

SUSTAINABILITY IN DANISH AGRICULTURE

SURVEY REPORT

Background:

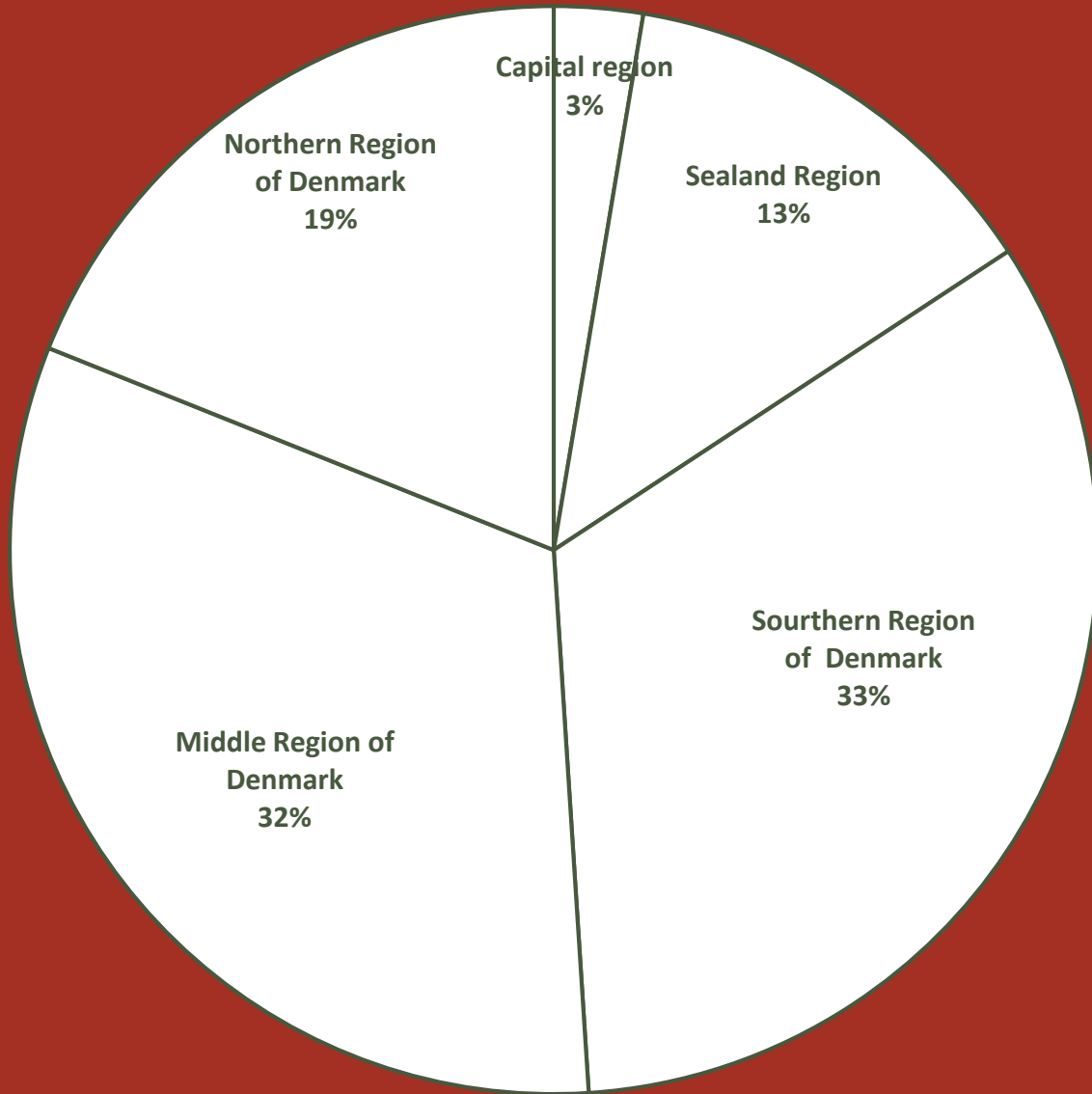
A new survey initiated by Syngenta Nordics and made by an independent institute, Aspecto Denmark in January 2020. We conducted a survey among growers perception of sustainability, climate change and the future solutions in DK. 311 answered out of 514 requested. We got very interesting findings and great insights where the growers need further support and knowledge in the future – both for conventional and organic farmers.



