



Knowledge and Skills required

To do´s in the academic education of professionals
for agriculture and agribusiness.



Defining Agronomists Professional Profiles
and
Agricultural and Life Science Study Programmes

4.-5. May 2017 Vienna Austria





Major trends influencing the green sector ...

... resulting needs for professional knowledge and skills

... and demands for the academic education





UN's 17 Sustainable Development Goals



Agenda 2030



<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>; abgerufen 17.03.2017





Productivity-development: high dynamic



(Selected) economic sectors in Germany

Economic sector	Ø Gross Value Added (€) per Working	
	1993-1995	2013-2015
Agriculture, forestry, fishery	18.634	+72% → 32.059
Industry	48.269	+75% → 84.650
Building/construction	35.248	+39% → 48.847
Trade, guesttrade, traffic	29.592	+42% → 42.123
German economy in total	48.241	+42% → 68.581

Source: German Federal Statistical Office;

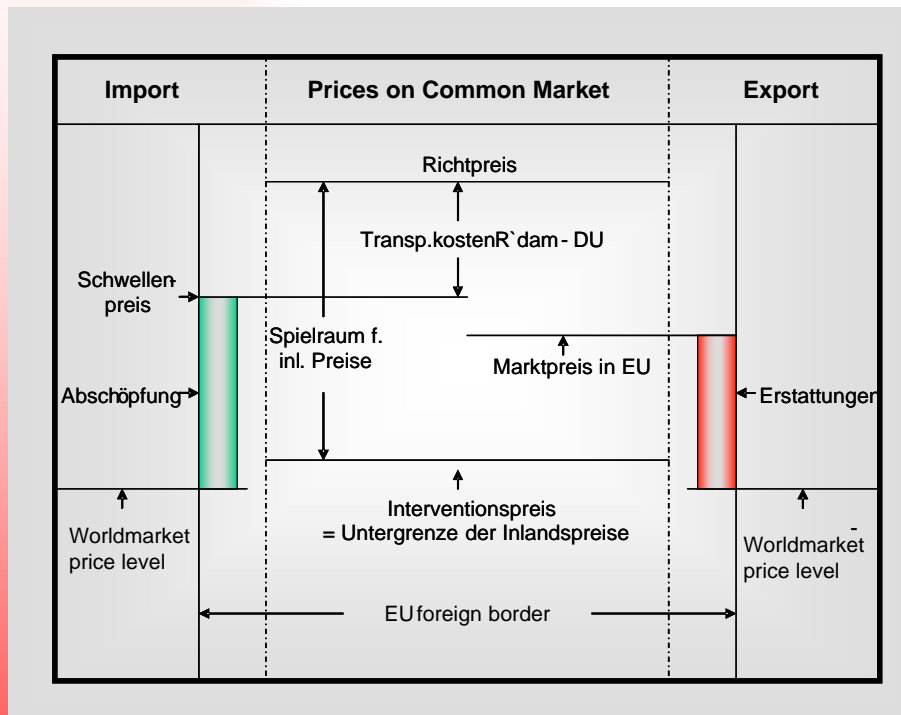
Quotation: Deutscher Bauernverband, Situationsbericht 2016/17



