National seminar

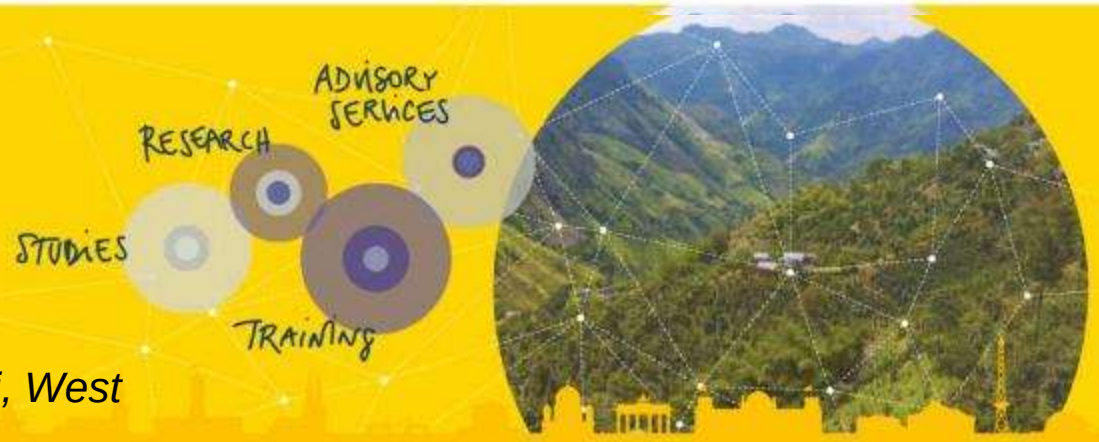
"Farmer researchers and organic agriculture – examples from Europe and lessons learned from CRAIIP"

Dr. Silke Stöber, Max Hollburg, SLE

23.10.2018 Universitas Pangandaran, Indonesia

Brot für die Welt

Brot für die Welt – Evangelischer Entwicklungsdienst



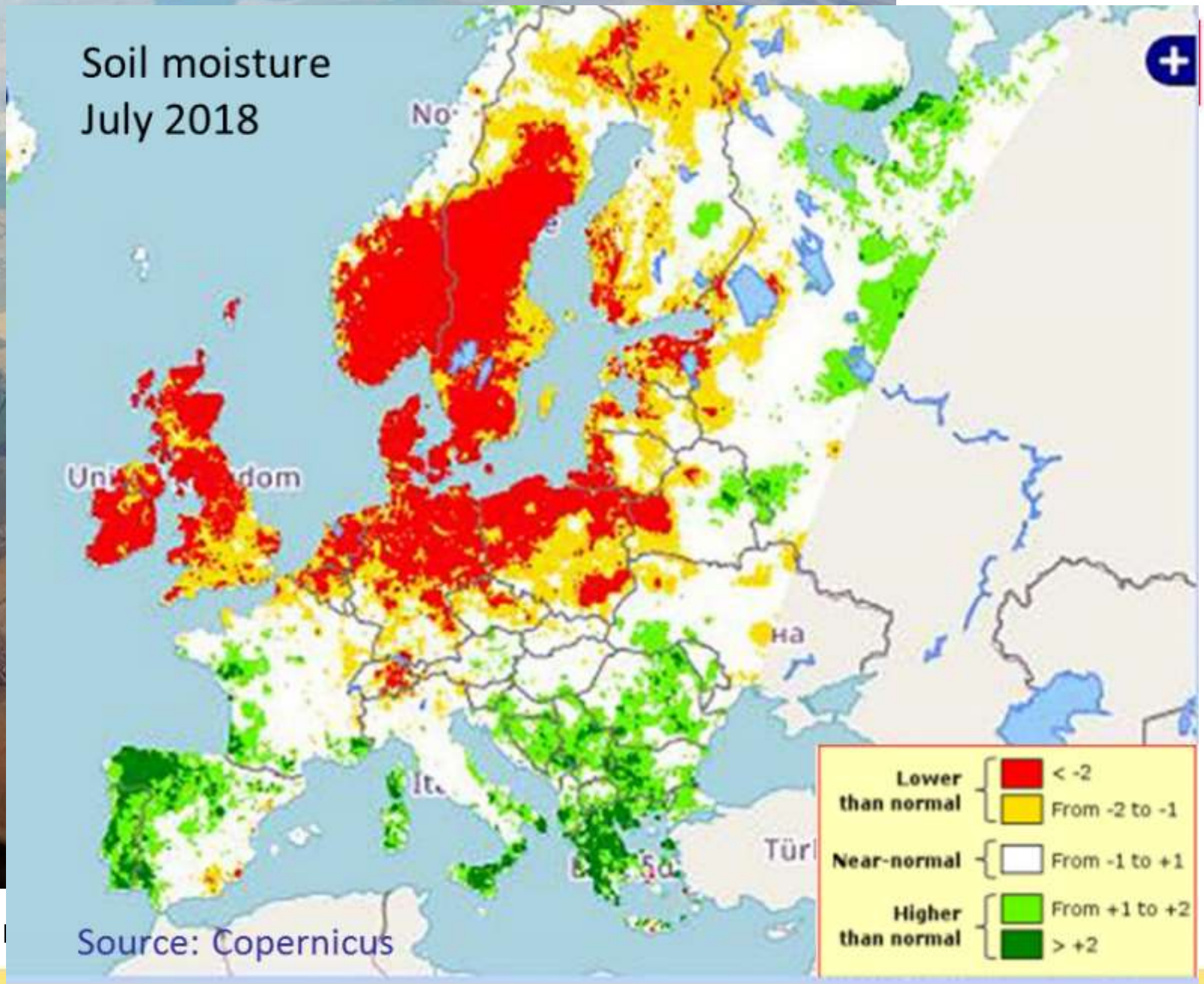
Climate resilient investigation and innovation project – South Sulawesi, West and Central Java

