



中德农业示范园

中德作物生产与农业技术示范园

DCALDP

Deutsch-Chinesischer Ackerbau- und Landtechnik- Demonstrationspark

Gefördert durch:



Bundesministerium
für Ernährung
und Landwirtschaft

aufgrund eines Beschlusses
des Deutschen Bundestages

The way to smart agriculture

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SKIAD
苏垦农发

GFA
GROUPE
COMPTON N. S. C. AGRICULTURE
Centre of Agricultural Expertise - EVBL
B. G. B. B. H.

IAK
AGRAR CONSULTING

DLG
International

AFCI
AGRICULTURE & FINANCE
CONSULTANTS



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- Project overview

- Joint project of the German and Chinese Ministries of Agriculture
- Conducted in Huanghai Farm, SKIAD in Jiangsu.
- Supported by German business partners





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- Project goals
 - Improving the productivity of arable land
 - Improvement in product quality
 - Reduction of environmental pollution
 - Introduction of modern management
 - The German-Chinese demonstration farm Huanghai is to be a model for other companies or farms



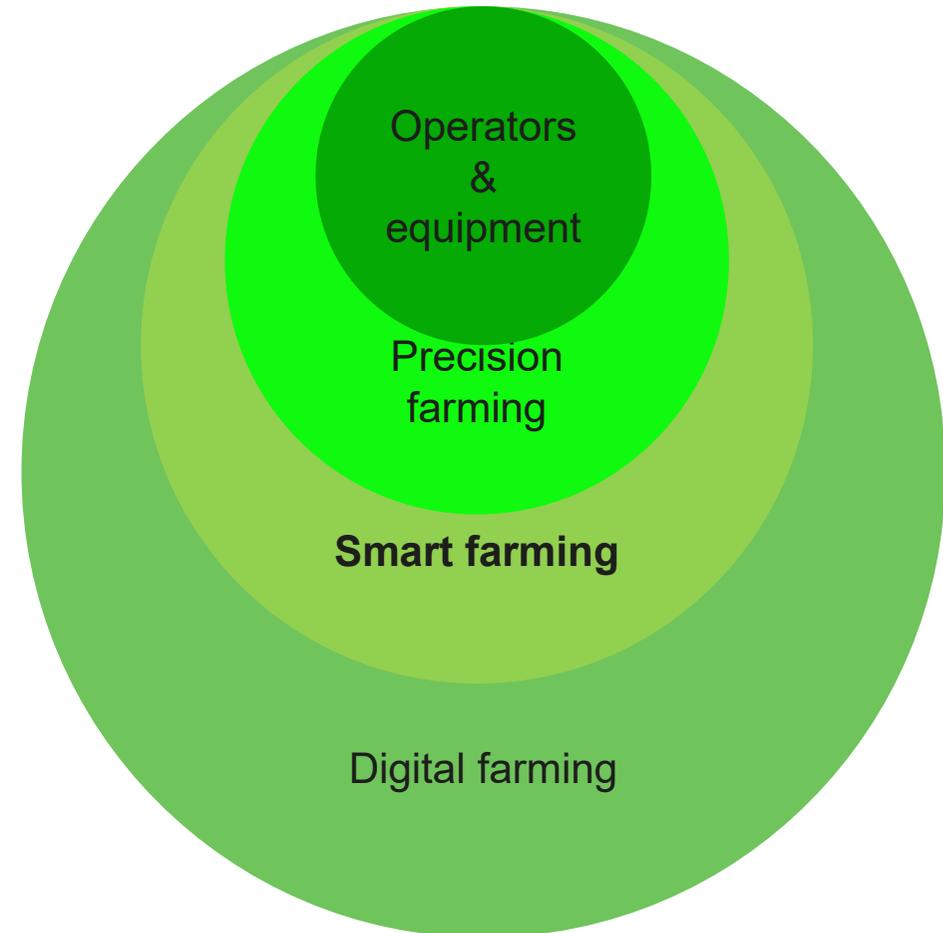
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- Modern agriculture

- ▶ Operators & equipment
- ▶ Precision farming
- ▶ **Smart farming**
- ▶ Digital farming



