

# FINLAND'S ANIMAL HEALTH SERVICE (FAHS)

## BIOSECURITY MEASURES IN ANIMAL HUSBANDRY TO PREVENT EPIDEMIC ZOOSES



**Veikko Tuovinen**  
DVM, PhD, MS, Diplomate ECVPH  
Managing Director of FAHS

# BIOSECURITY - definition

Management of biological risks to:

- achieve food safety
- protect (*human*), animal and plant life and health
- protect the environment; and
- contribute to its sustainable use



# BIOSECURITY – short definitions

- Safety of living things
- Freedom of concern for sickness or disease
- Security from transmission of infectious diseases, parasites and pests

# BIOSECURITY – in animal husbandry

Prevention of pathogens **entering** or **leaving** any place where livestock are, or have been, present



# BIOSECURITY – measures in animal husbandry

**MONITORING**

**SURVEILLANCE**

**ISOLATION**

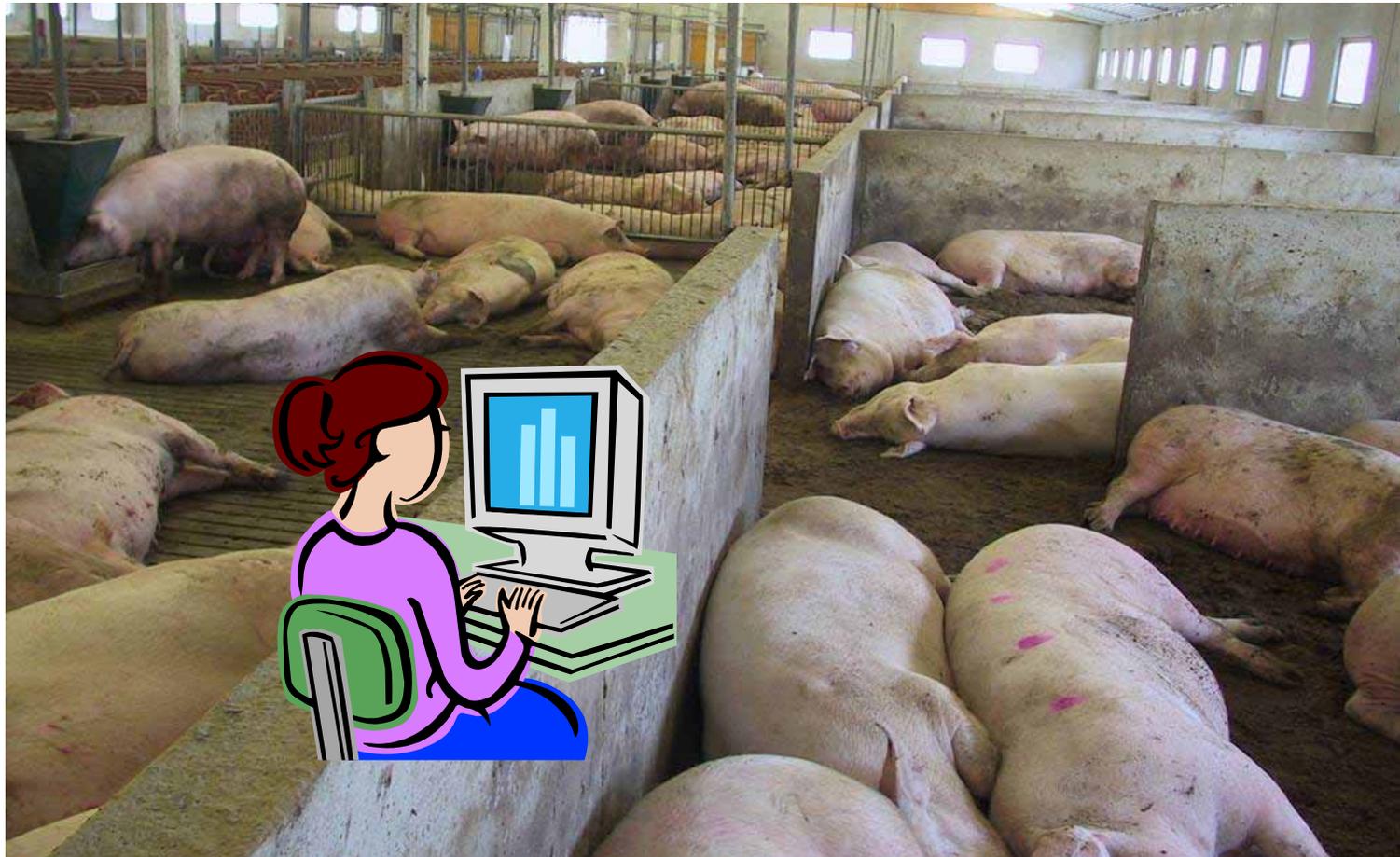
**ELIMINATION**

**ERADICATION**

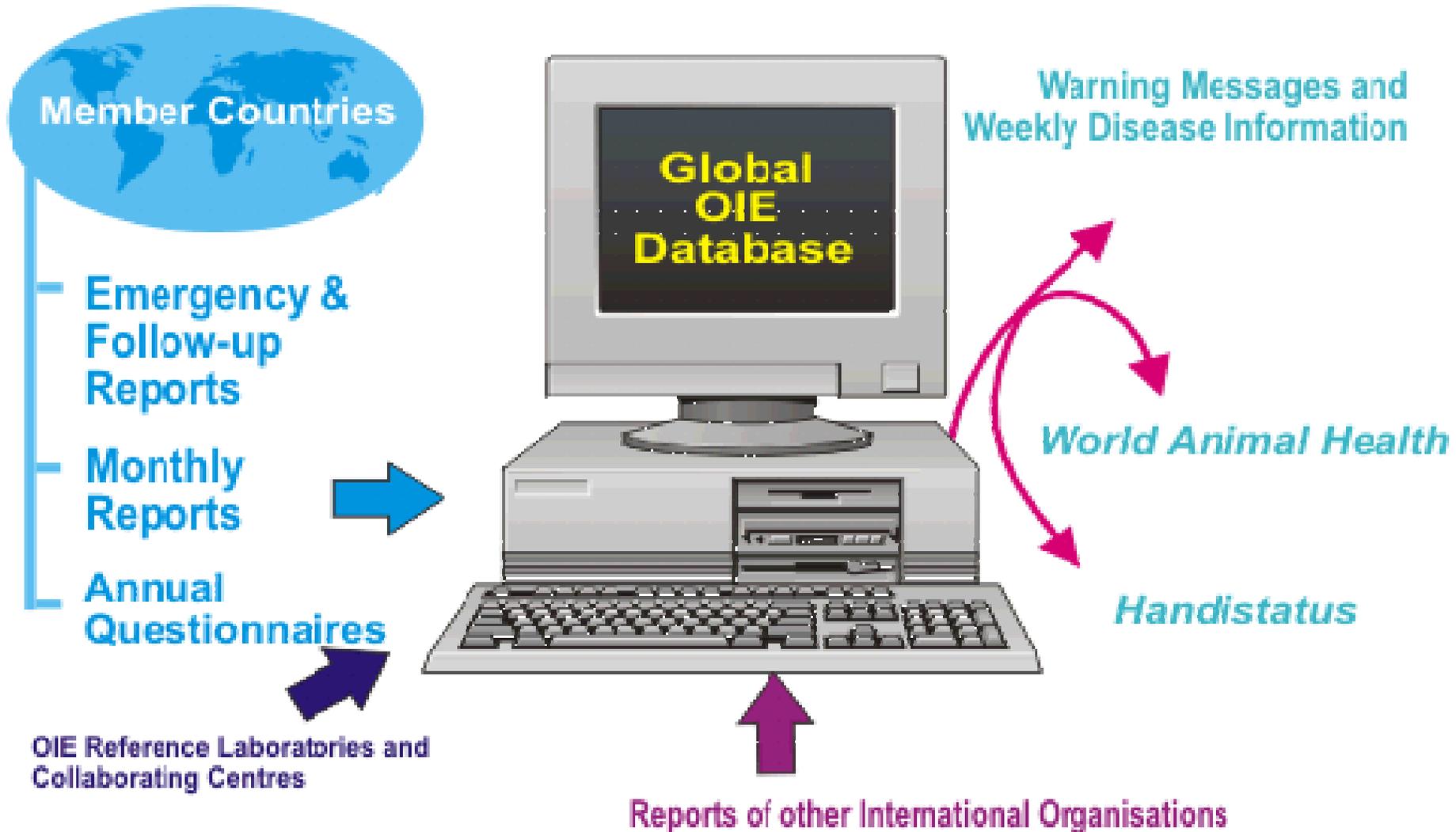
**PREVENTION**

# MONITORING

To detect changes in the prevalence of disease



# MONITORING – global example



# LIST A



- potential for very serious and rapid spread
- serious socio-economic or public health consequence
- major importance in the international trade
- *15 diseases*

