TAFS Workshop:
"Right Tools, Real Impact: Evaluation and Use of FMD Vaccines and Diagnostics in the Field"
November 4-5, 2025, Bangkok

Continuing Professional Development in Support of Effective Control and Prevention of FMD

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#1 [QS] World University Rankings 2025 Veterinary Science

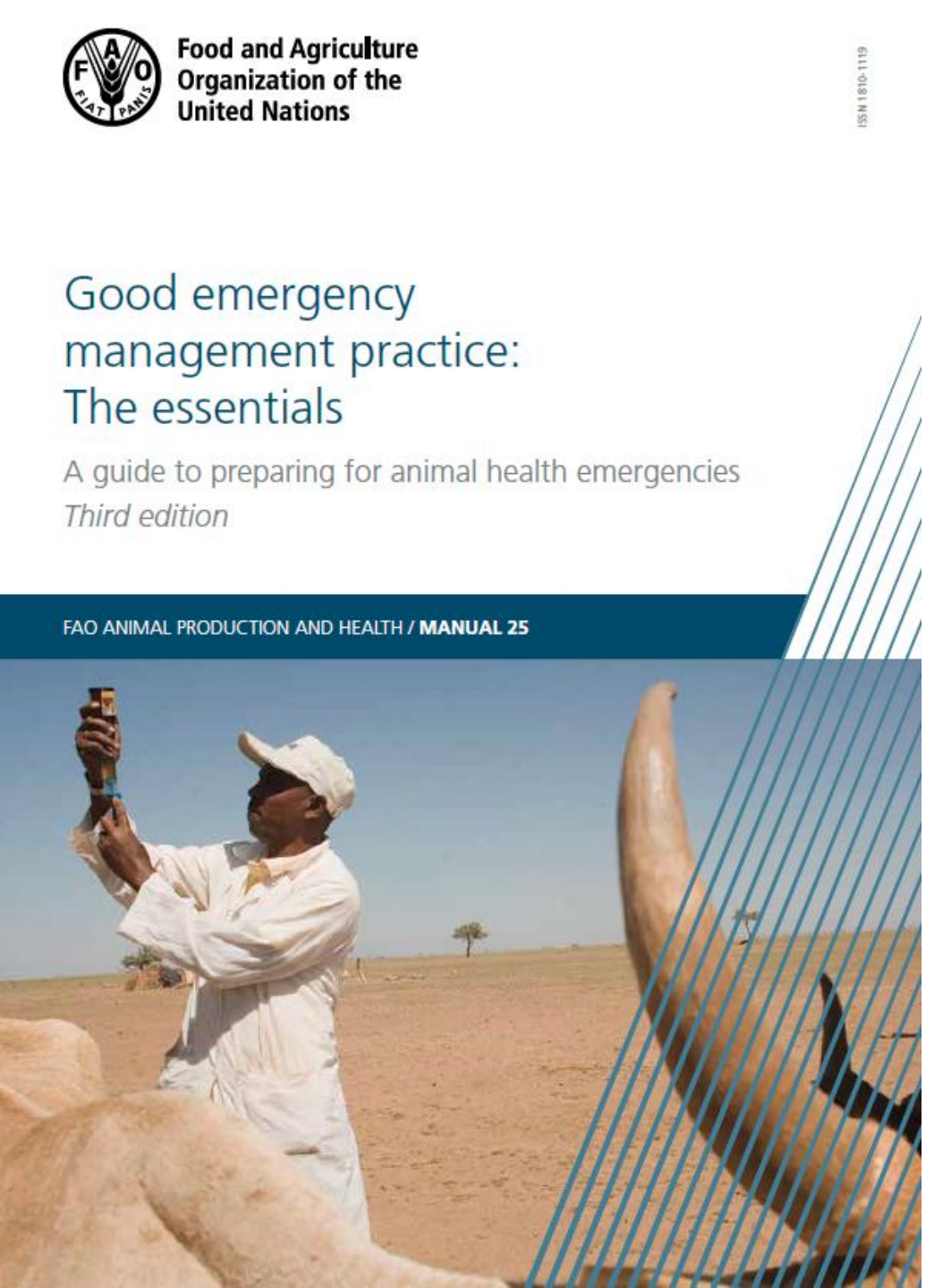
Royal Veterinary College
University of London

