

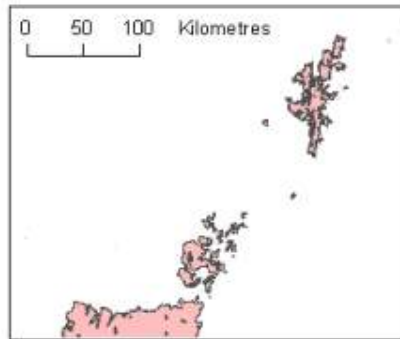


# Herd Health Programmes

Derek Armstrong

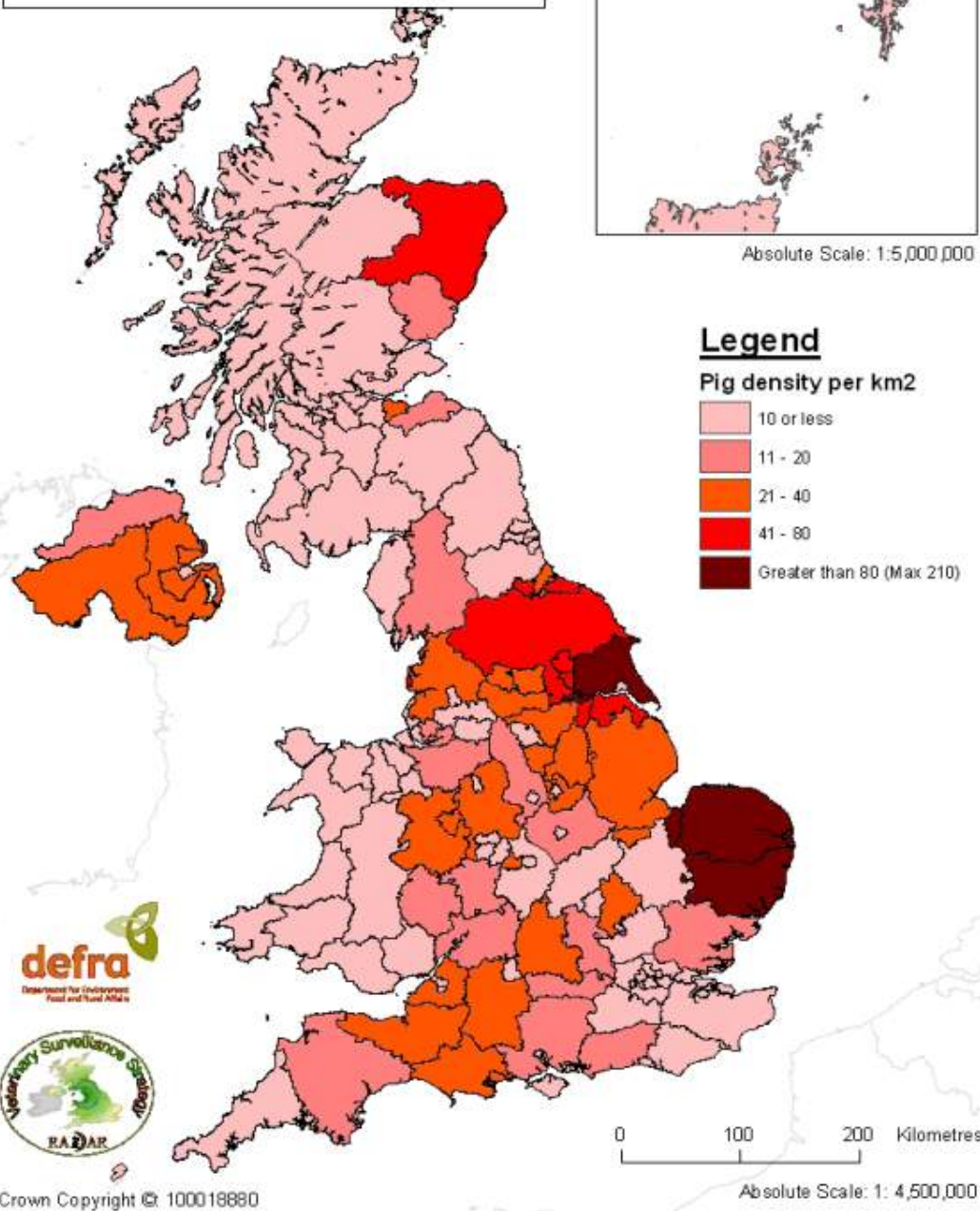
BPEX Veterinary Programme  
Manager

## Pig density in UK Census areas on 02 June 2005



### Legend

Pig density per km<sup>2</sup>



# Where are all the pigs?

- 10,000 pig premises
- 1600 assured farms account for 92% production
- 35 companies account for 50% of breeding herd
- 10 companies account for c. 35% of breeding sows



# How are our pigs kept ?

(Source: Defra)



No Stalls !



41% sows outdoors



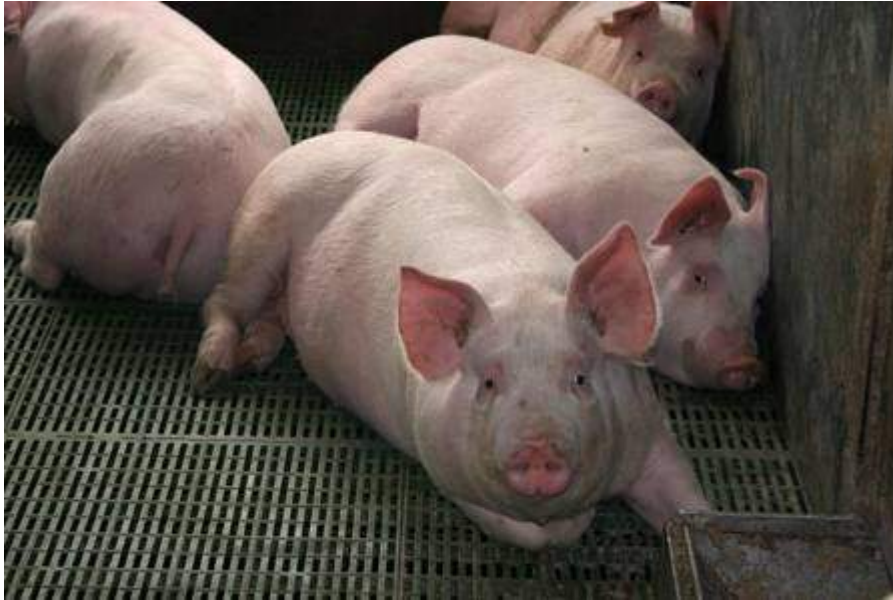
59% sows indoors





# How are our pigs kept ?

(Source: Based on AFS data)



39% of pigs on fully slatted floors

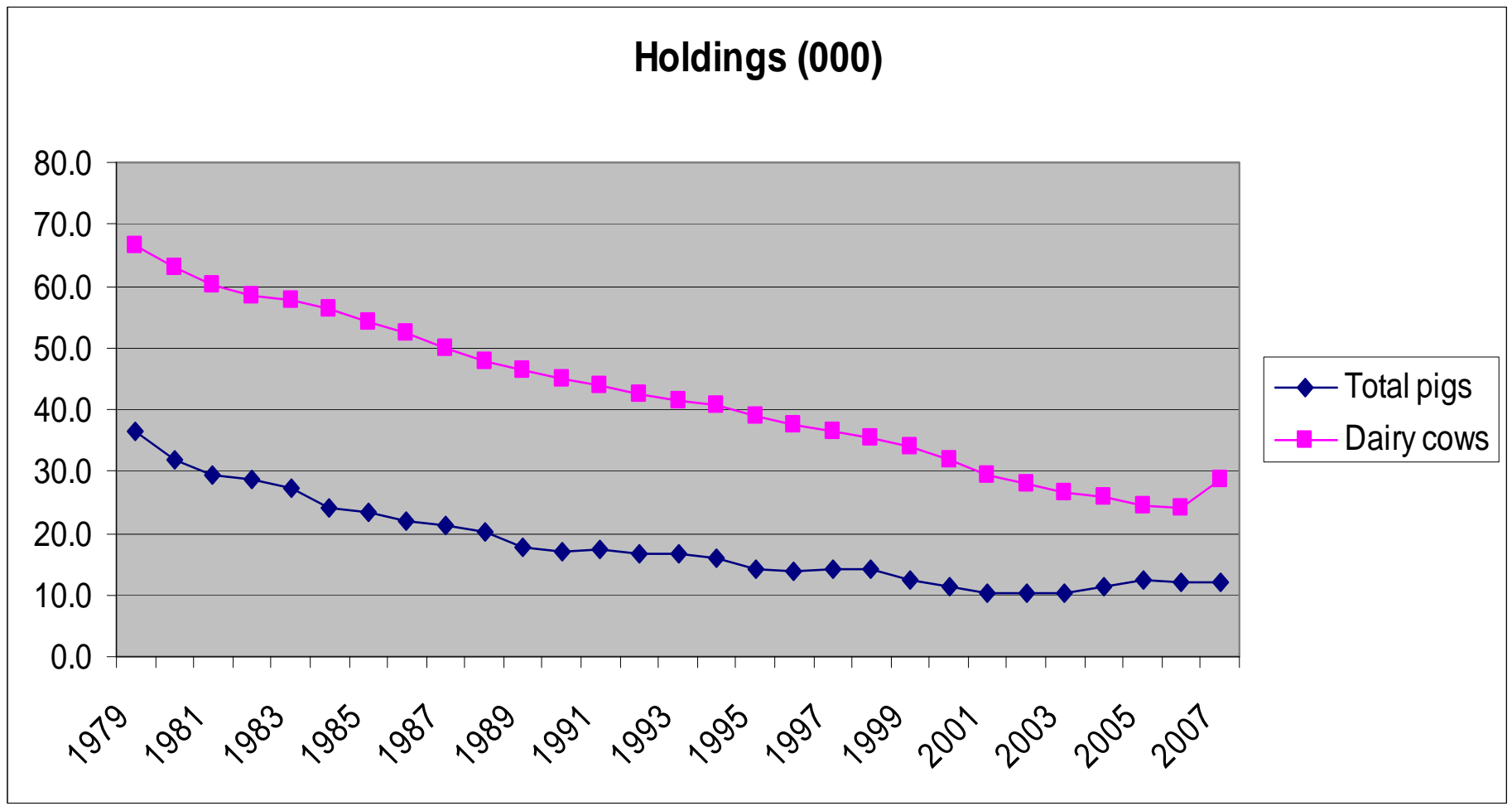
30% of pigs on partly slatted floors

31% on solid floors with bedding (i.e. straw)





