

Annex 2

Literature Review

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1. Effectiveness and Efficiency of organic support measures

The cost-effectiveness of a policy measure can be understood as a function of a) the uptake of the measure, b) the policy outcome and c) the cumulative policy relevant costs (Schader 2010). The European Commission (2010) suggests furthermore that the “facilitating” environment is one reason for organic sector development. Below, organic farming support measures are therefore discussed against the background of:

- Factors influencing adoption of organic farming support measures
 - The actual or perceived change in the relative profitability after conversion
 - Motives and barriers to organic conversion
 - Facilitating environment
- The effects on policy outcome
 - Impact on uptake (number of organic farms and organic area)
 - Impact of organic market growth
 - Impact of organic farming policies on environment
 - Organic Action Plan evaluation

1.1 Factors influencing adoption of organic farming support measures

Impact of organic farming support measures on actual or perceived change in the relative profitability after conversion

The importance of area payments is revealed by Offermann et al. (2009), who surveyed organic farmers in ten European countries. They show that the importance of organic area payments is higher for Eastern European organic farmers (75 % felt that the organic area payments had been important or very important for their decision to convert) compared to the statements of Western European farmers (56 %). Measuring the importance of organic farming support payments as a percentage of the family farm income, the importance was shown to be high in Germany and very high in the UK and in Denmark. The income of organic farms in the UK and in Denmark would decrease considerably without organic farming support payments. For organic farms in the Czech Republic, Estonia, Hungary, Poland and Slovenia, organic farming payments accounted for 4–19 % of the gross output prior to accession (Offermann et al. 2009), while organic farming payments contribute on average 4–6 % of gross output in the Western European output (Zander et al. 2008). Organic farming payments account for 10–30 % of family farm income plus wages in Western European study countries and—after EU accession—up to three-quarters in some of the Eastern European countries. However, other support payments and market returns contribute larger shares of total farm revenue in all the countries analysed than organic farming support (Zander et al. 2008). These results are confirmed for the Czech organic beef farms by Hrabalová and Zander (2006). While in the Czech Republic organic beef farming is in most cases economically viable, relating support payments to gross output shows that although organic farming payments are important for the economic performance of Czech organic beef farms, the share of other payments is much higher and thus much more important. As the marketing of organic beef is quite difficult, state support is supposed to be the main incentive for conversion to organic farming (Hrabalová and Zander 2006).

For Germany, Sanders et al. (2010) found that 91 % of the surveyed organic farmers state that the organic farming area payments are very important or important for the profitability of the farm. This confirmed the results from Rahmann et al. (2004), where 81 % of the organic farms consider the area payments of very important or important for profitability of the farm. Analysing the FADN data of comparable organic and conventional farms, Sanders et al. (2010) reveal that the family farm income

plus wages per agricultural working unit of organic farms is 23 % higher compared to comparable conventional farms. However, without organic area payments c.p. the family farm income plus wages per agricultural working unit of the organic farms would be lower than that of the comparable conventional farms. Thus, the organic support payments are of considerable importance for the economic performance and relative profitability and therewith influence the competitiveness of organic farming. In Germany, the importance, however, varies substantially among farm type and years (Nieberg and Kuhnert 2006; Sanders et al. 2010). For Finland, Pietola and Lansink (2001) stress that farmers with low returns to conventional farming have stronger incentives than farmers with high returns of conventional farming. The level of specialisation (livestock or arable farming) decreases the probability that farmers convert to organic farming.

