



First K1-centre

for company driven, trans-disciplinary, integrated research  
along important national feed and food value chains

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Director of FFoQSI



# Agri-food system in Austria

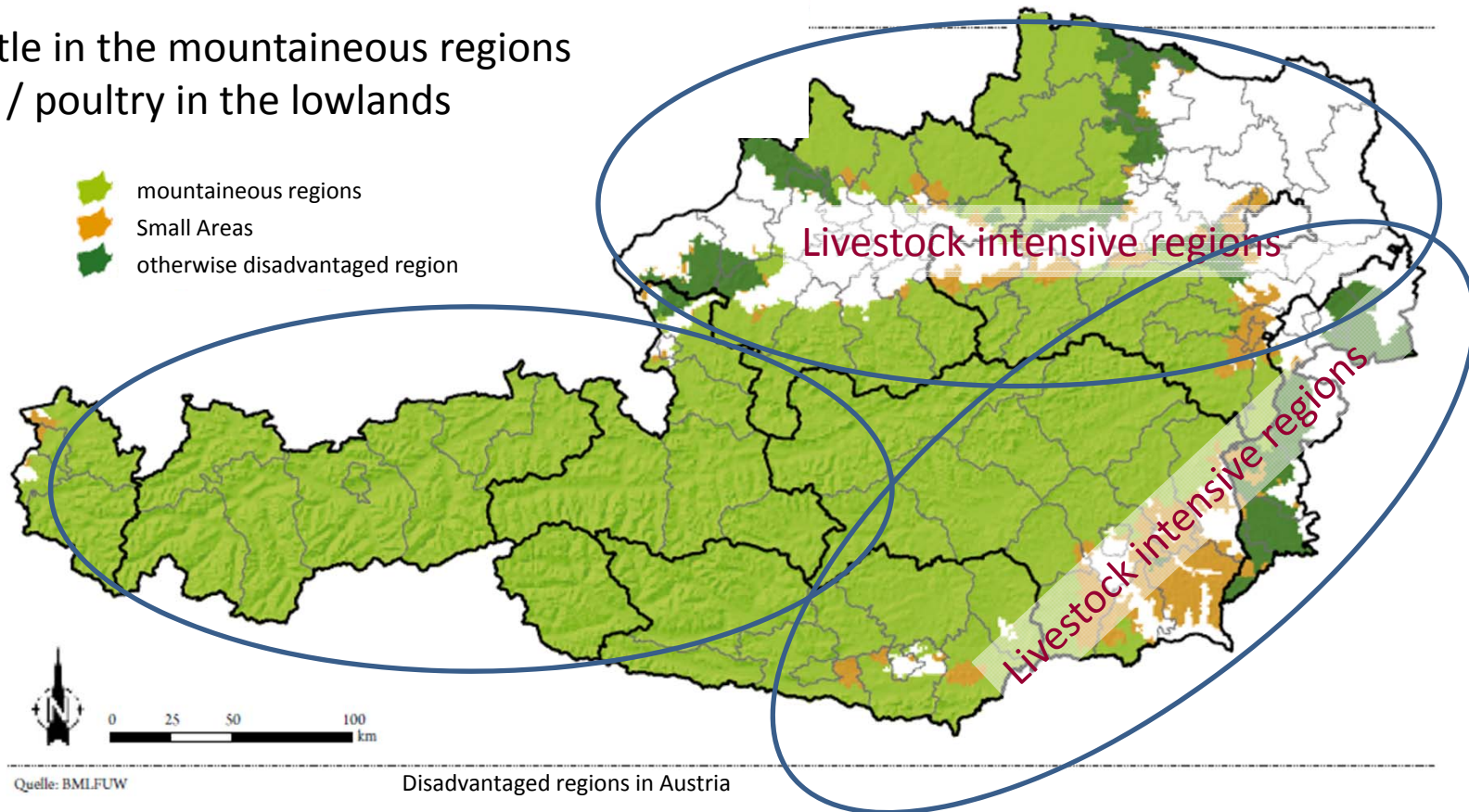


## ➤ 3 different **agricultural regions**

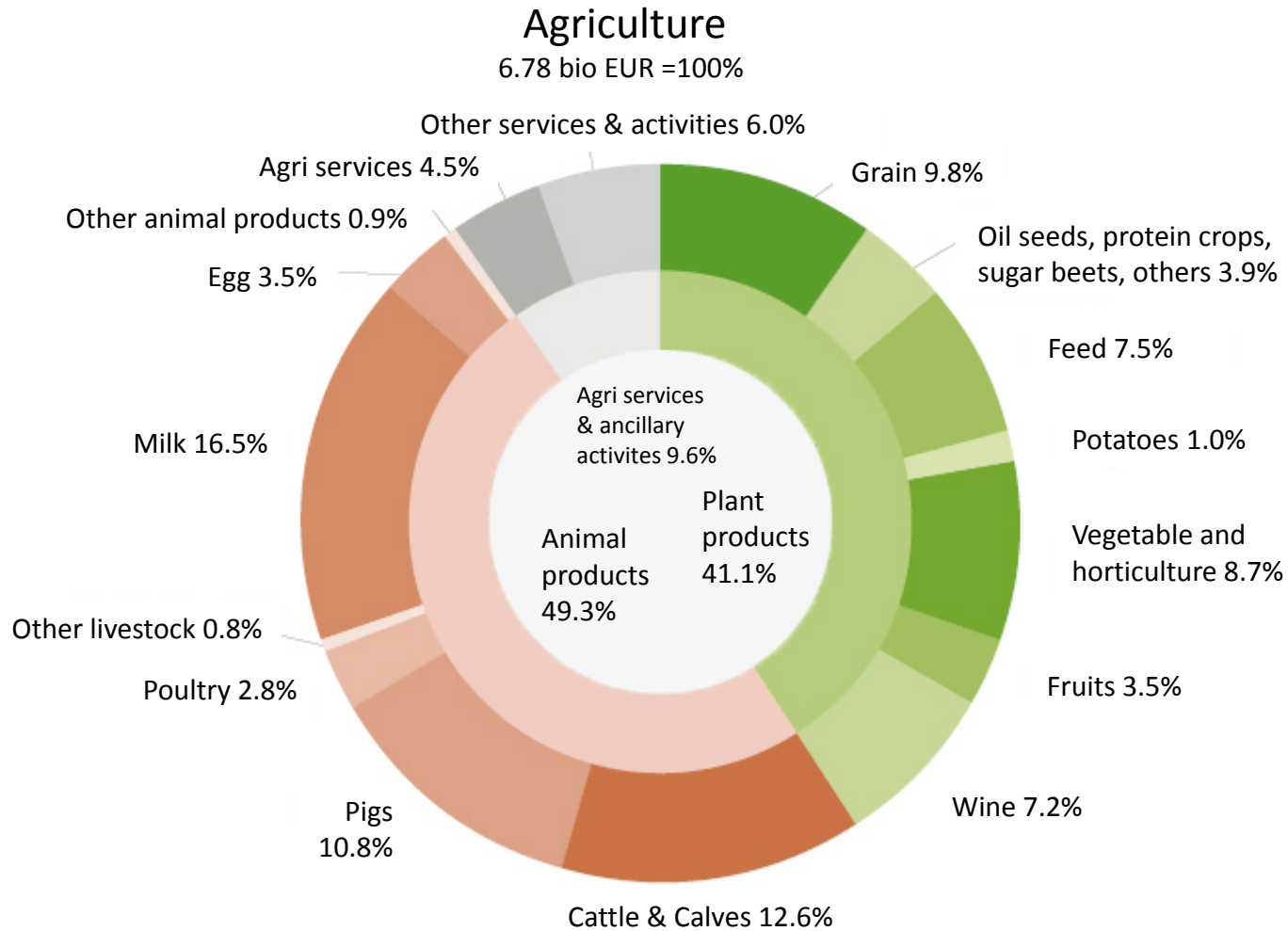
- north of Danube (Upper/Lower AUT, Salzburg)
- south/east of main Alpine ridge (Styria, Carinthia, Burgenland)
- Alpine area (Tyrol, Salzburg, Vorarlberg)

## ➤ cattle in the mountaineous regions

## ➤ pig / poultry in the lowlands



# Production value of AT agriculture 2015



# Agriculture by structures



*AT agri sector structure: **small units, traditional family farm operations***

	1999	2013
➤ <b>Total number</b> agricultural and forestry holdings	217.508	166.317
Organic farms		20.779 (18%) (2015)
➤ <b>Average farm size</b>	34.6 ha	44.2 ha
➤ <b>Family farms</b>		92.4 %
Regular		37.3%
<b>Sideline</b>		55.1 %
Cooperative		3.3 %
Corporate		4.4 %
		2015 vs 2014
Income loss per capita (real)		-8.4%
Income loss per farm (real)		-17%