Staff competencies required for animal disease control and prevention

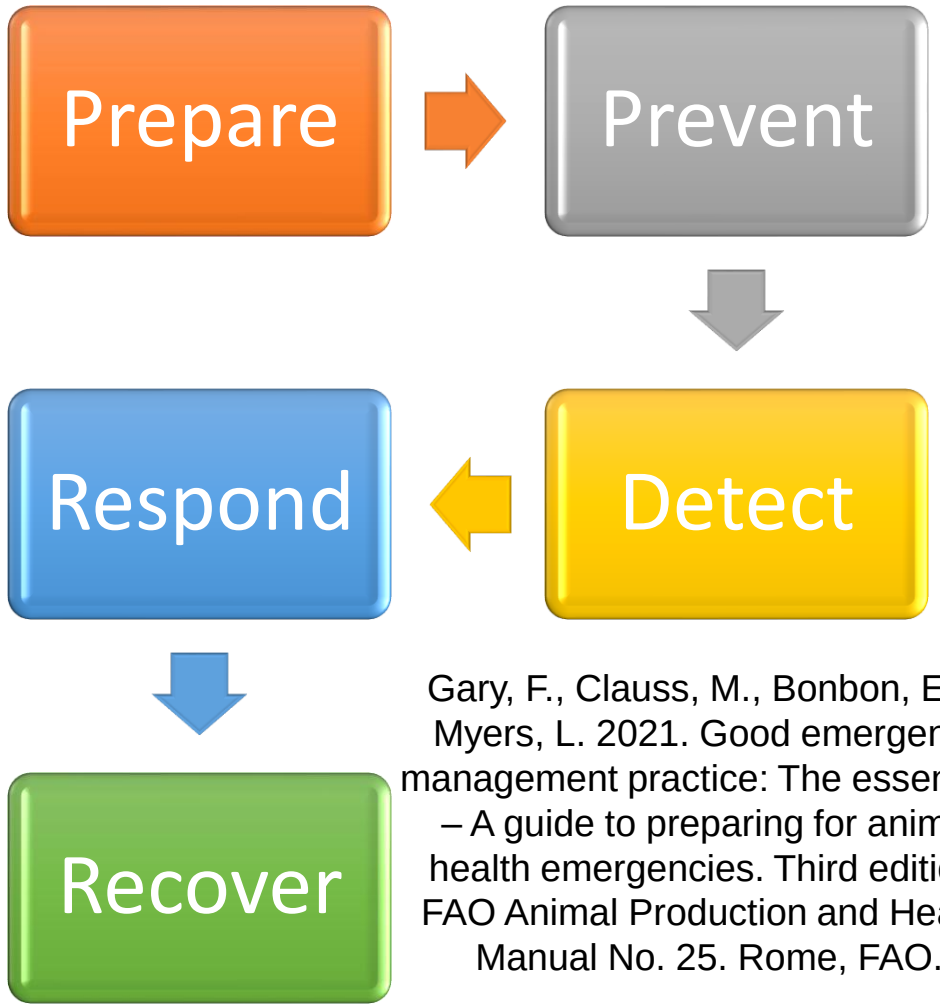
Competencies in Animal Disease Control and Prevention

- develop competencies that combine knowledge, skills and attitudes (Tegzes and Frost, 2021; Nahm et al., 2023)
- design and implementation of animal disease control and prevention programmes requires following competencies
  - knowledge and skills
    - epidemiology of infectious diseases in livestock populations
    - evaluation of disease control and prevention tools
    - food systems and stakeholder behaviour
    - field experience with animal disease, livestock value chain and value chain actors
    - systems thinking, critical thinking
  - attitudes
    - reflexivity
    - communication and engagement across science-policy-society interfaces
      - co-production of knowledge, participatory approaches
- need to differentiate between competencies expected from all veterinarians, para-veterinarians, frontline animal staff and those of specialist epidemiologists and diagnosticians, and other relevant staff

Animal Disease Control and Prevention



Good Emergency Management Practice (GEMP)

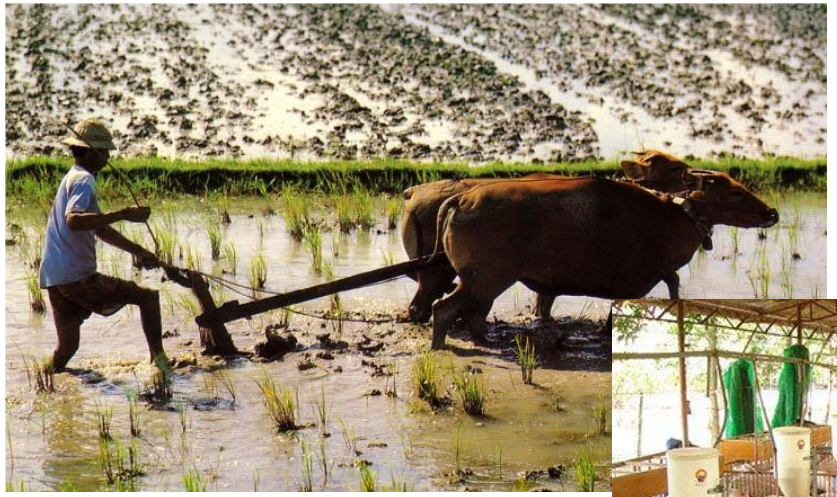


Gary, F., Clauss, M., Bonbon, E. & Myers, L. 2021. Good emergency management practice: The essentials – A guide to preparing for animal health emergencies. Third edition. FAO Animal Production and Health Manual No. 25. Rome, FAO.

