

Why are soybeans (*Glycine max*) a success story in Germany?

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Case Study No. 14

Background

- Soybean is not a traditional crop in Germany
- Climatic changes rising temperatures in Germany provide much more suitable growing conditions than the decades and centuries before.
- Governmental plant breeding programmes have improved varieties which are now better adapted to cooler local conditions.
- There is a demand for GMO-free food and feed.
- The vegetarian and vegan movements require food rich in protein with essential amino acids.



Soybean trials at experimental fields of University of Hohenheim
Photo: S. Gruber

What are the reasons for the success story?

Aims of the case study:

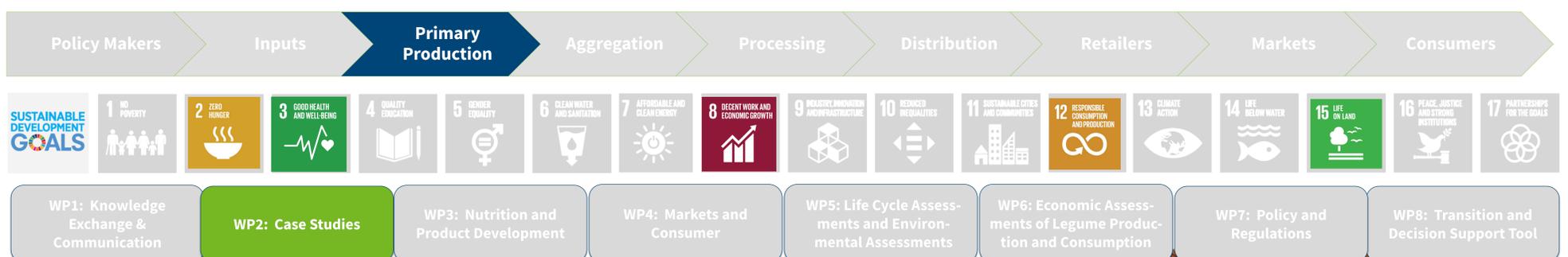
- Determination of the status quo of soybean cultivation in south west Germany
- Identification of agronomic factors which contribute to the success of soybean cultivation in south west Germany
 - Identification of farmers' motivation and constraints regarding cultivation and marketing
 - Illustration of new approaches which can help to stabilize, optimize and expand the soybean cultivation in central Europe

Methods

- Data collection: agronomical data (crop rotation, inoculation, yield, protein content, soil conditions and more)
- Questionnaires
- Interviews with farmers

First results

- Participation of 8 organic and 9 conventional farmers (soybean for food or for feed).
- Organic farmers harvested an average of 2.6 t ha⁻¹ with an average protein content of 44.5%.
- Conventional farmers harvested an average of 3.1 t ha⁻¹ with 39.5% protein.
- A detailed analysis will show the reasons of the differences, which probably depend on variety, soil tillage and crop rotation.
- The organic rotations in general included, besides soybeans:
 - other pulses, perennial fodder legumes, vegetables, potatoes, winter wheat, winter spelt, winter rye, spring wheat, oats and maize.
- The conventional rotations included:
 - oilseed rape, sugar beet, potatoes, maize, winter wheat, winter rye, winter barley and oats.
- The analysis of these and further data is in progress.



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