Embedding Sustainability in the Business of Bayer Crop Science

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Sustainability at Crop Science

Agriculture’s paradox: how to feed the world without starving the planet?

**Challenge:**

- **Growing Population**
  - 2.2bn people¹
- **Limited Resources**
  - 1/3 of land used for agriculture
  - 75% of freshwater resources devoted to crop or livestock production.³
- **Pressure on Ecosystems**
  - -17% harvest losses from climate change⁴
  - -20% significant loss in arable land per capita² between 2016 and 2050

**Way Forward:**

- We will link Sustainability to the core of our business and R&D/technologies
- We will transparently create value to balance farmer’s needs with societal expectations

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² FAO 2017 (FAO Global Perspective Studies); Nelson et al. (2019); FAO 2016 “Climate change and food security” ; FAO/STAT (accessed Oct 30, 2018)
We need to Enable Production of Safe and Affordable Food

~50% crop losses

Average yield losses (rice, wheat, barley, corn, potatoes, soybeans, cotton, coffee*)

10% post-harvest
13% fungal
14% weeds
15% insects

* approx. 50% of crop area worldwide – Source: Oerke et al., 1995; Yudelman et al., 1998
While enhancing Biodiversity and Overcoming Climate Change

Addressing the Paradox of Agriculture

- Production innovation and yield increase for food security while...
- ...reducing agriculture’s footprint to preserve planetary boundaries

Reducing field greenhouse gas emissions by 30% from the most emitting crop systems in the regions Bayer serves.

Reducing the environmental impact of crop protection by 30% with new innovations and an integrated crop management approach.

Empowering smallholder farmers to access sustainable agricultural solutions: >100M smallholders benefit from access to education, products & partnerships.

Addressing the Paradox of Agriculture // Production innovation and yield increase for food security while...

...reducing agriculture’s footprint to preserve planetary boundaries //
Our Approach to Sustainable Agriculture

1. **Focus on transformational topics** related to agriculture where we can really make a difference.

2. Always keep the **farmer's perspective** in mind while creating value transparently for environment & society.

3. Link sustainability strategy to the **core of our business** and R&D/technologies.

4. Define KPIs to make all commitments **Measurable and transparent**.
Carbon Initiative

Advancing a carbon-zero future for agriculture

- Greenhouse gas reduction
- Better yields and more predictable harvests
- Additional revenue streams for farmers

Greenhouse Gas Emission Reduction
Developing new generation corn that stands up to harsh winds

- Reduced crop loss
- More precise use of inputs
- Use less natural resources (like land and water)

Environmental Impact Reduction

Short Stature Corn
Better Farms, Better Lives

Improving the livelihoods of >100 million smallholder farmers

Drive innovation for smallholders through holistic crop solutions

Accelerate digitalization to create and scale new value chains

Foster partnerships to collaborate in smallholder capacity building and market access
Thank You!