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Extract

from the

"Organic Farming –
Looking Forwards" strategy

Towards Greater Sustainability in Germany

“Organic Farming – Looking Forwards” strategy

Towards Greater Sustainability in Germany

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Overview – The forward-looking strategy: Development, objective, content

Why do we need a national forward-looking strategy?

Organic farming is an especially resource-efficient and environmentally compatible form of agriculture which is based on the principle of sustainable development. The Federal Government thus supports efforts to expand organic farming in Germany and make it an equal segment of the agricultural sector overall. As consumer demands rise in response to dynamic market trends, they can only be met in part by organic produce grown in Germany. Thus, in 2015, Federal Agriculture Minister Christian Schmidt initiated work on a "Organic Farming – Looking Forwards" strategy to provide new stimulus for growth in organic farming and foods.

What is the strategy's aim?

The Strategy is designed to overcome resource policy challenges in agriculture and provide agricultural holdings in Germany with additional development prospects. The selected action areas focus pragmatically on the central question of what can be done at national policy level to achieve the 20 percent organic agriculture target in Germany's National Sustainability Strategy¹ in the medium term. This essentially means creating suitable policy conditions for all involved. The action areas also provide insight into the openness of organic and conventional production – away from operating side-by-side and towards an integrated approach.

Developing the Strategy

Development of the Strategy involved a joint approach with representatives from the organic food industry, the German states and the science and research community. To consider potential structural options for greater growth, a range of thematic working groups were created when the strategy process began. Each working group comprised representatives from practice, administration, advisory bodies and science and research. These groups initially assessed the respective status quo, identified specific action needs and determined the milestones to be reached. Subsequently, a list of existing and potential new measures was drawn up for each of the action areas. Detailed plans were developed for particularly important measures or for those which needed to be addressed in more depth. The various work steps were conducted in close cooperation with an advisory group comprising representatives from industry associations and science. Two seminars were also held during the strategy development process at which interim results were presented and discussed. Some 200 individuals were actively involved in producing the forward-looking strategy. The work processes were designed and coordinated by the Thünen Institute, a federal research institute which is an arm of the Federal Ministry of Food and Agriculture (BMEL).

Focal points of the forward-looking strategy

The forward-looking strategy contains five action areas which were identified as key areas for greater growth and also address the central challenges faced by the organic sector:

¹ Deutsche Nachhaltigkeitsstrategie (National Strategy for Sustainable Development), New Edition 2016, page 68

1. Design a future-focused, coherent legal framework
2. Simplify access to organic farming
3. Improve performance in organic agriculture *systems*
4. Fully utilise and increase potential demand
5. Reward environmental services in an appropriate way.

The instruments and models with which these goals are to be achieved describe and determine the 24 measures assigned to the respective action areas. Depending on the weakness identified, the various solutions take very different approaches to provide additional growth incentives for the organic sector along the entire value chain. They encompass legal and financial funding instruments, and also measures to promote research, foster technology and knowledge transfer, and address other national-level conceptual tasks. These range from problem-oriented further development of EU legislation on organic production to intensified expert support for agricultural holdings wanting to convert to organic farming, to the possibility of providing support for canteens and cafeterias in their efforts to include more organic products on their menus.

Implementing the measures

Implementation of the various measures and models calls for very different timelines and operative steps. When developing the forward-looking strategy, the various working groups drew up a list of action recommendations.

While some measures have been implemented in recent months, others are currently the focus of policy consultations. BMEL has, for example, been intensively involved in the process of revising the EU Eco-Regulation since late-2013. And right from the outset, in the initial stages of developing the forward-looking strategy, work began to produce specially designed measures to improve advisory services and training. This was also the case regarding research projects aimed at providing solutions to remedy important weaknesses, for example in the breeding of animals and crops.

For those measures not yet in place, BMEL, its subordinate agencies and departments will introduce the necessary steps in a timely manner to enable their implementation.

Key funding instruments to achieve the forward-looking strategy goals will continue to be the budget for the Federal Organic Farming Scheme and other forms of sustainable agriculture (BÖLN), and the Protein Crop Strategy (EPS). BMEL is working to increase the BÖLN budget to an annual €30 million and to ensure that EPS funding continues in the current amount of €6 million per year.

Action Areas and Measures

		Legal		Financial		Additional	
		EU	Natio- nal	BÖLN / EPS	GAK	BMEL/ Authorities	
Design a future-focused, practice-related legal framework							
M1	Further develop EU legislation on organic production in a problem-related approach	■	■				
M2	Implement legal amendments to support cultivation and production of seed and vegetative propagation material for use in organic farming	■	■				
M3	Assess potentially valuable protein carriers	■					
M4	Intensify research on alternative protein feeds			■			
M5	Support technical processes for the production and processing of protein feeds			■			
M6	Establish a demonstration network for small-seeded legumes and expand existing networks			■			
M7	Improve conditions for plant protection in organic farming through changes in the approval process	■					
M8	Dismantle or prevent barriers in emission reduction legislation		■	■			
M9	Make it easier for small businesses to comply with hygiene requirements					■	■
Simplify access to organic farming							
M10	Amend the vocational and education regulations and assess the teaching curriculum		■				
M11	Initiate networking and exchange between education stakeholders			■			
M12	Evaluate and enhance teaching materials and teaching modules					■	■
M13	Improve funding for conversion advisory services for agricultural holdings			■			
M14	Improve funding for vocational and further education and training of advisory staff			■			
M15	Drive development and provision of advisory instruments/tools			■			
Fully utilise and expand potential demand							
M16	Promote cooperation management in organic value chains			■			
M17	Improve funding for organic value chains under the GAK				■		
M18	Increase the organic share of goods procured with the BMEL remit					■	■
M19	Conduct information campaigns to increase the organic share of goods in public procurement			■			
M20	Fund advisory services to promote the use of organic products by external food and catering services			■			
Improve the efficiency and performance of agricultural systems							
M21	Determine and implement federal-level organic research priorities					■	■
Appropriate reward of environmental services							
M22	Secure sufficient funds for area-related organic farming premiums					■	■
M23	Introduce a conversion premium for partially converted holdings				■		
M24	Develop a model to enable efficient and effective reward of environmental services					■	■



■ Introduce / further pursue legal measures

■ Introduce / further pursue funding measures

■ Introduce / further pursue measures in the areas of research, development and knowledge transfer

■ Conduct / continue additional federal level activities

Next steps

With regard to the five action areas and their associated measures, all of which are described in more detail in Part 2 of the forward-looking strategy, it must be remembered that the intended expansion of organic farming cannot be achieved within the space of a few years by means of a one-off action programme. The forward-looking strategy for Organic Farming must thus be seen as a steering process with which the conditions for organic farming and food production are to be optimised as part of a continual approach.

The milestones for the coming years are set out in a Roadmap. A first interim status assessment is to be conducted in 2019 and a progress report prepared in 2022 to evaluate the progress achieved in implementing each of the Strategy's measures. Building on that report, BMEL will then produce a new, revised version of the forward-looking strategy for the period 2023 to 2030.

Fundamentals of the "Organic Farming – Looking Forwards" strategy

Introduction – Guidelines for sustainable agriculture

Soil, water and air – like no other industry sector, agriculture is reliant on natural resources and thus has a special responsibility to manage them wisely. However, in a market economy, sustainable resource use is not something that happens of its own accord. Policy guidelines are needed. Based on the principle of sustainability, the UN Agenda 2030 and Germany's National Strategy for Sustainable Development provide the necessary guiding framework. With its agricultural policy vision, the Federal Government has defined that framework further and taken measures which have helped the German agricultural sector to significantly improve its resource efficiency in recent years.

