



IBR control &
TRADE in Belgium

Who designs the IBR program in Belgium? **TASK FORCE IBR**

sciensano



Veterinarians

AGROFront





Cattle industry in Belgium

Importance of cattle trade related to IBR

Cattle industry in Belgium 2019



21.828 cattle herds

- Northern Belgium
 - 12.790 herds
- Southern Belgium
 - 9.038 herds
- **Densely Populated Livestock Area**
- **Intensive trade of cattle** within Belgium
- Severe decrease in number of herds (2010: 35.217) – scale intensification!

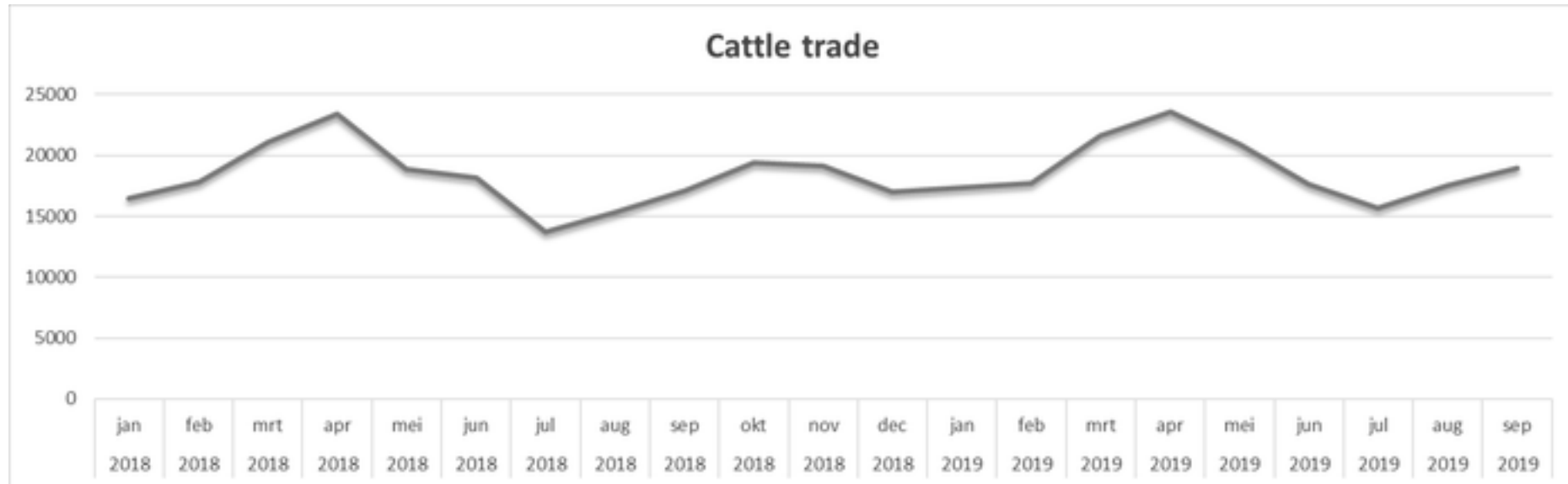
Cattle industry in Belgium 2019 (2)



2.238.383 cattle

- Northern Belgium
 - 1.127.593 cattle
 - Average herd size: 126
- Southern Belgium
 - 1.110.790 cattle
 - Average herd size: 166
- Slight decrease in total number of cattle
- ± 1 million of cattle births/year
- **'Economy of scale' and influence on infectious diseases**
- **Gradual awareness of importance of prevention and biosecurity**

Cattle trade in 2018: **217.559** - 2019*: 170.866



*2019: until september

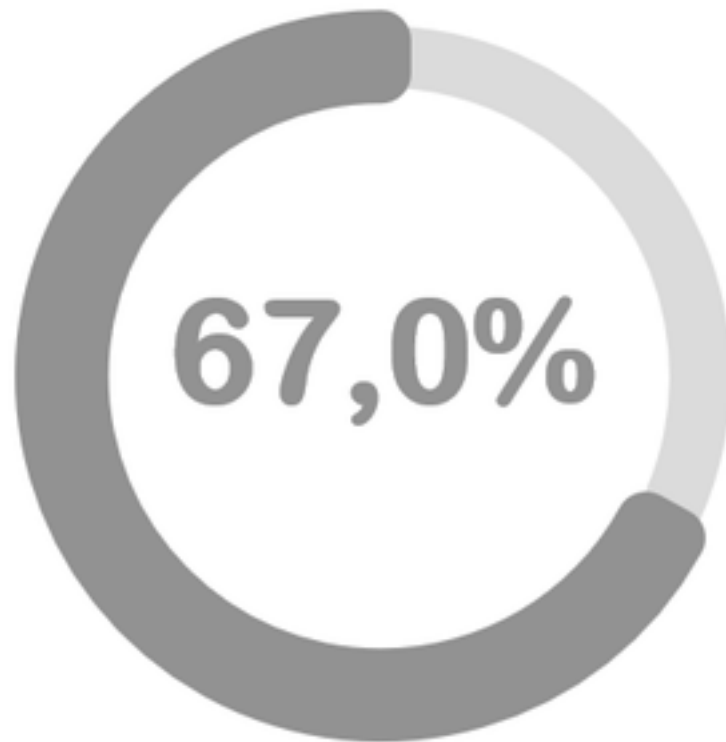


IBR control in Belgium

Importance of trade?

IBR-status Belgium in 1997

IBR-infected herds



IBR-infected cattle



IBR is a trade disease!!!