https://www.fao.org/documents/card/en/c/cb3833en

Food System

Diverse Livestock Production Systems



BUSINESS NEWS DECEMBER 7, 2020 / 1:27 PM / UPDATED A MONTH AGO

Flush with cash, Chinese hog producer builds world's largest pig farm

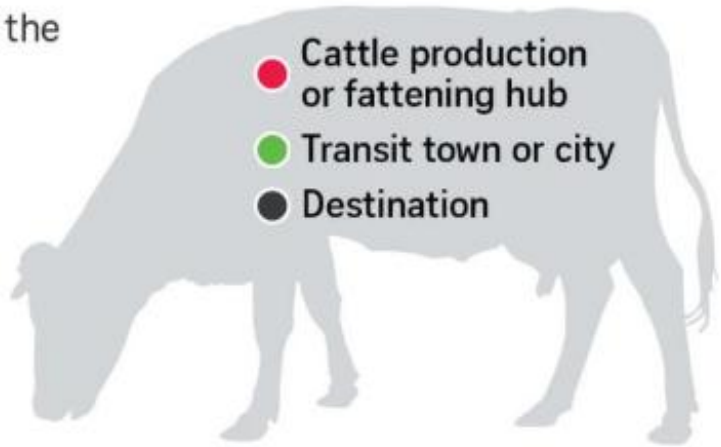
By Dominique Patton 6 MIN READ

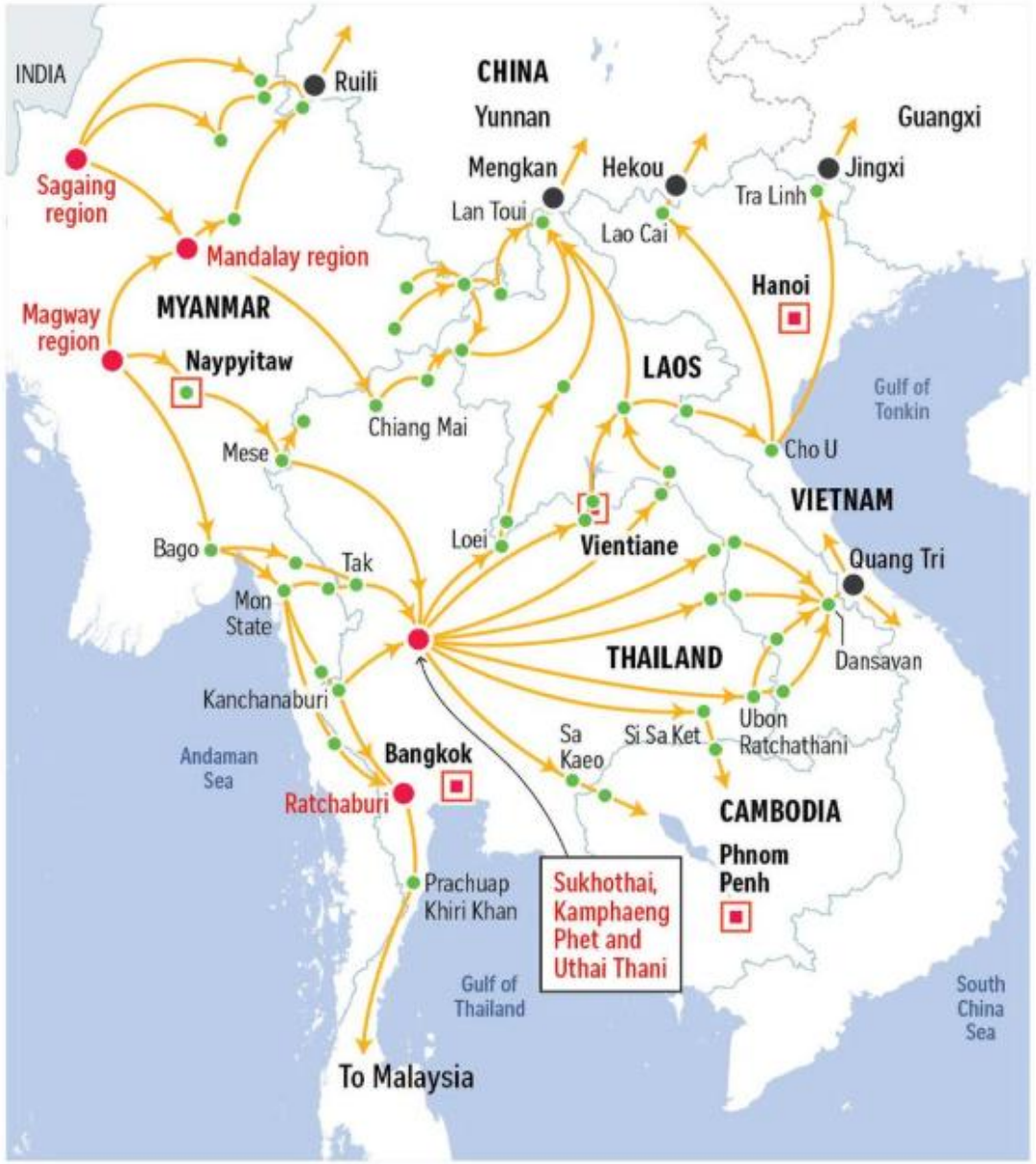
(This December 7 story corrects spelling of Ellermann in para 21, 22)

A drone image shows Muyuan Foods newly built multi-storey pig farm in Neixiang county, Henan province, China November 6, 2020. Muyuan Foods/Handout via REUTERS