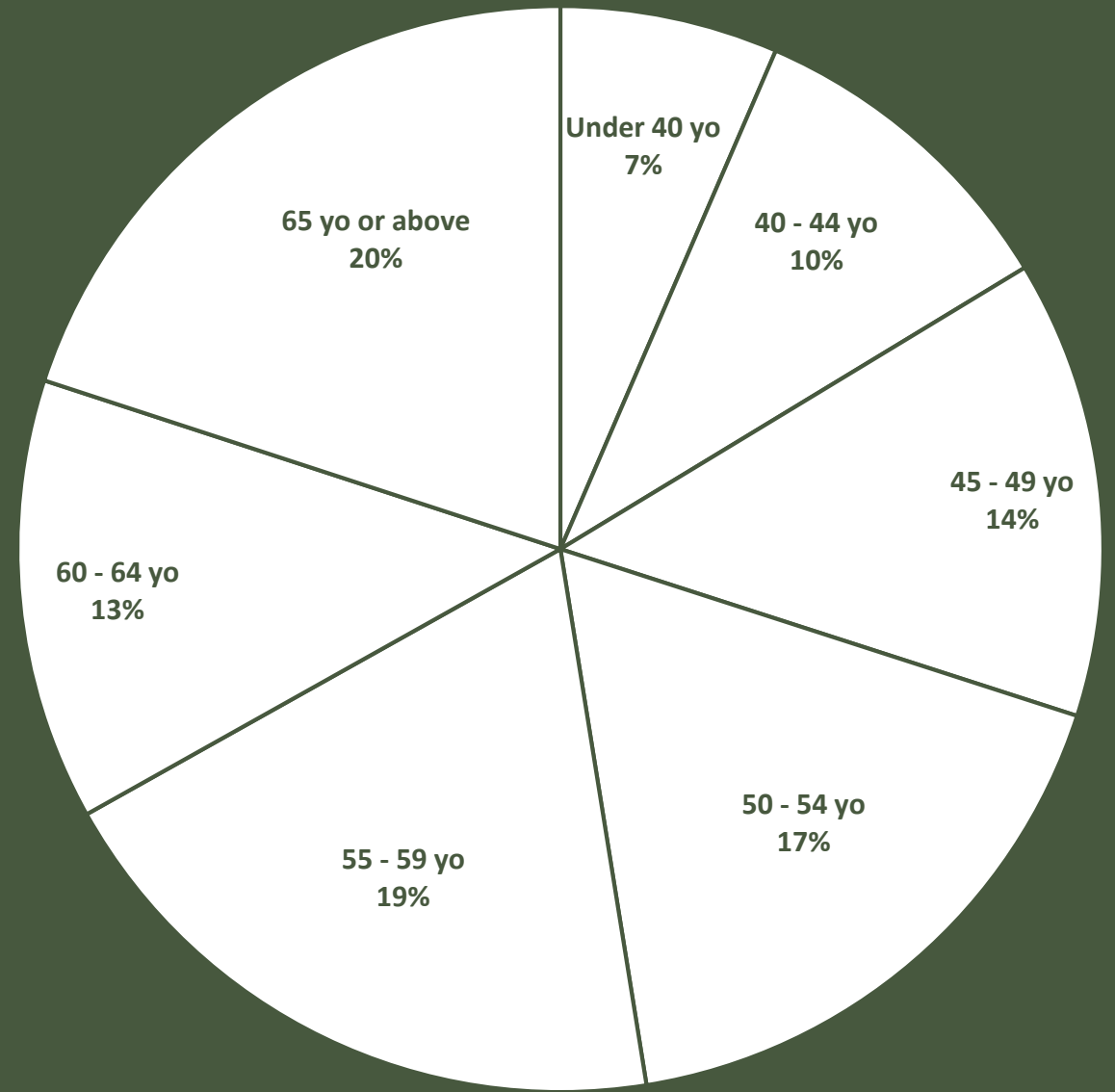
Demographics on the 311
respondents out of 514
requested in the survey