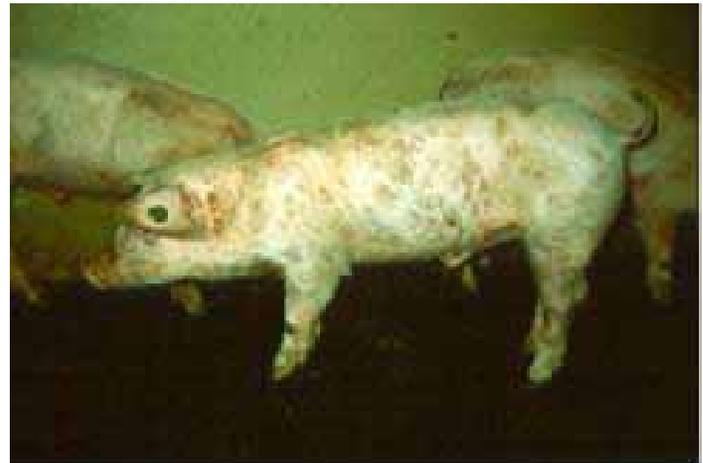
# LIST A - examples



- Foot and mouth disease
- Swine vesicular disease



- Classical swine fever



- Highly pathogenic avian influenza

- socio-economic and/or public health importance within countries
- significant in the international trade

# LIST B - examples

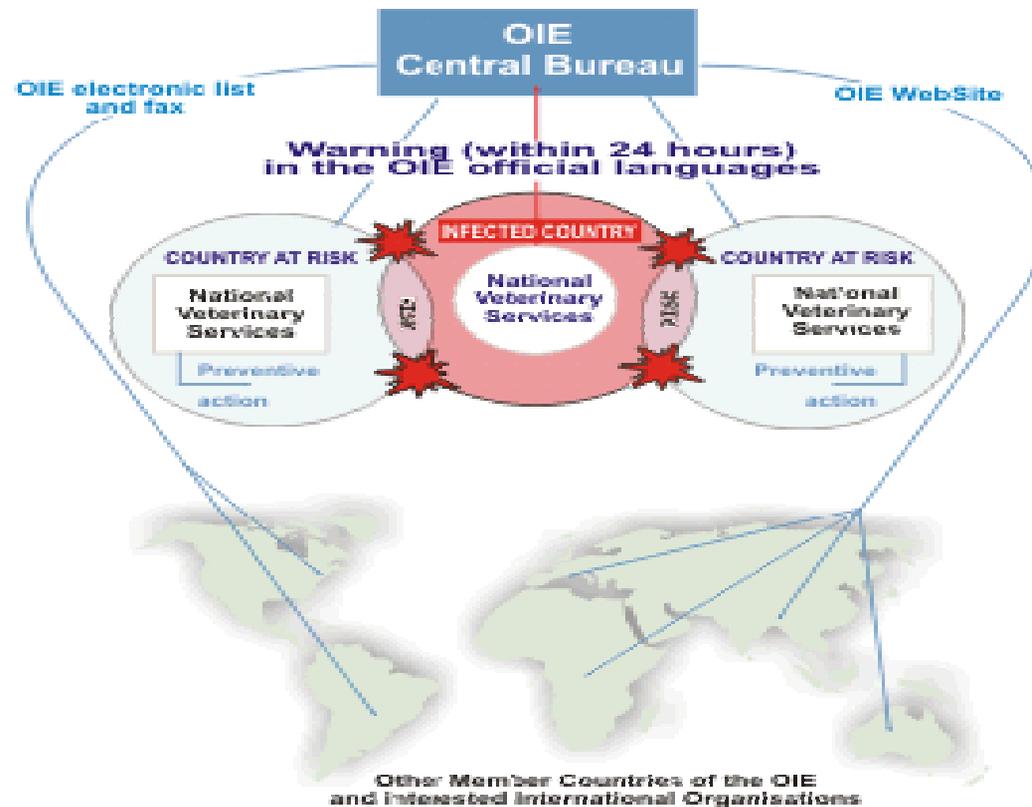


- 11 multiple species diseases  
(Anthrax, rabies, trichinellosis ...)
- 82 species specific  
(BSE, Scrapie, TGE, Avian tuberculosis...)