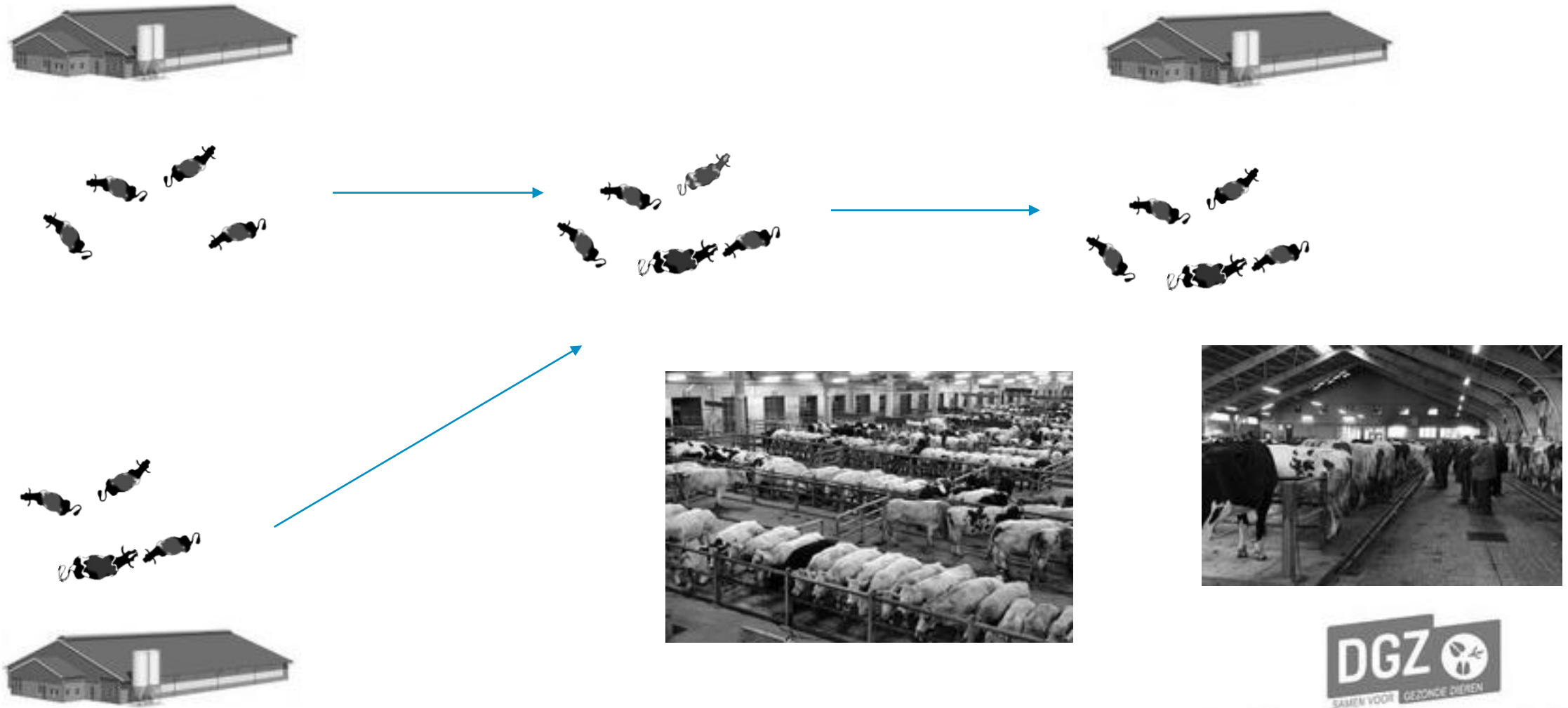
1970



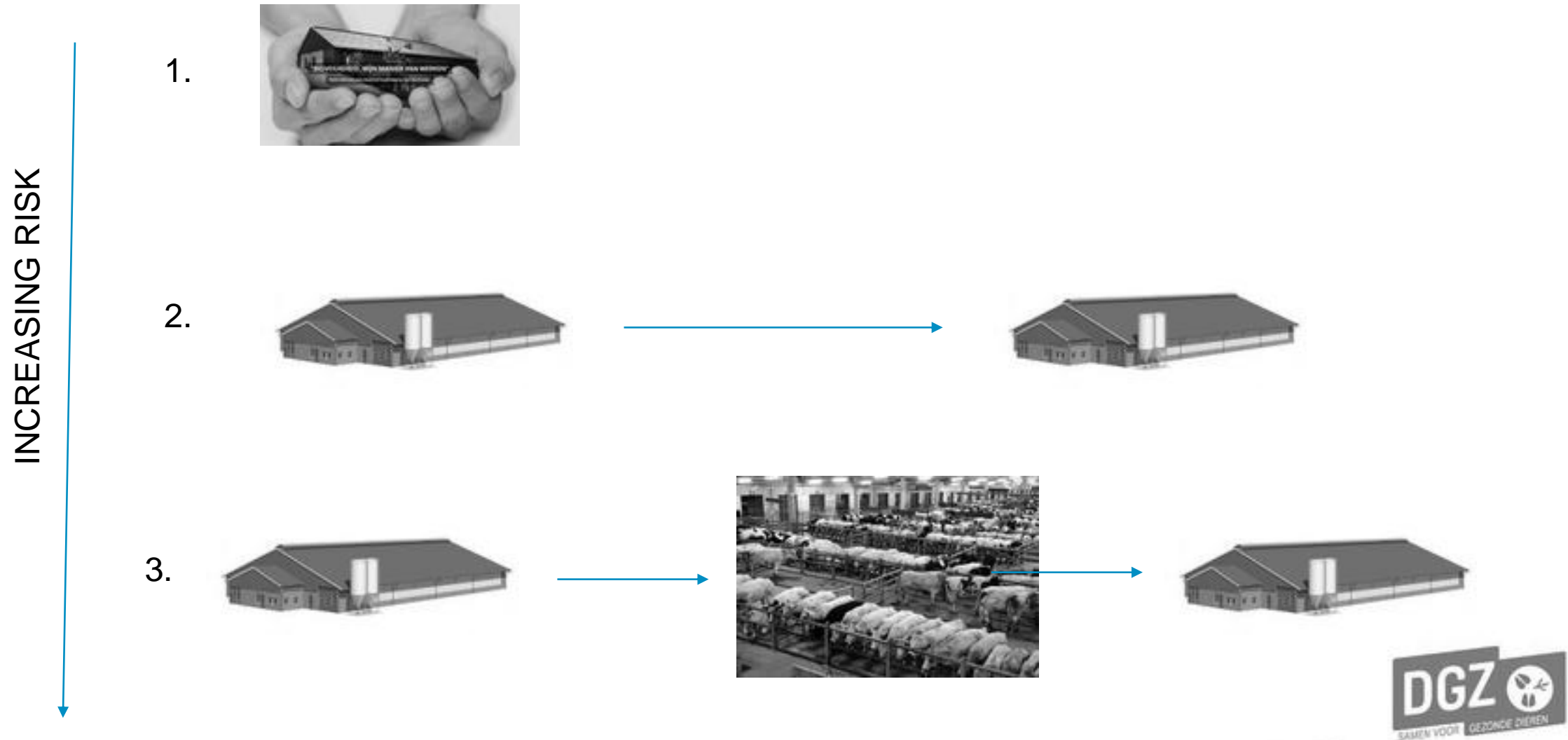
2010



Infectious disease & trade

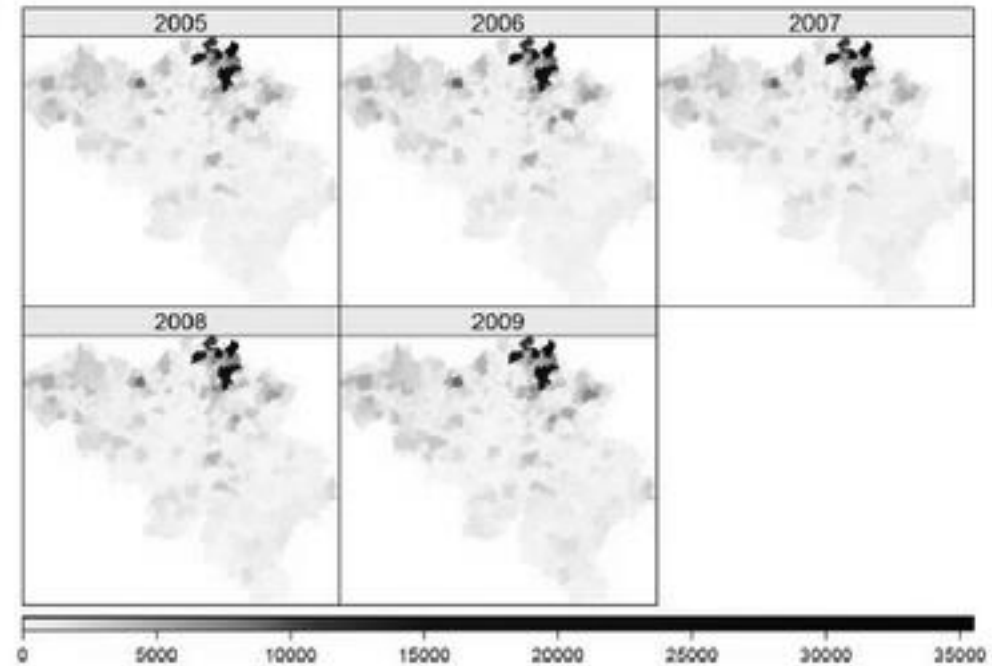
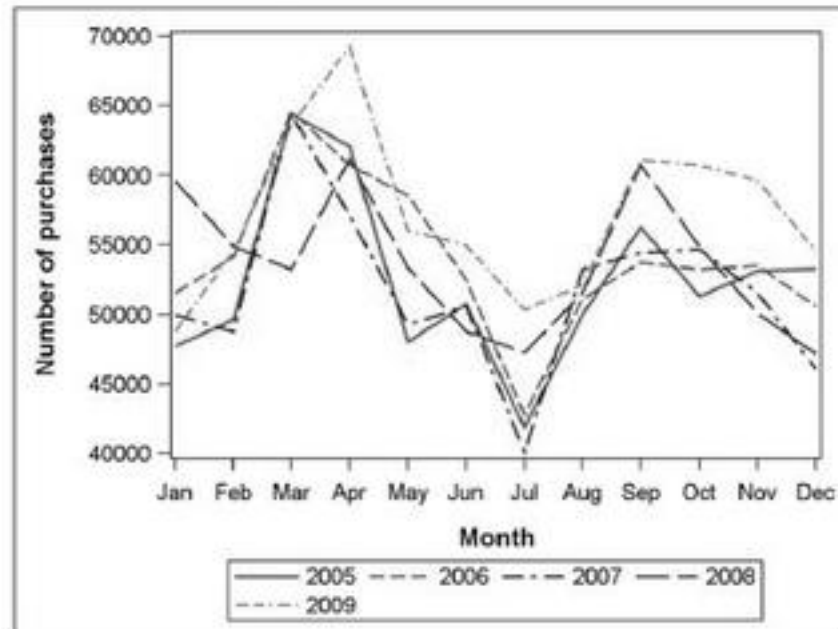


