



# **IMPLICATIONS OF GLOBALISATION ON HYGIENIC MEASURES IN ANIMAL DISEASE CONTROL**

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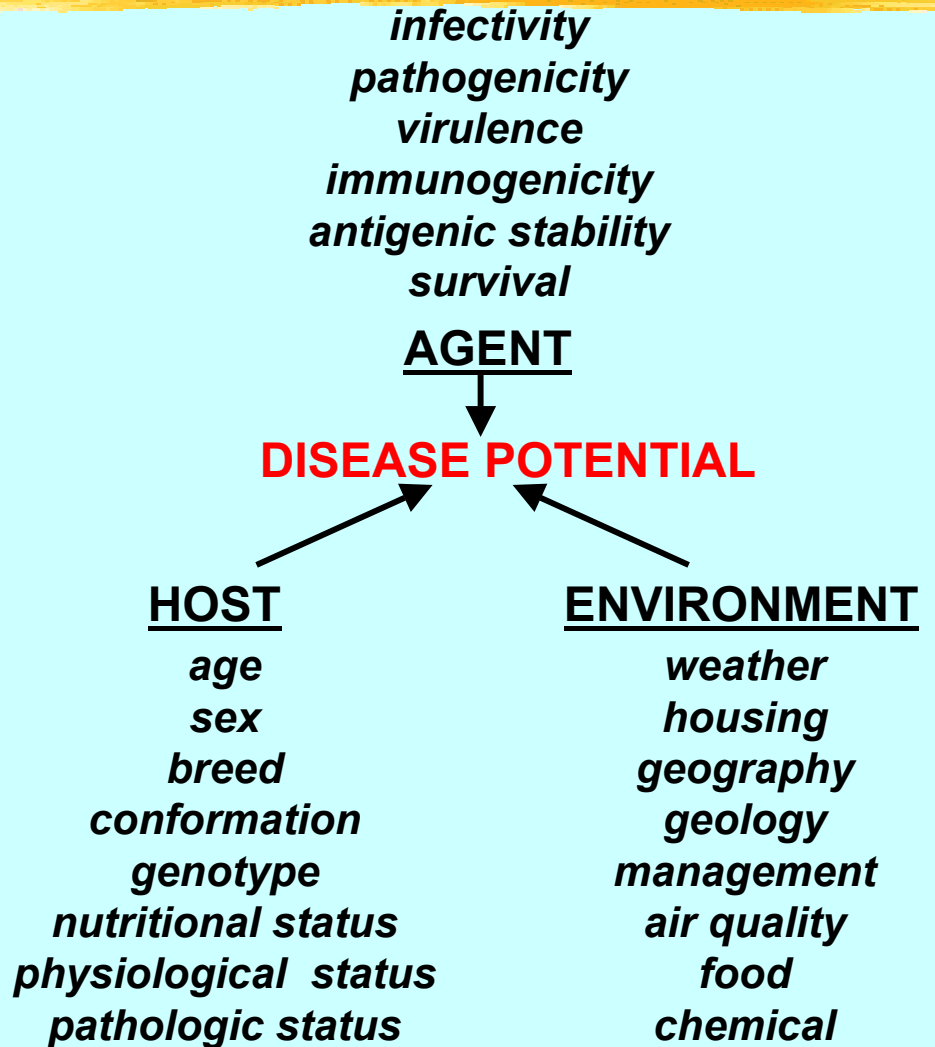
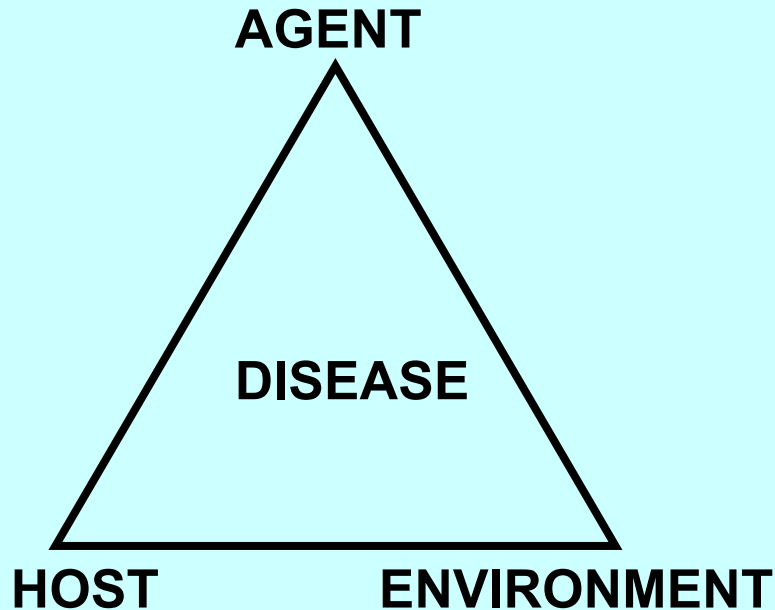


