1-5	Conv.	285	285	450-600	750
	Maint.	285	110-240	450-600	750
Germany yr 1-5	Conv.	150-252	150-252	300-576	452-1080
	Maint.	116-210	116-210	230-550	420-864
France yr 1-5	Conv.	200	100	350-900	100-900
	Maint.	100-151	80-151	150-600	590-900

Table 1: Organic Farming Scheme Payments: comparisons by country

The payment rates vary widely with the UK at the lower end with maintenance payments of Euro 73/ha. (£60/ha) for vegetable, arable and improved grassland compared to over Euro 500/ha. in parts of Germany, Italy, Malta, Finland, Portugal, Sweden and Slovenia for some vegetable land and over Euro 500/ha for arable land in Greece, Italy, Portugal and Sweden .

Conversion payments similarly vary between countries, some such as Austria have the same rate of payment at Euro 285/ha. during conversion as for maintenance, others such as Denmark paying Euro 101/ha. for maintenance and Euro 165/ha. for conversion arable. Again the UK payment rates are lower over the 5 years of the scheme.

In Spain a country producing crops that are directly competing with those in Jersey, the support provided is between Euro 77 - 480/ha. for arable and Euro 238 - 640/ha. for vegetable conversion and organic maintenance payments of Euro 71 - 436/ha. for arable and 198 - 540/ha. for vegetable land.



Photo 4: Intensive vegetable production for a box scheme

The EU organic land area more than doubled in the decade 2000/2010. It increased on average by around 500,000 ha. per year and reached 9.5 million ha. in 2011. The number of farms increased in the same period by 70% to 226,000 and the number of processors doubled to 32,500. Reference: EC Organic farming policy review 26.06.13

In the UK, support has been available for conversion and maintenance, albeit at amongst the lowest rates in the EU, through area payments and the provision of free specialist advice on conversion.

England provides the following support until the end of 2014:

- Area payments:

Conversion Years 1 and 2: £235/ha. (lowland arable, vegetable and grassland)

Maintenance: £60/ha. (on-going to all organic lowland arable, vegetable and grassland)

- Free Organic Conversion Information Service (OCIS) was provided until 2012

Scotland has developed an Organic Action plan:

<http://www.scotland.gov.uk/Publications/2011/03/14093552/0> which sets out a strategy for the provision of advice, national targets, representation, research, business and market support.

- Area payments:

Conversion Years 1 and 2: £220/ha. (arable), £105/ha. (improved grassland), £300/ha. (fruit and vegetables)

Maintenance: £60/ha. (arable, fruit and vegetables), £50/ha. (improved grassland) (ongoing)

- Free advice.

Wales provides the following: reference page 12:

<http://www.organiccentrewales.org.uk/uploads/ofsexplanbook.pdf>

The first hectare of land entered into the schemes receives £1,000/holding “establishment rate” (certification and advice).

Conversion Years 1 and 2: £150/ha. (horticulture), £150/ha. (arable and grassland)

Maintenance: £200/ha. (horticulture), £60/ha. (arable), £40/ha. (grassland)

Some important lessons have been learned in the UK over the years, with various schemes, including the need for consistent schemes and policy and the need to get the correct balance between conversion and maintenance payments. The relatively high conversion payments have in the past resulted in over production in some sectors, collapse of the market and undermining of existing organic businesses. Although costs of conversion are easily quantified, in fact maintenance payments provide greater stability over the longer term, and support the market more reliably than conversion payments. The wide ratio (3.9:1) between conversion and maintenance payments operating in the UK is wider than any other EU country and has tended to result in producers converting for the purpose of securing the conversion grant rather than the long term viability of the organic business. A ratio of between 1:1 and 2:1 is more effective. The importance of specialist organic advice has been very clear.

An important reference with direct relevance to consideration of appropriate support in Jersey is the report, *The Use and Efficiency of Public Support Measures Addressing Organic Farming*, by the Institute of Farm Economics, which was financed by the European Commission and is available on the EC website:

http://ec.europa.eu/agriculture/external-studies/organic-farming-support_en.htm

See The Executive Summary: http://ec.europa.eu/agriculture/external-studies/2012/organic-farming-support/exec_sum_en.pdf

The principal points made in this report are:

1. Supportive overall organic policy (at Government level) is essential to success
2. Such public support measures also need non-public support in the form of, for example, business security and market prospects
3. The need to recognise the dual role for organic farming in delivering environmental benefits and products for the market place.
4. Support payments (both conversion and maintenance) and organic action plans are the most relevant support measures contributing to the development of both production and the market
5. Action plans do not involve direct payments themselves but provide the strategic framework for development, identifying the role for organic farming, providing an understanding of the business and the market and ensuring the appropriate intervention in the form of support to producers, processors and the market.
6. Financial viability of the businesses involved is important

Additional relevant points are:

1. Need for collaboration between the parties
2. Continuity in support is essential and scheme support, structure and financing needs to be developed in order to avoid both supply/demand imbalances and erratic availability of area support
3. Fair competition between member states
4. The potential and importance of providing advisory and information services
5. Organic producers also need access to the grants available to conventional producers

Some countries such as Denmark have an overall strategy to develop organic farming, including area payments, research, advice, market development, processing and public procurement. This has resulted in a strong, stable, profitable organic sector which is now embedded in the overall national farming policy and public consciousness.

The integration of organic action plans with rural development objectives and plans is important.

2.2 ORGANIC ACTION PLANS

National or regional organic action plans provide a strategic instrument to coordinate different supply-push and demand-pull instruments tailored to local conditions. In total, 17 national and 10 regional action plans or similar support schemes were identified in EU Member States that have been implemented since 2007. In many cases, action plans bundle CAP measures and complementary national/regional measures not (co-) funded by the European Agricultural Fund for Rural Development (EAFRD) or European Agricultural Guarantee Fund (EAGF). The principal areas covered by action plans are:

1. a national/regional strategy
2. direct producer support
3. marketing and processing support
4. producer information and training
5. public procurement
6. consumer information and promotion
7. infrastructure support
8. research and regulation controls

The effect of such coordinated strategic organic farming policies in many European countries has been a continued growth of organic land area, supplying more produce to a wider range of markets. This growth has occurred despite the recession, whereas the

UK is standing out as an area where production and the market have declined due to both super-market response to the recession and to the lack of a cohesive national strategy with appropriate support.

2.3 ORGANIC FARMING POLICY AND SUPPORT IN JERSEY

The RES 2011-15:

<http://www.gov.je/Government/Pages/StatesReports.aspx?ShowMonth=1&ReportYear=2011> makes the point that “organic farming has an important contribution to make” and includes a statement about the benefits of organic farming in terms of addressing issues of sustainability, reduced inputs and environmental damage. It makes a qualified statement about the transferability of the UK evidence of the environmental benefits of organic farming to Jersey. The policy is to undertake an analysis of the benefits of organic farming (of which this report is a part), to review support mechanisms, encourage greater market focus and support market research and business innovation.

Currently grants are made available for conversion based on the fact that conversion involves costs that cannot be recouped. Maintenance grants are not available, based on the principle that organic businesses should be viable without grant support.

There is a wide range of grants and other support available to both conventional and organic farmers in Jersey, including:

- Dairy cow headage payment in recognition of the high local costs of production and their iconic status: £180/cow/year
- SAP area payments £37/vg. (£206/ha.) in 2010
- Environmental research and monitoring
- Some research, advice and information is available to conventional farmers but not organic farmers
- Access is available to the capital (including for manure storage and machinery) and marketing and processing grants. These are available to all farmers and are discretionary. Some organic producers have made successful use of these grants.

The discretionary conversion and organic support formerly provided under the CRS but currently under the CES scheme in Jersey is £100/vg. (£556/ha.) year one, £80/vg. (£445/ha.) year two, thereafter £40/vg. (£222/ha.). Reference: Appendix 4 CRS Organic Production Guidelines. The scheme is for a minimum of 5 years and maximum of 7 years. No new conversion agreements have been offered since 2009.

While area payments are entirely appropriate for medium sized farms it should be recognised that they do not provide appropriate support to smaller farms, which are an

important component of farming in Jersey. Some form of base payment in addition to an area payment, such as is provided in Wales is valuable, see above.

There is no on-going support for maintenance of organic farming after the CES scheme. The producers consulted all reported difficulties with the current organic scheme including lack of clarity of the scheme, difficulty in applying and unsuccessful applications with no clear explanation provided.

There is no specialist organic advice available.

2.4 THE FUTURE

The reform of the CAP provides new opportunities for the support of organic farming in the EU. Reference ORC CAP Reform information:

<http://www.organicresearchcentre.com/?go=Policy%20and%20debates&page=CAP%20reform>. The details of the reforms are not yet finalised but the principles have been agreed. The new scheme will be implemented from the start of 2016, with transition arrangements in place in 2015. The guidance in Measure fiche Organic Farming Article 30, reference: Appendix 5 Measure Fiche, provided by the EU on 20.6.13 explains the provision of support to the **conversion and maintenance of organic farming specifically for its known environmental delivery**. It states:

"In the rural development context, organic farming is mainly expected to establish and maintain a sustainable management system for agriculture. The farming practices it promotes contribute to improving soil and water quality, to mitigation and adaptation to climate change and to the improvement of the state of biodiversity (e.g. by no use of synthetic plant protection products and synthetic fertilisers, crop rotation, use of organic fertilisers, and improvement to soil organic matter)."

The Organic Farming Measure is expected to contribute to several Union priorities for Rural Development. It is most relevant for the following priorities:

Priority 4: "Restoring, preserving and enhancing ecosystems related to agriculture and forestry," with a focus on the following areas:

- restoring, preserving and enhancing biodiversity, including in Nature 2000 areas and high nature value farming, and the state of European landscapes
- improving water management
- improving soil management

Priority 5: "Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors," with a focus on the following area:

- fostering carbon sequestration in agriculture and forestry

Grants will be calculated on the basis of costs and income foregone, compared to conventional farming. Support rates are to be limited to a maximum of:

- 600 EUR per ha. per year for annual crops
- 900 EUR per ha. per year for specialised perennial crops
- 450 EUR per ha. per year for other land uses

Knowledge transfer may be funded separately under Article 15, capital investment under Article 18, quality schemes under Article 17 and small farm business development under Article 20.

Specific mention is made of the role of an Organic Action Plan and the importance of a strategic policy addressing the multifunctional nature of organic farming, the market, the balance of different support instruments and the Public Goods delivered by organic farming as identified in the EU report: "Provision of public goods through agriculture in the European Union," 2009, available at:

http://ec.europa.eu/agriculture/analysis/external/public-goods/index_en.htm

Namely:

- 
- Soil functionality
 - Farmland biodiversity
 - Water quality
 - Air quality
 - Agricultural landscapes
 - Rural vitality
 - Water availability
 - Climate stability

These deliverables are closely correlated with those identified as priorities in The State of Jersey - A report on the Condition of Jersey's Environment, released in January 2005, which set a baseline against which to measure progress on the implementation of a wide range of policies and legislation designed to look after the environment. The Report identified twelve social and environmental considerations:

- Climate change
- Air quality
- Globally important biodiversity
- Land use patterns
- Contaminated land
- Freshwater quality and availability
- Marine water quality
- Waste management
- Local biodiversity
- Land management regimes
- Key biological populations
- Quality of life for Islanders

However the Report also states that “Organic farming businesses need to become more market focused and reduce their reliance on States production subsidies”. The need for a strongly market orientated approach will be important for further development of organic farming in Jersey. But the market alone cannot be expected to deliver these multiple “public goods”, outcomes which organic farming is able to provide.

The majority of the organic farmers visited by MM are already strongly market orientated. But the policy in Jersey of moving away from on-going maintenance grants for organic farming is not consistent with policy in the EU including those producer countries competing with Jersey producers. Organic production does cost more and deliver more and the evidence from UK costings (*Organic Farming in England 2011-12, Farm Business Survey*, Newcastle University, August 2013) is that these additional costs will not be wholly compensated by the premium prices which consumers are prepared to pay.

It should also be noted that support for organic farming may also be justified on the basis of its inherent environmental impact and not necessarily to meet market demand, for example in nature reserves and water catchment regions.

This MM report clearly demonstrates that organic conversion and maintenance grants are justified for two reasons:

- the costs incurred in delivering high environmental outcomes, which are not going to be compensated by consumer premiums, and
- to ensure that Jersey producers are not disadvantaged in comparison with producers in the EU, who are their principal competitors

3 EVALUATION OF THE ENVIRONMENTAL, SOCIAL AND FINANCIAL PERFORMANCE OF ORGANIC FARMING IN THE CONTEXT OF JERSEY

3.1 ENVIRONMENTAL PERFORMANCE

3.1.1 RESEARCH EVIDENCE

The impact of organic farming on the environment has been widely researched in many countries, particular in the EU. This includes numerous comparative research projects of all farm system types, research reviews and meta-analyses. Generally they are comparing organic farming with standard conventional farming, which in the EU is typically operating to “Good Agricultural Practice”, detailed in the UK by the Defra Codes of Good Agricultural practice, which are the basis for conventional farming in Jersey.