Infectious disease (IBR) & trade



We trade a lot of live cattle in Belgium!!

B. Number of Local Purchases



Trade pattern major influence on any infectious disease control!



Fig. 1. Different provinces in Belgium. An – Antwerp; BF – Brabant Flanders; Br – Brussels; BW – Brabant Walloon; EF – East Flanders; Ha – Hainaut; Le – Liege; Lm – Limburg; Lu – Luxembourg; Na – Namur; WF – West Flanders.

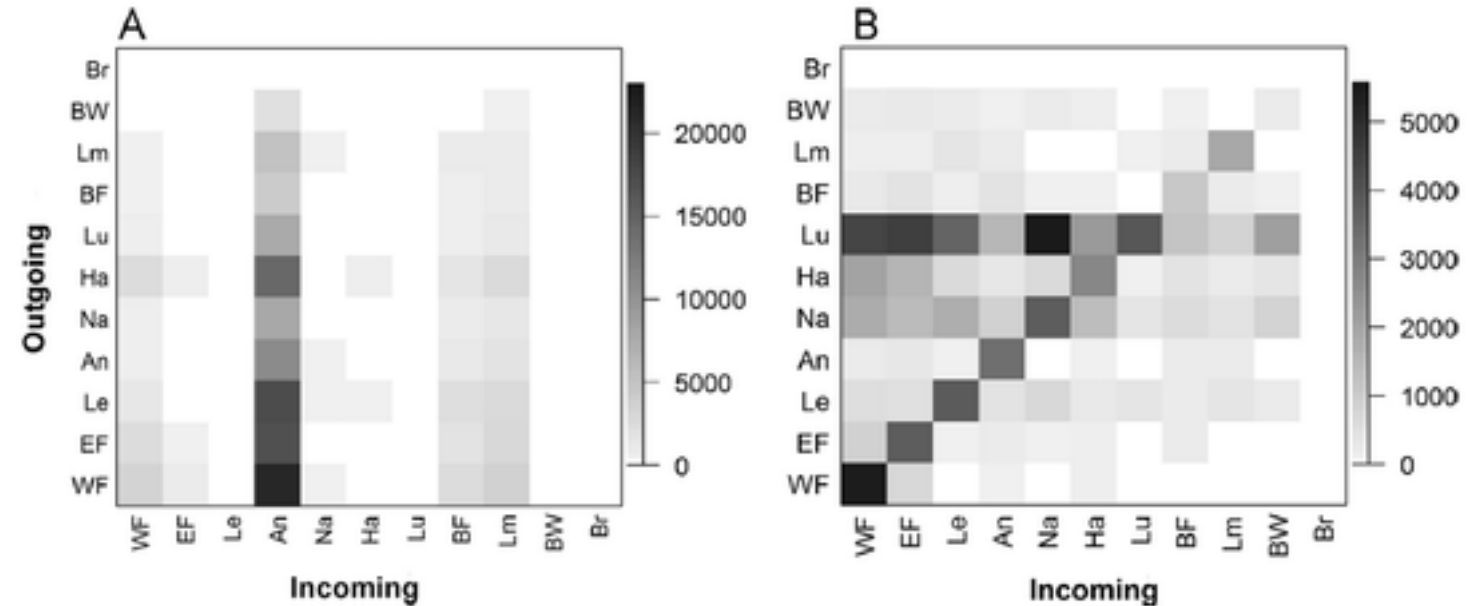
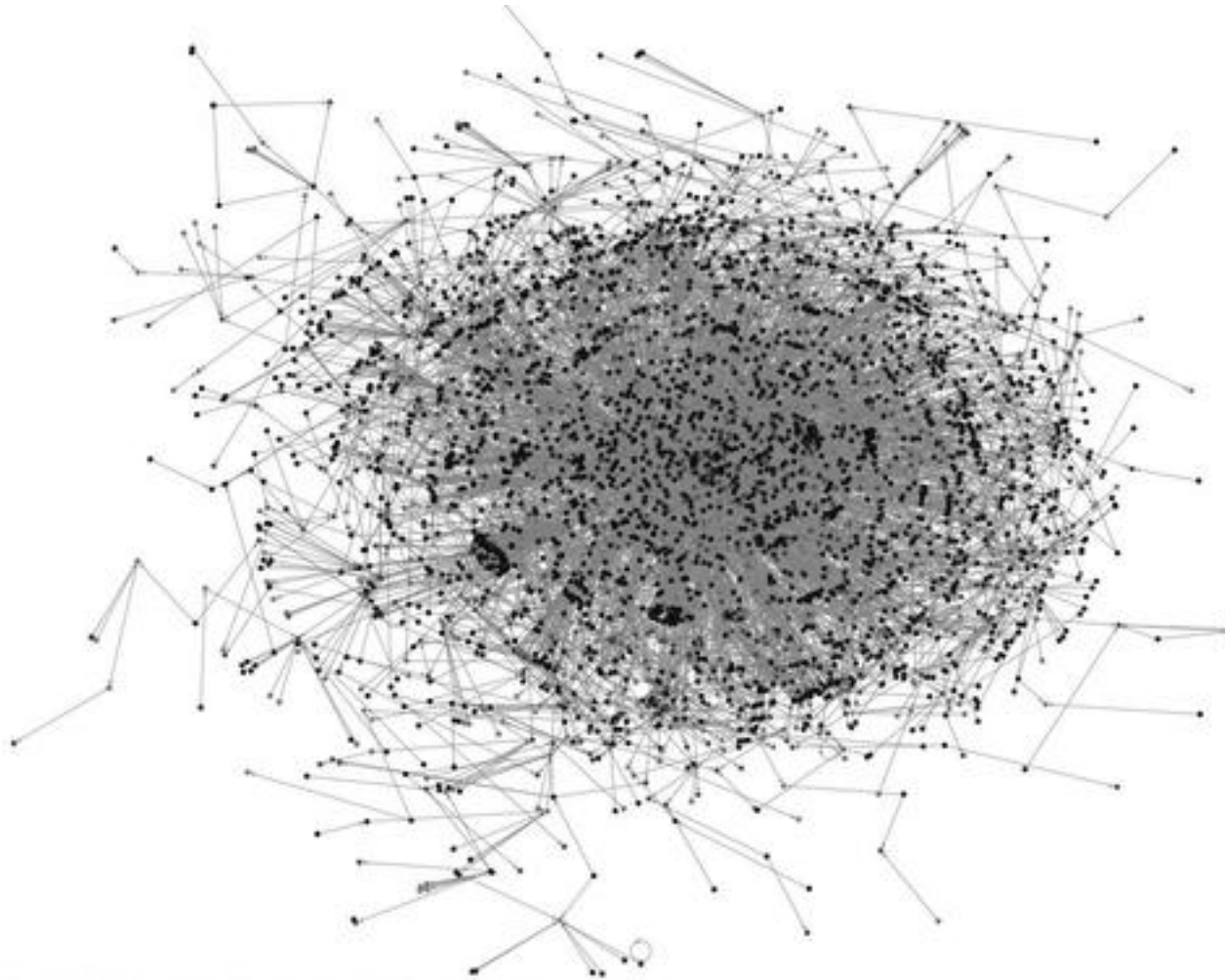