# Agri export/import



2015 in Mio. Euro, KN-24



## Export/import ratio Austria

Quelle: Statistik Austria, Fachverband der Nahrungs- und GenussmittelindustrieJahr

	Exports	Imports	Saldo
2013	5,44 Mrd. €	4,77 Mrd. €	+0,66 Mrd. €
2014	5,57 Mrd. €	4,89 Mrd. €	+0,67 Mrd. €
2015	5,97 Mrd. €	5,05 Mrd. €	

Quelle: Statistik Austria

# Livestock sector in AUT



*AT levels of self sufficiency / import / exports 2013*

	<b>Self-sufficiency rate</b>	<b>Import*</b>	<b>Export*</b>
cattle (with calves)	146 %	71.000 t	140.000** t
pigs	106 %	220.000 t	246.000 t
poultry	70 %	127.000 t	74.000 t
eggs	81 %	36.000 t	10.500 t
small ruminants	81 %	2.400 t	360 t
horses	249 %	85 t	490 t
fish	5 %	70.000 t	4.700t

- $\Sigma$  Live and processed
- \*\* very volatile

# Challenges



*Challenge: structural change, **concentration***

	Livestock			holdings		
	1995	2013		1995	2013	
cattle	2.300.000	2.000.000*	↓	117.000	66.000	↓↓
pigs	3.700.000	2.900.000	↓	112.000	27.000	↓↓
sheep	365.000	357.000	~	22.000	14.000	↓↓
goats	54.000	72.000	↑	15.000	10.000	↓↓
horses		120.000			-	
poultry		12.400.000			71.000	
bee hives		368.000			25.000	
fish/AQ		3.300 t			190	

