Achievements of the European BVDV Control network

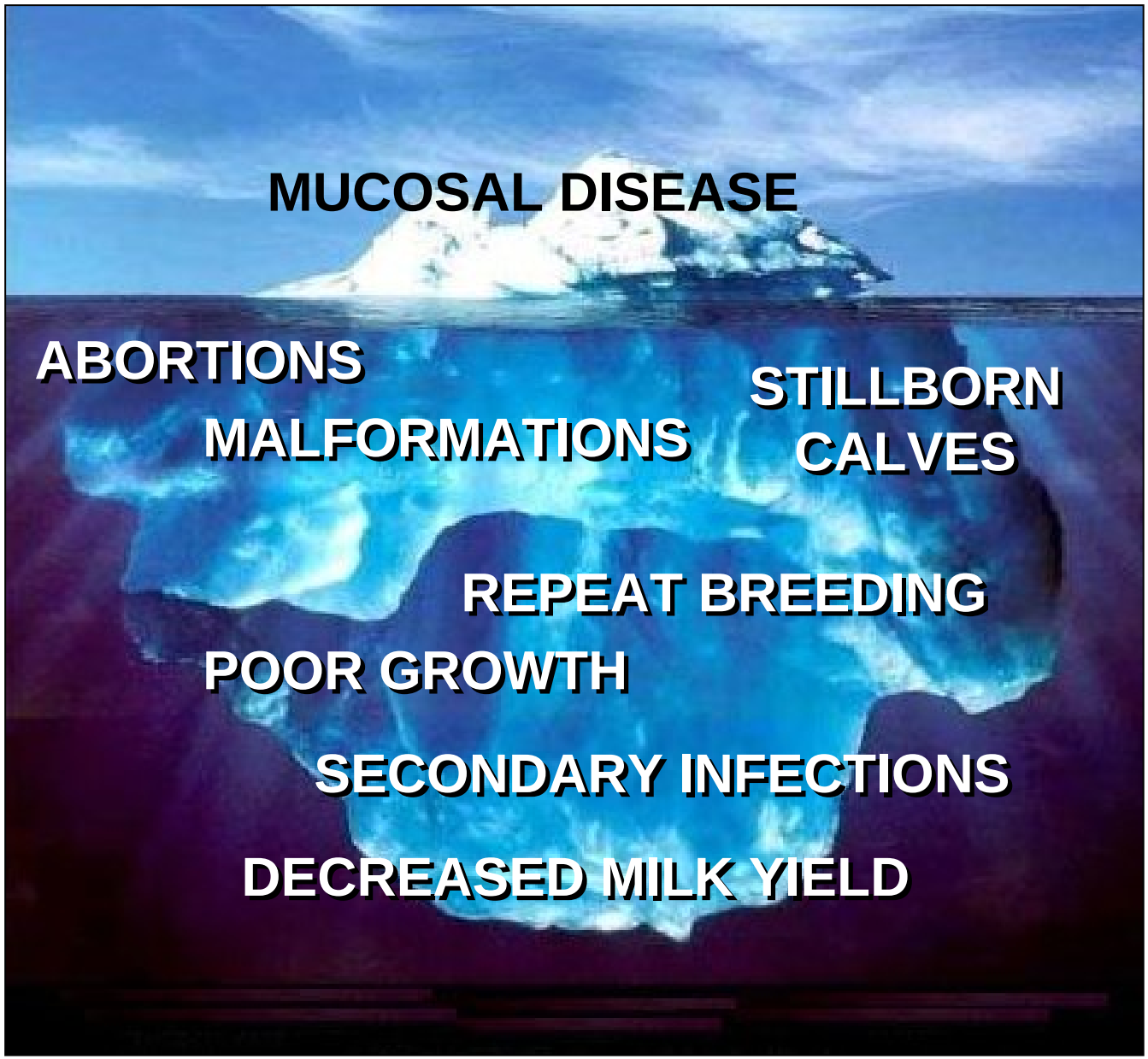
Ann Lindberg

Torstein Sandvik, Volker Moennig, Joe Brownlie, Helmut Saatkamp, George Gunn, Hans Houe and Paul Valle

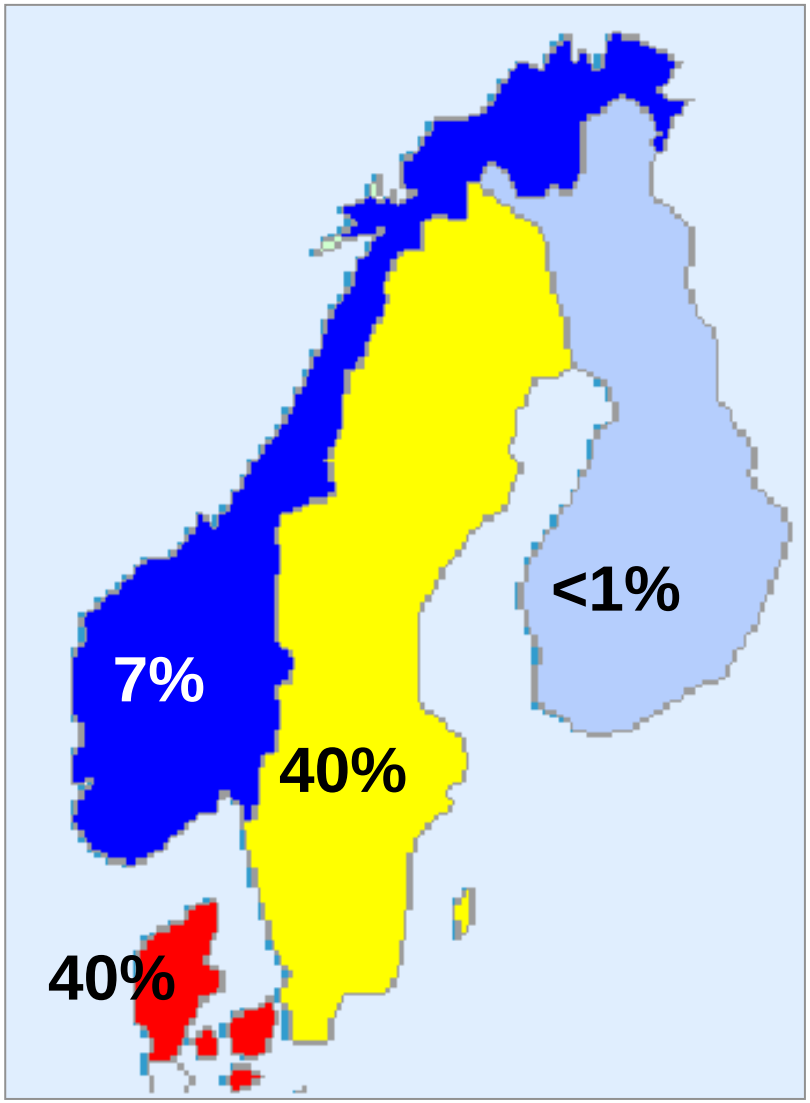
Outline

- Background
- The Thematic Network on BVDV Control – origin, objectives, organisation and output
- Outcome of discussions on..
  - ..initiation of control
  - ..a general model for BVDV control
  - ..the meaning of “biosecurity” in the BVDV control context
  - ..role of vaccination in BVDV control schemes
- Spin-off effects of the network and some future challenges
- Conclusions

