

# BayWa

## Supporting sustainable agriculture

**BayWa is an international trading company operating in the fields of energy, agriculture and building materials. In this thematic report, which is the fourth in a sequence of short notes and interviews about BayWa, we examine how the company's agriculture segment is evolving in response to the need to feed a growing global population while adopting more sustainable farming practices. The review includes both initiatives that help farmers produce crops more sustainably and initiatives that help farmers mitigate the adverse impacts of climate change.**

### Helping farmers reduce climate change

While the power generation and transportation sectors are most heavily criticised for their contribution to climate change, the agriculture sector accounts for at least 20% of global greenhouse gas emissions. This means there needs to be radical changes in agricultural practices if the world is to meet the goal of achieving net zero carbon emissions by 2050 that was agreed at the COP 21 summit in Paris in 2015. Since BayWa generates the highest revenues of any agricultural company in Germany and has extensive international produce trading and logistics businesses, it is able to play a significant role in supporting the shift to more sustainable farming. Promotion of precision farming techniques is a key element of this shift, as the methodology enables farmers to produce the same volume of crops while reducing greenhouse gas emissions and nitrate pollution and cutting the amount of crop protection products required.

### Helping farmers mitigate effects of climate change

The agriculture sector is particularly exposed to the adverse effects of climate change because extremes of weather such as droughts, heatwaves and hailstorms wreak havoc on growing orchard and field crops. BayWa provides products and services that help farmers mitigate the adverse effects of climate change. These include new cultivars that are resistant to extreme weather conditions, agri-voltaic systems that simultaneously protect growing produce while generating green electricity and smart irrigation systems.

Consumer staples

9 March 2022

#### Share details

Code	BYW6
Listings	Frankfurt, Munich, Xetra
Market capitalisation	€1.34bn

#### Company description

BayWa has an international renewable energy business focused on solar and wind farms, and trades oil and lubricants in Germany and Austria. It also trades agricultural produce and equipment within Europe and globally and is a retailer of building materials in Germany.

#### Analyst

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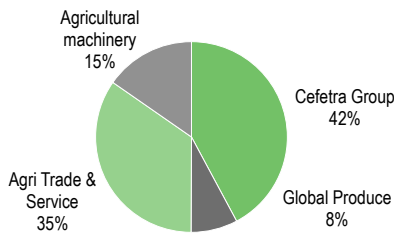
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## Agriculture segment business overview

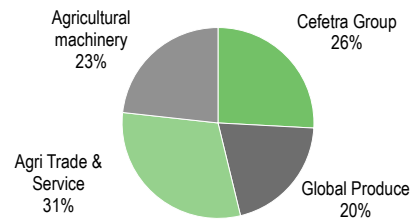
The BayWa group operates through three core segments, energy, agriculture and building materials, together with a smaller innovation and digitalisation segment. The agriculture segment, which is the subject of this report, covers the key elements of the supply chain, from the field to the marketing of agricultural produce, making it one of Europe's leading trading companies with a global reach. The segment is split into four business activities: Cefetra Group, Global Produce, Agri Trade and Service, and Agricultural Equipment.

**Exhibit 1: Revenues 9M21\***



Source: BayWa. Note: \*Nine months ended September 2021.

**Exhibit 2: EBIT 9M21**



Source: BayWa

### Cefetra Group

The Cefetra Group business unit is an international trader of grain, oilseed meal and speciality arable products. It purchases agricultural produce, sells it to grain and oil mills, breweries and malthouses, producers of starch and animal feedstuffs and manufacturers of biofuels and bioethanol, and provides logistic services. Over the last decade, global grain trading generally has been adversely affected by significant numbers of speculators entering the market, causing extreme price volatility. Management has mitigated the risk associated with this by diversifying into trading speciality products. For example, in 2017 it acquired Netherlands-based Thegra Tracomex Group, which trades various niche commodities including organic barley, oats and pulses and by products, and UK-based speciality grains and oilseeds trader Premium Crops in 2017. In early 2021, it formed Sedaco DMCC, which is headquartered in Dubai and specialises in oilseeds, pulses, raw nuts and specialty crops, primarily from Africa. In November 2021 the business unit entered the milk and dairy products market with the launch of Cefetra Dairy, a new company offering a broad range of dairy products such as cheese, butter and milk powder, as well as alternatives to milk.

