

Experiences from Asia and Africa – working towards responsible antimicrobial use in livestock



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Contents

- Experience from a JPIAMR-funded project in northern Thailand
- Profitability vs reducing antibiotic use
- Addressing gaps with capacity building and awareness
- Concluding words



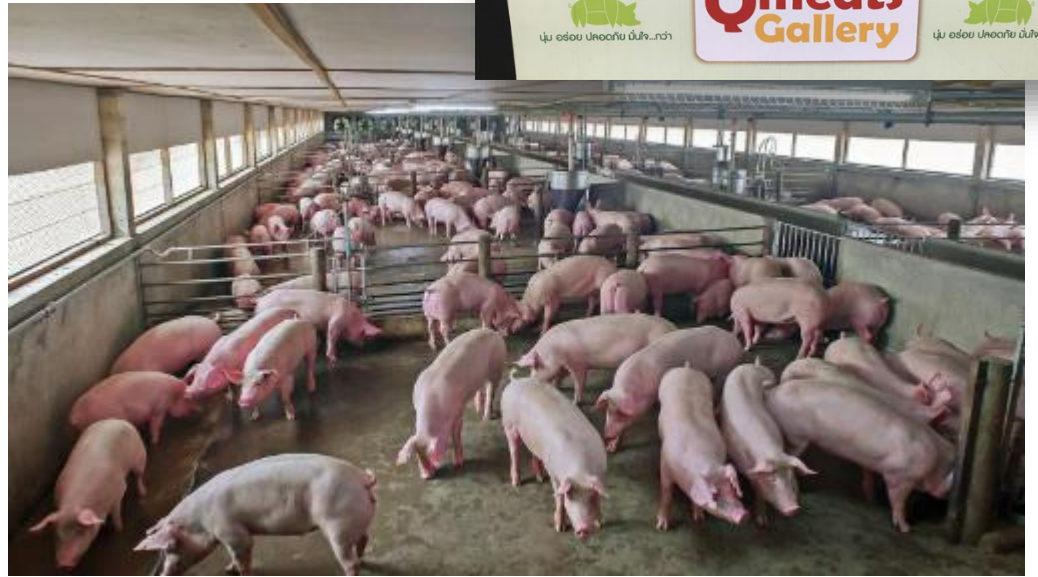
REDUCEAMU project in Thailand



- **One interviewed small-scale farmer** get treatment advice from own experience and local drug store
- Give AB to sows after farrowing
- If the first treatment choice doesn't work - try another AB
- Keep open bottles of drugs until they smell bad, throw among household garbage
- Antibiotics are cheap (USD100/year. Feed is USD 400/month)



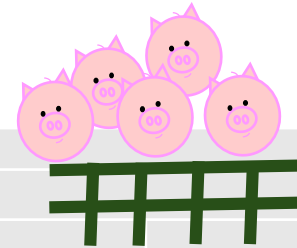
- A Company **veterinarian** responsible for **medium-size farms** (100-500 sows)
- Use company treatment guidelines
- Samples collected only when unusual disease signs in many pigs



- **One drug store** interviewed give advice mainly to small-scale farmers
- Require a responsible veterinarian but sellers rarely trained
- Recommend pen-strep for disease prevention, enrofloxacin for diarrhea and oxytetracycline for coughing

Resistance in humans and pigs

- Fecal samples from pigs, farmers working with the pigs (contact humans) and persons in the same household (on-contact human)
- 51 MSFs and 113 SSFs
- Higher frequency of resistance in pigs from MSF than SSF



Antimicrobial agents	MSF (n=457)	SSF (n=300)	Total (n=757)	Contact (n=139)	Non-contact (n=91)	Total (n=230)
Cefotaxime	0.9	1.0	0.92	2.2	2.2	2.2
Chloramphenicol	42.7	26.0	36.1	15.1	13.2	14.3
Ciprofloxacin	13.8	11.7	12.9	10.8	14.3	12.2
Gentamicin	6.8	4.3	5.8	3.6	4.4	3.9
Meropenem	0	0	0	0	0	0
Tetracycline	52.9	64.7	57.6	38.4	48.4	43.0
Trimethoprim/ Sulfamethoxazole	46.4	33.0	41.1	21.6	22.0	21.7
Multidrug-resistant	22.0	28.0	25.6	12.2	13.2	12.6

Source: Antimicrobial Resistance in Fecal Escherichia coli from Humans and Pigs at Farms at Different Levels of Intensification, Antibiotics (2020)