A summary of two research reviews and other information encompassing biodiversity, water quality, soil and organic matter and greenhouse gas emissions is provided in Appendix 6 The Environmental Impact of Organic Farming. This includes Organic Farming and Biodiversity: A review of the literature Organic Centre Wales, Executive Summary, Aberystwyth February 2011, available on:

http://www.organiccentrewales.org.uk/uploads/biodiversity_review_2011.pdf

and an extract from a further review undertaken by Measures, M. and Reining, I. on behalf of Organic Milk Suppliers Cooperative in 2011 (unpublished). Recent analysis currently being completed by Organic Research Centre confirms these findings.

3.1.2 BIODIVERSITY

The evidence that organic farming provides greater biodiversity than conventional farming is overwhelming, both in terms of number of organisms and species diversity – i.e. more species and greater frequency of birds, bats, butterflies, small mammals, invertebrates, plants and soil flora and fauna. This applies at the plot, field and whole farm level.

The reasons vary according to the focus of the individual species studied but include:

- The avoidance of “agro-chemical” inputs; both crop and livestock pesticides and soluble fertilisers.
- The practice of crop rotation including grass/clover leys, mixed cropping, green manures, etc.
- Most organic farms are mixed farms with many crops and involving mixed livestock enterprises

- The maintenance and introduction of permanent pastures, long term grass leys, hedgerows, beetle banks, etc.
- Restricted use of slurry and manure applications
- In general, management regimes which tend towards diversity and away from intensification.

3.1.3 WATER QUALITY

Ground and surface water quality is higher on organic farms due to:

- Prohibition of artificially synthesised pesticides and herbicides minimises the risk of agro-chemical pollution
- Prohibition of artificial nitrogen fertiliser and replacement with legumes minimises the risk of nitrate pollution
- Limitations on stocking rates and manure use and management minimise the risk of nutrient pollution
- Management practices and avoidance of soluble fertiliser minimises the risk of phosphate pollution

There is evidence that overall nitrogen leaching can be reduced by 40 – 60% through organic farming.

The opportunity to use organic farming as a strategic policy to address the known water quality issues of Jersey has been demonstrated by the experience in the water catchment area for Munich, Germany. This provides a good example of how organic farming can play a central role in water quality management over the 20 years of the project: <http://www.farmpath.eu/Groundwaterprotection> Through the major farming system changes required by organic farming, water quality has been secured. This has involved conversion support for organic farming for 18 years, provision of advice, paying for certification cost and market development. Organic farming has become mainstream in the area and this form of voluntary collaboration is being recommended widely by the project. The Munich catchment programme has found that organic farming has resulted in higher organic matter levels, improved water-holding capacity and reduced irrigation needs.

3.1.4 GREENHOUSE GASES

The research on organic farming's impact on greenhouse gas emissions and climate change has been reviewed by the ORC:

<http://www.organicresearchcentre.com/?go=Policy%20and%20debates&page=Climat e%20change>

And the Soil Association (SA): November 2009

<http://www.soilassociation.org/LinkClick.aspx?fileticket=SSnOCMoqrXs%3d&tabid=1326>.

And by the Research Institute of Organic Agriculture (FiBL Switzerland) Organic Agriculture and Climate Change 2007:

<https://www.fibl.org/fileadmin/documents/shop/1500-climate-change.pdf>

The overall conclusions are that organic farming produces lower greenhouse gas emissions, particularly in terms of emissions per ha. (48 – 66% lower) but also similar or lower emissions per kg. of food. This is due to the non use of energy consuming nitrogen fertilisers, the reliance on legumes, the involvement of animals but at low stocking rates, feeding ruminants on forage rather than concentrates, and use of manures, compost and green manures.

A particularly significant contributory factor is that many of these practices result in greater soil organic matter levels than conventional farming, effectively acting as a carbon sink. The SA report states: “a review of all available comparative studies on average, organic farming produces 28% higher soil carbon levels than non-organic farming in Northern Europe.”

3.1.5 ENVIRONMENTAL IMPACT OF ORGANIC FARMING IN JERSEY

An important consideration is whether the effects of organic farming on the environment found elsewhere also hold true for the particular farm type and structure in Jersey. The research reviewed in this report draws on research undertaken in a wide range of conditions and farming systems, including arable, grassland, dairy, beef, sheep, intensive and field vegetables, mainly in Europe, including varying farm sizes (from under 1 ha. to 1,000 ha.) and compact farms and those with widely dispersed fields, as is typical of parts of France and Germany. It includes research on the impact on wildlife, water quality, climate change and soil and resource use.



Photo 5: Ringlet butterfly with high organic matter returning to the soil

The work on pollinators by Batáry P., Sutcliffe L., Dormann C.F., Tscharntke T. (2013) *Organic Farming Favours Insect-Pollinated over Non-Insect Pollinated Forbs in Meadows and Wheat Fields*

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0054818> is highly relevant since it shows that small field size does not necessarily reduce the wildlife benefits of organic farming over conventional, in fact in this instance it actually increases it. The implication is that although Jersey has small fields with a large “edge effect,” there is no indication that the environmental advantage of organic farming over conventional will be different from that found elsewhere.



Photo 6: Green manuring and floristically rich field margins

The fact that in Jersey some fields are not contiguous does have an effect; research has shown that many contiguous organic farms deliver more environmental benefits than if separated. However the research referenced above was conducted on commercial farms many of which, particularly in Germany and France would have had widely dispersed fields. Organic farms with widely dispersed fields, as in Jersey, will deliver the sort of environmental benefits reported in the research undertaken elsewhere, but if fields are contiguous and if organic farms are grouped together the benefits will be greater still.

The environmental benefits of organic farming are due to its well known characteristics:

- crop diversity
- no use of synthetic pesticides and fertilisers
- reliance on pest/predator interactions
- reliance on soil biology
- use of manure, and
- the prevalence of mixed farming with animals

The fact that a relatively high proportion of Jersey is intensively farmed with potatoes and dairy cows indicates that the impact of organic farming is likely to be at least as great, if not more so, than that experienced in some less intensive countries. There is

nothing to suggest that the results found worldwide would not also apply to Jersey and its particular conditions and environmental priorities.

3.2 SOCIAL PERFORMANCE

3.2.1 ORGANIC PRINCIPLES

Organic farming is guided by principles set out by the International Federation of Agricultural Movements (IFOAM) and provides a strong social element to farming. The Principles are provided in Appendix 7 IFOAM Principles, and may be summarised as:

- The principle of health
- The principle of ecology
- The principle of fairness
- The principle of care

These principles are relevant to the potential social role of organic farming in Jersey. They provide the guiding ethos to the organic standards and farm management. While many activities may also be undertaken by conventional farmers, experience elsewhere has shown that organic farmers often take the lead and that the public relate more closely to traditional and organic farming systems. The standards themselves make organic farming more amenable to provision of public services, particularly due to the prohibition of synthetic chemicals and pesticides, which means that public access does not have to be restricted, also the beneficial presence of livestock is more likely and wildlife/biodiversity is greater.

3.2.2 EDUCATION AND SCHOOL VISITS

There is currently no programme providing school visits or other education services by organic producers in Jersey, however individual producers have been proactive providing farm visits to school groups. One producer has made a presentation to a school Food Technology student group, with a follow up farm visit.

The school food programme, educational resources and infrastructure established by the Soil Association in its Food for Life Programme:

<http://www.soilassociation.org/schoolfood/foodforlifepartnership> provides a unique opportunity for individuals or groups of organic farms in Jersey to engage with schools, both in the provision of food and providing educational access and information to schools.

3.2.3 HEALTH

The principal reason that consumers choose organic food is for their personal health. This is particularly the case with baby food and it has been compounded by the succession of food scares including BSE and more recently the traceability issues around

“Horse-gate”. The exemplary traceability of organic food is becoming an ever more important reason for organic purchasing.



Photo 7: Organic retail shop in St. Helier

The EU funded Quality and Low Input Food project:

[http://www.qlif.org/Library/leaflets/folder_0_small.pdf](http://www qlif.org/Library/leaflets/folder_0_small.pdf) demonstrated that “organic food production methods resulted in:

- Higher levels of nutritionally desirable compounds (e.g., vitamins/antioxidants and poly-unsaturated fatty acids such as CLA and omega-3), and
- Lower levels of nutritionally undesirable compounds such as heavy metals, mycotoxins, pesticide residues and glyco-alkaloids in a range of crops and/or milk”

There is no conclusive information to date to show that this positively benefits the health of humans consuming an organic diet. Nonetheless, eating an organic diet is being advised by some doctors in Jersey and there is the potential for it to contribute to the health of the population.

The health of agricultural workers and the public exposed to agrochemicals while walking or living adjacent to fields is a very important consideration, particularly given the close integration of residential areas and tourist activities in the countryside of Jersey. Organic farming provides a way of avoiding this risk, for example in Argentina a pesticide-free zone around urban areas has been implemented, creating an opportunity for organic farming.

3.2.4 EMPLOYMENT

Organic farming typically employs more labour than conventional farms, reference Soil Association Organic Works report:

<http://www.soilassociation.org/LinkClick.aspx?fileticket=60CVIT1Nw0U%3d&tabid=1326> which states that organic farms employ 30% more labour. See also EC Organic Farming Policy Review 26.06.13, which notes “organic farms are generally **more labour**

intensive than conventional ones and for comparable structures the income per AWU (Agricultural Working Unit) is in general higher on organic farms.”

The relative higher use of labour may be different on Jersey due to the already high labour use in conventional potatoes, though organic potatoes are likely to have relatively even greater labour requirements.

3.2.5 COMMUNITY SUPPORTED AGRICULTURE (CSA)

CSA is a system where consumers commit themselves to supporting a particular farm and providing a fair income for the farmers and they benefit by receiving fresh, healthy food, having a connection with the land and a knowledge of where their food comes from and how it is grown. It can take a wide variety of forms, one the one hand box schemes, which supply a weekly box at a fixed fee, on the other hand the consumer makes an annual financial contribution to the farm business and only receives what produce is grown during the year.

Developed in the US and more recently in the UK, organic farming (certified or not) has been the prevalent method of production in CSA.

There is an important link that can be made between the RES Policy for CSA and organic farming.

3.2.6 ACCESS

The RES Policy is to provide new and better access to the countryside in Jersey. Organic farming historically has taken the initiative in providing increased public access and is particularly well suited to providing a safe environment for the public due to the prohibition of synthetic agrochemicals, which are an inevitable hazard to the public walking footpaths around and through conventional crops.

3.2.7 TOURISM

Tourism is increasingly seeking ways of becoming more sustainable and green. Although Jersey has Green Globe status there is no readily available green accommodation for visitors. Agri-tourism is included in the RES Policy and organic farming provides a good base for such diversification, as has been achieved in Italy, including accommodation, farm visits, nature trails, cookery classes etc., for example:

http://ageconsearch.umn.edu/bitstream/91113/2/8_Donatella_The%20Importance_Apstract.pdf

<http://www.organicholidays.co.uk/Area/Italy/Tuscany.htm>

The “clean green” organic image is beginning to be used to promote Jersey, as evidenced by the in flight magazine “Travel” promoting Classic Farm and the airport map highlighting “chemical free” food. However, this image is not being as effectively realised on the ground as it could be.



Photo 8: Pesticide-free food features prominently at the airport

3.2.8 CARE FARMING

Care farming encompasses a broad range of farms and services offered by commercial farmers, charities and health communities. The aim is to provide health, social or educational care services for one or a range of vulnerable groups of people through supervised and structured programmes of farming related activities. It has developed rapidly in the UK from a small base pre 2000 to a thriving network with a support organisation Care Farming UK: <http://www.carefarminguk.org/home> drawing on the experiences of Holland which has established a strong link to their National Health Service.

Organic farming offers particular opportunities for care farming that has resulted in many care farms being organic:

- A safer working environment with no risk of pesticide exposure either through spray application or ingesting crops before withdrawal periods are expired
- The diversity of organic farms, often with livestock and with the many enterprises offering a range of work throughout the year
- Hand work and close supervision for weeding crops and caring for animals
- Opportunities for direct marketing of high quality certified produce to the community.