Livestock Trade in Greater Mekong Region

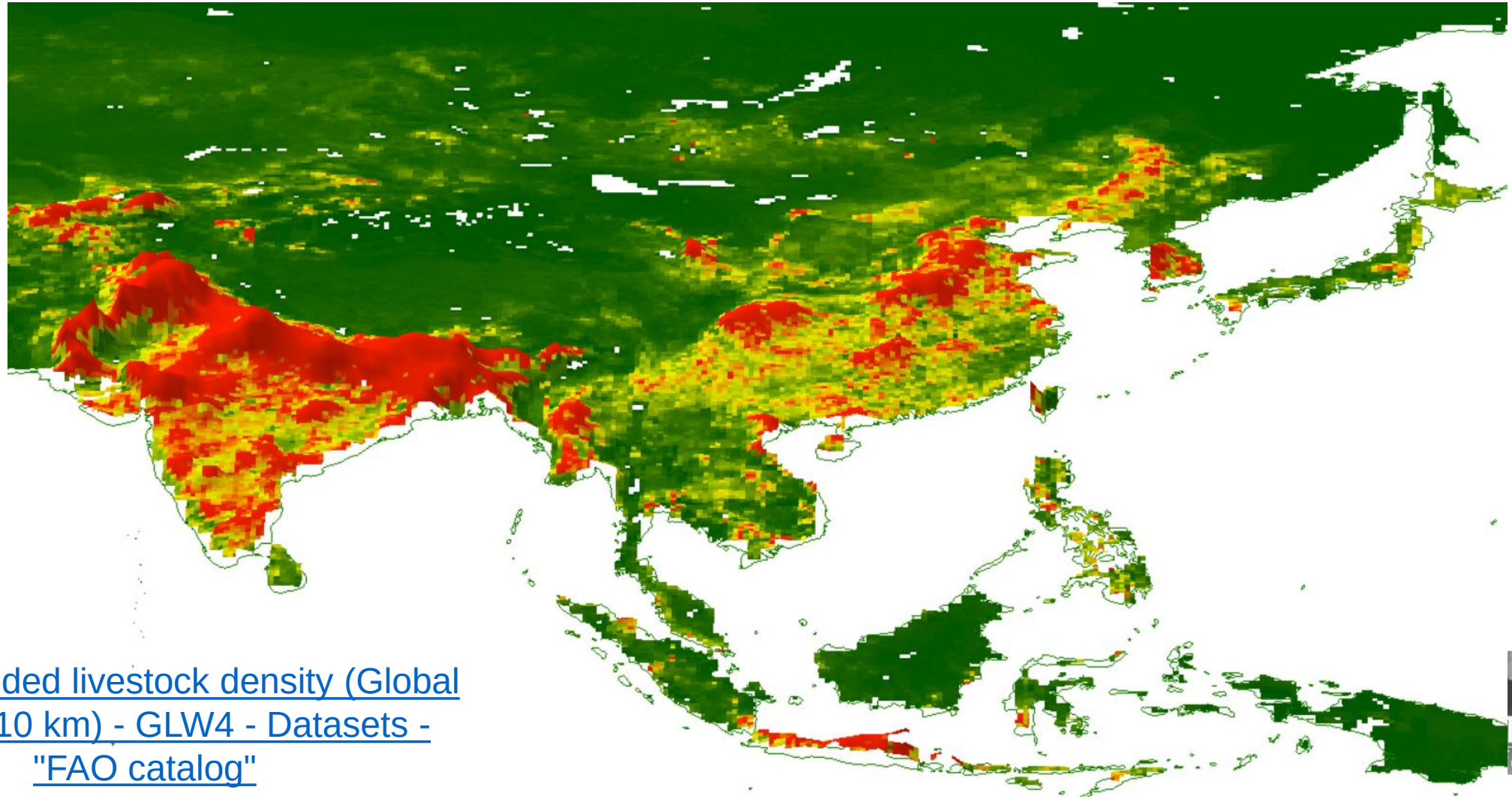
- significant illegal trade flows





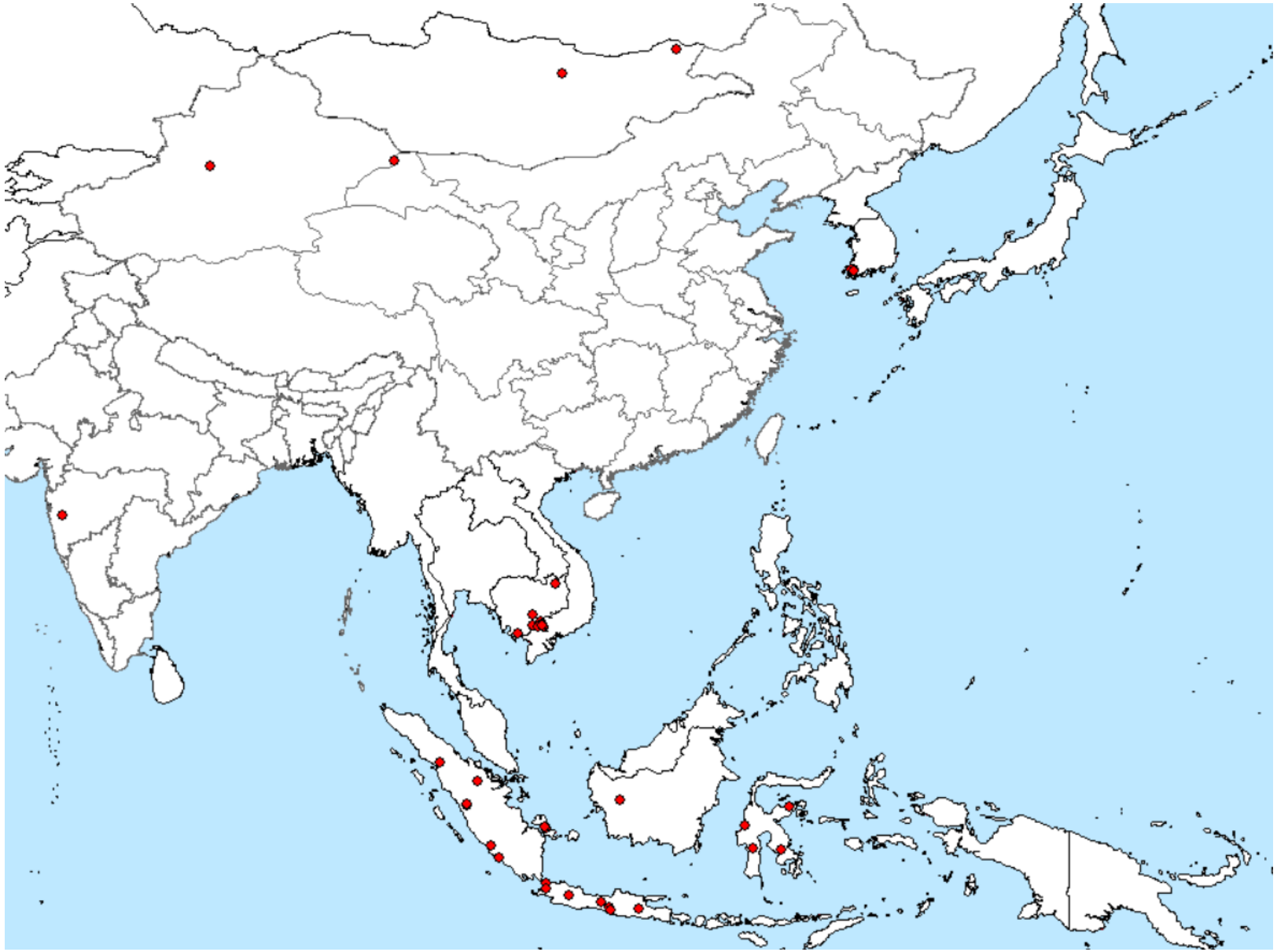
Source: MEKONG EYE
STRAITS TIMES GRAPHICS