Positive trends

The nitrogen surplus in German agriculture has declined by 30 percent (-38 kg/ha) since 1991, while production output has increased. Farming-related greenhouse gas emissions² have reduced by 15 percent (-11.6 Mio. t CO₂-eq.) in the same period. In both cases, growing environmental requirements, improved fertiliser management and a reduction in livestock numbers in eastern Germany played an important role. An equally positive trend was seen in the case of plant protection products. Although domestic sales of plant protection substances in Germany have risen slightly since the 1990s, fewer and fewer traces of such substances can now be found in groundwater. From 2009 to 2012, an increase in the quantity of plant protection substances was found in less than five percent of samples taken from near-surface groundwater. Between 1990 and 1995 that figure was less than 10 percent.³ This is largely the result of new legislative provisions regarding both the application and more efficient use of plant protection products.

The challenges faced

Although these trends run in the right direction, the progress made so far is not enough. Further efforts are needed if we are to secure sustainable use of resources and achieve the Federal Government's agri-environment goals. For example, at 92 kg/ha of land used for agriculture, nitrogen surpluses are still

² Taking account of indirect greenhouse gas emissions (source groups 4B and 4C in the greenhouse gas emissions report (Treibhausgasberichterstattung), farming-related emissions were reduced by 11% or 13.1 t CO₂-eq. between 1990 and 2014.

³ BMUB (2015) Indikatorenbericht 2014 zur Nationalen Strategie zur biologischen Vielfalt. Berlin, Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMUB). Web-Link: http://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/wawi_teil_02_2014_web_korr_2_5.7.2014_2.pdf

significantly above the 80 kg/ha target.⁴ In line with the international provisions of the National Emissions Ceiling (NEC) Directive, Germany must reduce its ammonia emissions by five percent by 2020 and by 29 percent by 2030 (based on 2005 levels). In addition, no reduction has been determined in the occurrence of nitrate-polluted water. This means that further efforts are needed in order to meet EU provisions such as those contained in the EC Nitrates Directive and the EC Water Framework Directive.

The trend towards biodiversity loss in the agricultural landscape has not been stopped despite the designation of protected areas (Habitats Directive, Natura 2000) and various other agri-environment measures. This is highlighted by the results of monitoring conducted under the National Biodiversity Strategy, which show that the target for species diversity and landscape quality has nowhere near been reached.⁵ Significant efforts are also needed with regard to achieving the goals in Germany's National Climate Action Programme. By 2050, the agricultural sector must limit its emissions to approximately 35 Mio. t CO₂-eq. – in other words, it must halve its existing emissions.

The resource-policy challenges faced by agriculture can only be overcome if measures taken focus on both using and safeguarding the natural resources vital for life. The aim must be to further develop the various aspects of sustainability which can sometimes conflict with one another. The increasing scarcity of resources, more frequent extreme weather, growing social demands in respect of farming and fluctuating prices for agricultural products highlight the fact that the effort needed to achieve this aim is becoming more and more complex and challenging. Answers and strategies based on providing a single catch-all solution are no longer feasible. When it comes to agricultural policy, the task at hand is to develop differing but coherent strategic approaches that lead to more sustainability without putting the competitive ability of agriculture at risk.

Organic farming potential

In this regard, the Federal Government sees organic farming as a land-use form which harbours vast potential to overcome the challenges described, even if it is not perhaps the most ideal of options in climate action terms.⁶ Organic farming takes special account of the critical load limits in natural cycles, contributes to preserving high levels of biodiversity and complies with strict animal protection provisions. The services provided by organic farming enjoy broad social acceptance. According to the results of a recent survey conducted by the Institute for Applied Social Sciences (infas), one quarter of respondents in Germany said that when shopping for food, they now make a concerted decision to buy organic produce; a further 46 percent said they do so on occasion.⁷ With sales rising by an average eight percent per year, the organic sector has long been a dynamic growth market.⁸ It is thus not surprising that value creation in the organic sector is particularly high⁹ and is helping to revitalise rural regions.¹⁰

⁴ Drei-Jahresmittel (1990/92, 2012/14). See: Julius Kühn-Institut (2016) Stickstoff-Bilanzen für die Landwirtschaft in Deutschland. Zeitreihe 1990 bis 2014. Zusammenfassung und Anmerkungen zum Bilanzjahr 2014.

⁵ BMUB (2015) Indikatorenbericht 2014 zur Nationalen Strategie zur biologischen Vielfalt. Berlin, Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMUB). Web-Link: http://www.bmub.bund.de/fileadmin/Daten_BMU/Pool/Broschueren/indikatorenbericht_biologische_vielfalt_2014_bf.pdf

⁶ Wissenschaftlicher Beirat Agrarpolitik, Ernährung und gesundheitlicher Verbraucherschutz und Wissenschaftlicher Beirat Waldpolitik beim BMEL (2016): Klimaschutz in der Land- und Forstwirtschaft sowie den nachgelagerten Bereichen, Ernährung und Holzverwendung. Gutachten. Berlin

⁷ infas (2016) Ökobarometer 2016. Bonn, infas. Web-Link: http://www.bmel.de/SharedDocs/Downloads/Ernaehrung/Oekobarometer2016.pdf?__blob=publicationFile

⁸ Between 2005 and 2015, annual growth in sales in the organic foods sector was 8 %. See: AMI (2016) AMI Markt Bilanz Öko-Landbau 2016. Bonn, Agrarmarkt Informations-Gesellschaft.

⁹ Sanders et al. (2016) Distribution of the added value of the organic food chain. Braunschweig, Thünen Institute of Farm Economics.

¹⁰ von Münchhausen, S., et al. (2006) Beitrag des ökologischen Landbaus zur Entwicklung ländlicher Räume: Fallstudien in verschiedenen Regionen Deutschlands. Bonn, Geschäftsstelle Bundesprogramm Ökologischer Landbau in der Bundesanstalt für Landwirtschaft und Ernährung. Web-Link: http://orgprints.org/10684/1/10684-02OE192-ble-ifls-2006-laendliche_entwicklung.pdf

Organic farming is thus a key technology on the road to more sustainability. It is seen by the German Council for Sustainable Development as the “sustainability gold standard”. For the Federal Government, organic farming plays an important role in achieving its agricultural policy vision. Worthy of note in this regard are organic farming’s innovative services to the agricultural sector as a whole. Organic solutions, such as the targeted use of compost to produce humus and preventive plant protection through the use of locally appropriate crop-growing practices, have contributed to the further development of good agricultural practice and have also made their way into conventional farming. The importance of organic farming is reflected in the fact that in its National Strategy for Sustainable Development, the Federal Government is aiming for a 20 percent share of organic farming in agricultural land overall and has reaffirmed this goal in the German Climate Action Plan 2050.

With a current share of around six percent, this goal has not been achieved despite a rise in demand for organic produce and products. It is foreseeable, therefore, that without the availability of additional policy incentives, Germany will be unable to achieve any significant expansion in the organic farming sector. This "Organic Farming – Looking Forwards" strategy is thus designed to shine the spotlight on the economic and policy conditions for organic farming in Germany in order to strengthen the sector’s competitive stance and productivity, and contribute to more sustainable management of vital natural resources. Because achieving an increase in the organic share of agricultural production is reliant on consumer demand, this kind of policy support will promote a self-perpetuating upswing that does not generate renewed dependence on state handouts. The forward-looking strategy is thus an important national-level component of Germany’s National Strategy for Sustainable Development. It provides a solution to overcoming the resource policy challenges faced by agriculture and offers the farming sector further development perspective.

Status quo - Moderate growth in area, increasing demand and diverse funding measures

At the end of 2015, Germany had 24,736 agricultural holdings covering approximately 1.08 million hectares which operated in accordance with EU legislation on organic production. This represents 8.7 percent of agricultural holdings overall and 6.5 percent of all arable land. Some 600,000 hectares are used as grassland. Organically farmed cropland covered around 445,000 hectares. The remaining land was used for fruit and vegetable crops, and as orchard meadows. Across Germany, the share of organically farmed land differs from region to region. The relative share of such land varies between 13 percent in Saarland and 12 percent in Hesse, and less than three percent in Lower Saxony. Looked at in absolute terms, organic production largely occurs in southern Germany (Bavaria: 229,881 ha, Baden-Württemberg: 130,436 ha) and north-eastern Germany (Brandenburg: 135,942 ha, Mecklenburg-West Pomerania: 125,512 ha). Some 60 percent of Germany's organically farmed land is located in these four states (Länder).

