



# Bayer's Vision of the Future of Modern Agriculture



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Hollabrunn, September 3, 2019

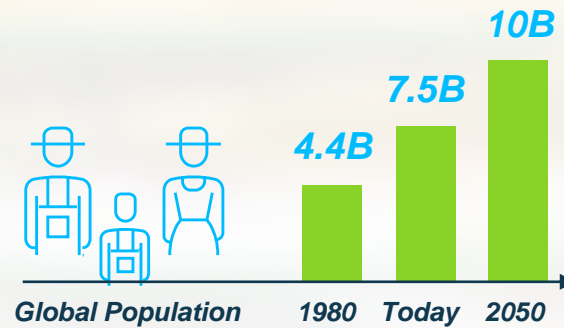




# Food security is a huge challenge



## Rising Population



## Changing Economies and Diet



50%

More food, feed & biofuel needed\*



70%

More meat in developing nations needed\*



1/3

of all food gets lost

\*By 2050

## Changing Climate



Water availability issues



Increasingly unpredictable weather



Plant health (with pressures from disease and insects)

## Limited Farmland

Acres per Person

1



1961

Acres per Person

<1/3



2050



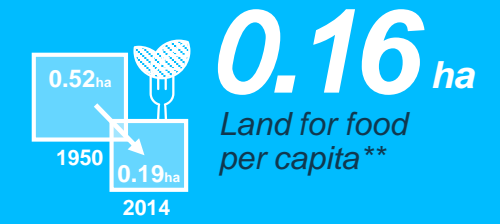
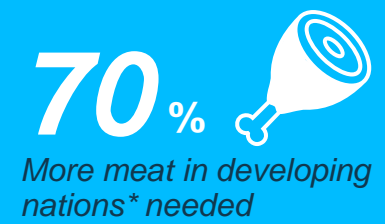
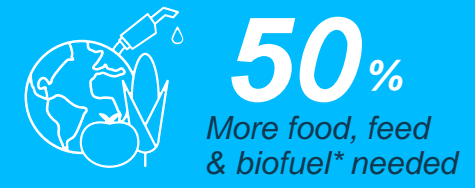
# The world needs more innovation in agriculture



*Need to produce significantly more while protecting natural resources*

**Demand**

**Supply**



Source: FAO 2017, The Future of Food and Agriculture  
\* By 2050; \*\* 2050 land for food per capita estimate: 2000: 0.24ha; 1950: 0.52ha



# Shaping agriculture to benefit farmers, consumers and our planet

## Our Mission

*as the industry leader*



Deliver world-class **innovation**



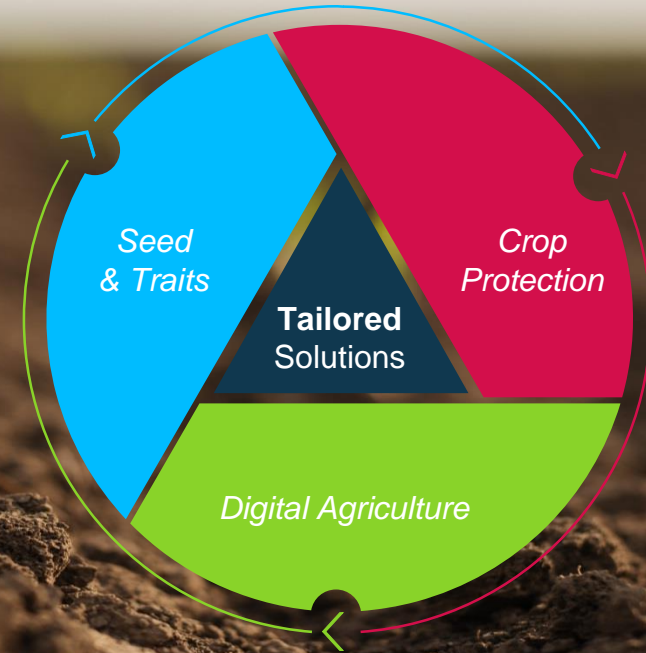
Pioneer the **digital transformation**



Set new standards of **sustainability**



Drive operational excellence through an output-based business model



*Tailored solutions are key to sustainably managing resources and improving productivity*