Regional Pattern of Livestock Density in 2020



From: Gridded livestock density (Global - 2020 - 10 km) - GLW4 - Datasets - "FAO catalog"

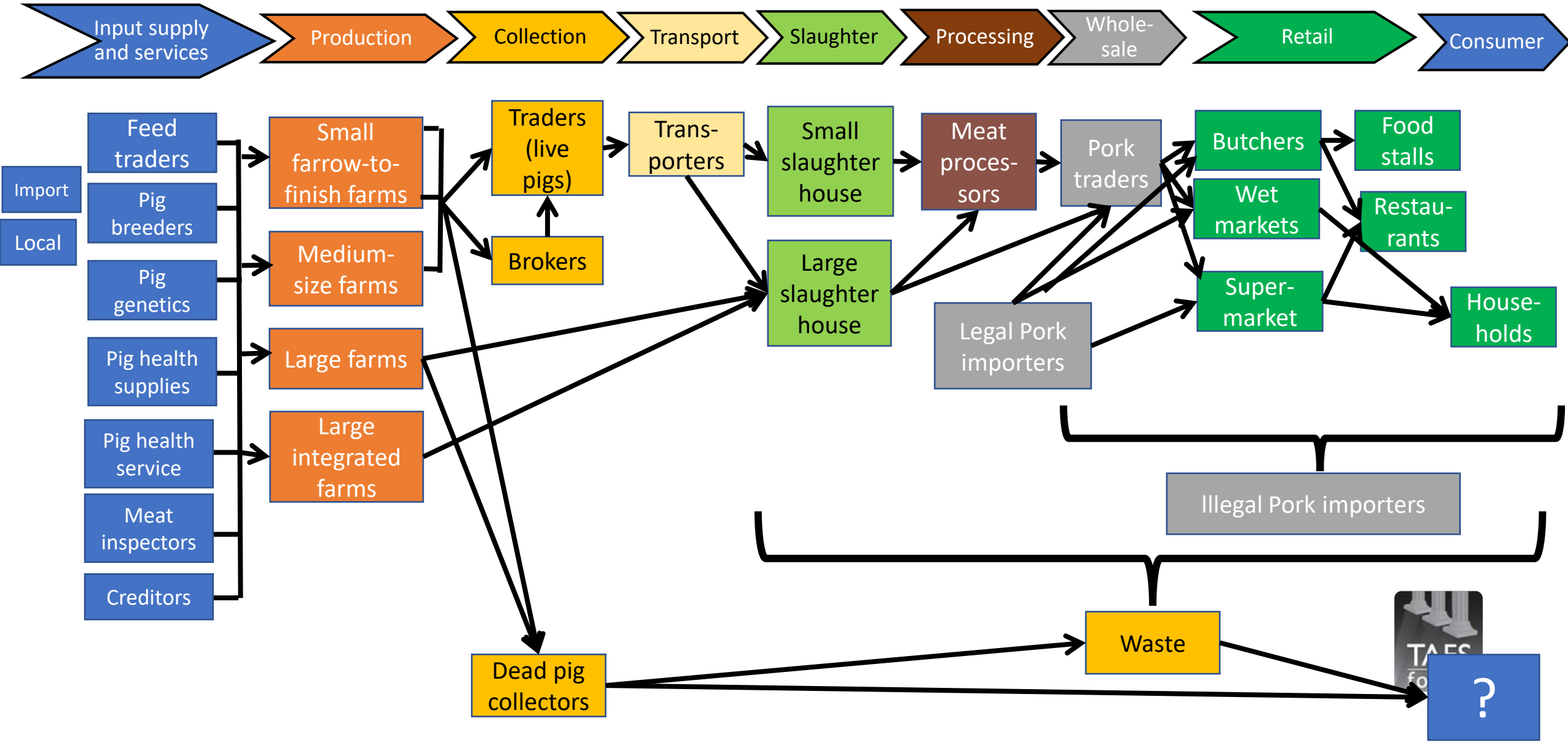
Regional FMD Pattern



Regional Pattern of Reported FMD Outbreaks in 2025 (Source: FAO-Empres-I)