***Livestock numbers decrease moderately,  
large numbers of farm operations drop out of business***

# Worth the climb

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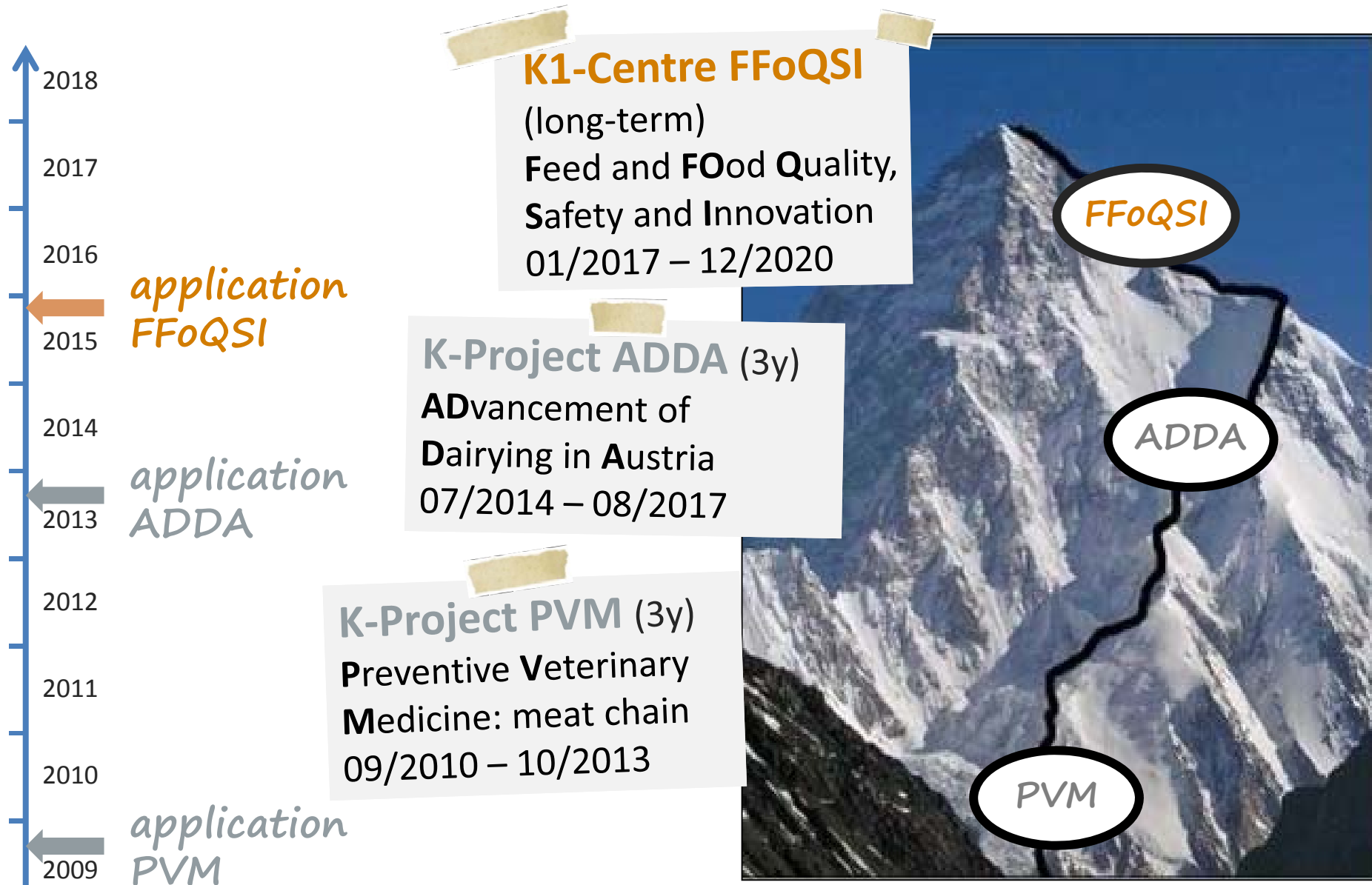


## *Austrian food industry*

- **goods worth 3.6% of GNP**
- **27,800 employees**
- **10 billion € yearly sales**
- **Research expenditure 0,36%**



