

National reduction of PRRS in Denmark

Nicolai Rosager Weber

Project manager, DVM, PhD

Outline of presentation

- Brief description of the Danish pig production & the SPF health system
- Brief description of the PRRS disease
- National PRRS reduction strategy - goals, tools & methods

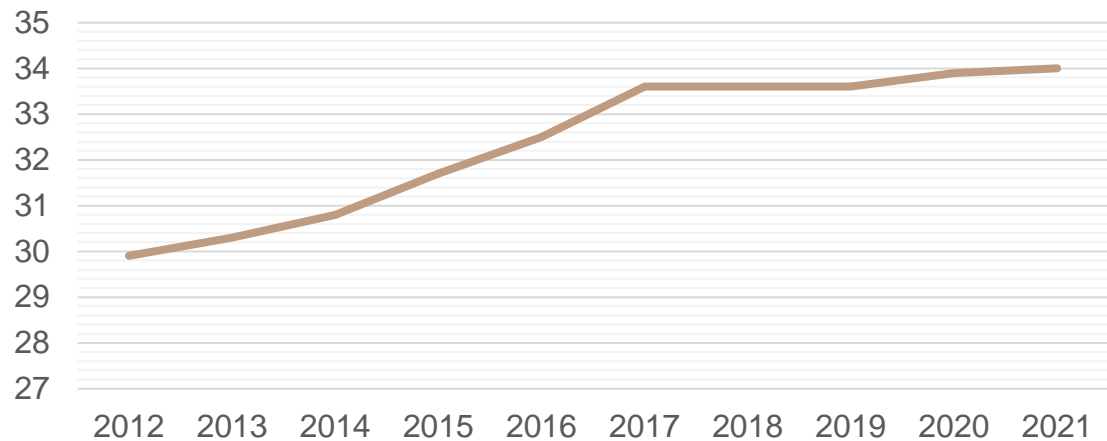


Production of pigs in Denmark - 2021

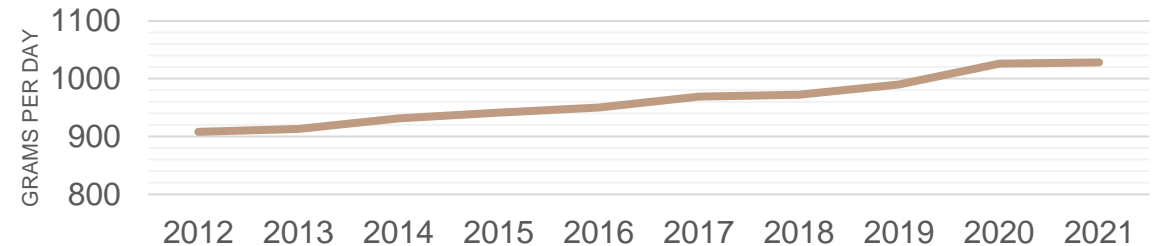
- 1.200 sow herds
 - 3.600 grower/finisher herds
 - 400 integrated herds
- 1 million sows → 33 million pigs
 - 18.8 million slaughtered in Denmark
 - 14.2 million pigs exported at 30 kg



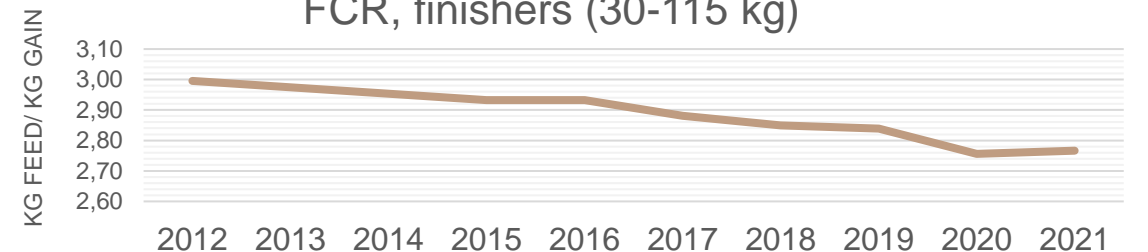
Weaned pigs per sow per year



ADG, finishers (30-115 kg)



FCR, finishers (30-115 kg)



Danish SPF system

Established in 1968 by the pig industry

Specific Pathogen Free

8 infectious swine diseases

Including PRRS Type 1 & Type 2

Serological surveillance and clinical signs

Transparency – health status of SPF herds available online for all stakeholders



Danish SPF-system principle:

- Health status is declared for the connected herds
- Health status is considered when pigs are traded and transported between herds

THE BACK BONE of Danish pig production

Today 80% of the sows in Denmark are SPF sows
100% of all purchased breeding stock have SPF health status

Prevalence of SPF diseases in Danish pig population - 2020

The SPF Diseases	% Seronegative herds	
	SPF sow herds + finisher herds	Breeding herds
Lice - <i>Haematopinus suis</i>	100	100
Mange - <i>Sarcoptes Scabies</i>	100	100
Swine Dysentery - <i>Brachyspira hyodysenteriae</i>	100	100
Atrophic Rhinitis - Toxigenic <i>Pasteurella multocida</i>	99	100
APP Serotype 2 - <i>A. pleuropneumoniae</i>	84	97
Enzootic pneumonia - <i>Mycoplasma hyopneumoniae</i>	30	74
PRRS - PRRSV Type 1 and/or Type 2	67	97

PRRS: Clinical symptoms

The reproduction syndrome (Sow herds)

Agalactia

Abortions late in gestation/prematurely farrowings

Increase in weak and stillborn piglets

Increase in "return to service" sows

Increased piglet mortality

Secondary disorders frequently observed among piglets

Exudative Epidermitis (*S. Hyicus*)

Arthritis

Diarrhea

Meningitis



PRRS infection is caused by an RNA enveloped virus, which was first isolated in the Dutch city of Lelystad in 1991

PRRS: Clinical symptoms

The respiratory syndrome

Often observed in older pigs (grower & finisher phase)

PRRSV viremia - highest concentrations in lymphoid tissues and lungs, affects lung macrophages

As a result, all present infections in the herd can cause problems

- Pneumonia
- Pleuritis
- Meningitis
- Pericarditis
- Arthritis
- Diarrhea



The PRRS virus come in two types:
PRRS1 (European or Danish PRRS)
PRRS2 (American PRRS)



National PRRS reduction strategy

Why fight PRRS at the national level?

-PRRS control = safer pig production



Controlling and reducing the incidence of PRRSV in Denmark

- Fewer economic fluctuations for sow herds in particular
- Lower the risk of PRRSV recombines into new more virulent variants
- Reduced use of MLV vaccines
- Reduced risk of recombination of vaccine strains
 - Danish case in 2019

- **Area control and eradication initiatives are necessary**



**STRATEGY FOR THE REDUCTION
OF PORCINE REPRODUCTIVE
AND RESPIRATORY SYNDROME (PRRS)
IN PIGS IN DENMARK**

Developed in a collaboration between;
Pig farmers: The Danish Agriculture & Food Council
Veterinarians: The Danish Veterinary Association
Authorities: Danish Veterinary and Food Administration
Processors: Association of Swine slaughterhouses

Launched May 2022

Main purpose

- ✓ Improve the health of Danish pigs
- ✓ Reduce antibiotic usage and improve welfare
- ✓ Prevent negative impact on production



Goals

The overall goal of the strategy for the reduction of porcine reproductive and respiratory syndrome (PRRS) is to increase the proportion of herds free of PRRS



	Starting point 2022	Goals
Proportion of finishers declared seronegative for PRRSV at slaughter	25%	75%
Proportion of sow herds declared seronegative for PRRSV	58%	85%

Noget at leve af. Noget at leve for.



Methods to achieve goals

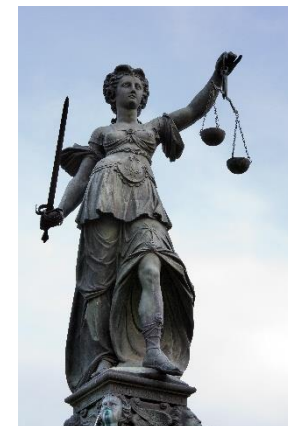
New rules defined in an executive order issued by the Danish Veterinary and Food Administration

Phase 1 - 2022

- Mandatory serological PRRSV status of all pig herds with more than 10 sows or 100 finishers – **approx. 5.000 herds in 2022**
- Monthly clinical surveillance by herd veterinarian in seropositive herds
- When clinical signs of PRRS – veterinarian are obligated to take blood samples for PCR analyses
- Pig slaughter companies has introduced a deduction in the price per Kg carcass of pigs delivered from PRRS PCR positive herds