Outline

- Simple show: Why climate-resilient agriculture matters for Indonesia?
- Climate change impact on agriculture in Germany and Indonesia
- Benefits of organic agriculture
- Examples from Europe: Netherlands
- Adaptation practices in Indonesia
- Conclusion

Two main messages:

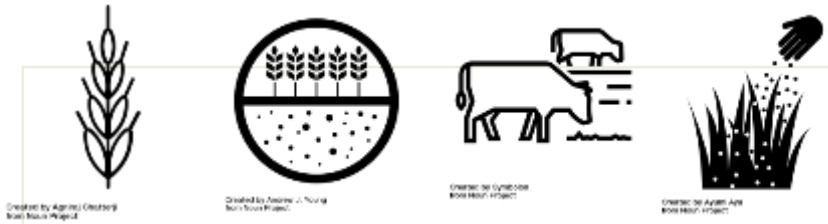
- Global temperature keeps rising
- CO_2 concentration keeps rising


Soil moisture
July 2018
Lower than normal
< -2
From -2 to -1
Near-normal
From -1 to +1
Higher than normal
From +1 to +2
> +2
Source: Copernicus

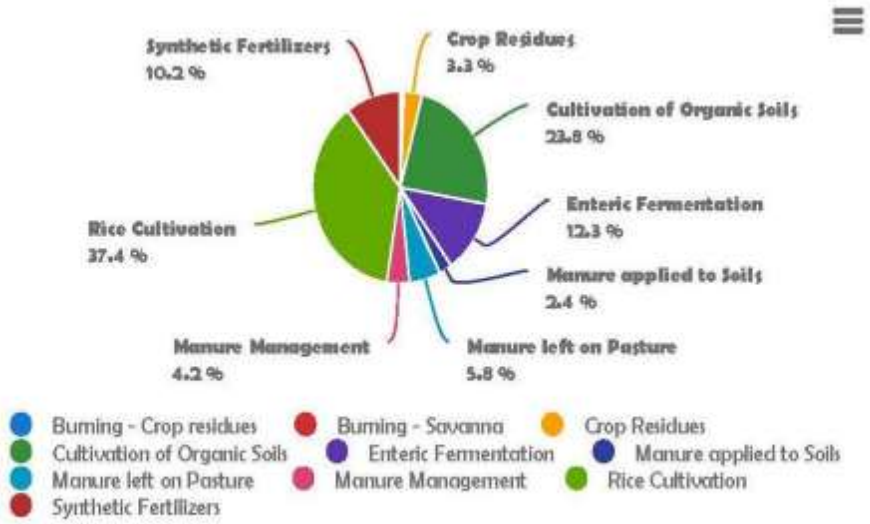
Organic olive grove with cover crops compared to a conventional grove with bare soil. Deifontes, Andalusia, Spain. 2008.