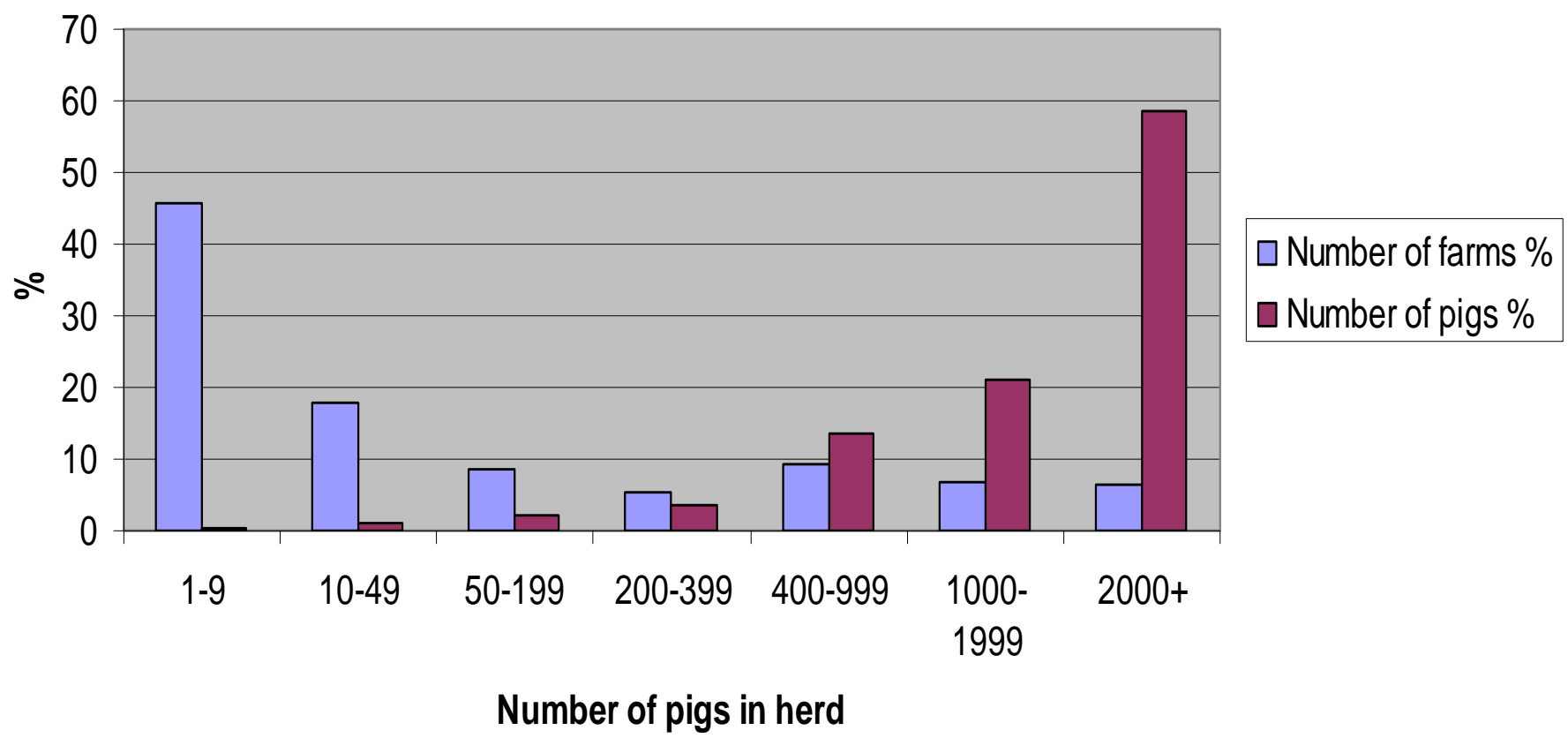
# Change in number of holdings





# UK herd structure

### UK herd structure 2003



# ... The pig sector is changing ...

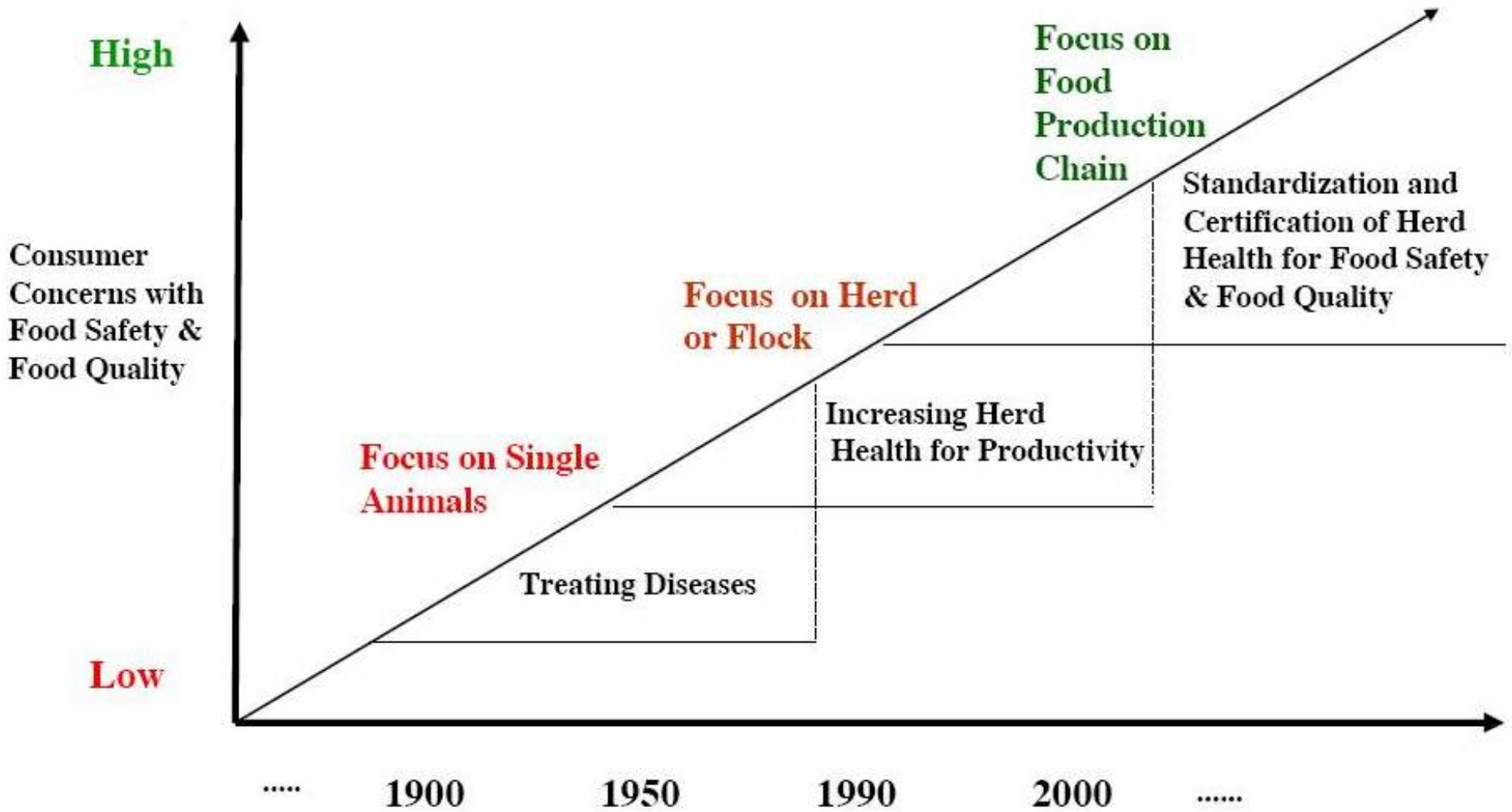


... The disease, welfare, environment and food safety issues are also changing ...

- Structural changes (herd size...)
- Environmental pressures (IPPC, Nitrates ...)
- Management practices and new technologies (feeding, housing, vaccines...)
- Genetics : lean pigs, hyperprolific sows...
- Trade (feed, semen..., over long distances...)



# The changing role of animal health care



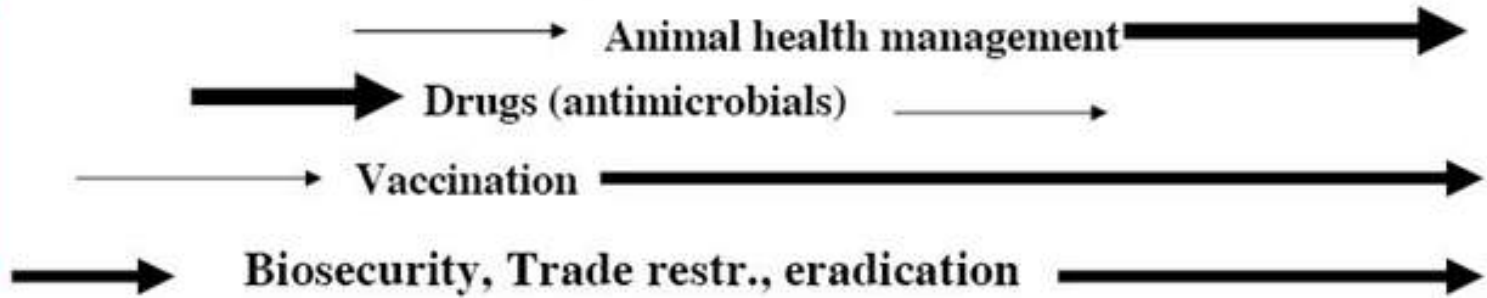




# Animal Health is .....

...not a simple "No" or "Yes", but a complex "Low" or "High"

**The tools**



Worms and Epidemics

Pneumonia and Diarrhoea

Little disease with lots of drugs

No disease with no drugs

No animal and no human pathogens



Low

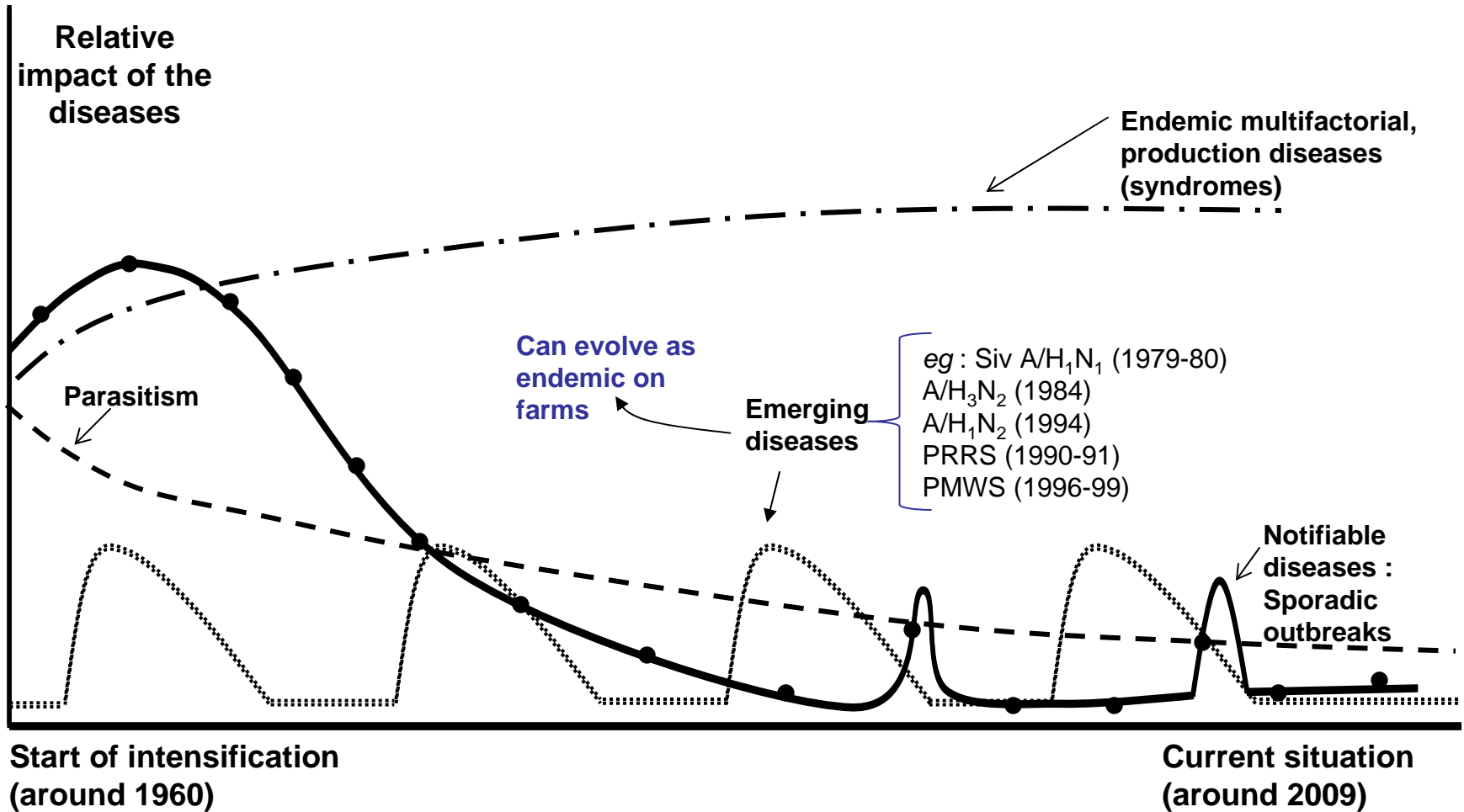
Animal Health

High

.... 1900 1950 1990 2000 .....

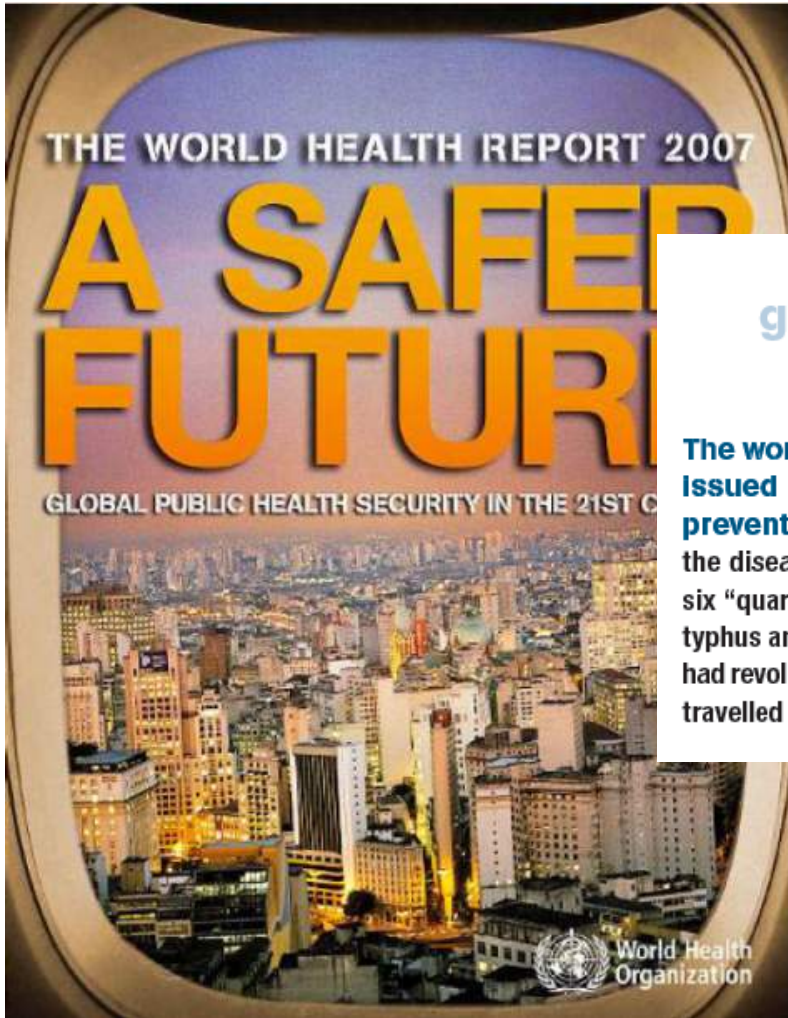


# Schematic representation of health problems of pigs in relation to intensification





# World Health Organisation



## world health report 2007 global public health security in the 21st century

Dr Margaret Chan  
Director-General  
World Health Organization

**The world has changed dramatically since 1951, when WHO issued its first set of legally binding regulations aimed at preventing the international spread of disease.** At that time, the disease situation was relatively stable. Concern focused on only six “quarantinable” diseases: cholera, plague, relapsing fever, smallpox, typhus and yellow fever. New diseases were rare, and miracle drugs had revolutionized the care of many well-known infections. People travelled internationally by ship, and news travelled by telegram.







# World Health Organisation

# MESSAGE FROM THE DIRECTOR-GENERAL



*M. Chan*

Dr Margaret Chan  
Director-General  
World Health Organization

Since then, profound changes have occurred in the way humanity inhabits the planet. The disease situation is anything but stable. Population growth, incursion into previously uninhabited areas, rapid urbanization, intensive farming practices, environmental degradation, and the misuse of antimicrobials have disrupted the equilibrium of the microbial world. New diseases are emerging at the historically unprecedented rate of one per year. Airlines now carry more than 2 billion passengers annually, vastly increasing opportunities for the rapid international spread of infectious agents and their vectors.

In a particularly ominous trend, mainstay antimicrobials are failing at a rate that outpaces the development of replacement drugs.