# ALERT – when something happens



## The OIE Early Warning System



# ALERT MESSAGES - examples



- Highly pathogenic avian influenza (virus H7N3) in Canada
- FMD suspected in Zambia
- Highly pathogenic avian influenza (virus H5N2) in USA
- Highly pathogenic avian influenza (virus H5N1) in the People's Republic of China
- etc.

# SURVEILLANCE

- continuous investigation
- to detect the occurrence of disease
  - for control purposes
  - may involve testing of a part of the population



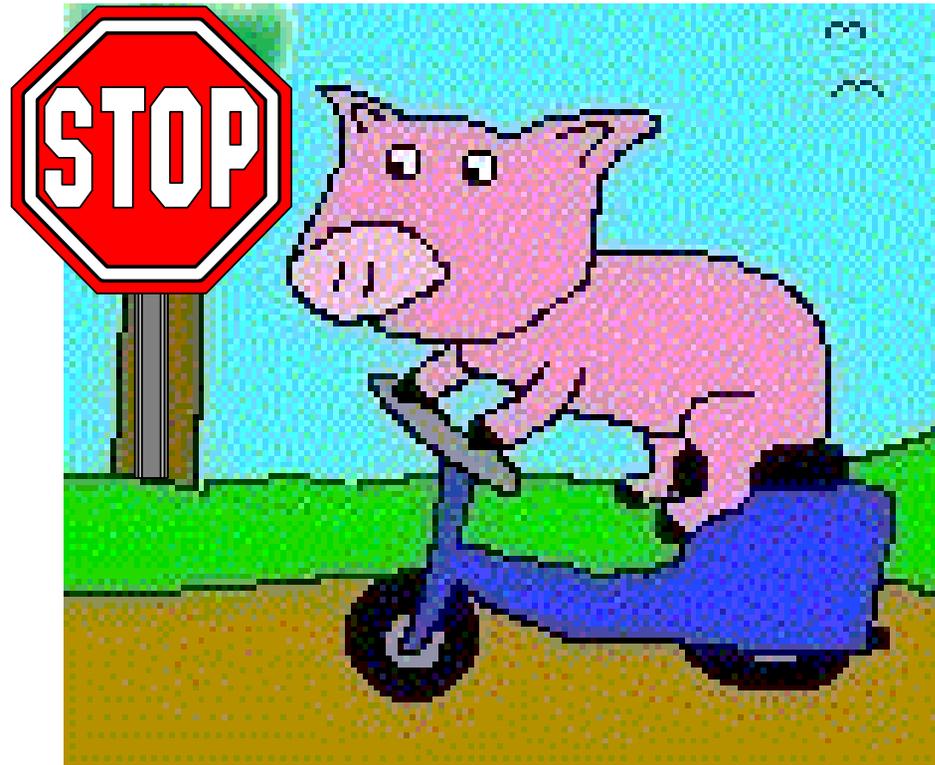
# ISOLATION

- Individual animal
- Whole herd
- Village
- County
- Country



# TRANSPORT LIMITATION

- To limit spreading of disease from herd or area
- As long as elimination occurs



# TRANSPORT LIMITATION

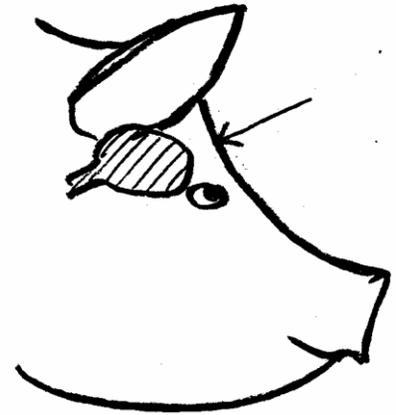
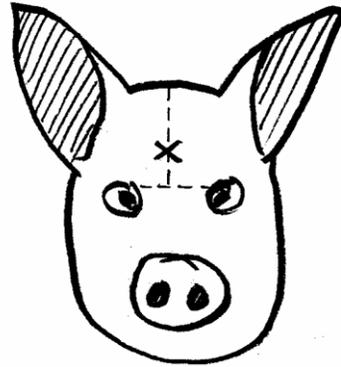
EXAMPLE – avian influenza

