



Plantekongressen 2025

How does running a regenerative farm influence financial performance?

JANUARY 2025

Introduction: Hello to all of you!



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Associate Director specialized in sustainability and large capital investments with strong expertise from the energy industry and agriculture

Co-author of BCG's report on [Reg Ag and its potential in Denmark](#)

The BCG logo, consisting of the letters 'BCG' in a bold, green, sans-serif font, centered within a white circle that is set against a green horizontal bar.

Boston Consulting Group

We are a management consultancy with considerable focus on sustainability, having:

- >2,000 sustainability cases since 2020
- >30.000 employees across ~100 offices
- Assisting some of the largest global forums/alliances on sustainability, incl. co-chairing the [COP Action Agenda on Regenerative Landscapes](#)

Our report aims at building awareness of RegAg and its potential

Our report was co-authored by Danmarks Naturfredningsforening & Food Nation



BCG



Danmarks
Naturfredningsforening



FOOD
NATION



The study was done pro-bono. We have invested in this study as a **commitment to progressing the green transitioning of Denmark**

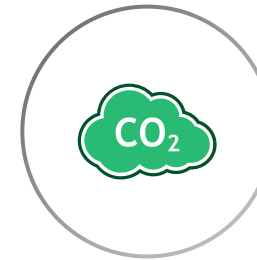
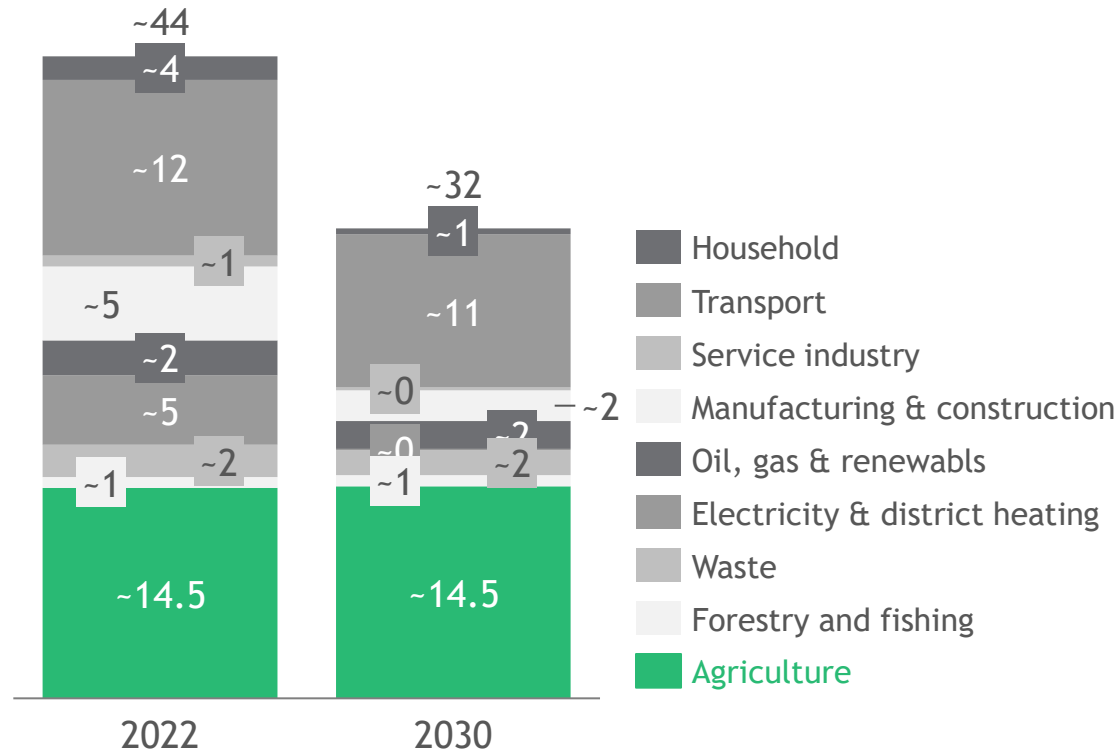


Our hope is that the study can lead to more **stakeholders and value chain players collaborating on the topic and increase political interest in RegAg**

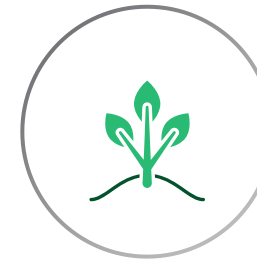
Case for chance: Agri is the largest source of emissions in Denmark

Danish total GHG-emission

Mt CO2e/year



Emission from Danish Agri expected to stay flat next 5-10 years, while rest of sectors are reducing their emissions