The Commonwork Grow2Grow project provides an example of a project that has been able to quantify the therapeutic effects of care farming: <http://www.commonwork.org/projects/grow2grow>. In Jersey there will be opportunities for care farming, some of which are already being explored, but successful development will need the building up of working relationships between suitable producers and the health services on the island.

3.3 FINANCIAL PERFORMANCE

3.3.1 CURRENT FINANCIAL PERFORMANCE

The financial performance of organic farming Europe-wide is particularly dependent on achieving a price premium on produce, securing grant aid and ensuring low variable costs. Premiums and grants are essential for dairy and field-scale vegetable producers due to lower yields and some extra overheads. Small growers are less dependent on area payments while labour costs, particularly for vegetable producers, are higher than conventional. These characteristics are largely true for producers in Jersey, although based on the farms visited, direct marketing is a major element of a larger proportion of farms than in the UK and most Northern European countries. This is partly due to smaller farm size. In England and Wales the profitability of most organic farm types has been similar to conventional, although during the last year the relative profitability of organic dairy and arable farms is now in favour of conventional. Reference: Organic Farm Incomes in England and Wales 2010/11, March 2012, IBERS and Farm Business Survey 2011/12 Organic Farming, July 2013, Newcastle University.

The main exception is the smaller intensive vegetable grower where financial viability is often entirely dependent on integration with direct selling and there is often no conventional counterpart.

The actual current financial performance of organic farms in Jersey is not possible to quantify precisely as there is no separate monitoring of the financial performance of organic businesses. The financial monitoring which is available amalgamates the conventional and organic enterprises of those farms that are part conventional and it also includes both the farm business and any diversification enterprises. This complicates obtaining an understanding of the financial viability of the production side of the organic business. My assessment, below, of the farm businesses is based on the stand-alone farm business, excluding any processing or direct marketing. My experience, based on contributing to the annual Defra funded reports produced by the **Institute of Biological, Environmental and Rural Sciences** *Organic Farm Incomes of England and Wales* report (2009 - 2012) and the biannual *Organic Farm Management Handbook Edited by Lampkin, N. Measures, M. Padel, S. 2011/12* allows the following comments based on interviews with 6 organic producers in Jersey.

1. The first point to make is that the farms visited are genuinely commercial businesses, not subsidised from on-going private cash injection.
2. The fact that several farms have survived for 20 years shows considerable resilience.
3. An assessment of actual Jersey dairy farm costings indicates that organic dairy production supplying local markets at realistic premium prices in the order of 20 – 30% is not financially viable in the absence of organic maintenance grants.
4. Organic field-scale vegetable production selling to local supermarkets and exporting to UK packers at premiums in the order of 30- 50% are competing

with UK or other European producers who are all receiving organic grants. Knowledge of the UK organic market and observation of yields, organic land area changes in Jersey and comments received on the state of the business of the Jersey farms visited indicate that organic maintenance grants are necessary in order to remain viable and competitive. This is very evidently the case for farms exporting to the UK as they are competing with southern European farms such as Spain where maintenance payments of Euro 198 - 540/ha, are available for vegetable land.

5. Some businesses, notably the smaller vegetable growers, have been able to survive by direct marketing, although the returns to the growing and the retailing are insufficient to provide a reasonable return on labour and capital on both elements of the business.

3.3.2 FUTURE FINANCIAL PERFORMANCE

The future financial performance of organic farms in Jersey will be a factor of demand (influenced by retail price, policy and promotion), wholesale prices (dependent on supply and demand), grant support and technical performance. In order to be viable organic businesses need to be as profitable as conventional businesses, or more so.

3.3.3 CONVERSION COSTS

There is no information available on the costs of conversion to organic farming in Jersey, however the detailed analysis from the UK and elsewhere is likely to be relevant. Conversion costs depend on the type of farm that is being converted and the system that is being established. Costs are usually incurred in the following:

- General restructuring of the enterprises
- Capital costs associated with improved manure management, machinery and buildings
- Costs of accessing information and advice
- Lower yields and stocking rates
- Lack of organic premiums during conversion

Typically, the more intensive the farm, the higher the costs. The very intensive nature of many dairy and potato farms in Jersey is likely to involve substantial conversion costs.

The potential for conversion will depend on: 1) the availability of conversion and maintenance grants, 2) the growth of the local and export markets and 3) agricultural policy and support. Some of the costs of conversion are better supported through capital grants and advice, rather than area payments.

3.4 BENEFITS OF RES ORGANIC EXPENDITURE

Reference: Appendix 8 Organic Funding under CRS June 2013.

The level of funding for organic farming under the 2006 – 2011 CRS was £100/vg. for year one, £80/vg. for year two of conversion and £40/vg. for subsequent years, a reduction from £50/vg. in 2006. The review of the CRS resulted in the launch of the CES, which has no funding for organic maintenance but provides the same level of funding for conversion: £100/vg. for year one, £80/vg. for year two.

During the period 2006 and 2010 inclusive the data indicates that conversion payments supported conversion of approximately 940 vg. during the period, with the supported area increasing from 1,150 vg. to 2,088 vg., with the total payments of £314,698 for organic production and £225,035 for conversion during the 5 years.

The prescriptions of the organic element of the CRS require active farming and organic certification of eligible land and scheme duration of up to 7 years: 2 years conversion and 5 years organic management. This is straightforward for the producer to understand and for The Department very straightforward and cost effective to administer.

As with conventional support, organic farmers are required to meet minimum standards of management and environmental delivery defined by the Defra Codes of Good Agricultural Practice. They can access funding for non-field habitat management, such as hedges. A key difference between organic and conventional support is that organic support and the associated standards requires a change in the farming system and practices, while most conventional support makes no requirement to change the farming system and practices.

The environmental, social and economic consequences of organic farming are discussed in detail elsewhere in this report, but the principal results from the scheme in Jersey will have been:

- Supporting the financial viability of organic farms
- Water quality protection
- Wildlife protection

These effects will have been achieved throughout the period of funding and subsequently while the land continues in organic management.

It is disappointing that much of the land that converted in 2006 - 2009 subsequently reverted to conventional, but not all did and there is clear evidence that the scheme was crucial in supporting some business that have continued with organic production. The reason for reversion was in most cases not due to the lack of a market, although it is quite likely that this might have been a problem later on given the lack of support elsewhere to develop the Jersey organic strategy and the changes in the UK market.

The fact that much of the land receiving conversion support subsequently reverted to non-organic farming does not detract from the benefits noted above for the duration of organic management. The advantage of the “pump priming” effects of conversion payments and subsequent on-going organic management is however lost. This combined with the site specific cost of conversion suggest that conversion aid is probably better set at a lower area rate relative to maintenance payments, particularly if consideration is given to the need for viable long-term organic businesses and avoiding stimulating conversion at a rate which the market cannot subsequently sustain. Temporary oversupply results in premium collapse and undermines existing organic businesses. Targeted capital support during conversion along with advice are particularly important.

Reliance primarily or solely on conversion payments will not secure on-going organic farming with its potential for securing lasting environmental benefit. This is best achieved with on-going maintenance support, comparable to that which is offered elsewhere.

In the Jersey CRS organic conversion scheme the average payment rates of £90/vg. (£500/ha.) for conversion and £40/vg. (£222/ha.) for organic land is high compared with that received in the UK, but is not out of line compared with what is paid elsewhere in the EU, particularly for vegetable land.

The fact that payment rates are set at a flat rate for all farm types means that funding is not being targeted as effectively as possible. The greatest environmental benefits are likely to be achieved from conversion of conventional cropping (vegetable) land, followed by dairy farmland followed by low input grassland. The costs of conversion and income foregone are also likely to be in this order. While the flat rate system of conversion and maintenance payment rates is simple to operate, it could be better targeted by operating 3 or 4 categories as in most other EU countries:

1. Horticulture and root cropping land
2. Intensive grass and arable land
3. Extensive grassland
4. Top fruit

The conditions set by the Jersey organic scheme are reasonable, including both the 5 year duration and the reliance on Organic Certification as a means of assessing eligibility for organic support. The latter is a widely used mechanism, self auditing, easy and cost effective.

The availability in Jersey of capital grants for all farmers to support market development, machinery and environmental protection, e.g. manure storage is particularly important for organic producers.

Apart from identifying the clear environmental and social benefits of organic farming over conventional, it is difficult to judge the value for money of organic support in Jersey

under the CRS without undertaking a full life cycle analysis, or to compare it with value for money for support available to conventional production.

There has not been a recent cost/benefit analysis of organic farming and support in the UK, however Pretty et al reported that one 1998 study in the UK “compared paired organic and non-organic farms, and concluded that organic agriculture produces £75–125/ha of positive externalities each year (with particular benefits for soil health and wildlife) (Cobb et al., 1998)”. Reference: Journal of Environmental Planning and Management, 44(2), 263–283, 2001 Policy Challenges and Priorities for Internalizing the Externalities of Modern Agriculture JULES PRETTY et al
http://are.berkeley.edu/courses/ARE242/spring05/classReadings/newValuation/PrettyEtAl_01.pdf

It is however worth noting the level of payment rates from additional schemes available to organic and conventional farmers in Jersey include £180/cow (potentially £300/ha. at 1.7LU/ha.) for milk supply, cost of production and iconic reasons and £206/ha. for SAP, for the purpose of remaining competitive and meeting the Codes of Good Agricultural Practice, including water quality protection, soil protection, animal welfare, environment and public health, together with the production of a Waste Management Plan. These are minimum standards that are all more tightly restricted by organic standards, frequently much more so.

Observation in Jersey and experience in the UK is that the Codes are not sufficiently addressing the pressing issues of pollution, climate change, wildlife loss, and resource use or soil depletion.

A full life cycle assessment of costs and benefits of organic support has been undertaken in Switzerland:

<http://www.sciencedirect.com/science/article/pii/S0264837712001196>; this concluded that the value for money for organic support was very similar to that for other environmental schemes and made the important point that schemes need to be carefully targeted and constructed to meet the needs of local conditions.

On this basis, the current rates of payment for organic maintenance (under the conversion scheme) in Jersey of £40/vg. (£222/ha.) are consistent with 1) addressing the environmental priorities, 2) the external cost of conventional farming which organic farming addresses 3) the financial needs of commercial organic farming, 4) the payment rates of other environmental schemes in Jersey and 5) the payment rates available in other competing countries. There is however a need to target payment rates in Jersey more accurately to different farming sectors.

4 ORGANIC MARKET



Photo 9: Classic Farm shop

4.1 JERSEY ORGANIC MARKET

The local organic market in Jersey is relatively undeveloped, which is surprising given the high standard of living of a significant proportion of the 100,000 population.

The Jersey Organic Association have not undertaken market survey work or a formal assessment of the opportunities for the development of the home or export market since A survey of organic food production and sales in Jersey 2006/7:

<http://www.joa.org.je/links.htm>

In the absence of clear evidence, the general observation is that the Jersey market has been static during the last 4 years, but that there is beginning to be a recovery, as observed in the UK. There are a range of market outlets including box schemes, farm shops, one specialist organic shop and two supermarket retail chains; some have been winners and others losers in terms of sales during the recent past. On-line sales are notably absent.

Discussions with the buyers for the Co-op and Waitrose, the two principal supermarket outlets for organic produce on Jersey provided their perspective. There are differences between the two: the Co-op has a very strong “buy Jersey” principle on all produce and featuring the “Genuine Jersey” label, this focuses on local provenance rather than method of production and associated attributes, possibly to the disadvantage of organic. No organic imports apart from yoghurt. They do not actively seek more organic produce, but they state that they are keen to stock it if a producer approaches them. They have a reasonable network of individual producer/suppliers and want others able to supply a range of crops. Seasonal fluctuations in supply can be accommodated. Organic meat and dairy is not stocked, except Yeo Valley UK yoghurt. Their view is that while the organic

market is smaller than in the UK, it is now growing following the initial effects of the recession and that there is further market capacity.



Photo 10: Organic supermarket produce

Waitrose, on the other hand, stocks organic dairy and vegetables and sources organic produce from anywhere with very few local suppliers. They report that local supplies have decreased, while the market has fluctuated considerably over the last few years. Their view is that the lack of availability of local supplies has significantly hampered sales during the last year and that there is potential growth in the market. While both supermarkets clearly saw an opportunity to grow the organic market with local supplies, they both made the following similar provisos:

- Reasonable price – no more than 20 – 30% organic premium
- High visual quality
- Better presentation
- Promotion by the producer

The Co-op, who mentioned that they will facilitate in-store producer promotion, emphasised that use of the Genuine Jersey label is very important. Waitrose emphasised the importance of the producer/retailer relationship and consistency of supply; they see the opportunity for establishing a producer group to enable them to do this. Neither provided any point of sale information on the attributes of organic food or explained why it cost more to produce.