Phase 2 – expected in 2025

- Virological surveillance (PCR - blood samples) in all seropositive herds



Expected effects of the new PRRS reduction initiatives

- Economical pressure on seropositive finisher herds
 - More mandatory visits by vet
 - Risk of deduction at slaughter
- Increased demands for seronegative piglets – increased price
- Increased financial gain for sow herds to eradicate PRRSV
- Farmers and vets will begin to work locally, to control and eradicate PRRSV at the regional level

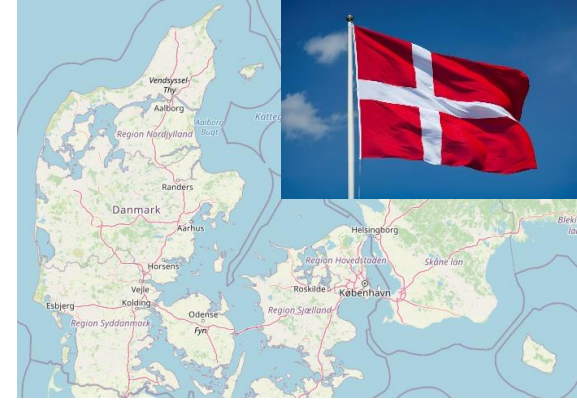


Serological PRRSV status of the Danish pig population

	Starting point 2022	Goals	January 2023
Proportion of finishers declared seronegative for PRRSV at slaughter	25%	75%	46%
Proportion of sow herds declared seronegative for PRRSV	58%	85%	58%

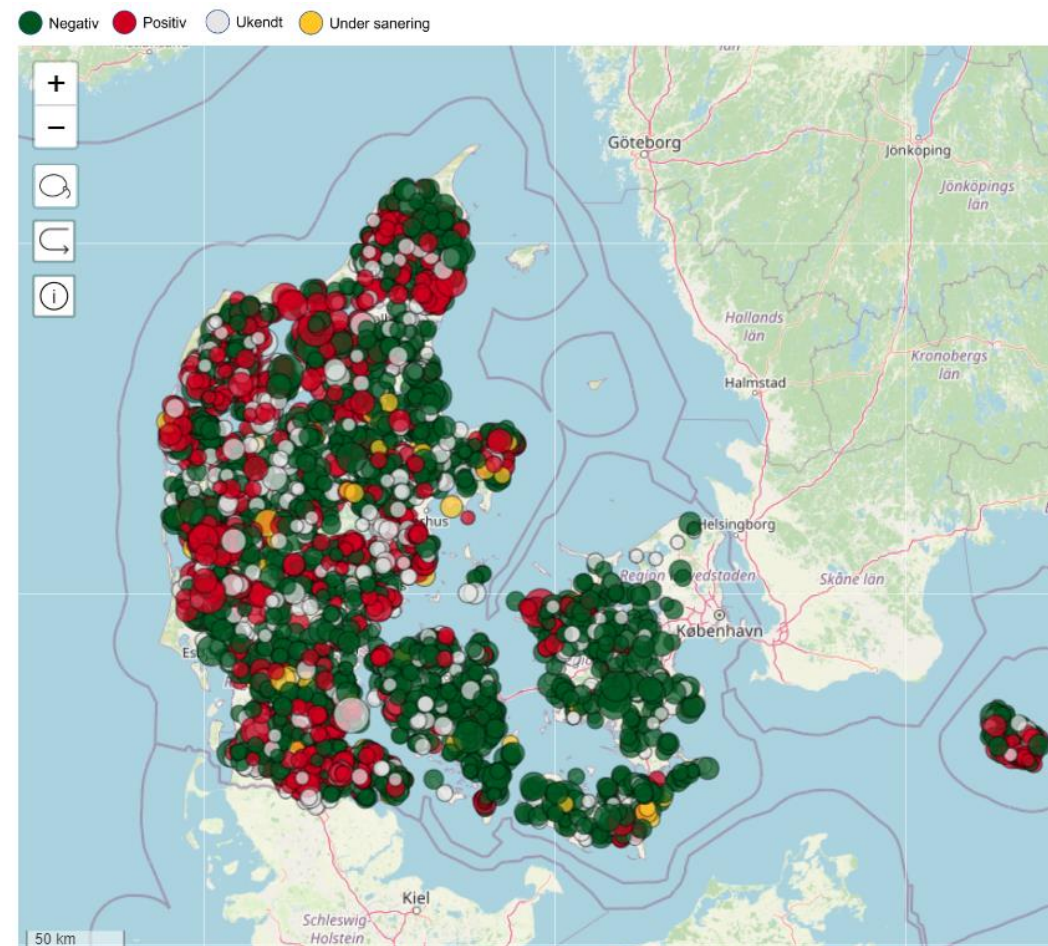
The conditions for PRRS control programs are excellent in Denmark