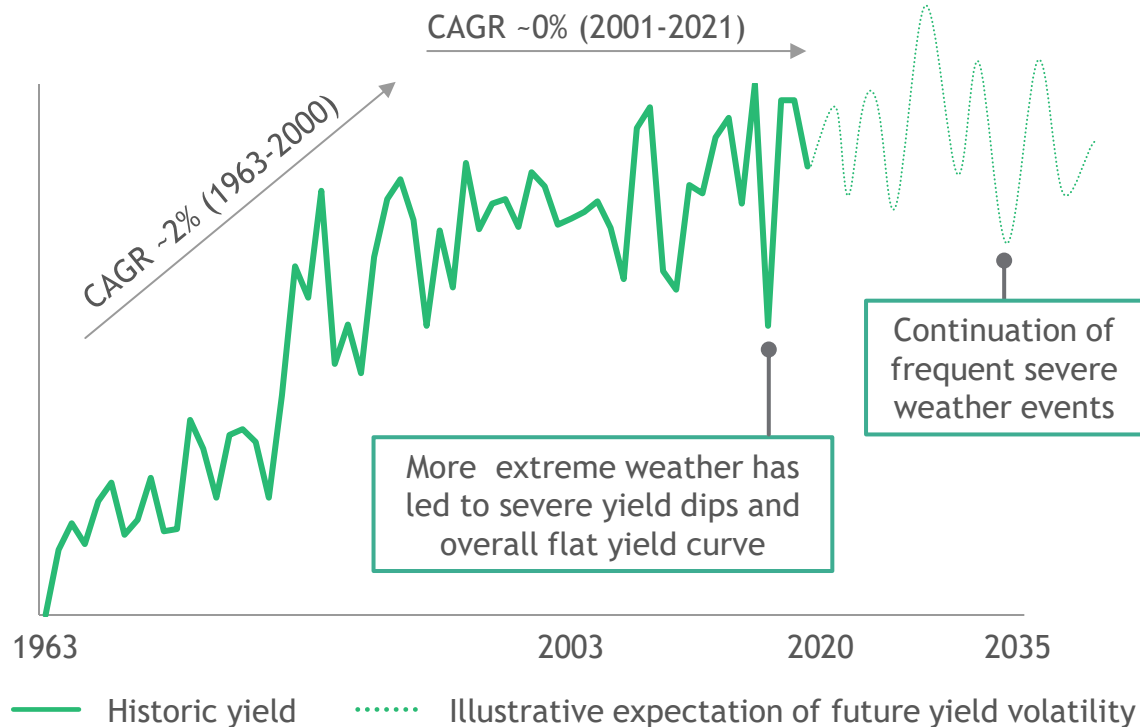


Regenerative Agriculture has potential to reduce emission from the agriculture industry

Case for change: We must shift to a more regenerative ag system

The new reality: Yield resilience under extreme weather events

Wheat yield (t/ha) in DK



The future of agriculture will have to reduce its adverse impact on nature



Nature loss is caused by the activities related to agriculture and food



Nitrogen consumption is caused by agri activities contributing to water oxygen depletion



Topsoil at risk by 2050, with consequences for food production and soil carbon sink functions

RegAg's triple-win: Financials, decarbonization and resilience



Farmer financials

Positive returns on grower P&L and security of long-term land value



20-40%

potential profit increase¹



Environmental impact

Positive environmental impact from reduced carbon emissions, decreasing water usage and nitrate emissions