# Pig health

**Host**



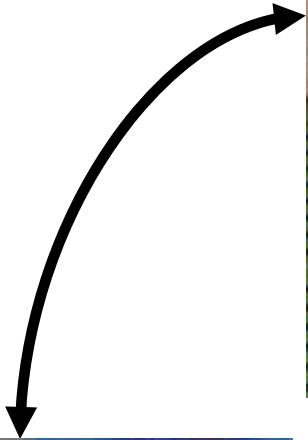
**Health**



**Environment**



**Agent**







# Animal health

**Host**



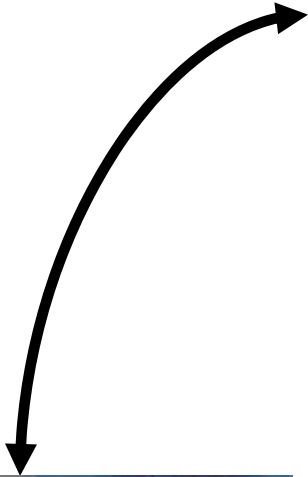
**Disease**



**Environment**



**Agent**





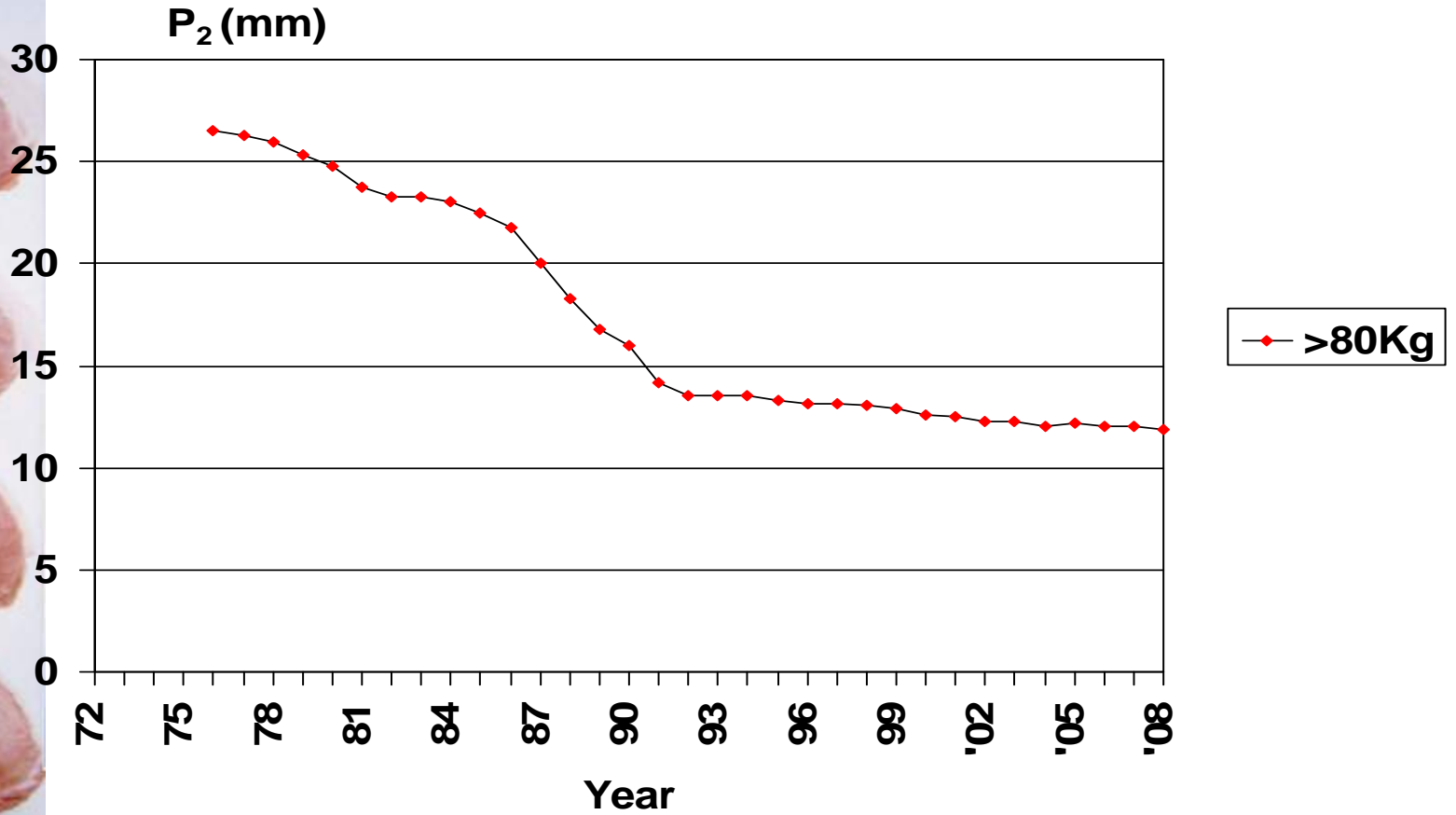
# Host – evolution or revolution

- Science of genetics has replaced art of animal breeding
- Programmes of intensive selection to achieve rapid progress in raising level of performance of farm livestock
  - Dramatic increases in litter sizes, growth rates, leanness
- Annual genetic progress for pig breeding programmes
  - daily gain of +20 g/day,
  - lean meat % of +0.5% and
  - litter size of +0.2 piglet/litter.





# Fat depth of pig carcasses by weight range, 1972-2008





# Host – evolution or revolution

- Science of genetics has replaced art of animal breeding
- Programmes of intensive selection to achieve rapid progress in raising level of performance of farm livestock
  - Dramatic increases in litter sizes, growth rates, leanness
- Annual genetic progress for pig breeding programmes
  - daily gain of +20 g/day,
  - lean meat % of +0.5% and
  - litter size of +0.2 piglet/litter.
- **Future - molecular genetics enable more genetic change for less heritable, expensive or difficult to measure traits,**
  - meat quality
  - health
  - longevity





# Agents that cause disease

- Exotic diseases
  - Classical Swine Fever, Foot and Mouth Disease ...
  - Rinderpest eradicated worldwide 2010
- Endemic diseases
  - E.coli, Enzootic Pneumonia, APP, Ileitis, Swine dysentery ...
  - Roundworms, mange, Leptospirosis
- Emerging diseases
  - PRRS, PCV2, swine Influenza
  - BSE, Bluetongue
- Zoonoses – potential to cause disease in people
  - Salmonella, Campylobacter, Toxoplasma
  - MRSA, Influenza





# Exotic disease control



## Control measures

- KEEP IT OUT
  - Controls on imports, Quarantine
- FIND IT QUICKLY
  - Early detection: Farmers, Private vets
- STOP IT SPREADING
  - Controls on movements
  - Slaughter policy
  - C&D
  - Vaccination





# Endemic disease challenges



- Antimicrobial resistance
  - Resistant strains of swine dysentery
  - MRSA
- Resistance is a real threat to the long-term viability of the pig industry.
- Limited number of chemically active groups available
  - Huge cost of R & D and registration of new products for food animals
  - Voluntary ban on cephalosporins and fluoroquinolones in Denmark
- Alternatives - vaccines and biological control agents
  - R&D cost – focus on international markets
- Must use current products sparingly and wisely.
- Regional/national disease elimination a serious option



# Welfare challenges



## THE FIVE WELFARE FREEDOMS

- Freedom from fear and distress
- Freedom from pain injury and **disease**
- Freedom from hunger and thirst
- Freedom from discomfort
- Freedom to express normal behaviour
- Consumer expectation
  - High quality of life
- Premium for 'high' welfare
- Disease control 'more challenging' in high welfare systems
- Regional/national disease elimination a serious option

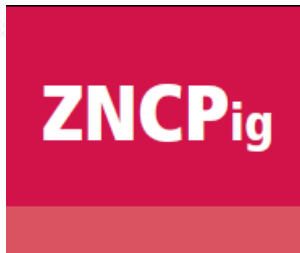
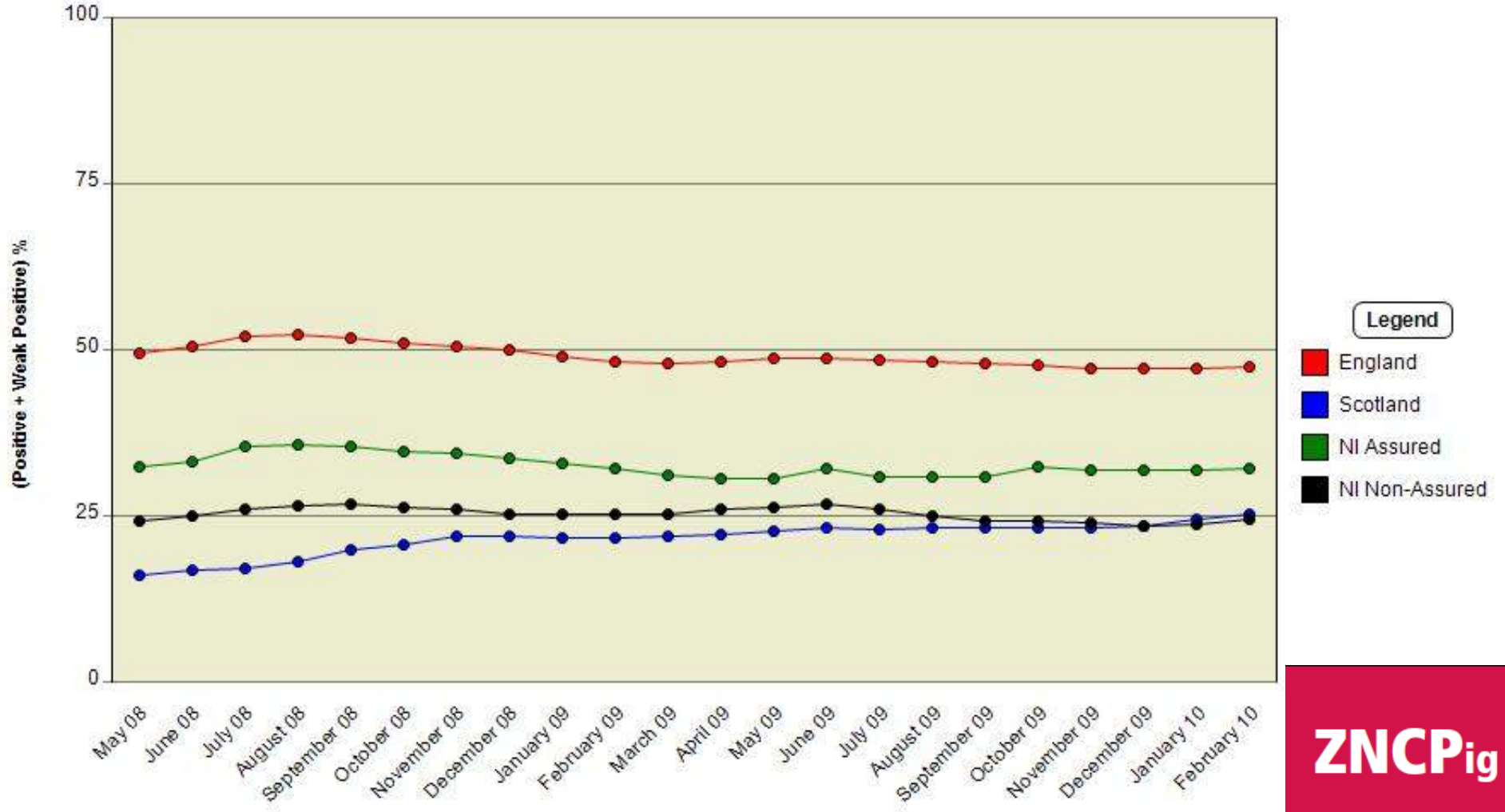
# Food safety challenges

- 1 in 4 pigs in UK carry Salmonella at slaughter
  - Highest level of S. Typhimurium in finisher pigs in the EU
- Prevalence stable over past decade
  - No impact of Salmonella Control Programmes
- Levels in breeding herds above EU average
  - High levels in Denmark and Netherlands
- Despite high levels in breeding herd in DK and NL levels in finishing pigs below EU average
  - Liquid feeding; fully slatted systems; AIAO; hygiene....
- EU regulation requires targets for finishing and breeding pigs and a National Control Plan



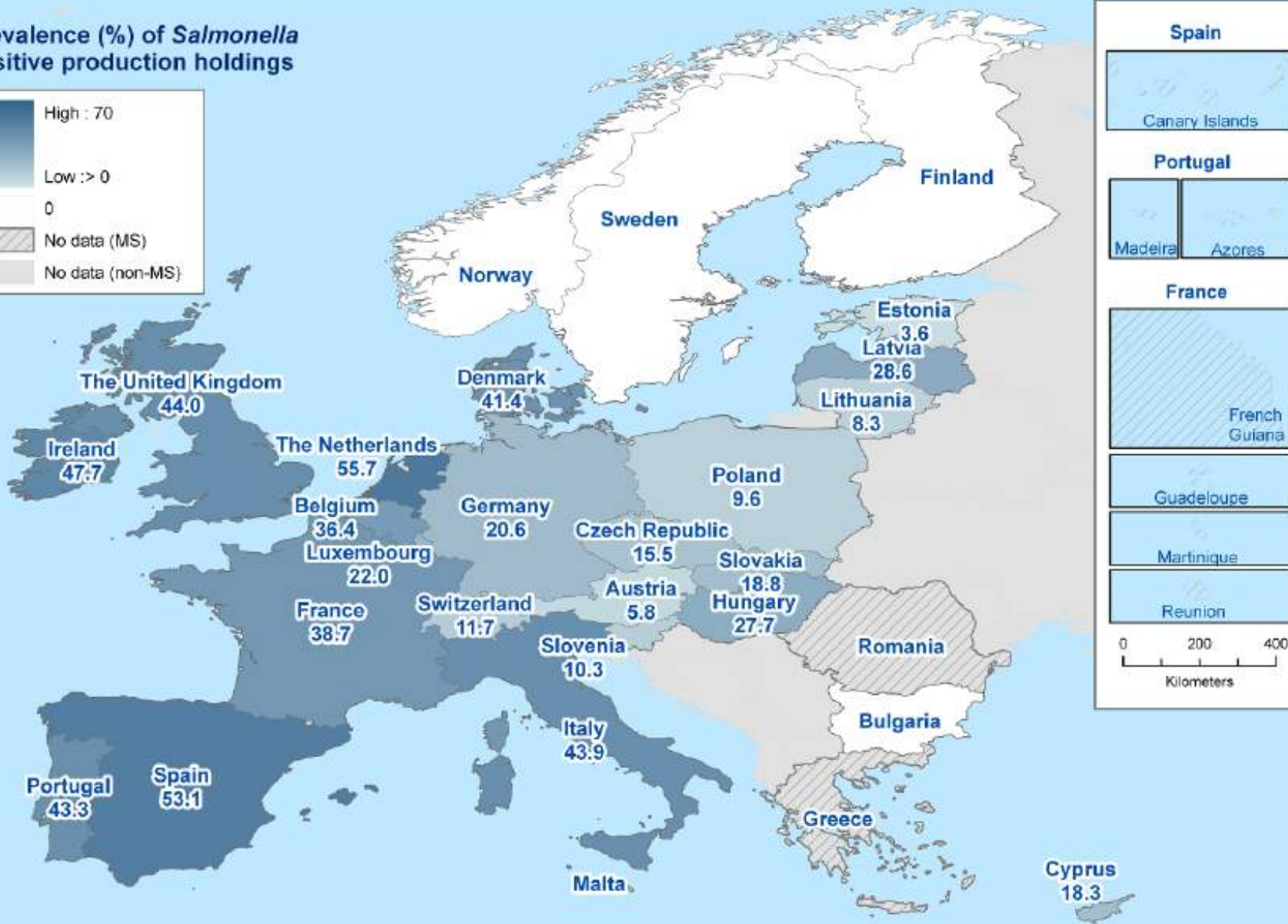
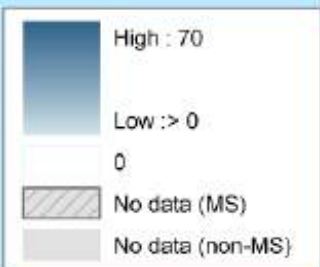
# Trend of ZNCPig regional results