Motives and barriers to organic conversion

Noe (2008) analyses the motives and barriers to organic conversion in Denmark. While environmental concern is the major motive for conversion; among full-time farmers economic factors also play a role. However data from 2006 and 2008 shows that only 3 % of the conventional farmers have plans to convert to organic – despite increasing consumer demand and even if there are to be increasing regulations on pesticide use. The major barrier for conversion is lack of support for organic production, and lack of an enthusiastic organic movement. In addition there is fear of economic losses and higher administration costs. Finally, specialisation and increasing the land area of organic farming require more knowledge and a larger working force. Contrastingly, Zagata (2007) shows for the Czech Republic that organic farming is not adopted only because of governmental support, but also due to the specific value orientation of farmers. Also Kaufmann et al. (2009) realised other than just economics factors of importance for the conversion to organic farming. They examined social factors of a network and economic factors along the example of the new member states Latvia and Estonia and revealed that these two factors are intertwined. The adoption rate of organic farming is higher when economic incentives are combined with social influence than just subsidy payments or just social influence. However, the economic factors appear to be more influential than social factors. Apart from social interaction, Läpple (2010) suggest key factors for adopting or abandoning organic farming in the Irish drystock sector are: farmer attitudes, market effects and RDP contract duration. Farmers are most likely to exit the organic business after the first five-year RDP contract expires. Thus, the authors suggest a more sophisticated approach to mainly subsidy-driven policies. As farmers are sensitive to price changes, offering fixed organic price premiums and better market outlets may encourage farmers not only to convert but also may secure the long-term economic viability of organic farms. Furthermore, providing existing organic farmers with information, especially in their first years after conversion, appears to be important in reducing the numbers of farmers exiting organic farming. Also Kerselaers et al. (2007) recommend policy-makers support the conversion to organic farming through increasing extension efforts, focussing public support on the transition period (area payments, investment aid) and to allow for a more gradual transition (familiarising with organic opportunities), and they highlight the importance of organic market conditions and market prices.

Even though organic farming in the Netherlands is more profitable than conventional farming, the 10 % of the total agricultural-area target set by the Dutch government in 2005 was not achieved. With a dynamic linear programming model approach Acs et al. (2007) show that particularly during the conversion phase with extra depreciation costs and lower prices for organic products organic farming is less attractive. Under the absence of organic area payments (at the period of time analysed, the Dutch government supported organic farming through marketing, advice and consumer information), they conclude that area payments for organic farms could be a tool to stimulate farmers to convert. Against the background of a decreasing number of organic farmers in Belgium since 2001, Kerselaers et al. (2007) analysed the economic conversion potential of Belgian farms. Their model results

showed an economic conversion potential which is higher than assumed or perceived by farmers respectively. The factors determining the economic conversion potential are i) the extent of liquidity decrease during the conversion period (no organic price premiums, lower yields, need to invest in new machinery and other farm adaptations), ii) social factors (opinion of family, colleagues, aversion to change) and iii) farmer's risk perception. As to the latter, Acs et al. (2009), using a discrete stochastic dynamic utility-efficient programming (DUEP) model, show that in the Netherlands risk-averse farmers would require a subsidy of at least 148 Euro/ha and year to convert the entire farm to organic. Extremely risk-averse farmers, however, would require 221 Euro/ha and year for partial conversion and 441 Euro/ha and year for full conversion. For a more risk-averse farmer it is only optimal to fully convert if policy incentives are applied such as taxes on pesticides or subsidies on conversion, or if the market stability for organic products increases.

To improve organic farming support within the rural development policies in Italy Cardone et al. (2010) summarise barriers identified by 45 experts during a Technical Round Table: lack of support to organic livestock, disadvantageous relative payment level between "integrated farming" and "organic farming", revision of organic area payments for crops, and administrative burdens.

Facilitating Environment

Moschitz and Stolze (2009) examine the patterns of influence of organic farming policy networks and how they affect policy implementation and the transposition of EU regulations at national level. The political environment is identified to be the main factor affecting size and density of organic farming policy networks in Europe while the distribution of power between organic farming organizations and agricultural ministries is influenced by state involvement and by the resources available to organic farming policy actors. However, while environmental and consumer stakeholders may be more visible in organic policy networks, the state and producers are the dominant influential stakeholder groups as in conventional networks. Halpin et al. (2010) taking organic farm policies in Denmark, Sweden, Australia and the UK as an example examines the impact divergent policy strategies that aimed at growing the organic sector have had. The analysis shows that four different types of organic policy have a different effect on the development of interest-group capacities to support policy formulation and implementation. The policy strategies were "non-intervention", "passive market development", "supply-driven" and "active market development". The authors come to the result, that interest-group capacity is not static, the development occurs over time in response to policy evolution. Therefore it is implied that that contrary to prior findings, interest groups therefore might have a larger potential to engage in organic policy implementation.