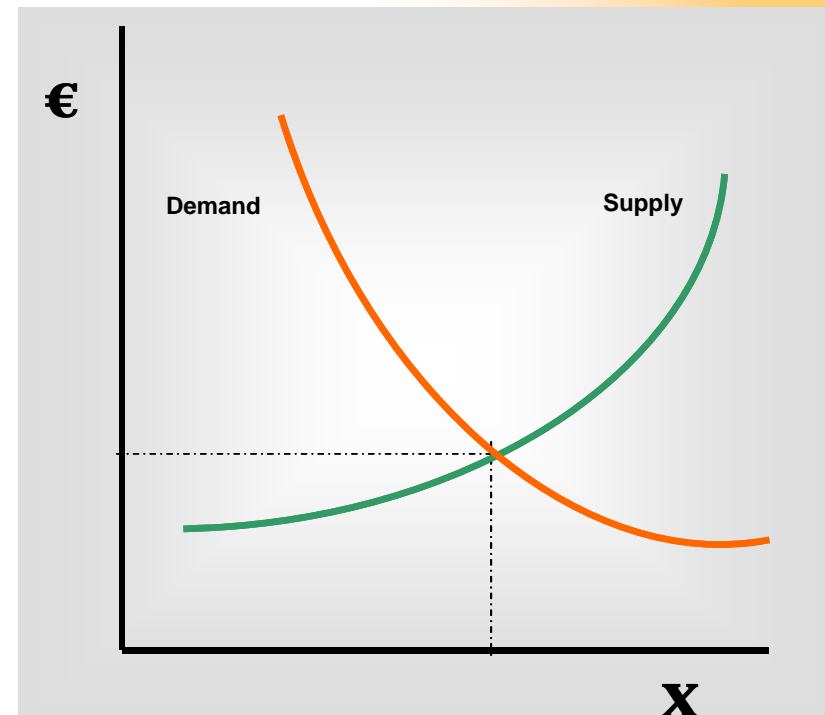
The change of CAP



... yesterday



... today + tomorrow



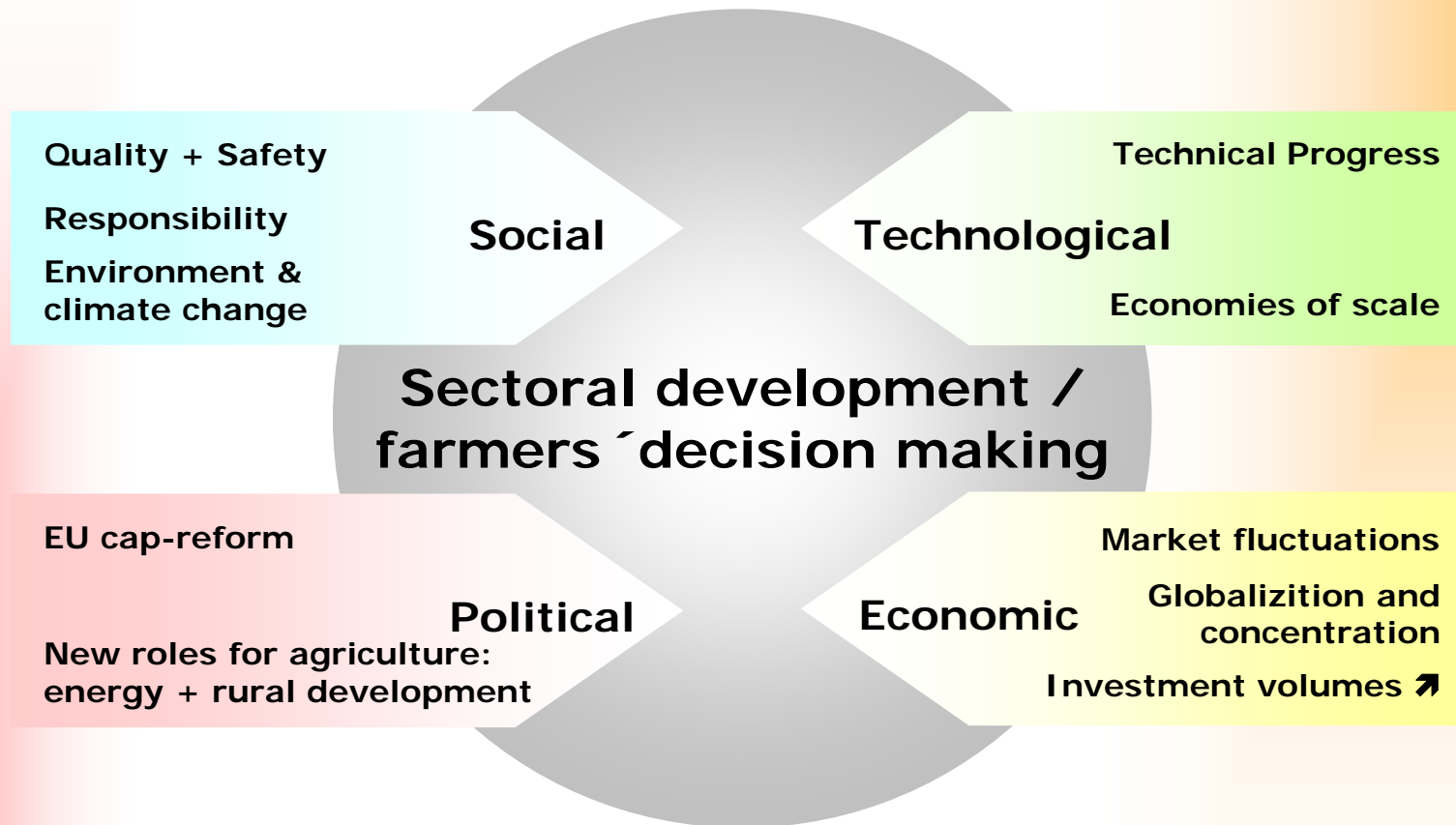
Watch out: The left side is much easier to understand !!!