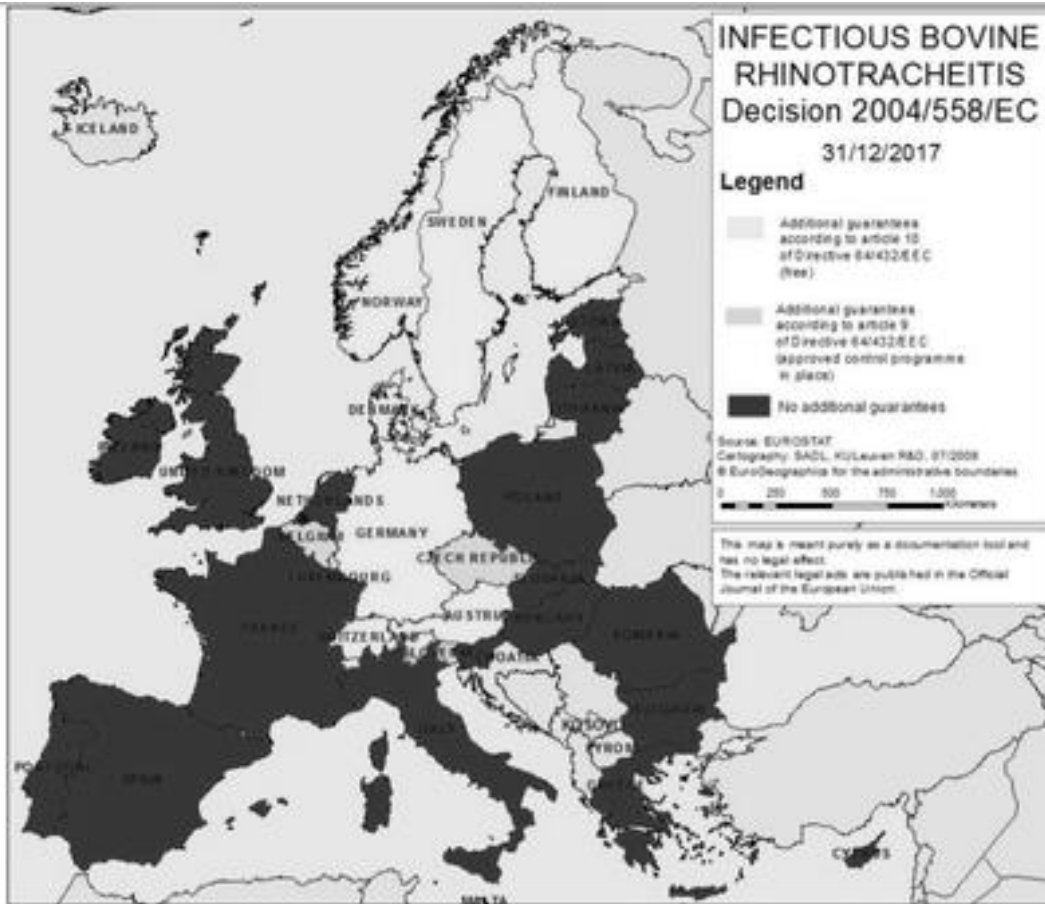
Fig. 4. Matrix plot of the inter-province (A) bovine and (B) fattening calf movement for age group 1 (less than or equal to 1 year) in 2009. If a movement occurs from a farm in province 'A' (on the y-axis) to a farm in province 'B' (x-axis), province 'A' is said to have an outgoing movement, while province 'B' has an incoming movement. Shading on the diagonal (positive slope) refers to within province movement while off-diagonal shading refers to movement to another province. Names of provinces are abbreviated according to Fig. 1.

Cattle trade january 2018 (n=6.777)

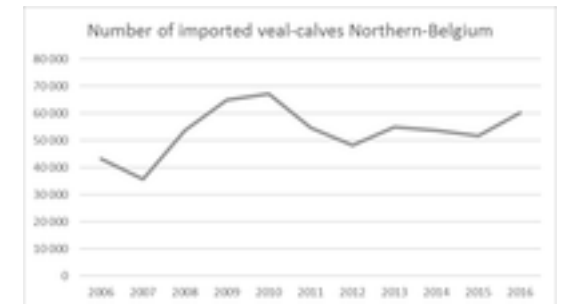
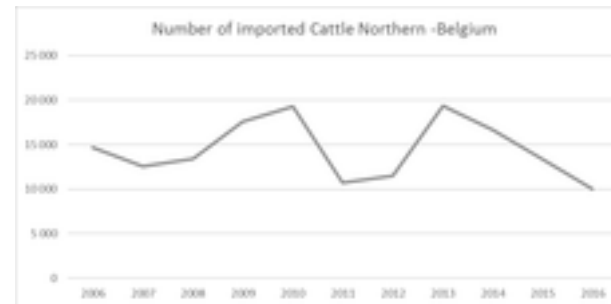


Created with NodeXL Basic (<http://nodexl.codeplex.com/>) from the Social Media Research Foundation (<http://www.smr.foundation.org/>)

Cattle intracommunity trade (TRACES)



Import 2018: 172,723 (mainly **DE**, CZ, EE, IE, DK, NL, FR, LU)



Export 2018: 245,234 (mainly **NL**, ES, IT, FR, CZ, PL)

Where are we now (2019)?