# The United Nations Sustainable Development Goals: A framework to enable joint action for a better life on our planet

Sustainable Development

# Goals

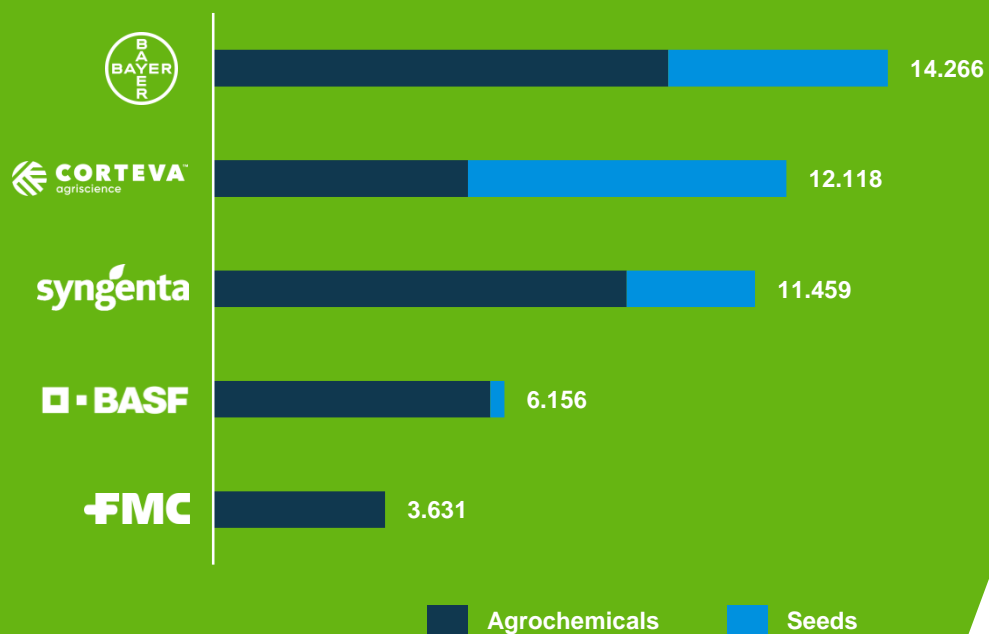




# The established leader in Crop Science

Grower endorsement of excellent product portfolio evidenced by industry leading sales

Total Sales FY 2018 (in € Million)\*



Exchange rate: FY 2018: ~1.18 USD/EUR  
Source: Company publications and Crop Science internal estimates