1.2 Effect on policy outcome

Impact on uptake

Daugbjerg et al. (2011a) analysed, on the basis of a statistical model for the UK and Denmark, the impact of organic policy measures on i) the number of organic farms and ii) the total organic area. They found evidence that for the UK the introduction of the Organic Farming scheme in 1999 as well as the Organic Entry Level Scheme in 2005 had a statistically significant impact on the growth of both the number of organic farms and the organic area. For Denmark a significant impact was found for the policy measures "introduction of organic subsidies for non-dairy farms" and "extension of organic farming support beyond 1997". Furthermore, they found statistically significant impact for livestock rules changes to EC regulation 2092/91 (UK) and support for cost and marketing services (Denmark). Taking the OECD positive policy principle and the institutional setting for organic farming as a basis

for the analysis of past support policies on EU level as well as in Austria and Finland, Lesjak (2008) finds a correlation between past policy orientation and the development of the organic farming sector: long-term policy orientation directed toward rural development has a positive impact on organic farming development. Lesjak (2008) stresses that evaluating policy outcome requires consideration of the long-term perspective of support policies. Long-term policy support orientation (e.g., towards rationalisation, specialisation or towards rural development) correlates strongly with the institutional setting in the agricultural sector and both determine whether the conditions for organic farming development are favourable or not. For Spain, Kallas et al. (2009) found policy change to be the most relevant factor motivating farmers to adopt organic practices.

Sauer and Park (2009) found for Denmark a statistically a lower likelihood of market exit for organic milk farms showing an increase in the amount of organic subsidies received. They conclude that for further growth in organic farming, on-going financial support is effective in order to keep farms in business. Urbinati (2010) assume the reason for 7 % organic farmers reconverting in 2008 is due to the negative economic trend or to an overall reduction in the financial support to organic farming in the new RDP. Similarly, Bahrs and Held (2006) concluded in their evaluation of the effectiveness and efficiency of organic area payments for organic farming in Germany that area payments can be regarded as an effective means in order to achieve an expansion of organic farming. If, however, the demand for organic products does not increase, a further expansion of the supply side would lead to lower prices and therewith a low effectiveness. Since payments are only partly differentiated, payment rates are higher than income foregone for farmers located in marginal areas. A further increase of organic support payments would result in higher incomes of existing organic farms and is rather an inefficient means to achieve a further expansion. Bahrs and Held (2006) therefore suggest tax policies for supporting organic farming (differentiation of organic area payments according to the tax-based yield index, exemption of organic managed areas from the property tax, exemption of organic products from the value-added tax). Also Gleirscher (2008) suggests – among other factors – a change of tax policies along two approaches: i) to increase the value-added-tax for pesticides and chemical fertilisers by 20 % and/or to reduce the value-added-tax for inputs and services that are related to organic production and products, ii) to offer a preferential fiscal treatment for consumers of organic products by making the related expenses tax-deductible. This approach would favour organic consumers instead of organic producers. This was seen as one factor for the further development of the organic sector in Austria, since after an impressive increase of the number of organic farms through direct payments between 1991 and 1999, in the following years (2000 and 2003), the number of organic farms decreased by more than 10 %, despite a 47 % increase of financial resources available to organic farms. To address the issue of a low market share of organic products of German origin, and to open the various positive effects of the domestic organic production, Köpke et al. (2011) suggest reversing the decreased organic policy support since 2005 and increasing the organic area payments, particularly for arable crops, fruits and vegetables.