### Global Produce

BayWa Global Produce is a global player in fruit and vegetable trading, marketing a wide range of pome fruit, tropical fruits and other high-quality fruit and vegetable products around the world. It is one of the largest individual sellers of dessert pome fruit, primarily apples, to wholesalers and retailers in Germany. It also records, sorts, stores, packages and provides marketing services for fruit customers at five sites in the Lake Constance and Neckar regions. The segment has been transformed through the acquisition of a majority stake in T&G Global in 2012 (74% end FY20) and a majority stake in TFC Holland in 2016 (90% end FY21). T&G is in one of the largest growers of fresh produce in New Zealand and the largest exporter of apples in the world, responsible for one-third of New Zealand's annual crop. It works with over 1,000 growers globally, buying and selling produce in North and South America, Asia, Australasia and Europe, thus enabling BayWa to provide food retailers with fresh fruit all year round. TFC Holland is a Dutch importer and exporter of exotic fruit and vegetables, enabling BayWa to supply exotic speciality fruit and vegetables such as avocados and mangos as well as more traditional fruit.

## Agri Trade and Service

The Agri Trade and Service business unit trades directly with farmers. It supplies farmers in several regions of Germany and Austria with agricultural inputs, such as seeds, fertilisers, crop protection products and feedstuffs, and hygiene products for livestock throughout the agricultural year. It also takes responsibility for collecting and marketing the harvest for farmers. To support this activity, the business unit operates a network of over 170 sites providing transport, processing and storage capacity. BayWa sells the agricultural outputs to local, regional, national and international companies in the foodstuff, wholesale and retail industries. The unit is gradually expanding its portfolio of organic products and marketing services for organic produce (see below). BayWa generates the highest revenues of any agricultural company in Germany.

## Agricultural Equipment

The Agricultural Equipment business segment offers a complete portfolio of machinery, equipment and systems for all areas of agriculture as well as road sweepers, mobile systems for wood shredding, forklift trucks for municipal services and commercial operations and machinery for forestry operations and sports venues. Worldwide, BayWa is the largest sales partner for the AGCO Group, with its brands Fendt, Massey Ferguson, Challenger and Valtra. As well as selling new and used machinery, the business unit offers maintenance and repair services and supplies spare parts. The business unit operates a workshop network of around 270 sites and over 780 mobile service vehicles. Historically, the business unit has focused on southern and eastern Germany and Austria, where growth prospects are limited because sales are related to replacement investments and modernisation projects. Management is addressing this by expanding activity in other geographies. In 2014, BayWa took an initial stake in Agrimec, which is based in the Netherlands, purchasing the remaining shares in 2016. The business unit has been active in sub-Saharan Africa, South Africa and other neighbouring countries including Zambia, since 2015, when it formed a 50/50 joint venture (JV) with Barloworld. The unit has had a cooperative agreement with CLAAS in Canada since 2016.

**Exhibit 3: Video exploring BayWa's initiatives promoting sustainable agricultural techniques (click to play)**



Source: BayWa

## Recent performance of agriculture segment

Segmental revenues grew by 11.0% year-on-year during the nine months ended September 2021 (9M21) to €9,009.4m. EBIT jumped by 43.7% to €111.4m. This was primarily the result of higher earnings contributions from the Cefetra Group and Agri Trade and Service business units. The Cefetra Group's international grain and oilseed trading activity took advantage of significant price volatility and generally better trading opportunities compared with a year previously, with sustained international demand and low grain availability leading to further price hikes in the third quarter, particularly for wheat and rapeseed. The agricultural input business benefitted from being able to sell produce harvested in 2020 at better trading margins, a sharp rise in fertiliser prices that enabled it to sell stock at a high margin and a warm and humid summer, which boosted herbicide sales. Earnings in the Agricultural Equipment business unit showed more modest growth, which was primarily attributable to substantially stronger sales of used machinery. In contrast, fruit trading in the Global Produce business unit faced a difficult operating environment and was unable to match the high levels of 2020. A large number of hail and heavy rainfall events affected the apple crop in Germany, while high air and sea freight prices squeezed profit margins at TFC and hail and a lack of seasonal workers related to the coronavirus pandemic led to a reduction in the harvest in New Zealand. In addition, logistics bottlenecks obliged T&G Global to delay the start of its exports to the core markets of Europe, Asia and the US.

In November BayWa's management forecast a considerable year-on-year improvement in the Agriculture Segment's earnings overall for the financial year 2021. When advising on the preliminary figures for FY21 at the end of February, management noted that all three operating business units had contributed to the 26% year-on-year increase in group EBIT to €266.6m.