Regional Positive + Weak Positive Results - 01/06/2008 to 01/03/2010





**Prevalence (%) of *Salmonella* positive production holdings**





# Prevalence in production holdings

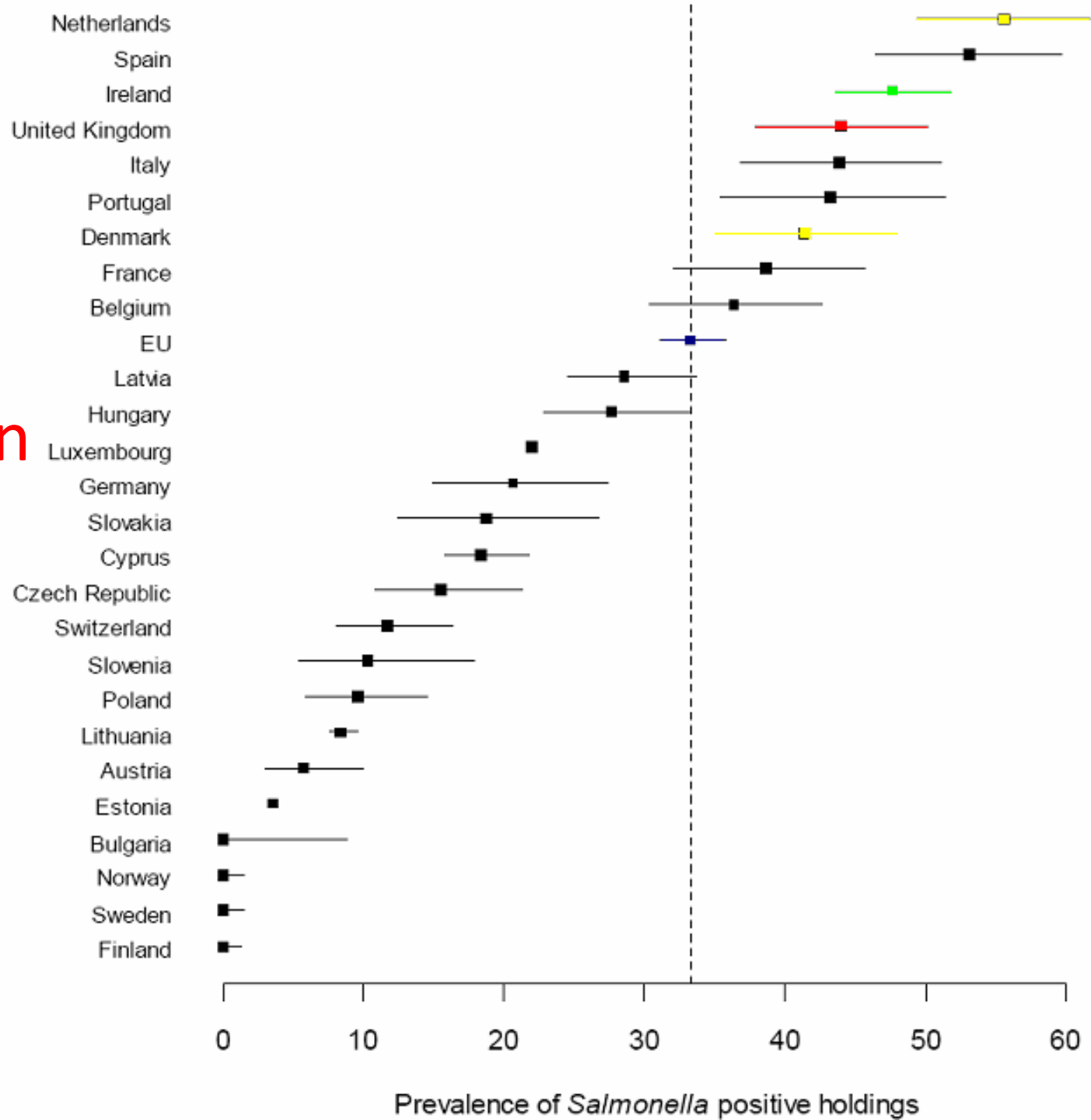
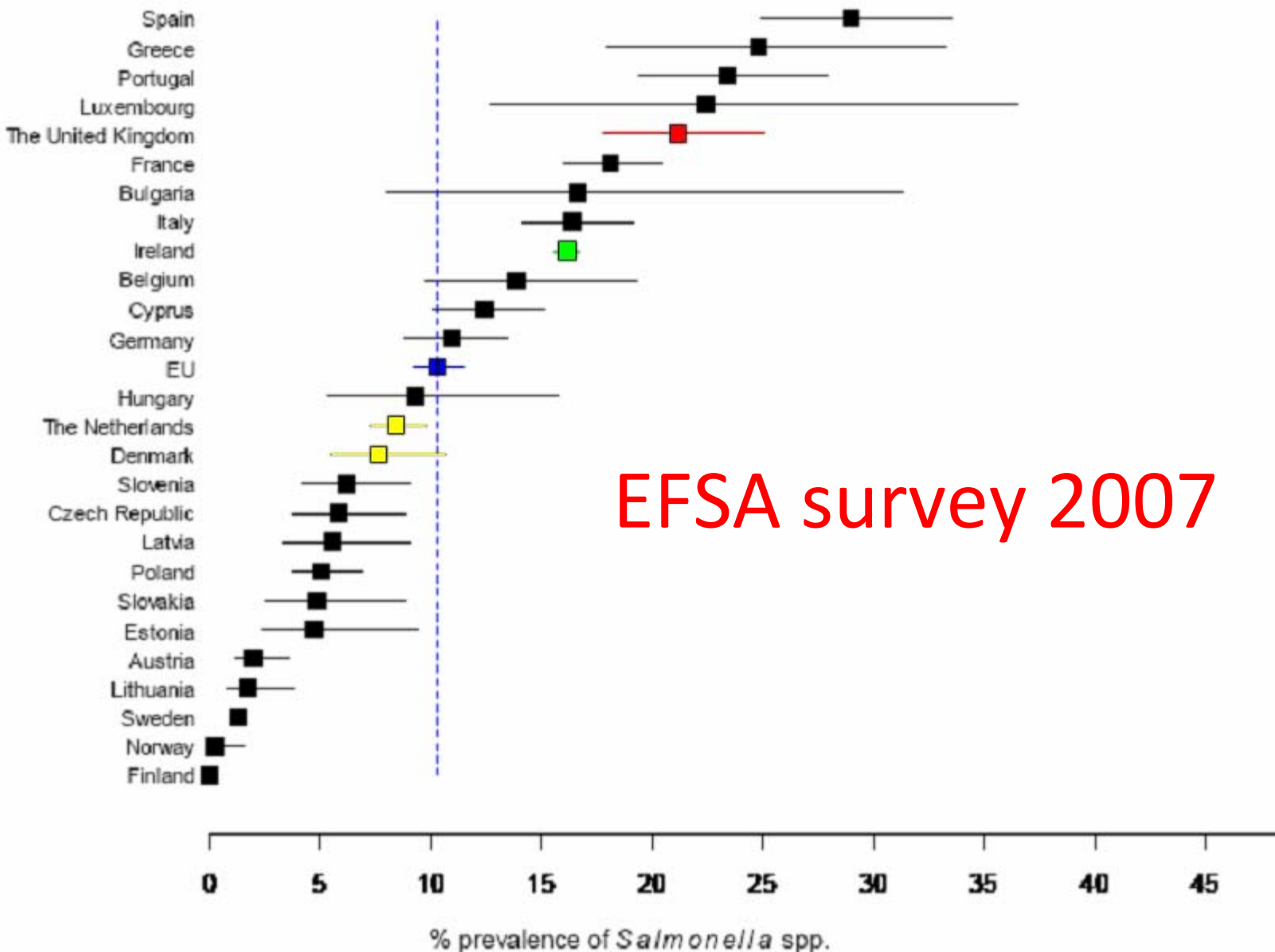


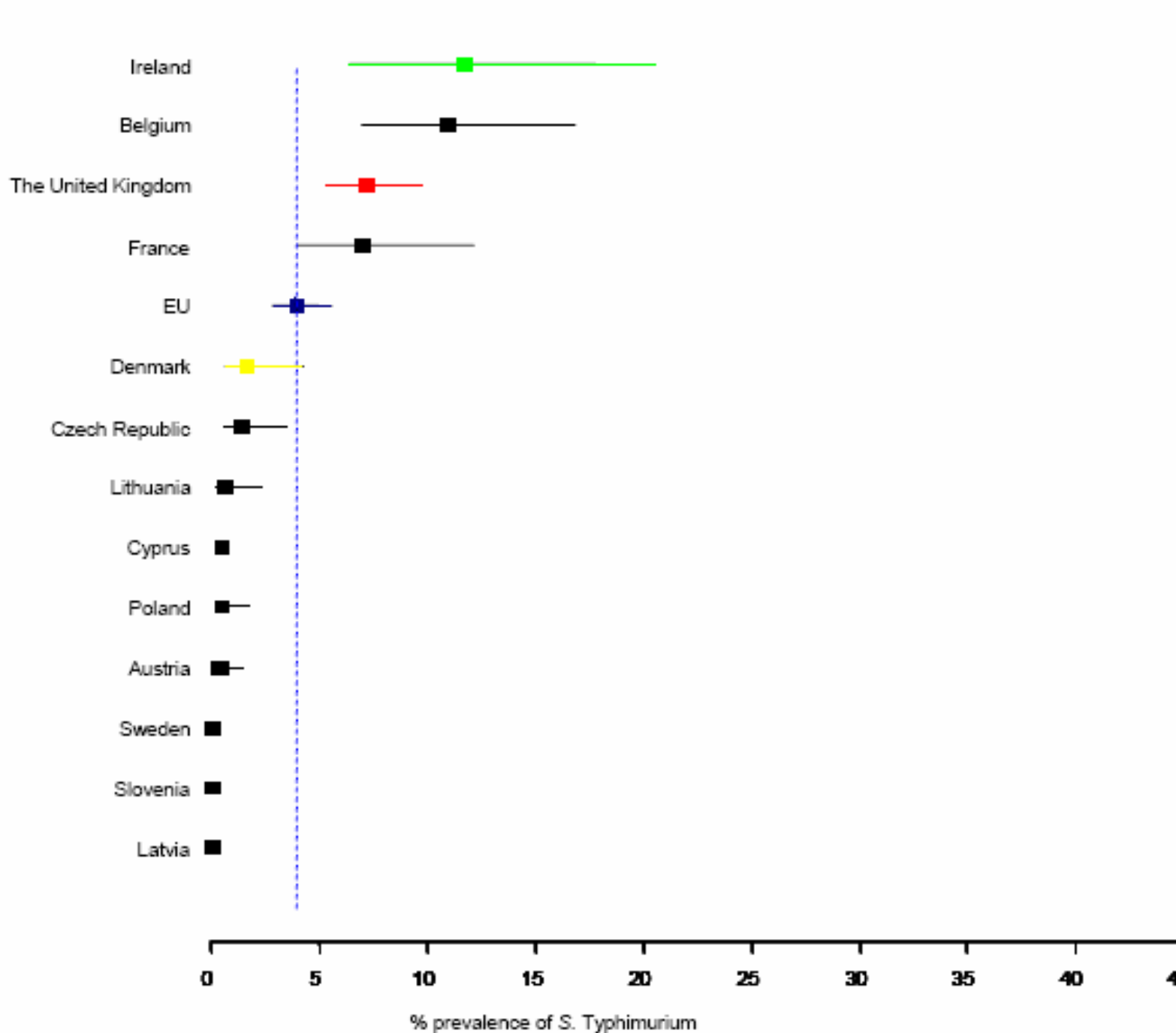


Figure 1. Observed prevalence of slaughter pigs infected with *Salmonella* spp. in lymph nodes EU and Norway, 2006-2007



EFSA survey 2007

Figure 6. Observed prevalence of carcasses contaminated with *S. Typhimurium*.





# REGULATION (EC) No 2160/2003

## REGULATION (EC) No 2160/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 November 2003

### ANNEX I

Specified zoonoses and zoonotic agents for which Community targets for the reduction of prevalence are to be established pursuant to Article 4

1. Zoonosis or zoonotic agent	2. Animal population	3. Stage of food chain	4. Date by which target must be established (*)	5. Date from which testing must take place
All salmonella serotypes with public health significance	Herds of slaughter pigs	Slaughter	48 months after the date of entry into force of this Regulation.	18 months after the date referred to in column 4
All salmonella serotypes with public health significance	Breeding herds of pigs	Primary production	60 months after the date of entry into force of this Regulation.	18 months after the date referred to in column 4

(\*) These dates are based on the assumption that comparable data on prevalence will be available at least six months before the establishment of the target. If such data were not available, the date for the establishment of the target would be postponed accordingly.





