

Biosecurity considerations for different production systems and different purposes in Asia

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What was forecast?

- General consensus that ASF would spread throughout China and across mainland SE Asia (FAO meeting Bangkok September 2018)
- Especially Vietnam, Cambodia, Laos and Myanmar
- Weaknesses in biosecurity will become evident
- Virus will not be eliminated for many years, if ever, from any of these countries once it enters (or, if so, not for long)



Why was it forecast?

- Knowledge of farm and processing practices
 - poor biosecurity along dominant production, processing and marketing chains
- Known weakness of border controls plus virus in human food chain
- Low overall industry biosecurity “score” (proportion of pigs reared under conditions that would prevent exposure to ASF virus if present)



Situation prior to outbreak (Vietnam)

- “More than **80%*** of pork is being supplied by **millions of small farmers** who operate at very small scale, mostly from 1-30 head/cycle.
- **Half of the pigs produced sold to local slaughter men**, who may do slaughtering (normally **1-3 pigs/day**), and processing/or and retailing.
- All slaughter men sell fresh pork to retailers, and/or consumers directly, at wet markets.
- Along this chain, pork quality/safety is **almost not traceable and not certified**”

Nha et al 2015

https://www.researchgate.net/publication/302904120_Household_pork_consumption_behavior_in_Vietnam_Implications_for_pro-smallholder_pig_value_chain_upgrading



*By 2019 number of small scale producers reputedly had fallen but still c.60%

Some observations from Vietnam outbreak

- 5,422 communes, 513 districts of 62/63 provinces and cities; 3.3 million infected pigs destroyed/died (mid-July - <6 months since first reported case)
- **Time for** industry in south to make **adjustments** and be prepared following detection in the north
- **Made little difference to spread**
- Example - Dong Nai province
- Major investment in pig sector, including donor support
- Largest pig population/province (>2 million pigs)
- First reported case two months after first case reported in north (links to illegal slaughtering?)
- Within 10 weeks, cases detected in 73 communes in 10 districts/cities



Experiences from other conditions relevant to African swine fever

- **Avian influenza**

- Factors leading to endemicity, including the structure of the poultry industry (FAO 2011)
- Availability of vaccine helped protect sub-optimally biosecure flocks (not available for ASF)
- Misuse of disinfectants

- **PRRS**

- Virulent PRRS spread across most Asian countries and equally devastating for many farmers
- Demonstrated weaknesses in biosecurity
- Not eradicable but vaccine can help to contain

- **Antimicrobial resistance**

- Lack of veterinary capacity to provide prescriptions, stewardship and farm disease management plans
- Use of AMs to compensate for weaknesses in disease prevention

What was not (necessarily) predicted?

- The extent of transmission to “higher” biosecurity farms (compared to Europe)
- As viral load increases, even supposedly good farms can break down
- “Peacetime” biosecurity measures can be overwhelmed
- Need to consider pathways that would normally be regarded as low risk – water, commercial feed (use of pig blood as a feed ingredient, other contamination)
- Still need better information on causes of breakdown for large commercial farms – how did virus get in?
- Can still make recommendations even with gaps in knowledge

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Biosecurity key to keeping African Swine Fever out of the UK's farms

News 16 Jul 2019 [Katie Jones](#)

African Swine Fever (ASF) is a hot topic for the pig industry at the moment with the death toll in Asia rising by the day. In the UK the focus is on preventing its entry into the country's pig farms.

Possible practices in high risk lower-middle income Asian country (LMIC) **without outbreaks**

- Recognise
 - that industry cannot be restructured rapidly
 - inevitability of spread following incursion of virus
 - virus will remain in the human food chain in Asia for some time
- High end producers must tighten biosecurity measures (code red) – see later
- Low end producers should also implement some simple biosecurity measures
- High risk of failure given nature of farms and practices
- Point out the inevitability and cost of outbreaks to small-scale pig producers well in advance
- Recommend fiscally conservative approaches for smallholders (low debt or consider stopping production)

Possible practices in high risk LMIC in Asia without outbreaks

- Implement and enforce a “no swill feeding” policy or boiling in places where the industry is built on waste feeding
- Needs strong farmer cooperation
- Government and industry to put in place appropriate methods to collect and handle large numbers of dead pigs
- Recognise that the likelihood of virus elimination is close to zero in the short to medium term once virus enters
- Important for approach to emergency management
- Rapid shift in emergency approach needed from mass culling to managing disease (e.g. Cambodia) once it is recognised elimination is not possible
- Stamping out has not stopped spread in any of the Asian countries with high pig populations where it has been used

Possible practices in high risk LMIC in Asia without outbreaks

- Zoning unlikely to be successful once an outbreak occurs, unless you have:
 - sufficient capacity to enforce it strictly (zero or very strict movement out of zones)
 - good information on extent of spread before zones are introduced
 - enforced bans on feeding uncooked meat scraps

Consider building “clean” chains (as described in the next slide) before the first outbreak

Possible practices for LMIC in Asia **with outbreaks**

- Recognise that virus will not be eliminated – have to live with on-going threat
- Develop and expand “clean”, short, biosecure chains to urban centres (“modified compartmentalisation”)
- Remaining pigs sold through “unknown status” local chains
- Allow direct sale of pigs from “clean”, accredited farms to “clean” slaughterhouses in sealed vehicles, even from areas with disease
- Routine on-farm dead pig testing – on-going, on all “clean” farms

Possible practices for LMIC in Asia **with outbreaks**

- Audit checks at “clean” slaughterhouse on sick and dead pigs – farms lose “clean” status if infected pigs found at slaughter
- “All-in-all-out” at “clean” slaughterhouses with daily cleaning
- No swill feeding (enforced) in “clean” chains
- Marketing advantage for “clean” farms and slaughter plants