## Redesigning food systems

In May 2020 the European Commission launched its [Farm to Fork](#) strategy, a key part of the European Green Deal, which sets out how to make Europe the first climate-neutral continent by 2050. The Farm to Fork strategy aims to redesign existing food systems that currently account for nearly one-third of global greenhouse gas emissions, consume substantial amounts of natural resources, result in biodiversity loss and negative health impacts linked to both under- and over-nutrition and do not allow fair economic returns and livelihoods for all participants, particularly primary producers. The strategy sets out both regulatory and non-regulatory initiatives and intends to make a legislative proposal for a framework for a sustainable food system before the end of 2023, using the common agricultural policy (CAP) as a key tool to support a just transition. For example, new 'eco-schemes' proposed within the CAP will offer a major stream of funding to boost sustainable practices, such as precision agriculture and organic farming. In addition, the European Commission proposes spending €10bn on research and investment on food, bioeconomy, natural resources, agriculture and the environment, as well as the use of digital technologies and nature-based solutions for agri-food through the Horizon Europe programme. The strategy recognises that efforts to tighten sustainability requirements in the EU food system should be accompanied by policies that help raise standards globally to avoid the externalisation and export of unsustainable practices.

## Better yield reduces the level of greenhouse gas emissions per tonne of produce

According to the [Agricultural Outlook 2021–2030](#) report from the Food and Agriculture Organization (FAO) of the United Nations, agriculture is responsible for around 12% of global greenhouse gas, or 21% if the indirect impact of land use changes is included. However, reducing the negative impact of farming on the environment in line with the United Nations' sustainability goal 13, taking urgent

action to combat climate change and its effects, needs to be reconciled with the United Nations' second sustainability goal, that of eradicating hunger. (We note the UN's second sustainability goal is to end hunger while promoting sustainable agriculture.) Based on projections of population and economic growth, the FAO report predicts that global demand for agricultural commodities, including for non-food uses such as biofuels, will grow by 1.2% per year over the coming decade. Around 87% of the increase in global crop production needed to meet this demand will be related to productivity improvements and only 6% from expanded land use and 7% from an increase in cropping intensity. Since the increase in agricultural output will be primarily the result of efficiency gains, direct agricultural greenhouse gas emissions (ie excluding emissions linked to changes in land use) are expected to increase by 4% over the next 10 years compared with global growth in crop production of 18%. In developed and emerging economies, the increase in crop yields supporting the reduction in greenhouse gas emissions per tonne of food will primarily be related to improvements in cultivated varieties and the adoption of precision farming technology.

## **Greater adoption of organic farming practices**

For the last 70 years, arable farmers have increased yields by applying greater quantities of synthetic fertiliser and using a range of toxic substances to kill insects, worms, moulds and other living organisms that attack plants. Similarly, livestock farmers have routinely added antibiotics to animal feed to reduce illness and promote faster growth. However, over the last three decades, interest in organic food and farming across the globe has driven a shift from conventional pesticides to chemical-free, biological-based products as well as the unnecessary use of antibiotics. This transition is being accelerated by greater consumer interest in the provenance of food and in food safety and quality, as well as concerns about soil quality, the loss of biodiversity and animal welfare.

These concerns have resulted in the enactment of legislation to reduce the use of certain pesticides. For example, in 2018 the EU extended the ban on using three neonicotinoids on all field crops, restricting their use to closed greenhouses because of the danger the pesticides pose to bees and other pollinators. In January 2020, the US Environment Protection Agency introduced restrictions on when neonicotinoids can be applied to flowering crops although it stopped short of a blanket ban. Use of glyphosate, which is the most widely used pesticide both worldwide and in the US, is also under question after a landmark case in 2018 requiring Monsanto to pay US\$39.2m in compensatory damages and US\$250m in punitive damages for failing to warn consumers that exposure to Roundup weedkiller, which contains glyphosate, causes cancer. Germany is banning the use of glyphosate from 2024. The EU is reviewing whether to renew approval for its use when the existing permit expires in December 2022. Its Farm to Fork strategy aims to reduce the overall use and risk of chemical pesticides by 50% by 2030 and to encourage greater use of alternative control techniques such as crop rotation and mechanical weeding. It will also facilitate the introduction of pesticides containing biological active substances, reducing the length of the pesticide authorisation process by EU member states.

## **Reducing nitrate pollution**

Nitrogen is a vital nutrient that helps plants and crops to grow, but high concentrations are harmful to people and to nature. The European Union's Nitrates Directive, which was adopted in December 1991, aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface water and by promoting the use of good farming practices. Voluntary codes of good agricultural practice include measures limiting the periods when nitrogen fertilisers can be applied on land to focus on periods when crops require nitrogen, measures limiting the conditions for fertiliser application, for example on steeply sloping ground, to prevent leaching and run-off, requirements for a minimum storage capacity for livestock manure and the use of crop rotations, soil winter cover and catch crops to prevent nitrate leaching and run-off during wet seasons. The EU's Farm to Fork strategy and associated biodiversity strategy set a common

objective of reducing nutrient losses, including nitrogen, in the environment by at least 50% by 2030, while preserving soil fertility. This is expected to reduce the use of fertilisers by at least 20% by 2030. Activities supporting this reduction will include promoting the use of precise fertilisation techniques and sustainable agricultural practices, notably in intensive livestock farming and of recycling of organic waste into renewable fertilisers through CAP Strategic Plans.