~4 ton

CO₂e/hectare mitigated²



Resilience

Crop yield resilience in years with severe weather events



30-40%

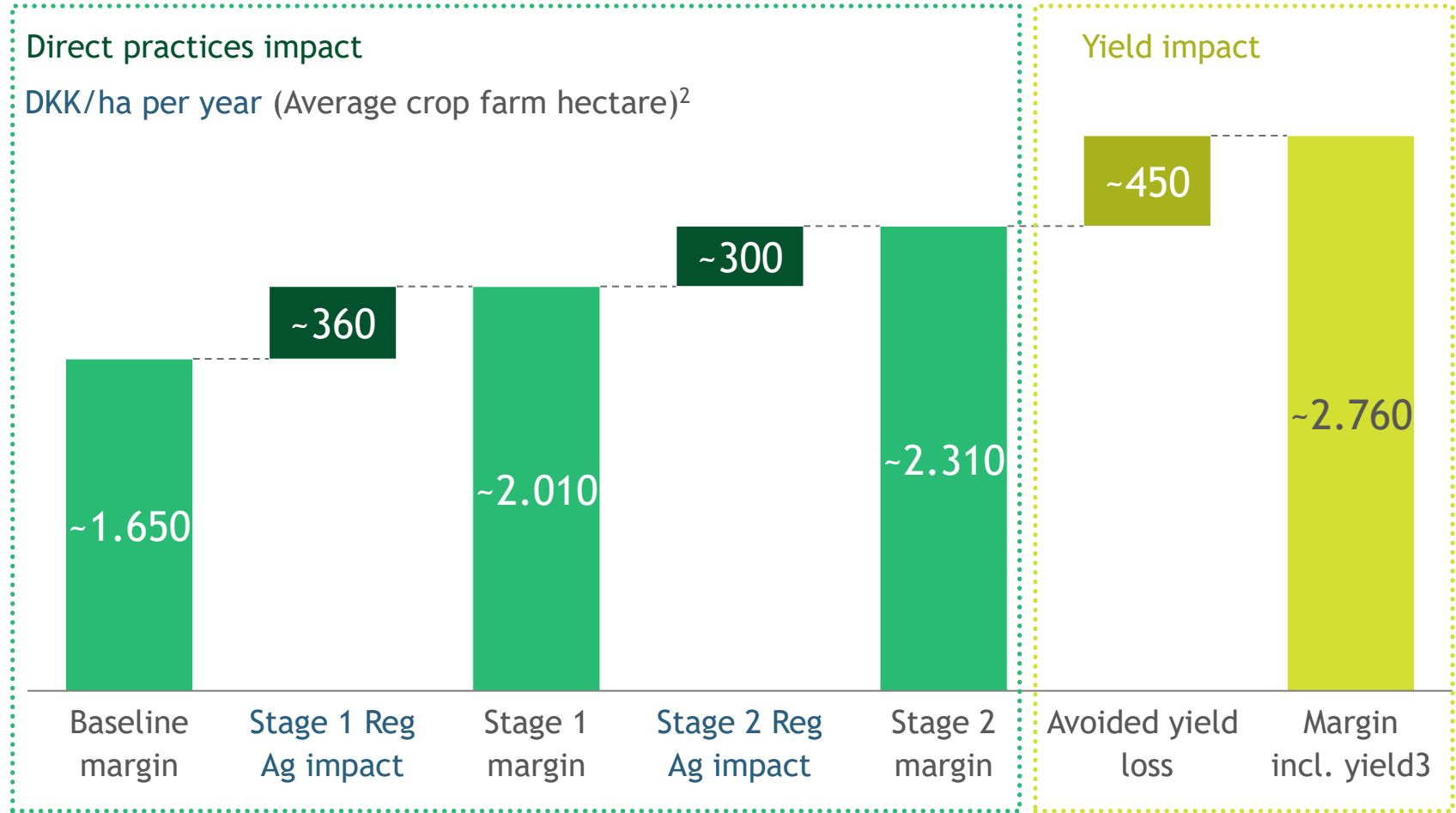
Higher yields in years with adverse weather events^{3,4}

Note: 1 and 2. Based on P&L study for transitioning to Regenerative practices in Denmark incl. no-till practices, cover cropping, crop-rotation, mulch-system. 3. and 4. Based on P&L study for transitioning to Regenerative practices in Germany as well as Rodale Institute's Farming System Trial comparing conventional agriculture to regenerative practices in a year with severe draught in the US

Source: BCG: The case for regenerative agriculture in Germany and beyond (2023); BCG: The potential of regenerative agriculture in Denmark (2024); Rodale Institute's Farming Systems Trial

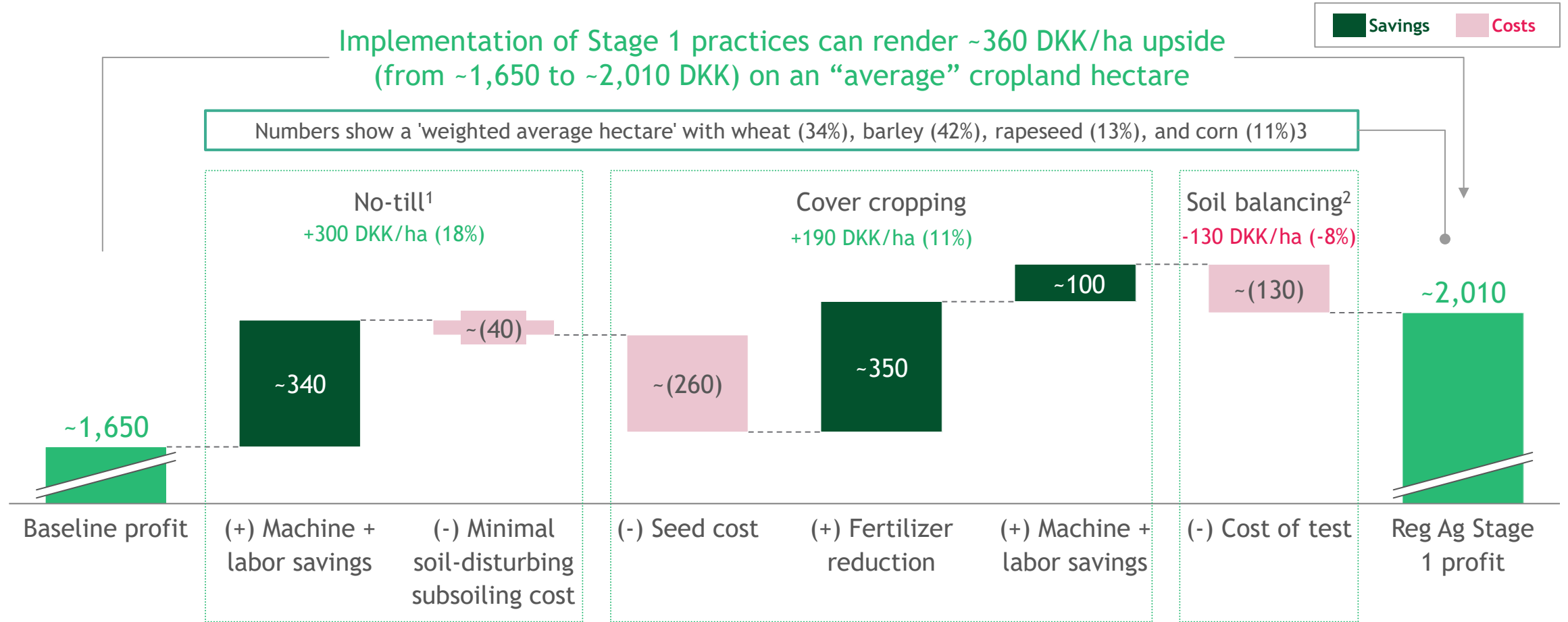
Farmer financials: Margin upside of 20-40% from RegAg