# Food safety challenges

- It is important that pigmeat maintains a reputation as a safe and wholesome product
  - Control processes to enhance food safety must be applied at every stage from plough to plate.
- No economic drivers for producers or processors to reduce Salmonella
  - Pride in Premium Product
  - Risk management – cf. BP, Edwina Currie
  - Feed measures increase cost and/or reduce performance
    - Meal; organic acids; barley replacing wheat ... (liquid feed)
- Hygiene, management and biosecurity requirements for salmonella control are the same as for other diseases
- Programmes for regional/national health improvement can make a contribution to Salmonella control



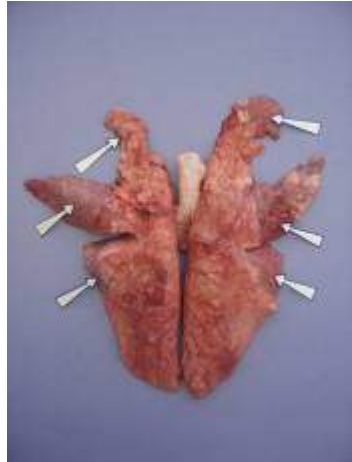
# Key costs of disease

- Mortality
  - Deaths; abortions; culling
- Carcass quality and food safety
  - condemnations; trim; effect on carcass value
  - Salmonella, Campylobacter
- Medicine costs
  - Antimicrobials
  - Vaccines
- Pig performance
  - Average daily gain
  - Food conversion ratio
- Regional/national disease elimination a serious option





# Porcine Respiratory Disease Complex (PRDC)



- A major concern for more than 50 % of farms in the EU
  - despite broad use of vaccines + AB...
- Pathogens involved :
  - *Myco. hyopneumoniae*, APP, *Haemophilus parasuis*, *Past. multocida*, *S.suis*... + SIV + PRRSV + PRCV + PCV2
- *Mycoplasma hyopneumoniae* : pivotal role in Pneumonia; widely spread.
- Interaction of risk factors ... that relate to :
  - Housing
  - Herd management
  - Hygiene

Level of disease and impact related to balance of these risk factors
- Regional/national disease elimination a serious option



# Post-weaning enteric disorders

- A problem on many farms :
  - unstable situation, peaks of problems,
  - despite c. 90% of the pigs being medicated at weaning



- Pathogens involved : E. Coli(s) (enterotoxigenic strains (ETEC)... + ??
  - But ETEC also found on farms where no disease (and no antimicrobial use...)



- **Interaction of risk factors ... that relate to :**

- Nutrition (digestive physiology)
- Gut flora (composition)
- Environment of the piglet before and at weaning...

- = a cascade of events that, combined, favour ETEC proliferation beyond pig « resistance »....

- Regional/national disease elimination not an option

- Hygiene, feeding, management, environment





# BPHWS – launched 2003



A STRATEGY FOR  
BRITISH PIG HEALTH  
AND WELFARE



- ‘An industry where the health of pigs and their welfare is optimised in a way that contributes significantly towards competitiveness and sustainability.’
- Developed by BPEX, National Pig Association, Pig Veterinary Society and MLC





# British Pig Health and Welfare Strategy

- Create a Health and Welfare Council
- Establish health & disease status
- Communicate disease surveillance information to industry
- Intervention studies on control/eradication & Technology Interaction
- Biosecurity
- Tackling new diseases
- Risks/consequences of emerging pig issues
- Training farmers and specialists
- Targeted pig research



A STRATEGY FOR  
BRITISH PIG HEALTH  
AND WELFARE





# BPEX Pig Health Scheme

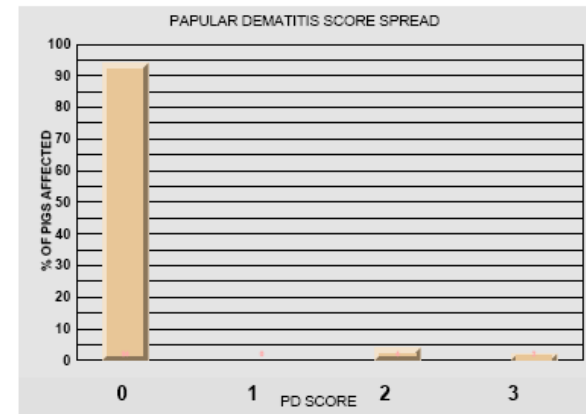
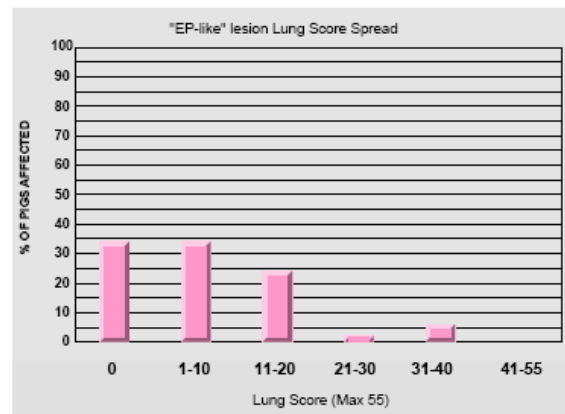
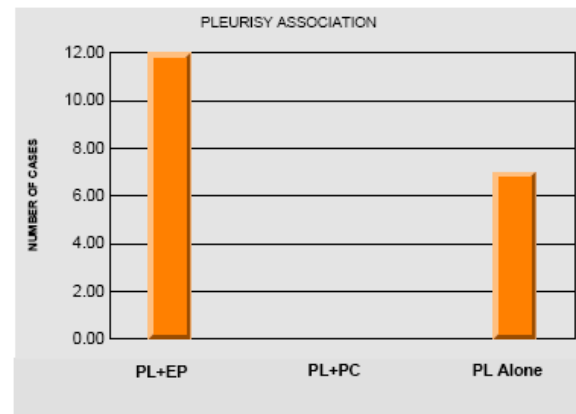


- Lesion scoring on line using trained assessors
- Information recorded on hand held IPAQs
- Information sent to producers, vets, and abattoirs within a week

SLAP :  
 ABATTOIR:  
 Date: Jun-2007 Pigs Submitted: 163 Pigs Examined: 50

INDIVIDUAL UNIT DATA

Summary	Lungs						Liver		Other				Body	Skin
	EP Ave Score	"Viral" %	PP Chronic %	PP Acute %	Abscess %	Pyaemia %	MS %	HS %	Pleurisy Mild %	Pleurisy Severe %	PC %	PT %	Tail %	PD Ave %
	8.05	0.00	0.00	0.00	0.00	0.00	0.00	2.00	22.00	16.00	0.00	0.00	0.00	0.14
Pigs Affected	33	0	0	0	0	0	0	1	11	8	0	0	0	3



Comments: Slapmarks unclear

**Extensive Enzootic Pneumonia-like lesions were found in greater than 30% of pigs examined. Veterinary advice should be sought** as this suggests that there is suboptimal control of infection. **DLWG reductions of between 6% and 50%** may have occurred as a result of this during the finishing period (depending on the onset and duration of disease). **This could be equivalent to an extra 4 to 35 days to reach slaughter weight!**

**Extensive Papular Dermatitis lesions were found in pigs examined with some individual pigs observed with scores of 2 or 3 (extensive and severe lesions). Veterinary advice should be sought** since mange is a possible cause for these lesions, particularly if there is evidence of scratching among finishing pigs. **FCR rates may be reduced by up to 10%** if mange is present. **This could equate to an extra 9kg of extra feed per affected finisher.**

**Pleurisy has been found in more than 10% of pigs examined. Veterinary advice should be sought** regarding further diagnosis of

For all enquires regarding BPHS contact the administration centre on 01463 233184 or e-mail bphs@sac.co.uk

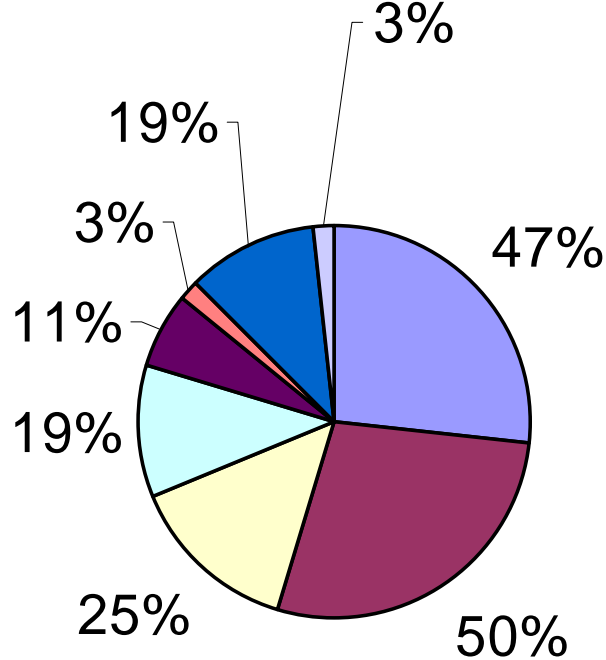
KEY

EP	Enzootic Pneumonia
"PP"	Pleuropneumonia-like
"Viral"	Viral-type distribution
MS	Milk Spot
HS	Hepatic Scarring
PC	Pericarditis
PT	Peritonitis
PL	Pleurisy
PD	Papular Dermatitis
Tail	Tail-bitten



# How BPHS results are used

## If Yes What - Producers?



- Review ed Vaccine Policy
- Review ed Worming Policy
- Review ed Other Medication
- Review ed General Health Plan
- Changed Production System
- Changed Nutrition
- Changed C&D
- Other



# Changes in severe Enzootic Pneumonia-like lesions detected through BPHS



Marked reduction in the occurrence of severe EP-like lesions (score >9). (Sanchez, 2010)

**How CARCASE SCORING is helping pig vets build a healthier British pig herd**

The BPHS is the first in a series of public-private partnerships to help improve the health of the British pig herd.

**THIS IS WHAT THE REPORTS SHOWED...**

Year	2006	2007	2008	2009	2010
Members	0.10	0.08	0.07	0.05	0.04
Non-members	0.09	0.09	0.09	0.08	0.08

**AND THIS IS WHAT WE DID ABOUT IT**

The BPHS has implemented a series of measures to improve the health of the British pig herd, including the use of CARCASE SCORING to monitor and improve pig health.

The BPHS has also implemented a series of measures to improve the health of the British pig herd, including the use of CARCASE SCORING to monitor and improve pig health.





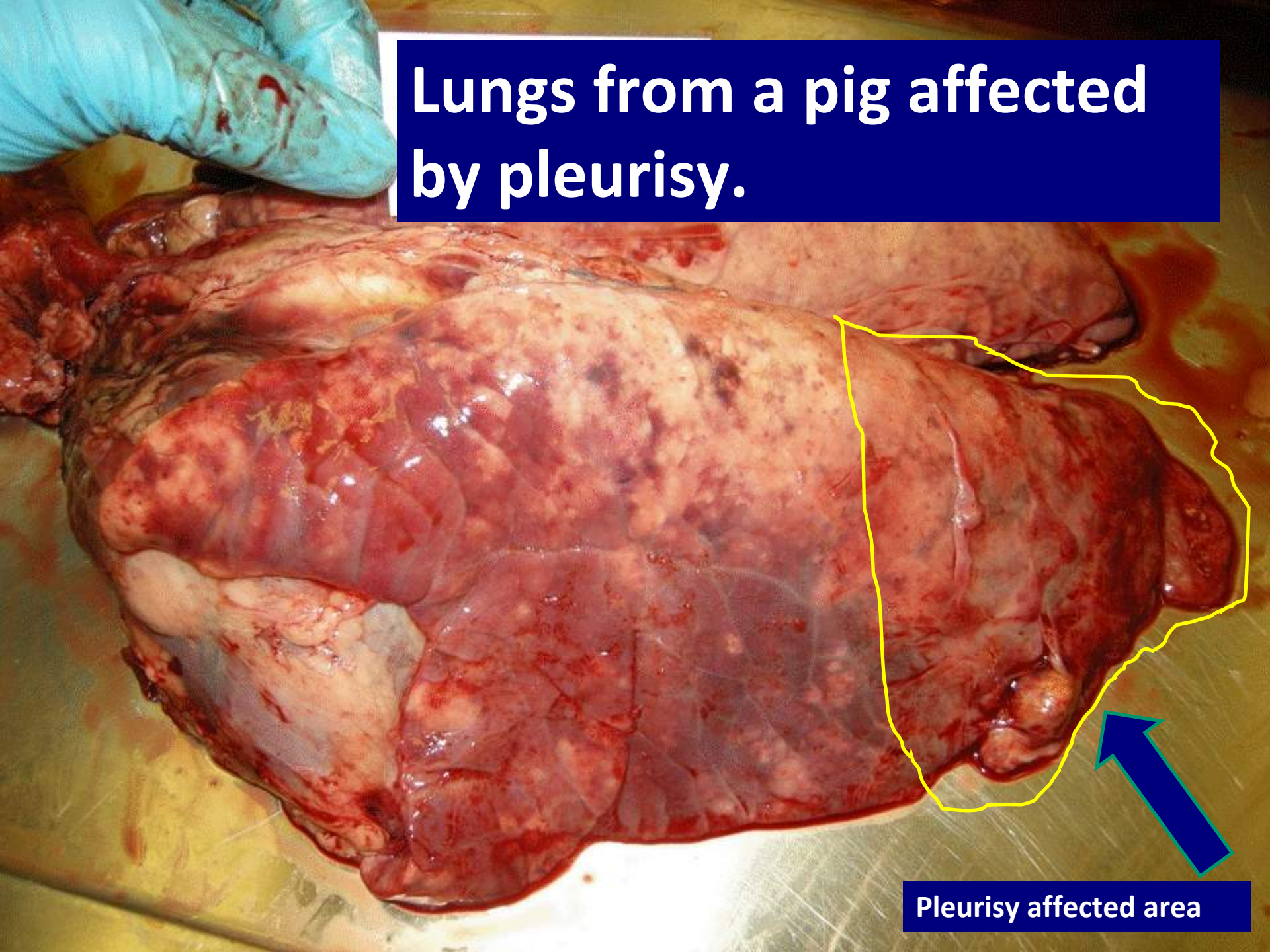
# **Pleurisy in Pigs: Associated risk factors and impact on health, welfare and performance.**

**A study commissioned by BPEX Ltd and undertaken by:  
Department of Veterinary Medicine, University of Cambridge  
Veterinary Laboratories Agency  
Bowes of Norfolk Ltd  
BQP Ltd  
Yorkwold PigPro Ltd**