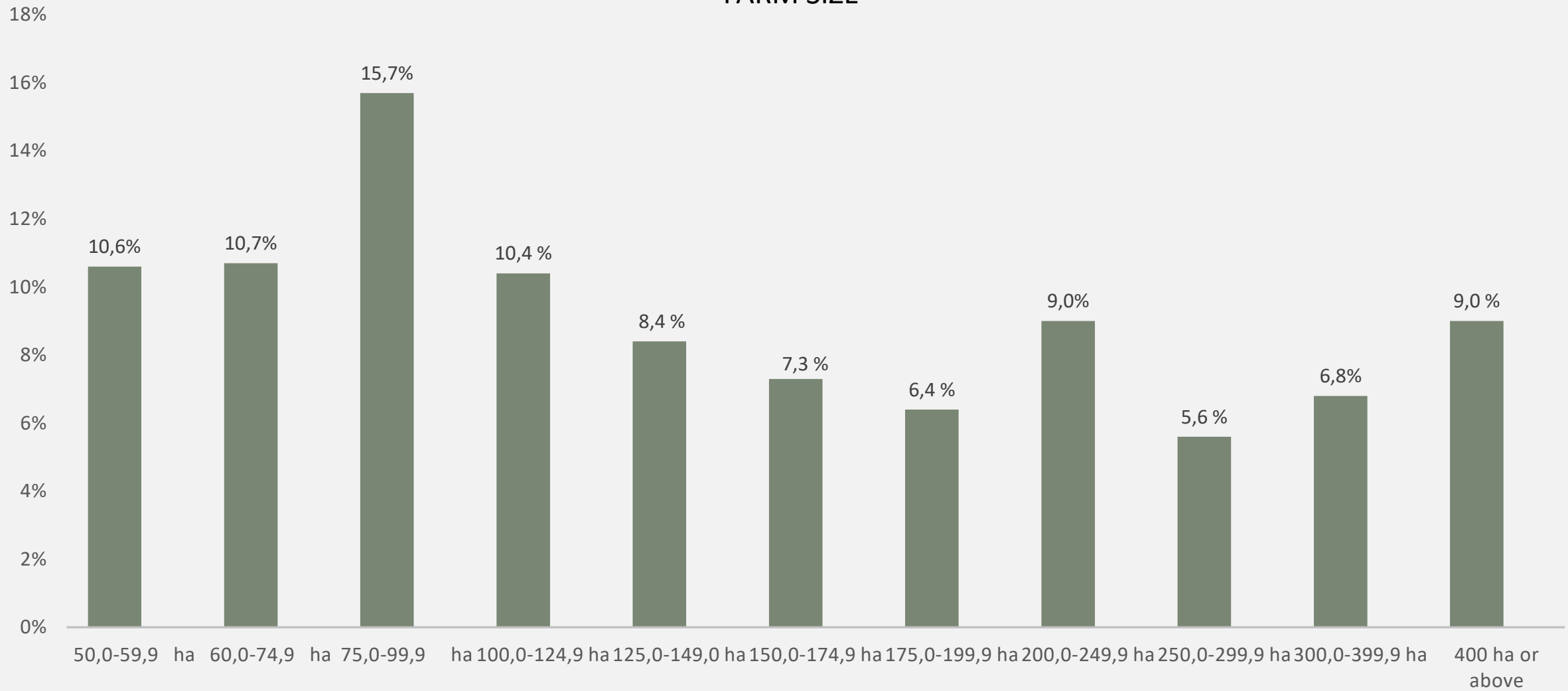
GEOGRAPHICS



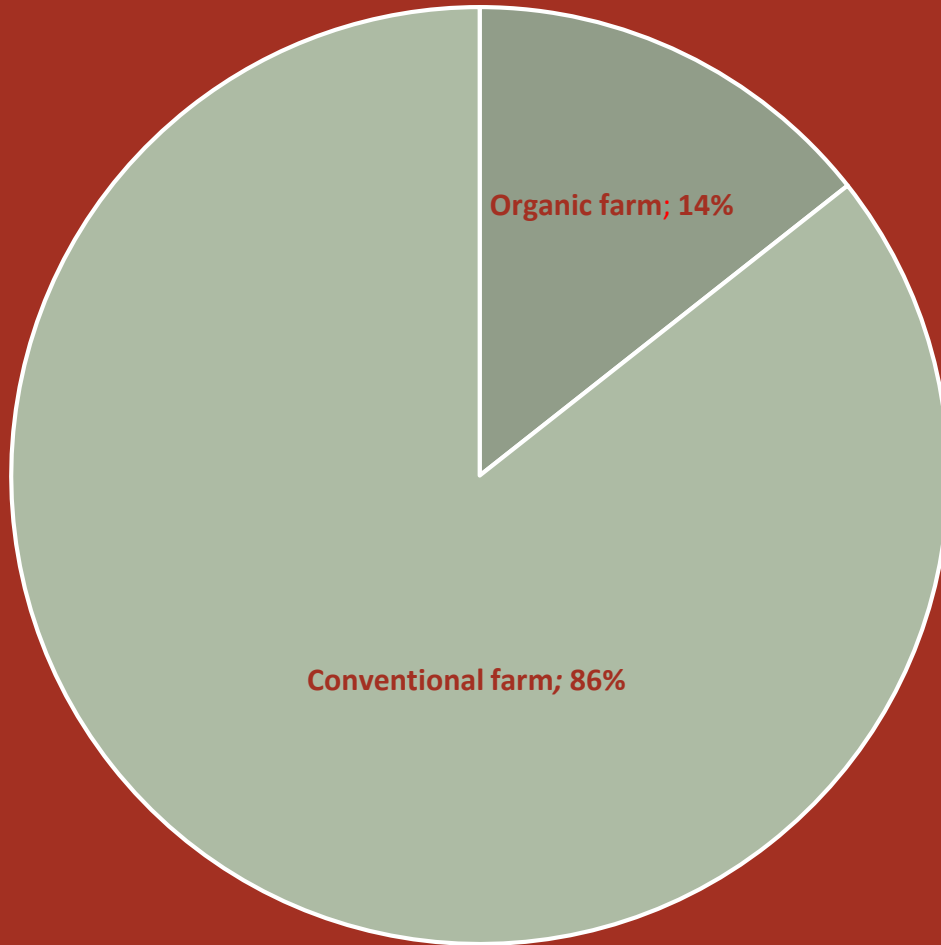
AGE



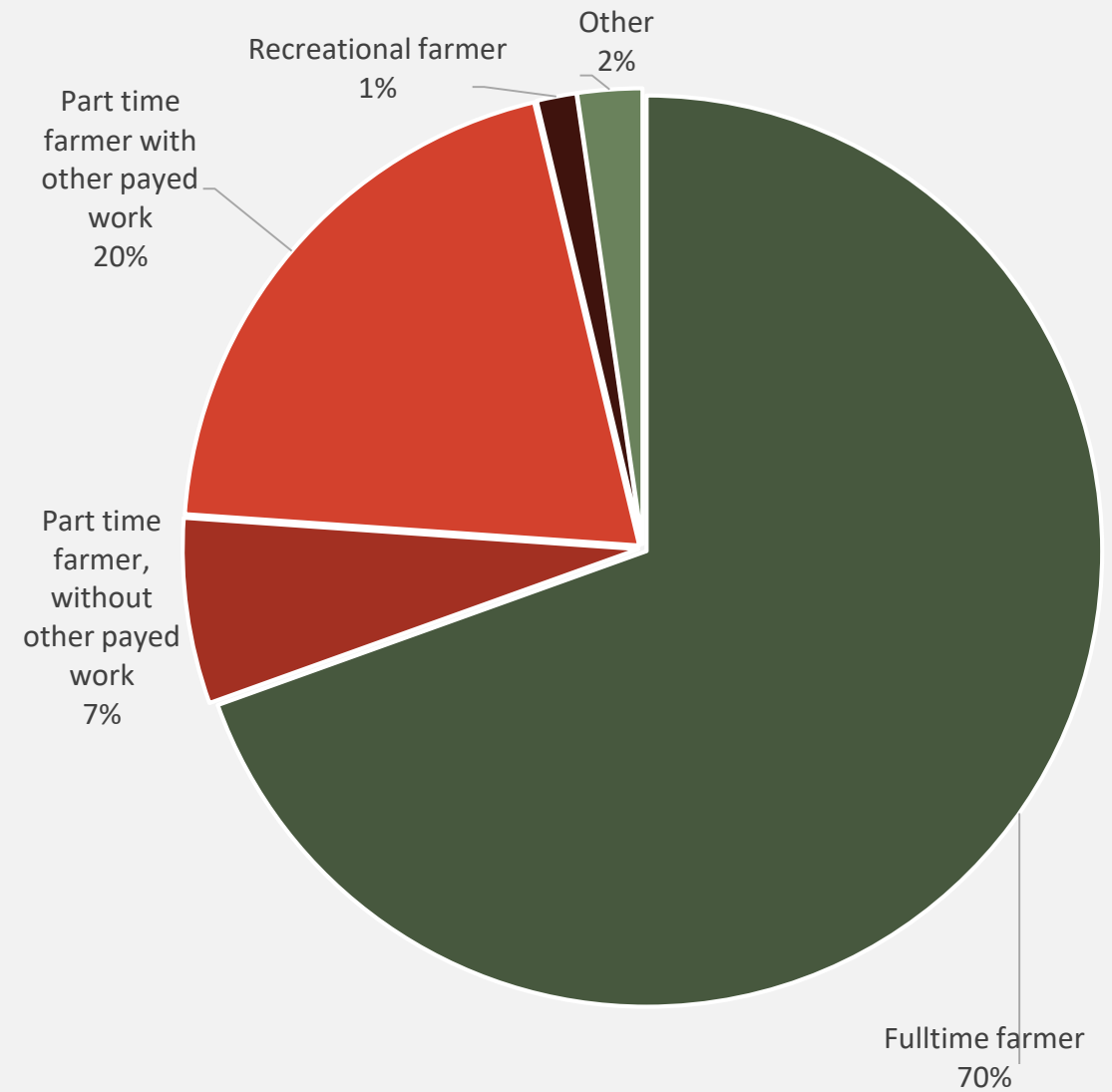
FARM SIZE



FARM TYPE



PART-TIME VS FULL-TIME



Results



Used crop protection/Future trends in crop protection

| | What methods do you use to day? (more than one answer allowed) | What method do you believe will dominate the future? |
|-----------------------------|---|--|
| Chemical crop protection | 87,4 % | 53,5 % |
| Biological crop protection | 5,9 % | 18,9 % |
| Mechanical crop protection* | 44,7 % | 27,6 % |

* Covering IPM, precision spraying, digital solutions etc.