Annual growth in organically farmed land

The trend towards organic farming in Germany is characterised by the ongoing expansion of organically farmed land. Annual growth has averaged three percent or 28,000 hectares in the past ten years. With average annual growth of four percent, organically farmed grassland increased somewhat faster than organically farmed cropland (two percent). The greatest regional growth in organically farmed land has been seen in Bavaria, Baden-Württemberg, Rhineland Palatinate and Hesse. About 70 percent of the land converted between 2005 and 2015 is located in these four states.

Looking at relative growth in Germany between 2005 and 2015, the trend in Rhineland Palatinate is especially prominent, with annual growth averaging 11 percent. Above-average growth was seen in Saxony and Bavaria, with five percent respectively, and in Hesse, with four percent. By way of contrast, only a marginal increase in organically farmed land was seen in Brandenburg (0.5 percent) and Mecklenburg-West Pomerania (1.0 percent).¹¹

Dynamic demand for organic products

When compared with organic production, the market for organic food in Germany has been considerably more dynamic in recent years. From 2005 to 2015, the market saw average annual growth of eight percent. Sales of organic produce and products in Germany amounted to €8.62 billion in 2015. This represents an annual per capita expenditure of €105 for organic products, and a 4.7 percent share of the retail food market overall. This does not take into account the organic share of food bought when eating out (food and catering services). Sales revenue accrued by organic farmers in 2015 amounted to €1.81 billion or €1.662/ha. From 2008 to 2015, average per hectare revenue amounted to €469 (€369 when adjusted for inflation). Sales rose significantly again in 2016. According to current calculations and estimates by market experts, sales in 2016 amounted to €9.48 billion. This represents a 5.04 percent share of the food market overall.

Germany is not only the most important organic market in Europe by far, but is also one of the world's biggest sales markets with the greatest sales growth. Germany is responsible for around one third of sales

¹¹ See Annex A1 for further details of the trend towards organic farming in Germany.

involving organic produce and products in Europe. In recent years, there has been a significant rise in demand for organically produced poultry, edible cooking oil, eggs, beef, pork and milk. Due to only a moderate increase in production, the domestic organic market has not been able to meet the growing demand for many organically produced goods. Significant differences are evident, however, depending on the product concerned. While, for example, domestic production of eggs increased and the import share declined, organically produced arable crops – especially those used in feed production – have increasingly come from abroad.

Funding of organic farming by the Federal and Länder governments

The growing demand for organic produce and products has been a key growth driver in organic farming in recent years. This has largely been influenced by the funding policies operated by the Federal and Länder governments. Since 1989, organic farming in Germany has been promoted by the provision of public funding. The scope for funding has been increasingly expanded during this time and now takes in the entire value chain.

With the existing package of measures, area-related funding provided for the introduction of, conversion to and retention of organic farming practices continues to play the biggest role. Public funding expenditure (EU, Federal and Länder) amounted to €160 million in 2014. Organic farms also receive financial support under the European Agricultural Fund for Rural Development (EAFRD) in the form of higher subsidies to aid investment in the construction of new stalls and through advisory and training measures. The Federal Government co-finances these measures under Germany's Joint Task for the Improvement of Agricultural Structures and Coastal Protection (GAK).

In addition, organic farming also receives Federal Government funding under the Federal Organic Farming Scheme (BÖL) introduced in 2001. The scheme was opened up to other forms of sustainable farming in 2010 and has since been known as the Federal Organic Farming Scheme and other forms of sustainable agriculture (BÖLN). Under BÖLN, the Federal Government participates in financing numerous (a) agricultural information services and sectoral trade fair exhibitions, (b) training and advisory schemes and (c) projects involving research, technology development and knowledge transfer.¹² This includes both the Organic Field Days (Öko-Feldtage)¹³ which are to be introduced nationwide for the first time in 2017 and the DLG Field Days operated by the German Agricultural Society. The various fields of work crisscross along the entire organic value chain, with the main focus on the exchange and target group-specific transfer of knowledge. Some €20 million are allocated for BÖLN in the Federal Government budget for 2017.

Other Federal and Länder-level funding activities

In addition to BÖLN, the German Bio-Siegel is another important Federal Government measure in promoting organic farming. The six-sided logo, which can be used to label organic produce and products which comply with and are monitored in accordance with EU legislation on organic production, provides transparency and is a reliable source of guidance for consumers. It has become one of the most well-known and most frequently used logos in food labelling in Germany. Some 5,000 companies use the Bio-Siegel label on approximately 76,000 products. The Bio-Siegel can also be used in conjunction with the BMEL-funded Regionalfenster (regional label) to indicate the region of origin in which a product was produced.

Apart from helping to shape the legal framework at EU level, the Federal Government also improves the legal conditions for organic farming in Germany to a significant extent by means of various administrative measures. The German Organic Farming Act consolidates implementation responsibilities in Germany and ensures standardised, efficient implementation of the EU Eco-Regulation. The Federal Government is thus

¹² Bundesprogramm Ökologischer Landbau und andere Formen nachhaltiger Landwirtschaft (BÖLN). Web-Link: <https://www.bundesprogramm.de/was-wir-tun/>

¹³ <http://www.oeko-feldtage.de/>

responsible for approving organic monitoring agencies and, as part of its Federal-Länder cooperation activities, works to ensure continued improvement of the national monitoring system.

EU regulations have a significant impact on market trends in the organic farming sector. The Federal Government thus places great importance on ensuring a level playing field by means of a binding monitoring system for all organic products irrespective of their origin. In the revision of the EU Eco-Regulation, the Federal Government places particular emphasis on strengthening and harmonising the monitoring regime.

In addition to the funding programmes which specifically target organic farming, the organic sector also benefits from numerous other BMEL activities and funding programmes which, among other things, are designed to improve animal welfare and sustainable management of resources. Worthy of note in this regard are the MuD Tierschutz animal welfare model farms programme, the Protein Crop Strategy, the Innovation Programme and the Renewable Resources Funding Programme. Also, the work performed by BMEL's departmental research institutes, not least the Thünen Institute, the Julius Kühn Institute and the Friedrich Löffler Institute, plays a central role in organic farming development and innovation.

The German Länder assist organic farming by means of EAFRD activities and also through the introduction and expansion of organic-specific education institutes (such as organic farming colleges), further education and training offerings and greater consideration of organic farming in agricultural education and training. Another package of measures used at Länder level comprises supplementary activities to advance organic processing and marketing, and to increase consumer demand for organic foods. These measures include presence at specialist trade fairs, product development projects, regional value creation projects, and marketing and communications measures to promote organic products. Regional organic labels have been developed in Baden-Württemberg, Bavaria, Hesse and Mecklenburg-West Pomerania, and funds have been allocated to aid their promotion. In nine German states, funding measures have been consolidated in the form of a regional action plan to provide new and targeted growth incentives for local organic farms.

Objective – 20 percent organic agriculture still the medium-term goal

The objective to expand the share of organic farming to 20 percent is, as described earlier, one of the sustainability goals of German agricultural policy and thus of the "Organic Farming – Looking Forwards" strategy. In achieving that growth, the quality of organic farming is also to be improved. The ultimate aim is to strengthen organic farming as an answer to the diverse environmental and resource policy challenges of our times. The forward-looking strategy is thus designed to further expand organic farming's sustainability potential and open up alternative development opportunities for small and medium-sized agricultural holdings in Germany.