Consequenses to everybody

**"China Cancels Soccer Game Against Myanmar**

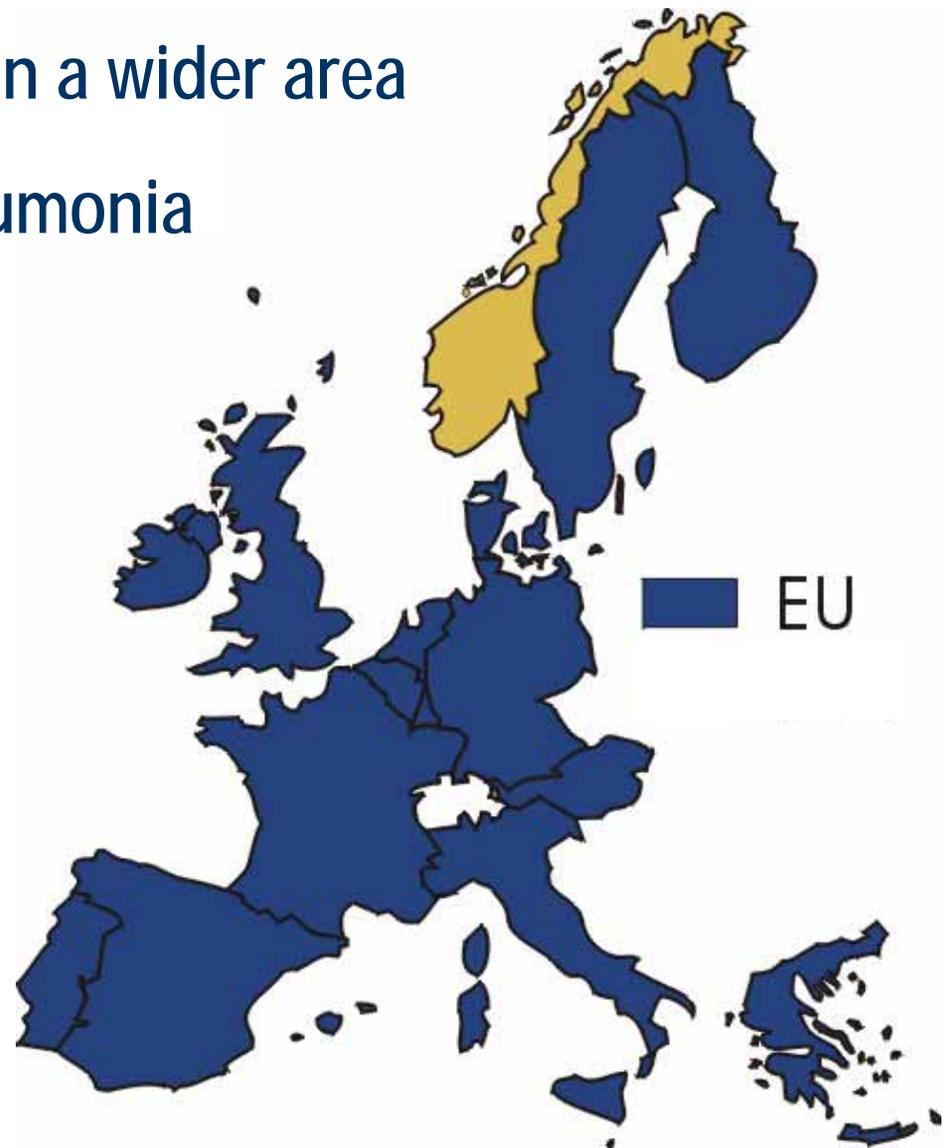
- restriction for Myanmar players to enter China since they are from a bird flu-hit area" (ProMED-mail)

# ELIMINATION – animal, herd, area



# ERADICATION

- Elimination of a disease in a wider area
- e.g., Swine enzootic pneumonia from Finland



# PREVENTION

- Cheapest
- Most effective
- Must be done before anything happens
- Very difficult to get money for prevention