- ✓ No national import of living pigs
- ✓ A breeding nucleus free of PRRSV
- ✓ A field-tested health control system – the SPF system
 - Needs to be developed, PRRS status of all pig herds will be declared
- ✓ Geography – Limited air borne transmission from neighbouring countries
- ✓ Extensive professional knowledge of PRRSV control and eradication among the Danish pig veterinarians
- ✓ Good data systems (Health, Trade, Geographical position of herds)
 - **We know where the pigs are, their health status, and the trading patterns**



Dynamic PRRS map

- Realtime data
- Includes all Danish pig herds
- Herd information + geographical position + PRRS serological status
- Available for all farmers, vets and consultants
- Important tool to gain overview before regional eradication programmes are initiated
- Developed in collaboration with SEGES Innovation



Demonstration of dynamic PRRS map

LANDMAND.DK

FORSIDE

FORETRUKNE

NYHEDER

Nicolai



Klimaaftryk

Opdateret med registreret udbytter

Klimaaftryk fra marker i Mark Online
SEGES har beregnet klimaaftryk fra næsten alle marker, der findes i Mark Online.

Vi har ikke beregnet klimaaftryk for dine marker, fordi dine marker enten ikke er i Mark Online, bedriften er under 10 ha eller der kun er afgrøder, som vi ikke kan beregne aftrykket for.

SEGES Lager


Hold styr på bedriftens beholdninger



[GÅ TIL SEGES LAGER](#)

PRRS kort

Se oversigt over PPRS i Danmark



[SE PRRS KORT](#)

Vådområde- og klimainsatsen i Danmark

Klik her for at se gennemførte projekter og forundersøgelser af vådområde- og lavbundsprojekter i hele Danmark.



[SE KORT](#)

Få helt styr på arbejdsmiljøet på din bedrift

Tag arbejdsmiljøuddannelsen til januar og februar



Brian deltog i det lovpligtige arbejdsmiljøkursus hos SEGES

[FIND UDDANNELSEN HER](#)

Arbejder du med færemærket kemi?

Overhold loven og forebyg ulykker, når du arbejder med færemærket kemi. Brug CRiska!



CRiska
Overhold lovgivningen og forebyg ulykker.

[LÆR MERE OM CRISKA](#)

Vejret fra DMI

Vejret for København V

I DAG 2 DØGN 5 DØGN

Onsdag 4. jan

10°C

Nat: 9°C 34mm

[LÆS MERE HOS DMI](#)

Prøv FarmTracking og CropManager gratis!

Frem til 31. marts 2023 kan du prøve FarmTracking og CropManager gratis. Prøv det nu, og oplev fordelene.



Prøv CropManager og FarmTracking GRATIS

[BESTIL NU](#)

Landbrugets klimadage: Du kan nå det endnu!

SEGES INNOVATION

SIDSTE CHANCE

KUN TRE GRATIS KLIMADAGE TILBAGE!
Bliv skarp på landbrugets nye klimaværktøj

[TILMELD DIG NU](#)

SPONSORED BY **Forenet Kredit Nykredit**

Virkemiddelvælgeren

Indtast cvr-nummer på den kunde du ønsker at se beregningen for.

[SE KORT](#)

VikShop

VikingDanmark leverer alt til landmanden



[GÅ TIL VIKSHOP](#)

FarmTracking

Se de seneste videoer

Nyheder i FarmTracking



[SE FLERE VIDEOER](#)