Expanding the area of land used for organic farming is only one component in implementing the sustainability goals and in strengthening the structure of agricultural production. The idea is not to crowd out competition, but to seize both potential and opportunity. Expansion can only occur by adopting the principle of voluntary entrepreneurial decision-making rather than planned-economy thinking.

Despite the numerous funding instruments, the rise in agricultural sales revenue and the favourable market conditions, at six percent the share of land used for organic farming still lies significantly below the Government's 20 percent target. Land use is thus only one parameter. The aim is also to achieve a gradual increase in market share for organic products.

Trends in other EU countries

Trends in various EU member states (France, Estonia and Sweden) indicate that organic farming has potential for even greater dynamic growth.

The example of Austria highlights the fact that organic and conventional agriculture can develop side by side, especially in regions where local conditions result in low yield potential. It is in these regions that organic farming helps to secure incomes and preserve cultural landscapes. In its first Action Plan in 2001, Austria announced that it intended to use one fifth of its arable land for organic production. That target was achieved in 2015. This was largely due to favourable market conditions and comprehensive promotion of organic farming practices. Thus, since the 1990s, the Austrian government has seen organic farming as a means to secure incomes and has pushed and promoted it with subsequent action plans. Favourable conditions to enable conversion to organic farming were created especially for farms in regions where local conditions result in low potential yield. Germany, and also Sweden, Slovenia, Estonia and Finland, all aim to achieve similar expansion to that seen in Austria and have adopted targets to increase their organic farming share of arable land to 20 percent.

Conversion needs and readjustment of enabling conditions

Expansion of this kind in Germany would mean tripling the area of organically farmed land. This would require an estimated 30,000 to 40,000 farmers to convert to organic farming. Looked at from today's perspective, this would be a huge step that only appears achievable in the medium term and which calls for a dramatic rise in demand for organic products made in Germany in the course of the coming years. The existing policy conditions would also have to be adjusted to take in more than a mere continuation of

current organic-specific instruments. But what does this mean in real terms? What must be done at national level to enable organic agriculture to exploit its potential further?

In conjunction with the organic and conventional food production sectors, the science and research community, and also with the involvement of the German states, BMEL has identified five core action areas which supplement existing funding measures and make a substantial national-level contribution in efforts to further expand organic farming:

- **Coherent, future-focused legal framework:** The underlying principles and specific requirements of organic farming are laid down in EU legislation on organic production. Production-related decisions must take these into account alongside generally prevailing legal provisions. To enable a significant increase in the number of farms converting to organic practices, a coherent and future-focused legal framework is needed in order to dismantle or prevent legal barriers to growth. Apart from the specific legal provisions which apply to organic farming, the design of horizontal legal provisions plays an important role.
- **Simplify access to organic farming:** Entry into organic farming is still made difficult due to a lack of related knowledge. Access to organic farming must be simplified to enable farmers to make an informed decision regarding the opportunities and risks, offer them expert support on what can often be the complex road to conversion and help them acquire the necessary organic farming skills. There is thus a need for greater integration of organic farming-related learning content in vocational education and training, and broader advisory services. The Federal Government aims to introduce supportive measures to achieve these aims.
- **Improve efficiency and performance in organic farming systems:** The efficiency and performance of the organic farming sector has a considerable impact on its relative competitiveness and thus on its economic appeal. The aim must be, in addition to improved performance, to enhance its relative environmental appeal. If that can be achieved, organic farming will become a central component in solutions designed to meet the overarching challenges of our times. For this to happen, organic production systems must be optimised through greater research and development activity. And to ensure that newly-gained knowledge is transferred as quickly as possible into practice, efficient and effective knowledge transfer systems must be made the order of the day. The organic and conventional farming sectors must also be better integrated.
- **Fully utilise and expand potential demand:** A significant increase in organic production will only become self-perpetuating and sustainable in response to a dramatic rise in demand. It is thus vital for the future of organic farming that the sector not only fully utilises, but also expands potential demand for organic goods. The Federal Government intends to foster this process with a range of supportive measures.
- **Appropriate reward of environmental services:** Organic farms perform a wide range of environmental services on which significant economic value can be placed. To reward these services appropriately, existing funding schemes must be reviewed and, where necessary, enhanced.

In the sections that follow, the action areas outlined above are described in more detail together with the measures they entail. In addition to the existing funding instruments, the selected measures will act as catalysts and will drive the developments seen so far. The measures underscore BMEL's aim to support organic farming in the most comprehensive way and make it an integral component of cross-sectoral, coherent sustainable development policy for the farming and food sector overall. Focus will thus be placed not just on farming, but on every stage of the value chain.

In this "Organic Farming – Looking Forwards" strategy, BMEL illustrates the concrete action that the Federal Government will take in the coming years to improve enabling conditions for further organic farming expansion. It must, however, be remembered that such expansion can neither be planned nor managed in a centralised approach. The decision as to how they manage their farms will remain with farmers themselves and the decision as to which products they buy will remain with consumers. It is thus

the responsibility of policymakers to provide a reliable, growth-oriented framework in which to incentivise and support both of the groups involved.

In addition to the Federal Government, the German states (Länder) also play an important role. With their rural development programmes, the work performed by monitoring authorities and the provision of official advisory services and vocational education and training, the state governments exercise significant influence on organic farming policy in Germany. Municipal administrations can also play an active role in designing policy provisions to advance organic farming, especially in their respective regions. An important step in this direction has been made with the establishment of the nationwide Bio-Städte (organic cities) network. And last but not least, the European Union, with its various institutions, is also a key stakeholder in deciding the legal requirements for organic farming and the Common Agricultural Policy (CAP). Thus, the real challenge of the forward-looking strategy will be to work with all involved to both implement and continually optimise a dynamic enabling process for the further expansion of organic farming.

Catalysts – Action Areas and Measures to Promote Organic Farming

Action Area 1: Design a coherent, future-focused legal framework

EU organic farming law

The principles of and special provisions for organic production are laid down in EU organic farming law. Provision of a coherent, appropriate and reliable EU legal framework is a key component in efforts to promote organic agriculture. It plays a vital role both in strengthening the competitive stance of businesses in the organic sector and in dismantling and preventing unfair competition at national and international level. The revision of the EU Eco-Regulation is thus of central importance for the future of organic farming in Germany. The aim must be to agree a legal framework which builds on tried and tested provisions, closes gaps and takes account of the new and emerging challenges arising from a growing organic sector and increasing globalisation.

From the outset, the Federal Government has been involved in consultations on the EU proposal for the revision of EU Eco-Regulation and, with support from the German Bundestag and the Bundesrat (lower and upper houses of parliament), has set out clear cornerstones for the structure of the new provisions. In the talks held so far, the Federal Government has been able to secure the inclusion of a large number of issues in the revision documents. The task now at hand is to at least secure the positive negotiation outcomes achieved in the Council's common standpoint and use these to bring the consultations to a fitting close. Once the basic legislation has been agreed, it will be important to complete the future legal framework for the organic farming and food sector, and then reach a timely agreement on the implementing provisions and delegated legislation.

The revision process also offers an opportunity to further improve quality in organic agriculture. Organic farming is characterised by its potential for a closed production cycle and the use of natural processes and resources within the system. External inputs are only used to a limited extent and should originate from organic production or natural or naturally-derived substances. However, current regulations regarding the use of seed and young livestock, vegetative propagation material and protein feeds provide little incentive for the organic sector to pursue further quality improvement. The forward-looking strategy thus provides both for enhancement of these legal provisions by means of a problem-focused, practicable approach, and for accompanying measures to support their implementation.

The following outlines BMEL's key efforts to enhance the existing legal framework.

Organic monitoring and certification

BMEL believes that the special provisions concerning monitoring of organic farming must be retained in their various forms in the new EU Eco-Regulation and be developed further as part of a problem-oriented approach (► Measure 1). This includes greater harmonisation in the application of existing legislation, expanding risk-focused monitoring and control, better monitoring of third-country monitoring bodies and more efficient and effective exchange of information between the various stakeholders, especially concerning irregularities and violations.

