One of the main questions that arises from the ongoing increase in demand for organic food products and ingredients is whether or not supply will be able to keep up. Growing demand implies that more farmers need to convert to organic, but the conversion process is complex and can prove to be a bottleneck for further growth of the organic food industry. The organic label is subject to strict regulations and controls. Farming organic requires specialised knowledge, start-up investments and higher working capital needs in order to bridge the conversion period.

It is in the food industry’s own best interest, where necessary, to set up programmes together with partners such as farming cooperatives, (semi-)governmental organisations or financial institutions in order to secure future supply. Notably in the US, we observe various major food companies and retailers setting up these programmes to help farmers convert. The most common support programmes during the conversion period (and beyond) that we are seeing are:

1. (Semi-) governmental organisations with various programmes in place to support farmers who convert to organic. These include subsidy programmes and guaranteed arrangements in which governments and financial institutions share credit risk.
2. Educational support: stakeholders such as cooperatives, food companies, traders and (semi-)governmental organisations share knowledge, skills and other necessary forms of non-monetary support.
3. Premiums for conversional crops: food producers or other off-takers such as traders pay a premium for crops in conversion. Various producers are working on transitional labels (e.g. ‘certified transitional’) to (partially) pass on premium pricing to consumers.

Outpacing growth of organic food expected to continue
In our recent publication Organic Is Good For You!, we highlighted that, until 2025, total organic food sales in Western Europe and the US are forecast to grow (CAGR) by 6.7 percent and 7.6 percent, respectively, in a base-case scenario. That’s roughly three times faster than overall food consumption growth. Furthermore, growth in the US in the next five years will be somewhat higher than 7.6 percent. Ongoing strong demand for organic produce for a prolonged period of time could prove to be challenging, and the supply chain could struggle to keep up the pace.

Upstream challenged to keep up with downstream demand
The appetite for organic products from consumers in Europe and the US is resonating upstream in the supply chain, all the way to the farmer. Farmers need to increase production of organic crops and livestock, both for direct consumption (vegetables, fruit, dairy, meat, etc.), as well as inputs for livestock and processed foods (meat, wheat, soy, corn, etc.). Aside from the general challenge to keep up with surging demand for organic products, regional or structural obstacles are adding to the complexity. For example, bananas or tropical fruits don’t grow in Europe, and in order to farm organic rice, extensive water management is required.

The amount of organic farmland as a percentage of total farmland varies substantially across countries (see Figure 1). The US stands out, because only roughly 0.6 percent of total farmland is used for organic farming, which is low compared to our estimate of total organic food market share of around 5 percent. Note that these comparisons are only to
illustrate a likely deficit or surplus, as some countries can be major net exporters or net importers of agricultural products. Nevertheless, a major difference between the percentage of organic farming and that of organic consumption—which is the case in the US—signals a mismatch.

![Diagram showing organic farmland penetration rates in Western Europe and the US, 2005 vs. 2010 vs. 2015.](image)

**Figure 1: Organic farmland penetration rates are on the rise in Western Europe and the US, 2005 vs. 2010 vs. 2015**


### Filling the gap with imports and conversion

The US case is illustrative for challenges that can arise in the balance of supply and demand for organic products. Some product categories need to be imported, as these products are geographically bound (e.g., coffee, cocoa, or tropical fruit). But products such as organic soy and corn (which are often used in animal feed) are also largely imported from South America and Eastern Europe, as over 90 percent of soy and corn produced in the US is GMO. Preferably—also from a carbon footprint point of view and a general consumer preference for locally produced foods—US domestic supply needs to increase.

In Europe, as opposed to the US, there seem to be fewer challenges when it comes to sourcing organic products or ingredients for domestic consumption. However, further strong growth and potentially strong export growth to the US might, over time, because some challenges regarding the availability of certain crops in Europe.

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1. The gap between the market share of organic food sales and organic farmland to total farmland is subject to many variables, such as import/export, a difference in the “nature of farming” across regions and countries, but also cultural and regulatory differences. The gap merely signals the ability of regions/countries to satisfy demand for products domestically, i.e., with available domestic supply.

2. For further details, see www.usda.gov/organic or ec.europa.eu/agriculture/organic/organic-farming/what-is-organic-farming/organic-certification_en. The US and the EU also have an ‘organic equivalence agreement’ in place, enabling them to sell products labelled ‘organic’ in each other’s regions with a few exceptions.

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### Box 1: Obtaining/maintaining the organic label involves significant effort

The ‘organic’ label is strictly governed in the US and the EU. It describes the requirements food products and ingredients must meet in order to be able to carry the label. The US and the EU work with various certifying agents and controlling bodies around the world to ensure products comply with their respective requirements.

US farmers with the ambition to convert to organic first apply at a USDA certifying agent, after which they are required to operate according to the established standards for a minimum of three years. The specific requirements depend on the type of operations (e.g., crops, wild crops, livestock or processing). Generally speaking, farmers cannot make use of synthetic fertilisers and pesticides, sewer sludge fertilisers, genetic engineering, growth hormones, irradiation, antibiotics, artificial ingredients and other synthetic material. But requirements could also be in place concerning room to manoeuvre for livestock and crop rotation techniques. And farmers also face requirements when it comes to, for example, their management of water, soil, energy and waste.

After full compliance, payment of fees, and on-site inspection and review, a farmer obtains the ‘organic’ certificate. Producers or handlers must provide annual updates to their certifying agent, have their operations inspected on-site and have their business reviewed in order to maintain the ‘organic’ label.
The challenge of securing organic supply

Creating a steady flow of inputs might be challenging for food producers

In order to meet growing consumer demand, food producers also need to secure a growing flow of organic inputs. This means that producers are exposed to farmers’ willingness and ability to convert to organic farming (see Box 1).