IBR-infected herds



IBR-infected cattle





IBR control in Belgium

History of IBR control

(IBR-herd states used in Belgium)

State	Explanation	Practical info
I1	No IBR-control	No valid option
I2	IBR-control through vaccination	Mandatory vaccination protocol
I3	IBR free (no gE antibodies), vaccination voluntary	2 neg screenings gE antibodies (all animals >12 months) Annual follow-up
I4	Officially IBR free (no gB antibodies), vaccination prohibited	2 neg screenings gB antibodies (all animals >12 months) Annual follow-up

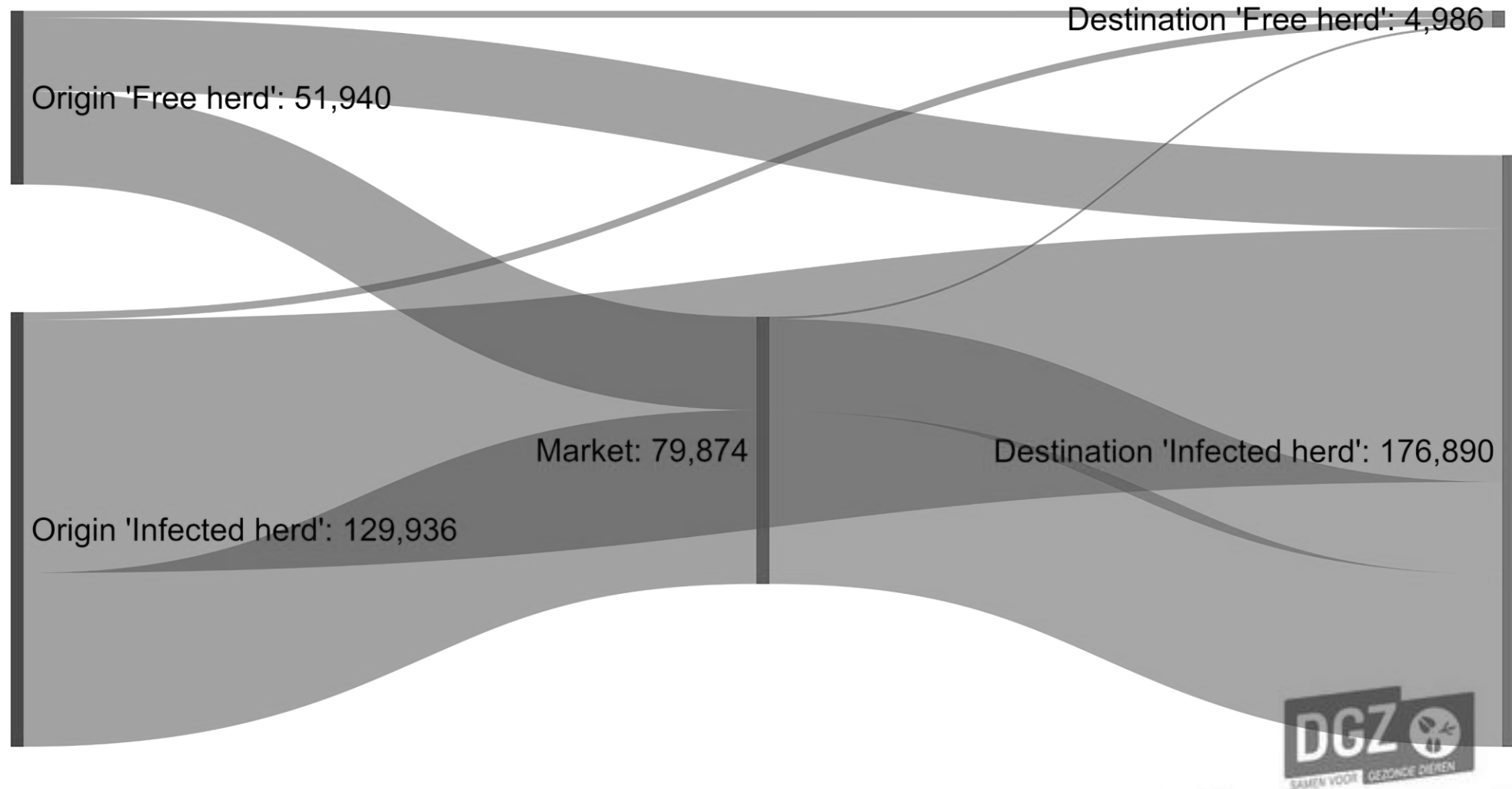
Mandatory 'hyperimmunisation'

BoHV-1 free & certified

Phase 0: Voluntary IBR control

Year	Measures	% Certified free	P herd	P animal
1997	First step only marker-vaccines allowed	/	67%	35,9%
2003	2003/43/EC: AI & semen	/		
2004	2004/558/EC: article 9 & 10	/		
2007	Start of voluntary program & announcement obligatory program within 5 years	1%		
2008		2%		
2009		3%		
2010	Task force IBR – funding by FPS (sanitary fund)	15%	43%	12%
2011		22%	34%	14%

Trade pattern 2012 (destination Northern-Belgium)



Phase 1 = Mandatory: every herd has an official IBR-state

Year	Measures	% Certified free	P herd	P animal
2012	Start of mandatory control	25,0%	35%	11%
2013		27,0%	31%	10%
2014	Article 9 status EU (october)	30,1%	25%	9%
2015		35,5%	19%	4%

Phase 1: Towards free herd – direct transport



Free



Free



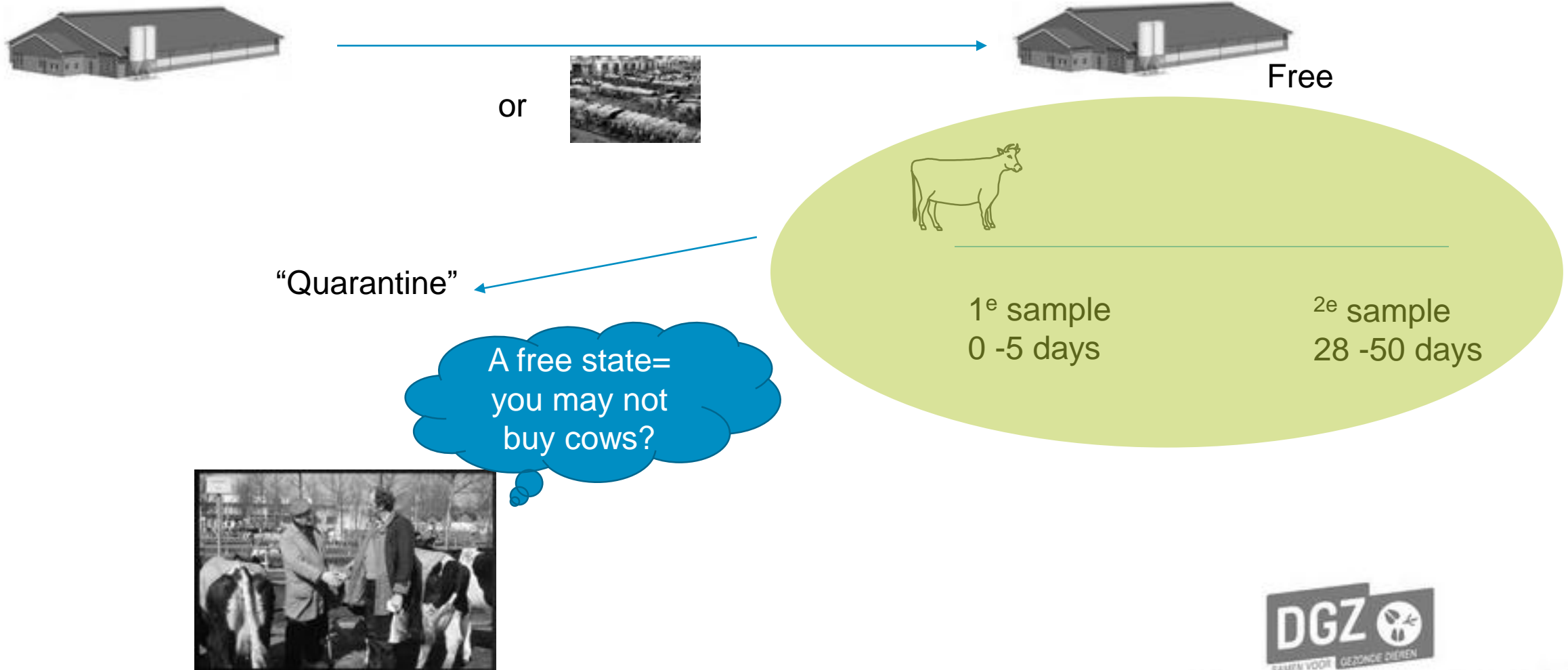
1^e sample
0 -5 days

“Quarantine”

Blood
sampling &
quarantine?!