# The steep ascent to K1



# SWOT feed & food production



## Weaknesses / Challenges

National scientific landscape fragmented



Trans-disciplinary, integrated research along feed and food chains

Research potential of research not fully exploited by companies



Lasting one-stop-shop for science driven innovation

Structural deficiencies in research management at SME level



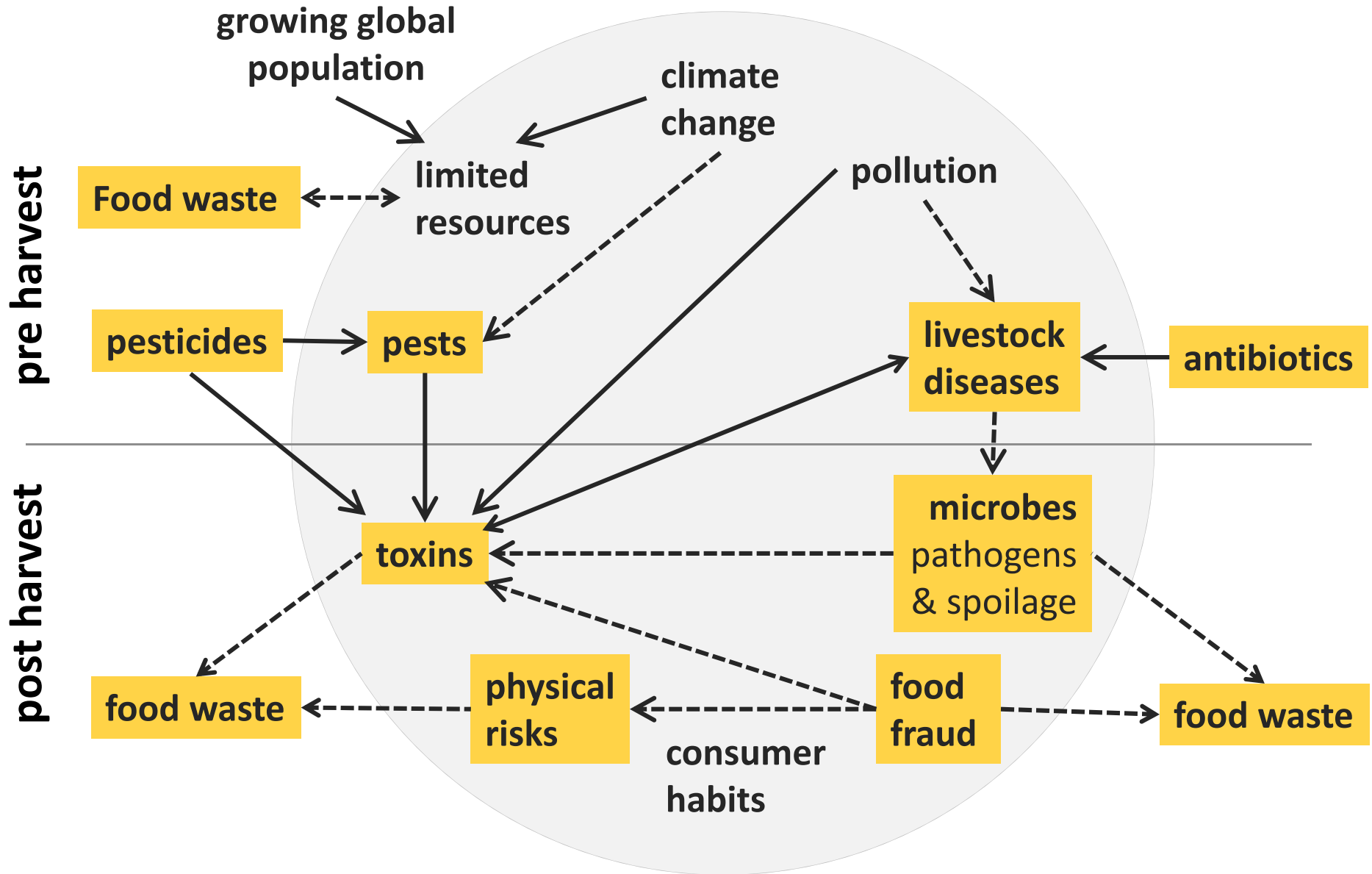
Easy access to professionally managed high level research