Background



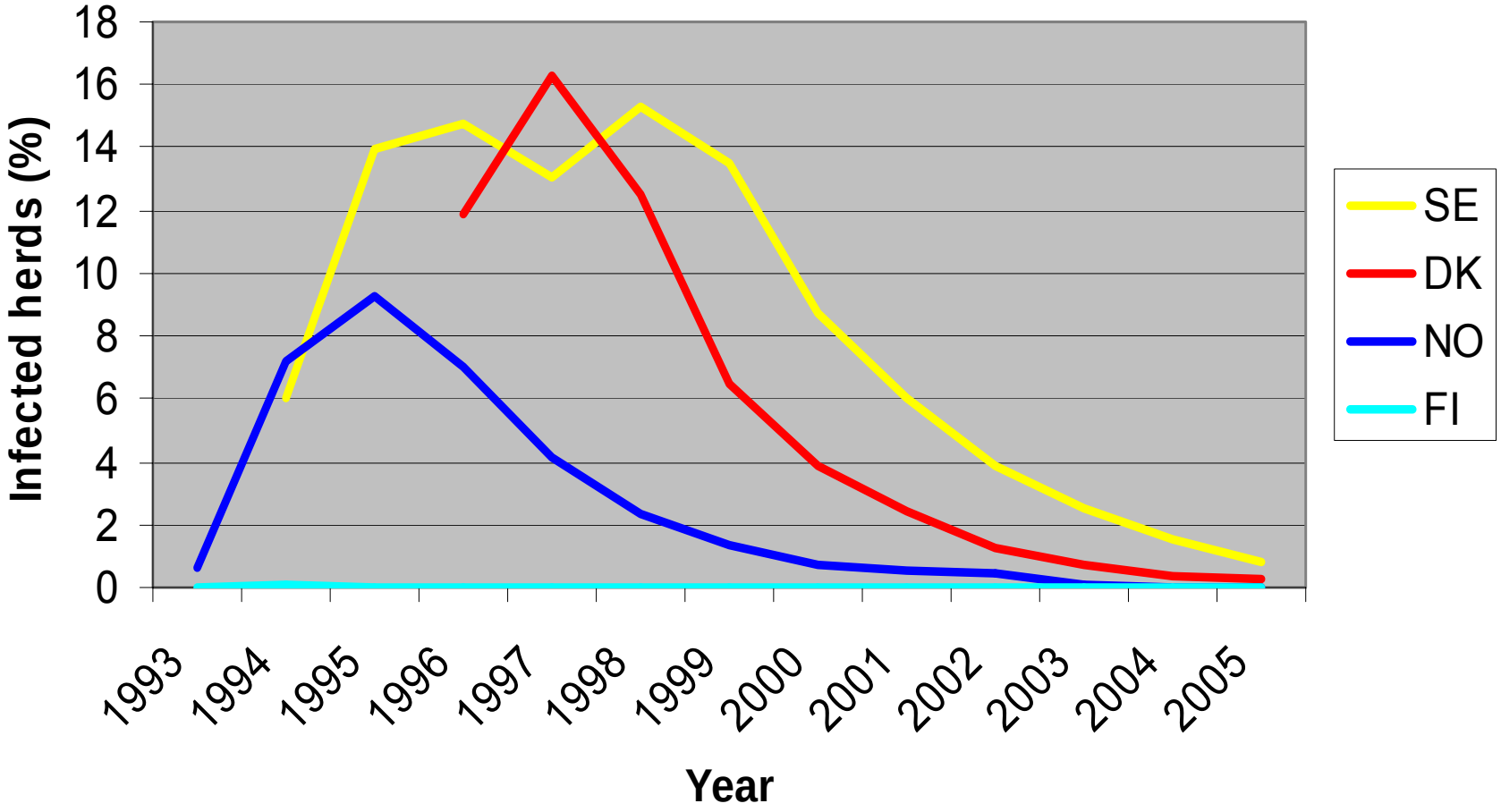
BVD Control; The Future is Now. Denver 29-31 January 2006



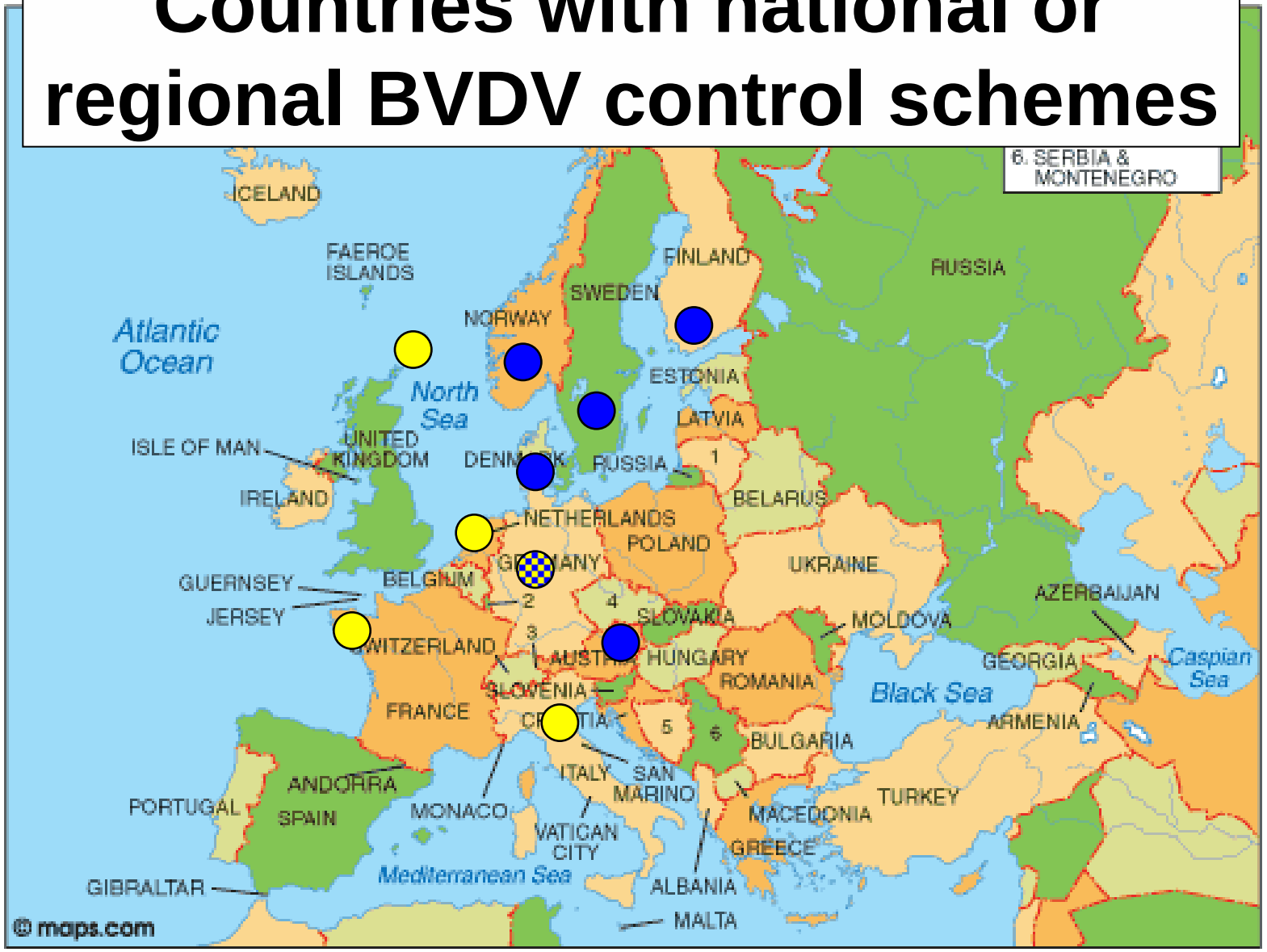
Prevalence of herds with antibody levels in bulk milk indicative of recent/ongoing BVDV infection