Phase 1: Towards free herd – indirect transport or origin ‘non-free’ herd



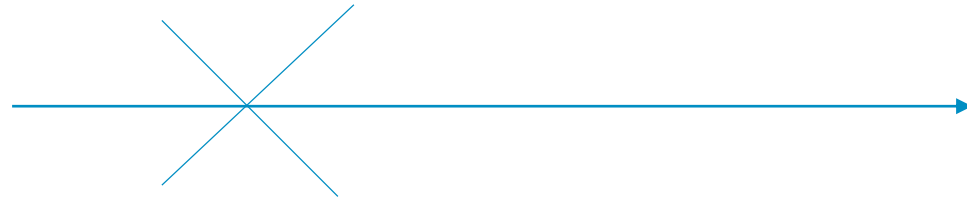
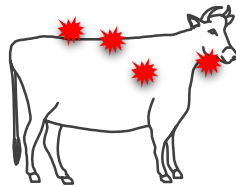
Phase 2 & 3 – “pushing” towards IBR free & limit spread

Year	Measures	% Certified free	P herd	P animal
2016	‘Young stock’ test ‘infected herds’ – is vaccination efficient?	52,5%		
2017	Registration of gE+ animals & canalisation	67,2%		
2018	Annual screening in infected herds and shift in trade patterns	86,2%	7,2%	1,2%
2019		89%	4,3%	1,2%

Phase 2 (2018): canalisation of gE POS animals

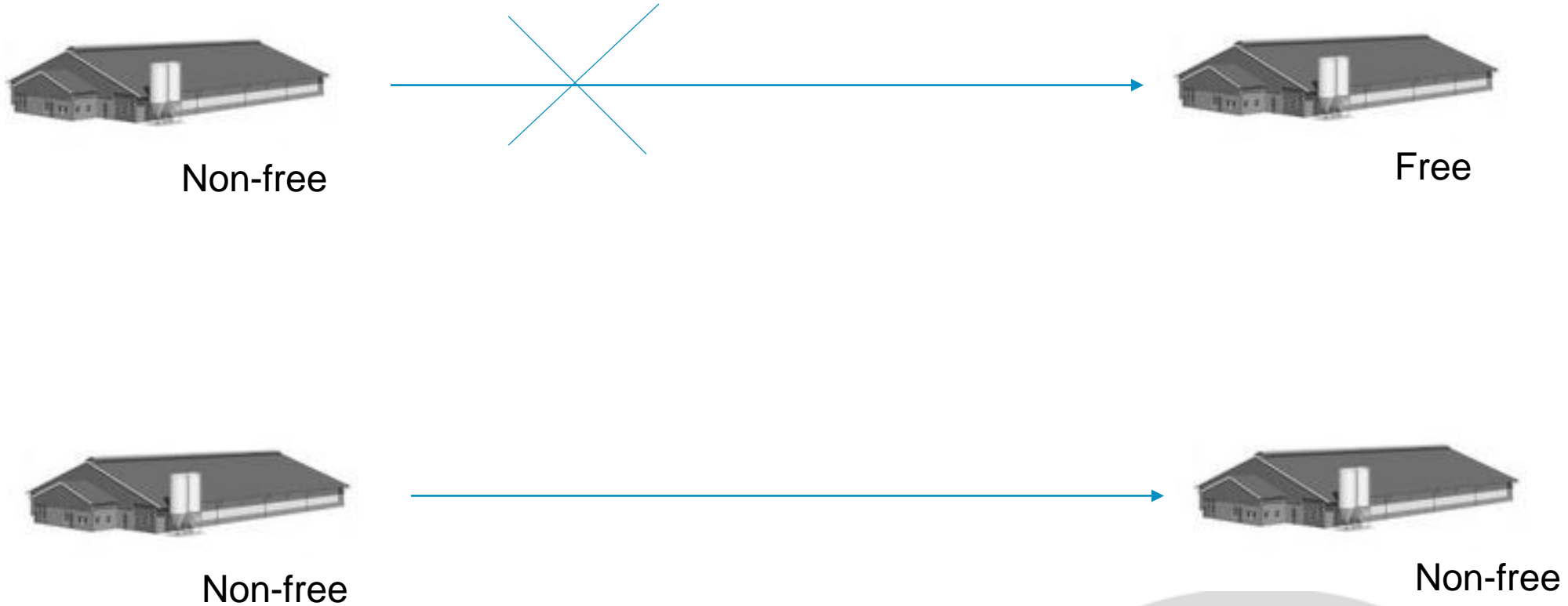


Non-free



Only suitable for direct slaughter

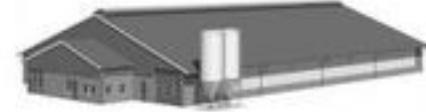
Phase 3 (may 2018) change in trading patterns



Phase 2 (2018)