Lack of problem solving capacities in companies



Pool of qualified staff; consulting in non-K

# Main food-related risks



# Our vision

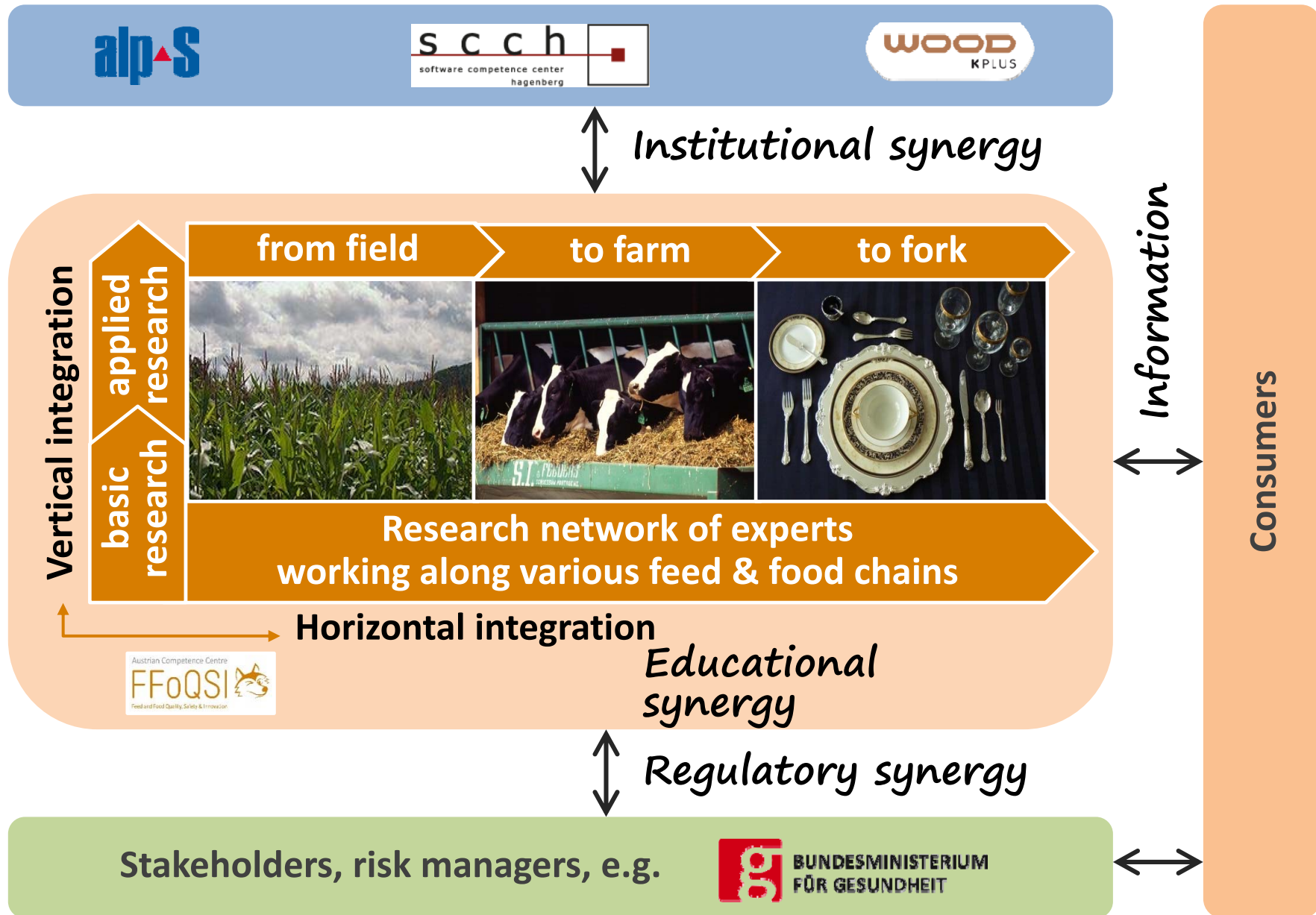


*By 2025 FFoQSI will be...*

- internationally among most recognized interdisciplinary research centres*
- a popular employer, inspiring and training young talents for top-level research*



# Expected synergies & impact



# 34 company partners



pre harvest


post harvest




# 34 company partners



pre harvest

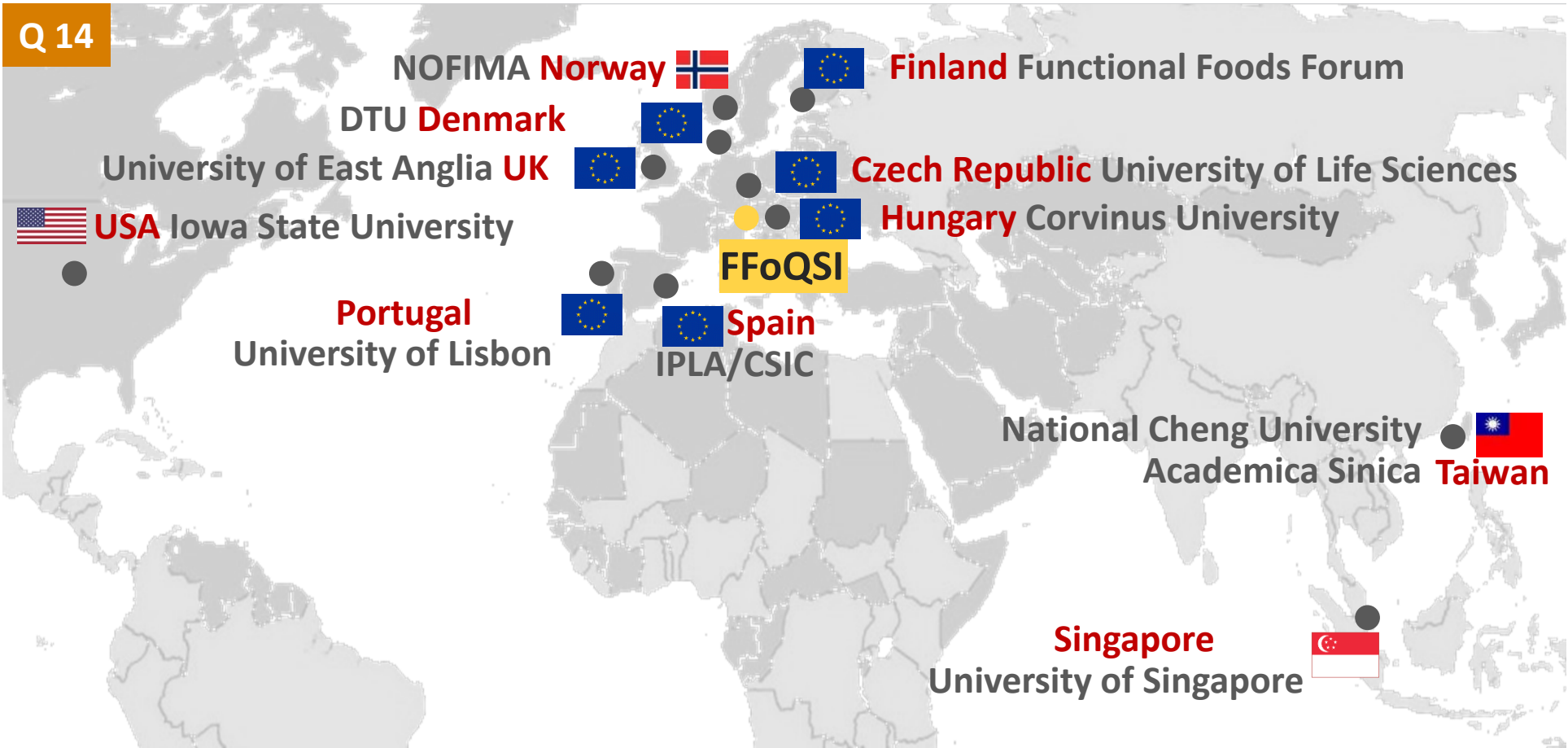
- 14 international – 8 with HQ in Austria
- 9 highly export-oriented – all with HQ in Austria