# OVERVIEW

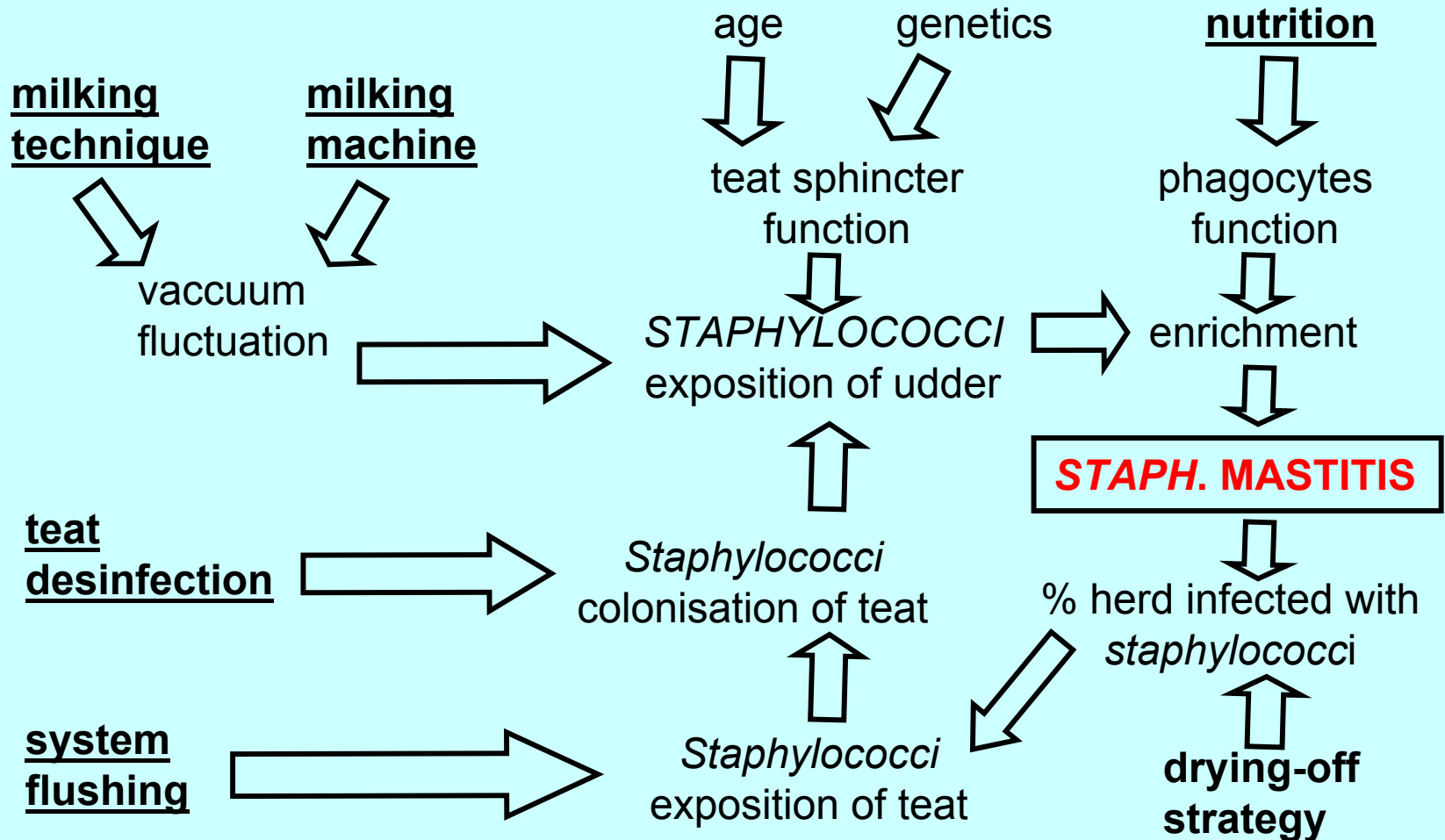


- **HYGIENE CONCEPT**  
epidemiological triad, hygienic measures, infrastructure, implementation problems
- **INTERNATIONAL DEVELOPMENT**  
developed vs developing countries, intensification of production and disease spectrum
- **IMPLEMENTATION**  
risk chain concept, analytical challenges
- **SUMMARY**