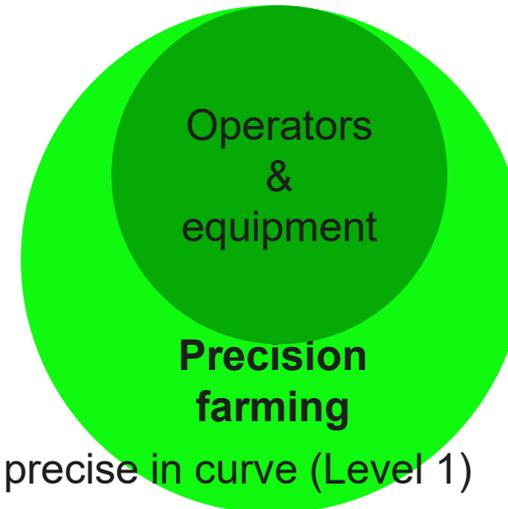


- Precision farming

- ▶ Operators & equipment

- ▶ **Precision farming**

- Automation of steering, driving or flying straight or precise in curve (Level 1)
- Boom section or single nozzle control, reduce overlapping (Level 2)
- Specific treatment, map based variable rate application of pesticide, fertilizer and seeds (Level 3)
- Harvest data collection, also called yield mapping to support variable fertilization, plant care and seeding





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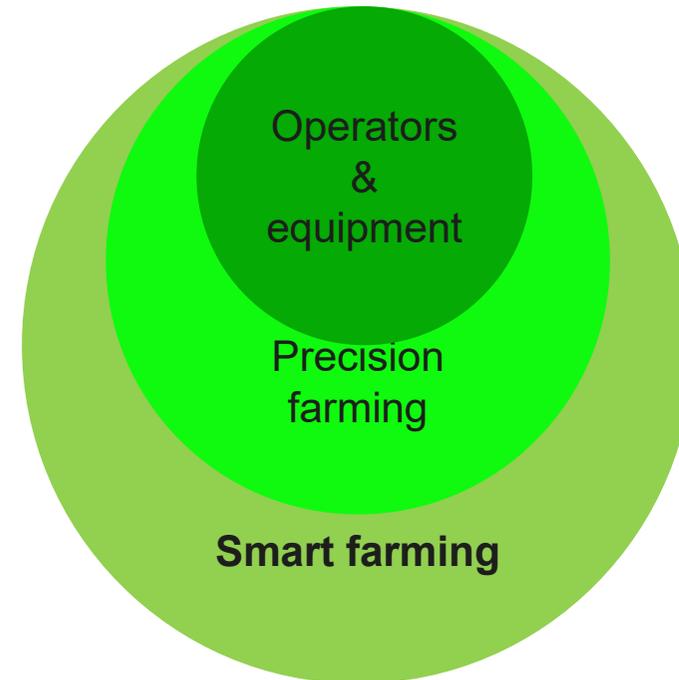
- Smart farming

- ▶ Operators & equipment

- ▶ Precision farming

- ▶ **Smart farming**

- Data collection and analysis of information
- Decision support



What differentiates smart farming from precision agriculture is that it does not focus on precise measurements. Instead, smart farming focuses on capturing data and interpreting them using computing technologies to make farm operations more predictable and efficient or **more precise**



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- Smart agriculture

- ▶ **What are the processes taking place on a farm using smart agriculture?**

- 1. Data collection**

Use sensors or cameras (Drone) in the farm gather and transmit data about the soil, plants, air, livestock

- 2. Diagnostics**

The data collected is analyzed by the system and conclusions are made. Potential problems get identified.

- 3. Decision making**

Based on the problems identified in the previous steps, the software platform and/or a human managing the platform decides on actions that need to be taken.

- 4. Actions**

Precise action according to analyzed data, e.g pesticide or fertilizer application



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- Precision farming / Smart farming

- ▶ Drone

- Data collection, like weeds, biomass development, insects diseases
- Application of pesticide and fertilizers

- ▶ Intelligent spraying with big sprayers. But it also pply for drone or small sprayers

- Section control - Single nozzle control
- Specific application. Field map from drone is required or equipment with cameras

- ▶ Intelligent spreading of fertilizer

- Section control
- Specific application. Field map from drone is required or equipment with cameras

- ▶ Intelligent seeding or planting

- Single row control (all crops)
- Specific plantation. Field map from drone is required