post harvest

- 44% SMEs – 15 of 34



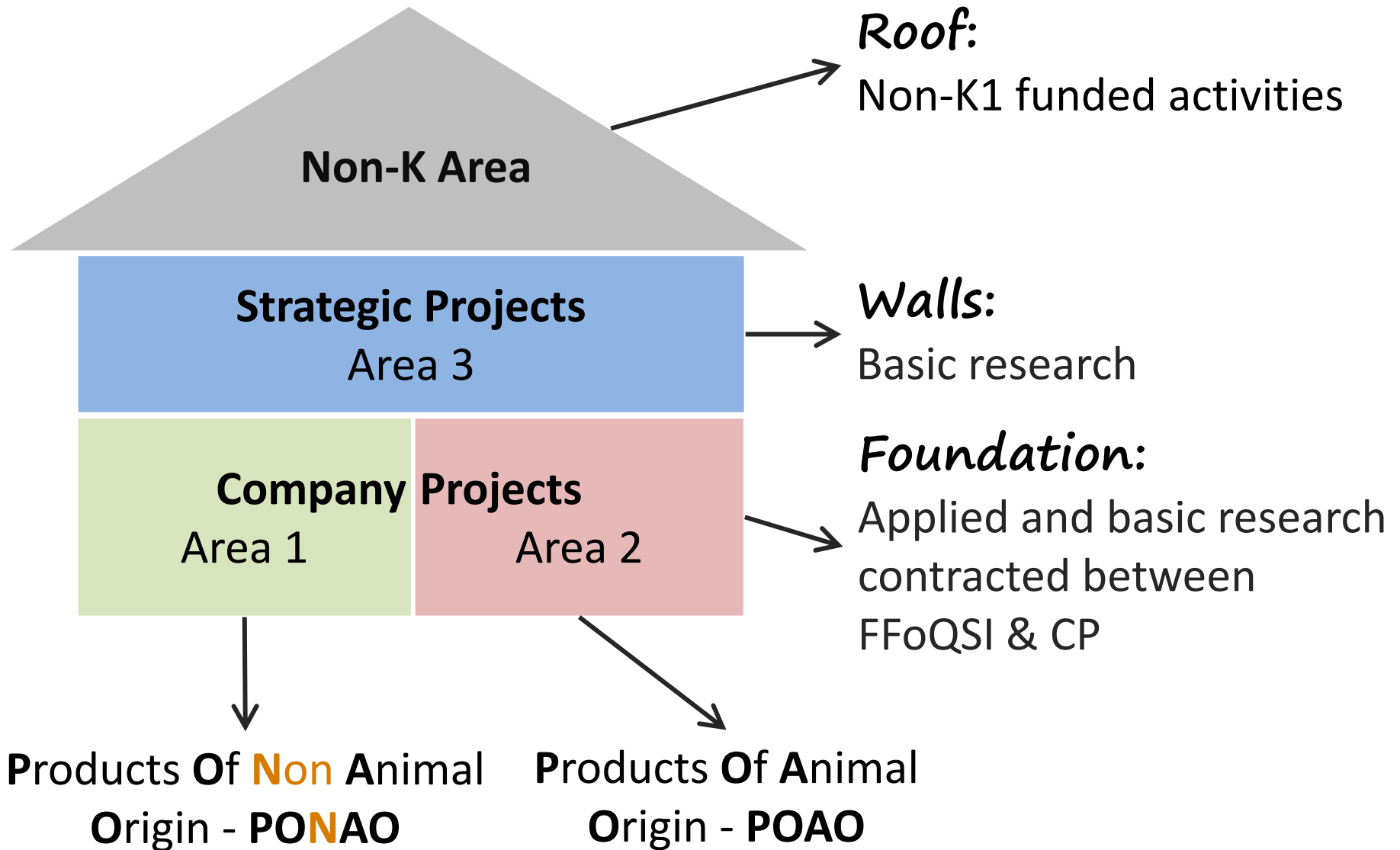
# 19 associated partners



- Austria** Institute of Applied Statistics and Computing (BOKU), **Vienna**
- Institute of Veterinary Public Health (Vetmeduni Vienna), **Vienna**
- Federal Institute of Alpine Dairying, Rotholz, **Tyrol**
- Federal Institute of Education and Research Francisco Josephinum, **Niederösterreich**
- AIT, Environmental Resources & Technologies, **Niederösterreich**