Separate residue thresholds for organic products

Germany rejects the separate threshold for residues from operational resources which are not approved for organic farming use (e.g. chemical-synthetic plant protection products) which the Commission plans to use as the threshold for de-certification of organic products. The introduction of such a threshold would be inappropriate and harbours incalculable risks for all businesses involved in the value chain. To achieve better control in the maintenance of production standards, BMEL is working to expand and standardise implementation of monitoring requirements, and towards more intensified information exchange (► Measure 1).

Use of seed and vegetative propagation material

Under prevailing provisions on seed and vegetative propagation material, in the event of a supply shortage, both products from farms in the process of conversion or products from conventional origin may be used. While this gives organic farmers a degree of flexibility when planning their crops, it impairs development of an adequate supply of seed and vegetative propagation material from organic production. This situation is thus considered problematic in that the granting of exceptions differs greatly across the EU.¹⁴ Given the considerable differences in costs between organically and conventionally produced seed and vegetative propagation material, the granting of exceptions can lead to a distortion of competition. Thus, the Federal Government believes that in the revision of the EU Eco-Regulation, the process for granting exceptions should be harmonised and made binding throughout the EU (► Measure 1). In addition, the Federal Government welcomes in principle the initiative of the EU Commission to allow the exception options to be gradually phased out, but also sees the need to link the opt-out to availability and to support this with additional accompanying measures. BMEL is thus putting great effort, both at EU level and elsewhere, into achieving a change to the prevailing threshold quantities contained in the EU Seed Regulation, the aim being to increase the availability of seed from old crop varieties (regional cultivars). In addition, BMEL will call for the approval of so-called niche varieties to be simplified and approval of populations/multi-line varieties to continue (► Measure 2).

Use of young stock in poultry farming

Should organically produced young stock be unavailable, organic farmers can request approval from their monitoring authorities to obtain stock from conventional farms. In many EU member states, this option is used to purchase poultry chicks. To enable country-wide use of organically produced chicks and create the same production conditions EU-wide, in the case of the poultry sector BMEL will work to ensure that only organic chicks may be used in the future (► Measure 1).

Use of protein feeds

EU legislation on organic farming allows partial use of conventionally produced protein feeds in organic pig and poultry husbandry up to the end of 2017. The abrupt removal of this exception rule would pose an insurmountable challenge for many organic farms. At present, it is unlikely that sufficient quantities of the protein feeds needed to cover animals' amino acid needs will be available from 2018. To avoid impairing growth in organic poultry and pig production, and also to prevent any negative impacts on the welfare of the animals concerned, the Federal Government is in favour of temporarily continuing with the exception rule. However, efforts must also be taken in this area to ensure that the principles of organic farming are implemented and that this exception rule be allowed to expire. It is thus necessary, as in the case of seed, to design the legal framework in such a way that it provides a clear incentive to close the protein gap. One option involves the phased reduction of the allowable quantity of conventionally produced protein feed (► Measure 1). Because organic poultry and pig farming have seen significant growth in recent years and

¹⁴ Sanders, J., (2013) Evaluation of the EU legislation on organic farming. Braunschweig, Thünen-Institut für Betriebswirtschaft.

are expected to grow even further, this measure will not be enough in itself to close the present protein gap. BMEL thus works to ensure detailed assessment of the potential for alternative protein carriers with high quantities of limiting amino acids (► Measure 3), provides additional research funding as an accompanying measure to promote development and use of alternative protein feeds (► Measure 4), supports technological development to aid production of high-quality protein feeds (► Measure 5) and promotes knowledge transfer through the creation of a demonstration network and additional networking activity (► Measure 6).

Horizontal provisions

In addition to the more specific legal provisions, the generally binding provisions for further development of and growth opportunities in organic farming are of vital importance. These must be evaluated in respect of both their promoting and their restricting functions, and the need for possible changes assessed. In the case of livestock holdings, which make up a large share of holdings in the organic farming sector, future emission reduction legislation, among other things, will be a determining factor in the competitive standing of agricultural holdings. When it comes to crop production, consideration must be given to the impact that plant protection provisions have on the enabling conditions for organic farming production.

Approval of plant protection products

In contrast to those in conventional farming, organic farmers are limited in their choice of plant protection products, as these must be expressly approved under the EU Eco-Regulation. These products may only be used when there is a proven need and/or – in accordance with plant protection provisions – when the preventive measures already taken cannot control the infestation of harmful organisms. The procedure for approval of specific substances as laid down in EU legislation on organic production has so far involved a prolonged and complex approval process. This has meant considerable delays in the use of new substances or even a ban on their use. Thus, to simplify market entry for innovative plant protection products, in the revision of the EU Eco-Regulation, BMEL has called for efficient and effective EU-level design of the approval process (► Measure 1).

In addition to the provisions contained in the EU Eco-Regulation, innovation potential for plant protection in organic farming is also determined by the general procedural rules for the approval of plant protection products. For organic farming, this means the provisions for approval of preparations made from natural substances and raw materials. In the upcoming evaluation of Regulation (EC) No. 1107/2009 concerning the placing of plant protection products on the market, BMEL will work to increase the availability of plant protection products for use in organic farming (► Measure 7).

Emission reduction provisions

To maintain and ensure animal health, the EU Eco-Regulation requires that stalls “shall permit plentiful natural ventilation and light to enter”. This is why open stalls are the preferred choice in organic farming. However, when compared with closed stalls with air purification systems, the harmful environmental impacts of open animal husbandry systems are greater. This is especially the case with pig farming and thought is currently being given to defining air purification as the generally accepted practice for large pig farms. Newly constructed stalls which are ventilated with fresh air would then no longer be approved for many farms with livestock in excess of given levels even though such stalls are seen as especially beneficial in animal welfare terms. To promote husbandry systems which focus on animal welfare, BMEL works to ensure that animal welfare issues receive adequate consideration in the approval of stall buildings in both organic and conventional farming. To allow accurate evaluation of the requirements to protect the environment against harmful impacts when approving animal-keeping facilities, BMEL also supports the collection of reliable emissions data for organic animal husbandry processes (► Measure 8).

Hygiene requirements for small businesses

The underlying general and specific hygiene requirements for the production, processing and sale of foods are regulated by Regulation (EC) No. 852/2004 on the hygiene of foodstuffs and Regulation (EC) No. 853/2004 laying down specific hygiene rules for the hygiene of food of animal origin. In recent years, EU-level hygiene rules on food processing have tightened significantly in some respects. For small food businesses, which play an important role in establishing regional value chains in organic production, complying with these rules is often a challenge. As an accompanying measure, BMEL aims to use the existing GAK instruments (for improved processing and marketing structures for agricultural production) to promote regional processing of organic foods. In addition, BMEL will support small and medium-sized processing businesses by developing and disseminating information and training documents on complying with hygiene rules (► Measure 9).

Action Area 2: Simplify access to organic farming

For farmers, converting to organic farming is only a realistic option if they have acquainted themselves with the subject in an open-minded way. While a vast range of information is available on organic farming practices, experience shows that young farmers in particular lack knowledge about and in some cases are biased against organic farming practice. This can in part be attributed to the fact that subjects related to organic farming have rarely been included in vocational education and training. Access to organic farming is made difficult as a result. Against this backdrop, it would be helpful if apprentices and other trainees could be better acquainted with both the principles and the fundamentals of organic farming practice, and be able to put them into perspective.

Consideration must also be given to the fact that organic farming calls for specific production-related knowledge and skills. To be successful, farmers require solid vocational education and training which also addresses the particular challenges involved in organic farming and provides solutions to them. To ensure that this happens, education regulations and the framework curriculum must be enhanced. The applicable legal provisions only allow for their amendment if the vocational education and training programme no longer adequately provides the knowledge and skills needed to enter a skilled occupation or profession. This would, for example, be the case if the requirements for successful business management change as a result of technical advancement or developments in work organisation. A lack of related analyses makes it difficult to say whether this applies to vocational education and training in agriculture. BMEL is thus conducting a market study to investigate this further (► Measure 10).