Sustainability

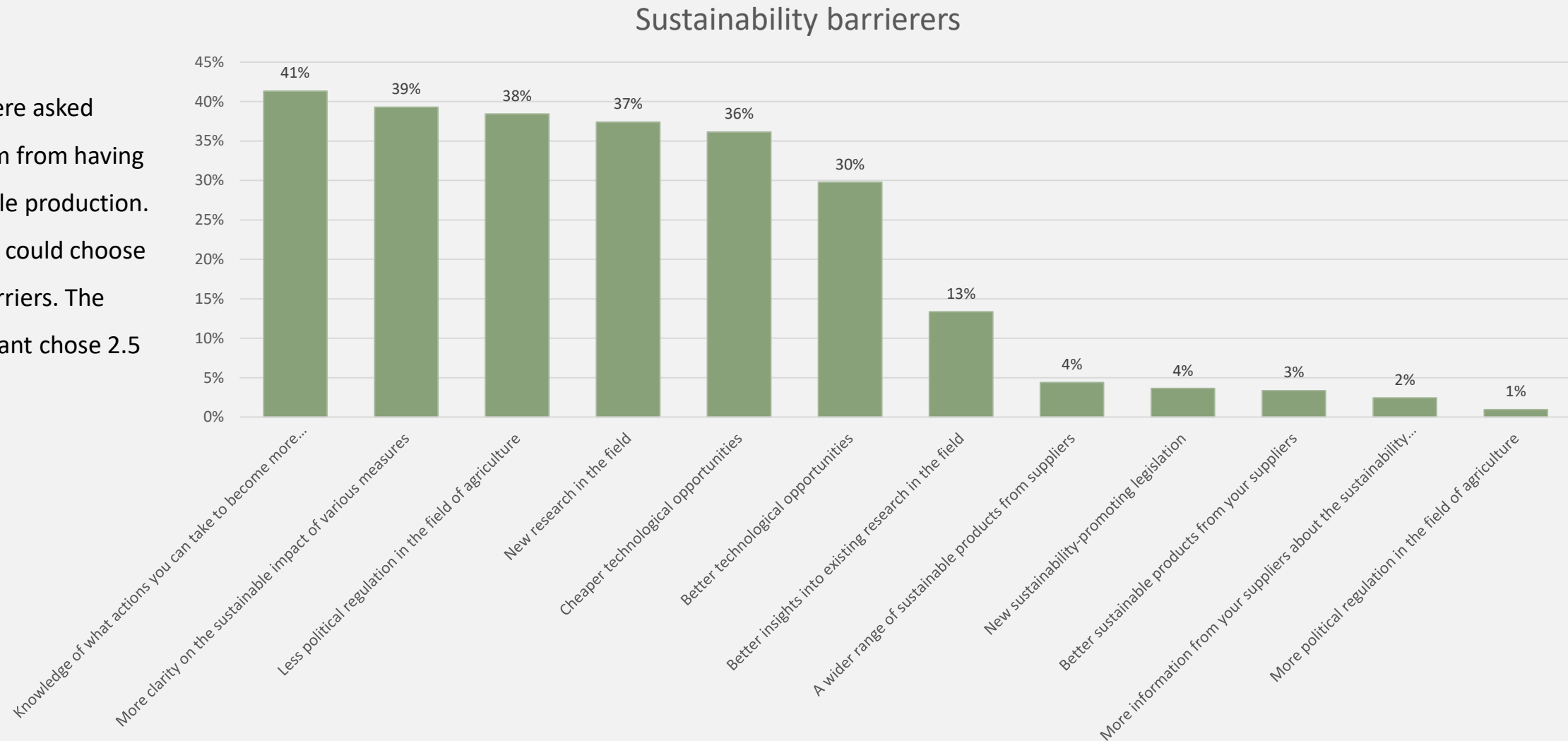
| | 3. To what extent do you weight in the sustainability factor of a new solution in your production? | 4a. When you implement sustainable solutions in your production to what extent do you find the environmental impact to be of importance? | 4b. When you implement sustainable solutions in your production to what extent do you find the climate impact to be of importance? | 4c. When you implement sustainable solutions in your production to what extent do you find financial consequences to be of importance? | 4d. When you implement sustainable solutions in your production to what extent do you find the consequences for your image to be of importance? | 5. To what extent do you feel that the Government has to make sustainability-promoting measures for you to be able to better incorporate sustainable solutions? | 6. To what extent do you find sustainable solutions in your production to have business potential? |
|------------------------|--|--|--|--|---|---|--|
| | Avg: 2,9 | Avg: 4,3 | Avg: 3,9 | Avg: 4,6 | Avg: 3,9 | Avg: 3,7 | Avg: 3,8 |
| [1] Not at all | 7,4 % | 3,0 % | 6,0 % | 0,9 % | 7,3 % | 12,1 % | 8,2 % |
| [2] To a lesser degree | 21,6 % | 9,6 % | 20,0 % | 3,5 % | 19,3 % | 24,7 % | 23,0 % |
| [3] To some degree | 44,1 % | 40,9 % | 48,3 % | 18,7 % | 43,4 % | 38,0 % | 46,6 % |
| [4] To a higher degree | 23,0 % | 40,9 % | 20,7 % | 48,6 % | 26,0 % | 19,7 % | 18,7 % |
| [5] Very much so | 3,9 % | 5,6 % | 4,9 % | 28,2 % | 4,0 % | 5,5 % | 3,5 % |