1993

Prevalence of herds under investigation 1993-2005



Countries with national or regional BVDV control schemes



The Thematic Network on BVDV Control

Origin

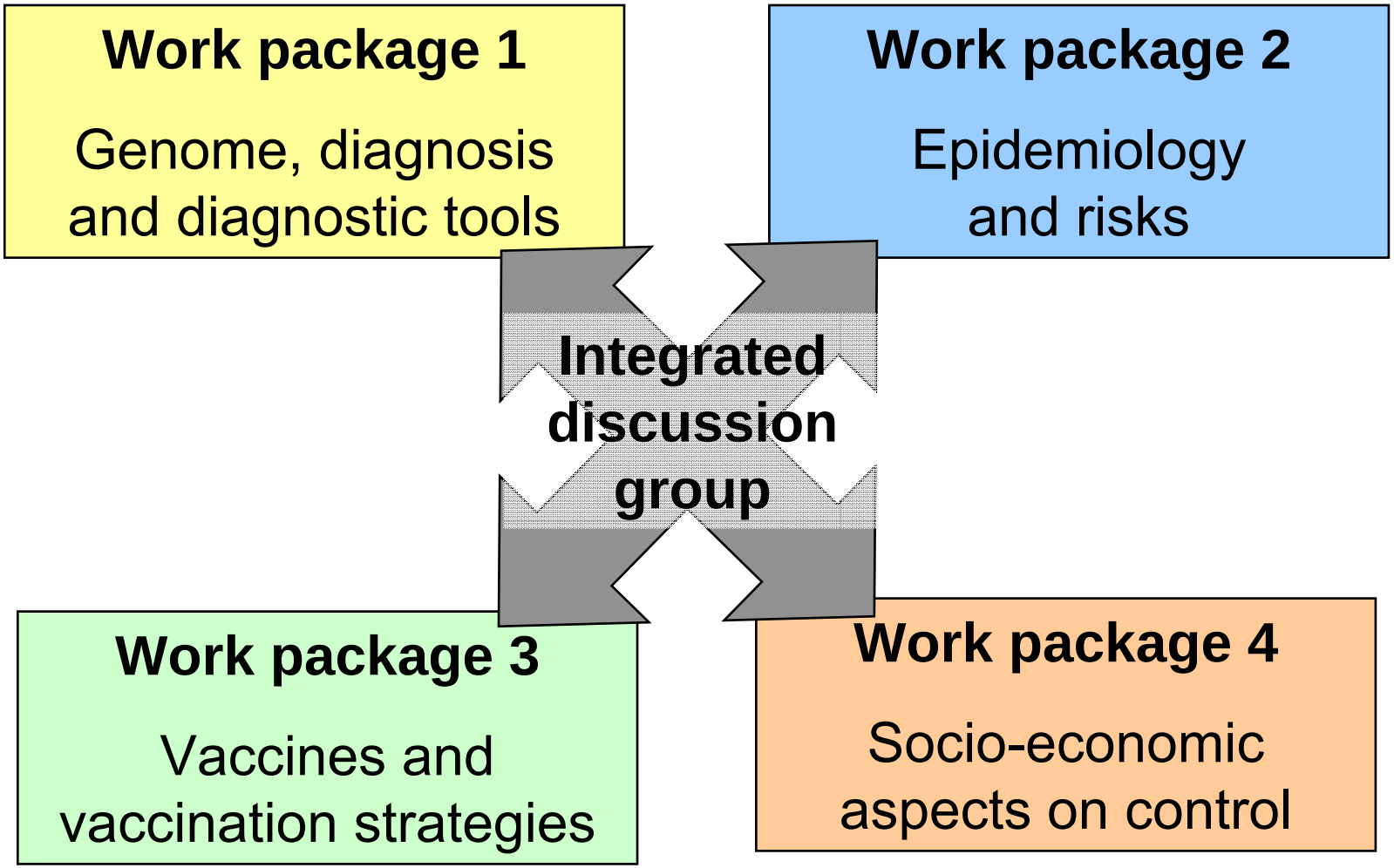
- Initiated and co-ordinated by Norway
- Funding for 3 years (dec 2002 – 2005) from the EC 5th framework
- Twenty-eight partners from 18 countries
  - all older member states except Luxembourg
  - Norway and Switzerland
  - of newer member states – Slovakia and Slovenia

Overall objectives

- To identify knowledge gaps of importance for the control of BVDV infections in Europe,
- to provide guidelines for future evolvement

  and
- to coordinate ongoing and future research.

Organisation



Specific activities/outputs

- Meetings (incl. international symposium in Oporto, Portugal 2004)
- Special issue on BVDV control in Preventive Veterinary Medicine (vol 72, issues 1-2, 2005)
- Expert opinion on different matters captured by means of questionnaires and discussions
- Position papers
  - relating to specific work package objectives
  - relating to the overall objective to provide guidance to the European Community

Specific activities/outputs

- BVDV serology ring test
- Genome data base (demo version) incl standardised protocols for submission
- Study on economic and social pressure to control BVDV within Europe
- Assessment of regional risk factors for introducing and maintaining BVDV infection
- Pan-European web survey on attitudes towards BVDV control

Specific activities/outputs

www.bvdv-control.org

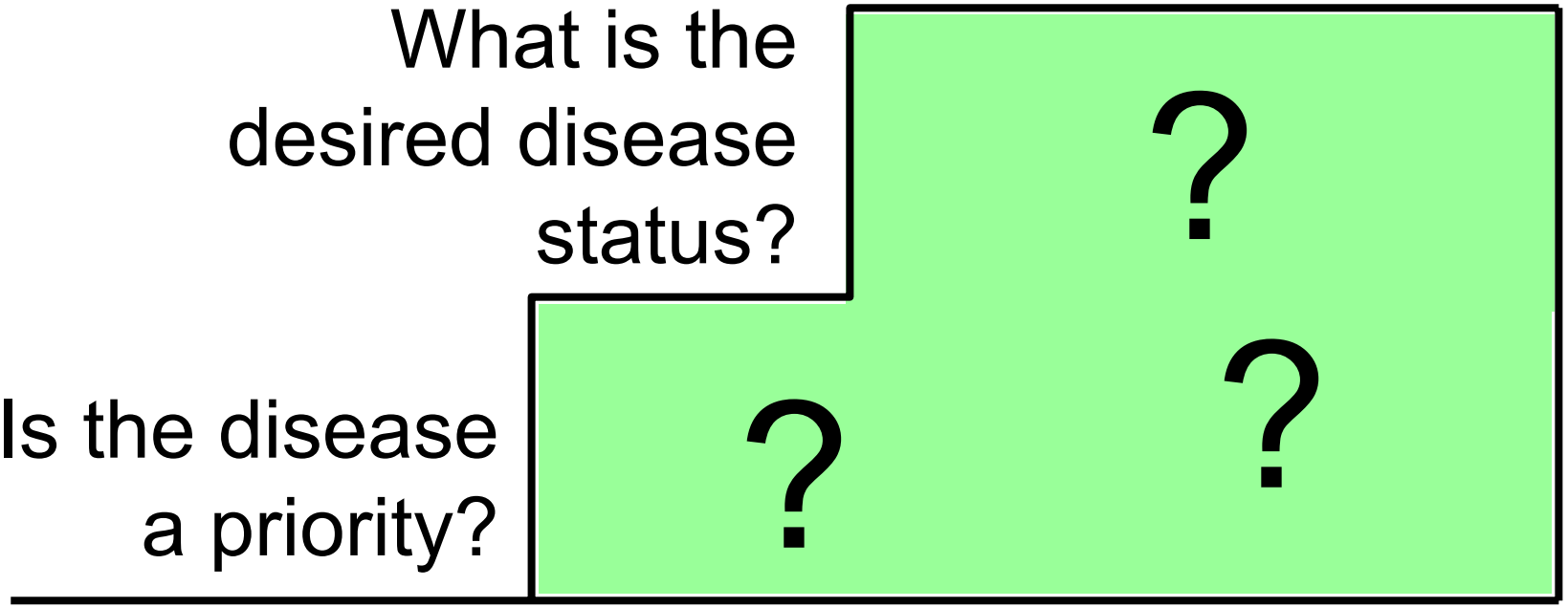
Outcome of discussions on initiation of control

The ”control initiation threshold”

Is it possible / desirable to achieve, maintain and restore this status?

What is the desired disease status?

Is the disease a priority?



Farmer´s decision problem

- Gunn et al. (PVM issue)
- Paradox: Countries where farmers have the highest economic pressure ≠ countries with control today
- Confounding factors:
  - other disease priorities
  - unfavourable epidemiological preconditions => high risk of reinfection
- Unilateral investments into establishing a BVD free herd is associated with risk and with high costs for maintaining status.
- Investing farmers creates public good for others without getting any for themselves.

Drivers and barriers for improved implementation of biosecurity

Drivers:

- Referents: vets and other farmers
- Attitude drivers: Others do their bit, financial benefit is real, image/future of farming, autonomy

Barriers:

- Referents: no fully trusted source of advice; GOV is perceived as a necessary actor to co-ordinate but not trusted
- Attitude barriers: others not doing their bit, efficacy of measures, fear of loosing freedom/autonomy