Possible practices for LMIC in Asia **with outbreaks**

“Unknown status” chains

- Allow local sales of healthy pigs (same district/county/province) even in areas with disease
- May need to consider establishing a floor price to prevent farmers being exploited by traders
- Reduce incentives for farmers to illegally discard dead pigs (have systems in place for managing dead pigs – see earlier)
- Note that ASF is not usually an explosive disease – can be managed
- Expectation is that all known infected farms would be depopulated (but may not just be via on farm destruction)

Possible practices for LMIC in Asia **with outbreaks**

- Enforce bans on uncooked swill feeding
- Reiterate that ASF is not a human health concern to retain confidence in local produce
- Separate vehicles for “clean” and “unknown status” chains
- Gradually decrease the size of “unknown status” chains with the long term goal of virus elimination
- Set a realistic but firm target for no more “unknown status” chains
- Importance of traders/middlemen/small scale slaughterers



Possible practices for LMIC in Asia **with outbreaks**

- For farms already depopulated, restocking allowed only after meeting enhanced biosecurity standards, capable of preventing entry of virus
- Assist formation of cooperatives of small holders in local areas with group biosecurity measures to gain access to “clean” chains
- Will likely see a marked reduction in the number of small scale producers due to high risk of breakdowns (market forces)
 - unless a vaccine or treatment for ASF becomes available, or
 - enhanced biosecurity can be implemented

Need to consider what you want the industry to look like in the future

- China already proposing “modernised” large scale pig industry with few smallholders
- Is there still a place for small scale production/slaughter?
- Hard to see it surviving this disease unless radically changed
- Massive livelihood implications
- Major gaps in production in places like Vietnam that will take time to fill if/when smallholder production is reduced dramatically

Some key biosecurity measures – “code red”

- Farm and pig house entrance – Danish method or equivalent done every time by all workers and managers
- Stringent vehicle hygiene for all chains
 - specialised vehicle washing sites
 - preferably with inspection and certification
 - includes motor cycles and any cages used for transport
- Needs to be much better than systems in place at present
- Stop disinfecting trucks full of pigs and other wastage of disinfectants
- Off farm quarantine for new breeding stock?
- Essential visitors only - drivers stay off farm
- Enforced down-time after pig exposure off farm for staff and visitors



Biosecurity for small-scale producers

- Existing GAHP guidance too generic and unlikely to prevent virus from entering
- Not enough focus on the “software” (management aspects)
- Modified, appropriate version of systems for large commercial farms needed but must consider existing constraints (including money to invest)
- No uncooked swill feeding
- Crackdown on butchering of sick and dead pigs
- Systems in place to handle sick and dead pigs safely (easier said than done)

- Note the many guides to biosecurity available online.

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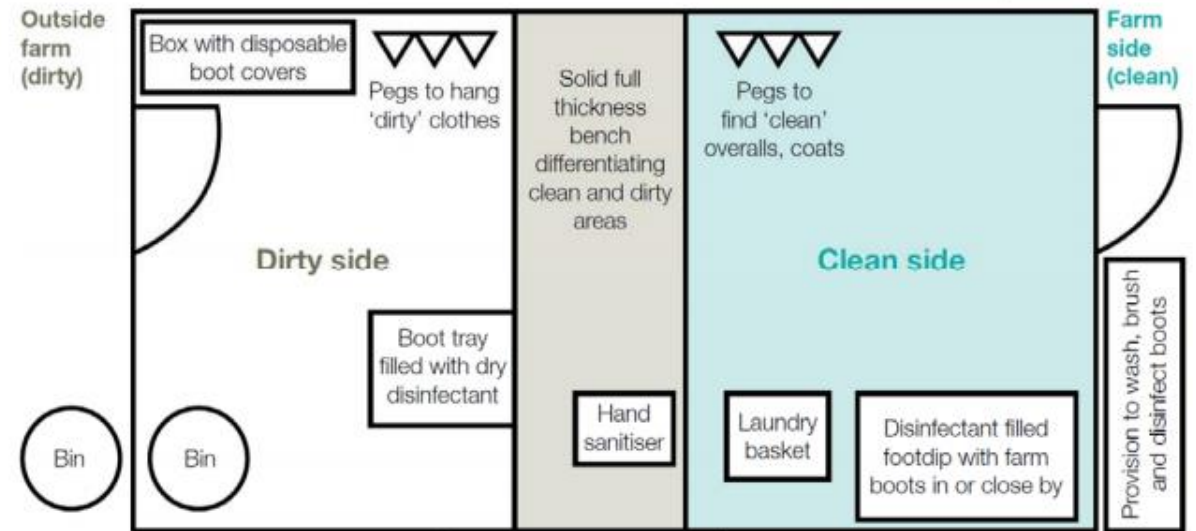
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How to use Biocheck.Ugent?



When entering the farm/building:

- Always enter through the Danish entry
- Reach inside the door to collect some disposable boot covers and put these on before entering
- Remove outer coats etc and hang on pegs
- Step into the dry disinfectant boot tray and sit on the bench
- Remove shoes, leaving them on the boot tray on the dirty side
- Without touching the floor swing legs over to the clean side
- Disinfect hands with hand sanitizer
- Put on farm overalls, boots and gloves kept on the clean side of the entry
- Enter the production area.



Lorry washing campaign launched to ensure #MuckFreeTrucks



9th May 2019 / By Alistair Driver

Pig producers, processors and hauliers are being urged to ensure livestock lorries are properly cleaned, under a new campaign launched in response to the threat posed by African swine fever (ASF) and other diseases.