Sustainability

| | 3. To what extent do you weight in the sustainability factor of a new solution in your production? | 4a. When you implement sustainable solutions in your production to what extent do you find the environmental impact to be of importance? | 4b. When you implement sustainable solutions in your production to what extent do you find the climate impact to be of importance? | 4c. When you implement sustainable solutions in your production to what extent do you find financial consequences to be of importance? | 4d. When you implement sustainable solutions in your production to what extent do you find the consequences for your image to be of importance? | 5. To what extent do you feel that the Government has to make sustainability-promoting measures for you to be able to better incorporate sustainable solutions? | 6. To what extent do you find sustainable solutions in your production to have business potential? |
|---------------------------------|--|--|--|--|---|---|--|
| | Avg: 2,9 | Avg: 4,3 | Avg: 3,9 | Avg: 4,6 | Avg: 3,9 | Avg: 3,7 | Avg: 3,8 |
| Not at all/to a lesser degree | 29,0 % | 12,7 % | 26,0 % | 4,4 % | 26,6 % | 36,8 % | 31,2 % |
| To some degree | 44,1 % | 40,9 % | 48,3 % | 18,7 % | 43,4 % | 38,0 % | 46,6 % |
| To a higher degree/very much so | 26,9 % | 46,5 % | 25,7 % | 76,8 % | 30,0 % | 25,2 % | 22,2 % |

Sustainability barriers

Participants were asked what keeps them from having a more sustainable production. Each participant could choose 3 predefined barriers. The average participant chose 2.5 barriers each.



Sustainability barriers

| Top 3 challenges | Percentage |
|---|------------|
| Knowledge of what actions you can take to become more sustainable | 41,3 % |
| More clarity on the sustainable impact of various measures | 39,3 % |
| Less political regulation in the field of agriculture | 38,4 % |

Key findings

Age



Differences based on age

| 1. Which crop protection methods do you use today? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|--|-------------|------------|------------|----------------|
| Chemical crop protection | 81,7 % | 85,8 % | 89,4 % | 87,4 % |
| Biological crop protection | 16,7 % | 9,0 % | 5,5 % | 2,1 % |
| Mechanical crop protection | 56,3 % | 49,3 % | 47,2 % | 36,5 % |
| 2. Which crop protection method do you believe will dominate the future? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
| Chemical crop protection | 39,1 % | 56,8 % | 52,2 % | 55,5 % |
| Biological crop protection | 26,7 % | 21,9 % | 17,9 % | 16,2 % |
| Mechanical crop protection | 34,1 % | 21,2 % | 29,9 % | 28,3 % |

Differences based on age

| 3. To what extent do you weight in the sustainability factor of a new solution in your production? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|--|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 25,1 % | 32,6 % | 29,9 % | 26,2 % |
| To some degree | 64,5 % | 49,6 % | 37,2 % | 43,9 % |
| To a higher degree/very much so | 10,4 % | 17,8 % | 32,9 % | 30,0 % |

| 4a. When you implement sustainable solutions in your production to what extent do you find the environmental impact to be of importance? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|--|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 8,2 % | 13,1 % | 15,8 % | 9,8 % |
| To some degree | 36,8 % | 44,9 % | 37,5 % | 42,5 % |
| To a higher degree/very much so | 55,0 % | 42,0 % | 46,7 % | 47,7 % |

Differences based on age

| 4b. When you implement sustainable solutions in your production to what extent do you find the climate impact to be of importance? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|--|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 23,2 % | 26,4 % | 21,5 % | 31,2 % |
| To some degree | 56,6 % | 50,5 % | 49,5 % | 43,9 % |
| To a higher degree/very much so | 20,2 % | 23,1 % | 28,9 % | 25,0 % |

| 4c. When you implement sustainable solutions in your production to what extent do you find financial consequences to be of importance? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|--|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 0,0 % | 0,9 % | 3,6 % | 8,7 % |
| To some degree | 2,5 % | 16,4 % | 21,2 % | 20,8 % |
| To a higher degree/very much so | 97,5 % | 82,8 % | 75,2 % | 70,5 % |