Source: Hovi et al., 2004

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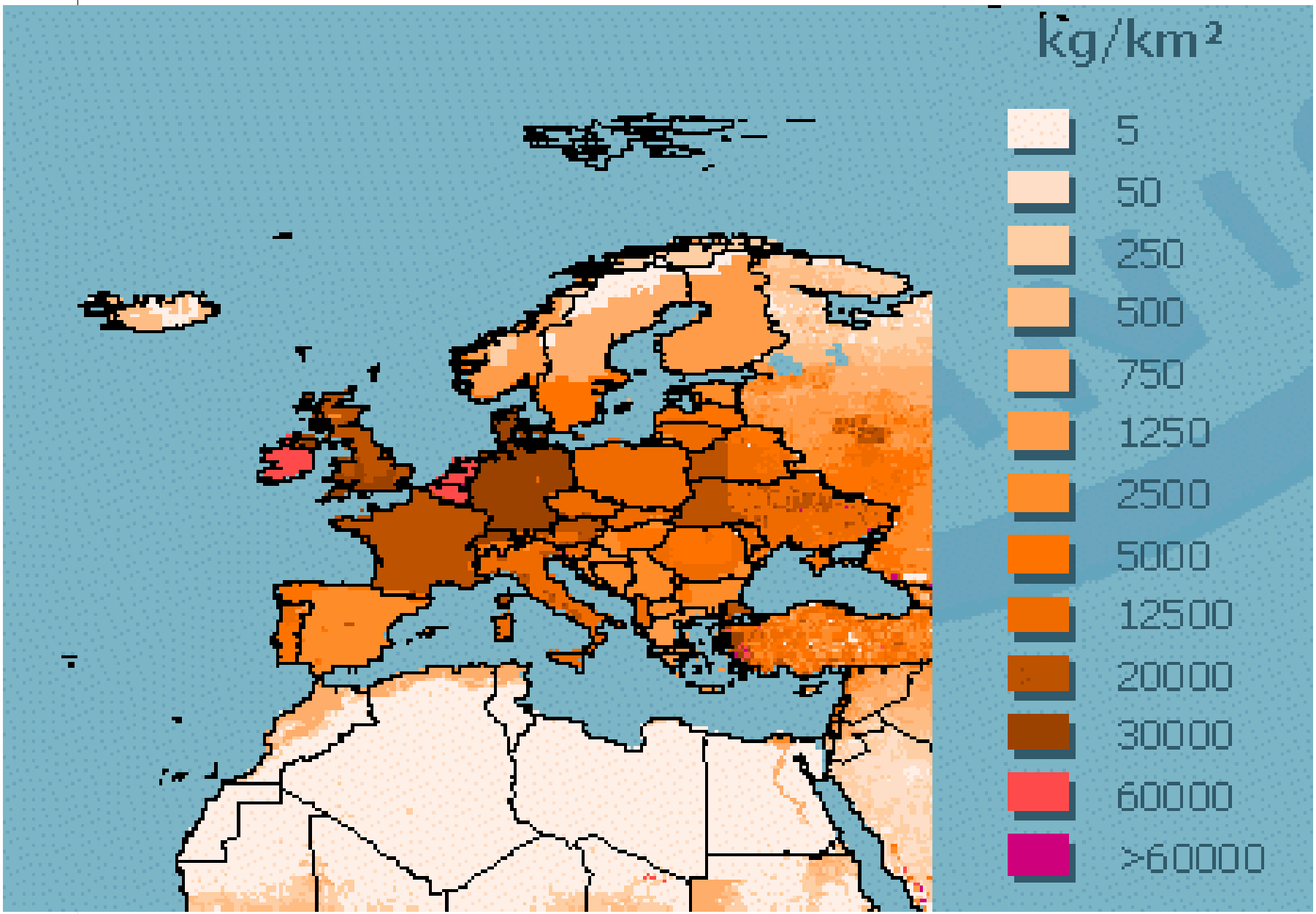
Common denominators for areas with large scale control

- Initiatives driven by organisations representing the primary stakeholders
  - Provides guarantee that responsibility is shared
  - Provides a social pressure to conform
- Large networks for extension services (preventive medicine)
- Necessary know-how accessed and developed together with competent research institutions/diagnostic labs
- Fairly conflict-free relationship with authorities

Attitudes to BVDV control

- Web survey: Researchers, policy makers, field vets, rep's of farmers' organisations
- Arguments raised by countries without control as to why the results seen in regions with control could not be replicated in their own country => larger herds, more dense animal populations.


kg/km²
5
50
250
500
750
1250
2500
5000
12500
20000
30000
60000
>60000

Attitudes to BVDV control

- Web survey: Researchers, policy makers, field vets, rep's of farmers' organisations
- Arguments raised by countries without control as to why the results seen in regions with control could not be replicated in their own country => larger herds, more dense animal populations.
- Underlying belief that farmers will not comply
- At the same time; very few have addressed this issue by education/information

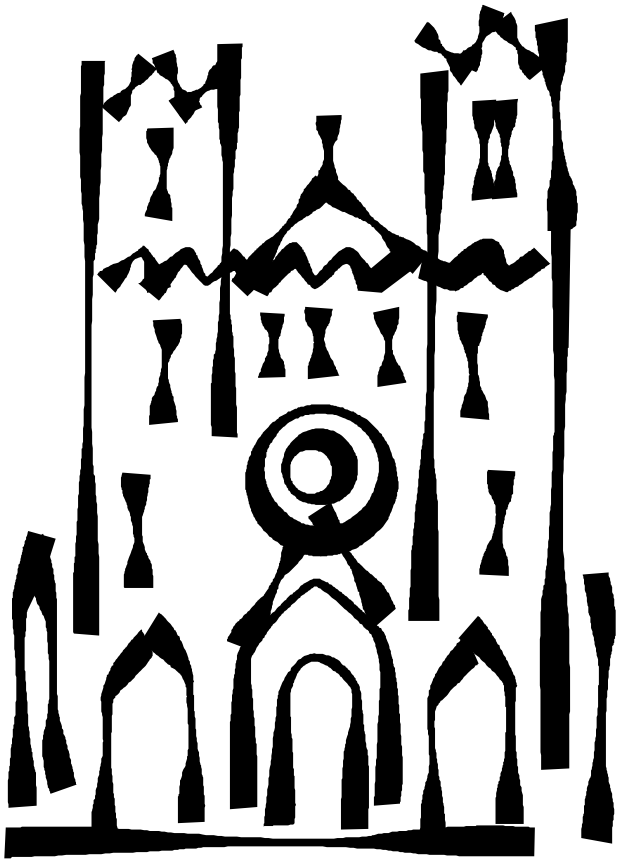
Factors contributing to the current European BVDV situation

- Social and political differences in attitudes to disease control just as (more?) important as farm economy / BVDV epidemiology
- How much do our own attitudes and perceptions contribute to / reflect these differences?

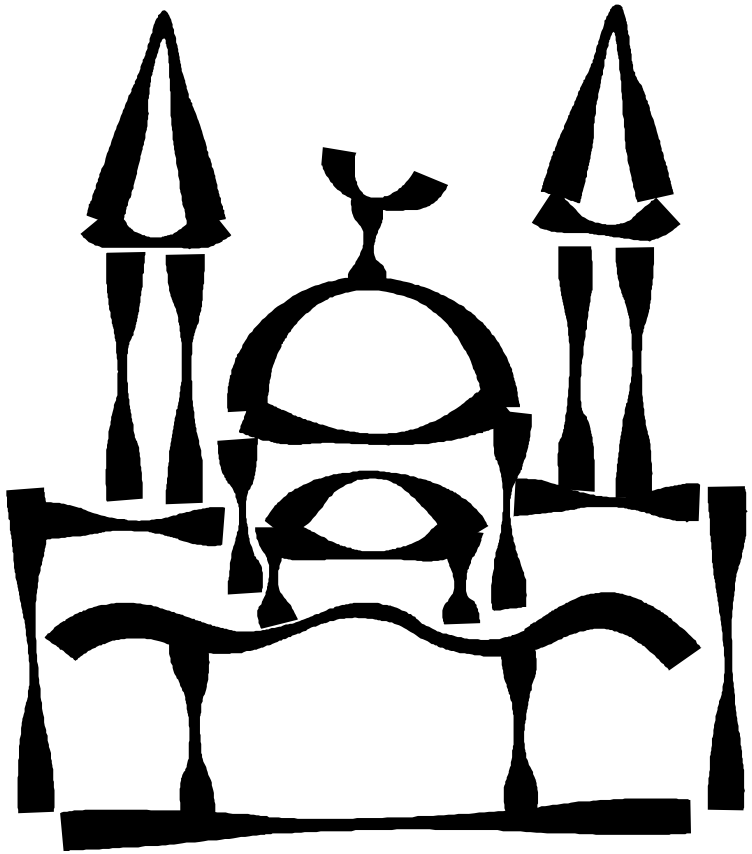
Outcome of discussions on a general model for BVDV control

Strategies for BVDV control – ”the old differentiation”