**800 YEARS  
1209 ~ 2009**

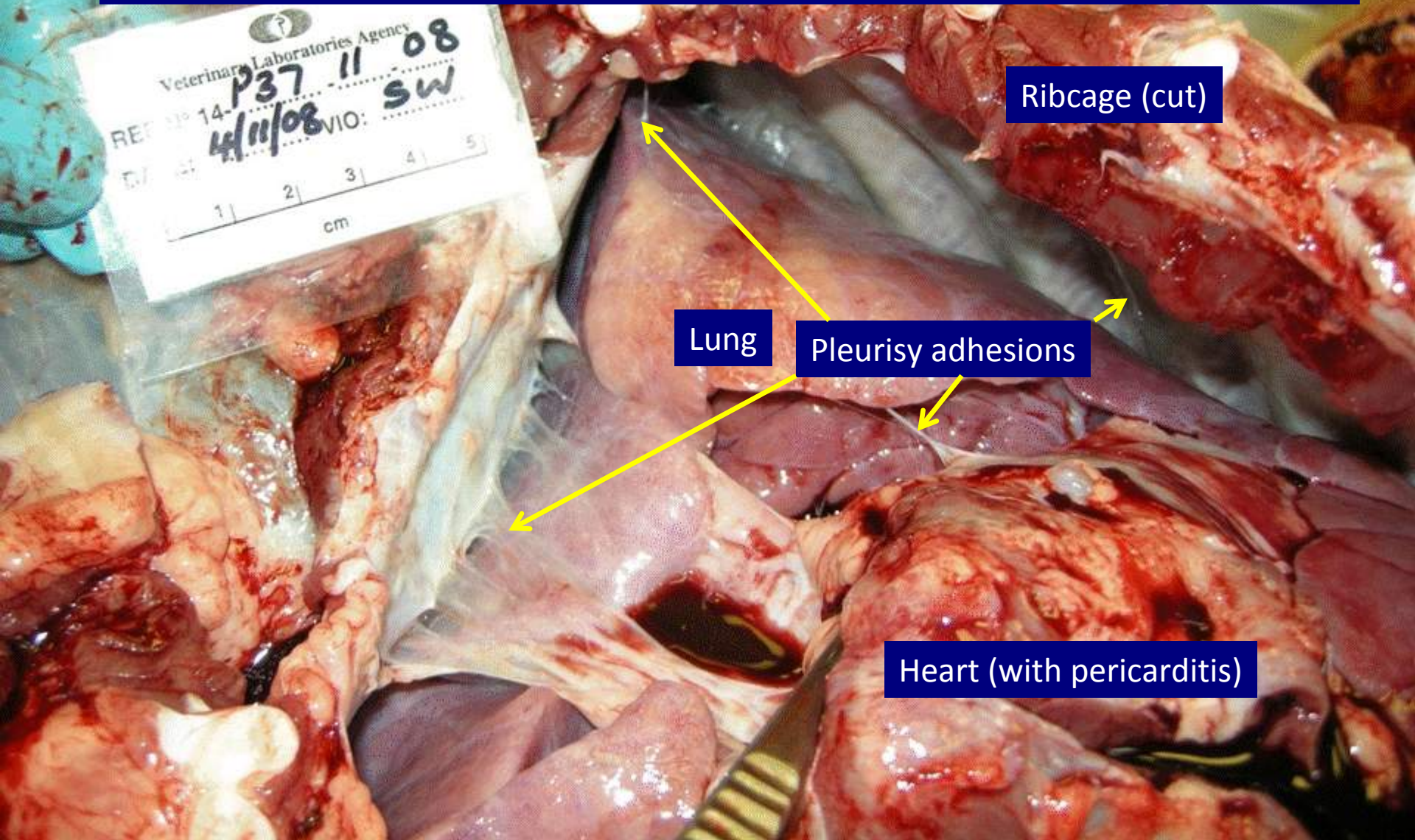
**Lungs from a pig affected  
by pleurisy.**



**Pleurisy affected area**



# Open-chest view of a pig affected by pleurisy.

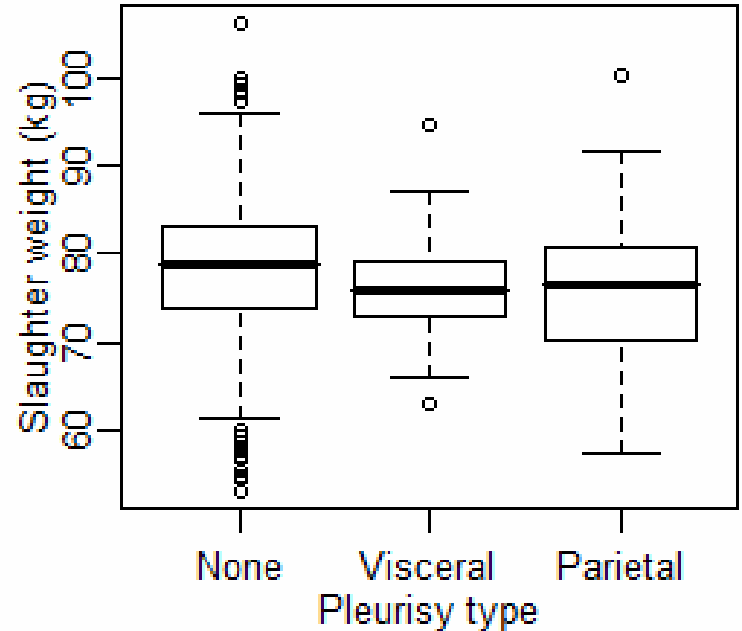




# What is the impact of pleurisy on performance?

## 1. Individual pig data:

- Correlated individual presence of visceral or parietal pleurisy to individual trimmed carcass weight (1366 pigs).
- No account taken of severity.
- Presence of parietal pleurisy equated to 1.42kg reduction in carcass weight.
- **£2/affected pig** (based on April 09 price) on lost carcass weight.



	Mean	Low CI	Upp. CI
Overall average	78.24	76.84	79.64
Weight (kg) Visceral	-1.15	-3.26	0.97
Parietal	-1.42	-2.70	-0.15



# What is the impact of pleurisy on performance?

## 2. Batch level data

For a typical batch with 10% prevalence of pleurisy:

- Cost in terms of reduced carcass weight and increased age at slaughter
  - 0.7kg carcass weight x 145p = 101p/pig
  - 2.6d extra to slaughter = 130p/pig

**Total cost = £2.30/pig at batch level**





# What is the impact of pleurisy at processing

## Indicative case scenario:

- Prevalence of pleurisy in consignment of pigs was 10%
- Herd of origin had consistent BPHS scores >10% over 2 years.
- Costs were extrapolated from one consignment to entire batch of 1191 pigs.
- Costs:
  - **Necessary reduction in line-speed** was 8.5% equating to extra 25min to kill entire batch (usual 271min became 296min). Total cost impact (1 x additional slaughterman/trimmer for entire batch (£35), 25 min extra overtime for entire slaughter team (£199) and MHS team (£106)) was approx. £340
  - **Cost of disposal** of Category 2 Animal Byproduct (trimming): £14
  - **Final approximate cost per pig = 29.8p/pig assuming 10% prevalence.**

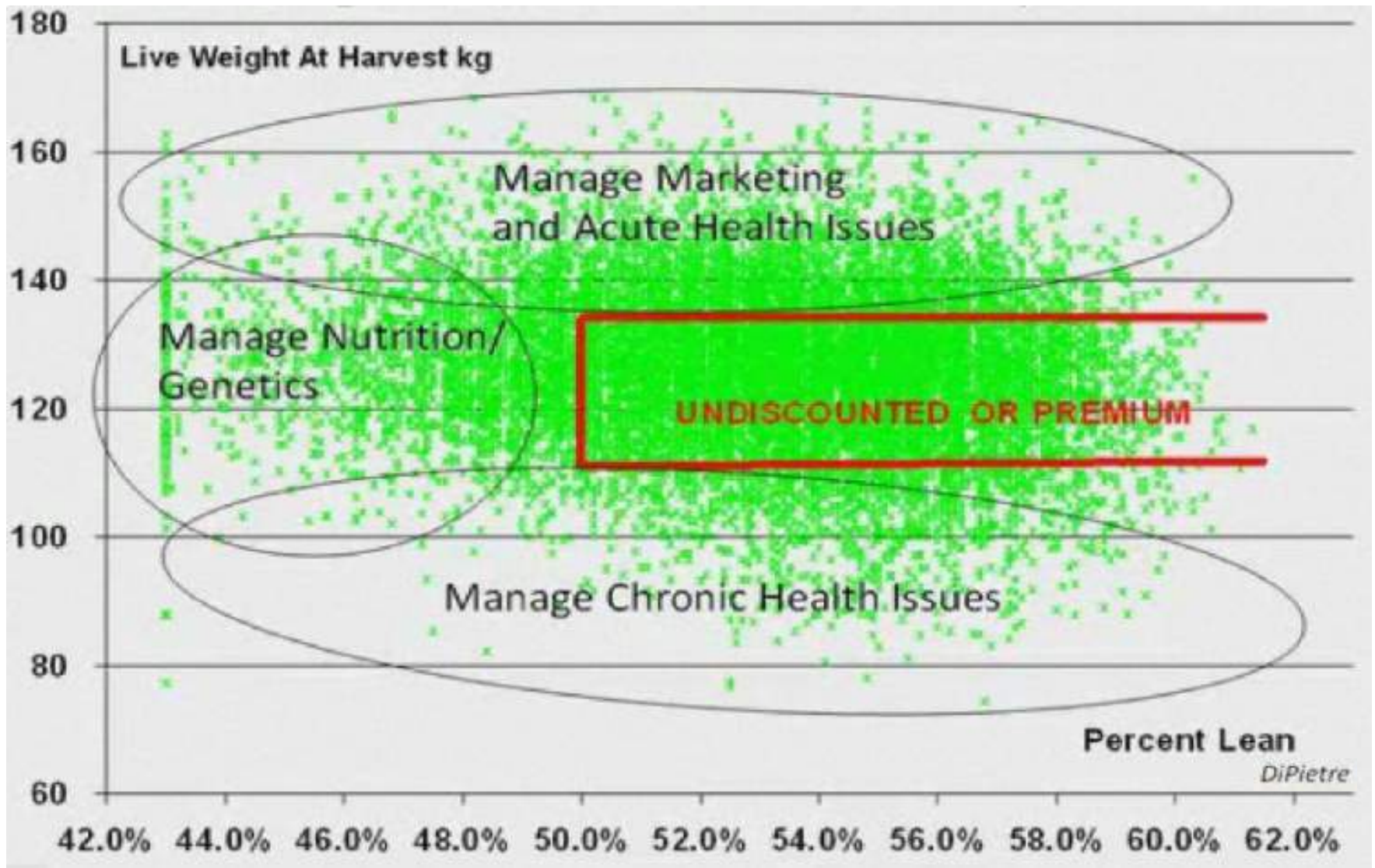


**Total  
Carcase  
Weight On  
The Truck  
Per Sow is  
What  
Really  
Matters**





# Meeting the target spec.





# Regional Health Improvement Programmes

- Pig health is a major welfare issue
  - Freedom from disease
- Pig health is a major food safety issue
  - Antimicrobial resistance; MRSA
  - Zoonoses – Salmonella
- Pig health is a major environmental issue
  - Poor performance increases carbon footprint
- Pig health is a major economic issue
  - Increases costs; reduces performance



# Regional Health Improvement Programmes

- Health improvement recognised as essential for long-term industry survival
- Regional Health Improvement Programmes planning started in 2008
  - Funding from BPEX
  - Access funding from Regional Development Programme for England
- Underlying principle
  - Together we stand divided we fall
- The larger the disease free area
  - the longer the average to disease breakdown
  - the longer the payback period on investment

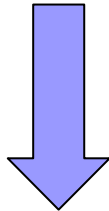






# Benefit of Health Improvement Programmes

## DIRECT VALUE:

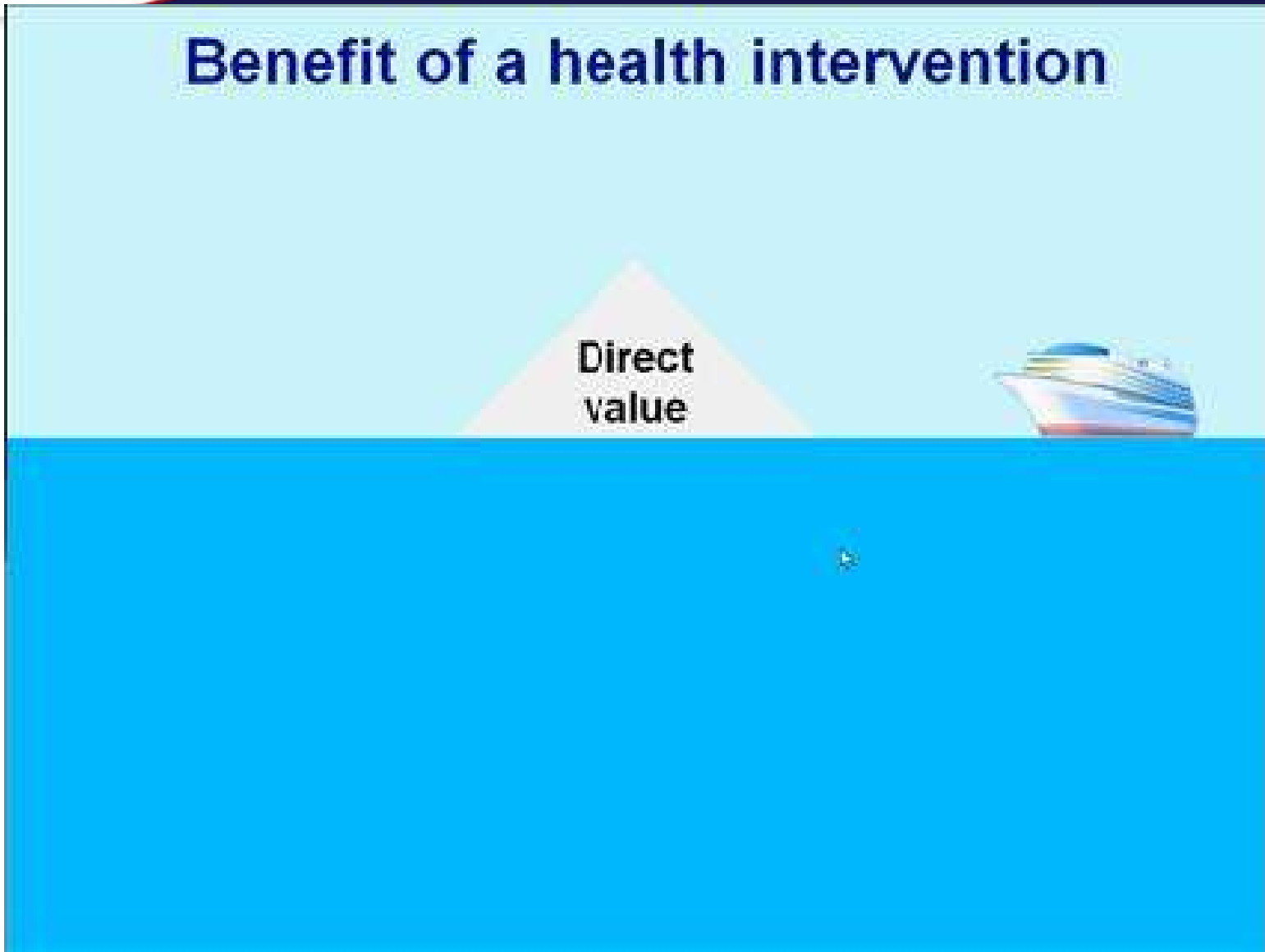


## Performance improvement

- ↓ % mortality
- ↓ % culled
- ↓ abortions
- ↓ medicine costs
- ↓ condemnation losses
  
