

Sharing lessons of smallholders' pig system in South Asia and Southeast Asia: A review

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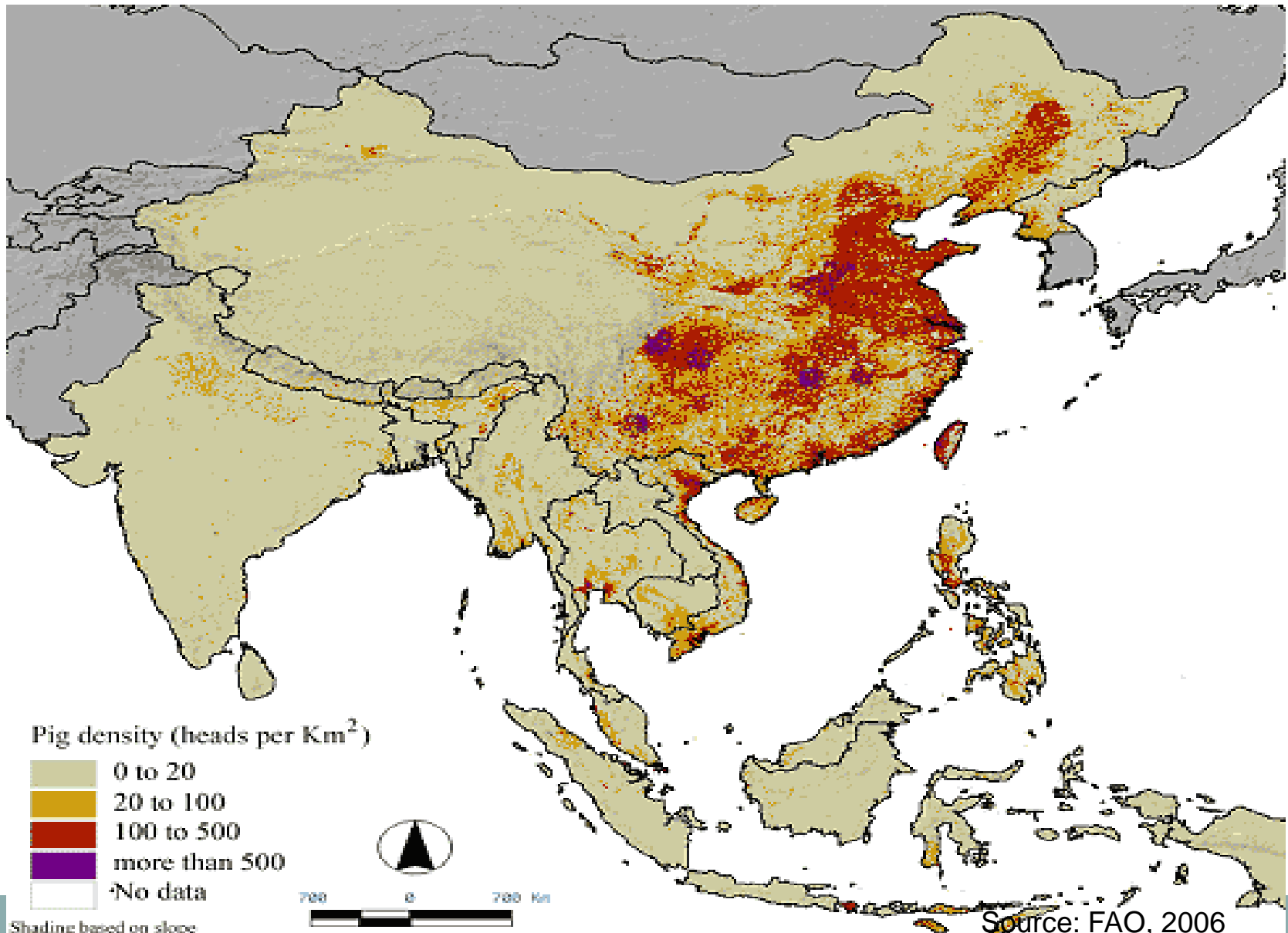
Delivered at the National Conference on Opportunities and Strategies for Sustainable Pig Production, organised by ICAR-NRCP in Guwahati, India on 20-21 December 2014

Geographical distribution of South & SE Asia



Historical Links between both regions from the past

Pig density in both the regions



Basic comparison

Particulars	South East Asia	South Asia
Pig rearing community	All communities except few	Only few communities
Socio- cultural value among pig producers	High	High
Religious sentiments against pig production	Low	High
Livelihood importance	High (20-30% of HH income)	High (20-30% of HH income)
Government attention towards pig sub-sector	High	Low
Industrial pig production	Yes	Nil/Negligible
Contract farming (integrator)	Yes	No/Negligible
Importance of pork as a source of meat	High	Low