# HYGIENE CONCEPT: epidemiological triad



# EXAMPLE: mastitis



# HYGIENIC MEASURES

**Man-derived measures to improve the sanitary environment of animals, aimed at altering the susceptibility of host animals to disease agents and on agent`s ability to survive and transmit**

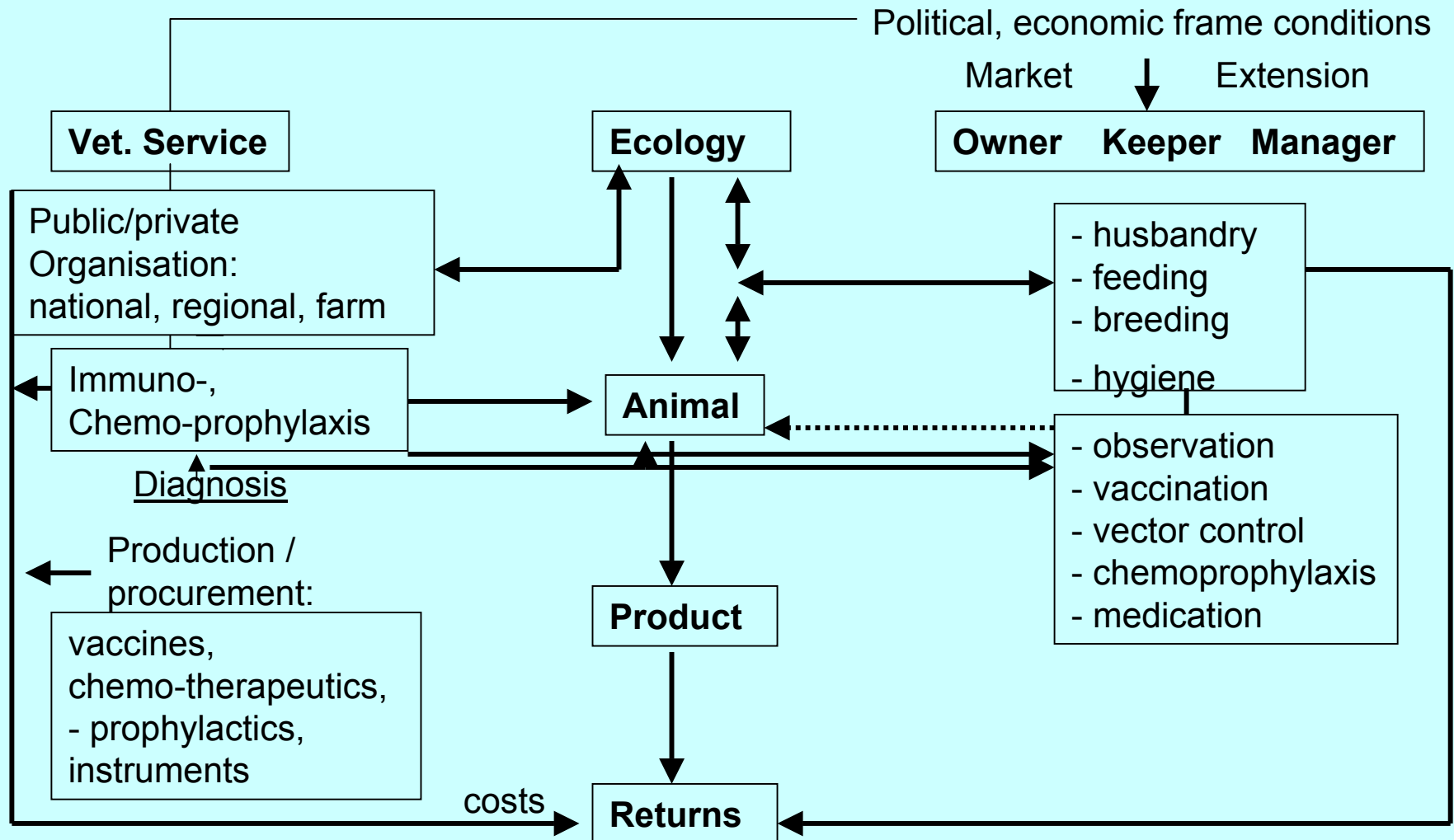
include structural, zootechnical and production-organisational elements, e.g.