Systems Thinking

Value Chain of Pork Food System



Complex Systems Perspective on Pork Value Chain

Governance

Government

Scientists

Lobby groups

Policy makers

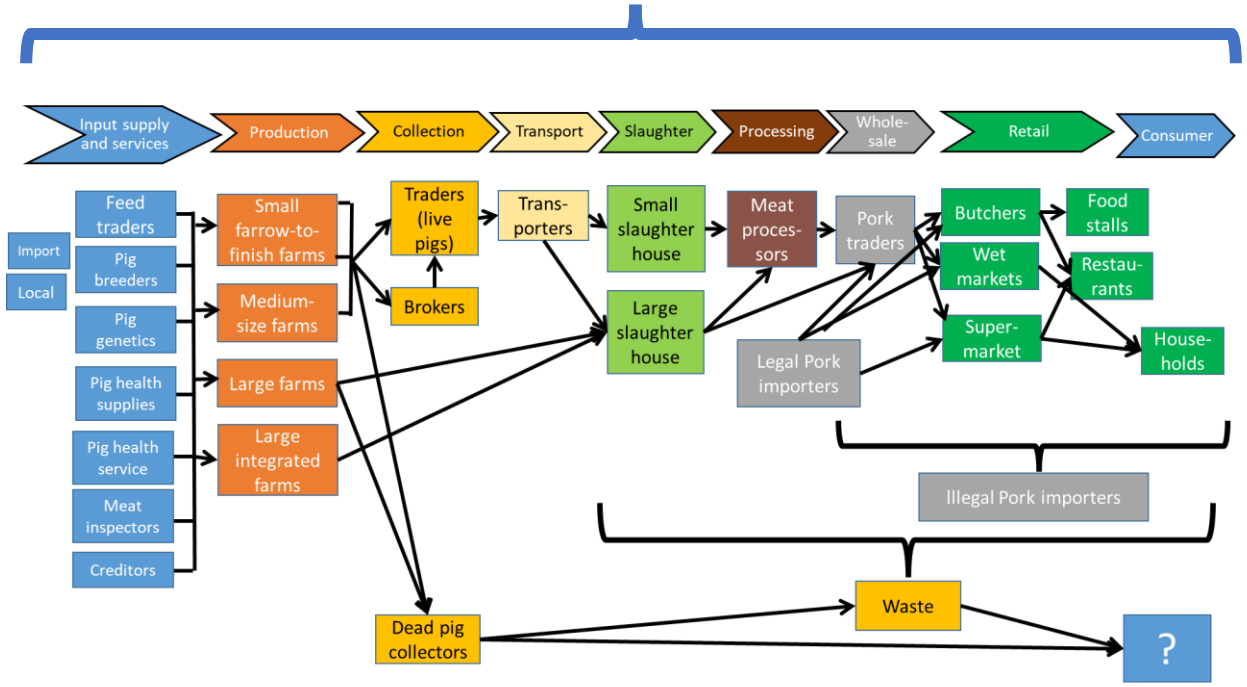
Policies

Enforcement

Incentives

Risk mitigation

Technological | Financial | Social | Other factors



Political Economy

Power | Profit distribution | Gender | Social | Consumer preferences

Threats

Animal disease

Global disorder

Natural disasters

Targets

Pork

Profit

SDGs

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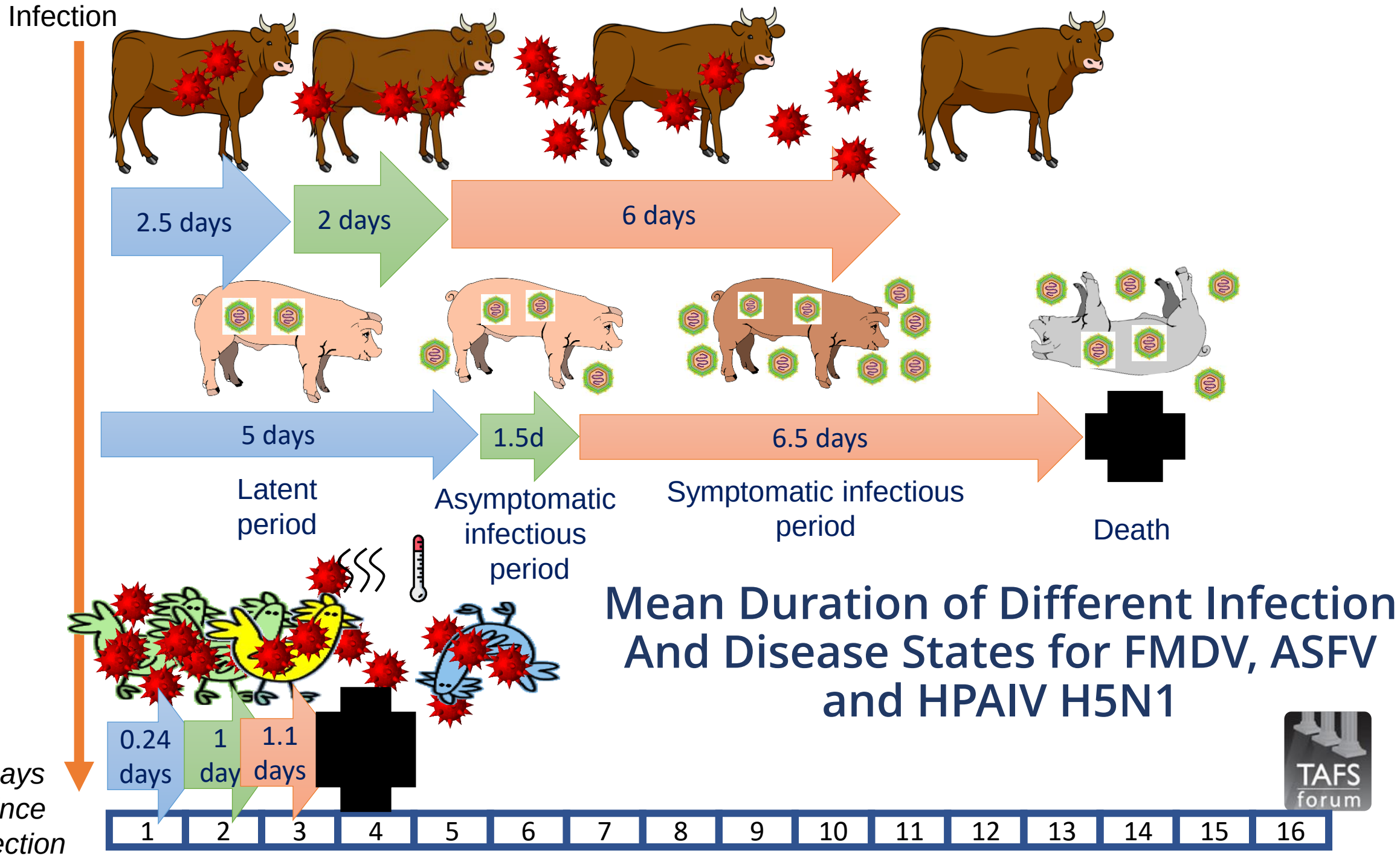
Pathogenesis of Disease and its Population Dynamics



Mean Duration of Different Infection And Disease States for FMDV, ASFV and HPAIV H5N1

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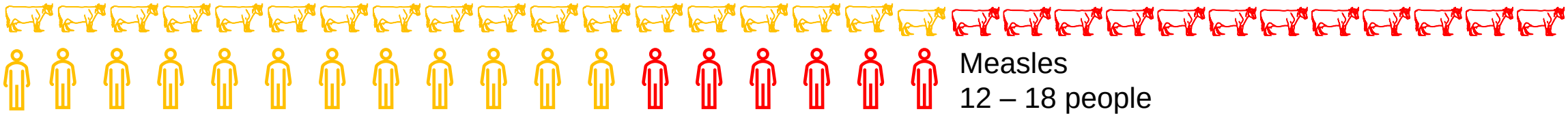


FMD virus
20 – 30 cattle

Measles
12 – 18 people

Equine influenza
2 – 10 horses

African swine fever
2 – 10 pigs

COVID-19
2 – 10 people

Smallpox
4 – 6 people

HIV
2 – 5 people

SARS
3 – 4 people

Common cold
2 – 3 people

Influenza (1918 pandemic strain)
1 – 3 people

Ebola
1 – 2 people

One infectious individual will on average infect ??? other in-contact susceptible individuals

Basic Reproduction Numbers for Various Infectious Diseases

https://en.wikipedia.org/wiki/Basic_reproduction_number plus other sources

Co-production and Co-Design with Stakeholders

From: https://openknowledge.fao.org/handle/20.500.14283/cd1150en

FAO - Community African swine fever Biosecurity Interventions (CABI)

Implementing biosecurity practices is essential for maintaining the health and well-being of animals.