Vaccination



Zoo-sanitary control

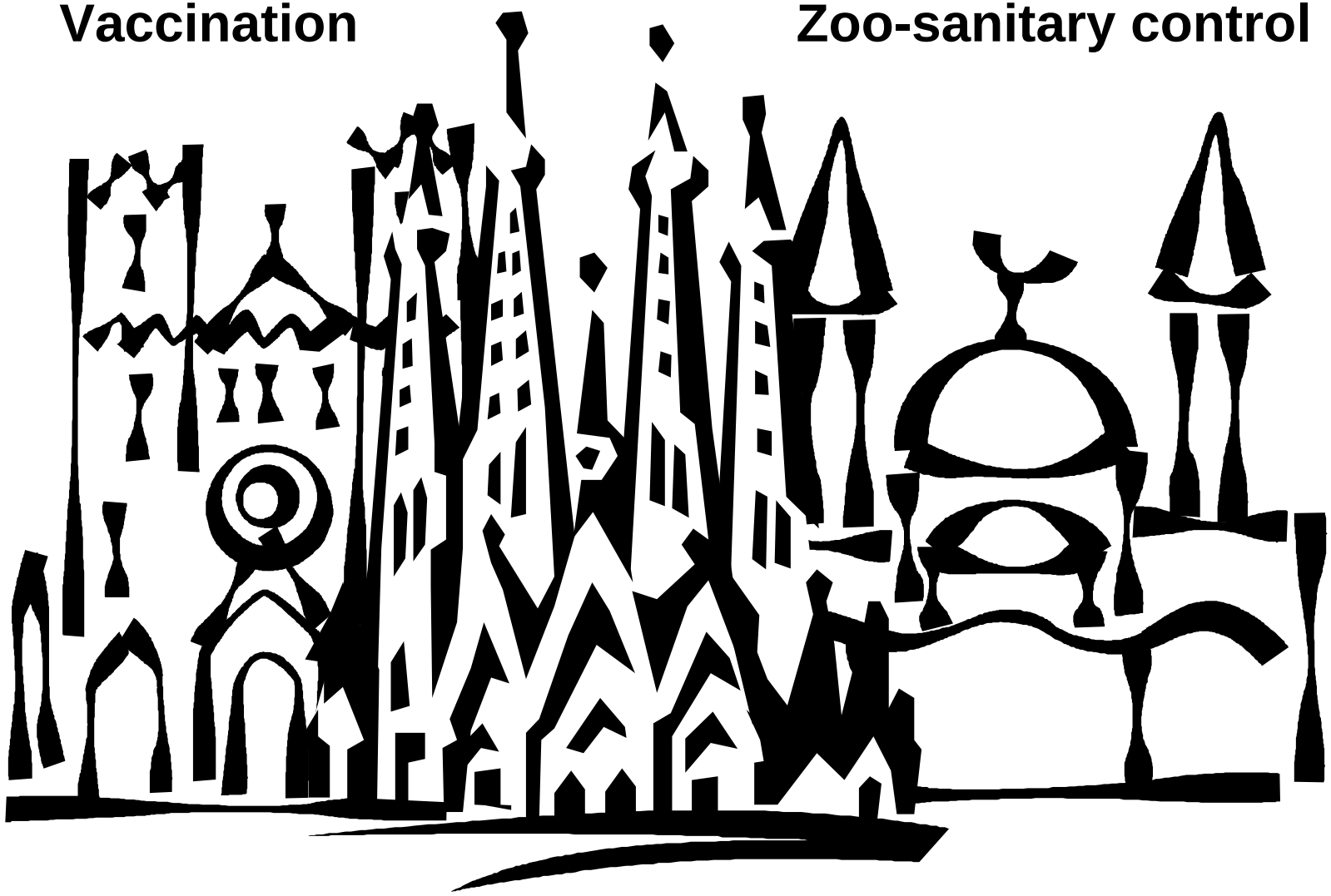


BVDV control attitude survey

- Scandinavian experiences acknowledged as being useful
- ≠ the ’best’ or ’only’ way to achieve eradication
- a change in these cognitive patterns necessary to reach mutual acceptance
- if not; a constraint to any form of collective action

Strategies for BVDV control – ”the old differentiation”

Vaccination **Zoo-sanitary control**



Systematic control approaches

vs

Non-systematic control approaches

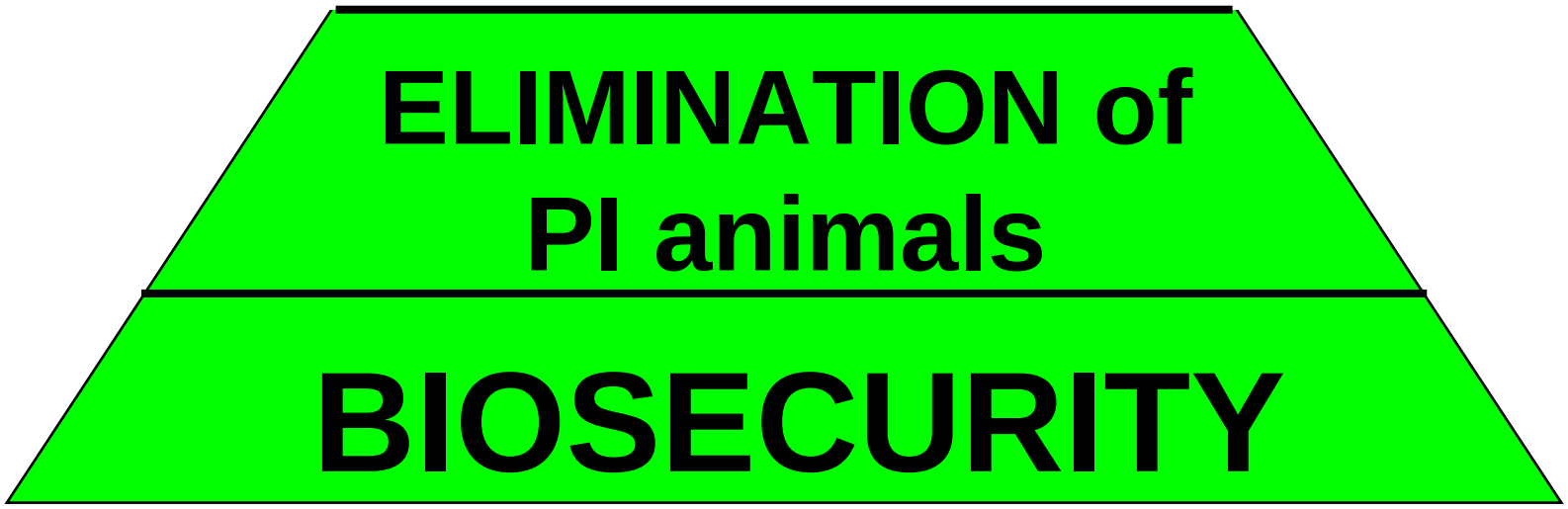
Systematic control

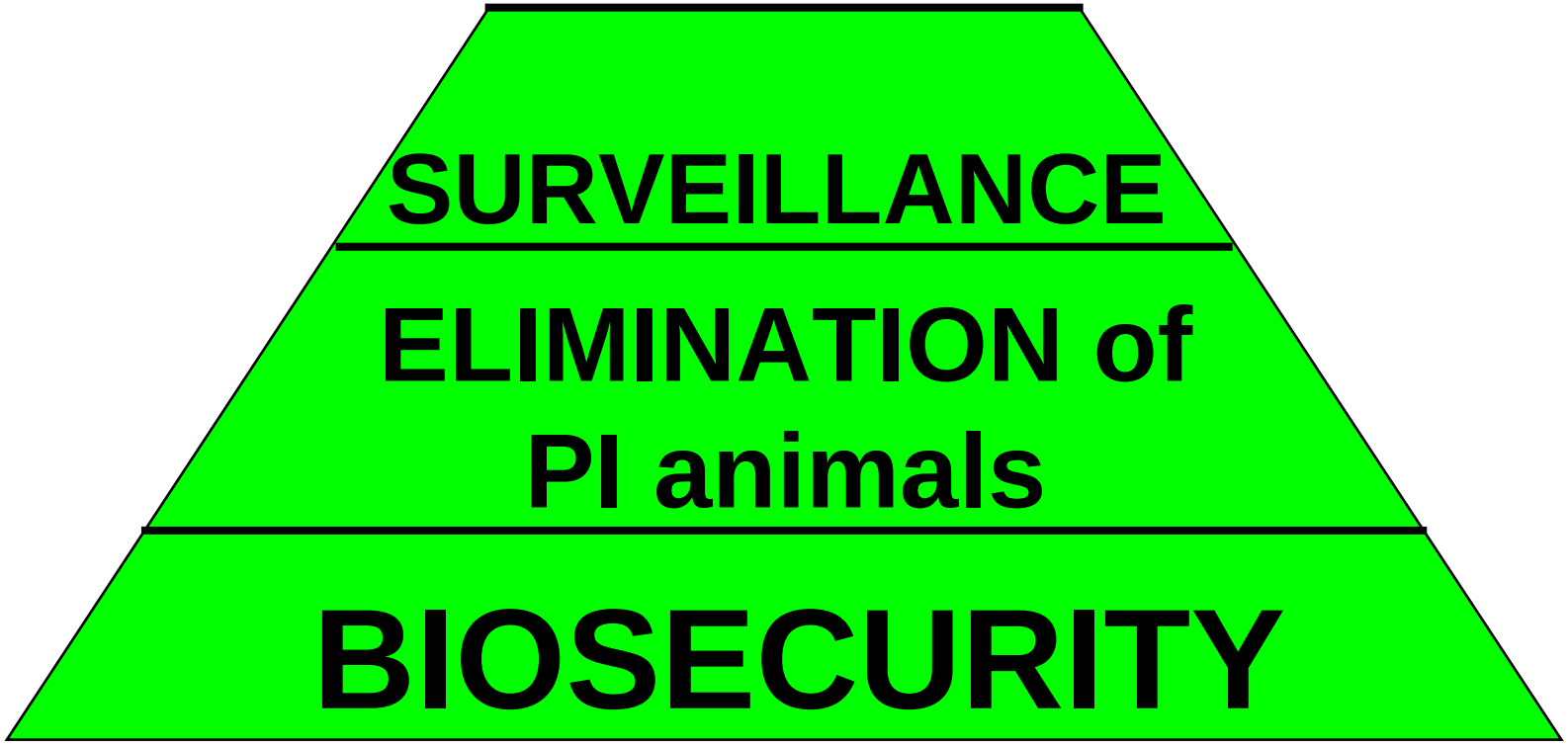
- Goal-oriented, systematic reduction in the incidence and prevalence of BVDV infection
- Implies that progress is being monitored
- Scale – herd/sectoral/regional/national