There are, however, many ways in which to address the possibility of integrating the subject of organic farming into vocational education and training. These are not widely used,¹⁵ however, and there is an obvious lack of opportunity to learn from best-practice examples and receive input from others. This is why BMEL has initiated a measure to link up relevant educational stakeholders in Germany (► Measure 11) and sensitise them to the importance of the subject of organic farming. The ultimate aim is to foster exchange on successful teaching modules, curricula and exam questions. And as a further accompanying measure to simplify access to organic farming, BMEL supports the further development of teaching materials and teaching modules on organic farming (► Measure 12).

Better communication of organic farming-related teaching content in vocational education and training is not only relevant in farming, gardening and horticultural professions, but also in other professions along the value chain (such as in food production and processing, and food retail). Based on initial experience gained in implementing the measures outlined above, BMEL will work to ensure that the measures are expanded to take in other professions.

However, better integration of organic farming-related teaching content into vocational education and training is not enough in itself to secure adequate access to organic farming. Farmers will only choose to practice organic farming if the advantages associated with organic farming management outweigh the disadvantages. This calls for sound assessment and neutral weighting of the associated opportunities and risks. This is where conversion advice and support can play an important role in sensitising conventional farmers to the topic of organic farming and ‘picking them up’ at their respective business level through the provision of easily-accessible advisory services which are offered free of charge and, ideally, supplemented by intensive follow-on conversion support. Farmers interested in converting to organic farming can make use of a wide range of advisory services offered by the state and also by private organisations. However, given the expansion aims for organic farming, the advisory capacities currently available will simply not suffice. This applies both to conversion advice services and to the existing funding for vocational and further education and training of organic farming advisors. BMEL thus intends to step up BÖLN funding for advisory and further education and training measures (► Measures 13 and 14). And in efforts to improve the availability of organic farming advice throughout Germany, BMEL works in close cooperation with organic farming advisory agencies in Germany to promote the development and provision of advisory tools (such as programmes for use in costing farm conversions and for evaluating specific farming segments (► Measure 15).

Action Area 3: Fully utilise and expand potential demand

The market for organic foods has been a growth market for many years. From 2005 to 2015, average annual growth was around eight percent. In 2016, households in Germany spent some €9.48 billion on organic food and drinks. While rising demand has led to ongoing expansion in the area covered by organically farmed land in Germany, the level of expansion achieved has not been enough to meet the growth in demand. Thus, in recent years, organic raw materials have been imported and German producers have only benefited in part from the positive market trends. This is also the case concerning other products which, in principle, could also be produced in Germany on account of prevailing climatic conditions. In 2014 and in 2015, an estimated 24 percent of organic grain, 37 percent of organic milk and 26 percent of organic pork was imported from abroad.¹⁶

¹⁵ Kempkens, K. and T. Frieder (2015) Tagungsdokumentation: Den Ökologischen Landbau in die landwirtschaftliche Berufsbildung integrieren. Bonn, bio-offensive / Konstanz, AgrarBündnis. Web-Link: http://www.agrarbuendnis.de/fileadmin/Daten-KAB/AB-Aktuelles/AB-Tagung_OEko-Ausbildung/2015-01-20_FT_Tagungsdoku_Fulda_OEko-Ausbildung.pdf

¹⁶ AMI (2016) Importangebot von Bioprodukten in Deutschland 2014/15. Bonn: Agrarmarkt Informations-Gesellschaft.

Regional, home-grown produce

Studies show that consumers of organic produce and products have a strong preference for goods grown locally, regionally or elsewhere within Germany, and are willing to pay a higher price to obtain them.¹⁷ From a consumer (and retailer) perspective, home-grown produce promises greater product safety and enjoys greater credibility and trust.¹⁸ With regard to the value chain, the question arises as to why consumer demand does not 'reach' producers and spark the necessary readiness to convert. One reason could be the lack of consideration for product origin, which can partly be attributed to poor origin labelling of products on sale. Also, it can be assumed that some consumers mistakenly expect that all organic produce is home grown.¹⁹ With the industry-funded Regionalfenster label introduced with BMEL support in 2014, an instrument was called into being which assists purchasing decisions and makes it easier for consumers to recognise regionally produced foods.

To supplement this and existing BÖLN measures to promote organic sales, foster the establishment of domestic value chains in the organic sector and strengthen existing cooperation partnerships, a funding programme for improved management of trading partnerships is to be created under the BÖLN scheme. The programme is designed to strengthen market players' cooperation skills and reduce both sales and procurement risks within the value chain (► Measure 16). Also, in addition to these measures, BMEL aims to establish and expand domestic organic value chains by improving the funding conditions for both producer partnerships and businesses in processing and marketing organic produce under the GAK (improving processing and marketing structures for agricultural production) (► Measure 17).

Public procurement

Also, in efforts to further incentivise demand, it makes sense to better utilise the potential harboured in organic farming in markets which have to date been under-developed. This includes public procurement. With the quantities of goods they use, public institutions not only influence demand for organic products, but also serve as an important role model and have a facilitator function, both for private industry and for private households. For policymakers, the procurement of organically produced and processed foods is thus an integral component of sustainable procurement. For example, the principle of sustainable procurement of products and services in the BMEL remit proposes that, to the extent possible, organic products are to be offered at internal meetings and ministry events. In its Green Public Procurement (GPP) Directive, the EU Commission recommends that when issuing tenders and awarding service contracts for external food and catering services, public bodies should specify a minimum percentage of food which must be organically produced.²⁰ The positive impact of this recommendation in Germany can be seen in the cities of Munich and Nuremberg, where the mandatory requirement to use organic foods in combination with an advisory service had led to a requirement for all children's daycare centres to use a binding percentage of organic

¹⁷ Gremmer, P., Hempel, C., Hamm, U. und Busch, C. (2016) Zielkonflikt beim Lebensmitteleinkauf: Konventionell regional, ökologisch regional oder ökologisch aus entfernteren Regionen. BÖLN-Projektendbericht. Witzenhausen, Universität Kassel, Fachbereich Ökologische Agrarwissenschaften, Fachgebiet Agrar- und Lebensmittelmarketing. Web-Link: <http://orgprints.org/30487/1/30487-120E028-uni-kassel-hamm-2016-zielkonflikt-lebensmitteleinkauf.pdf>.

Platzmann, S. und U. Hamm (2009) Kaufbarriere Preis? - Analyse von Zahlungsbereitschaft und Kaufverhalten bei Öko-Lebensmitteln. BÖLN-Projektendbericht. Witzenhausen, Universität Kassel, Fachbereich Ökologische Agrarwissenschaften, Fachgebiet Agrar- und Lebensmittelmarketing. Web-Link: http://orgprints.org/15745/1/15745-060E119-uni_kassel-hamm-2009-kaufbarriere_preis.pdf.

¹⁸ Feldmann, C. und Hamm, U. (2015) Consumers' perceptions and preferences for local food: A review. In: Food Quality and Preference, vol. 40, p. 152-164.

¹⁹ In einer Studie des Thünen-Instituts waren rund 30 % der Befragten der Ansicht, dass Ökolebensmittel grundsätzlich in der Region erzeugt werden und nur etwa 50 % waren sich sicher, dass Ökolebensmittel auch aus Übersee importiert werden können. Siehe: Sanders, J., (2013) Evaluation of the EU legislation on organic farming. Braunschweig, Thünen-Institut für Betriebswirtschaft.