There is no evidence of a higher mark-up on organic produce, always a concern of producers.

The producers involved in direct sales have their own individual experiences, generally a recent decline in sales and one reporting a significant drop in business as a result of a supermarket opening locally. The standard of direct sales facilities is variable reflecting the level of demand and the value of investment, but some are operating to a very high standard. The high street retailer providing a full range of organic produce except meat

and alcohol reports a static market following a decline 3 or 4 years ago and sees potential to grow the market through collaborative marketing and involvement with groups with a common interest, such as Jersey in Transition. The high street retailer was the only one to comment on the nature of their customer, how they had changed from being predominantly “artistic”, to a wide range including older people, young mothers, single parents and recommendations from some doctors. Income is not a predominant factor.

The direct sellers and the retailer provided some information to consumers on organic farming. This is noticeably absent from the major retailers who give little information to the consumer to explain why they should buy organic produce or that they need to pay extra because of the additional costs of production.

Drawing on the experiences elsewhere, e.g. Denmark, the principal actions needed to develop the local market are:

- National policy supporting organic farming
- Provision of stable support to encourage producer and retailer confidence and supply of organic produce at affordable prices
- National policy advocating organic produce in public catering procurement
- Point of sale information

Currently the Jersey market for local organic produce is predominantly for vegetables, supplied through all market outlets. Fresh milk is available through some outlets and processed dairy products and eggs through an even smaller number of outlets. While the supermarkets and most direct sellers have a limited range of organic produce one retailer and a farm shop have a full range of organic groceries and fruit, much of which is imported and one or two farms shops have a good range of meat. The lack of product range and the fact that much produce is imported, including organic yoghurt, implies that there is potential to increase the volume and range of local organic produce. To realise this potential there will need to be active market development on several fronts and possibly processing facilities.

4.2 EXPORT OPPORTUNITIES

The organic market in the UK and elsewhere in Europe has been well documented and shows recent trends and principal drivers for the market. The Soil Association Annual Market Report 2013 shows the recent recovery:

<http://www.soilassociation.org/marketreport>

Key findings of the SA Market Report:

Boom in online sales

Organic shoppers are increasingly choosing the convenience and variety offered by home delivery over limited ranges at many supermarkets.

A striking success in 2012 was seen by Ocado, increasing organic sales by 6.4%, and overtaking Asda and Morrisons to become the UK's fourth-largest organic retailer - with predicted further growth of 10-15% in 2013.

Home-delivery specialists Ocado, Abel & Cole and Riverford, increased their combined organic sales by 10.3% in 2012, putting them as front-runners of organic box scheme sales.

Sainsbury's saw its online organic sales increase by a remarkable 48%.

Independent outlets

Independent outlets saw a 0.7% increase in sales, covering box schemes, mail order, farm and health-food shops, farmers' markets and catering.

Now valued at £480.6 million, the independent sector is providing consumers with a high street alternative for the ethical consumer.

Multiple retailers

Reduced availability of organic products in various supermarkets has affected the market both in the short term, and looking at future growth.

The seven leading multiple retailers saw their organic sales fall by 3.8%.

Sales of supermarkets own-label ranges fell by 11.2% in 2012. Success of Duchy Originals own-label range contributed to a 1.1% increase in Waitrose organic sales.

Box schemes

Box scheme, home-delivery and mail order sales increased by 4.4% to £174.3 million.

A third successive year of healthy growth was spearheaded by Abel & Cole and Riverford, whose turnover increased by 20% and 8% respectively. Abel & Cole's weekly deliveries reached the 50,000 mark, increasing by a quarter.

The Grocer (13/7/13) reports that the UK organic market is now in growth, with an overall increase of 4% during the previous quarter, with specific growth for Waitrose 6.6%, Doves 18% and Yeo 17%.

This has been backed by recent market information (Kamar August 2013) which shows continued growth in the UK market.

*The decline in the UK organic market since 2008 is an exception to the trends seen in most other European countries, which have continued growth throughout the recession, reflecting different marketing outlets and supermarket policies, and more strategic and higher levels of Government support. The production and market for organic food, in the UK and several other EU countries is available in the presentation *The Organic Sector in the UK, Recent Trends* by S. Padel at Biofach: <http://orgprints.org/22345/37/padel-2013-uk-market.pdf> and for the EU *The European Market for Organic Food, 2011* by H. Willer: Federation of Organic Agriculture Movements (IFOAM). From 2002- 2011, the worldwide industry grew 170%, or approximately 19% a year. While organic food*

accounts for 1-2% of total food sales worldwide, the organic food market is growing rapidly, far ahead of the rest of the food industry, in both developed and developing nations. [Yahoo News](#) (24 June 2013)

The principal opportunity for Jersey producers to access this market is to the UK, for both cultural reasons and the fact that Jersey is able to provide produce early in the season. Jersey has the potential to displace suppliers from southern countries such as Spain and the Canaries for some produce or at least enter the UK market before home producers in the spring.

Compared to UK producers, Jersey has the disadvantage of higher freight costs and smaller fields than the field-scale vegetable producers of the East of England. The freight costs, including harbour dues, are £60 per pallet. This adds £60 per tonne for early potatoes, with a UK wholesale value of £550 – 650/tonne and carrots, more per tonne for other lighter produce, for example adding approximately £150 per tonne to calabrese with a wholesale value of £1,200/tonne. This is a significant additional cost which will be borne by the producer unless higher prices can be secured for out of season produce or Jersey branding. Given the distances there is no reason why the costs of transport to the UK should be significantly higher from Jersey than from other European supplying countries such as Holland and Spain.

The fact that France is dependent on 30% of its organic food supply to come from imports suggests that there may be opportunity for exports, at least in the medium term.

The obvious products for which there is an export market are those vegetable crops which can be produced on Jersey either earlier or more cheaply than in the UK, unless some other advantage (such as low pest incidence due to the maritime climate) can be found the export market will be limited to fresh crops such as early potatoes, brassicas and roots, and salads and protected crops. UK processing outlets, which are important for some UK producers are unlikely to be viable due to the lower prices.

4.3 SUMMARY OF THE ORGANIC MARKET

The information gathered from Jersey retailers and producers and the experience of the organic market elsewhere in Europe demonstrate that there is potential growth in the domestic and export market for out of season Jersey produce. However, expanding the market is not easy and this will not happen without further market research, market promotion, and establishment of distribution structures and involvement of professional expertise. Some development of processing may be an opportunity for some and a necessary part of the way forward.

5 FUTURE RESEARCH AND DEVELOPMENT PRIORITIES

Discussion amongst producers concluded that while research is badly needed, in view of the limited funding available this is not the immediate priority for Jersey. The organic research programmes in the UK and elsewhere in Europe are relevant to Jersey organic farming, for example there are many decades of work on the potential of organic farming to reduce nitrate pollution. There is no urgent need to undertake further work in Jersey. What is needed is for Jersey producers to contribute to the research priority setting at an international level and for the establishment of a research dissemination mechanism.

The Europe wide research priorities have been identified by TP Organics: <http://www.tporganics.eu/index.php/vision.html> an EU umbrella organisation of 20 organic institutes and consumer and environment groups. There is potential for Jersey producers to be part of this.

The Organic Research Centre in the UK: <http://www.organicresearchcentre.com> has set out the broad remit of its research programme; opportunities for closer collaboration should be explored:

ORC's research programme focuses on organic/agro-ecological approaches to food and farming in order to:

Improve the productivity and sustainability of such approaches and to address key technical problems where current practice falls short of organic/agro-ecological principles.

Evaluate, with a view to improvement, the wider impacts of such systems, in particular the delivery of ecosystem services; reduction of pollution and resource use and biodiversity impacts; greenhouse gas emissions and potential for climate change mitigation; food security, food sovereignty and sustainability of food systems; as well as food quality, safety and human/animal health and wellbeing.

The current research priorities which have been identified during the Jersey workshop and farmer meetings as being of particular and immediate relevance to Jersey producers are:

- Development of peat free growing medium
- Soil fertility building generally and specifically for Jersey Royal potato production
- Pest and disease control for vegetable crops
- Grassland management

In the future, research priorities for Jersey may include a better understanding and development of the market, addressing specific local environmental issues as well as resolving technical problems. For example a research project comparing the

environmental impact of a conventional farming system primarily focused on potatoes with a mixed organic system involving a range of root and vegetable crops and livestock would be valuable for policy making decisions, though not of direct relevance to organic producers.

Better access to existing and new technical information will be important in the future. A structure for accessing that should be explored, possibly by formal links with similar initiatives lead by the Organic Research Centre in the UK. This should include knowledge exchange, participatory research projects and research dissemination through a variety of cost-effective mechanisms, including better use of website and email groups, local and UK workshops and conferences as well as some form of on-farm advice.

6 SUMMARY OF THE OPPORTUNITIES FOR ORGANIC FARMING IN JERSEY

There are 3 major focus areas for organic farming in Jersey, within which there are a number of specific opportunities:

6.1 SUSTAINABLE FOOD PRODUCTION

Sustainable food production is becoming increasingly important as the need to guarantee food supplies, avoid environmental damage and conserve resources becomes more widely recognised. Organic farming delivers more effectively in most areas of sustainability: environmental, social and economic. The following identifies specific areas for development of the islands food production:

- Sustainable farming: operation of profitable businesses delivering high environment and social outputs
- Production of high quality food
- Market opportunities locally, including working closely with Genuine Jersey and for export
- Increasing the island's food self-sufficiency
- Community CSA and Care Farming
- Tourism with opportunities for establishing a "green" island image, supply of food and agri-tourism services
- Public procurement of food including government, school and hospital catering, -potential for SA Food for Life project

6.2 WATER QUALITY

Organic farming offers the potential to address the existing water quality problems:

- Diffuse pollution reduction in general, including ground, surface and marine water quality – nitrate, phosphate and pesticide reduction
- Focus on organic management of priority areas such as DPP areas, and role in any potential Nitrate Vulnerable Zone.

6.3 WILDLIFE ENHANCEMENT

A number of opportunities have been identified where organic farming could be encouraged to address the environmental issues that have been identified in this report:

- General wildlife support, including low pesticide pollution, habitat diversity, encouraging rare arable weeds and legumes supporting pollinators such as bees
- Wildlife focus areas:
 - The recently proposed National Park
 - ESA land adjacent to semi-natural habitat
 - Priority Habitats and Corridors
 - The need for sensitive management of wildlife sites and provision of public ecological services provide a significant opportunity to manage land with organic farming. Worcestershire Wildlife Trust is an example of the use of organic farming to deliver maximum environmental benefits <http://www.worcswildlifetrust.co.uk/lower-smite-farm>
- National Trust farms with a high biodiversity emphasis
- Target wildlife species projects such as the Chough reintroduction which needs ruminant animals not treated with Ivomectin wormers, to avoid damage to soil life crucial as food
- All areas visited by tourists
- Complement other environmental and social policies including marine protection, resource use and soil protection and meeting the multiple “public goods” and “eco-system services” which are becoming a feature of farming policy.



Photo 11: Organic farming protecting valuable meadows

7 PRIORITIES AND ACTIONS FOR THE DEVELOPMENT OF ORGANIC FARMING IN JERSEY

The future for organic farming in Jersey will be dependant on close engagement and collaboration from the outset between all the key parties involved. Jersey organic producers are central to the future; they have already given considerable thought to how best to develop. The following list summarises discussions at the open workshop.

Priorities for the future, scored by participants at the open workshop:

• Clear policy support	17
• Grant support, particularly for maintenance	17
• Market support	9
• Education – schools and public	9
• Advice and training	7
• Research	3
• Public procurement	0

Clear Government commitment and policy together with the necessary support to producers were identified as the highest priorities.

While producers' priority must be to focus on the management of their businesses, considerable responsibility also lies with them to innovate as the market and environmental and social opportunities change and for them to drive the movement forward.

The successful development of organic farming in Jersey will not happen without a strategic plan which understands the business, establishes the role for organic farming, sets goals and provides support and stimulus to its development. In order to achieve the maximum contribution by organic farming to Jersey's agriculture, society and environment, it is recommended that it is fully integrated into the national farming policy, environmental policy and marketing strategy and that an Organic Action Plan is developed and implemented by Government with the collaboration of key stakeholders. The Action Plan should include the following key elements:

- Definition of relevant goals
- Identification of current constraints
- Integration of market and public support
- Integration of stakeholders and public institutions in partnership approach
- Integration of policy measures (supply 'push' and demand 'pull'), including production support, market support and public purchasing policy
- Focus on specific, local issues that need to be addressed, with tailored measures
- Provision of advice, training and information
- Establish appropriate links with organic research elsewhere.