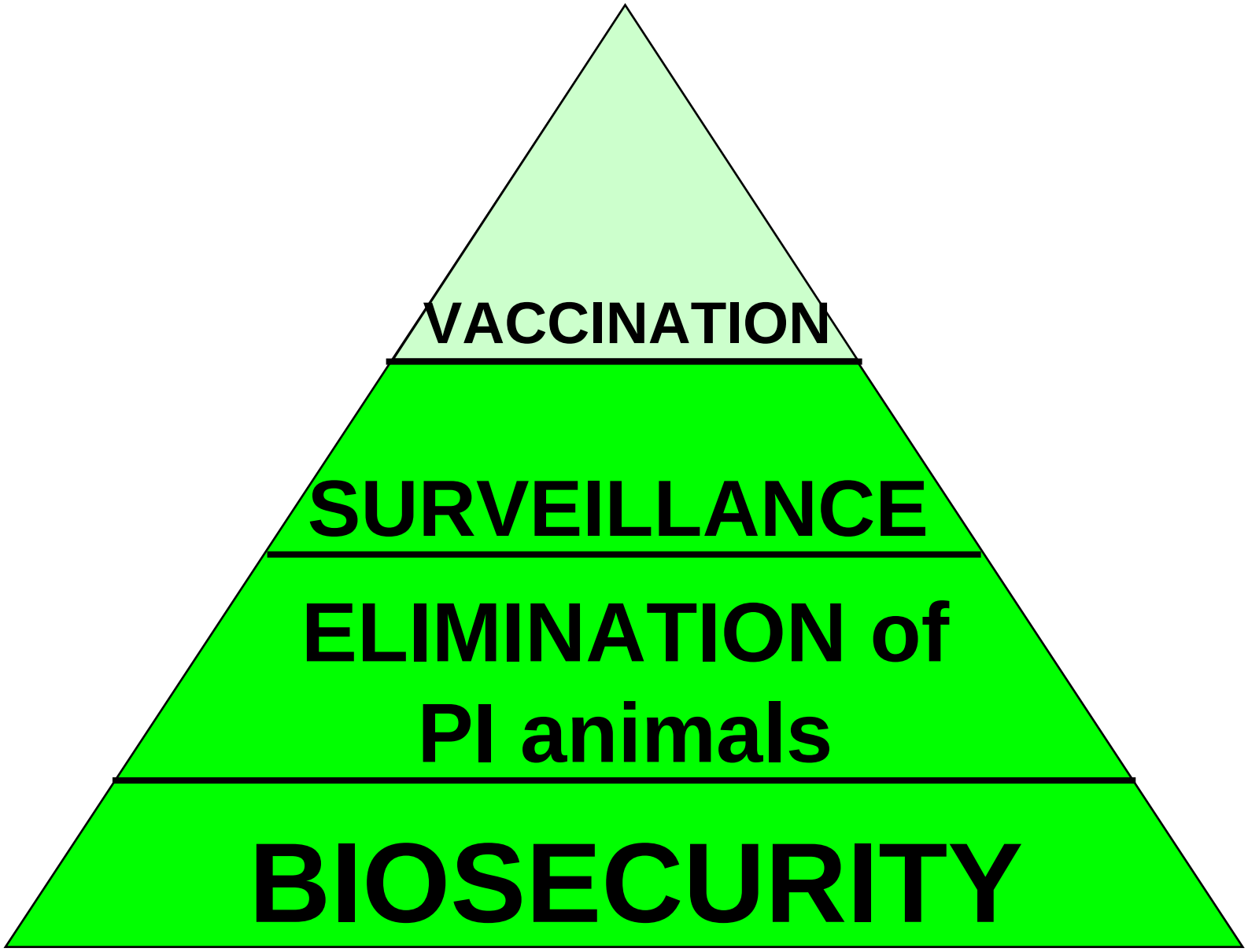
Non-systematic control

- Measures lacking an organised effort to achieve and maintain freedom from BVDV
- No surveillance in place
- Typically immunisation strategies using live or killed vaccines and/or removal of PI animals in selected cohorts without systematic follow-up

BIOSECURITY


ELIMINATION of
PI animals
BIOSECURITY


SURVEILLANCE
ELIMINATION of
PI animals
BIOSECURITY


VACCINATION
SURVEILLANCE
ELIMINATION of
PI animals
BIOSECURITY

Outcome of discussions on the meaning of “biosecurity” in the BVDV control context

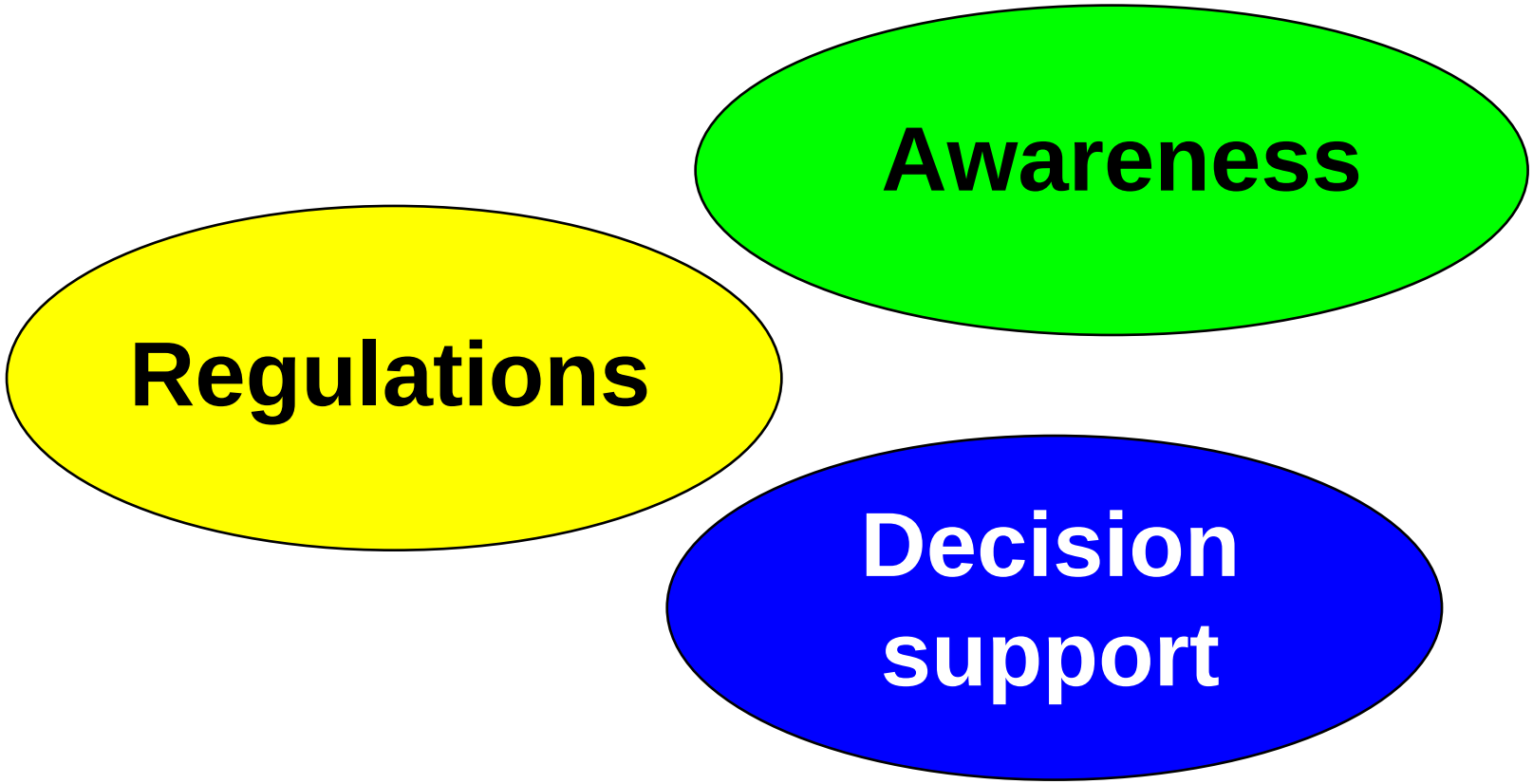
What is biosecurity?