Picture source: IFOAM EU Group 2012: 17

Climate change and Agriculture



- Impacts CC = mitigation



Source: FAOSTAT Indonesia

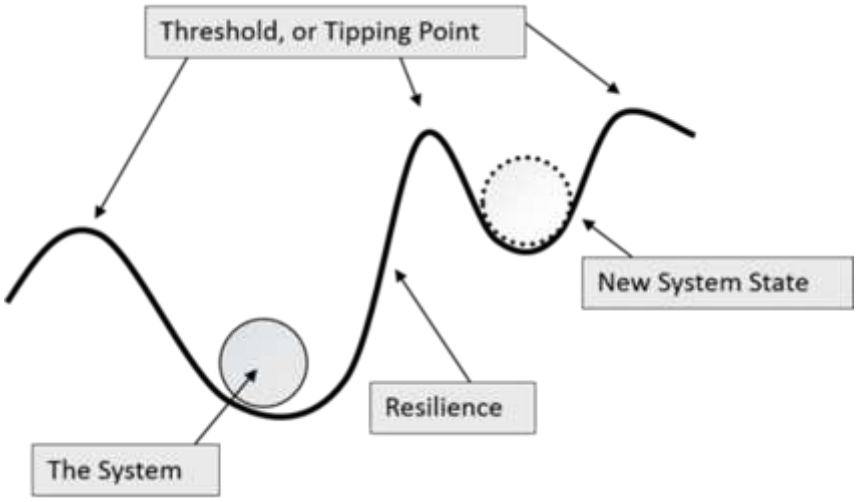
- is impacted by CC =adaptation

- impacts vary strongly per **region**
- **water** is a key issue: water scarcity and drought, extreme precipitation events and waterlogging and flooding
- increased weed, pest and disease **pressure**
- extreme events cause **stress**
- Increased **risk** in agricultural production

Source: IFOAM EU Group 2012

Adaptation = increased buffer capacity

Buffer capacity



Strategies

1. Diversification (field, farm, beyond farm)
2. Reduction of financial risk by minimal external input
3. Increase resilience (by animal, soil and plant health)
4. Weather-based insurances…!?

Source: Mueller et al 2012

Problem and solution:

What can a farmer do if the fields are getting more and more saline?

What can a farmer do if the fields are getting more and more saline?

Story of Farmer family *van Wesemael*

"Saline soil" = EC > 4 dS/m (Soil Science Society of America)
Here: 8 EC

Picture source: http://www.opdemariahoeve.nl/home

Sea cabbage (crambe maritima)

Idea: from white coast Dover

Follow up: Cooperation with University (analyse nutrients)

Income: Farmer family

- Price 120 €/kg (2 M IDR)
- x 1500 kg/season = 180,000€ or 2.9 billion IDR revenue

Picture source: own 19.09.2018

Sea cabbage production process

- 1st year: growing roots outside (550,000 roots)
- 2nd year: sprouts inside
- Harvest time: 8-11 AM
- 4 months, each day 12 kg

Picture source: own 19.09.2018

Picture source: https://www.gastropedia.nl/artikel/zeekool-crambe-maritima/

Saline Potatoes

- Smaller and harder than normal potatoes, yield lower
- Not salty!
- Sea Water is pumped from the sea and sprayed on potatoes

Picture source: own 19.09.2018

eration:
nce and farmer

Zouttolerante aardappel binnen Regionaal bod Proeftuin Zoet Water

Verslag van het volgen van aardappelrassen onder verschillende zoutregimes gedurende 2 groeiseizoenen