After 6y+ transition period, farmers could see economic upside, potentially up to ~20-40%+ (from non-subsidized base profit)



1. Common Agricultural Policy, EU-wide policy partnership 2. Average economic impact weighting barley(42%), wheat(34%), rapeseed(13%), and corn(11%) 3. Theoretical margin 4. Depends construction of policies
Source: SEGES; FRDK; Statistics Denmark; Expert Interviews; BCG analysis

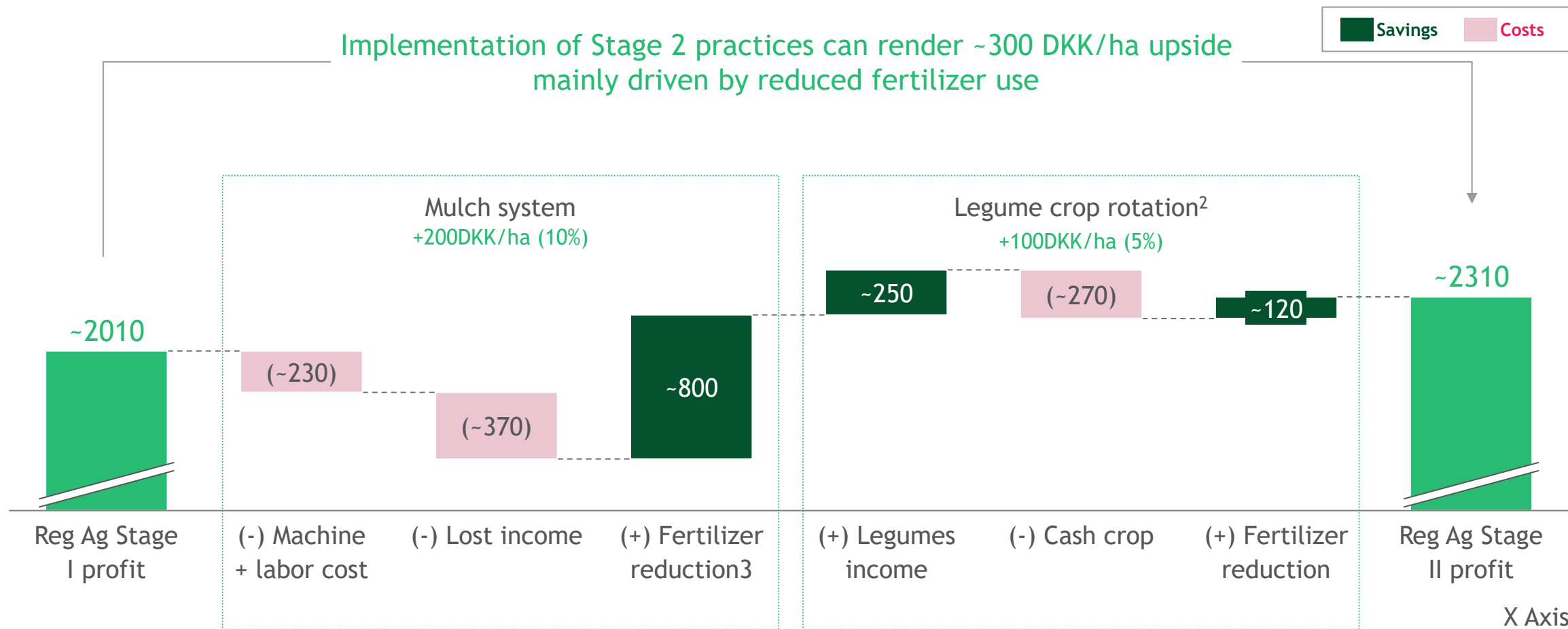
Farmer financials: Stage 1 practices can enable a ~20% margin uplift



1. Incl. Minimally Disruptive Subsoiling 2. Test for mapping micro-organisms 3. Based on Danish cropland distribution between the crops.
 Note: Excluding subsidiaries & only considering yield revenue + direct costs (e.g., seeds, labor, machine etc.)
 Source: SEGES; Statistics Denmark; Expert interviews; BCG analysis

X Axis

Farmer financials: Stage II practices give add. 300 DKK/ha upside



1. Based on Danish cropland distribution between the crops (wheat (34%), barley (42%), rapeseed (13%) and corn (11%)). 2. Legumes in crop rotation every 6th year; 3. Fertilizer savings scaled down ~30% from peak-price savings, reflecting potentially inflated priced and outcome uncertainty
 Note: Excluding subsidiaries & only considering yield revenue + direct costs (e.g., seeds, labor, machine etc.)
 Source: SEGES; Danmarks Statistik; Expert Interviews; BCG Analysis

RegAg could notably reduce DK CO₂e emissions in 10-15 years

Up to
~4 megatons
CO₂e p.a.