Pig population & growth

South East Asia			South Asia		
Country	Population (mil)	Growth in 2013 (%)	Country	Population (mil)	Growth in 2013 (%)
Cambodia	2.15	1.40	Bhutan	0.015	-91.79
Indonesia	8.25	4.20	India	9.30	-1.08
Lao PDR	2.28	-22.54	Nepal	1.16	1.94
Malaysia	1.72	-4.27	Sri Lanks	0.090	0.83
Myanmar	1.05	0.28	Bangladesh	Few thousands pigs	
Philippines	11.84	-0.17	Pakistan	Few thousands wild boar	
Thailand	7.85	0.64	Afghanistan	-	
Vietnam	26.26	-0.89	Possible reasons may be:		
Cambodia	2.15	1.40	High consumption		
			Increased mortality		
			East Asian financial crises		
			Increased competition for smallholder		
China	482.25	1.70			

Farm size of pigs

South East Asia		South Asia	
Vietnam/ Philippines Indonesia/ Malaysia (Thailand: 56% is large)	Smallholders (<20 pigs): 80% Medium (21-500 pigs): 15% Large (>500): 5%	India/Nepal/ Bhutan/ Sri Lanka	Smallholder (<5 pigs): >95% Medium (5-500 pigs): <5% Large (>500): Almost nil
Laos/ Cambodia/ Myanmar	Smallholders (<5 pigs): >90% Medium (5-500 pigs): <10%		

This is just an estimation based on some literature review.
 There is wide % variation within & between the countries
 and classifications also varies

Breeds & breeding

Particulars	SE Asia	S Asia
Indigenous pigs (declining rapidly)	Mong cai, Ban, Soc, Lath, Khong, Moolat etc. Fatty, concave back	Doom, Madhuri, Dogar, bampudke, Hurra, Mini etc. (Lean, short ear, straight back)
Exotic pigs (increasing rapidly in SEA)	Hampshire, LWY, LB, Landrace, Duroc, Tamworth etc. (>10% exotic)	Hampshire, LWY, LB, Saddleback, Tamworth, Landrace, Duroc (< 1%)
Cross bred (increasing rapidly)	> 70% pig population	>80% (because of haphazard crossing)
Availability of good breeding stock	Available in industrial farms	Difficult to find
Natural breeding (fee based)	Popular in the villages	Popular in the villages
Artificial Insemination	Available in well accessible areas & industrial belts	Available sporadically

Indigenous pigs available in both regions



Fig: Mong Cai pig, Vietnam (
Photo credit: Ram Deka)



Fig: Ban pig, Vietnam
(concave) back (Photo
credit: Ram Deka)



Fig: Indigenous pig, Laos
(Photo credit: Ram Deka)



Fig: Indigenous (doom) pig, Assam, India
(Photo credit: Ram Deka)

Feeds & feeding

Particulars	SE Asia	S Asia
Major ingredients (smallholders)	Maize, rice bran, broken rice, cassava, sweet potato (75% of SP in Vietnam) , legumes (eg. stylo), banana leaf, fish meal, soybean meal.	Residue of rice bear , rice bran, wheat bran, kitchen waste, taro, cassava, jungle forages , maize
Production & distribution of concentrate feed	High	Negligible
High quality internal feed formulation by industries	Yes	No/negligible
Cultivation of food-feed crops for feeding pigs.	Popular	Not popular
Non conventional feed ingredients are mixed & cooked	Common	Common
Competition of pig feed with human food	High	Low

Housing system

System	SE Asia	South Asia
Scavenging system	Still popular in Laos & Cambodia	Still popular in Nepal & Bhutan
Tethering/pan/enclosure	Majority of smallholders' pigs are housed under the system	Majority of smallholders' pigs are housed under the system
Cage system, Evaporative cooling etc.	Available	Not available
Mobile herding system	Not reported	Available sporadically

Fig: A mobile pig herd near Dhaka, Bangladesh (photo credit: Ram Deka)



Housing



Fig: Pig sty , Vietnam (Photo credit: Ram Deka)



Fig: Pig sty, Laos (Photo credit: Ram Deka)



Fig: Pig sty, Cambodia (Photo credit: Ram Deka)



Fig: Pig sty, North East India (Photo credit: Ram Deka)