Production support for conversion and maintenance will be an important element of this, providing a consistent and well-targeted level of support that compensates producers for the costs of organic management in recognition for the environmental delivery.

In the first instance it is important to put in place the appropriate measures, including on-going maintenance area support, to ensure that existing producers are able to stay in business; the loss of their expertise, marketing structures and enthusiasm would be a major setback for organic farming in Jersey.

Secondly there is a continued need to provide support for conversion. While the costs of conversion are clear, it is recommended that the relative conversion and maintenance payments are set at levels which places more emphasis on the latter in order to avoid the problem of conversion without a viable on-going organic business and to avoid unnecessarily high payments to farms which do not need to undertake substantial and costly restructuring during conversion. Continued access to capital grants for manure storage, buildings, machinery, processing and marketing is very important and is a valuable adjunct to conversion and maintenance payments.

Thirdly the position of growers with smaller areas of land should be recognised. They are an important part of the organic sector, one for which standard area payments are of little significance. A high area payment e.g. £1,000 for the first hectare, in recognition of certification costs and administration would address this problem.

The former UK Agriculture Minister, Jim Paice stated in 2011 "organic principles lead the way on sustainable farming". There is potential for organic farming to lead the development of sustainable food and farming in Jersey.

DISCLAIMER

In undertaking this work, Mark Measures Associates has based the report on the figures and information provided by the client or its representatives, and on that provided by the people interviewed. Data sources are referenced where possible.

Mark Measures Associates has taken reasonable steps to ensure that the report is accurate and applicable to the client's circumstances.

No liability shall lie with Mark Measures Associates in respect of any disclosure or use made of this report and its recommendations and acceptance of this report shall constitute an indemnity from the client to Mark Measures Associates.

Appendices

Appendix I

Water Quality Monitoring

Reference Department of the Environment information: Field and Chemical data, May 2012 and November 2012. Pesticide data, May 2012 and November 2012, Nitrates and Land use, Raw Water Pesticide data.

Monitoring by the Water Company and reports by the Department of the Environment identifies pesticide breaches at above threshold levels in 11 out of 19 samples of surface water in 2012, including Primcarb, 2,4-DP, Dicamba twice, Mecoprop, MCPA, Tebuconazole twice, Tricoloyr, Propiconazole twice, this latter fungicide is listed as “Moderately Toxic” for Fish, Insects, Molluscs and Zooplankton by Pesticide information http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC34271#Water

This situation is also reported in borehole sampling with instances of high levels of Chlorthal, Dicamba, Primcarb and PCB rated as slightly to very “Highly Toxic”.

Water nitrate levels have declined over the last 20 years but the groundwater annual mean remains at around the maximum of 50 mg/l. In 2012, with high rainfall, there were no cases of samples over 50 mg/l. but in 2013, 29% of samples exceeded the threshold. High nitrate levels are also frequently reported in borehole samples.

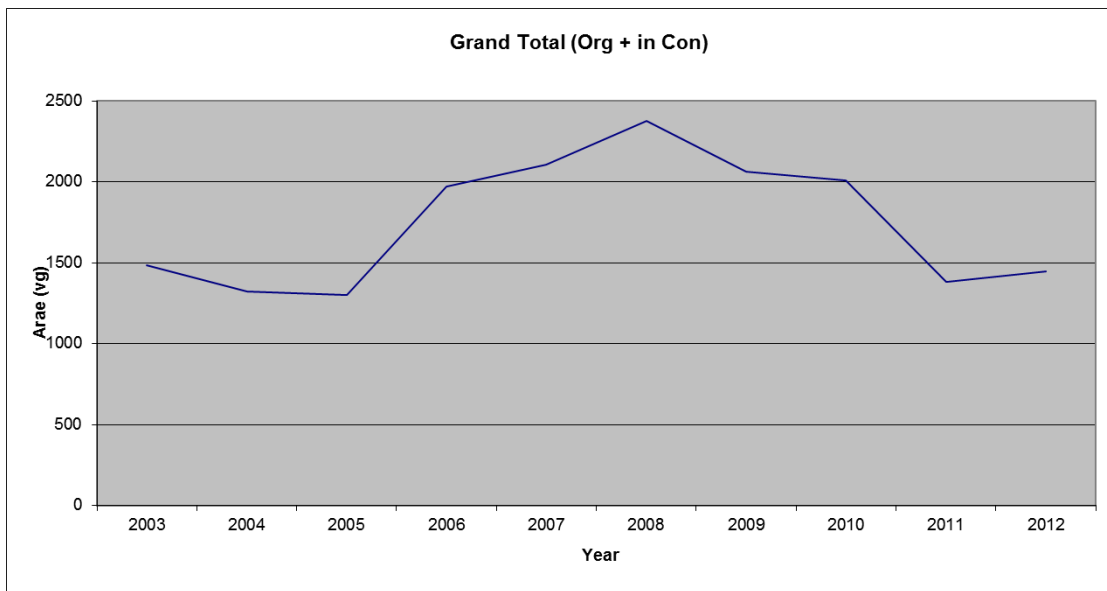
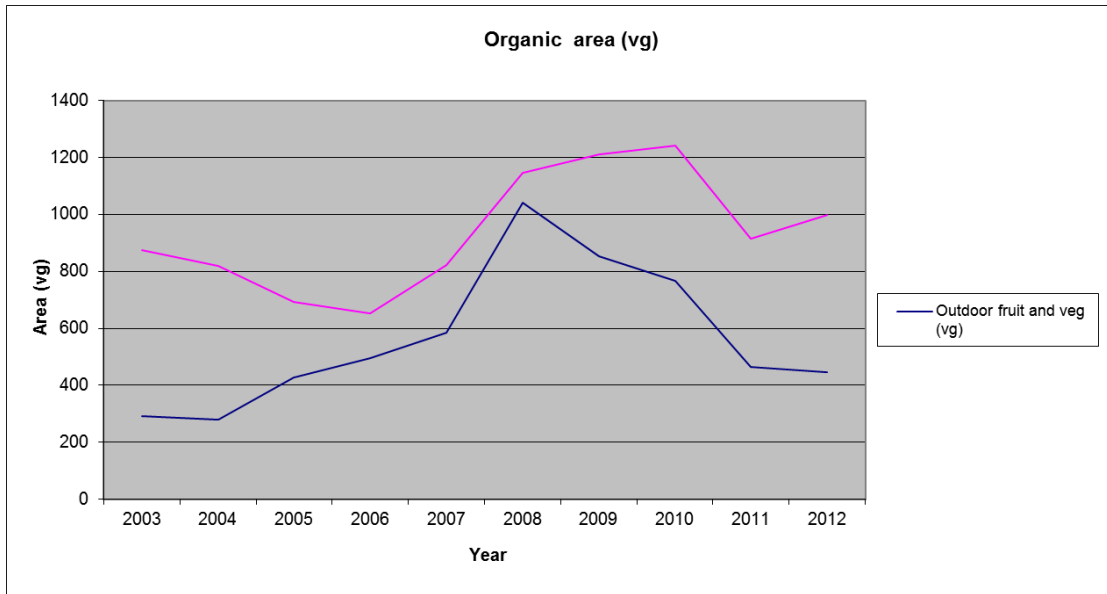
Appendix II

Organic Areas

Area of organic land in Jersey

(Source: Jersey Department of the Environment, 2013)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Outdoor fruit and veg (vg)	291	278	426	494	584	1041	854	768	465	447
Organic Grassland	876	820	693	654	822	1147	1210	1242	915	997
Total	1167	1098	1119	1148	1406	2188	2064	2010	1380	1444
In conversion	317	222	181	823	701	191	0	0	0	0
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Grand Total (Org + in Con)	1484	1320	1300	1971	2107	2379	2064	2010	1380	1444
Protected (m2)					9318					12713



Appendix III

EU Support for Organic Farming

ORC Bulletin: No. 109 - Summer 2012

Use and efficiency of EU public policy measures for organic farming

*The development of the organic sector in Europe varies between countries, ranging from Austria, the Czech Republic, Estonia and Sweden where more than 10% of land area is now farmed organically to Bulgaria and Ireland with less than 2%. These differences are partly due to significant variations in the policy environment in EU member states. **Susanne Padel** from ORC, **Jörn Sanders** from the German von Thünen Institute and **Matthias Stolze** from the Swiss Research Institute of Organic Agriculture (FiBL) report on the results of a study they conducted for the European Commission.*

The study had two main aims: firstly, providing a comprehensive overview of public support measures for organic farming in all 27 Member States and, secondly, to explore the relationship between policy measures, policy strategies and the development of the organic farming sector (both in terms of production and market development) in six case study countries (Austria, Czech Republic, Denmark, Germany, Italy and the United Kingdom).

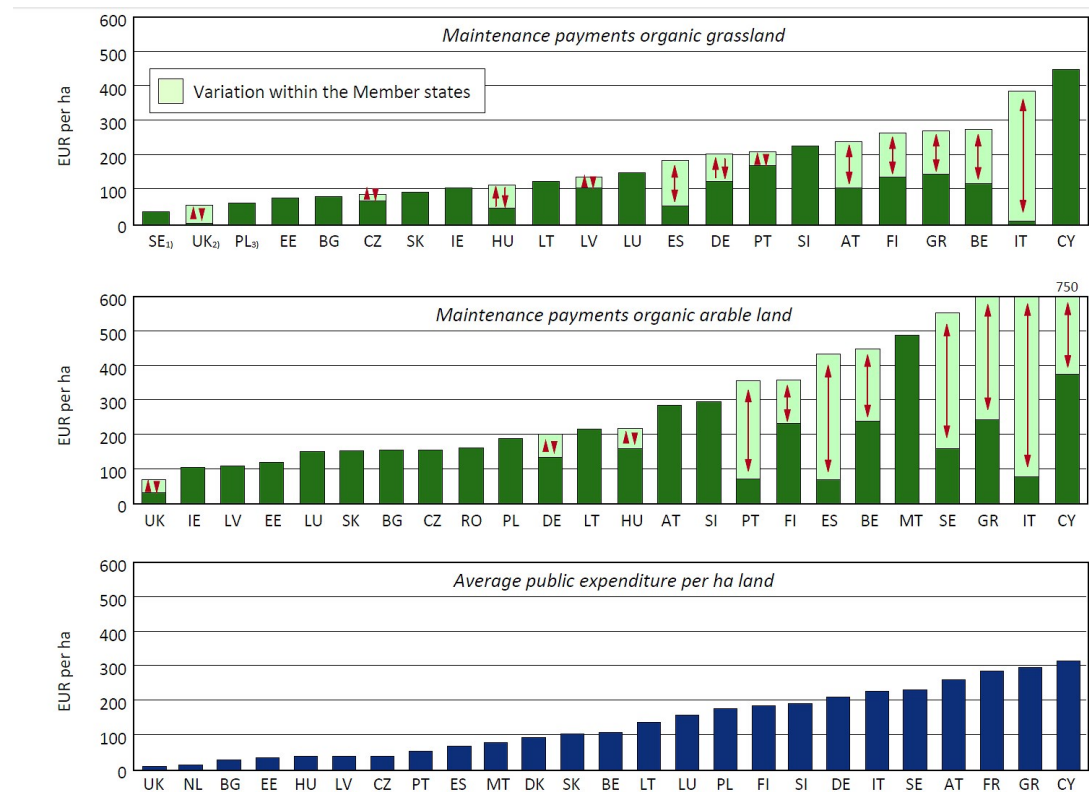
Significant variation in policy support across EU

It is clear from the results of the study that wide variations in support rates and policies exist between member states and that these have the potential to influence significantly the competitive position of producers within the European organic market. Organic area payments (as part of agri environment programmes) are the most important support measure for organic farming. They are used in all EU countries apart from France, where organic farmers are supported under CAP Pillar 1 (Article 68), and the Netherlands, where the focus is on market support.

As can be seen from the Figure below, there are wide variations in organic support payments under agri environmental measures, both between and within countries (the latter either due to regional differences or due to different payment rates for variants of the same crop type, such as temporary, permanent and rough grazing in the case of grassland). Average public expenditure per hectare of certified organic area (across all payment types and land categories) varied between 7€/ha in the UK and 314 €/ha in Cyprus for the period 2008 to 2009. (It should be noted that the UK data are incomplete - they are based on values submitted to and published by the European Commission, which exclude England, as the data were not available from this source at the time of going to press.)

Additionally, considerable variation exists in the types of land supported, other scheme requirements and eligibility conditions as countries/regions struggle to sustain current levels of Rural Development Programme (RDP) support in the face of a lack of resources in times of austerity.