Farmers face five major challenges when converting from conventional to organic

Challenges for farmers willing to convert are (i) meeting the organic requirements; (ii) obtaining specialised knowledge and skills, as farming organic is significantly different from farming conventionally; (iii) obtaining necessary start-up funding and working capital; (iv) risk of lower yield on their farmland and (v) potential price uncertainty, as time horizons are long (see Box 2).

Box 2: Premiums, yields, costs and risks when farmers convert to organic

Organic offers higher crop premiums, but lower yields

In general, organic premiums are between 20 percent and 30 percent higher, but with great variations between crops and years. Rabobank has indications that yields on farmland are, on average, 10 percent to 20 percent lower than in conventional farming. How much lower depends on multiple factors, such as crop type and crop rotation methods. When using Dutch data and a large international meta-study, we find that the lower yield is generally offset by higher price premiums for organic crops (see Figure 2). However, relatively higher premiums (gains) compared to lower yield (losses) do not necessarily translate into higher returns because of a different cost structure.

A different cost structure

Usually, organic seedlings are more expensive, and labour costs (hours worked) are higher. These higher costs are (partly) offset by lower (or no) costs for pesticides and, sometimes, fertilisers. Furthermore, farmers face differences in, for example, energy costs or transportation costs. All in all, the cost structure changes significantly.

The bottom line: it’s not easy to convert in general

When converting, farmers potentially profit from higher premiums that generally offset lower yield. But to get there, the business model also needs to change. In addition, risks such as price and yield uncertainty can threaten future profitability. Ultimately, whether or not an organic crop is more profitable to grow than a conventional crop depends on the type of crop and a whole range of other variables, including weather, pests and the conventional product’s performance as a benchmark.

Figure 2: Estimates of relative premiums and yields for Dutch organic crops, 2012 vs. 2015


Notes:

1 The estimates of lower yield are a very general indication over a long period of time across many crop types. Depending on crops, regions, weather, and impact from diseases and pests, these yields can also be up to 50 percent lower. Crops which commonly have substantially lower yields than the 10 percent to 20 percent average, such as organic rice, tend to trade at substantially higher price premiums. Also note that price premiums evolve over time, due to similar factors and economics as described above.
A stable flow of organic products requires a joint effort

Securing the steady flow of organic products is a joint effort by farmers, regulators and producers, due to the extensive conversion process and necessary shifts in business model when compared to conventional farming.

Methods of support programmes from food companies and other stakeholders

Over time, the food industry has acknowledged the strategic relevance of securing organic supply. Food companies have a range of methods to support farmers willing to convert. These include paying price premiums, creating ‘transitional labels’, and sharing knowledge and skills.

- Food producers can offer a premium price (above conventional, below organic) for crops in conversion.
- Transitional labelling goes one step further and might provide farmers even better prices for their crops in transition. A major US producer of organic cereal bars has introduced a number of products which contain wheat from farmers that are in transition. The package shows a transition label, and the producer explains to consumers that the product is made with transitional wheat. Farmers in transition receive a premium for their crops (between conventional wheat and certified organic wheat).
- Food companies also actively share knowledge and skills in order to optimise production and quality, but also to accelerate supply in general. A major US food producer is actively supporting the Organic Farming Research Foundation, which encourages the adoption of organic farming practices through education and research. Other companies are actively engaged in the industry councils of the Organic Trade Association (see Box 3).

Box 3: Case study—General Mills increasingly focused on organic

In recent years, General Mills has invested in its organic and natural product portfolio. The company offers organic and natural products through nine brands, including Cascadian Farm and Annie’s, making it a leading producer of natural and organic food in the US. 2015 sales of the current portfolio of natural and organic brands were at around USD 675m.

General Mills aims to have USD 1bn in sales (about 5 percent of group sales) from organic and natural products by 2019, thereby doubling the organic acreage from which it sources to 250,000 in the US (2015: 120,000 acres). In June 2016, the company announced a partnership with Organic Valley (one of the largest US cooperatives of organic farmers), providing help to 20 dairy farms and adding 3,000 acres to organic dairy production by providing resources and support.

Governmental and semi-governmental organisations also support conversion

There are numerous examples of (semi-)governmental organisations that support the organic transition of conventional farmers. For example, the Dutch Ministry of Economic Affairs has a guarantee programme in place to aid farmers willing to convert. This guarantee is designed to ease access to bank financing for farmers who want to convert, but who face liquidity and profitability challenges during the conversion period. In Europe, the specific type of support can be country-dependent.

In the US, the USDA has several programmes in place. In October 2016, it announced it would make USD 17.6m available for research, education and extension projects, helping producers transition to organic farming through the Organic Transitions Program. On the state level, financial assistance is also available via the National Organic Program (NOP). The USDA also facilitates organic farmers, an example of which is the ability to insure (transitional) organic crops at higher prices.
Satisfying the Appetite for Organic Food Products

**Conclusion**

Growing demand for organic food implies that the supply chain should be able to keep track. For products that only grow in specific regions, such as tropical fruits or cocoa, importing from overseas is inevitable. Local programmes—sometimes supported by traders and the promise of good export prices—should help more farmers convert to organic. But when there are no obvious specific regional issues, local production is preferable, also with a view to the carbon footprint. There is an increasing need for more organic production, especially in the US. It is in the food industry's own interest to set up programmes in collaboration with partners—such as farming cooperatives, (semi-)governmental organisations or financial institutions—in order to secure future supply.

**This is the second report in an organic food series**

This is the second report of a series on the organic food industry. The first report, *Organic Is Good for You!* (published on 24 October 2016), focused on the growing demand for organic food. The upcoming reports in this series of four will deal more in depth with distribution channel trends and market structure analysis of Western Europe and the US.