Differences based on age

| 4d. When you implement sustainable solutions in your production to what extent do you find the consequences for your image to be of importance? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|---|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 10,2 % | 26,6 % | 31,4 % | 24,4 % |
| To some degree | 49,9 % | 41,8 % | 42,3 % | 44,4 % |
| To a higher degree/very much so | 39,9 % | 31,6 % | 26,4 % | 31,1 % |

| 5. To what extent do you feel that the Government has to make sustainability-promoting measures for you to be able to better incorporate sustainable solutions? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|---|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 26,7 % | 39,6 % | 34,1 % | 39,8 % |
| To some degree | 47,1 % | 42,0 % | 34,4 % | 37,3 % |
| To a higher degree/very much so | 26,2 % | 18,4 % | 31,5 % | 22,9 % |

Differences based on age

| 6. To what extent do you find sustainable solutions in your production to have business potential? | Under 40 yo | 40 - 49 yo | 50 – 59 yo | 60 yo or above |
|--|-------------|------------|------------|----------------|
| Not at all/to a lesser degree | 39,5 % | 39,1 % | 25,9 % | 29,8 % |
| To some degree | 37,1 % | 41,4 % | 50,6 % | 47,7 % |
| To a higher degree/very much so | 23,4 % | 19,5 % | 23,4 % | 22,5 % |

Differences based on age

| Top 3 barriers for young farmers | Percentage | Top 3 barriers for senior farmers | Percentage |
|--|------------|---|------------|
| More clarity on the sustainable impact of various measures | 62,8 % | Knowledge of what actions you can take to become more sustainable | 49,8 % |
| Cheaper technological opportunities | 60,0 % | New research in the field | 42,8 % |
| Better technological opportunities | 37,3 % | Less political regulation in the field of agriculture | 42,1 % |

Key findings

Large vs. small farms



Large vs. small farms

| 1. Which crop protection methods do you use today? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|--|-------------------|--------------------|-----------------------|
| Chemical crop protection | 89,8 % | 87,9 % | 81,3 % |
| Biological crop protection | 2,5 % | 9,7 % | 7,9 % |
| Mechanical crop protection | 36,6 % | 47,4 % | 59,0 % |

| 2. Which crop protection method do you believe will dominate the future | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|---|-------------------|--------------------|-----------------------|
| Chemical crop protection | 54,4 % | 55,5 % | 48,8 % |
| Biological crop protection | 20,0 % | 18,6 % | 16,9 % |
| Mechanical crop protection | 25,7 % | 25,9 % | 34,4 % |

Large vs. small farms

| 3. To what extent do you weight in the sustainability factor of a new solution in your production? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|--|-------------------|--------------------|-----------------------|
| Not at all/to a lesser degree | 29,4 % | 30,3 % | 26,0 % |
| To some degree | 43,7 % | 44,3 % | 44,7 % |
| To a higher degree/very much so | 26,9 % | 25,4 % | 29,2 % |

| 4a. When you implement sustainable solutions in your production to what extent do you find the environmental impact to be of importance? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|--|-------------------|--------------------|-----------------------|
| Not at all/to a lesser degree | 14,6 % | 10,8 % | 11,3 % |
| To some degree | 42,1 % | 40,9 % | 38,0 % |
| To a higher degree/very much so | 43,4 % | 48,3 % | 50,7 % |

Large vs. small farms

| 4b. When you implement sustainable solutions in your production to what extent do you find the climate impact to be of importance? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|--|-------------------|--------------------|-----------------------|
| Not at all/to a lesser degree | 27,1 % | 26,2 % | 23,1 % |
| To some degree | 47,6 % | 48,8 % | 49,3 % |
| To a higher degree/very much so | 25,3 % | 24,9 % | 27,6 % |
| 4c. When you implement sustainable solutions in your production to what extent do you find financial consequences to be of importance? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
| Not at all/to a lesser degree | 6,1 % | 2,5 % | 3,4 % |
| To some degree | 20,8 % | 21,4 % | 10,3 % |
| To a higher degree/very much so | 73,1 % | 76,1 % | 86,3 % |

Large vs. small farms

| 4d. When you implement sustainable solutions in your production to what extent do you find the consequences for your image to be of importance? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|---|-------------------|--------------------|-----------------------|
| Not at all/to a lesser degree | 28,2 % | 28,5 % | 20,2 % |
| To some degree | 43,8 % | 41,0 % | 45,8 % |
| To a higher degree/very much so | 27,9 % | 30,5 % | 34,1 % |

| 5. To what extent do you feel that the Government has to make sustainability-promoting measures for you to be able to better incorporate sustainable solutions? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|---|-------------------|--------------------|-----------------------|
| Not at all/to a lesser degree | 39,9 % | 34,0 % | 34,2 % |
| To some degree | 35,4 % | 39,5 % | 41,4 % |
| To a higher degree/very much so | 24,7 % | 26,5 % | 24,5 % |