Jánský and Živelelová (2007) analysed the level of governmental support for organic farming and products in the Czech Republic. They conclude that for the further development of organic farming, the system of support must be extended and intensified. An increase in compensatory payments per unit area of organically farmed land however already supports the interest of farmers in organic farming. Therefore, apart from support the supply side, it is also necessary to improve processing and distribution of organic food, to educate consumers and inform them about the benefits of organic farming. Likewise, Nicholas et al. (2006) stress analysing drivers for organic farming policy uptake in Austria, Switzerland, Germany, Denmark, Finland, France, Greek, Italy, the Netherlands and in the UK that organic farming support policies are not the only driver for organic farming uptake. External factors, such as conventional market performance, food scares, as well as administrative uncertainties about organic farming schemes also interact with policy measures and have an influence on organic farming uptake rates.

Contrarily to the literature reviewed above, Flaten et al. (2010) examine the characteristics of and reasons for Norwegian farmers' ceasing or planning to cease certified organic production. They summarise a large number of reasons for deregistering into five factors through factor analysis: economics, regulations, knowledge-exchange, production, and market access. Policy recommendations for reducing the number of dropouts are to focus on economics, environmental attitudes, and the regulatory issues surrounding certified organic production.

Apart from scientific studies, governmental documents were reviewed with respect to the effectiveness of organic support measures.

The Ministry of Agriculture of the Czech Republic (2010) generally states in the evaluation report on public support measures that the fast development of organic farming and the growth of the number of organic farms was particularly due to the reintroduction of the governmental financial support. The organic area payment support is considered as important since the acreage of organic area would be significantly lower due to low price premiums and undeveloped market for some organic products in Czech Republic. However, the report concludes that a new design of organic supporting measure should focus on the enhancement of whole system instead of only quantitative increasing of area under organic management and that the growth of the organic farming area and number of organic farms does not need to be a priority since there is a supporting system developed and that will likely motivate the further growth in number of farms and processors.

The coherence between subsidies and uptake of organic farming considering market development was also discussed in a report of the Federal Agricultural Ministry of Baden-Württemberg (Germany) (2011). A large number of applicants as well as budgetary constraints led to the situation that organic support payments were not increased for organic farms in 2003 or paid for converting farms between 2004 and 2006. As a consequence, the number of converting farms decreased continuously between 2000 and 2006. On the other hand, the Post Project Evaluation of the Northern Ireland organic farming scheme (conversion of animal housing scheme) (Environmental Policy Branch 2008) concluded that organic production increased by 25 % as result of the scheme. Finally, The Green Report of Austria (Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) 2010) revealed that one tool to increase the number of organic farms in Austria was an Entry-stop to the measure "organic agriculture" by the end of 2009. However, also a positive market situation (new organic programmes of supermarket chains, sugar-beet processing, gastro-sector) contributed to an 4.5 % increase of in the number of organic farms between 2008 and 2009 (Federal Ministry of Agriculture, forestry, environment and water management (BMLFUW) 2010).

Environmental impacts

The most apparent governmental support is targeted to market failure in the context of the provision of public goods. EU member states support conversion to and maintenance of organic farming through area payments under the framework of agri-environment and rural development policy (Stolze and Lampkin 2009). Organic farming here is considered as a land management concept that contributes to sustainable development and which is compatible with the need to preserve the natural environment and landscape and protect and improve natural resources (European Commission 2005).

Von Alvensleben (1998) and Mann (2005) argue referring to the Tinbergen Rule (1956) that organic farming support is less efficient than individual targeted agri-environmental measures due to its multi-objective nature. On the other hand, Stolze et al. (2000) and Dabbert et al. (2004) state that taking transaction costs into account, that organic farming support to achieve environmental goals could be effective and efficient as it can be administered at low costs. Beckmann et al. (2003)

compared the transaction costs of organic area payments with individual agri-environmental measures that might lead to similar environmental effects in a case study approach in two German federal states (Baden-Württemberg and Thuringia). They conclude that large numbers of individual agri-environmental goals required for achieving similar environmental effects than through organic farming support lead to an increase in public transaction costs. However, compensation payments for organic certification increase public transaction costs. Furthermore, it is the difference in the control density between organic farming area payments with mandatory annual inspection of organic farms (100 % control) and individual agri-environmental measures where only the 5 % of the farms are required to be controlled which leads to higher private transaction costs of organic farming area payments (Beckmann et al. 2003). Schader (2010) showed on the basis of a analytical linear optimisation model that introducing organic farming support payments in addition to individual and targeted policy instruments may result in either lower costs for achieving the same level of policy targets or in a better target achievement with less public expenditure.