# FFoQSI's house of activities



# Educational synergy



## *Academy of Applied Feed and Food Science*

### Internal

lectures &  
expert talks

symposia,  
conferences,  
workshops

visiting  
scholars  
programme

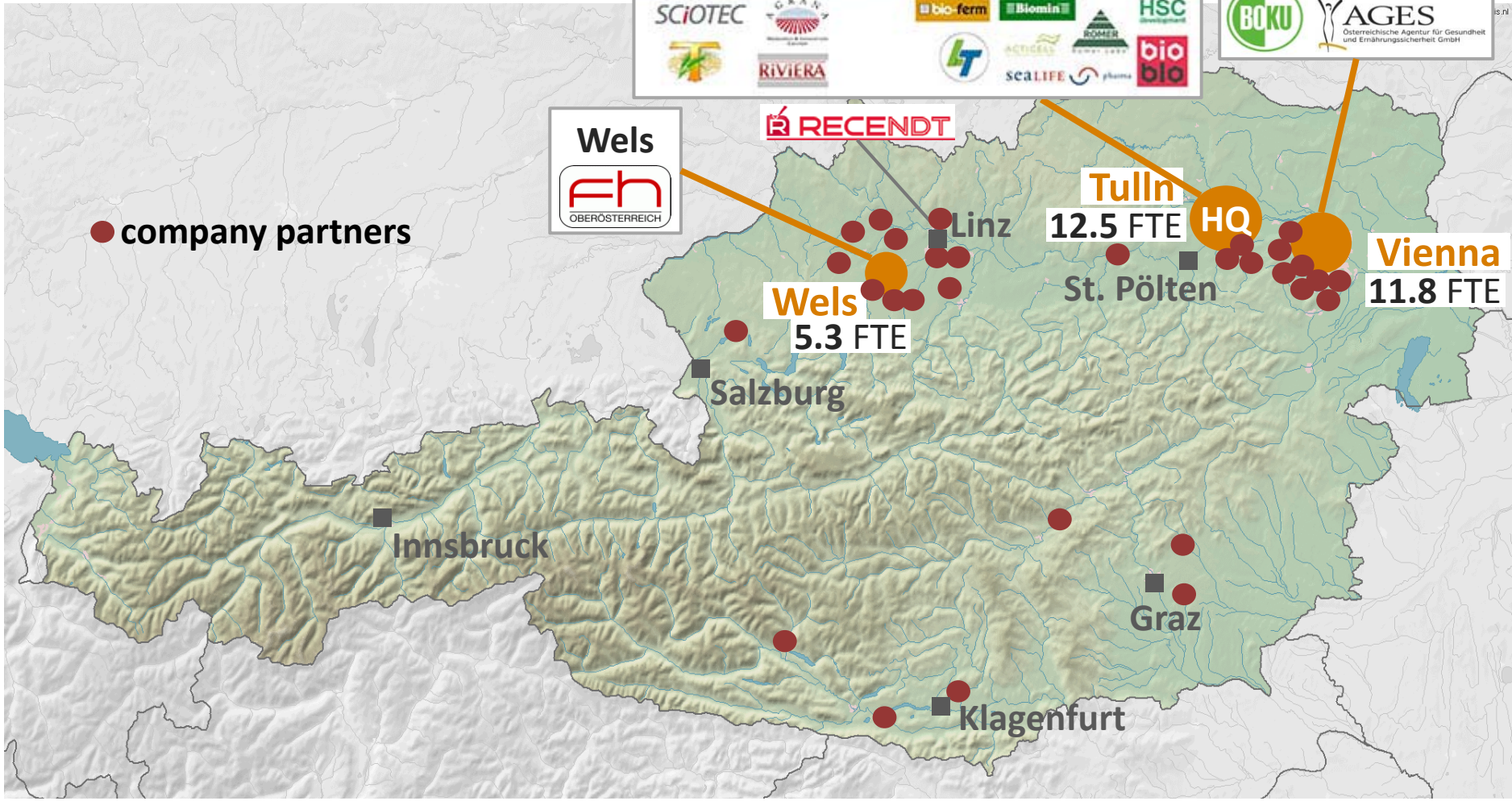
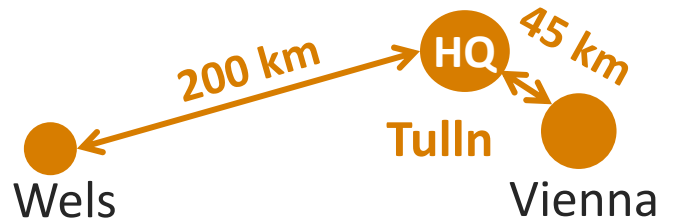