Broadest Crop Science Product Portfolio



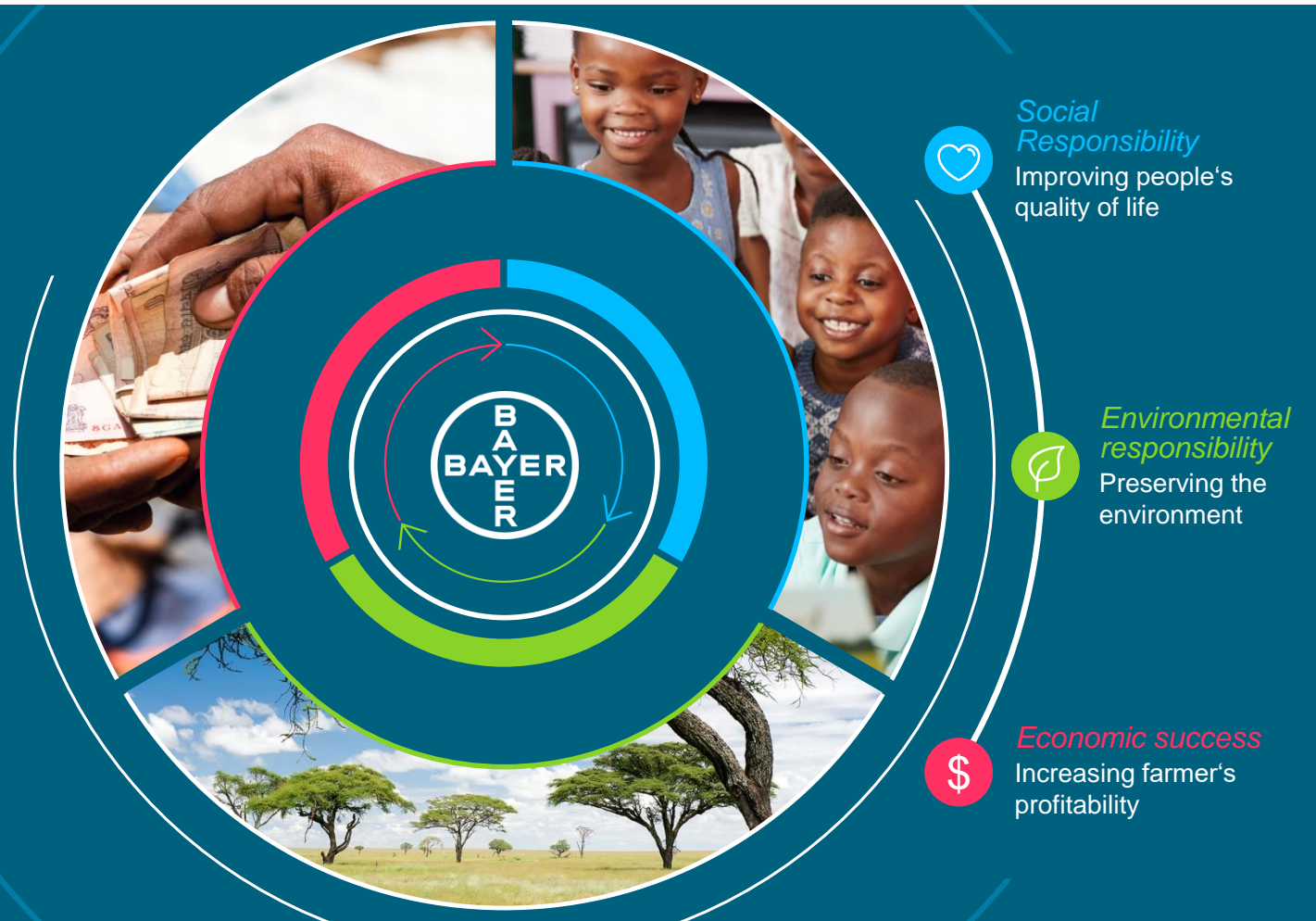


# Sustainability: Growing healthy, safe and affordable food sustainably

We take a holistic view on

## Sustainable Agriculture

that focuses on environmental,  
social and economic progress.





# How we do things: Responsibly

## *Responsibly*

- Building trust through transparency, dialogue and education
- Operating responsibly and ensuring our products are safe
- Supporting farmers with pro-active stewardship







# Bayer ForwardFarming – Demonstrating sustainable agriculture in practice

Holistic and tangible



**BAYER** ▶▶  
**FORWARD**  
**FARMING**

## **KNOWLEDGE IN PRACTICE**

A knowledge platform to demonstrate innovative practices for sustainable agriculture