Some RDPs address organic farming under farm investment schemes, marketing and processing aids or the participation in food quality schemes. For example, under the measure *Modernisation of agricultural holdings* (Measure 121), organic farmers in Flanders (Belgium), Madeira (Portugal) and North Rhine-Westphalia (Germany) are



AT = Austria, BE = Belgium, BG = Bulgaria, CY = Cyprus, CZ = Czech Republic, DE = Germany, DK = Denmark, EE = Estonia, ES = Spain, FI = Finland, GR = Greece, HU = Hungary, IE = Ireland, IT = Italy, LT = Lithuania, LU = Luxembourg, LV = Latvia, PL = Poland, PT = Portugal, RO = Romania, SE = Sweden, SI = Slovenia, SK = Slovakia, UK = United Kingdom
Exchange rate (average 2011): 1) EUR 1 = SEK 9.0359 2) EUR 1 = GBP 0.8668 3) EUR 1 = PLZ 4.1551
Source: Own illustration, based on data from national contributors.

given higher grant aid for investing in agricultural holdings to improve the overall performance of the farm; in Austria this is limited to organic livestock farmers investing in farm buildings.

Under the measure *Adding value to agricultural and forestry products* (Measure 123), projects related to organic food production, processing or marketing receive higher support rates in Bavaria (Germany) and Slovenia. In Estonia, a sub-scheme specifically targets organic farming and conventional dairy farmers.

As an alternative to providing higher grants, Cyprus, the Czech Republic, Latvia and Slovakia place organic farming projects in a higher priority selection category. Several countries/regions use *Participation of farmers in food quality schemes* (Measure 132) to cover parts of the certification and inspection cost incurred by farmers (Austria, Belgium, Cyprus, Estonia, Greece, Malta, the Netherlands, Poland, Portugal, Slovenia, most regions of Italy and Spain, as well as Scotland and Wales).

Policies need more strategic thinking

It is clear that the development of the organic sector is influenced by external factors and by the effective combination of a range of support policies. The study confirms that public support is a major driver for development, with area support payments and organic action plans identified as the two strong measures in several countries. 19 member states have some form of Organic Action Plans, but they have considerable

variation in what they cover and how well they are embedded in the wider agricultural and rural development policy framework.

The growth of organic farming can be boosted by developing an overall coherent development strategy combining different instruments. For example, a significant expansion of organic fruit production in the German region Altes Land in Lower Saxony is the result of a successful interplay of area support, organic research, support for advisory services, and facilitation.

Another example is Denmark, which has a clearly stated strategy, *Organic Vision*, that sees organic farming as a key measure to promote the sustainability of agriculture, to improve food quality and consequently, the competitiveness of agriculture. Links between organic farming and wider policy goals have been successfully established and the whole framework of the RDP has been used, considering both demand-side and supply-side measures. Policy strategies also exist in Austria and the Czech Republic.

In other cases, policy makers appear to struggle in balancing the environmental and market aspects of organic farming and the extent to which organic stakeholders have been consulted in policy development also varies. Of the case study regions both England and Lower Saxony in Germany appear to have no on-going strategic vision.

The study recommends that the Commission should further encourage strategic thinking about the potential of organic farming at Member State level by integrating common policy development principles for the organic sector (see Box) into the Rural Development Framework for 2014 to 2020.

Organic policy principles

The report recommends that Member States, in implementing future organic policies, could improve results by:

1. Specifying a strategic vision for the development of organic farming
2. Recognising the dual role of organic farming in delivering environmental benefits and products for the market place
3. Contributing to fair competition between producers in different Member States
4. Acknowledging that premium prices and the market benefits of certification reflect the entrepreneurial activities of farmers
5. Ensuring continuity of organic land management schemes
6. Acknowledging the role of innovation, knowledge exchange and advisory programmes
7. Exploiting synergies between policy measures
8. Engaging stakeholders from various organic sector businesses and the general public

The study was conducted by the Johann Heinrich von Thünen-Institut (DE) together with the Research Institute of Organic Agriculture (FIBL, CH) and the Organic Research Centre (UK) on behalf of the DG Agriculture of the European Commission. The conclusions, recommendations and opinions presented in this report reflect the opinion of the consultants and do not necessarily reflect the opinion of the Commission.

The full report can be downloaded from http://ec.europa.eu/agriculture/external-studies/organic-farming-support_en.htm

Appendix IV

CRS Organic Production Guidelines

COMPONENT TITLE:	Organic production		
COMPONENT CODE:	AG3	Length of Commitment:	5 years
REQUIREMENT:	The production of organic crops and livestock according to standards stipulated by a recognised Organic Certification Body.		
PAYMENT:	£40 per vergée		
RATIONALE:	<p>Consumer demand for organic food is forecast to increase. This offers growers the opportunity to add value to their produce by production according to a recognised organic standard. Environmental benefits include reduced pesticide loading, inorganic fertiliser use and a more sustainable agricultural system with potential for enhanced biodiversity.</p> <p>It is recognised that yields can be lower and costs higher in organic systems, which need to achieve a premium over conventional production to be economically viable. Due to the higher costs of maintaining an organic system, producers need additional support following conversion.</p>		
CONDITIONS:	<ul style="list-style-type: none"> • Payments will only be made on land registered with a recognised Organic Certification Body. • Land will be deemed as organic following the successful completion of the conversion period defined by the Certification Body. • Inspectors from the Certification Body will carry out annual inspections. • An Agreement must be signed with the Environment Division for a minimum of 5-year organic production to qualify for payment. • Contravention of the Organic Standards, withdrawal of your Organic Licence by the Standards Authority, or withdrawal prior to the completion of the 5-year period will require repayment of any monies paid to you by the Division via the CRS. • Payment will be withheld if land is not actively farmed by the Applicant. 		
CONSENTS:	If the applicant does not own the land it will be necessary for the landowner to sign the Tenant-Landlord Agreement form, CRS 5.		
MONITORING:	A copy of all the Organic Certification Scheme documentation must be sent to the Division to confirm you have achieved the required standard.		
EXPECTATIONS:	In order to receive payment for land in organic production the annual inspection carried out by the Certification Body must confirm that their required standards have been met.		

Appendix V

Organic Production Measures fiche

(Source: EU Commission, 2013)

Measure fiche
ORGANIC FARMING
Measure XXX
Article 30 of Council Regulation [...]
Article XX of Commission Regulation [...]

This fiche is based on the Commission's proposal for a regulation of the European Parliament and of the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD)" (COM(2011) 627/3) and, where relevant, on the Commission proposal laying down common provisions on the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF) covered by the Common Strategic Framework (COM(2011) 615 final).

*Since both proposals mentioned above are currently under discussion with the European Parliament and the European Council, this fiche provides **preliminary guidance**, which will only be finalised, including references to relevant articles of legislation, **after the formal approval of the legal framework**.*

Nevertheless, this fiche reflects the already achieved informal agreement reached between the institutions on certain issues.

This fiche presents the baseline as it is set in the Commission proposal. This aspect might require a revision once the agreement concerning the implementation of greening in Pillar I is reached.

1. RATIONALE OF THE MEASURE

The support under this RD measure is to be focused on the conversion to or / and maintenance of organic farming practices with a view to encourage farmers to participate in such schemes, thus answering society's demand for the use of environmentally friendly farm practices.

The measure aims at encouraging farmers to convert from conventional farming methods and to apply organic farming methods as defined in Council Regulation (EC) No 834/2007 as well as to maintain these methods after the initial period of conversion.

In both cases, support is paid for carrying out the environmentally favourable production methods which are intrinsically linked to organic farming.

2. WHAT'S NEW IN COMPARISON TO THE PERIOD 2007 – 2013

During the 2007-2013 programming period support for organic farming was part of the compulsory agri-environment measure. For the programming period 2014-2020 it has been proposed to establish a specific voluntary Organic farming measure. This is to recognise the importance of organic farming in contributing to various rural development objectives and priorities.

Moreover, the new legal framework makes groups of farmers eligible for the support under this measure with the possibility of granting higher transaction costs for such groups when compared to individual beneficiaries.

3. CONTRIBUTION TO FOCUS AREAS AND CROSS-CUTTING OBJECTIVES

In the rural development context, organic farming is mainly expected to establish and maintain a sustainable management system for agriculture. The farming practices it promotes contribute to improving soil and water quality, to mitigation and adaptation to climate change and to the improvement of the state of biodiversity (e.g. by no use of synthetic plant protection products and synthetic fertilisers, crop rotation, use of organic fertilisers, and improvement to soil organic matter).

The Organic farming measure is expected to contribute to several Union priorities for RD. It is most relevant for the following priorities:

- Priority 4: "Restoring, preserving and enhancing ecosystems related to agriculture and forestry" with a focus on the following areas:
 - a) restoring, preserving and enhancing biodiversity, including in Natura 2000 areas and high nature value farming, and the state of European landscapes;
 - b) improving water management;
 - c) improving soil management.
- Priority 5: "Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors" with a focus on the following area:
 - d) fostering carbon sequestration in agriculture and forestry.

4. SCOPE, TYPE AND LEVEL OF SUPPORT

a. DEFINITION

Following Council Regulation (EC) No 834/2007¹, "*organic production shall pursue the following general objectives:*

¹ Definition given at Article 3 of Regulation (EC) n° 834/2007 on organic production and labelling of organic products, and repealing Regulation (EEC) n°2092/91 (OJ L 189 of 20/07/2007).

- a) *establish a sustainable management system for agriculture that:*
- (i) *respects nature's systems and cycles and sustains and enhances the health of soil, water, plants and animals and the balance between them;*
 - (ii) *contributes to a high level of biological diversity;*
 - (iii) *makes responsible use of energy and the natural resources, such as water, soil, organic matter and air;*
 - (iv) *respects high animal welfare standards and in particular meets animals' species-specific behavioural needs;*
- b) *aim at producing products of high quality;*
- c) *aim at producing a wide variety of foods and other agricultural products that respond to consumers' demand for goods produced by the use of processes that do not harm the environment, human health, plant health or animal health and welfare."*

b. LENGTH OF THE COMMITMENTS

Commitments under this measure shall be undertaken for a period of five to seven years. However, where support is granted for conversion to organic farming methods, a shorter initial period may be determined corresponding to the period of conversion.

For new commitments concerning maintenance directly following the commitment performed in the initial period, Member States may determine a shorter period in their rural development programmes.

In addition, the RD programmes may provide for annual extension after the termination of the initial period where support is granted for the maintenance of organic farming practices.

c. TYPES OF OPERATION

Support under this measure can be provided for operations of:

- conversion to

and/or

- maintenance of

organic farming practices and methods as defined in Council Regulation (EC) No 834/2007.

d. BENEFICIARIES

There are two possible types of beneficiaries eligible for the support under Organic farming measure:

- Farmers.

- Groups of farmers.

The eligibility of groups of farmers stems from the potential of such groups to multiply the environmental and climate benefits related to organic farming practices and can play a significant role in providing environmental public goods.

Member States are given flexibility with regard to the eligible forms of groups of farmers which are not defined in the RD Regulation.

Both groups with a legal status and other types of groups (e.g. formed on ad hoc basis) shall be eligible. This can also include producers groups.

For more information on this aspect please refer to point 4.2.1 of the document on the technical guidance for the agri-environment-climate measure².

e. ELIGIBILITY

i. Eligible expenditure

Costs of activities are calculated on the basis of income foregone and additional costs resulting from the commitments made and regarding the conversion to or maintenance of organic farming practices and methods as defined in Organic farming legislation. Fixed costs are not eligible (they can be covered by the investment measures).

In principle, the calculation of the costs of organic farming practices shall be established by comparing them to conventional farming methods.

For further information on eligibility expenditure and methods of calculating payments, please refer to point 4.7.2 of the technical guidance for agri-environment-climate measure.

ii. Other eligibility issues

Beneficiaries of the support for Organic farming must respect the baseline conditions and can only be compensated for requirements going beyond these conditions.

The baseline conditions are made of:

- the rules of cross-compliance comprising the statutory management requirements and the standards for good agricultural and environmental conditions as provided for in Council Regulation (EU) No (HR)... ;
- relevant minimum requirements for fertilisers and plant protection products use;
- other relevant mandatory requirements established by national legislation.

² "Technical elements of agri-environment-climate measure in the programming period 2014-2020", European Commission, DG AGRI, 2013

The support for organic farming can only be granted to land defined as agricultural area. This also implies that the support shall be granted per hectare. However, in duly justified cases other units than hectares can be used for the purpose of payments' calculation. These do not include payments per livestock units. The threshold for the annual payments set out in Annex I of the RD Regulation would still apply. Conversion to units other than those used in Annex I will be further regulated in the framework of the implementing acts.