Diseases & prevention

Particulars	SE Asia	S Asia
Major disease problem	PRRS , CSF , FMD, Swine Pox, swine dysentery, Erysipelas, parasitic infestation, congenital problem	CSF , FMD, Swine Pox, PRRS, swine dysentery, parasitic infestation, congenital problem
Treatment	80% households in Vietnam treat diseased pigs (near the town higher the %)	About 64% households treat pigs in NE India but 67% of them treat by themselves
Vaccination	88% pigs are vaccinated against CSF in Vietnam	<2% pigs are vaccinated against CSF in India
Deworming	71% pigs are dewormed in Vietnam	Small % of pigs are dewormed
Movement control & slaughter	Thailand, Vietnam & Malaysia	Not practically adopted

Market

Particulars	SE Asia	S Asia
Pork consumers	Large majority of the people	Only certain communities
Common transportation mechanism at villages	Motorbike	Auto van, mini truck
Paperwork for trading	High	Low
Premium price for pork of indigenous pigs	Yes	Yes
Organised slaughter infrastructure	Available in most of the cities	Scanty
Market demand at the farm gate	Moderate	High
Market efficiency for smallholders	Low	Moderate
Market competition & price fluctuation	High	Low

Markets



Fig: Pig transported by motorbike



Fig: Pork market, Hanoi
(Photo credit: Ram Deka)



Fig: Pork market, Northern Vietnam (
Photo credit: Ram Deka



Fig: Pork market, Dimapur, India (
Photo credit: Ram Deka

Trend of consumption & growth

Particulars	SE Asia	S Asia
Countries that prefer pork most to other meat	Vietnam, the Philippines, Cambodia	None
Increased in consumption of pork	Vietnam (5%), Thailand, The Philippines (4.3%), Cambodia & Myanmar (growth 1.5- 5.0% per year)	India, Nepal, Bhutan
Decreased in consumption of pork	Indonesia, Malaysia & Laos	Sri Lanka
Major exporter	Vietnam, & Thailand	Nil
Major importer	The Philippines & Malaysia	-
Per capita consumption	6-15 kg/ year Vietnam/Philippines: >15kg/cap Indonesia/Laos: <6kg/cap	0.76 kg/cap in India, 8.37 kg/cap in Nagaland (NE India)

Export-import scenario of pork

Country (SE Asia)	Export (in tones)	Import (tones)	Country (South Asia)	Export (in tones)	Import (tones)
Cambodia			Bhutan		
Indonesia	45	134	India		3
Lao PDR			Nepal		3
Malaysia	144	9034	Sri Lanks		
Myanmar			Bangladesh		
Philippines		47,307	Pakistan		
Thailand	2,280	46	Afghanistan		
Vietnam	7,032				
Singapore	495	55,525			
China (mainland)	71,647	316,775			

Food safety & zoonosis

Particulars	SE Asia	S Asia
Disease animal sold at rural areas by smallholders	Yes	Yes
Quality assurance system like HAACP, GAP, GMP etc. in pig industry	Followed	Not followed
Information to smallholder on biosafety & biosecurity	Present	Absent
Unsafe coliform count	Above acceptable level (82% in Vietnam)	Above acceptable level (80% in Nagaland)
Total plate count	Above acceptable level (50% in Vietnam)	Above acceptable level
Antibiotic residue in pork	?	Yes (20% samples in Nagaland)
Clean and hygiene in pork value chain	Relatively better	Poor
Important zoonotic diseases	1. Japanese Encephalitis 2. Cysticercosis	1. Japanese Encephalitis 2. Cysticercosis

Lessons learnt for improvement of pig system in South Asia

- Adopt two prone clear strategy: (a) transforming smallholder system and (b) promoting industrial farming system.

Lessons for industries:

- Support industrial farms to import exotic pigs and to maintain pure lines.
- Stimulus package for industrial farming including feed milling, integrate farming & processing.
- Ensure world class bio security measures at industrial premises.
- Ensure production/access to sufficient vaccine against CSF, FMD and PRRS in the country.
- Design and implement customised capacity building programmes for entrepreneurs/ industry leaders to understand the world class technology on housing, breeding, healthcare and management including economics
- Provide easy access to credit and insurance
- Policy support for maintaining food safety and standard for better access to market (domestic & international)

Lessons for the smallholders in South Asia



- Increase efficiency and productivity of smallholders pig production system through value chain approach.
- Support rapid transformation of subsistence to commercial system
- Popularise A.I and systematic natural cross breeding programme.
- Consider private sector as an important player for supplying quality breeding stock to smallholders.
- Encourage cultivation of food-feed crops & incorporation of concentrates in smallholder feed regime.
- Popularise of vaccination, deworming, quarantine & movement restriction for prevention and control of diseases.
- Strengthen customised extension and capacity building programme.
- Promote better clean and hygiene throughout the value chain
- Reduces the risk of zoonosis and improve pork safety
- Conservation of indigenous germplasm
- Reduce women drudgery and ensure environment safety

Thank You