Juni 2017

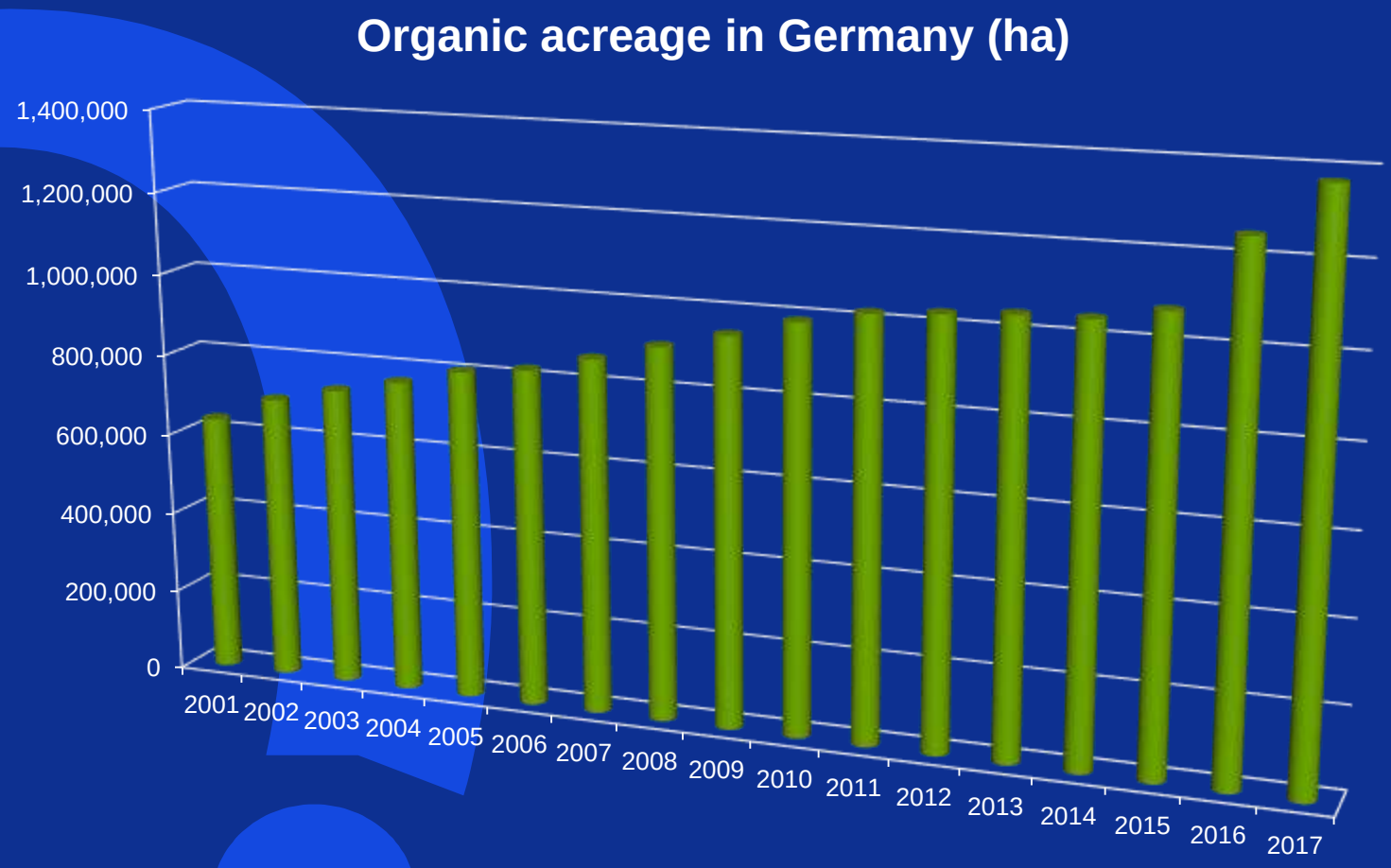
Auteurs:
Guus Heselmans (Meijer); Perry de Louw (Deltares); Corstiaan Kempenaar (Meijer); Edvard Ahlrichs (Deltares); Inez Terpstra (Meijer); Joost Delsman (Deltares); Sheila Ball (Deltares); Cheryl van Kempen (Deltares); Esther van Baaren (Deltares); Jean-Pierre van Wesemael (Saeftinge Zilt)

ılatie Z2014-049 in de zoute behandeling en rechts

What is the potential of **Organic agriculture**?