### External

KIC  
Food4Future

summer  
school  
for selected  
students and  
researchers

# Location



## Vetmeduni – University for Veterinary Medicine



- Founded in 1765
- ~ 2.500 Students; 130 graduates per year; High score of satisfaction; 27% foreign students; Global QS Ranking (Veterinary Medicine): Rank 37
- ~ 1400 Employees (VZÄ); 500 Scientists; ~ 40 Professors, ~ 70 Associated Professors
- Runs an Animal hospital (about 30.000 patients per year)
- 3 ERC grants, numerous EU grants, ~ 20 FWF projects, participation to excellence programmes (FWF, COMET, Christian Doppler, WWTF, FFG...)
- ~ 300-400 per-reviewed papers per year (SCI),
- 5 Departments
- 1 Site (Floridsdorf Vienna) and 7 support facilities



# BOKU – University for Natural Resources and Life Science



- Founded in 1872
- ~ 12.500 Students (8 Bachelor, 26 Master Programmes; 10 Master Programme in Englisch); 2 PhD Programmes; 1300 graduates per year; High score of satisfaction; 18% foreign students; Green University ranking: Nr. 12 in Europe, Nr. 1 in German speaking countries
- ~ 1600 Employees (VZÄ); 1062 Scientists; ~ 72 Professoren (50% Non-Austrian origin), ~ 130 Associated Professors
- ~ 700 pending projects, ~ 100 EU grants, ~ 110 FWF projects, participation to excellence programmes (FWF, COMET, Christian Doppler, Laura Bassi, WWTF,...)
- ~ 2500 scientific papers per year (~ 560 SCI),
- 15 Departments
- 3 Sites (Türkenschanze, Muthgasse, Tulln) and 6 support facilities

# University for Natural Resources and Life Science - Site Tulln

## IFA

Interuniversitäres Department für  
Agrarbiotechnologie  
Konrad-Lorenzstr. 20



## UFT

Universitäres Forschungszentrum  
Tulln (Ingeborg Dirmhirn Haus)  
Konrad-Lorenzstr. 24



# Site Tulln – Facts and Features



## UFT

- 15.000m2 Laboratory - and infrastrukture
- 5 – 7 Seminar rooms
- App. 220 BOKU employees (another 100 AIT)

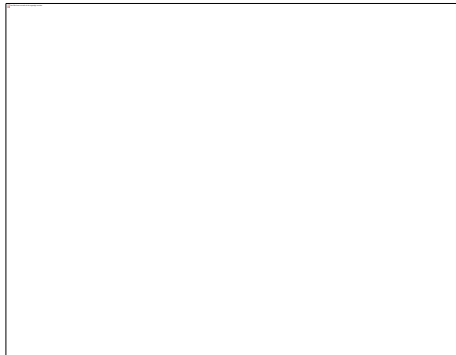
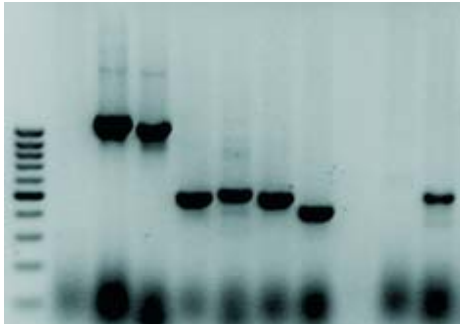


## IFA

- 13.000m2 Laboratory - and infrastrukture
- Plenary room
- App. 140 BOKU employees, another 50 ACIB employees (K2 Centre)



# Scientific Initiative BiRT



## Biological Resources

- Genetic Resources
- Biological
- Nachwachsende Rohstoffe
- Bioanalytics

## Healthy Environment – Safe foods

- Soil– Ecology – Geochemistry
- Plant production
- Viniculture
- Feed- and Food Safety
- Animal Production

## Biobased Materials – Microbial Technologies

- Environmental Biotechnology
- Natural Compounds





## Schools of the Upper Austria University of Applied Sciences

Informatics  
Communications  
Media

HAGENBERG Campus

Applied Health  
Social Sciences

LINZ Campus

Management

STEYR Campus

Engineering

WELS Campus

# Wels Campus



- established in 1994
- ~ 2000 students
  - 13 Bachelor's programmes
  - 12 Master's programmes
- staff: ~ 180
- full-time professors: ~ 65
- part-time lecturers: > 400

**More than 150 Courses  
taught in English**



Focus on:

- >> **Engineering & Technology**
- >> **Management & Industrial Engineering**
- >> **Energy & Environment** (Food Technology and Nutrition)



# R&D group Prof.(FH) Dr. Weghuber



- 3 PostDocs
- 2 PhD students
- 3 Research associates
- 9 undergraduate students and exchange students



## Research activities in the fields of **basic** and **applied science**:

- Identification and characterization of plant raw materials, extracts and their main substances
- Development and application of suitable *in-vitro* and *in-vivo* test systems
- Design and evaluation of strategies for integration of phytochemicals into (functional) food and feed products

# What does the FFoQSI say:

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...**real innovation** in multi-actor approaches **originates from** close, multi-disciplinary collaboration of **partners performing at distant positions** along a value chain...