²⁰ European Commission (2008) European Commission GPP Training Toolkit - Module 3: Purchasing recommendations. Brussels, European Commission. Web-Link : http://ec.europa.eu/environment/gpp/pdf/toolkit/food_GPP_product_sheet.pdf

foods. Apart from isolated examples and despite increasing awareness, the subject of organic food plays only a subordinate role in public procurement and public cafeterias and canteens. Estimates put the share of organic food in public cafeterias and canteens at below 10 percent. This means that the potential for public procurement to promote organic farming continues to go unused.

To change this situation and adopt a pioneering role, BMEL plans to use a practice-related project to evaluate whether and how within its remit, the procurement of food and beverages can increase the share of organic products to 30 percent (► Measure 18). And to ensure that the share of organic produce amounts to at least 20 percent of goods used in as many public institutions as possible – at federal and Länder level, and in both cities and rural districts – BÖLN will be used to conduct a Germany-wide information campaign entitled “20 plus X” (► Measure 19).

The hospitality sector

In addition to public procurement, the hospitality sector has also nowhere near utilised its considerable potential to promote and use organic goods. Experts estimate overall sales in the external food and catering services sector (including communal catering in public institutions) at €70 billion. Of the 225,000 eating establishments operated in Germany, only an estimated two to three percent regularly use organic foods.²¹ To facilitate development of this market potential for organic production, information campaigns have been launched in recent years at both federal and state (Länder) level, and also by privately run initiatives. These have helped to increase awareness for organic foods in organisations that use external food and catering services. However, experience has shown that in practice the provision of information is not enough to break down bias against increased use of organic foods in eating establishments and will not ensure that they find their way onto menus. Because use of organic products often calls for new procurement paths, altered recipes, new pricing calculations and appropriate labelling for guests, customised advisory services are needed for external food and catering services. To foster take-up of such advisory services and increase demand for home-grown organic produce, both in the hospitality sector and in communal catering, BÖLN scheme funding will be used to promote the provision of advice to food and catering service providers (► Measure 20).

Monitoring and information

To exploit and expand existing demand potential, it is vital that consumers continue to trust in the quality of the processes used in producing organic foods (sustainable resource management, environment protection, compliance with high animal welfare standards and so on). This is currently ensured by means of a finely-meshed monitoring system. Given the increasingly complex, cross-border division of work in production and trading structures, and also the dynamic market trends, there is a need for continuous further development of the existing monitoring system at both EU and national level (► Measure 1). Scientific studies on business ethics and risk-related behaviour among market players can aid this process. Apart from an efficient monitoring system, trust in organic production and processing can also be improved through the use of innovative information systems. This is where legislative, economic and behavioural psychology research can make a valuable contribution and aid the (further) development of suitable systems. Thus, in its work to develop a future organic farming research strategy, BMEL takes these research topics into account and places great importance on funding associated research activity (► Measure 21).

²¹ Ministerium für Klimaschutz, Umwelt, Landwirtschaft, Natur- und Verbraucherschutz des Landes Nordrhein-Westfalen (2015) Regionaler Biomarkt NRW Erzeugung, Verarbeitung und Handel von Ökolebensmitteln in Nordrhein-Westfalen Marktanalysen – Fallbeispiele. Düsseldorf, Ministerium für Klimaschutz, Umwelt, Landwirtschaft, Natur- und Verbraucherschutz des Landes Nordrhein-Westfalen. Web-Link: https://www.umwelt.nrw.de/fileadmin/redaktion/Broschueren/biomarkt_2015_broschuere.pdf

Action Area 4: Improve efficiency and performance of organic farming systems

Taking account of agri-environmental relationships, organic farming aims to optimise the efficiency and performance of the entire agricultural system. At the forefront of this endeavour lies the effective and efficient use of the system's natural resources in the form of an, ideally, closed production and substance cycle, promotion of natural soil fertility and biodiversity, improvement of self-regulatory processes, implementation of proactive and preventive measures, doing without genetically modified organisms and products made of them, and – last but not least – animal welfare. In contrast to conventional production, use of external production resources is limited and use of easily-soluble mineral fertiliser and chemical-synthetic plant protection products is prohibited. This usually means lower natural yields, especially in temperate climate zones such as in Germany. According to scientific studies, Europe's organic farming yield is usually some 20 to 40 percent lower than the reference level for conventional production systems.²² To enable further expansion of organic farming, it is vital to increase in performance and productivity while maintaining current high expectations regarding process and product quality. The aim must be to improve the competitive standing of organic farming and its relative environmental appeal. If this is achieved, organic farming will become a key component in the solution to tackling the overarching challenges of our times and will also develop the best-possible conditions for the sector's economic growth.

A substantial increase in productivity will not be achieved without additional research and technology development efforts. There is a need, for example, for scientific studies into crop breeding to develop more robust crop species and varieties with high nutrient and water absorption capacities, disease resistance and high resilience levels. Advancement in digitisation of agricultural production processes and the use of smaller, autonomous farming equipment could offer new opportunities for optimised management of stock. Development of more effective natural substance-based plant protection products and systemised plant protection processes, further development of management processes in plant nutrition, optimisation of nutrient and energy use while reducing greenhouse gas emissions are all additional research areas which contribute to increasing system capacity. Here, it is important to address the weaknesses of organic farming in respect of resource use and climate change action, and to develop appropriate solutions. In organic animal farming, the task at hand is to further develop organic husbandry systems to make them financially attractive and, when it comes to achieving animal welfare and environmental goals, a benchmark for the entire livestock farming sector. This calls for additional research efforts in animal breeding and feeding, and for the development of innovative husbandry systems. In some circumstances, it may also require expansion of the existing organic research infrastructure. And it must also be remembered that the results of research into the areas described above are not only of relevance for organic farming, but also for the conventional agriculture as well.

To improve existing conditions for organic farming research, the Federal Government budget has allocated BÖLN scheme funding in the amount of €20 million for 2017. BMEL has also decided to boost departmental research into organic agriculture by creating a national research centre for organic pork production at the Thünen Institute of Organic Farming facility in Wulmenau, Germany.

The task now at hand is to identify and finalise the areas which are especially suited to increasing efficiency and performance in organic farming. BMEL will thus work with the Federal Ministry for Education and Research (BMBF) to prioritise the research topics, decide how they can best be approached and agree the amount of funding needed for the medium term (► Measure 21). Here, it is important to also consider

²² De Ponti T, Rijk B, van Ittersum M. (2012) The crop yield gap between organic and conventional agriculture. *Agric. Syst.* 108, 1–9
 Ponisio, L. C., et al. (2015) Diversification practices reduce organic to conventional yield gap. *Proc. R. Soc. B* DOI: 10.1098/rspb.2014.1396.
 Seufert V, Ramankutty N, Foley JA. (2012) Comparing the yields of organic and conventional agriculture. *Nature* 485, 229–232.

complementary funding activities at both national (especially other research funding programmes run by BMEL, BMBF and also the Federal Ministry for the Nature Conservation, Building and Nuclear Safety (BMUB)) and EU (the ERA Network, Horizon 2020) level. And when working out the finer points of the research topics and the areas of focus to be addressed, the ideas which emerged while developing the forward-looking strategy regarding promotion of crop-breeding using organically produced seed and for poultry breeding under organic production conditions (see Annex A5) will flow into that process. Guidance will also be provided by the Eco-Research Strategy developed by the German Agricultural Research Alliance (DAFA), which contains not only suggestions on content, but also on creating productive structures for research and research funding (e.g. idea competitions, research practice networks and greater focus of funding instruments on transdisciplinary research).

Action Area 5: Rewarding environmental services

Organically farmed holdings perform numerous services that benefit the environment. By refraining from use of easily-soluble mineral fertilisers and by maintaining appropriate stocking densities in animal husbandry, nutrient inputs into surface water bodies are reduced. Doing without chemical-synthetic plant protection products also has a positive impact on the quality of water bodies. Organic fertilisers and the planting of nitrogen-fixing catch crops foster humus formation and help to promote stable soil structures. This reduces the risk of soil loss through erosion as well as the infiltration capacity of the soil, thus improving flood protection. In addition, organic agriculture promotes biodiversity in the farming landscape and can also help in mitigating climate.