Mine Links

Nyheder fra Landbruksavisen

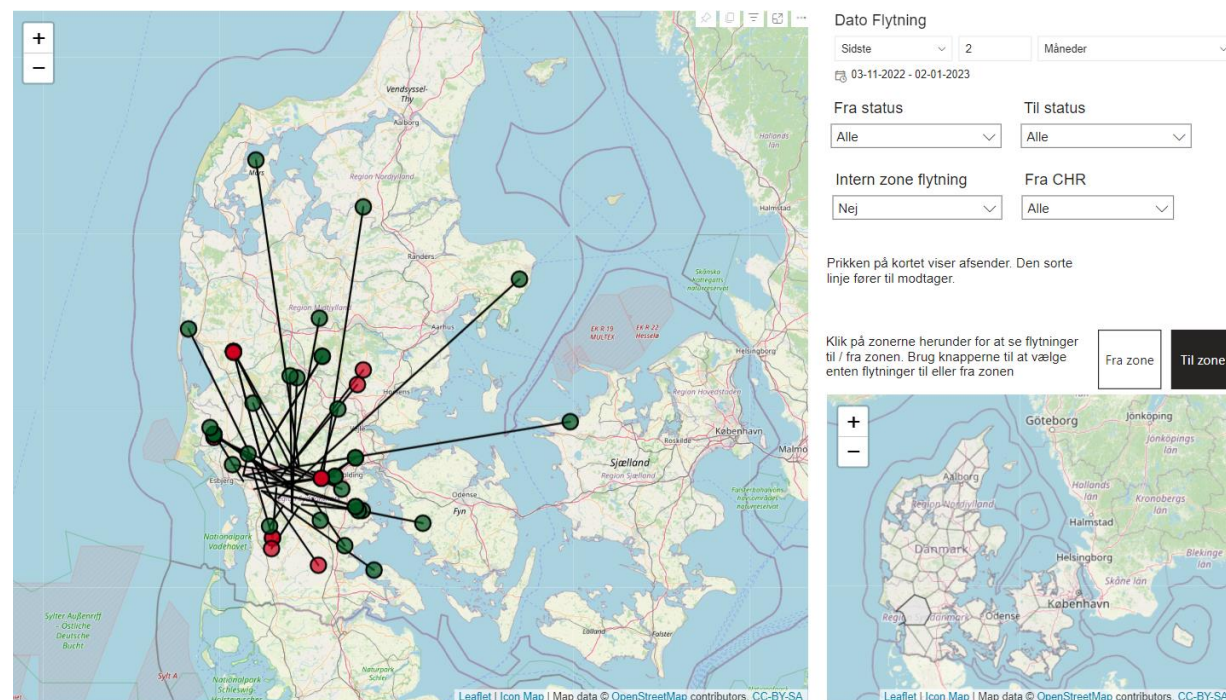
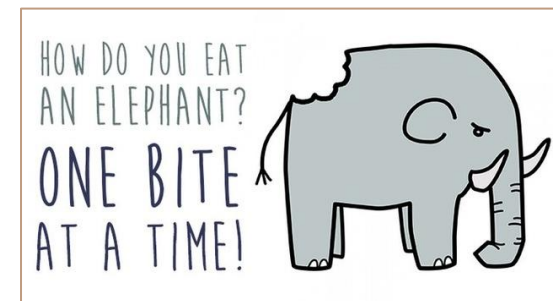
Dansk direktør køber sig ind i siloproducent

4.1.2023



New map with regions and trade patterns

- **Regionalisation** – deviding the elephant into smaller edible pieces
- Addition of **trade information** from "Flyttedatabasen"
 - Overview of trade patterns within region and between regions
 - Realtime visualisation of transport with indication of PRRS status



Demonstration of new map with regions and trade patterns

RP_PRRS - Intern | Data opdateret 4.1.23

Søg efter

Filer | Eksportér | Del | Chat i Teams | Få indsigt | Abonner på rapport

0.0 % | 57.4 % | ...

50 km
30 mi

Leaflet | Icon Map | Map data © OpenStreetMap contributors, CC-BY-SA

Vælg et område for at se dealjer

Farv kort efter

- # Positive / 100 km²
- Andel positive %

Besætningstype

- Integreret
- Sohold
- Vækstgrise

Vis besætningsliste

Antal CHR	Positive %
4.933	26 %
Antal slagtegrise	Antal VPE
5.766.503	2.091.378
Antal søer	Antal smågrise
1.060.427	6.338.591

Aktuel status

- Integreret
- Sohold
- Vækstgrise

PRRSstatus	Integreret	Sohold	Vækstgrise	Totalt
Negativ	669	1.513	2.377	2.377
Positiv	324	884	1.283	1.283
Ukendt	1.004	1.183	1.183	1.183
Under sanering	90			90