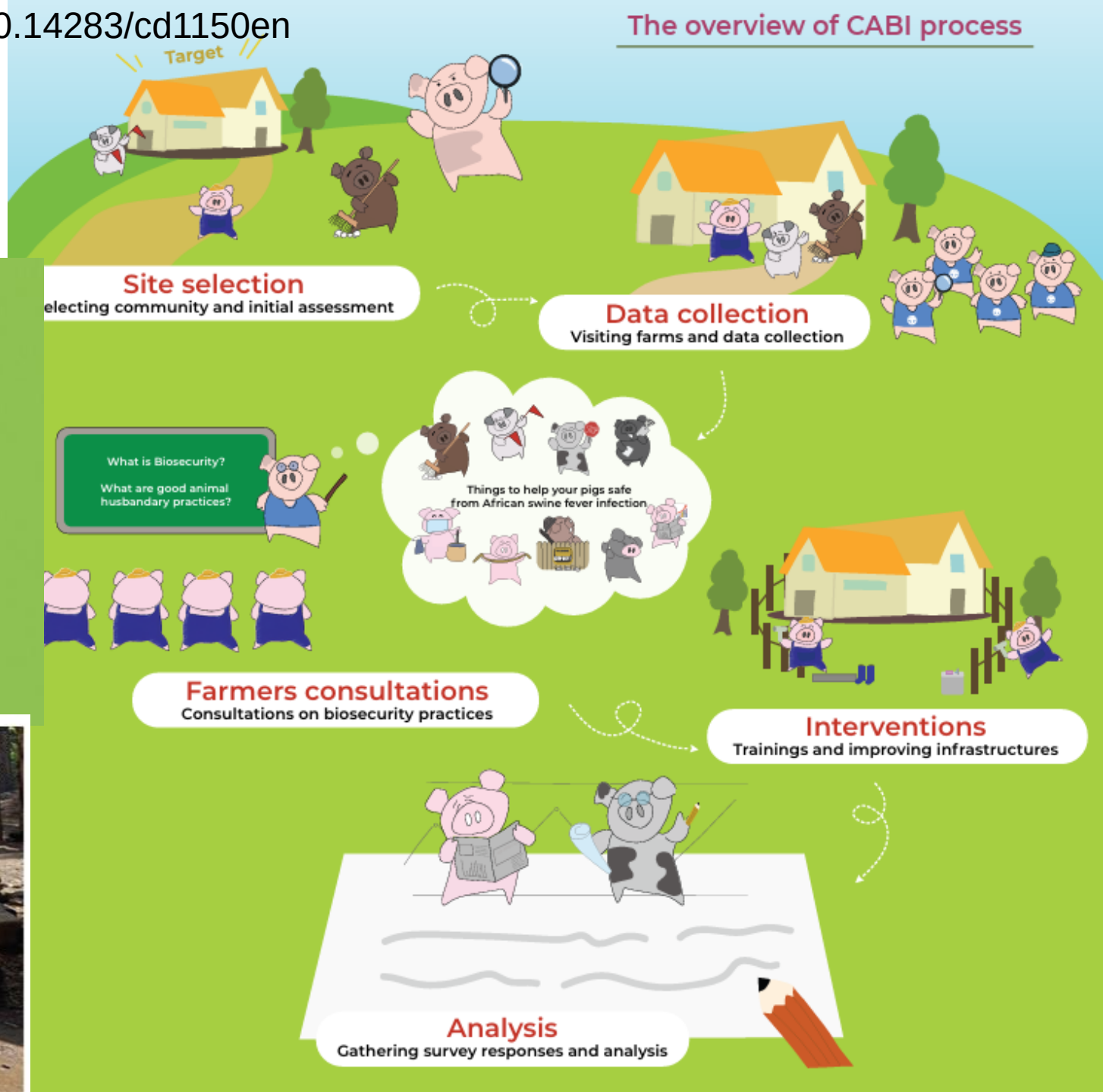
Be a champion farmer

with biosecurity practices

- Restrict movements
- No swill feeding
- Report unusual events
- Wash hands with soap
- Disinfect frequently
- Clean farm regularly

Biosecurity is a key to stop ASF.
Be a champion farmer and keep your pigs free from ASF!

The overview of CABI process



Emergency Centre for Transboundary Animal Diseases (ECTAD) Asia and the Pacific Region

177 pig farmers in the Philippines graduate as African swine fever biosecurity champions

Free Learning Resources

Continuous learning->Peer-to-peer support network

ENTRVST

E*pidemiology* ***N****etwork for* ***TR****aining, utilizing the* ***V****eterinary workforce and evidence, and* ***S****haring for* ***T****rust*

Peer-to-Peer Network

- **Focus on Asia-Pacific**
- **Open to all – Epi & One Health**

Collaborate, Learn, and Share

Food and Agriculture Organization of the United Nations

In-service field epidemiology training for animal health and One Health

Program & geographical coverage

Year of program establishment

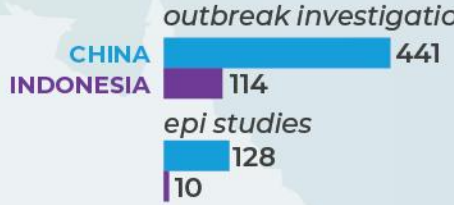
2009 — REGIONAL R-FETPV: 200 basic, intermediate & advanced-level graduates — from 13 countries

2010 — CHINA C-FETPV: 268 basic & intermediate-level graduates; 126 advanced-level graduates — 31 *provinces*; 5 *national institutes*

2017 — INDONESIA PELVI: 77 basic & intermediate-level graduates; 10 advanced-level graduates — 10 *provinces*; 27 *districts*

Field practices (OIs + Epi studies)

REGIONAL **207** *outbreak investigations & surveillance analysis*



Publications & manuscripts

Asia Pacific Consortium of Veterinary Epidemiology

APCOVE

Freely available eLearning modules:

- A – Fundamental competency
- B – Outbreak investigation and response
- C – Surveillance and data analysis
- D – Risk assessment and disease control
- E – One Health and biosecurity
- F – Leadership and communication

Available in multiple languages:
English
Bahasa
Vietnamese
Khmer
Burmese
Lao

https://www.apcove.com.au/resources/english/#modules

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Conclusions

Conclusions

- decision making about tools (vaccines, diagnostic tests) for control and prevention of FMD requires
  - well designed FMD control and prevention programme
    - based on agreement with key stakeholders on aims of FMD control and prevention programme
      - should aim to co-design disease control and prevention programmes with key stakeholders
  - understanding of FMD epidemiology and role of food system
  - critical assessment of performance characteristics of tools (vaccines, diagnostic tests)
  - field experience
- need to develop required competencies amongst animal health staff
  - knowledge and skills
    - epidemiological expertise
    - laboratory expertise
    - food system expertise
    - systems thinking
  - attitudes
    - reflexivity
    - ability to communicate with key stakeholders and relevant value chain actors
  - offer flexible learning modes tailored to competencies required for different animal staff roles

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