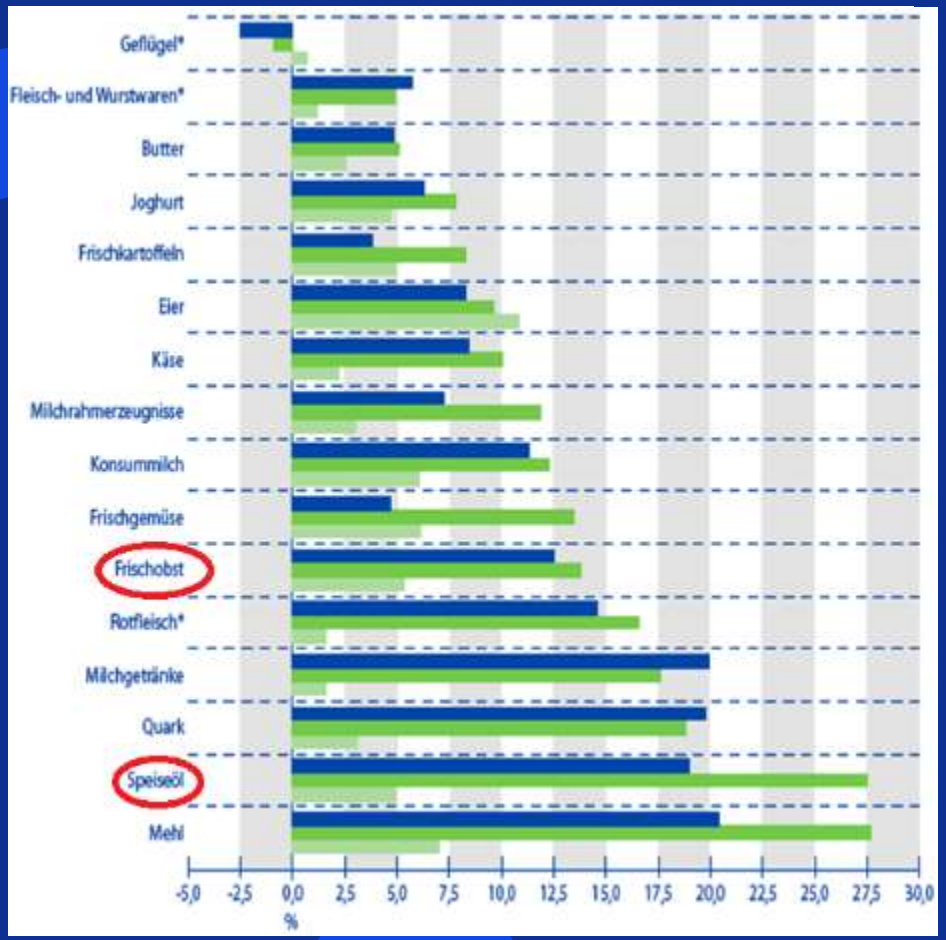
Source: slide courtesy:BÖWL

Growth of Organic Area



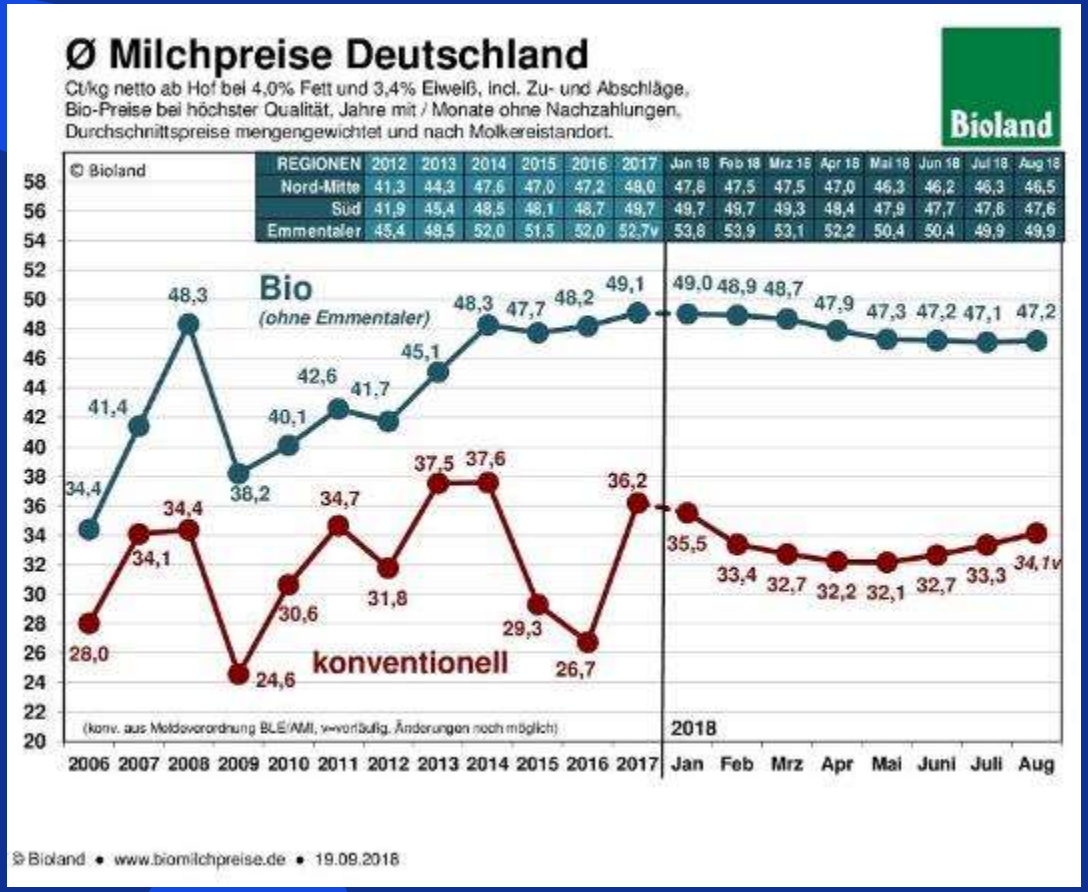
Source: slide courtesy:BÖWL

German Organic Market: Topsellers



Source: slide courtesy:BÖWL

Organic Agriculture: Growing Demand – Stable Prices



Why does a farmer convert to organic agriculture?