- excrement removal
- clean water; safe feed
- ventilation, light
- pest control
- general cleanliness
- immuno-, chemo-prophylaxis

**Extension**: Health protection: the total of measures to assure productivity and welfare of animals

**Hygiene**: no standard concept, dependent on production orientation and on production system

# TYPE OF LIVESTOCK SYSTEM / INFRASTRUCTURE



# **HYGIENE CONCEPT: problems**



**Hygienic measures: - population (farm) oriented  
- preventive approach (sustainability)**

**Problems in implementation:**

**developing countries (smallholder systems):**

- diversity and differences in husbandry systems**
- marked differences in management quality levels**
- heterogeneity of 'management measures'**

# INTERNATIONAL DEVELOPMENT

## ANIMAL AGRICULTURE IS GLOBALLY UNDERGOING DRASTIC AND FAST CHANGES

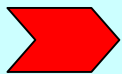
**quantitatively** (“Livestock Revolution”)  
**qualitatively** (consumer expectation)  
**regulatory** (WTO-SPS; EU)

- Rapid change from traditional to intensive/industrial production

drive: increased productivity at lowest costs

- Higher demands made on products and production processes

drive: food safety issues, animal welfare, environment;  
progress in biotechnology and genetics



**Resolution of food safety and animal welfare issues (in developed countries) have impact on the scale and kind of production (in developing countries)**



# INTERNATIONAL DEVELOPMENT

## OPPOSITE DEVELOPMENT

### DEVELOPING COUNTRIES

### DEVELOPED COUNTRIES

#### **TREND**

Demand increase  
milk: 3.3% / year  
meat: 2.8% / year

by year 2020: 63% of total  
world meat consumption

stagnation

#### **FORCE**

demand driven  
food security

consumer driven  
food safety

#### **POLICY**

quantity-oriented  
production

quality-oriented  
markets

# MANDATED INSTITUTIONS

World Trade Organisation (WTO): **SPS Agreement**

**Food safety:** FAO/WHO:

**Codex Alimentarius Commission**

**Disease control:** World Organisation of Animal Health (OIE):

**International Animal Health Code**

- Standardised sanitary measures and harmonisation of animal disease control measures
- Risk analysis

**EU:**

**White Paper on Food Safety**

- Integrated quality management systems: from primary production to consumption ('food chain', "farm to fork" approach)