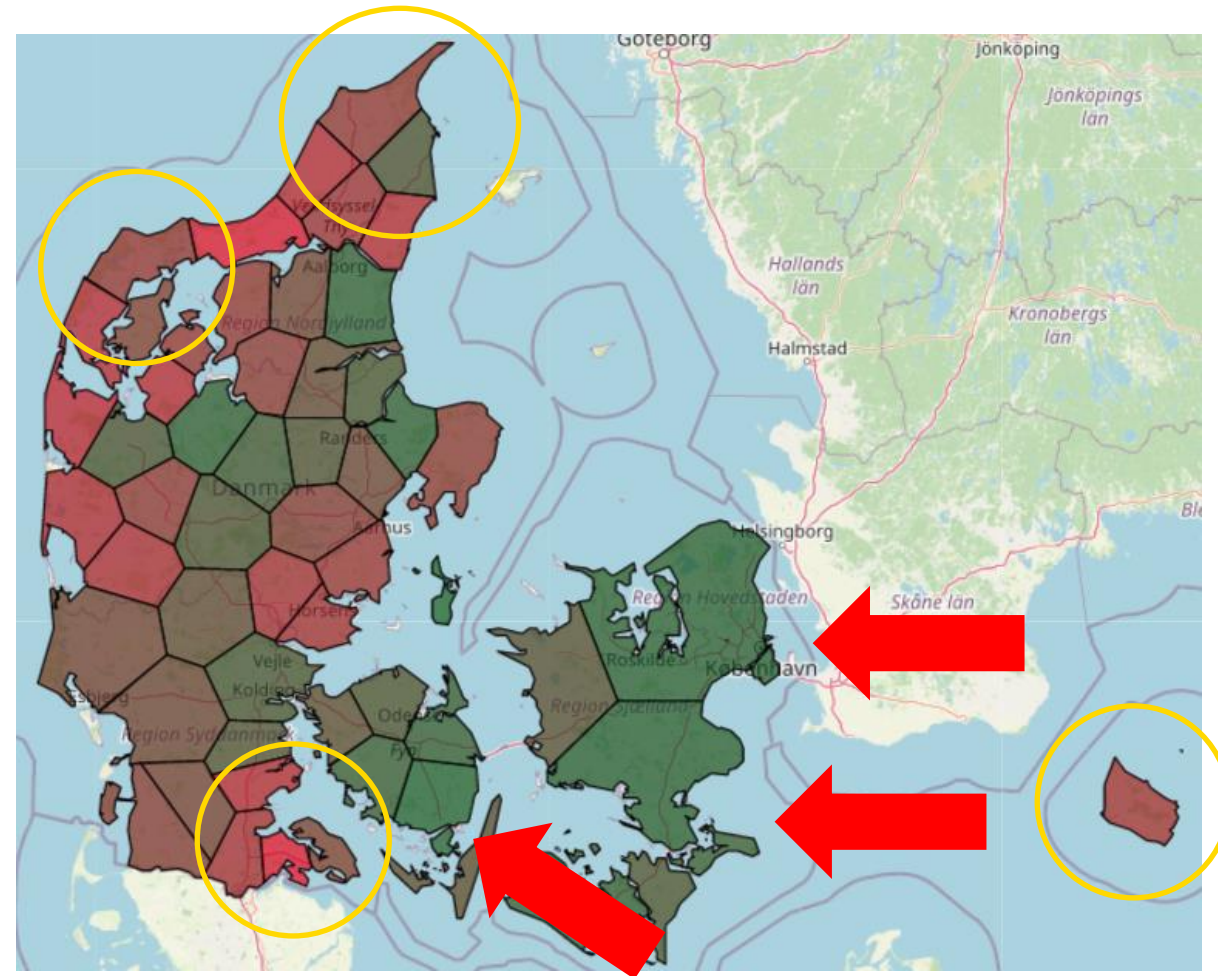
Antal CHR

115 %



National PRRS strategy

- 1. Push PRRS out of low prevalent regions**
 - Eastern part of Denmark (Except Bornholm)
- 2. Coordinated PRRS eradication programs in high prevalent regions**
 - Participation by farmers, vets, advisors



Next steps

- New executive order will be issued by the Danish Veterinary and Food Administration as soon as possible
- PRRS status on the remaining herds currently with unknown status
- Digital tools will be further developed and distributed to farmers, vets and advisors
- The Danish Agriculture & Food Council will designate PRRS regions and possible eradication areas
- Appointment of local PRRS coordinators
- Area eradication programs will be initiated when farmers are ready

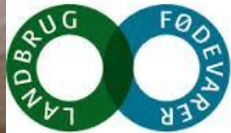


Questions?



Ministry of Food, Agriculture
and Fisheries of Denmark

Danish Veterinary and
Food Administration



Danish Agriculture
& Food Council



Danish Agriculture & Food Council

Kristian Møller

Bjørn Lorenzen

Vibeke Frøkjær Jensen

SPF-SUND

Veterinary Laboratory - Kjellerup

SEGES
INNOVATION

SUPPORTED BY

Danish Pig Levy Fund