Free



Free



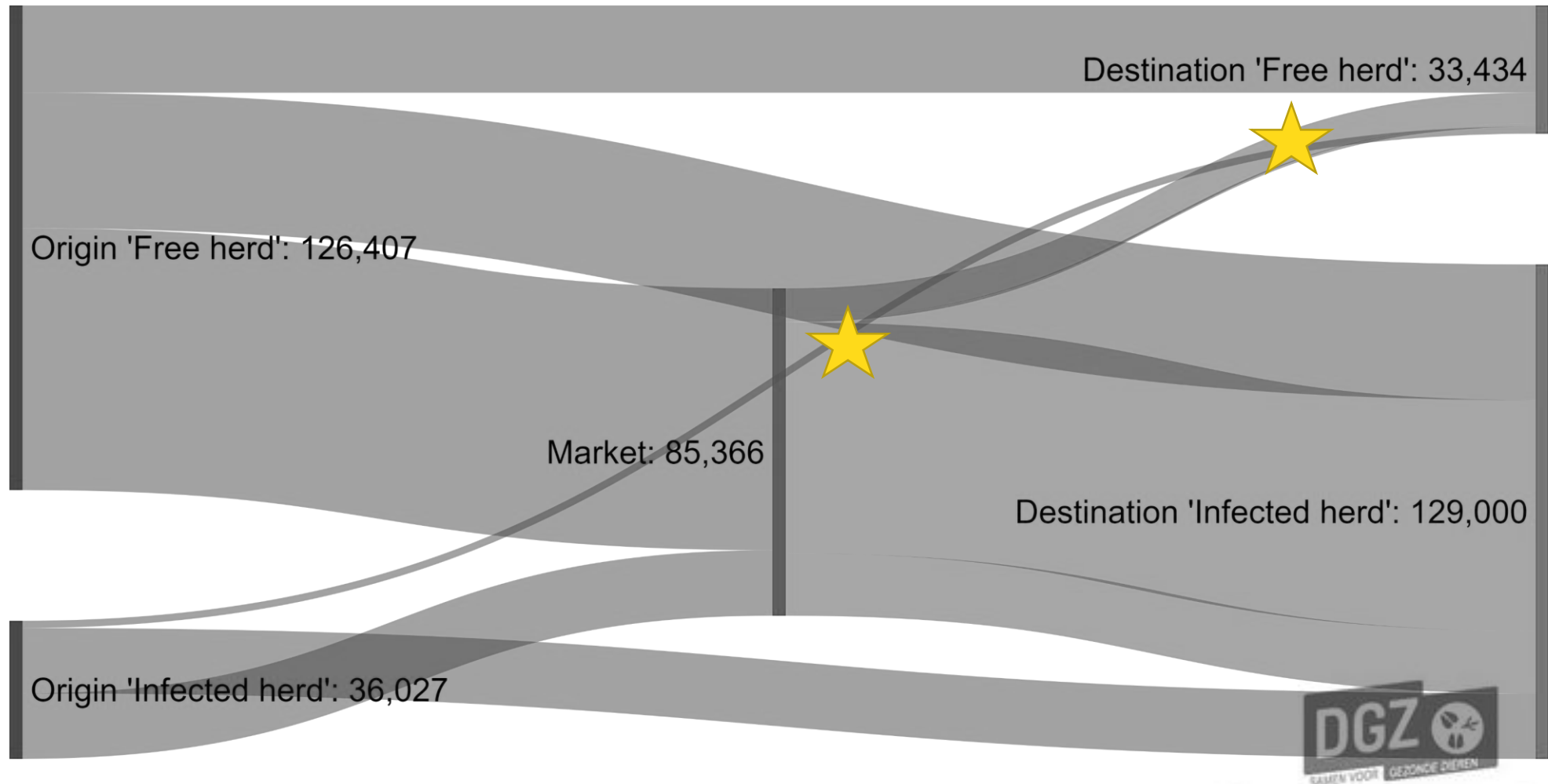
Free



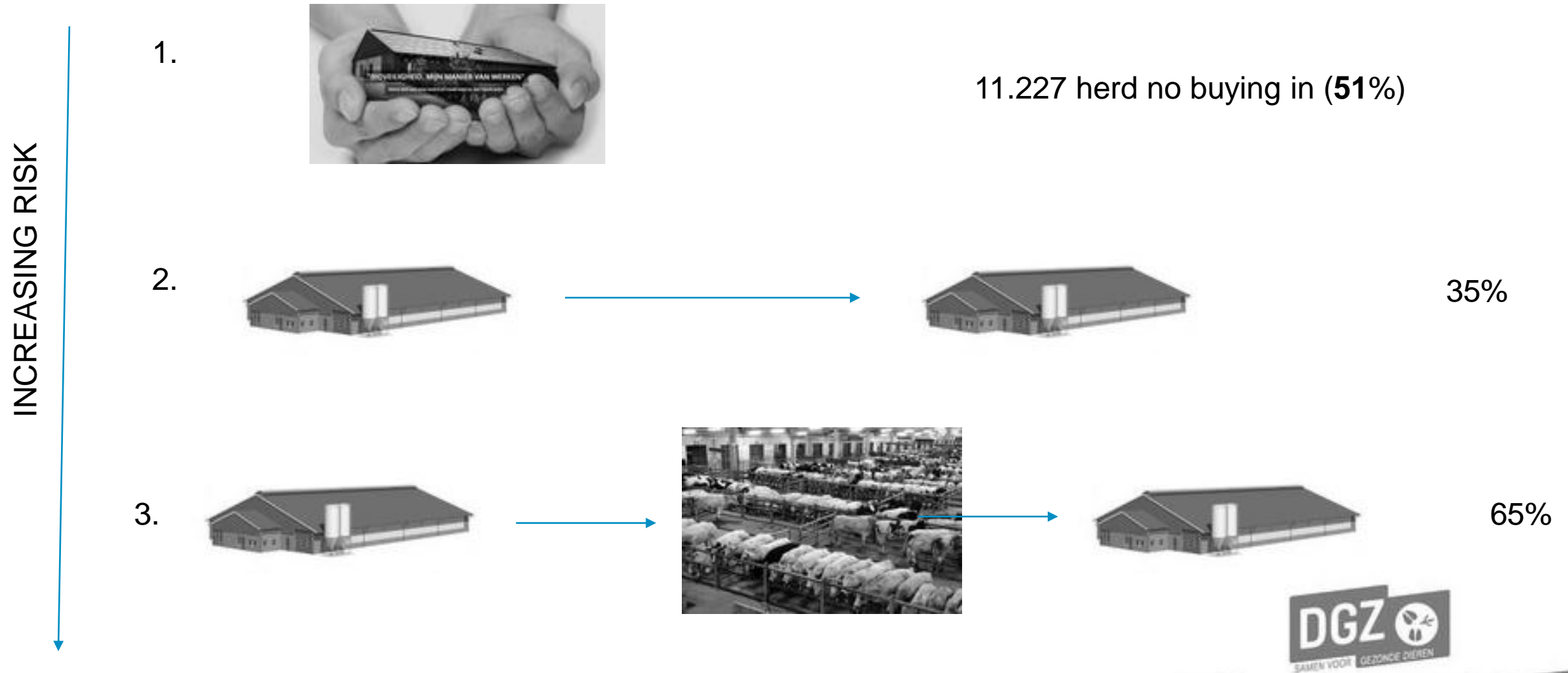
Free



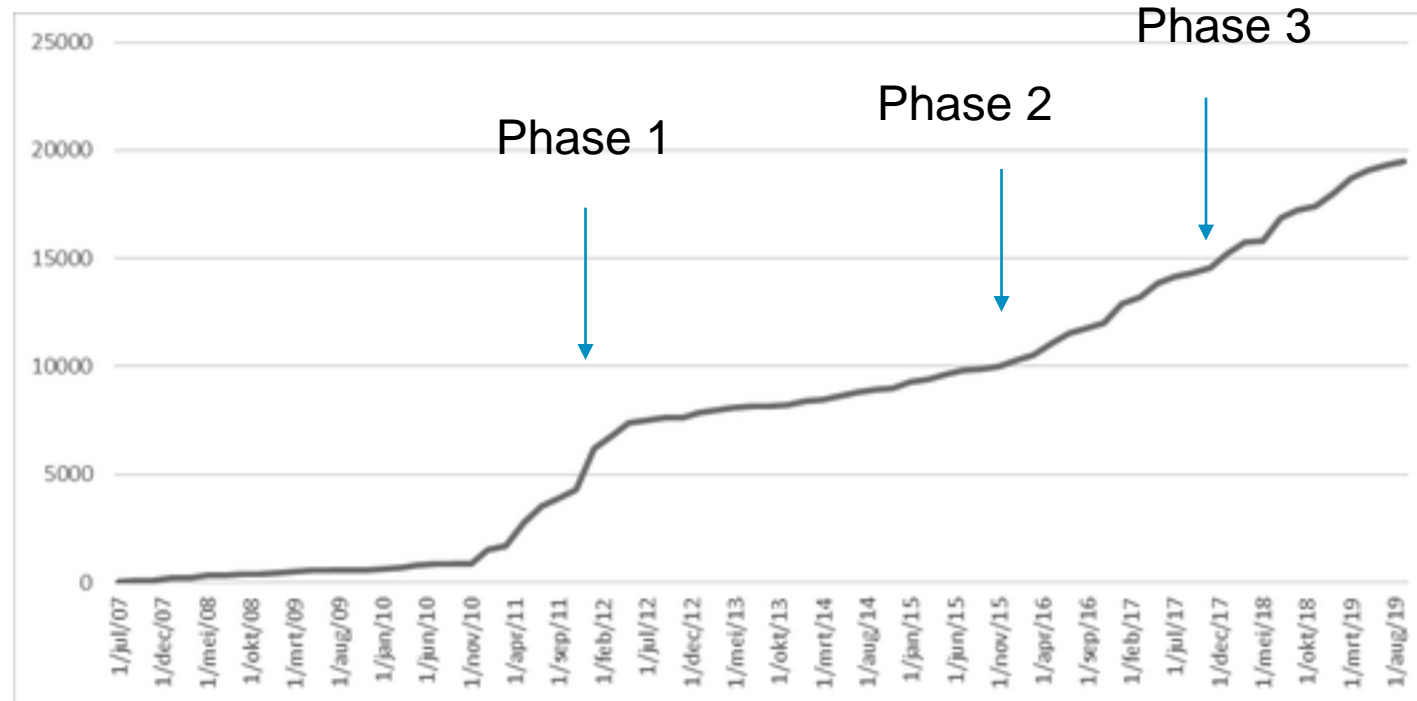
Trade pattern 2018 (destination herd in Northern Belgium)