- ▶ Intelligent harvest

- Yield mapping

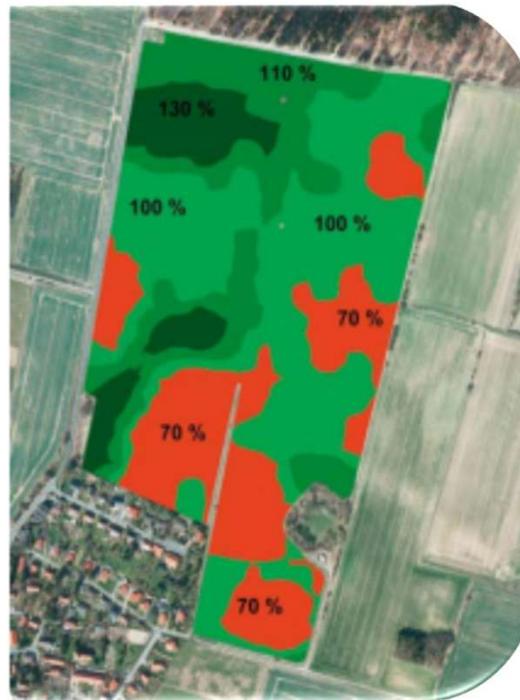
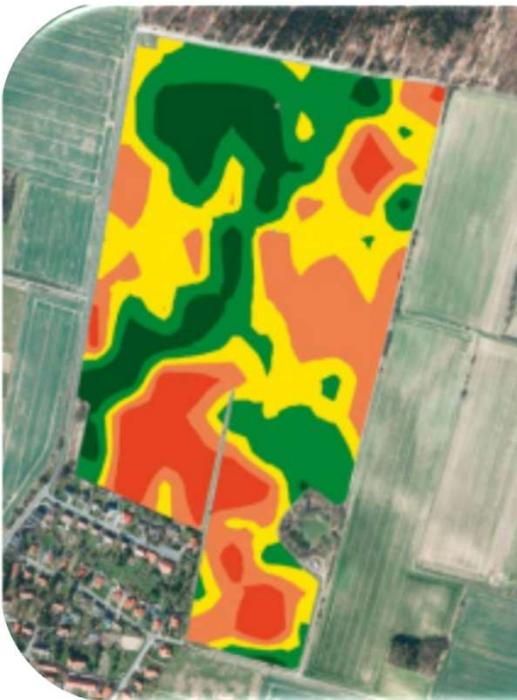


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- Precision farming / Smart farming

Field map

Automatic boom / single nozzle control



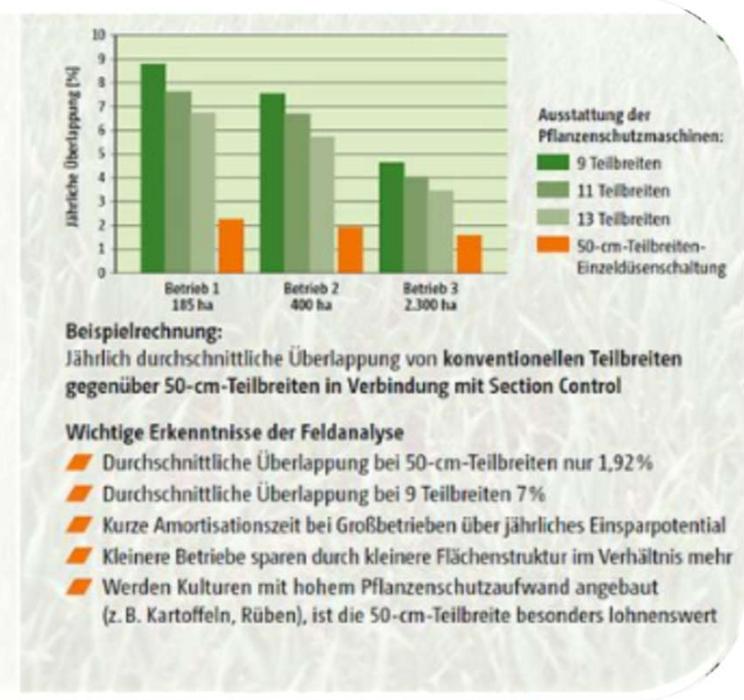
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- Operators & equipment

- ▶ Operators & equipment

- Strong team.
- Equipment standardization





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