- ↑ farrowing rate
- ↑ weaned pigs/litter
- ↑ Average Daily Gain
  
- ↓ Feed Conversion Ratio

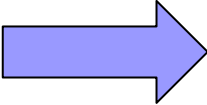


# Benefit of Health Improvement





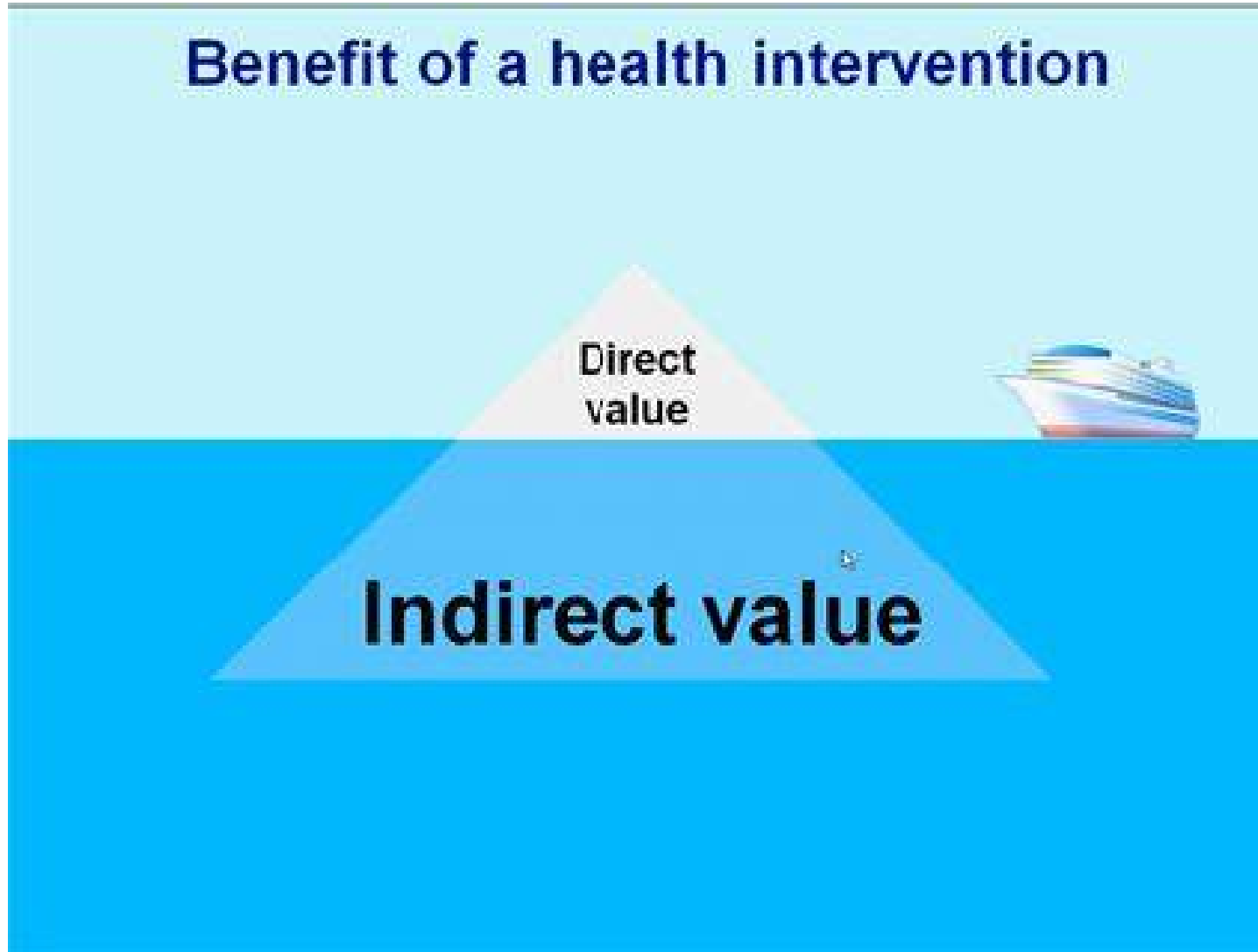
# Benefit of Health Improvement Programmes

**INDIRECT VALUE:**  **Virus exposure risk reduction**

- Reduction of virus shedding (viral load)
- Reduction in strain genetic variation
- Reduction of risk of emergence of “new variants”
- Substantial reduction in risk of breakdown if done on an area or regional basis



# Benefit of Health Improvement





# Regional Health Improvement Programmes

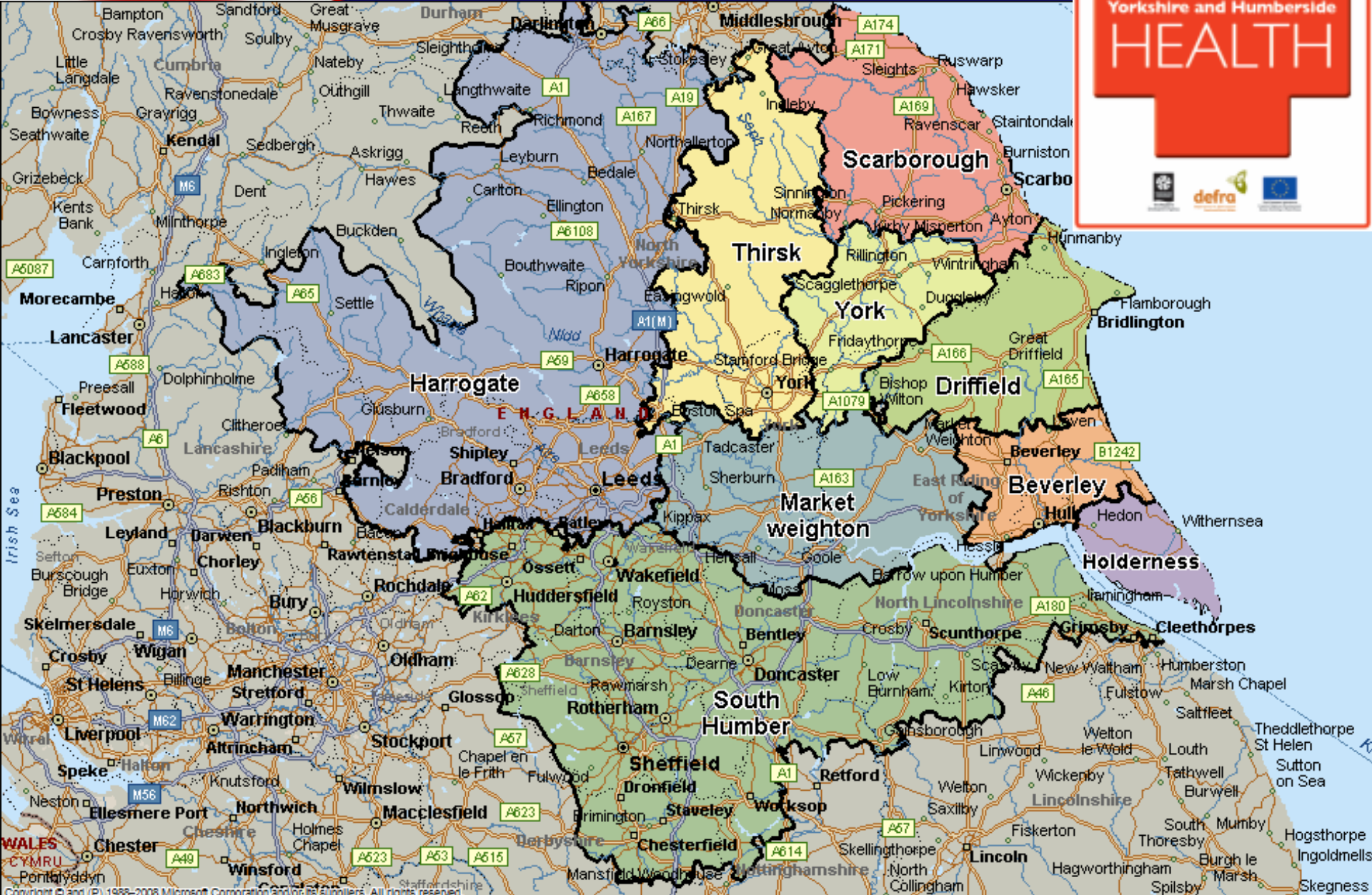
- Disease ELIMINATION where it makes sense today
  - Low prevalence and low density areas
  - Swine dysentery
- Disease CONTROL where elimination does not make sense today
  - High prevalence and high density areas
  - Directly improving the ongoing performance of pigs
  - Indirectly reducing the “load – diversity – new variant emergence” of wild-type virus in CONTROL areas and reducing the long term risk of viruses getting back into ELIMINATION areas





# RHIP Phase 1: Feasibility

- **SEVEN KEY POINTS FOR SUCCESS**
  1. Technical feasibility
  2. **LEADERSHIP AND COOPERATION**
    - **FARMERS AND VETS**
  3. **FUNDING FOR PRODUCERS**
  4. Information sharing
  5. Local co-ordination
  6. Supporting institutions
  7. Reporting mechanisms





# RHIP Phase 2: Where are the pigs?

- **IDENTIFICATION OF PIG-RELATED SITES**

## **Objective**

- **Identify the general characteristics of the pork industry in the region**



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Map Satellite Hybrid Terrain

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**Google**  
1 mi  
2 km

Type a grid ref, postcode, site name or slap mark

Find on map

V P C M

Anonymous Mode



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Map data ©2009 Tele Atlas - Ter... Use



## RHIP Phase 3: region characterisation

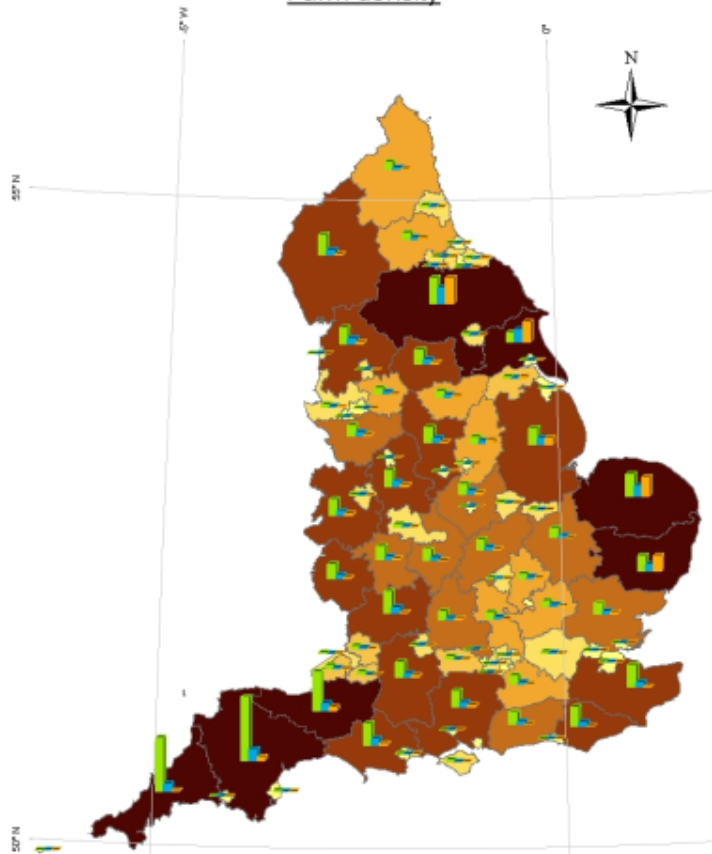
- REALITY CHECK
- Determine disease prevalence and strain distribution in area
- Evaluate risk from pig and transport movements and systems flow
- Determine risk of breakdown by analysis of on-farm biosecurity
- Categorise sites



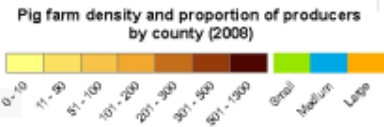


# Regional Health Improvement Programmes

Pig industry characterisation using animal movement records  
Farm density

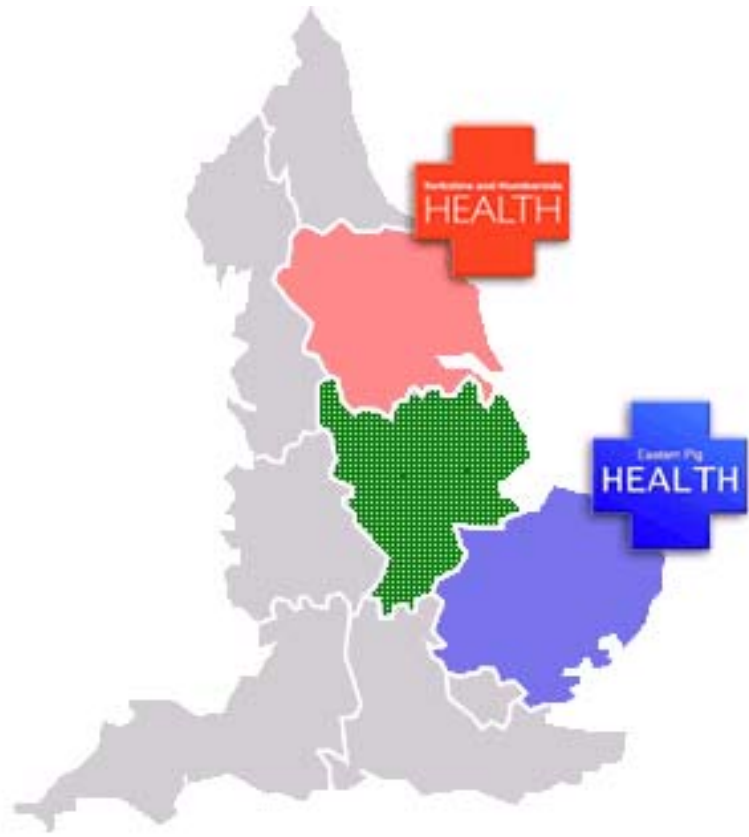


Diogo Marques



0 25 50 Miles  
Datum: D\_OSGB\_1936  
Ellipsoid: Airy - 1848  
Geographic coordinates:  
WGS84 system