BVD Control; The Future is Now. Denver 29-31 January 2006

Biosecurity

- All measures targeted at preventing between-herd transmission
- Core: Preventing introduction of PI animals and dams carrying PI fetuses

Elements of biosecurity



Regulations

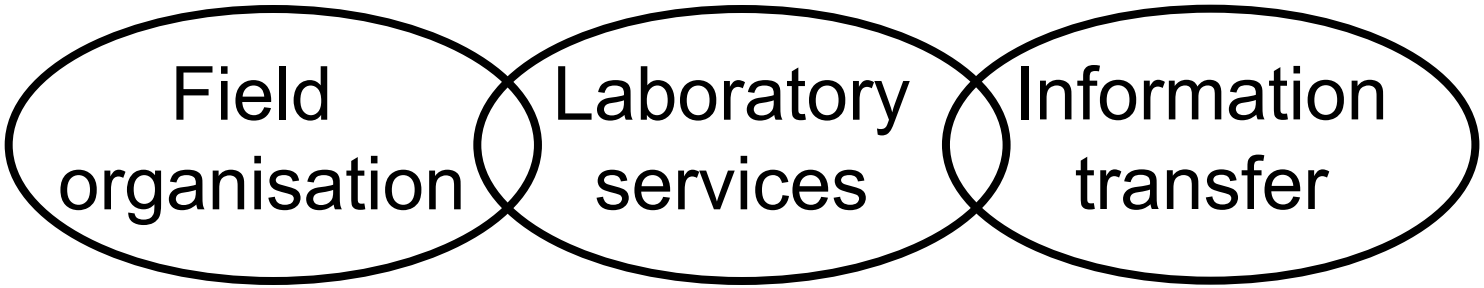
- A common formal framework outlining what measures are required to break between-herd transmission
  - Practical measures (incl. vaccination)
  - Definition of a free/infected herd and measures needed to ascertain status

Stakeholder awareness

- First line defense!
- Education / information
- Real target: Change/influence behaviour..
  - Function of a person's attitudes and subjective norms (social pressure)

Decision support

- System for obtaining and disseminating information on BVDV status (animal and/or herd)
  - To help people aware of BVDV risks make correct decisions
  - Updated information!