2035-2040
indicative potential yearly CO₂e impact¹
from Reg Ag practices in Denmark²

1. Increased sequestration and direct reduction 2. Including only Stage I & II practices; 3. Organic, minor crops, and peatland omitted 4. Goal to reduce emissions with 70% of 1990 emissions
Source: BCG analysis

... equal to:



~10% of Danish 2022 emissions



~15% of Danish 2030 emissions⁴



~30% of Agriculture 2022 emissions



~180M trees planted



~2M internal combustion engine cars

Barriers to Reg Ag | Scaling RegAg requires value-chain partnerships



Four key barriers across the value chain ..

<p>⊗</p> <p>Barriers</p>	<p>Trans. risk & initial profit decline</p> <p>Upfront finance need and profit decline as yield decreases while soil microbial activity is reactivated</p>	<p>Costly, hard to scale MRV</p> <p>MRV systems are costly and lack scalability not ensuring adequate ROI</p>	<p>Long farmer transition time</p> <p>Long transition time ~4-6 years with yield drop in transition period</p>	<p>Fragmentation & limited scale</p> <p>High fragmentation and insufficient scale in RegAg landscapes hampering ROI</p>
	<p>✓</p> <p>Solutions</p>	<p>Co-financing & risk sharing</p> <p>High upfront finance need and risk-taking investing in RegAg trans.</p>	<p>Sufficient quality & scalable MRV</p> <p>Scalable and cost-effective MRV systems to unlock access to capital and credit markets</p>	<p>Faster RegAg outcomes</p> <p>Fast-forward transition time and ROI through 2.0 soil solutions e.g., microbials and biochar</p>

Q&A

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Tilpasning til nye vilkår koster penge

Jacob Krog

Plantekongres

Herning 8. januar 2025

STØTTET AF
Promilleafgiftsfonden for landbrug

SEGES
INNOVATION

Størst mulige udbytte på bundlinjen

- Afgrødevalg og afgrøderækkefølge
- Dyrkningssikkerhed -> minimer udsving
- Så lidt så muligt
 - så meget som nødvendigt
- Optimering på marginalen år for år
- Langt perspektiv

Nuværende valg er det bedst tilgængelige
Ændring kræver et bedre alternativ



Nuværende valg er det bedst tilgængelige

Uddrag af tiltag i regenerativ dyrkning:

- Mindre N-gødning
- Ingen insekticider
- Pløjefri etablering
- Flere efterafgrøder

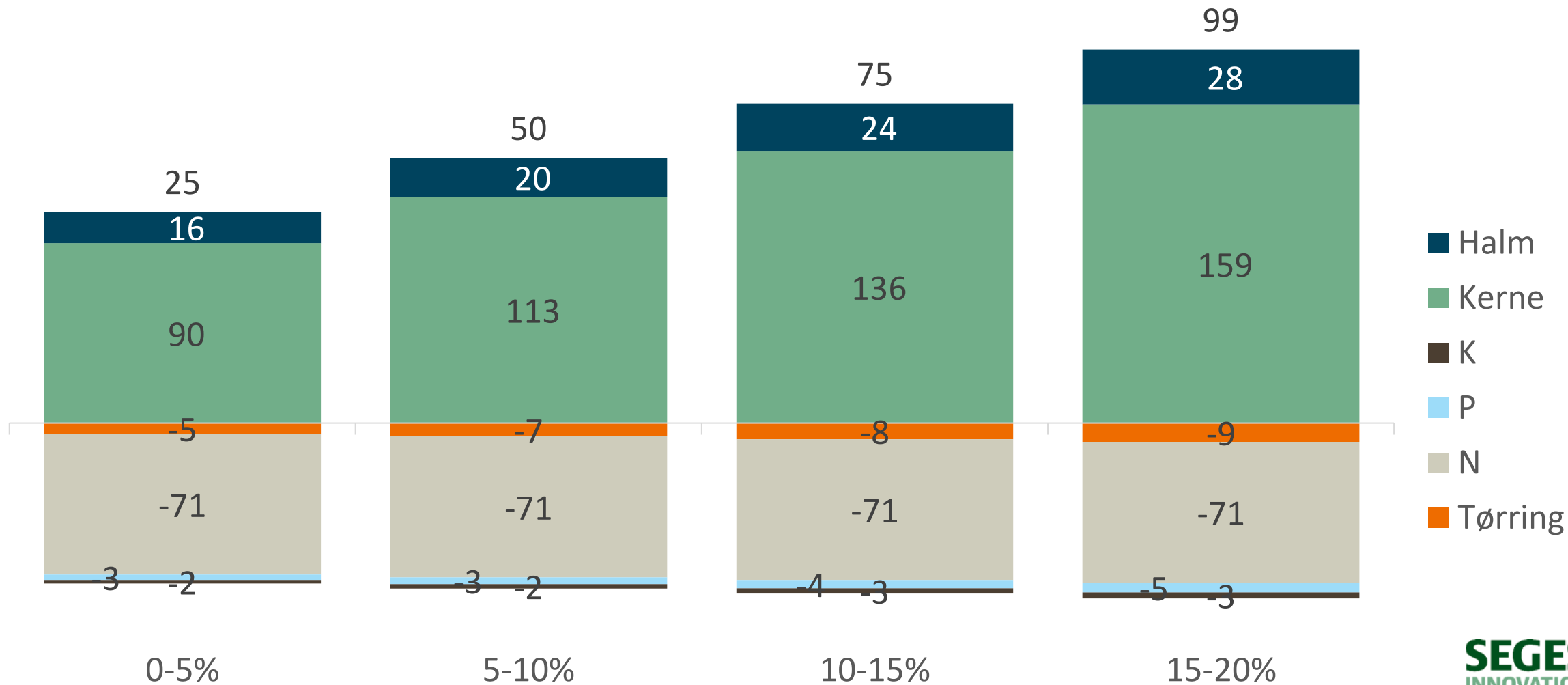
Giver tiltagene et bedre produkt?
Eller er det sidegevinster?