The need for professional skills



Selected major driving forces



➤ **Increasing complexity, specialization and speed.**





Handling of information



Information available – the challenge: making use of it



acymusrcjel-becst:qe



The research point of view



Joint positions of „Zentralausschuss der Deutschen Landwirtschaft“

- **Inter- and transdisciplinary approaches are to be emphasized**
- **More international co-operation in research networks is needed**
- **Open minded view on disruptive effects of digitalization**
- **Overcoming administrative, functional and institutional borders**
- **Systemic views in order to achieve ecologic, economic and social sustainability**
- **Measuring excellence in agricultural sciences also by a „practical impact factor“**

Deutscher Bauernverband, Deutsche Landwirtschaftsgesellschaft,
Verband der Landwirtschaftskammern, Deutscher Raiffeisenverband





The research point of view



Joint positions regarding ...

- **Plant production**

- is to be seen as a systemic, inter- and transdisciplinary science.
- Topical items: crop rotation, protein plants and plant protection

- **Animal husbandry**

- has to be improved in a context of social expectations, efficiencies in resource management, economic framework conditions,
- Consumers' behaviour, animal welfare, environmental impact and competitive fitness as well as food quality and –safety are to be integrated.

- **Agricultural technology**

- Disruptive potentials of digitalization, automatization and sensor technologies
- Aspects of data security, data property rights have to play a role.

- **Consumers' research**

- Value chain integrating approaches that allow for improved consumers' decisions
- Communication as means to improve consumers' knowledge