Here is the Story of the farmer F.J.J. de Koning

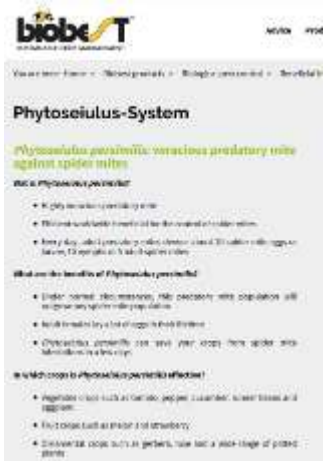
„I changed because conventional prices very low and farming was business as usual, no challenge, just follow what science advised"

Picture source: own

Crop rotation

Healthy soil, living soil, good balance of nutrients

Champignon compost, horse and chicken manure, steamed at 70-120 degree C: high PH, high in organic matter



Healthy plant

Use of CO_2 from heating for plant growth

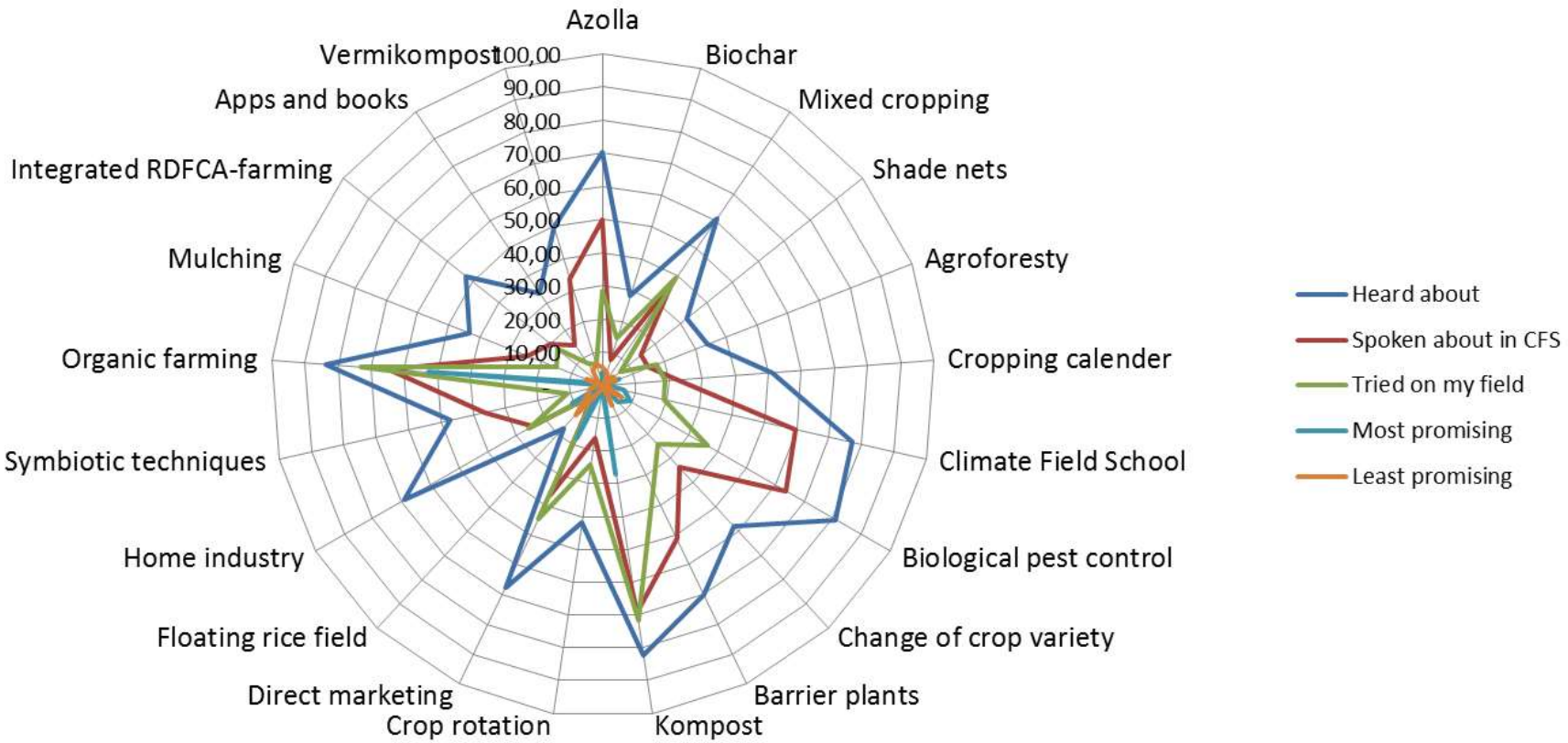
40 permanent and 60 seasonal labour from 20 countries

Processing and Marketing

25% Holland organic shops
17% organic shops Germany
68% supermarkets UK; Scandinavia, Germany