Hvad koster det at tilpasse sig?

Mindre N-gødning - et eksempel baseret på "kalkule mark" (NLES5)

Tab ved reduktion af N-tilførsel maltbyg JB5-6 - kr. pr. ha

Kerne	170 kr. pr. hkg
Halm	0,55 kr. pr. kg
N	10 kr. pr. kg
P	16 kr. pr. kg
K	8 kr. pr. kg



Individuel tilpasning til faktisk udbytte

- Mulighed for at øge N-kvoten ved dokumentation af højere udbytte
- Mulighed for at tildele mindre N end normen
- Den optimale mængde varierer over tid
- Økonomisk udbytte reduceres ved at afvige fra optimum

Er lavere N-tildeling regenerativ?
Eller er det en sidegevinst?

Ingen insekticider

- Maltbyg, primært mod bladlus
- Større forekomst i sydlige egne
- Sjældent nødvendigt at behandle i nordlige egne
- Gns. nettomerudbytte af bekæmpelse 300 kr. pr. hektar (160 kr./hkg)
- Nettomerudbytte i hårdt angrebne afgrøder op til ca. 2.000 kr. pr. hektar

Udsving i udbytte øges uden adgang til insekticider

Kommer der færre bladlus når der praktiseres Conservation Agriculture?

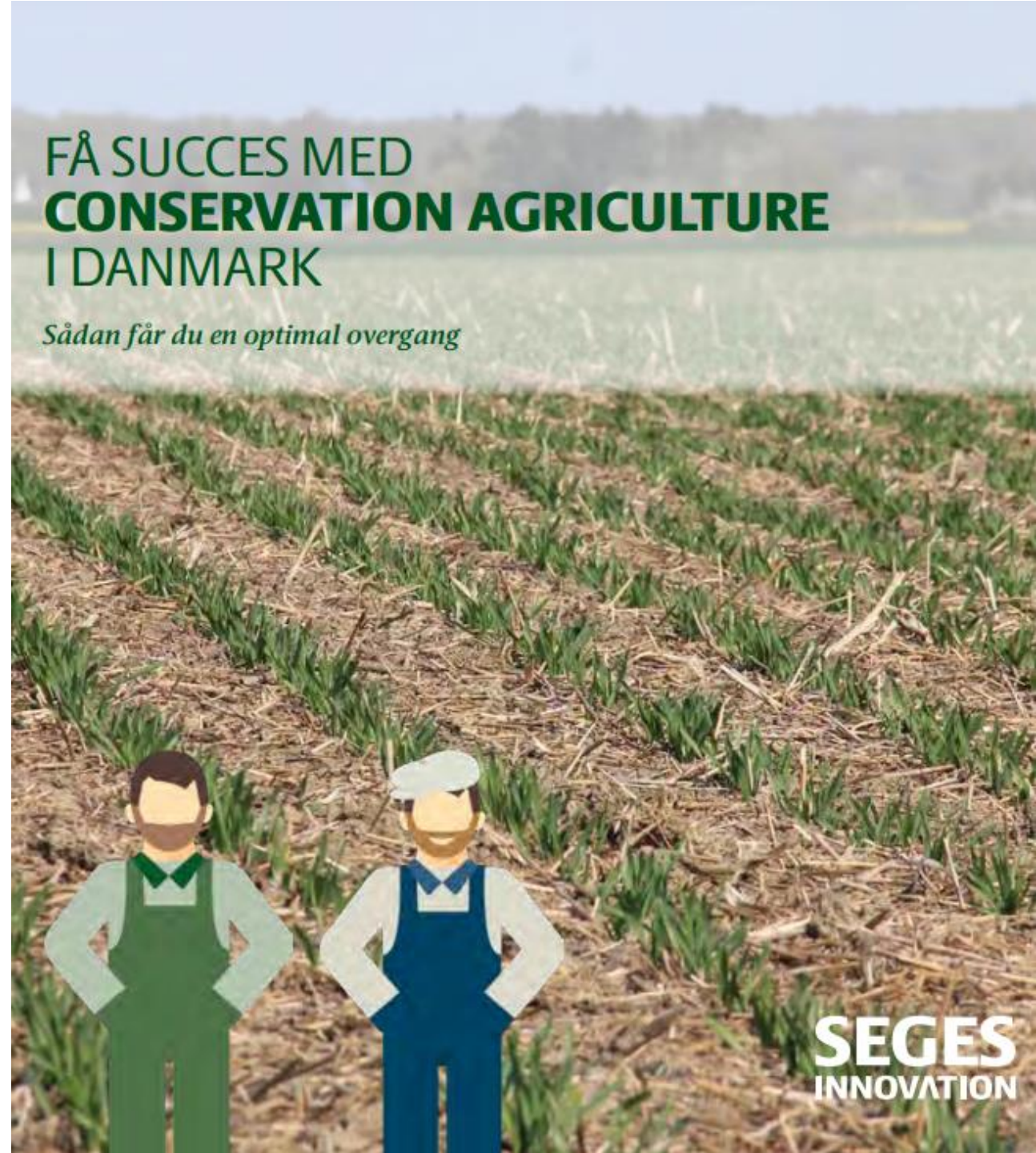
Læs mere:
Landsforsøgene 2024
side 93

- 12 pløjede marker og 12 CA-marker – ”nabomarker”
- Lokationer: Ringe, Holeby, Hadsten, Haslev, Sandved, Vester Vælling, Bramstrup, Kalundborg, Gørlev og Jerslev
- Angreb af bladlus og forekomst af visse nyttedyr
- Bedømt 45 m inde i begge marker
- Ikke fundet sikre forskelle på bladlusangrebene og forekomsten af visse nyttedyr

Er dyrkning uden insekticider regenerativt?
Eller er det en sidegevinst?

Pløjefri etablering

- Ca. 400 kr. billigere pr. hektar
- 6-10 pct. reduktion af maskin- og arbejdsomkostninger
- Svarer til ca. 3 pct. af bruttoudbytte fra maltbyg v. 170 kr./hkg
- Ændret dyrkningssystem => ændret risiko
- Passer afgrødevalg og dyrkningspraksis til pløjefri etablering?



Spredningen i økonomiske resultater er stor

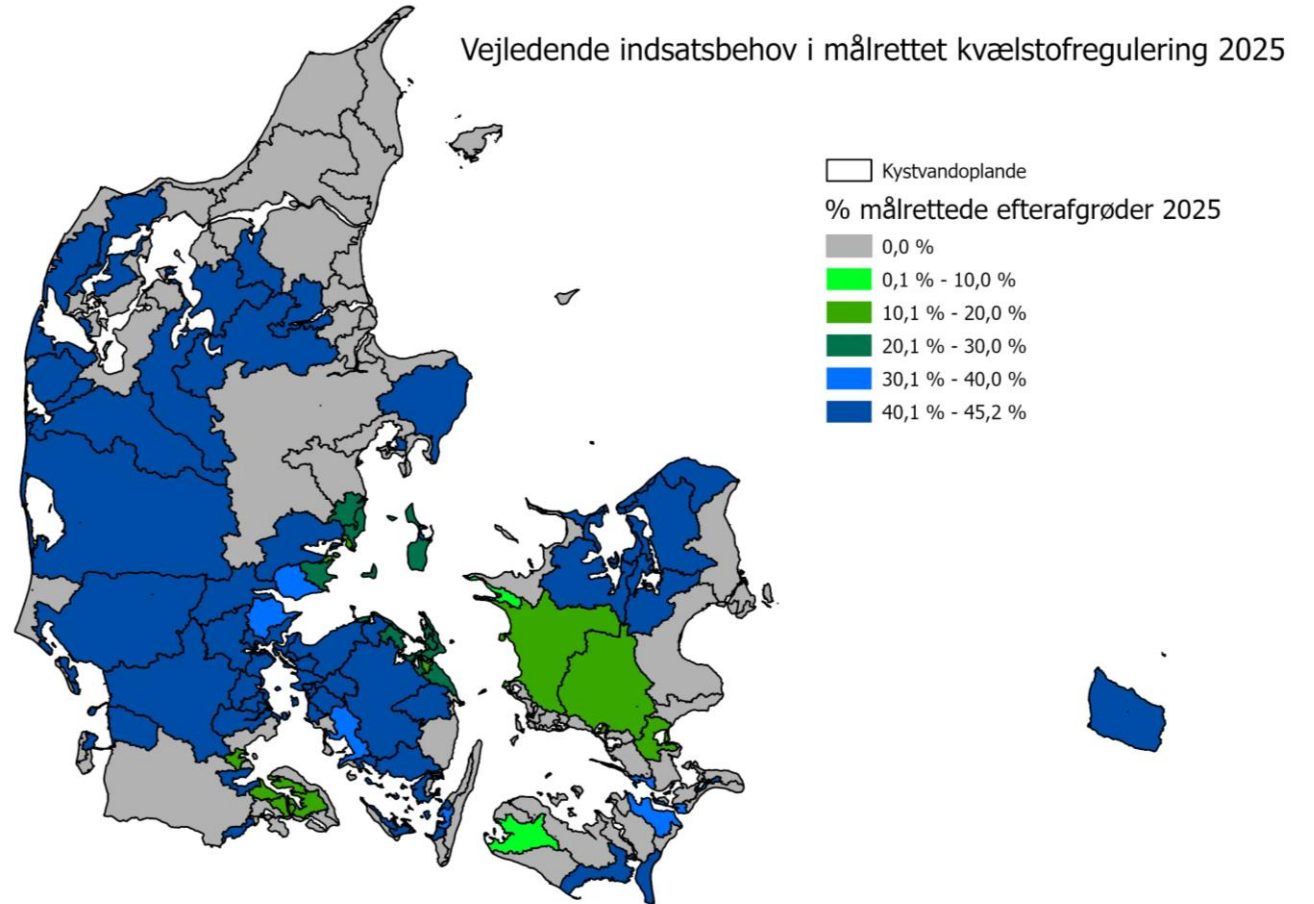
Tabel 1. Fraktilanalyse 2023 – Salgsafgrøder, lerjord alle