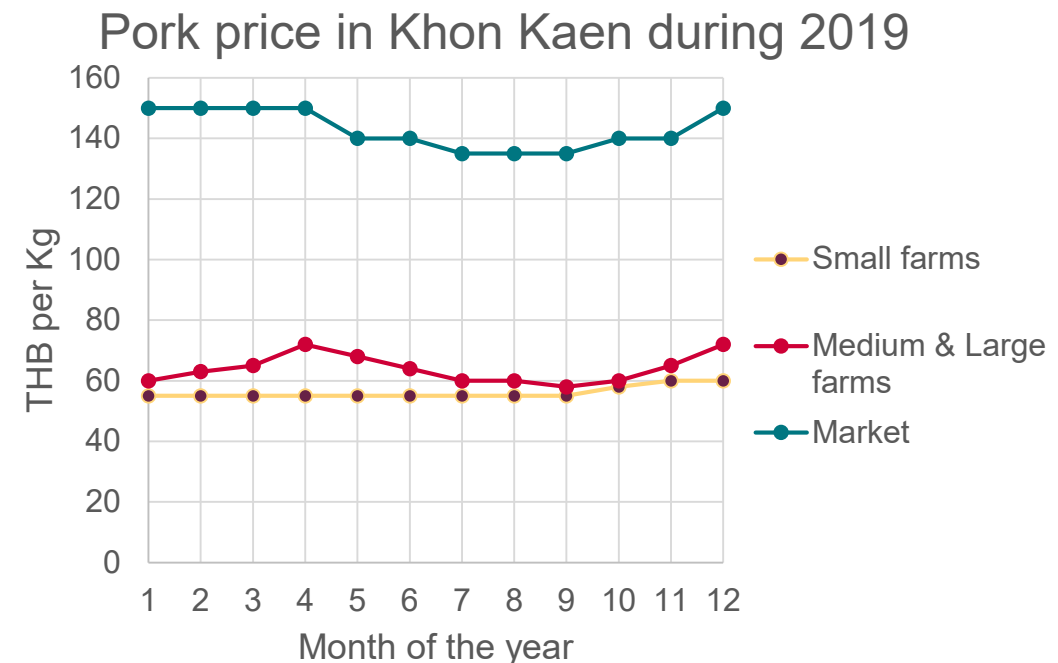
Table 4 | Country specific analysis of policies, legislation, and regulation for antibiotic use

Topic	Main findings/objectives	Gaps identified	Country specific features
General	Existence of official documents framing antimicrobial use in 7 countries (9 policy documents and 7 legal instruments) Documents in line with international standards and trade partner requirements	Inadequacy between policy interventions and available legal instruments Disproportionate national policy objectives regarding the local socioeconomic context	India, Nepal, Bhutan: national roadmaps to ban non-therapeutic use of antibiotics in feed but no regulatory framework for implementation
Appropriate and prudent use of antibiotics	Development of good pharmacist practices Ban on over-the-counter antibiotics Development of standard treatment guidelines Promotion of AST before prescription Licensing of veterinary pharmacists Education and awareness of sellers and users	Policy interventions focusing on: good practices, users and prescribers' awareness, disease prevention and spread Research of new antibiotics and alternatives is poorly addressed	Indonesia, Thailand: Code of practices for control of veterinary drugs use (in line with Codex) Bangladesh, Bhutan, India, Thailand, and Nepal: intersectoral policies to contain AMR. India: regulation for judicious use by veterinarians, but no provisions for implementation and monitoring
Regulation of veterinary medicines and medicated feed usage	Prohibition on use of antibiotics in feed as growth promoter Control enforcement for irrational and non-therapeutic/subtherapeutic use Improvement of labelling and traceability Ban on certain antibiotics critical to human health	Antibiotics still used as growth promoters or in animal feed for therapeutic use Lack of official controls to ensure law enforcement	Sri Lanka, Maldives: ban of all antibiotics as growth promoters and in medicated feed Thailand: ban of all antibiotics as growth promoters, total prohibition of medicated feed in aquaculture, regular official controls on use Bangladesh: ban on antibiotics as feed additive Indonesia, India, Thailand: restriction on the use of antibiotics intended for human treatment

AMR=antimicrobial resistance; AST=antimicrobial susceptibility testing.