Effectiveness and efficiency of public support measures to the development of the growth of the organic market

The most important financial instruments for the demand side are the support of marketing initiatives which are available in Belgium, Germany, Denmark, France and Portugal and the financial support of organic marketing projects which are provided in almost every EU15 country (Nieberg and Kuhnert 2006; Tuson and Lampkin 2007).

Daugbjerg and Svendsen (2011b) compared the effectiveness of Danish government intervention (package of policy instruments) of two infant green industries: the wind turbine industry and the organic food. While electricity market share of wind energy has reached 20 % in 2007, organic food sector lag behind with 8 % market share in 2007. The results indicate that the reliance on demand-side measures in the wind energy sector has been more effective than the policy instruments implemented for organic farming support which consist predominantly of supply-side support and to a considerably lower extent of demand-side instruments. Daugbjerg and Svendsen (2011b) state that the energy sector policy model with its government guaranteed price premiums cannot be directly transferred to the organic sector. But for stimulating demand for organic produce, they suggest demand-side instruments such as lowering the value added tax for organic food or introducing organic products to be mandatory in public procurement where available. Such policy instruments would be less interventionist than the policy model applied in the energy sector though there may be political opposition to such measures (Daugbjerg and Svendsen 2011b). This conclusion was confirmed in another paper by Daugbjerg and Sønderskov (2010) who tested the impact of four types of policies based on the balance between supply-side and demand side policy instrument on organic food consumption. This was done in a comparative analysis of the performance of organic food policies in Denmark, Sweden, the UK and the US. The analysis revealed that cross-country variation in organic food consumption is explained by differences in the packages of policy instruments applied: governments should introduce more demand-side instruments. Also for the Czech Republic, Hrabalova and Handlová (2006) concluded for future sustainable organic farming development governmental support should focus on demand-side instruments. The spectrum of organic support should be extended to marketing, processing and adult education.

The effectiveness of state involvement in organic labelling schemes was investigated by Sønderskov and Daugbjerg (2010) analysing detailed survey data from the US, the UK, Denmark and Sweden. Consumers are more likely to trust organic labelling schemes where the state plays an active and visible role. The results suggest that governments who wish to promote green consumerism should engage heavily in eco-labeling.

The effectiveness of subsidy schemes on the organic market growth is also subject of an evaluation of the Danish Food Industry Agency (2009). The survey results indicate that all companies that have received financial support have obtained at least one positive effect. More than half of the companies argue that public payments have been important for the project activities and have had a significant effect on the firm income and competitiveness. Another Danish study evaluating the Subsidy Scheme for Promoting Organic Food Consumption in Public Institutions showed positive impacts of public procurement support (Danish Food Industry Agency 2004). 64 % of the 43 supported projects stated that their project would not have been established without the relevant public support. Another 33 % answered that their project has been depended on public payments to some extent. The program has been important for enhancing knowledge, attitudes, and relevant skills among employers and workers in order to introduce organic food at public institutions (Danish Food Industry Agency 2004).

Evaluation of Action Plans for organic food and farming

According to Lampkin and Stolze (2006), the EU action plan takes up very important issues for the further development of organic farming standards through EC Reg. 2092/91, some of which have now been addressed through the publication in December 2005 of a draft proposal to fully revise this regulation (European Commission 2005). It also stresses the importance of information provision to both organic actors and consumers and thus sets a baseline for balanced 'push' and 'pull' strategies. However, many of the action points are ones which were already in progress and are the responsibility of the Commission's organic farming unit. The remaining actions relate to enhancing or encouraging Member States to make better use of existing measures. There is no consideration of interaction of organic farming with the main parts of CAP and many other key areas discussed in the independent expert working group (such as public procurement) are not covered. Furthermore, the action plan says nothing about how and by when the suggested actions should be implemented and what the priority areas are (although there is guidance on this from the Council of Ministers and European Parliament decisions) (Lampkin and Stolze 2006).