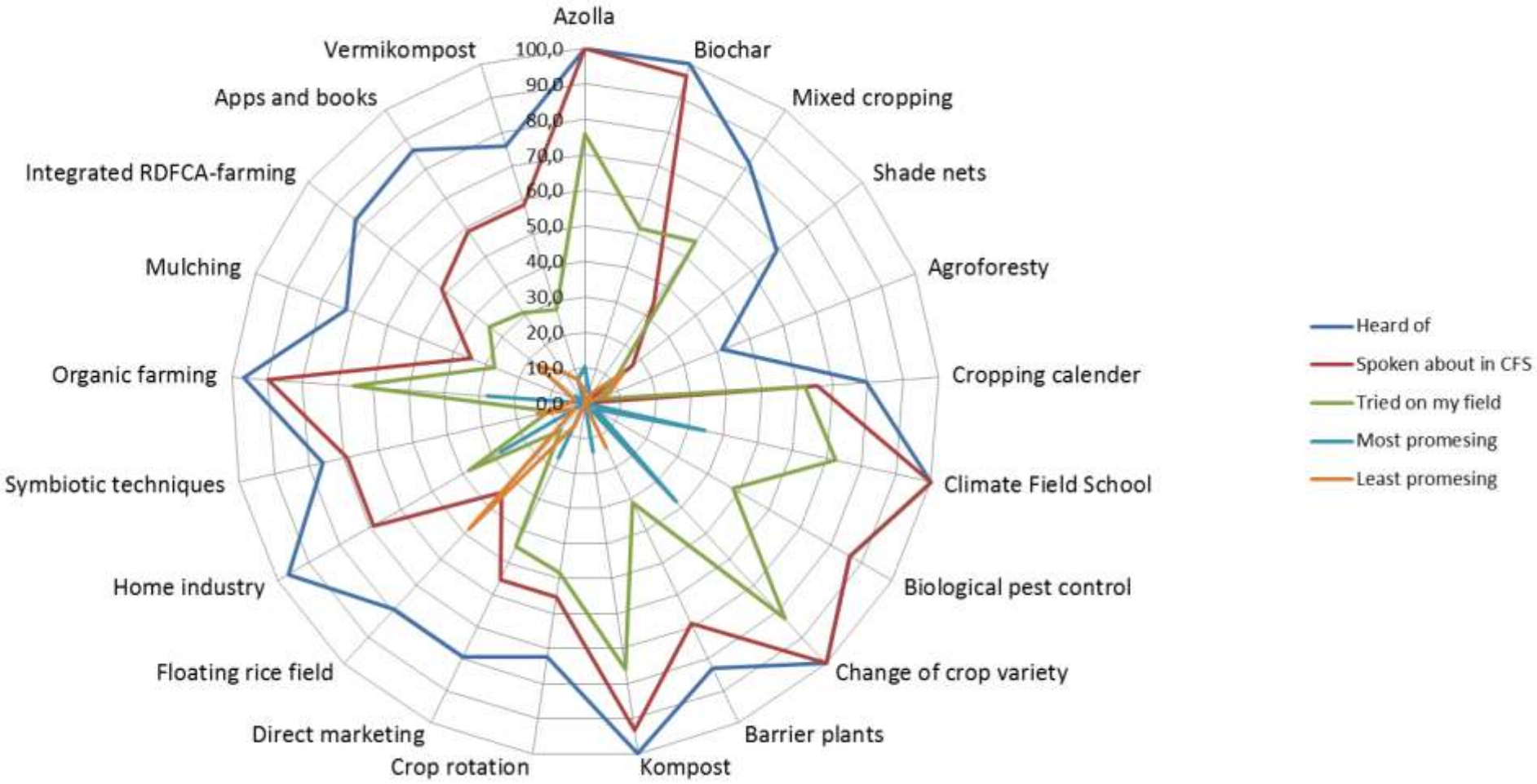
Direct marketing

How do **farmers in Pangandaran/Cilacap and Toraja** evaluate adaptation strategies?