## Helping farmers reduce climate change

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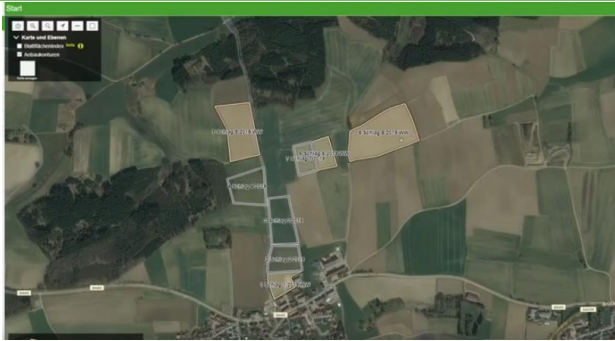
BayWa provides various products and services that enable farmers to work in a more environmentally friendly way, reducing the amount of energy, fertiliser and crop protection products used in their operations. BayWa is a member of the Germany's fourth-largest organic farming association, Biokreis. The Agri Trade and Service business unit offers organic seeds, animal feedstuff and other agricultural inputs. In total, 120 of the unit's sites are certified to trade inputs for organic agriculture.

### Support for precision farming

As noted above, precision farming techniques enable farmers to apply fertiliser and other crop inputs more efficiently. In 2015 BayWa acquired FarmFacts, an established developer of desktop or cloud-based digital farming solutions for small, mid-sized and large farms. The broad software portfolio provides products and packages from crop planning, fertilisation, crop protection to harvesting as well as managing leases and organising workflows. The N-manager package simultaneously addresses the issue of yield and nitrate pollution. If fertiliser is spread evenly across a field based on average yield, in lower-yielding areas the plants are not able to take up all of the nitrogen, which is washed away and causes nitrate pollution, while in potentially higher-yielding areas the plants do not receive enough nitrogen and do not produce as much seed as they could. If the correct amount of fertiliser is applied to each section according to its yield potential, the same amount of nitrogenous fertiliser produces on average 10% more output. This improvement is particularly important in areas where farmers are legally required to reduce fertiliser application.

BayWa's software creates fertiliser prescription maps for determining how much fertiliser is applied to each part of the field by automated farm equipment. The map for the first application at the beginning of the growing season is based on potential yield. After this point, actual biomass growth from satellite data is compared against anticipated growth from a computer simulation and used to adjust prescription maps for subsequent applications. Other software packages are available to control the density with which maize seeds are sown across a field and the application of crop protection products. The various software packages can include information on the long-term biomass potential of each part of a field, which has been determined using geo-statistical analysis of multi-year satellite data. These data are supplied by VISTA, a company in which BayWa has a 51% stake. These activities are included in BayWa's Innovation and Digitalisation segment.



**Exhibit 4: Using BayWa's software for crop planning**

Source: BayWa

**Exhibit 5: Video showing weeding robot in action**

Source: Naio Technologies

## Reducing food miles

In March 2017 BayWa formed a JV with Al Dahra Holding in the United Arab Emirates to grow premium fruit and vegetables for domestic consumption, thus reducing food miles. The JV is producing tomatoes for the local market throughout the year in two climate-controlled greenhouses. A totally different initiative to reduce food miles is BayWa's [www.radimundi.de](http://www.radimundi.de) online platform, which it launched in late 2020. Consumers in several regions of Germany can use this click-and-collect online system to order fresh food from local producers and pick them up at the producer's farm shop.

## Reducing usage of crop protection products

Farmers apply herbicides to avoid weeding, which is a very labour-intensive process. BayWa is pioneering the use of robotic weeders. It is working with the Bavarian State Institute for Viticulture and Horticulture on the use of robotic weeders to control the growth of weeds in lettuce, leek and onion farming. In 2020 BayWa launched sales of the Dino agricultural weeding robot. The robot, which is designed by Naio Technologies, is controlled via satellite navigation, weeding up to five hectares a day with an accuracy of 2cm.