Large vs. small farms

| 6. To what extent do you find sustainable solutions in your production to have business potential? | 50 - 124 hectares | 125 - 249 hectares | 250 hectares or above |
|--|-------------------|--------------------|-----------------------|
| Not at all/to a lesser degree | 30,2 % | 35,8 % | 26,8 % |
| To some degree | 52,5 % | 38,8 % | 44,8 % |
| To a higher degree/very much so | 17,2 % | 25,5 % | 28,3 % |

Large vs. small farms

| 50 - 124 hectares | |
|---|--------|
| Knowledge of what actions you can take to become more sustainable | 43,8 % |
| Less political regulation in the field of agriculture | 43,6 % |
| Cheaper technological opportunities | 36,4 % |

| 125 - 249 hectares | |
|---|--------|
| More clarity on the sustainable impact of various measures | 44,0 % |
| Knowledge of what actions you can take to become more sustainable | 42,7 % |
| New research in the field | 39,7 % |

| 250 hectares or above | |
|--|--------|
| New research in the field | 42,8 % |
| More clarity on the sustainable impact of various measures | 42,1 % |
| Better insights into existing research in the field | 36,6 % |

Key findings

Organic vs. conventional



Organic vs. conventional

| 1. Which crop protection methods do you use today? | Organic farm | Conventional farm |
|--|--------------|-------------------|
| Chemical crop protection | 21,0 % | 98,5 % |
| Biological crop protection | 18,3 % | 3,8 % |
| Mechanical crop protection | 88,8 % | 37,3 % |

| 2. Which crop protection method do you believe will dominate the future | Organic farm | Conventional farm |
|---|--------------|-------------------|
| Chemical crop protection | 21,7 % | 58,9 % |
| Biological crop protection | 31,1 % | 16,8 % |
| Mechanical crop protection | 47,2 % | 24,3 % |

Organic vs. conventional

| 3. To what extent do you weight in the sustainability factor of a new solution in your production? | Organic farm | Conventional farm |
|--|--------------|-------------------|
| Not at all/to a lesser degree | 30,0 % | 28,8 % |
| To some degree | 33,4 % | 45,9 % |
| To a higher degree/very much so | 36,6 % | 25,3 % |

| 4a. When you implement sustainable solutions in your production to what extent do you find the environmental impact to be of importance? | Organic farm | Conventional farm |
|--|--------------|-------------------|
| Not at all/to a lesser degree | 13,2 % | 12,6 % |
| To some degree | 23,4 % | 43,8 % |
| To a higher degree/very much so | 63,3 % | 43,6 % |

Organic vs. conventional

| 4b. When you implement sustainable solutions in your production to what extent do you find the climate impact to be of importance? | Organic farm | Conventional farm |
|--|--------------|-------------------|
| Not at all/to a lesser degree | 21,3 % | 26,8 % |
| To some degree | 42,4 % | 49,3 % |
| To a higher degree/very much so | 36,3 % | 23,9 % |

| 4c. When you implement sustainable solutions in your production to what extent do you find financial consequences to be of importance? | Organic farm | Conventional farm |
|--|--------------|-------------------|
| Not at all/to a lesser degree | 7,3 % | 3,9 % |
| To some degree | 17,2 % | 19,0 % |
| To a higher degree/very much so | 75,6 % | 77,1 % |

Organic vs. conventional

| 4d. When you implement sustainable solutions in your production to what extent do you find the consequences for your image to be of importance? | Organic farm | Conventional farm |
|---|--------------|-------------------|
| Not at all/to a lesser degree | 28,8 % | 26,2 % |
| To some degree | 33,2 % | 45,1 % |
| To a higher degree/very much so | 38,0 % | 28,7 % |

| 5. To what extent do you feel that the Government has to make sustainability-promoting measures for you to be able to better incorporate sustainable solutions? | Organic farm | Conventional farm |
|---|--------------|-------------------|
| Not at all/to a lesser degree | 29,9 % | 38,0 % |
| To some degree | 35,3 % | 38,4 % |
| To a higher degree/very much so | 34,8 % | 23,6 % |

Organic vs. conventional

| 6. To what extent do you find sustainable solutions in your production to have business potential? | Organic farm | Conventional farm |
|--|--------------|-------------------|
| Not at all/to a lesser degree | 13,7 % | 34,2 % |
| To some degree | 50,5 % | 45,9 % |
| To a higher degree/very much so | 35,7 % | 19,9 % |

Organic vs. conventional

| Organic farm | |
|--|--------|
| New research in the field | 51,0 % |
| Cheaper technological opportunities | 46,8 % |
| More clarity on the sustainable impact of various measures | 43,6 % |

| Conventional farm | |
|---|--------|
| Knowledge of what actions you can take to become more sustainable | 42,2 % |
| Less political regulation in the field of agriculture | 40,7 % |
| More clarity on the sustainable impact of various measures | 38,6 % |