# PREVENTION – animal trade

## Buying or selling

- Confirm disease freedom in advance
- Quarantine



# PREVENTION – feed control

- Proper feed
- Local



- Commercial feed from controlled factories

# PREVENTION - visitors

- No unnecessary visitors
- Farm clothes
- 48 hour rule for foreign visitors



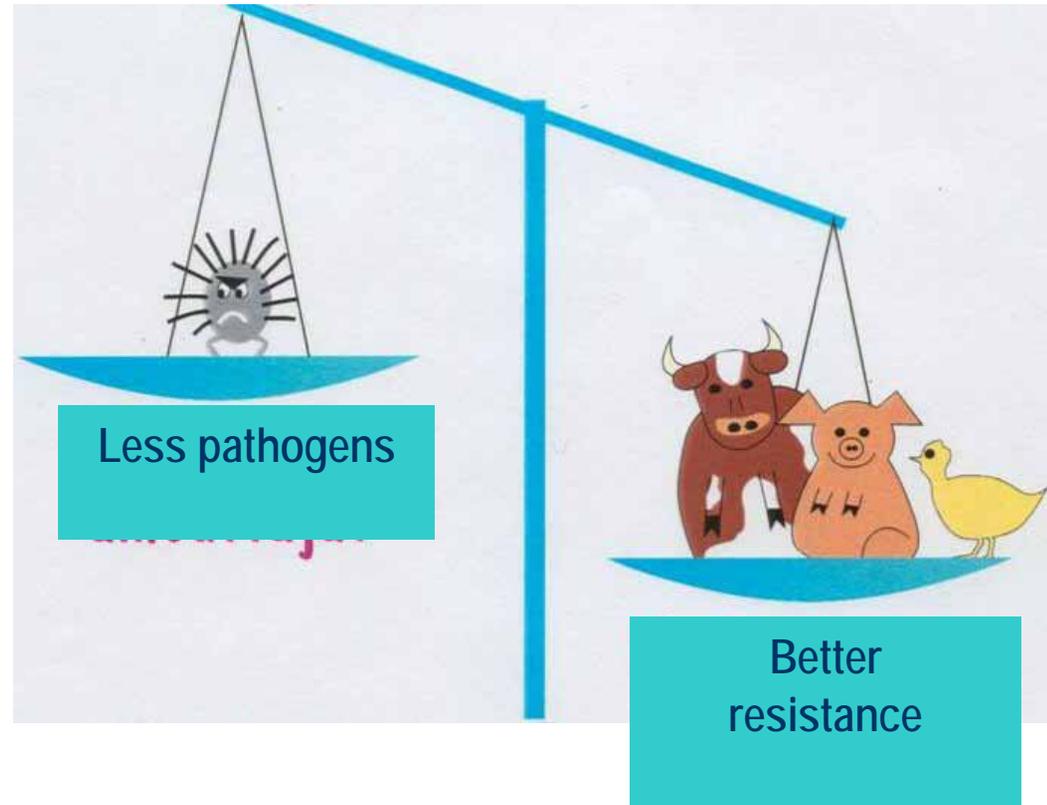
# PREVENTION – animal buildings

- All in – all out
- Age segregation
- Hygienic measures



# PREVENTION – good management

- Good hygiene
- Good welfare
- Low animal density
- Frequent veterinary visits on farms



# BIOSECURITY – measures in society

## Not into cities:

- live animals
- dead animals
- unpacked food



# BIOSECURITY – no trade barriers

*Biosecurity* frameworks

should not create  
unjustified barriers to  
international trade

# EXAMPLE– avian influenza

## PROBLEMS IN IMPLEMENTING BIOSECURITY

- Backyard farms (50 – 80 %)
- Economics of many people depend on poultry
- Lack of control experience
- Lack of resources
- International spread of problem

# EXAMPLE– avian influenza

## SHORT TERM BIOSECURITY

- Aggressive culling
- (Vaccines)
  - possibility and threat

Prevention should be planned!

# EXAMPLE– avian influenza

## SUGGESTIONS FOR PREVENTION

- Special poultry farming zones
- Bird-proof buildings
- Environmental factors (water, waste)
- No other animal species in the poultry farms

# EXAMPLE– avian influenza

## SUGGESTIONS FOR PREVENTION

- Shower in – shower out
- Frequent veterinary control
- Registration of all poultry farms (web)
- Animals directly from farm to slaughterhouse

# EXAMPLE– avian influenza

## SUGGESTIONS FOR PREVENTION

- Poultry slaughterhouses
  - to rural areas → off from cities
- HACCP applied on farms
- Quality chain from “stable to table”
  - farms, transportation, slaughter, shops

*Thank you!*