These public services are rewarded in the form of area-related premiums for organic farming practices, with payments based on the additional costs incurred and the loss of income involved. Without this kind of financial compensation, organic farms would be at a financial disadvantage compared with their conventional counterparts even though they charge higher prices for their goods. This means that interest in converting to organic farming and the decision to continue organic farming practices are largely influenced by the payment of premiums. It is thus important for farmers to be able to rely on the amount and receipt of organic farming premiums which are co-financed by the EU and the Federal Government under the EAFRD programme. As a result, it must be ensured that in the course of the coming years, adequate budget allocations are available for area-related organic farming premiums and that any interruptions in the provision of such funding are avoided. Thus, during the EAFRD funding periods, BMEL monitors the amount of funding planned for provision by the Länder and works to ensure that adequate funds are available to support organic farming, including in future funding periods (► Measure 22).

Under prevailing provisions, farmers in Germany only receive organic area premiums if they have converted or have agreed to convert their entire holding to organic agriculture. Farmers who only farm certain parts of their holdings in accordance with the EU Eco-Regulation receive no financial support. To enable a gradual transition from conventional to organic production and provide an additional incentive to take up organic farming, BMEL intends to see financial support being provided to partially converted farms (► Measure 23). To prevent any competitive disadvantage for fully-converted holdings, premiums paid to partially converted farms should be lower and the payments made as a one-off subsidy for a limited period of time.

Farmers' attitudes to conversion are not only influenced by the reliability of the premium payment provisions, but also by the relative amount of the organic farming premium itself. This applies not only with regard to the decision to convert, but also in more general terms to the scope of voluntary environmental services that farmers are willing to provide. Up to now, the vast majority of agricultural subsidies have involved direct payments which help to offset farmers' loss of income and risk, and serve as compensation for the services to society which agriculture performs. Under the current funding system, alternative approaches which tend to focus on the financial value of a specific service performed play only a subordinate role. However, in the light of growing social demands in respect of environmental protection

and resource conservation, and also the need to work towards the targeted environmental goals with only limited public funds, payment systems of this kind are gaining in importance. They are also seen as a means with which to support organic farming in a demand-oriented way and also aid its expansion. There are, however, few sustainable implementation models available to allow differentiated analysis of the value of the environmental services performed. With a view to agricultural policy for the period beyond 2020, BMEL with support from departmental research is developing a coherent holistic model for efficient compensation of environmental services performed by agriculture (► Measure 24). When developing this model, a check should also be made as to how it can be used to reward specific services in the area of animal protection and welfare. Dialogue forums are thus planned in order to closely involve the sector in designing and planning this model.

Roadmap - Ways to sustainable growth in organic farming and food production in Germany

An expansion of organic agriculture to meet a target of 20 percent cannot be achieved over night. To enable sustainable growth in the organic sector, long-term change processes are needed. The "Organic Farming – Looking Forwards" strategy should not, therefore, be seen as a one-off policy-based intervention, but as a steering process designed to optimise on an ongoing basis the enabling conditions for organic farming and food production. The measures outlined in the previous section, and which are described and explained in more detail in the second, thus form an initial action programme.

Some of those measures are designed to improve the legal conditions for organic farming. Here, it must be remembered that the Federal Government cannot design certain legal areas autonomously, and must instead do so in conjunction with the EU institutions or the German states (Länder). For some time now, BMEL has worked to achieve problem-oriented further development of both the EU Eco-Regulation and the emission reduction regulations. Concrete results are expected in the course of 2017. Also, at EU level, BMEL actively supports the ongoing efforts to assess the use of alternative protein feeds and simplify the approval process for plant protection products. It also plans to implement the other legal provisions in a timely manner and, where relevant, regularly review the need for amendment.

Yet other projects provide for the introduction or expansion of funding measures to ensure expert advice and support for agricultural holdings when converting to organic production. As a general rule, the necessary financing will be determined by the pace of development in organic farming. Where funding programmes involve the creation or expansion of structures, there is a need to plan in an appropriate funding period. It would not be very productive, for example, to only push for initial vocational and further education and training of organic farming advisors once the number of farms wanting to convert has risen to any significant extent. And where funding programmes under the GAK are involved, BMEL will present its implementation proposal at the expert and policy consultations on the framework plan. All other funding activities will be implemented for the most part under the Federal Organic Farming Scheme and other forms of sustainable agriculture (BÖLN) and also under the Protein Crop Strategy (EPS).

Under the forward-looking strategy, the BÖLN scheme together with the Protein Feed Strategy is the central funding instrument for research, technology development and knowledge transfer. The secretariats for both programmes will prepare appropriate announcements on implementation of the planned measures. To cover the funding needed, BMEL will strive to increase BÖLN funding to €30 million per year and to ensure that EPS funding continues at the current level of €6 million per year.

And in the course of the next few years, further projects are planned which take in a wide range of Federal Government activities. These involve recurring measures (such as further development of teaching materials and teaching modules) as well as one-off projects and programmes, and particularly the development of further measures such as those to reward environmental services.

Implementation of these various measures thus gives rise to very different requirements in terms of timelines, the stakeholders who will need to be involved and the financial resources needed for medium and long-term achievement of the projects and funding programme goals.

As mentioned earlier, the development of organic farming in Germany is influenced by a wide range of stakeholders and not least by market players. Only if all involved work together will it be possible to promote Germany's organic farming sector in a substantial and sustainable way. It thus makes sense to improve networking between the various stakeholders and to expand and enhance the coordination structures for relevant policy areas. This applies on the one hand to collaboration within the Federal Government, because in addition to BMEL other federal ministries are involved in implementing the proposed measures. On the other, the federal and state (Länder) governments must continue and intensify their existing cooperation activities to promote the organic sector – for example, by improving the organic farming monitoring system and stepping up research funding. To strengthen strategic cooperation between policymakers and farming sectors, BMEL recommends the creation of national strategy forums in the form of a round table. An event of this kind could be held once every two years with the aim of identifying issues related to the further development of organic farming and finding appropriate solutions for them.

To provide effective policy support for organic farming, not only are well-designed action plans and instruments needed, but also the strategic expansion of policy action capacities. This involves the necessary resources for the implementation of new funding programmes and the coordination of additional policy processes. It also involves problem-solving and innovation capabilities for further development of both policy and structural conditions. In particular, this means greater networking between relevant stakeholders (food sector, policymakers, science and research, civil society, etc.) to enable better utilisation of existing knowledge and experience.

For a strategy to develop into a truly powerful instrument, its implementation and application must be periodically reviewed and adapted. To ensure this happens, BMEL plans to conduct an initial status assessment in 2019 and will prepare a progress report in 2020 to assess the successes achieved in implementing certain measures. In close cooperation with the forward-looking strategy advisory group, BMEL also intends to draft a new, revised version of the forward-looking strategy for the period 2023 to 2030.

In the new version of Germany's National Strategy for Sustainable Development, the concept of sustainability, as seen by historian Ulrich Grober, will serve as a compass for the journey into the future. This image also serves in illustrating both the function and the importance of the "Organic Farming – Looking Forwards" strategy. The forward-looking strategy offers guidelines and points of reference on the road to more organic agriculture in Germany. As an integral component of Germany's National Strategy for Sustainable Development, it also sets out the efforts needed to promote organic farming in both a social and a political context. Thus, some 15 years since the introduction of the Federal Organic Farming Scheme (BÖL), we now have the first-ever model designed by both policymakers and industry to meet the objective of Germany's National Strategy for Sustainable Development and further expand organic farming to cover 20 percent of arable land. The task now at hand is thus to work together to implement the measures that have been devised, explore the ideas that have come together and provide stimulus for growth in organic farming and with it greater sustainability in Germany.

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