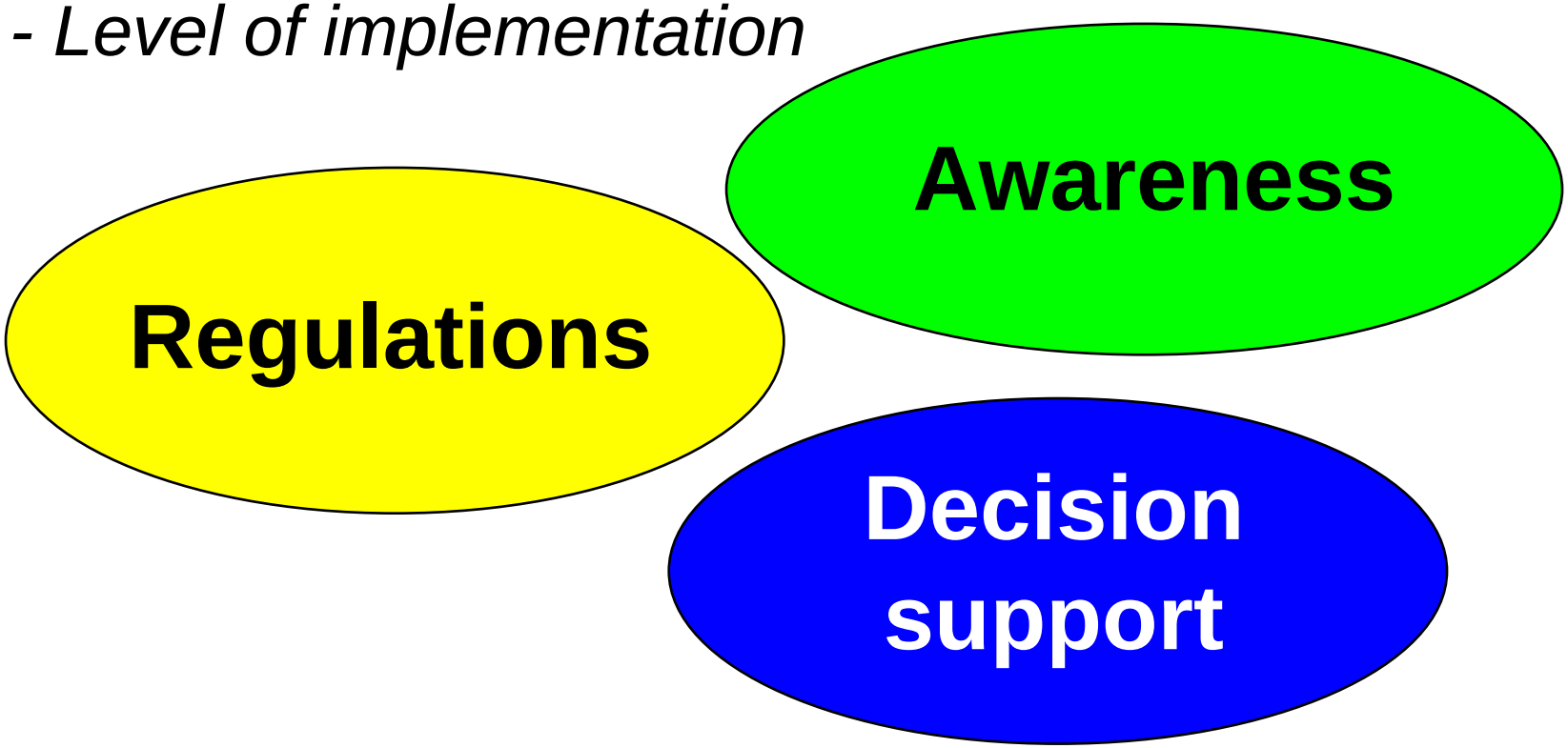


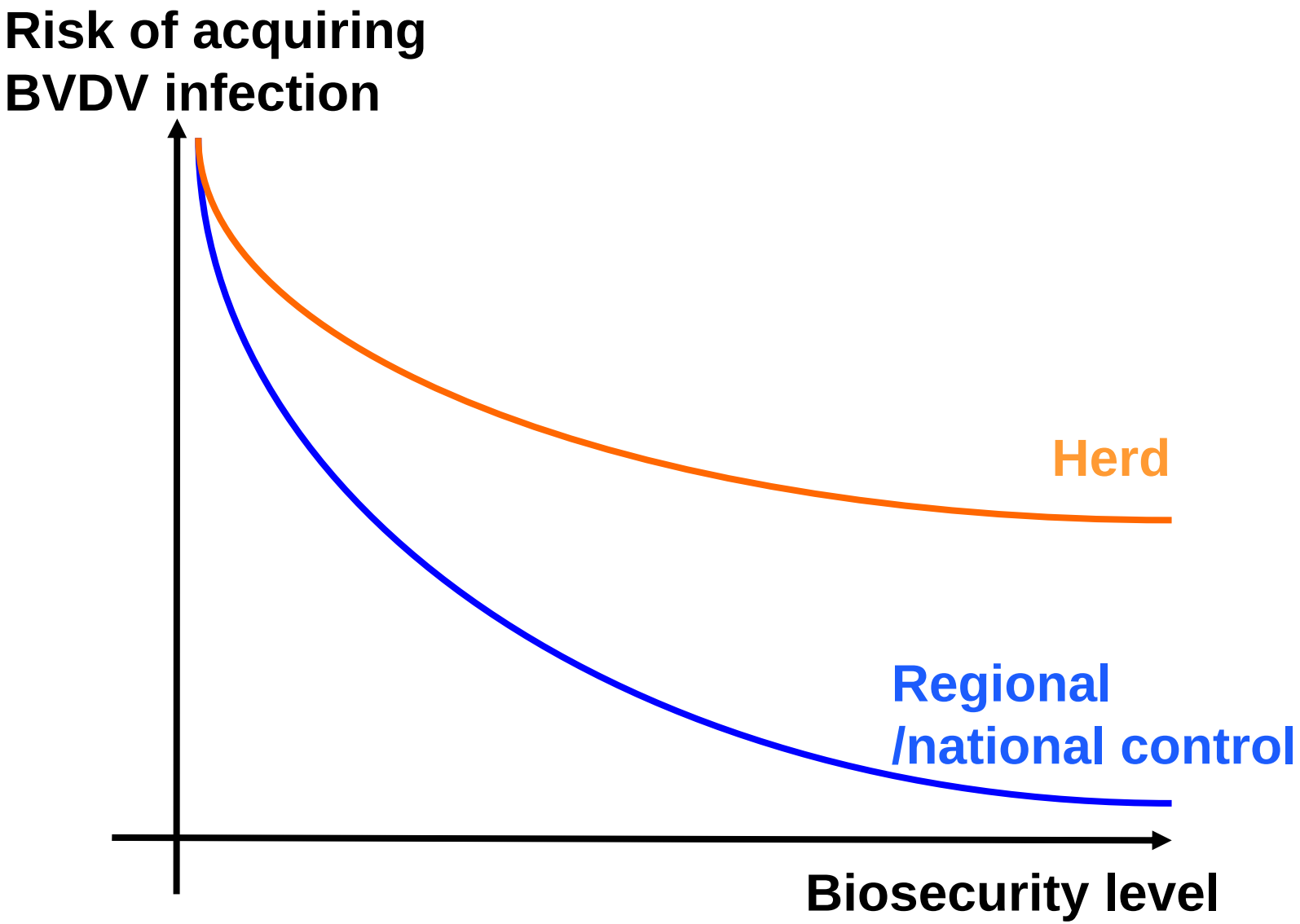
Elements of biosecurity

Efficiency of these in reducing between-herd transmission risk depends upon

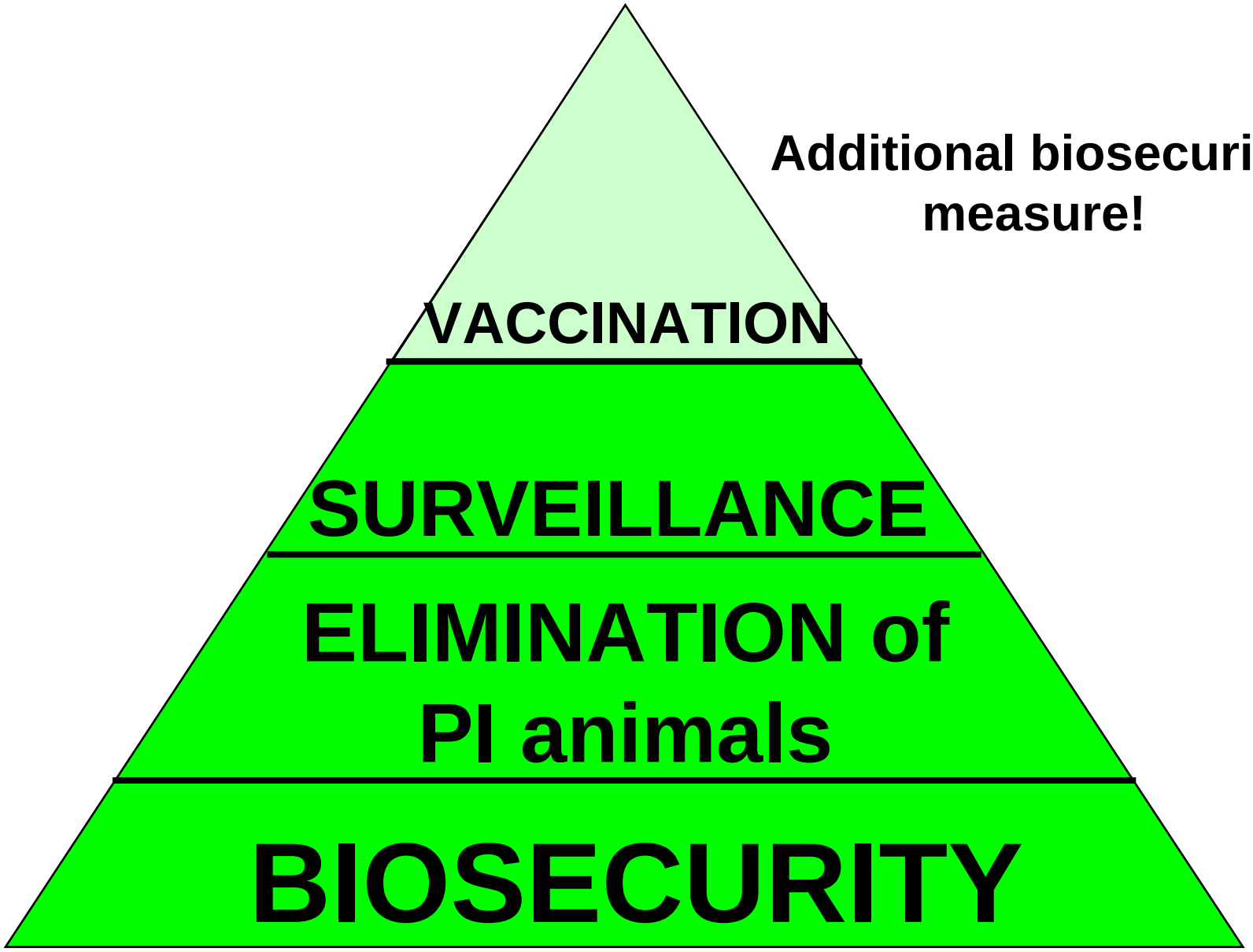
- How they are designed

- Level of implementation




Risk of acquiring
BVDV infection
Herd
Regional
/national control
Biosecurity level

Outcome of discussions on the role of vaccination in BVDV control schemes


Additional biosecurity measure!
VACCINATION
SURVEILLANCE
ELIMINATION of PI animals
BIOSECURITY

Potential benefits

- Prevent accidental reinfection (introd. of PI animals /dams with PI fetuses excluded)
  - Reduction of losses in case of accidental reinfection
- Prevent genesis of new PI animals in herds undergoing clearance
- Reduce infectious pressure at larger scale if implemented in many herds simultaneously
- For initiation: Gain acceptance from stakeholders in regions where risk of reinfection is historically known to be high.

Need to use vaccines

- …will differ between countries/regions
- …will change over time

- Adding a vaccination regime adds a cost
- Has to be evaluated against the benefits

Considerations when adding a vaccination regime to a systematic scheme

- Problems can arise if..
  - Antigenic makeup of products do not match circulating strains
  - Vaccines are used incorrectly
  - Vaccines fail to elicit an adequate immune response
  - Vaccine expectations are unrealistic
  - Vaccines are contaminated with BVDV

Considerations when adding a vaccination regime to a systematic scheme

- This implies..
  - additional demands on surveillance
  - additional demands on education and communication
  - additional costs for control
  - higher demands on vaccine manufacturers

Spin-off effects of the network and some future challenges

Examples of network effects

- France:
  - Expansion of control to new areas underway
  - Control becomes compulsory in Brittany
- Belgium:
  - Industry embarks on control supported by research institutions and authorities
- UK:
  - Industry has formed committees with the task to design a national programme
- Switzerland:
  - Industry and cantonal vets responds positively to intitiative from Swiss Veterinary Office.
  - Scheme underway and may start 2007.

Future challenge for a Pan-European BVDV control approach

- Attitude barriers within the scientific community need to be overcome
- BVDV need to be acknowledged as a problem by policy makers
- Creating incentives for farmer-close bodies to drive the issue may be an opportuntiy
- OIE listing may create a common target for a Pan-European strategy

Future challenges for the scientific community

- Knowledge gaps have been identified by the network
- Research coordination needed!
- Appointment of an EU Community reference laboratory

Conclusions

Conclusions

- The concensus within the Thematic network provides an opportunity to work towards a long-term improvement of the BVDV situation in Europe
- The dynamics of the network have already resulted in moving BVDV up on stakeholders' agendas
- Research funding opportunities lie in the relevance of BVDV control to disease control in general
- OIE listing and additional countries embarking on control will help in manifesting BVDV as a priority not only for farmers and the industry, but also for policy makers at the European level

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Thank you for your attention!