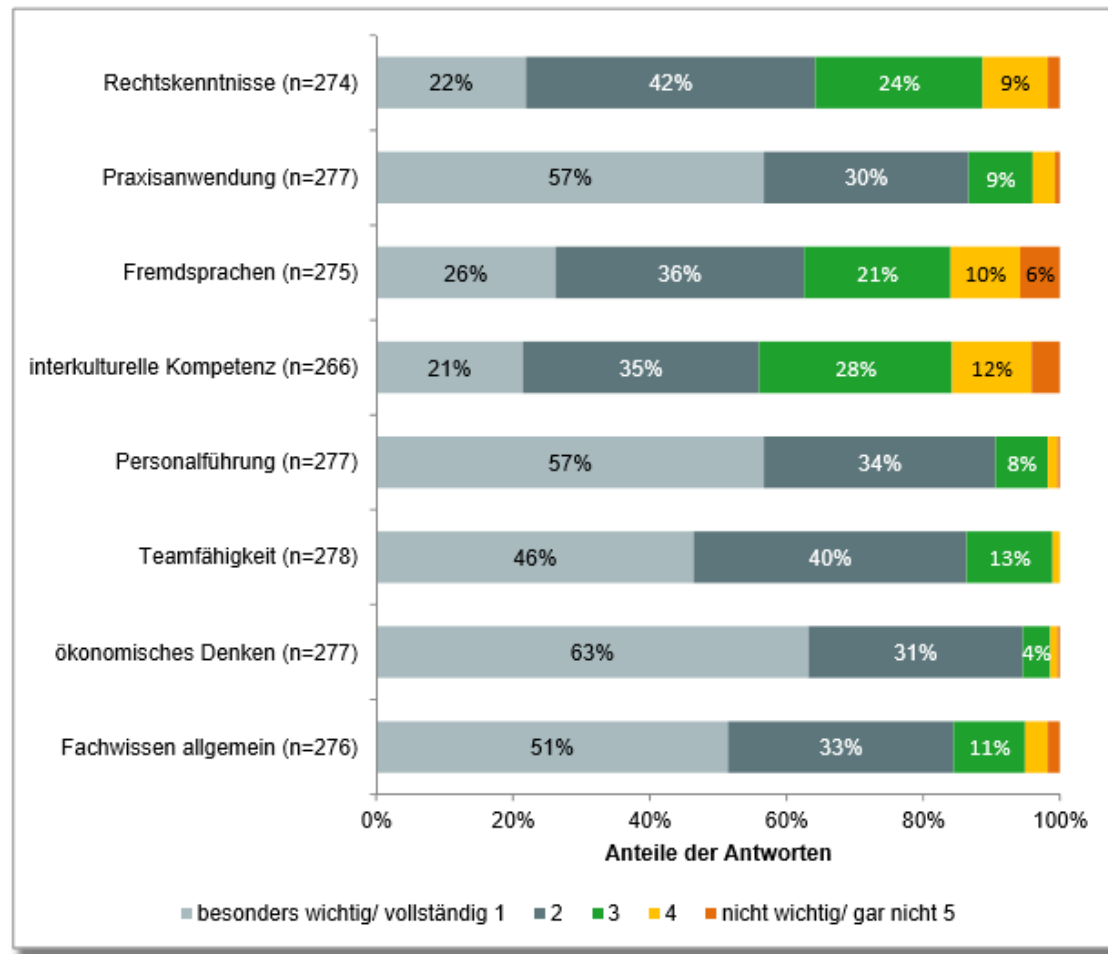




Professionals and executives skills



Skills to be emphasized in universities agronomic study programmes?



Source: VDL: Fach- und Führungskräftebedarf in der Agrarbranche Befragungen und Analysen 2013/14. Berlin 2014



The look of graduates



VDL graduate study 2015: selected findings



- **Agricultural study programmes**

- In a 10 years period 2004-2013 the number of graduates has more than doubled
- Most study programmes are in line with Bologna (Bachelor / Master) > 80 %

- **Satisfaction**

- > 75 % of the graduates are a satisfied with their universities study programme
- Only 42 % (UoaS) resp. 22 % of the graduates look at their Bsc. as qualifying for the job

- **Desiderata**

- University graduates tend to ask for a study programme closer linked to practice
- University of applied sciences graduates tend to ask for a higher specialized science.

- **Career**

- The unemployment rate of agronomists is < 5 % of the graduates
- 16 % of the graduates start their careers with a job on a farm. 80 % in agribusiness.





Executive Summary 1 + 2



1 Major trends are driving dynamism in 3 fields:

- Complexity
- Specialization
- Speed

Not only - but for sure also - in green sciences

2 Agronomists are facing increasing demands regarding

- analytic skills,
- ability to judge
- appropriate decision making
- communication skills

Knowledge is important – know how is indispensable





Executive Summary 3 + 4



3 Academic education has to qualify for

- dealing with hard facts as well as applying soft skills
- specialist´s knowledge as well as generalist´s skills
- handling (also) artificial and (more important) human intelligence

Ready for technical and economical solutions but also trained for social responsibility and good governance

4 Academic study programmes have to

- integrate practical experience in academic education
- enable professionals to transforming information into knowledge and knowledge into skills
- emphasize the holistic, systemic view upon agronomy

An academic grade is a ticket for a professional career based upon life long learning