Salgsafgrøder Lerjord (387)	Stærk konkurrenceevne				Stort forbedringspotentiale							
	5%	10%	25%	33%	40%	50%	60%	67%	75%	90%	95%	
Fraktil												
Udbytte pr. ha vårbyg, hkg	63,6	60,0	53,1	50,9	49,6	47,2	43,7	41,3	39,9	34,2	29,9	
Udbytte pr. ha vinterhvede, hkg	99,1	96,2	90,0	87,6	85,1	81,9	79,4	77,5	74,5	67,4	61,5	
Udbytte pr. ha vinterbyg, hkg	88,4	86,5	78,2	76,3	74,9	70,4	66,1	64,8	60,0	49,7	43,0	
Udbytte pr. ha rug, hkg	90,1	84,8	75,2	71,4	69,3	64,7	62,3	60,1	57,8	49,2	41,1	
Udbytte pr. ha vinterraps, hkg	53,2	51,4	48,5	46,8	45,7	44,6	42,7	41,4	40,0	33,3	31,5	
Fremstillingspris kr/hkg korn	139	162	188	198	212	223	232	246	266	323	353	
Bruttoudbytte i alt pr. ha	16.721	15.908	14.254	13.737	13.274	12.630	12.087	11.651	11.015	9.826	9.059	
Stykomkostninger i alt pr. ha	2.747	3.038	3.728	3.959	4.135	4.488	4.728	4.930	5.341	6.348	6.809	
Dækningsbidrag pr. ha	12.265	11.282	9.722	9.224	8.822	8.074	7.507	6.994	6.461	5.035	4.237	
Maskinomk. inkl. arbejde pr. ha	3.746	4.219	4.843	5.152	5.443	5.732	6.015	6.414	6.799	8.135	8.953	
Øvrige omkostninger pr. ha											3.382	
Rest til jordleje før EU-støtte pr. ha											-5.651	
Jordleje fratrukket EU-støtte pr. ha											6.150	
Resultat, driftsgren pr. ha											-10.136	

Er pløjefri etablering regenerativt?
 Eller er det en sidegevinst?

Flere efterafgrøder

- Hvor mange efterafgrøder skal der til for at man dyrker regenerativt?
- Nogle steder er der plads til flere efterafgrøder
- Omkostningen til et givent niveau af efterafgrøder varierer meget



Eksempel: Beregnede omkostninger til efterafgrøde efter vårsæd

kr. pr. ha	Sandjord		Lerjord	
	<80 kg N	>80 kg N	<80 kg N	>80 kg N
Udsæd	160	160	160	160
Såning	120	120	120	120
Eftervirkning N (obligatorisk)	-153	-225	-153	-225
Udbytteeffekt	0	0	150	150
Succesrate etablering	14	14	14	14
Omkostninger uden tilskud	141	69	291	219

Hvad koster det at producere regenerativt?

Ændring i:

- Afgrødevalg og risiko
- Individuelle og regionale forskelle

Produktionen følger prissignaler
Det bedst tilgængelige bliver valgt



Spørgsmål?

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