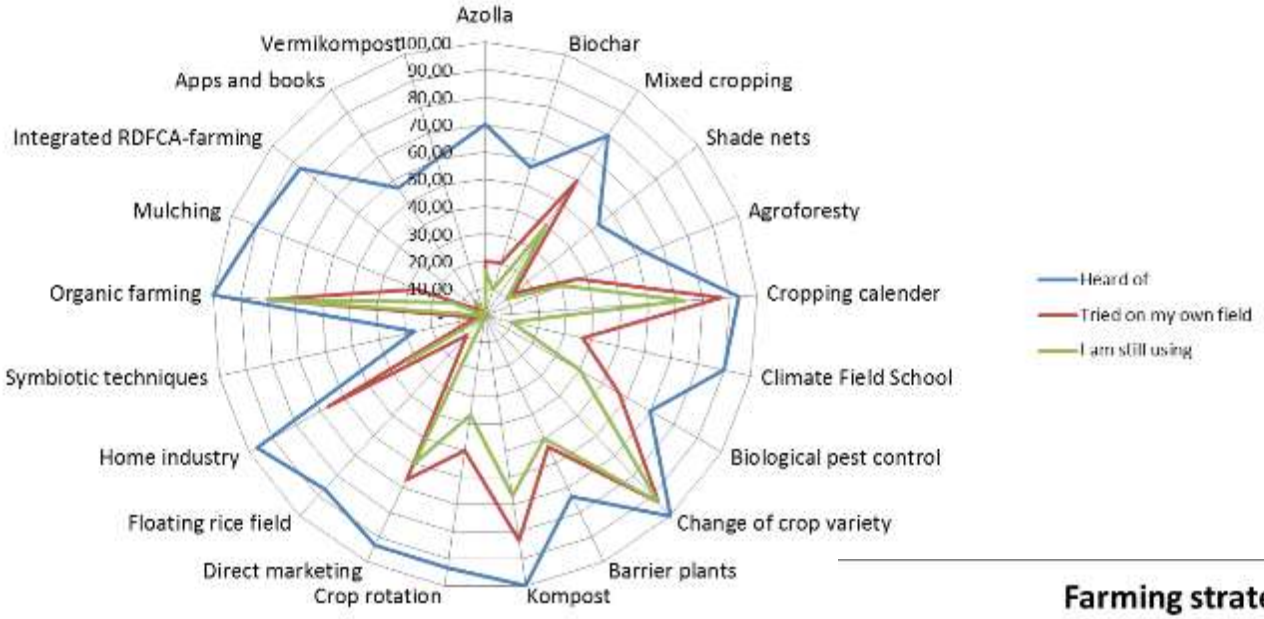
Source: own survey 2018

Farming strategies of farmer researchers in Pangandaran

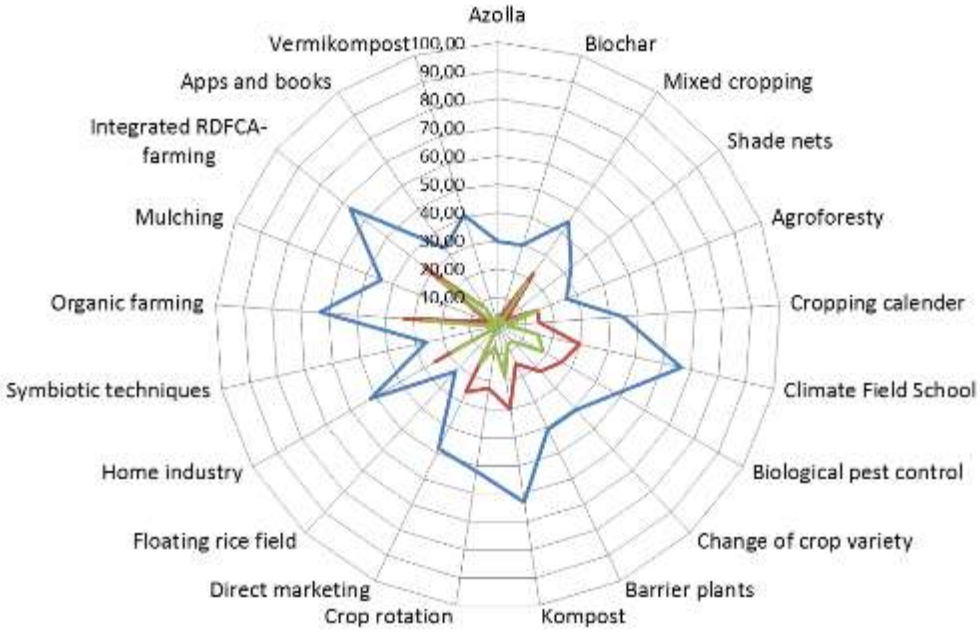


Source: own survey 2018

Farming strategies of non farmer researchers in Pangandaran



Farming strategies of non farmer researchers in Toraja



Source: own survey 2018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Sources

- BOELW
- Mueller, A., Osman-Elasha, B. and Andreasen, L. (2012). The potential of organic agriculture for contributing to climate change adaptation, in: Halberg, N. and Muller (Eds), Organic Agriculture for Sustainable Livelihoods, Routledge Publishers
- FAOSTAT
- IFOAM EU Group (2012): Organic agriculture A strategy for climate change adaptation, Brussels.