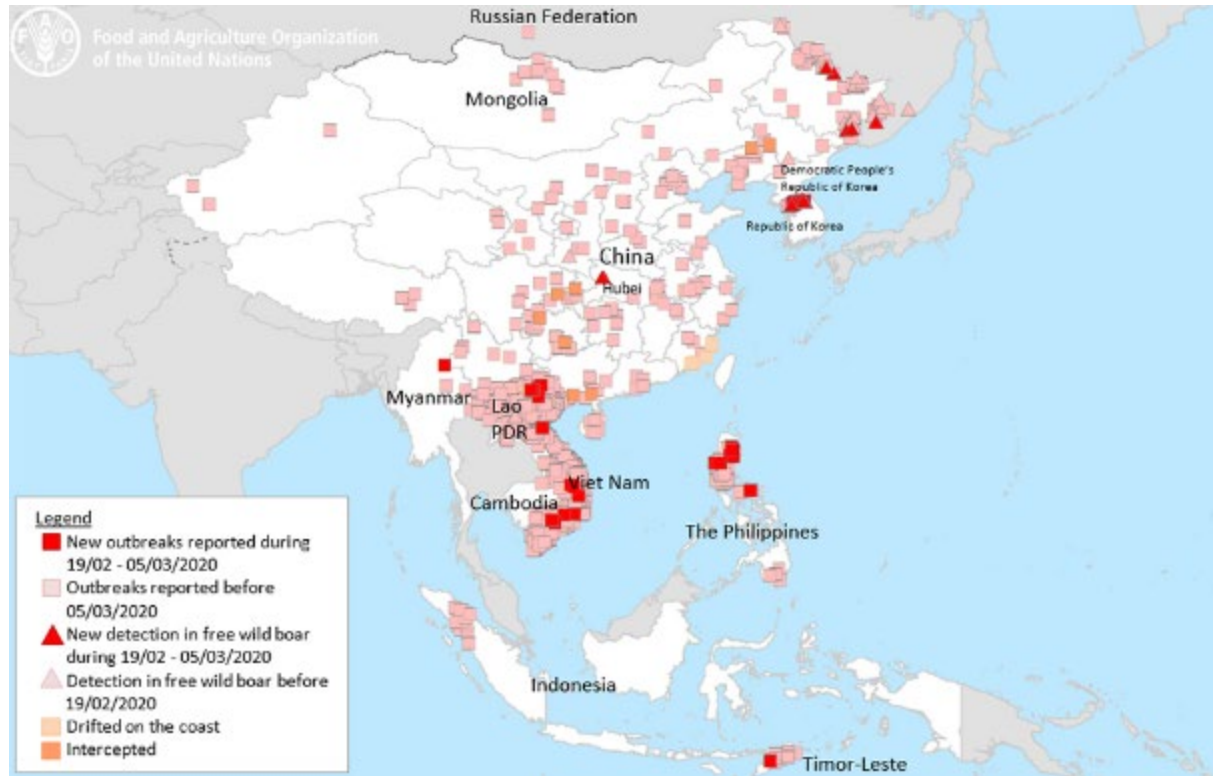
Profitability is a key driver


- High susceptibility of farmers to economic and market stability
- The costs of AB are small in relation to other costs (ex feed)
- In another study in SEA* >75% of farmers found economic advantage to antimicrobial use (greater farm profitability and lower mortality rates)



**Characterizing Antimicrobial Use in the Livestock Sector in Three South East Asian Countries, Antibiotics (2019)*

Can we learn from the ASF emergence?









ASF kills pigs

African swine fever (ASF) is not a danger to humans but kills domestic and wild pigs. There is no vaccine against it.


The virus is highly resistant in the environment and in pork products.

Carelessness can spread the disease.

Respect general PRECAUTIONS

-  Declare any suspicious case (dead or alive) to the Veterinary Services
-  Do not carry pigs or pork products. If you do, declare them to the authorities
-  When working in or visiting farms, respect biosecurity measures
-  Do not visit pig farms in affected areas

AFRICAN SWINE FEVER
Don't be the carrier of a deadly pig disease



PIC FARMERS

Take measures in your backyard and at the market, to protect your pigs and your neighbours' pigs from the risk of ASF.

COMMERCIAL PIG FARMS

Reinforce your biosecurity measures on your farm.

HUNTERS

During hunting trips, especially in places considered at risk of ASF, make sure you disinfect your equipment before leaving the hunting area.

TRAVELLERS

Do not carry the ASF virus by transporting pigs or carrying pork products.

TRANSPORT AUTHORITIES AND CHECK POINT STAFF
(airports, harbours, rail stations, highways)

Know the countries infected with ASF and systematically check for travellers carrying animals or animal products, in particular pigs or pork products.

www.oie.int/asf

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Protecting animals, preserving our future

Observations from Mozambique

- Academia can play a key role
- Utilize regional training centers
- Access to laboratory reagents is an issue



Capacity building for behaviour change

- Data isn't as useful without skills to transfer data into policy
- Sustainable CB based on assessed needs
- TOT for extended reach



Impact of awareness raising



https://youtu.be/72_M1N6We68

Tackling AMR with an animal perspective

- Human health sector often more advanced and better financed
- Misuse in animals not only a public health concern - also threatens modern veterinary medicine
- High production with low use of AB require collaboration with stakeholders across the AB supply chain and food industry



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