While the support per beehives shall be possible, support for organic aquaculture is excluded from the scope of this measure.

f. TARGETING AND PRINCIPLES WITH REGARD TO THE SETTING OF SELECTION CRITERIA

Selection criteria are less important for Organic farming measure than for certain other rural development measures and therefore their application is not compulsory.

However, such selection criteria must be set and be ready for use at the moment when the measure starts being implemented. It should be made clear in the programmes that the selection criteria will be used if funds prove insufficient to cover all eligible applicants.

For further information on this aspect, please refer to point 5.5 of the document on eligibility conditions and selection criteria³.

g. LINKS TO OTHER LEGISLATION

The link to other legislation is very important in case of the Organic farming measure as organic farming practices and methods defined in Council Regulation (EC) No 834/2007, and supporting only those commitments going beyond the baseline as described in the point 4.5.2 of this fiche, constitute the basis for granting support under this measure.

The following legislation is of relevance:

- Horizontal Regulation, Chapter I of Title VI (cross-compliance).
- Council Regulation (EC) No 834/2007 on organic farming and Commission Regulation (EC) No 889/2008 with detailed implementing rules.
- Council Regulation (EC) No 882/2004 on official food and feed controls.

This measure is obviously linked to the Union and national legal frameworks implementing the organic farming policy. Thus, the support provided under this measure underpins the objectives of such specific legislation, and is conditional on the respect of relevant provisions concerning this policy.

³ "Working document on eligibility conditions and selection criteria for the programming period 2014 – 2020", European Commission, DG AGRI, 2013.

h. AID INTENSITY / AMOUNT OF SUPPORT

Support under this measure shall be limited to the maximum support rates laid down in Annex I to the RD Regulation:

- 600 EUR per ha per year for annual crops.
- 900 EUR per ha per year for specialized perennial crops.
- 450 EUR per ha per year for other land uses.

The amounts indicated in Annex I to the RD Regulation may be increased in exceptional cases taking into account specific circumstances to be justified in the RD programmes.

i. CO-FINANCING RATE(S)

In the context of the Multiannual Financial Framework the maximum EAFRD contribution rate has been established as follows:

- 75% of the eligible public expenditure in the less developed regions, the outermost regions and the smaller Aegean islands within the meaning of Regulation (EEC) No 2019/93;
- 75% of the eligible public expenditure for all regions whose GDP per capita for the 2007-2013 period was less than 75% of the average of the EU-25 for the reference period but whose GDP per capita is above 75% of the GDP average of the EU-27.
- 63% of the eligible public expenditure for the transition regions other than those referred to in the previous indent
- 53% of the eligible public expenditure in the other regions.
- 100% for amounts transferred from pillar I to pillar II under flexibility between pillars provision.

The minimum EAFRD contribution rate shall be 20%.

A higher co-financing rate (by 10%) can be applied when a Member State is receiving financial assistance in accordance with Articles 136 and 143 of the TFEU, thus reducing the effort required from national budgets at a time of fiscal consolidation, while keeping the same overall level of EU funding. This rule shall continue to apply to these Member States until 2016.

The individual beneficiaries (i.e. farmers) of this measure can also be granted compensation for transaction costs, where necessary and justified, of the value of up to 20% of the premium. When the beneficiaries are collective (i.e. groups of farmers) this value can be increased up to 30%.

This higher transaction costs for groups of farmers is linked to additional costs linked to establishing and managing such groups.

j. ***FOCUS ON SPECIFIC ISSUES***

Apart from identifying and defining elements of the baseline, other elements must be defined:

- level of premiums: whether they cover all or a part of the calculated amount, their accuracy, their certification by an independent body, sources and dates of the figures used in the calculations.
- where relevant, description of the different elements composing the transaction costs.

5. INDICATORS

Reference should be made to the Commission Working Paper "Elements of strategic programming for the period 2014-2020", Annex IV.

6. VERIFIABILITY AND CONTROLLABILITY

Reference to be made to the "Guidelines on verifiability and prevention of errors"

In order to avoid errors the following elements should be taken into account:

- Clarity of the supported commitments and of the eligibility conditions.
- Avoiding unnecessary eligibility conditions.
- Valid documentary evidence that the beneficiary meets the requirements laid down in Regulation (EC) No 834/2007, established according to the model set out in Annex XII to Regulation (EC) No 889/2008 (documentary evidence provided by Control authorities or Control bodies).
- Exchange of information between the RD Paying Agency and the Control Authority or Control body approved in accordance with Article 27 of Regulation (EC) No 834/2007 on the status of the beneficiary and on the results of inspections and visits to the operator carried out by the Paying Agency or the Control Authority or Control body.

When designing and implementing this measure, Member States shall consider the existing or potential possibilities to market the output of organic farming methods as organic products.

7. TRANSITIONAL ARRANGEMENTS

It shall be possible to undertake new commitments related to organic farming until end 2014 within the framework of agri-environment measure. However, once the new programming is in place, such commitments shall become part of a new measure – Organic farming measure – and respect all the rules as defined in the new legal framework for organic farming.

Member States may continue to undertake agri-environmental commitments (organic farming being part of the measure in the period 2007-2013) under the old rules until

the adoption of their new programmes, even if the financial resources from the period 2007-2013 would be used up.

The commitments carried over from the current programming period can be financed from the financial resources of the new programming period. Requirements are that such possibility is provided for in the new RD programme, the new co-financing rates apply and that the transitional operations are clearly identified in the MS' management and control systems.

8. BEST PRACTICES

a. STRATEGIC APPROACH

Member States should consider a **strategic approach** to organic farming, considering the marketing structures and the specific economic environmental and societal potential of organic farming. This strategic approach may be addressed in the form of a national or regional organic farming action plan, developing a vision for the territory and possibly fixing certain targets. If any, it should be referenced in the RD Programming documents.

The participation of farmers in organic farming can be watered down if it is not fully remunerated by the market, especially at the early years of participation, when additional obligations and additional costs are imposed.

b. RELATION WITH OTHER RD MEASURES

In the context of RD, in addition to Article 30 ("Organic farming"), a farmer applying organic farming methods can receive support, among others, through Article 17 – "Quality schemes" and through Article 18 - "Investment in physical assets" as long as interventions under these three measures cover different costs. Article 18 can cover the investment related eligibility and costs, Article 17 the new participation in organic food quality schemes.

Other useful measures include knowledge transfer and information actions (Article 15), use of advisory services (Article 16), development of farm and business for small farms (Article 20), and cooperation (Article 36), which supports the development of innovative products, processes, practices, technologies, and cooperation approaches among actors of the food chain.

Obviously, beneficiaries of the support under Organic farming measure are also eligible for the agri-environment-climate payments as long as they commit to carry out commitments going beyond the agri-environment-climate measure's baseline and which differ from the commitments supported under Article 30.

c. EXPERIENCE GAINED IN PREVIOUS PROGRAMMING PERIOD

An external study financed by the European Commission⁴ (DG AGRI) was carried out in 2011 on the "Use and efficiency of public support measures addressing organic farming".

Its first part provides a comprehensive description of public support measures for organic farming in the EU 27. Its second part consists in a detailed analysis, based on six case studies, of the contribution of these measures to the development of the organic sector and of the presence and coherence of policy strategies.

The study concludes that policy packages are more relevant than the sum of individual policy measures and appear more effective if they are embedded in the general policy development, contain strategic goals and consider directly the needs of the sector.

It also suggests that the development of organic support strategies be based on an in-depth analysis of the relevant bottlenecks for further development (both on the side of production and demand), the specific economic, environmental and societal potential of organic farming, the interplay of different organic support policies, and a balance of different instruments in recognition of the organic farming's dual societal role (public goods from organic land management and specialist markets for organic food).

d. LINKAGE WITH PUBLIC GOODS

Introduction or maintenance of organic farming is often, together with extensive farming systems, applied in order to maintain and enhance soil functionality. Support for converting to organic and for maintaining organic management practices is also considered as contributing to the provision of the broad range of public goods, including rural vitality. This is because of the higher labour needs of organic farms, which provide employment opportunities in rural areas.

Organic farming methods applied on permanent grassland can play a role of an accompanying measure in providing proper management in a Natura 2000 sites.

According to the Public Goods study published by the Commission⁵ organic farming, its maintenance and introduction contribute positively to the following public goods:

- Soil functionality
- Farmland biodiversity
- Water quality

⁴ "Use and efficiency of public support measures addressing organic farming", 2011, available at http://ec.europa.eu/agriculture/external-studies/organic-farming-support_en.htm

⁵ "Provision of public goods through agriculture in the European Union", 2009, available at http://ec.europa.eu/agriculture/analysis/external/public-goods/index_en.htm

- Air quality
- Agricultural landscapes
- Rural vitality
- Water availability
- Climate stability.

Appendix VI

Environmental Impact of Organic Farming

Biodiversity

A literature review has been undertaken on the effects of organic farming on wildlife, Organic Farming and Biodiversity: A review of the literature Organic Centre Wales, Aberystwyth February 2011

http://www.organiccentrewales.org.uk/uploads/biodiversity_review_2011.pdf

The Executive Summary includes the following:

1) There is overwhelming evidence that organic farming provides more biodiversity than conventional farming. In almost all studies overall biodiversity on organic farms has been found to be much greater and often significantly so, than on conventional farms. This evidence is consistent whether the studies are based on plots, fields or whole farms. The evidence in favour of organic farming compared to conventional farming at the level of specific biodiversity components is also compelling. Studies of birds, bats, butterflies, small mammals, insects, invertebrates, soil organisms and fauna generally show enhanced levels and diversity on organic farms. There is also evidence of a greater level of rare or threatened species.

2) Analysis of the published studies of the effects of organic farming on plants, invertebrates, soil microbes, birds, landscape and ecosystem services confirms a wide range and a large number of positive effects (62 out of 82 studies) with very few negative effects (6 out of 82 studies). These positive responses are most consistent for plants, with 16 out of 19 studies reporting beneficial effects of organic systems.

3) The rationale for these results varies according to the focus of the study but there is a clear body of generally accepted reasons:

- The avoidance of “agro-chemical” inputs; both pesticides and soluble fertilisers
- The practice of crop rotation including grass/clover leys, mixed cropping, green manures etc.
- That most organic farms are mixed farms
- The maintenance and introduction of permanent pastures, long term grass leys, hedgerows, beetle banks etc.
- Restricted use of slurry and manure applications
- Mixed livestock enterprises
- In general, management regimes which tend towards diversity and away from intensification.

A further review (2012, unpublished) has been undertaken by Measures M. and Reining I. on behalf of Organic Milk Suppliers Cooperative which found that:

“Out of 10 research reviews on the impact of organic farming on general biodiversity all 10 concluded that organic farming has positive effects on biodiversity. One paper noted methodological problems with many comparative studies on this topic and a lack of longitudinal system-level studies. Two meta-analyses both found that organic farming contributes positively to biodiversity. One found that on average organic farms have 30% higher species richness and organisms are 50% more abundant than on conventional farms.

Two multi-taxa studies of biodiversity both found that organic farming generally supports higher levels of biodiversity; out of approximately 76 field studies that compared the biodiversity of specific species, or groups of species, between organic and conventional farming systems 51 found benefits to biodiversity under organic farming, 5 found no differences, and 21 found mixed results. Results for each species/group are summarised below.

Birds: Out of 14 studies that compared bird biodiversity between organic and conventional systems, nine found higher biodiversity measures on organic farms. Two studies found that total bird density was not affected by farming systems, but skylark abundance was consistently higher in organic fields. Two studies showed mixed results depending on the season, species, or landscape type.

Bats: One study of bat diversity in organic and conventional farms found higher total activity, foraging activity, and number of bat passes over water on organic farms.

Plants: Out of 12 studies that compared plant diversity in organic and conventional farming systems, 11 found that organic farming supported greater plant diversity.

Earthworms: Out of 11 studies on earthworms, nine found that earthworm populations benefited from organic management. One study found smaller earthworm populations under organic management and one study found a higher density and biomass of earthworms in organic arable systems, but a lower earthworm density but no difference in biomass in organic mixed dairy systems.

Fungi: One literature review concluded that organic farming provides more supportive conditions for arbuscular mycorrhizal fungi. Out of 10 studies on fungi, seven found that organic management enhanced fungal abundance and/or diversity. One study showed large variations and mixed results depending on fungus species. One study found higher total fungal biomass with the application of insecticides but no difference in active fungal biomass between organic and conventional treatments. One study showed higher fungi populations in “low-input” farm plots compared with conventional plots.