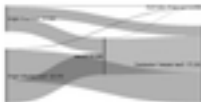

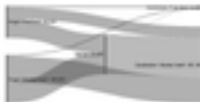


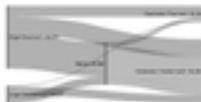
IBR & trade – what do we do in 2018 (n= 10.601)



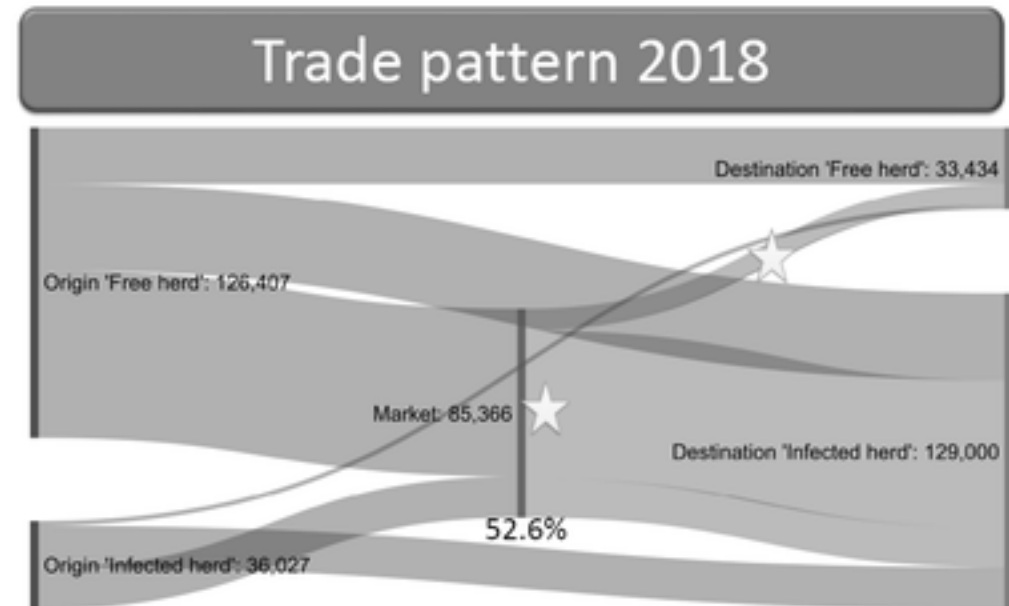
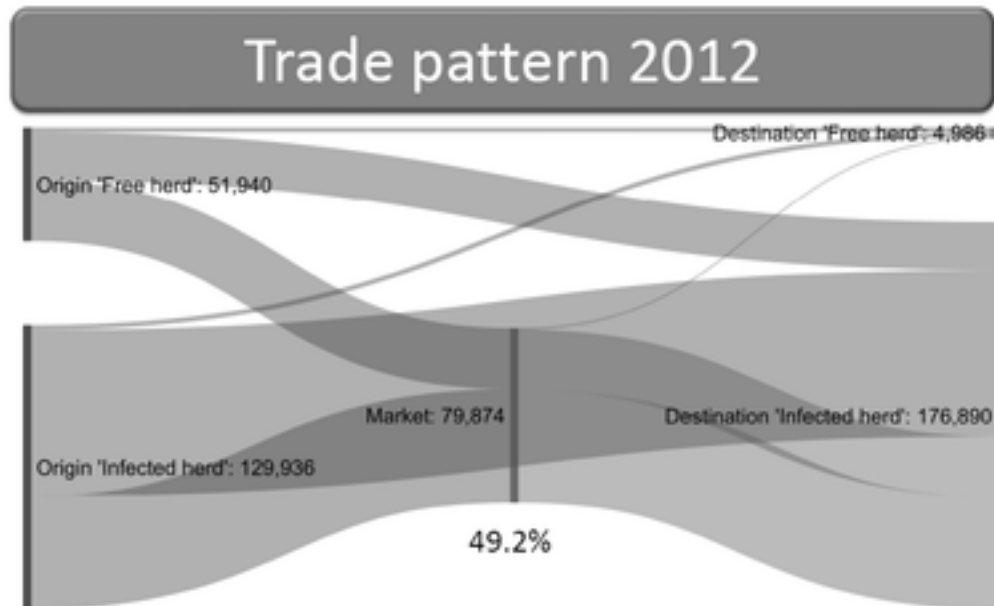
Evolution of certified free herds – effect of phases



Overview

	2012	2013	2014	2015	2016	2017	2018
% Certified free herds	25,0%	27,0%	30,1%	35,5%	52,5%	67,2%	86,2%
	Phase I				Phase II screening	Canalisation of BoHV-1 infected animals for slaughter.	Phase III Trade restrictions
Shifting trading patterns							
Estimated vaccination coverage*	80%?						20%?

Shift in trading pattern (*: destination Northern-Belgium)



Sankey graphs of registered cattle trade with destination in Northern- Belgium. 'Free herd': certified free within legislation – 'Infected herd': non-certified free herd applying hyperimmunization of cattle – 'Market': cattle trading places. N (2012)= 181.876 – N (2018)= 162.434.

- 69.3% of traded cattle originate from 'potentially infected herds' (not certified free)
- 97.4% of traded cattle is bought in 'non-free herds'

- 77.8% of traded cattle originate from free herds
- 79,4% of traded cattle is bought in non-free herds
- Marginal increase in direct trade from 'free'-> 'free'

Next fases

Year	Measures	% Certified free herds	% gE+
2020	Extra measures in problem herds & indirect trade		
2021	New Animal Health law		
2022			
2023		99,9%???	

Conclusions

- IBR: a disease mainly driven by trade
- Alteration in trading patterns is a must, although should be feasible for herd owners
- Shift in habits and alteration of trade patterns is a slow process
- Belgium enters the final stage of IBR-control!
- Succesfull strategy with marker vaccination!
 - $P_{(\text{herd } 2012 \rightarrow 2019)}$: 34,1% \rightarrow 4,3%
 - $P_{(\text{animal } 2012 \rightarrow 2019)}$: 10,4% \rightarrow 1,2%
- Next years and strategy in problem herds (2%) will determine speed of eradication