## **COOPERATION**

With selected farmers



## **DIALOG**

Facilitating dialog between farmers, all interest groups, and Bayer





*Bayer*  
*Forward* ▶▶  
*Farming*

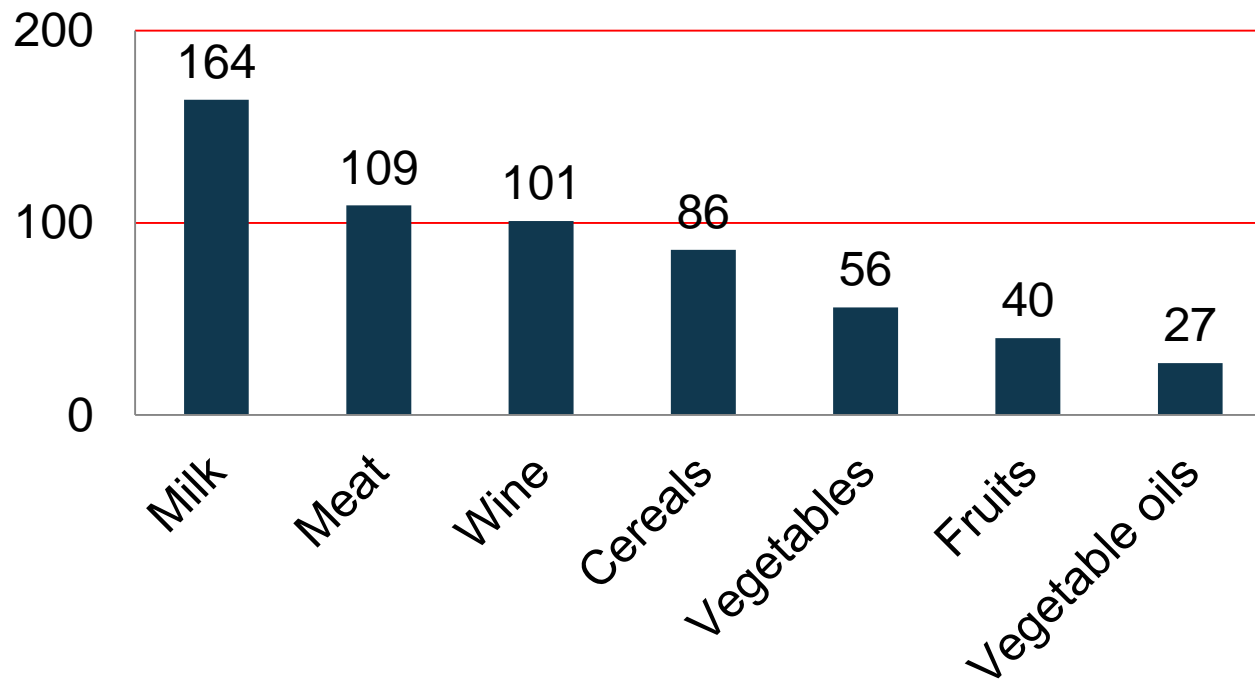
//////////  
*A collaboration with the  
Agricultural College in  
Hollabrunn*  
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**Karl Neubauer**  
*Lead Crop Science Division  
Austria*



# Modern and sustainable agriculture key to tackle today's and future challenges – also in Austria

**Degree of food self-sufficiency in Austria\* %**



## Arable land decreases

as shown in Austria





# Bayer ForwardFarm in Collaboration with the Agricultural College in Hollabrunn



## Overview of the Sustainability Activities



### Key Elements

- 1** **Seeds**  
High quality, certified seed provides the basis for good yields.
- 2** **Crop protection**  
The combination of chemical and biological crop protection products, as well as biotechnical measures in an integrated crop protection program, allow for high-quality, sustainable yields.
- 3** **Digital solutions**  
support the farmer in his or her decisions. Crop protection applications are optimized, and the environment is preserved.
- 4** **easyFlow M**  
protects the farmer and preserves the environment. With this closed transfer system, crop protection products are safely transferred.
- 5** **Safe storage**  
Crop protection products are safely stored in a suitable warehouse and are available when needed.
- 6** **Flower strips**  
Annual and perennial flower strips in strategically favorable locations protect native flora as well as birds, beetles and earthworms.
- 7** **Phytobac®**  
System in which microorganisms degrade crop protection product residues in order to protect water.
- 8** **Skylark plots**  
Small open plots in grain fields help threatened skylarks to land and nest safely.
- 9** **Insect hotels**  
Inside this breeding aid, wild bees and other pollinators enjoy protection from predators and weather. The insect hotel was built by students.
- 10** **Rock piles and beetle bank**  
The loose soil of a beetle bank provides an ideal habitat for beetle species that build their nests below the earth's surface. Lizards and slowworms can find an airy and warm shelter inside a rock pile.
- 11** **Preventing erosion from wind and water**  
In addition to the implementation of erosion prevention projects for tillage and greening systems, wind protection hedges are installed to prevent wind erosion and serve as a shelter or food source for wild animals, insects and birds.

■ Tailored Solutions  
■ Product Stewardship



*Thank  
you*