Becker et al. (2004) conducted the mid-term evaluation of the German Federal Organic Farming Scheme which was implemented in 2002 additionally to existing organic support measures. The programme aims to improve the framework conditions for a balanced growth of organic farming along the whole supply chain. The evaluation concludes that the German Federal Organic Farming Scheme succeed in providing better access to information about organic farming, attracting more attention of conventional farmers, processors and the public towards organic farming, improving the qualification of organic supply chain-actors and enhancing knowledge through organic farming research. However, the image of organic farming has only partly been improved.

The English Action Plan was passed in 2002 and evaluated in 2004 (DEFRA 2004). A key objective of the Action Plan was to increase the UK-produced share of the market for organic foods that can be grown to at least 70 %. Since 2002, UK organic produce in the shops has increased significantly to 44 % of total organic sales which is on target to reach 70 % by 2010. Furthermore in 2003, DEFRA introduced for the first time a scheme providing on-going support for organic farmers after the ending of conversion and also a much increased payment for top fruit production. Very positive examples were observed where organic food has found a major place in public procurement. The Advisory Committee on Organic Standards has been set up to ensure advice is given to Departments from as wide a range of UK interests as possible.

2. Conclusions from the literature review

From the literature review we can draw following conclusions:

- Organic area payments are of considerable importance to the profitability of organic farms. The relative importance is higher in Eastern European countries than in Western European countries. Therefore, organic area payments are an important factor for farmers' decision to convert the farm. However, this is tantamount to a high dependency on organic farming support which makes organic farms vulnerable to changes in agricultural policy.
- Recent research confirms that governmental organic farming support has a significant impact to organic sector development (number of farms, acreage of organic area). Furthermore, there is statistical evidence that the provision of organic extension as well as marketing support correlates positively with the number of organic farms and the area under organic management.
- Evaluations showed organic area payments to be effective to achieve expansion of the organic sector. However increasing area payments to induce further growth in the organic sector is inefficient as this, in the first place, would result in higher income of already converted farms. Therefore, alternative policy instruments should be implemented if governments aim at fostering the organic sector.
- Apart from economic factors, farmers' risk perception is also an important factor for conversion to organic agriculture. Area payments are only one element so address risk perception.
- Member-states' long-term policy orientation towards rural development is beneficial to organic sector development.
- To achieve environmental goals, organic farming support can be a cost-effective policy measure if embedded in a policy mix with individual and targeted policy instruments.
- The effectiveness of demand-side policy support to foster organic sector development has so far not been sufficiently recognised by policy makers.
- The political environment for organic agriculture is an import factor to facilitate organic sector development. Interest groups have a large potential to engage in organic policy. However, the institutional setting is very much determined by member-states long-term policy orientation.
- There is a broad consensus in the literature that future organic farming support should be designed in form of a whole package of different policy instruments giving particularly demand-side policy instruments a considerably higher priority. Furthermore, policy-makers should to a greater degree make use of supply-side support instruments other than area payments to mitigate risk of conversion. In literature, following instruments are suggested:
 - Demand-side instruments:
 - tax policies: differentiation of organic area payments according to the tax-based yield index, exemption of organic managed areas from the property tax, exemption of organic products from the value-added tax, to increase the value-added-tax for pesticides and chemical fertilisers, to reduce the value-added-tax for inputs and services that are related to organic production and products, to offer a preferential fiscal treatment for consumers of organic products by making the related expenses tax-deductible
 - Strong governmental involvement in eco-labelling
 - Support of organic marketing initiatives and projects
 - Public procurement

- Consumer information and education
- Instruments to mitigate farmers' risk of conversion:
 - Investment aid
 - Information provision, knowledge exchange and extension
 - Long-term reliability of organic farming support
- To ensure both consistency of the instruments integrated in such an organic farming policy package and coherence with general agricultural policy, an umbrella framework is required e.g. in form of a completely revised and expanded Organic Action Plan or through a comprehensive Organic Farming Scheme.

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