Nematodes: In six studies of nematode populations four found that organic farming benefited nematode populations. One study found that while nematode numbers were higher in systems treated with manure, trophic diversity was higher without manure. One study found mixed results at different sites.

General invertebrates and arthropods: Out of three studies one found higher invertebrate richness in organic farm streams, one study found higher abundance of aerial invertebrates on organic farms, but no difference in abundance of ground-

dwelling invertebrates. Of three general studies on arthropod populations, one found greater diversity on organic farms one found greater diversity in conventional fields and one found higher abundance on organic farms but no difference in species richness.

Spiders: Out of 10 studies eight found that organic farming benefited spider diversity and/or abundance. One study found no difference in the frequency and density of spiders between farm types and one study found lower species richness of spiders in organic fields.

Insects: Two general studies found greater abundance and richness of insects on organic farms. Two studies of bugs and springtails found few significant differences between organic and conventional farms. Three studies of bee populations all found greater diversity with organic management. Of six studies of butterfly populations, five showed greater species richness and abundance on organic farms and one study showed no difference in butterfly diversity.

Beetles: Out of 13 studies that compared the diversity of beetles on organic and conventional farms, nine studies found that measures of beetle biodiversity were greater under organic. Two studies found different results for different beetle species. One study found that beetle abundance was not affected by management type.”

Water Quality

Through the strict limitation of chemically synthesized inputs in plant production, organic farming significantly helps reduce residues of plant protection products and chemical fertilisers in water thus improving water quality (Mahé and Portet, 2012). Rotations including legumes and green manure crops, the use of manure as fertiliser and limitation of the total numbers of livestock and the amount of livestock manure reduce the input of rapidly soluble and mineralisable nitrogen, therefore reducing leaching of nitrates. Several studies show that nitrogen leaching can be reduced by 40–64% through organic farming (e.g. Edwards et al., 1990; Younie and Watson, 1992; Eltun, 1995; Condrón et al., 2000; Goulding, 2000; Haas et al., 2001; Kirchmann and Bergström, 2001; Mäder et al., 2002; Stopes et al., 2002; Auerswald et al., 2003; Pacini et al., 2003; Shepherd et al., 2003; Osterburg and Runge, 2007). Based on a statistical comparison of 12 studies, Mondelaers et al.(2009) conclude that the nitrate leaching is on average 9kg/ha in organic production versus 21kg/ha in conventional agriculture.

Soil and soil organic matter

Due to the organic standards and practices organic farming has a direct and positive impact on soil and its organic matter content. In particular, good soil management practices and mandatory rotations including legumes and other green manure crops and organic fertilisation practices using only products listed in the EU Regulation Annex I (especially manure and compost), which contribute to a higher level of organic matter.

Review of scientific literature

Organic agriculture encompasses a number of different activities which aim at increasing the organic matter content in the soil. Most important is the ban on mineral fertilisers, which necessitates meeting the nutrient demand of the crops with organic

fertilisers (Mäder et al., 2002). Furthermore, the importance of a crop rotation including short-term clover grass leys supports the development of fertile soils (Pimentel et al., 2005). There is also clear scientific evidence that soils under organic management have higher biological activity, both in terms of species and general biomass. Results from the Swiss long-term DOC trial show that organic soils contains 20 to 30 % more microbial biomass, 30 to 40 % more earthworms, 90 % more spiders (with high diversity) and 40 % more mycorrhizae⁶ (Mäder et al., 2002; Pfiffner and Luka, 2007, Fließbach et al., 2007). Moreover, the content of organic matter improves the soil characteristics. Tuomisto et al., (2012), found in their meta-analysis a 7% higher soil organic matter content on organic farms compared to conventional farms. Organic soils thus show improved water retention properties and allow the crops to cope better with drought. Investigation of five plots in Rutzendorf/Weinviertel in Lower Austria, differing in soil quality as well as in fertilising methods (cover crops, compost, dung, conventional fertiliser), revealed a significant increase of saturated hydraulic conductivity in organic tilled soils compared to conventional tilled soils. Best effects were obtained with compost, followed by dung and green manure/cover crops (Lunzer, 2009). The positive effects of organic farming practices on soil structure results in beneficial effects on soil erosion (Siegrist et al., 1998; Shepherd et al., 2002).

Green House Gases

Due to lower stocking rates per hectare, organic farming performs better with respect to greenhouse gas emissions and methane emissions (Schader et al, 2012). Hörtenhuber et al., (2010, 2011), showed that, when if account is taken of deforestation due to growing feed concentrates for imports and inclusion of carbon sequestration, the soil's carbon footprint per unit of product is in favour of organic production. Organic systems also avoid the N₂O emissions associated with mineral nitrogen fertiliser, as the main source of N is biological nitrogen fixation, within the fertility building ley period of the crop rotation. Despite this, there are only a few studies available, which compare N₂O emissions from organic and conventional farming systems. Chirinda et al. (2010) found no differences in N₂O emissions between farming systems. Flessa et al. (2002) and Sehy (2003) found lower N₂O emissions in organic farming systems per ha, and calculated N₂O emissions per output weight to be equal to Swiss non-organic farming systems. A *Life Cycle Assessment* by Nemecek et al., (2005) showed lower N₂O emissions in organic farming systems for both area and product output (36 or 18% respectively) than conventional. Gattinger et al. (2010) conclude that organic farming systems have a lower N₂O emission potential than conventional farming systems, because in general there is a linear relationship between N-Input und N₂O release and in organic farming systems N-supply is up to 50% lower than conventional. In summary, data uncertainty concerning N₂O emissions from different fertilisers and from the soil does not allow general conclusions to be drawn on the impact of organic farming.

⁶ Pimentel et al. (2005) have shown that organic matter content is higher in an organic system (+28 % with legumes and organic fertilisers and +15 % with legumes) with regard to a conventional ones (+9 %)

Since the performance of organic agriculture regarding CO₂ emissions is highly correlated to energy use, the same arguments apply as for the discussion of energy use in the section above. Unlike the energy use though, net emissions of CO₂ (i.e. gross emissions subtracted by the sequestration rate) need to be taken into account. There are indications that organic farming performs better regarding carbon sequestration due to the incorporation of fertility building grass-clover leys and the use of livestock manures within diverse crop rotations (Olesen et al., 2006; Niggli et al., 2009, Smith et al., 2011). Several long-term trials from the United States, Germany, and Switzerland (Mäder et al., 2002) show that organic farming systems are able to sequester more carbon from the atmosphere than the best performing conventional counterparts. A meta-analysis of 74 studies conducted by Gattinger et al. (2012) confirms higher soil organic carbon concentrations and stocks in topsoils under organic farming management compared to conventional. These differences seemed to be mainly influenced by elements of mixed farming (livestock plus crop production), such as organic matter recycling and forage legumes in the crop rotation.

The main finding is that GHG emissions are 48 to 66 % generally lower per hectare in organic farming than conventional⁷. However, related to the quantities produced, GHG emissions remain equivalent or, sometimes higher for organic production. Important factors which influence the product-related greenhouse gas emissions are yield, land use change due to the production of feed concentrates (deforestation), the method of production, the intensity of cultivation (pesticides, fertilisers) as well as carbon sequestration (Schmid et al., 2012).

The Soil Association also provides a review of the potential for organic farming to address GHG emissions and climate change:

<http://www.soilassociation.org/LinkClick.aspx?fileticket=SSnOCMoqrXs%3d&tabid=1326>.

⁷ “Les enjeux de la production d’agriculture biologique en France”
<http://www.agreste.agriculture.gouv.fr/IMG/pdf/analyse501207.pdf>, *Biblio AB_enviro_RMT_DevAB*

Appendix VII

IFOAM Principles

(Source: International Federation of Organic Agricultural Movements website, 2013:
<http://www.ifoam.org/en/organic-landmarks/principles-organic-agriculture>)

Preamble

These Principles are the roots from which organic agriculture grows and develops. They express the contribution that organic agriculture can make to the world, and a vision to improve all agriculture in a global context.

Agriculture is one of humankind's most basic activities because all people need to nourish themselves daily. History, culture and community values are embedded in agriculture. The Principles apply to agriculture in the broadest sense, including the way people tend soils, water, plants and animals in order to produce, prepare and distribute food and other goods. They concern the way people interact with living landscapes, relate to one another and shape the legacy of future generations.

The Principles of Organic Agriculture serve to inspire the organic movement in its full diversity. They guide IFOAM's development of positions, programs and standards. Furthermore, they are presented with a vision of their world-wide adoption.

Organic agriculture is based on:

The principle of health

The principle of ecology

The principle of fairness

The principle of care

Each principle is articulated through a statement followed by an explanation. The principles are to be used as a whole. They are composed as ethical principles to inspire action.

Principle of health

Organic Agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible.

This principle points out that the health of individuals and communities cannot be separated from the health of ecosystems - healthy soils produce healthy crops that foster the health of animals and people.

Health is the wholeness and integrity of living systems. It is not simply the absence of illness, but the maintenance of physical, mental, social and ecological well-being. Immunity, resilience and regeneration are key characteristics of health.

The role of organic agriculture, whether in farming, processing, distribution, or consumption, is to sustain and enhance the health of ecosystems and organisms from the smallest in the soil to human beings. In particular, organic agriculture is intended to produce high quality food that is nutritious and has a function in preventive health care. Moreover, it should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects.

Principle of ecology

Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

This principle roots organic agriculture within living ecological systems. It states that production is to be based on ecological processes, and recycling. Nourishment and well-being are achieved through the ecology of the specific production environment. For example, in the case of crops this is the living soil; for animals it is the farm ecosystem; for fish and marine organisms, the aquatic environment.

Organic farming, pastoral and wild harvest systems should fit the cycles and ecological balances in nature. These cycles are universal but their operation is site-specific. Organic management must be adapted to local conditions, ecology, culture and scale. Inputs should be reduced by reuse, recycling and efficient management of materials and energy in order to maintain and improve environmental quality and conserve resources.

Organic agriculture should attain ecological balance through the design of farming systems, establishment of habitats and maintenance of genetic and agricultural diversity. Those who produce, process, trade, or consume organic products should protect and benefit the common environment including landscapes, habitats, biodiversity, air and water.

Principle of fairness

Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings.

This principle emphasizes that organic agriculture should maintain and conduct human relationships in a manner that ensures fairness at all levels and to all parties, producers, farm workers, processors, distributors, traders and consumers.

Organic agriculture should provide everyone involved with a good quality of life. It aims to produce a sufficient supply of good quality food and other products. This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being.

Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental costs.

Principle of care

Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions. Practitioners of organic agriculture can enhance efficiency and increase productivity, but this should not be at the risk of jeopardizing health and well-being. Consequently, new technologies need to be assessed and existing methods reviewed. Given the incomplete understanding of ecosystems and agriculture, care must be taken.

This principle states that precaution and responsibility are the key concerns in management, development and technology choices in organic agriculture. Science is necessary to ensure that organic agriculture is healthy, safe and ecologically sound. However, scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional knowledge offer valid solutions, tested by time. Organic agriculture should prevent significant risks by adopting appropriate technologies and rejecting unpredictable ones. Decisions should reflect the values and needs of all who might be affected, through transparent and participatory processes.

Appendix VIII

Organic Funding under CRS 2013

(Source: Jersey Department of the Environment, 2013)

Year	Organic Conversion	Rate (conversion)	Funding (conversion)	Organic Production	Rate (production)	Funding (production)
2006	471.25Vg	£100/Vg	£47,125	1,150Vg	£50/Vg	£57,516
2007	789Vg	£100/Vg	£78,900	119 Vg	£40/Vg	£4,764
2008	763Vg	£100/Vg	£75,536	1,583Vg	£40/Vg	£73,817
2009	292Vg	£100/Vg for year 1 £80/Vg for year 2	£23,474	1,938Vg	£40/Vg	£86,544
2010	No funding			2,088Vg	£40/Vg	£92,057
2011	No funding			1,009Vg	£40/Vg	£40,514
2012	No funding			899Vg	£40/Vg	£36,096
2013	No funding			581Vg	£40/Vg	£23,248 - yet to be claimed / paid

Note: In 2010 & 2011 the CRS was reviewed and a new scheme was formulated named Countryside Enhancement Scheme (CES) which was launched in 2012. The CES has no specific organic components although organic farmers are eligible to apply for grants which can be up to 100% of any particular environmental project. The review of the CRS organic production subsidies concluded they were a business subsidy and should therefore not be included in the CES. Organic conversion however is supported under the CES (at the same rates as under the CRS) as long as the area converted is shown to be required to meet a specific business need. To date (2012 & 2013) no grant monies have been allocated for organic conversion by the CES Panel.