## Helping farmers adapt to climate change

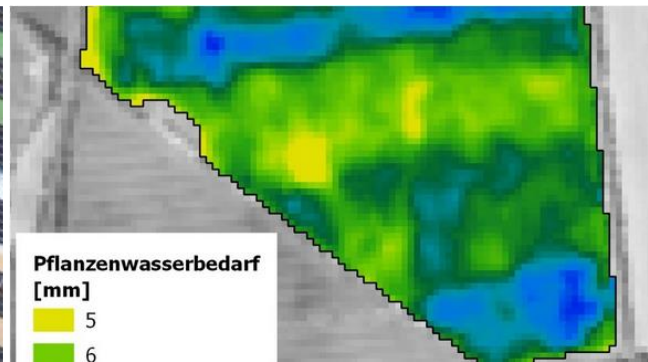
BayWa also provides products and services that help farmers mitigate the adverse effects of climate change.

## Developing new cultivars that cope with climate change

The Hot Climate Programme is a Spanish-New Zealand initiative involving partners including T&G Global, which was set up to ensure apples and pears with the taste, texture and visual appearance sought by consumers will still be available as the world's climate warms. The programme's first new apple cultivar, HOT84A1, was first planted commercially in Spain in 2020, where temperatures regularly reach more than 40°C, causing major problems growing traditional apple cultivars. T&G notes that a group of selected growers in Italy, France and the UK reported that the new cultivar was growing well and producing fruit of an attractive, rich red colour with excellent texture and a sweet taste. UK-grown fruit was tested by leading retailers and consumers, with the sweet apple being highly rated and given very positive feedback.

**Exhibit 6: Agri-PV installation in the Netherlands**


Source: BayWa

**Exhibit 7: Irrigation recommendation for a field**


Source: VISTA

## Agrivoltaics: A double harvest

In agrivoltaic (agri-PV) solutions, crops are grown under translucent solar panels. Not only do the panels generate electricity, they also protect the crops from weather-related damage and they are more durable than conventional protection systems, which typically have to be replaced every six years. The technique is already established in China, Japan and South Korea but relatively new to Europe. BayWa's renewable energy business, BayWa r.e., completed a 2.7 MWp agri-PV installation in the Netherlands that covers a 3.3-hectare raspberry field. BayWa developed an innovative semi-transparent type of solar module for the project that lets enough light through for the raspberry bushes while protecting them from extreme weather, including hail, heavy rain and direct sun. BayWa has also completed a project where the solar panels protect an apple orchard and the electricity generated powers a Fendt electric tractor.

## Satellite information helps farmers deal with drought

Farmers in Germany and elsewhere are increasingly having to cope with droughts related to climate change. For example, extreme drought and heat during 2018 resulted in a potato yield in the Saxony-Anhalt region that was only half that of the previous year. Regional yields for wheat, barley, oil seed rape and potatoes were also low in 2019 because of drought. BayWa offers a full range of products and services for water management. In 2019 the group launched a new irrigation system, VariableRain, which automatically calculates the water requirements of crops using weather data, information from satellite images and a crop growth model originally developed by the Ludwig Maximilian University in Munich. The system prevents both the consequences of prolonged drought and overwatering, resulting in water and energy savings of up to 30% and prevent waterlogging and nutrient leaching. BayWa also offers micro-irrigation systems for speciality and permanent crops such as grape vines, hops, vegetables, bush and tree fruits as well as saplings. Microirrigation is an efficient and ecofriendly method of administering water and nutrients directly to the roots of each individual plant.

## Other notes and interviews in this series

[Sustainable solutions for life](#): a review of how BayWa is able to make a major contribution to limiting the effects of climate change by adapting both its strategy and internal operating processes and how this helps the group secure green investment, creating a virtuous circle. (Published 2 February 2022)



**Investment from Energy Infrastructure Partners accelerates the growth of the renewable energy segment:** an [interview with CFO Andreas Helber](#) on the group's strategy and how green financing is helping BayWa achieve its targets for 2025. (Published 9 February 2022)

[Embracing renewable energy:](#) a review of how BayWa's energy segment is evolving in response to society's shift away from fossil fuels. The review includes both BayWa's strategic investment in renewable energy related activities and numerous environmentally friendly new products launched by the group's conventional energy business. (Published 16 February 2022)

**Embracing more environmentally sustainable construction practices:** an exploration of environmentally linked activities in BayWa's building materials segment. (Upcoming)

**Strong financial foundation:** an analysis of FY21 financial results. (Upcoming)

**Applying ESG principles delivers strong operational performance:** an interview with CEO professor Klaus Josef Lutz explaining how the group's environmental strategy underpins its operational performance plus a discussion of how he sees this commitment to the environment helping the group continue to grow and evolve in future. (Upcoming)

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