# AGENTS: EPIDEMIOLOGICAL CHARACTERISTICS

**epidemic**  
**mono-causal**  
**Classical Epidemics**

**endemic**  
**multi-factorial**  
**Herd Problems**

**VIRULENCE, CONTAGIOSITY**

**GENETIC STABILITY**

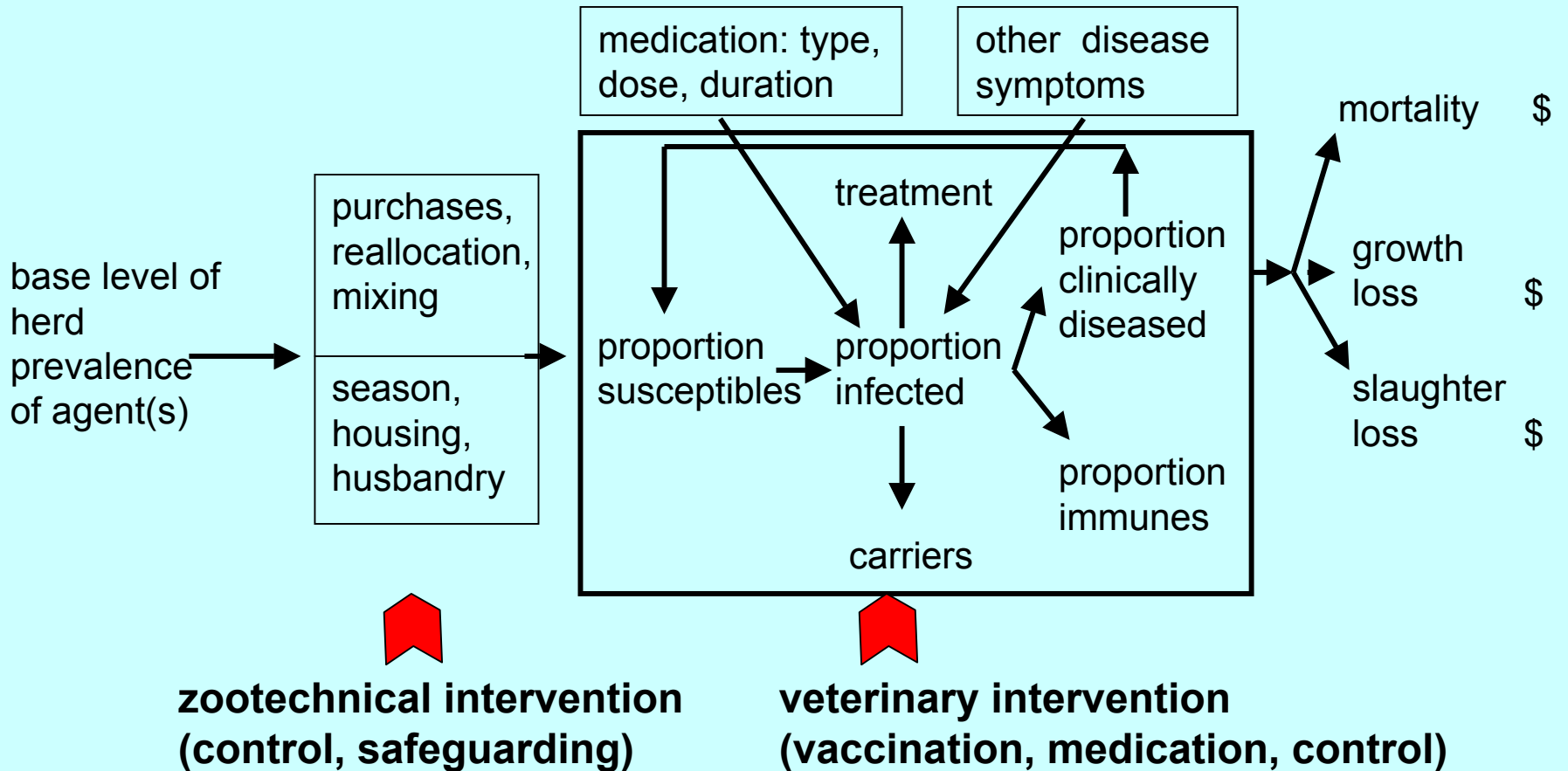
**IMMUNERESPONSE**

**HYGIENIC MEASURES**

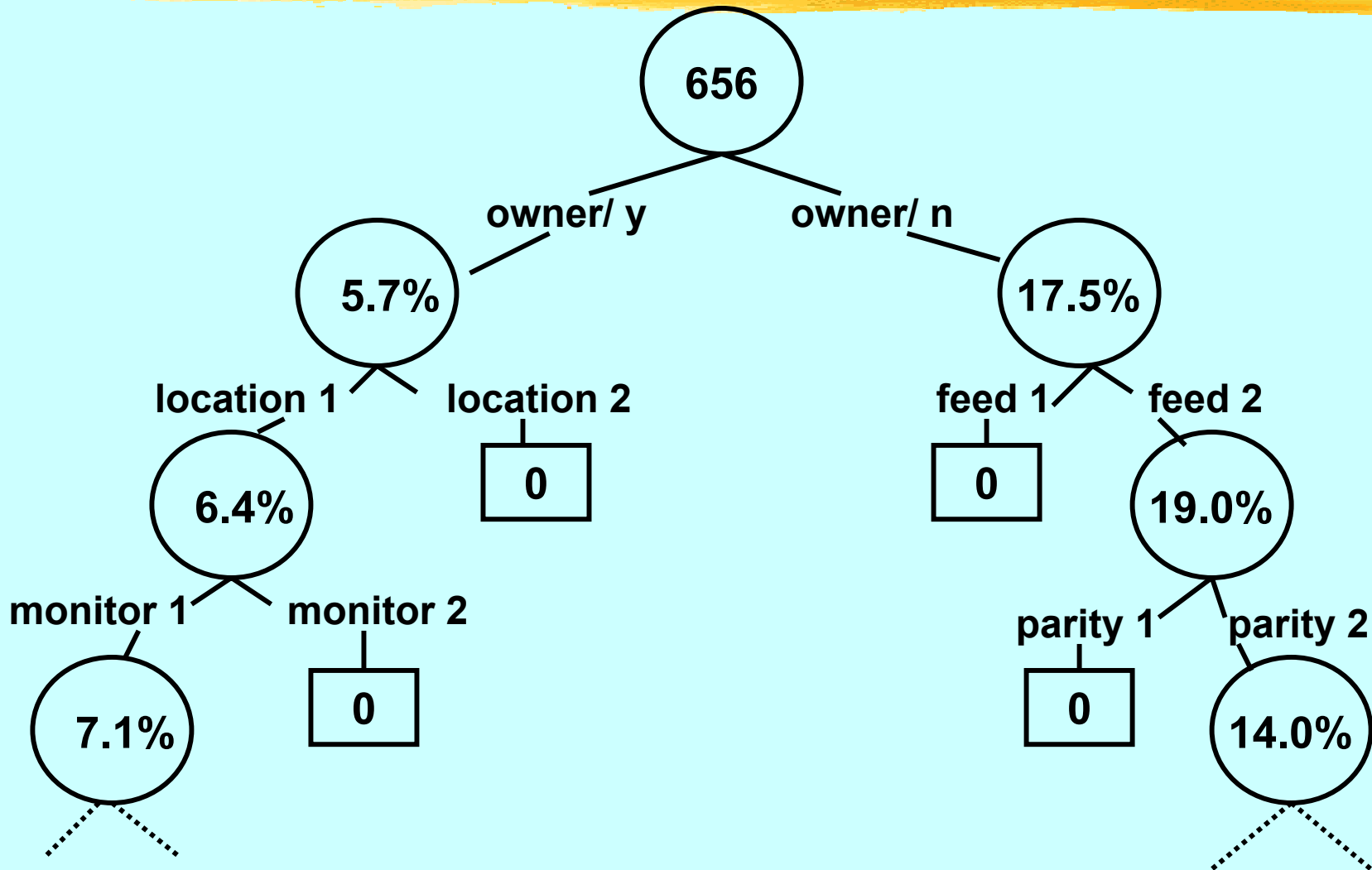
**SPECIFIC DRUGS**

# RISK CHAIN CONCEPT

prevalence of infection	exposure to risk factors	transmission	outcomes and economic loss
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# CARD CLASSIFICATION TREE: mortality, dairy calves, Uganda



# SUMMARY



- **Dramatic shift to intensification of production:  
hygienic measures gain in importance**
- **Modes and methods of disease control governed by international standards and regulations:**
  - **Livestock becoming less of a viable option for the 70% of the world's rural poor**
- **Split up market: 'premium' and 'discount' disease control**
- **Need to develop risk factor analysis**