Preliminary and in development results from the thesis of the project "Combined spatial and network analysis of pig movement data"





# Regional Health Improvement Programmes

- Sharing of disease status information - vet survey

**Baseline Vet Survey**

Is your practice responsible for this unit? Yes  No  **V3.1**

Is the unit currently in pig production? **V3.2**

Yes  
 No, temporarily out of production  
 No, closed permanently

check this box when the information is complete

Has the unit owner (or where applicable both the owner of the site and the owner of the pigs) given permission for their details to be included in the survey? Yes  No  **assessment guidelines**  
[Click here](#) to download a copy of the required permission form. **V3.3**

Please provide the following details. **V3.4**

Name of Unit

Unit Type  Breeder/finisher  
 Pig weaner producer  
 Pig/Weaner producer  
 Farrower

Production Type  Continuous  
 Batch

Responding Practice

Responding Vet

Date of Response

check this box when the information is complete



122  
d  
B2228

Map Satellite Hybrid Terrain

POWERED BY  
**Google**  
1 mi  
2 km

Type a grid ref, postcode, site name or slap mark

Find on map

V P C M


Anonymous Mode



Map data ©2009 Tele Atlas - Terri



# Improving pig health. Improving biosecurity assessment



**BIOSECURITY QUESTIONNAIRE**

Trading Name: \_\_\_\_\_  
 Farm: \_\_\_\_\_  
 CPN Number: \_\_\_\_\_ PO Act Code: \_\_\_\_\_ OE Crd Ref: \_\_\_\_\_  
 ABP Number: \_\_\_\_\_  
 Veterinarian: \_\_\_\_\_  
 Review Date: \_\_\_\_\_

ALPINS	ANSWERS	SCORE	COMMENTS
<b>BREEDING</b>			
A1	Do you have breeding pigs on site? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - medium No - 1/11	Yes - go to A2 No - go to A16
A2	How many breeding sows and gilts do you have? Number	Weighted	Go to A3
A3	Do you have indoors or outdoors? <input type="checkbox"/> Indoors <input type="checkbox"/> Outdoors	Indoors - low Outdoors - 1/11	Go to A4
A4	Do you sell replacement breeding stock? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - 1/11 No - 0	Go to A5
A5	Do you sell pigs at weaning? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - 1/11 No - 0	Go to A6
A6	Do you sell the pigs for finishing? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - 1/11 No - 0	Go to A7
A7	Do you only sell pigs directly to slaughter? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - low No - 1/11	Go to A8
A8	Do you bring in replacement breeding stock? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - 1/11 No - 0	Go to A9 No - go to A12
A9	Do you have outdoor facilities? <input type="checkbox"/> Yes <input type="checkbox"/> No	Yes - low No - 1/11	Yes - go to A10

Eastern Pig Health, Veterinarian Sub-committee  
Biosecurity Questionnaire v12 2 April 2018

**Eastern Pig Health Biosecurity Questionnaire**

A10 Do you have outdoor facilities?  
 Yes  No

A11 Do you always wear and disinfect boots and clothes between occupancies?  
 Yes  No

A12 Do you use antibiotic feed additives?  
 Yes  No

A13 Do you colostrum in bulk for the whole flock?  
 Yes  No

A14 Do you bring in semen? Low-to-medium (Commercial stud, Company stud, Local group stud)  
 Yes  No

A15 Do you bring in breeding stock?  
 Yes  No

**GROWING/FINISHING**

A16 Do you keep growing or finishing pigs. How many pig places do you have for pigs under 30kg and 30 and over kg?  
Number
 Weighted | Go to A17 || A17 | Are you growing or finishing pigs indoors or outdoors?  Indoors  Outdoors | Indoors - low Outdoors - 1/11 | Go to A18 |
A18	Do you separate on site all-in/all-out by site date?  Yes  No	Yes - 1/11 No - 1/11	Yes - go to A19 No - go to A21
A19	Do you always wear and disinfect boots and clothes between occupancies?  Yes  No	Yes - 1/11 No - low	Protocol required Go to A23
A20	Is each batch obtained from a single source?  Yes  No	Yes - low No - medium	Go to Section B No - go to A21
A21	From how many sources do you obtain pigs? Number	Weighted	Go to Section B
A22	Do you have outdoor production. Do you mix pigs from more than one source?  Yes  No	Yes - 1/11 No - medium	Yes - go to A22
A23	From how many sources do you obtain pigs? Number	Weighted	Go to A23
A24	Do you have a production block to allow for culling and de-fecbing?  Yes  No	Yes - medium No - 1/11	Protocol required Go to Section B
**B. VEHICLES**			
B1	Do you have a permit to take wild gamestaves?  Yes  No	Yes - low No - 1/11	Go to B2

Eastern Pig Health, Veterinarian Sub-committee  
Biosecurity Questionnaire v12 2 April 2018  
Page 2/6

- Completed by producers
- Ask about what is being done, not what the ideal is
- Internal and external risks
- Tailored control plan
- Reviewed on regular basis



# RHIP Phase 4: Design control strategies

- DESIGN DISEASE CONTROL STRATEGIES

## Objective

- Design disease control strategies for the farm and neighbouring farms
- Involve allied support industries





# Central elements for succes

1. High level of biosecurity
2. Motivated farmer
3. The right procedure, for the right disease !
4. Plan in advance
  - Who will do intensive C&D , ordering new inventory, replacement stock, planning for holidays .....





# RHIP Phase 5: Execution and monitoring

- EXECUTION AND MONITORING

## Objective

- Carry out and monitor disease control strategies by farm and neighbourhood



# Regional management

- REGIONAL MANAGEMENT – PARALLEL ACTIONS
- Establish regional biosecurity programme
- Pursue continued funding
- Update farm data
- Ongoing diagnostics and status change
- Sequential biosecurity surveys
- Set up farm-based research projects
- Modelling results and information generation



# Regional Health Improvement Programmes

- Sharing of disease status information - vet survey
- Promoting awareness of biosecurity
- Access to better **diagnostics**
- Formation of producer **clusters**
- Support tools: Evaluate costs and benefit of on-farm improvements
- **Steering groups** - best use of resources, leadership

**BPEX**

Yorkshire and Humberside **HEALTH**

## SWINE DYSENTERY WORKSHOP

Dust off your copy of Sherlock Holmes and join the BPEX health team for a fun night investigating swine dysentery.

This interactive themed evening of quizzes and games aims to equip you with the knowledge you need to help prevent the spread of dysentery in Yorkshire.

The evening will be hosted by Ben Strugnell, Veterinary Investigation Officer at the VLA, who has a wealth of experience in the diagnosis and control of dysentery

So what are you waiting for?  
It'd be a crime to miss out!

**Where:** The Crown Hotel, Boroughbridge - 7<sup>th</sup> June  
The Beverley Arms Hotel, Beverley - 8<sup>th</sup> June

**When:** 6pm start for hot food, workshop to start at 6.30pm

Please contact Helen Clarke (YHH coordinator) to register your interest, or tick the box on the return postcard included in this mailing

Tel. 07973 701 369  
Email: [helen.clarke@bpex.org.uk](mailto:helen.clarke@bpex.org.uk)



AASV position statement on PRRS eradication:



- *“Eradication of PRRS from the North American pig population is the long-term goal”.*



# Area Regional Control in U.S.



# Lower costs to remain the global low cost producer

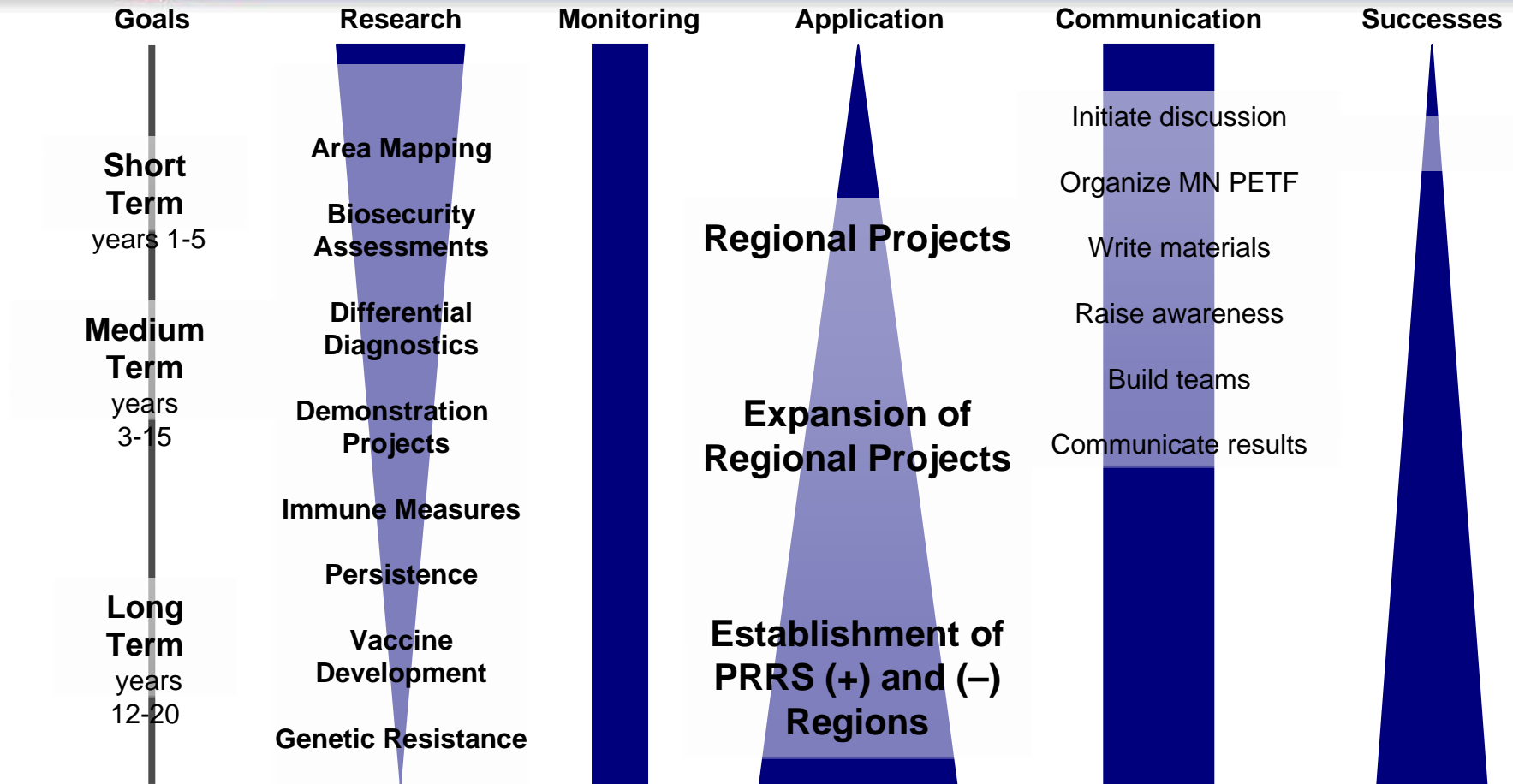
- Competitors are PRRS-negative
  - Brazil, Chile
- Canada, Denmark only deal with mild strains
- US regions (eg. Ohio, Pennsylvania)



PRRS Neg.



# MN PRRS Eradication Task Force: Road Map to Success



## Farrowing

1. All-in / all-out strictly applied
  - Empty slurry pit, clean & disinfect between batches
2. Wash sows & treat for parasites before farrowing
3. Cross-fostering
  - Limit to that which is necessary
  - Within 24 hours of farrowing only

## Post Weaning

4. Small pens (<13 pigs) solid partitions
5. Empty slurry pit, clean & disinfect, strict all-in / all-out
6. Lower stocking density
  - (3 pigs / m<sup>2</sup>)
7. Increased space at the feeder
  - + 7 cm / piglet
8. Improved air quality
  - (NH<sub>3</sub> < 10ppm, CO<sub>2</sub> < 0.15%)
9. Improved temperature control
10. No mixing of batches





# Madec 20-point plan

## Grower / Finishing

11. Small pens, solid partitions
12. Empty slurry pit, clean & disinfect, strict all-in / all-out
13. No mixing of pigs from the post-weaning pens
14. No re-mixing between finishing pens
15. Reduce stocking density: over 0.75m<sup>2</sup> / pig
16. Improved air quality & temperature

## Others

17. Appropriate vaccination programme for other diseases on farm
18. Sensible flow within buildings
  - (air, animals, people)
19. Strict hygiene
  - (tail & teeth clipping, injections...)
20. Early removal of sick pigs
  - → hospital room or euthanase



# Changes in management: effect on losses

	No of recommendations effectively applied (/20)		% losses (Weaning to slaughter)	
	Before changes	After changes	In 3 months before changes	In the 3 months after changes
1	8	15	19	3.7
2	7	19	12	3
3	2	13	21.4	10
4	7	16	20.3	5.8

(Dr F Madec, AFSSA)



## Conclusions and future strategies

- The pig sector is changing – disease control will need to **adapt**
- **Whole chain communication** is key to future sustainability
  - establishing networks, promoting honesty



# Keys to success





# Keys to success







# Aujeszky's Disease Eradication

- Started in 1983 as joint Government-industry initiative
  - Administered by MAFF
  - Funded by pig producers
  - Pig Disease Eradication Fund Ltd.
  - Compulsory slaughter of over 500 herds and 440,000 pigs
- Despite bitterness, acrimony and politics
  - Technical success – eradicated 1991
  - Financial disaster(?) – cost £27 Million



## Key to Area-Regional Control is

...producers and veterinary surgeons  
**WORKING TOGETHER** with their  
neighbours and business partners so  
that together they achieve greater  
sustained improvement in health  
and productivity in their  
neighbourhood **than anyone can  
achieve ON THEIR OWN ....**



Thank you for your attention

