



# The farmers' perspective

Participatory research on phosphorus recycling for organic farming



Carlotta Hoffmann

Brussels, Dec 12<sup>th</sup> 2017

# Introducing **Bioland**



**German organic farming association**

**Members: 6800 (Jan. 2017)**

**Advisors: > 70**

**Department Research & Development**

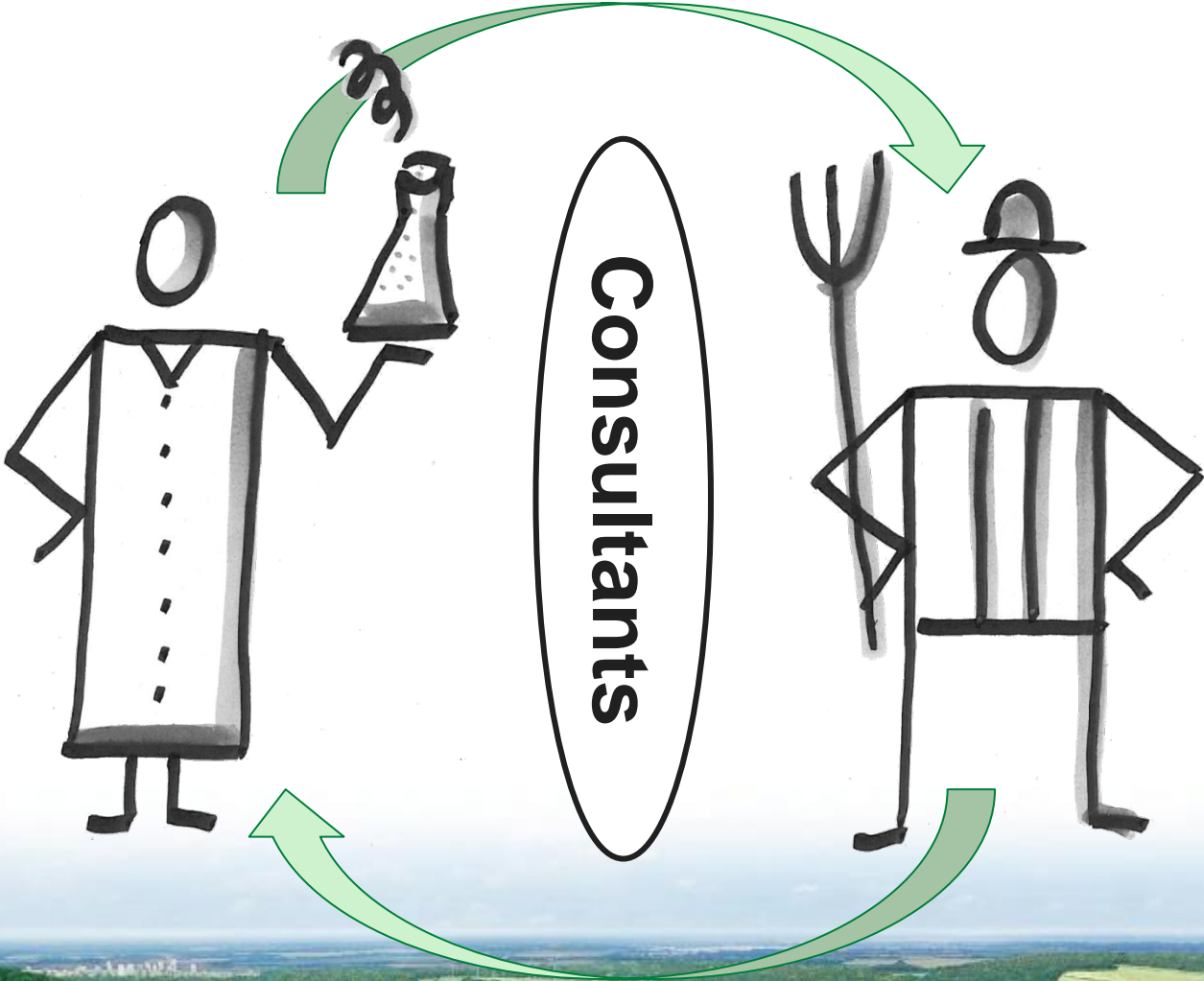
**Four staff plus regional advisors**

**Research projects (national, EU)**

**Knowledge transfer & participatory research**



# Participatory research

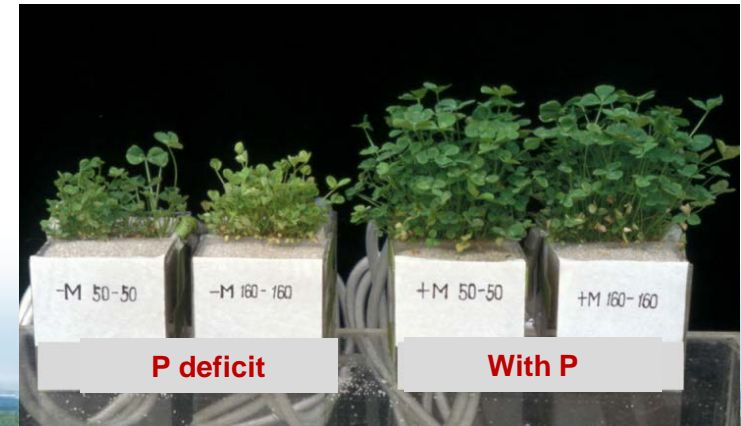


# Phosphorus deficiency

- **Decreased photosynthesis**  
colouring, energy transport
- **Stunted growth**  
P as component of nucleic acids
- **Reduced N-fixation**  
most important nitrogen source in  
organic farming!



**Deficit visible on farms!**



# Phosphorus levels in Organic farming

Class	A	B	C	D	E
<b>P content (mg P/100g soil)*</b>	<b>Below 2</b>	2,1 to 4,4	4,5 to 9	9,1 to 15	Over 15,1
<b>Share of examined fields</b>	<b>16 %</b>	25 %	35 %	18 %	6 %
<b>*CAL-method</b>					

Kolbe 2015



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# Phosphorus recycling – which criteria are important?

## LMU & Bioland – Study on P recycling acceptance in 2014

Ranking	Criterion
1	Absence of pollutants
2	Effect
3	Energy input
4	Transparency
5	Price
6	Applicability
7	Public acceptance
8	Visually distinguishable from synthetic fertilizer



- Overall acceptance by farmers
- Requirements for **processes & products**
- **We need special criteria for organic farming!**

Jedelhauser, 2014

# Nurec4org project

Funded by:



**Duration:** 01/2017 – 12/2018

**Aim:** determining the possible application of recycled P products in organic farming

**Partners:** KOMPETENZZENTRUM  
WasserBerlin

iASP





# Nurec4org project

## Objectives:

- Defining acceptance criteria and process requirements

### **Inclusion of stakeholders of the organic sector**

- Exploring market potential and product availability
- Assessment of potential risks and environmental effects
- Have results available for the admission process

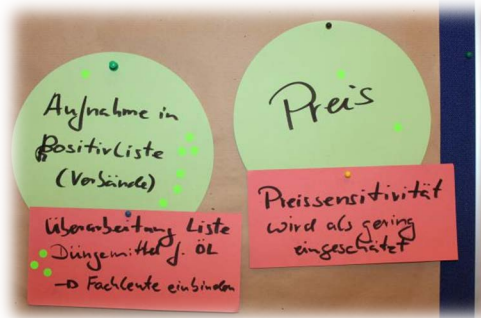
# Nurec4org project

## Participation and dialogue

### Stakeholder workshop – November 16<sup>th</sup>, 2017 in Frankfurt

Over 30 participants

- Farmers
- Advisers
- Sector representatives
- Policy makers
- Plant operators



# Results – Workshop

## Knowledge transfer and transparency

- We need more dialogue between the respective stakeholders!

## Product requirements

- Most important: potency of the product combined with low level of hazardous components

## Process requirements

- Assessment of environmental impact & energy input

## Public awareness

- Building up public awareness for importance of nutrient recycling

# Outlook

## Next steps in the project

- Criteria catalogue → survey (to reach more farmers)
- Pot trials
- Risk and life cycle assessment
- Final workshop with all stakeholders

## General conclusion

- Positive attitude towards recycling products
- Further participation in the admission process desired

**Thank you for your attention!**



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