

# National Pig Sector Review

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**ILRI**

International Livestock Research Institute

# Changes in global share of production and consumption of pork

Country	Production share (%)		Consumption share (%)	
	1999-2006	2008-2017	1999-2006	2008-2017
China	50	52	50	52
EU	24	21	23	20
USA	10	10	10	9
Brazil	3	3	2	2
Canada	2	2	1	1
Russia	2	2	3	3
Japan	1	1	3	2
Mexico	1	1	2	2
Philippines	1	1	1	1
South Korea	1	1	1	2
Taiwan	1	1	1	1
Thailand			1	1
Indonesia			1	1

Source: FAPRI 2008

# Changes in global share of pork trade

	1999-2006 (%)	2008-2017 (%)
<i>Net exporters</i>		
EU	38	26
Canada	25	22
Brazil	16	21
USA	13	28
China	6	2
Vietnam		-1
<i>Net importers</i>		
Japan	36	26
Russia	21	19
Mexico	10	10
Hong Kong	8	7
South Korea	6	11
Philippines	1	3

# Production projections to 2020 for pork in selected Southeast Asian countries

Commodity and country	2000	2005	2010	2015	2020	% change 2005-2020
Pork						
Vietnam	1385.02	1715.94	1964.79	2253.30	2541.69	48
Indonesia	476.64	550.18	673.21	794.14	910.12	65
Malaysia	162.86	204.82	234.92	261.99	288.84	41
Myanmar	113.72	170.07	194.30	223.68	252.97	49
Philippines	1017.85	1384.67	1567.28	1730.32	1915.26	38
Laos and Cambodia	138.61	150.75	177.31	210.07	246.85	64
Thailand	474.01	624.82	780.60	966.00	1157.86	85

Source: IFPRI IMPACT model results 2009 (unpublished data).

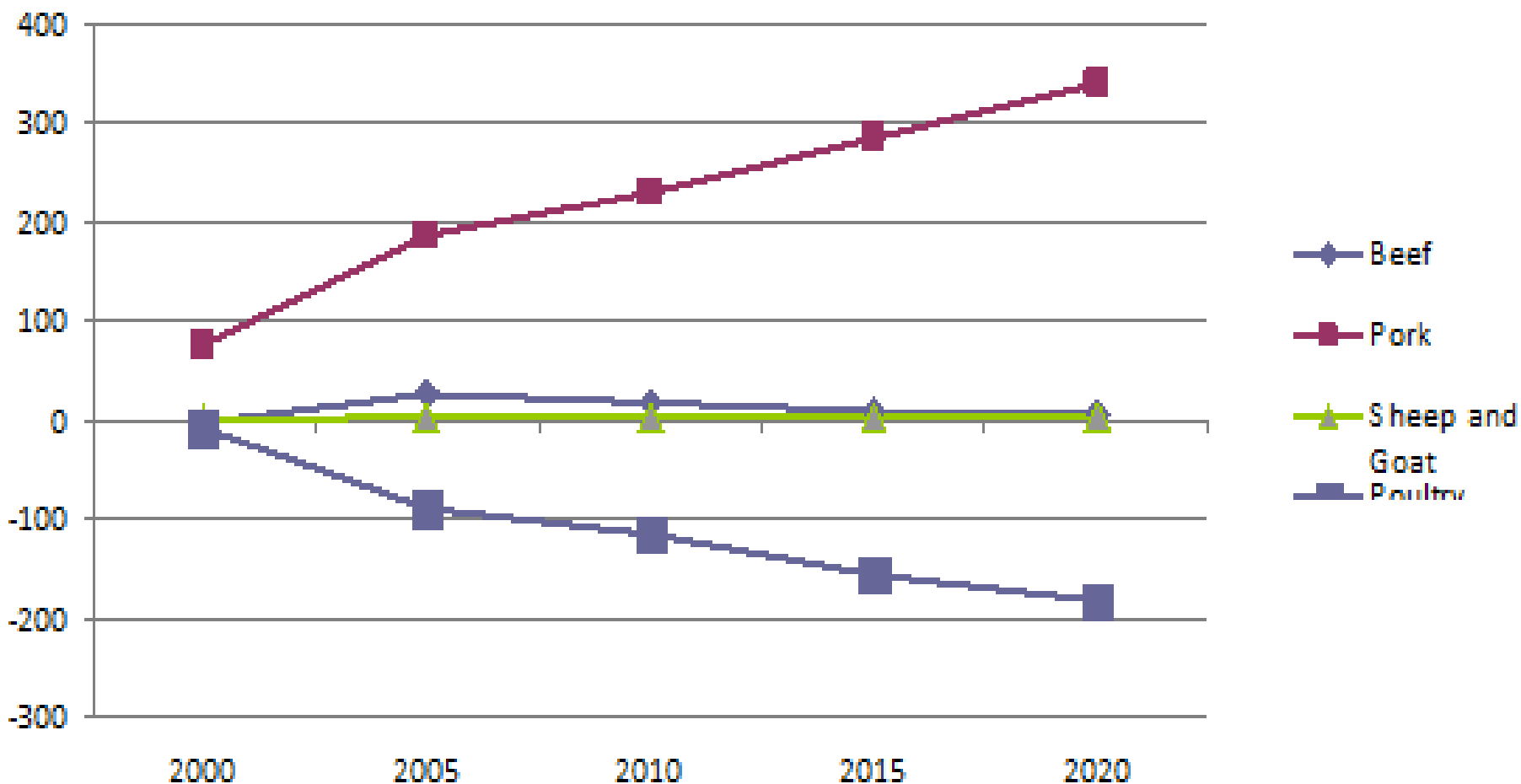
# Consumption projections to 2020 for pork in selected Southeast Asian countries

Commodity and country	2000	2005	2010	2015	2020	% change 2005-2020
Pork						
Vietnam	16.64	18.17	19.34	20.72	22.05	21
Indonesia	2.27	2.47	2.72	3.12	3.53	43
Malaysia	7.31	7.76	8.37	9.34	10.40	34
Myanmar	2.37	2.39	2.67	3.27	3.90	63
Philippines	13.69	14.17	14.90	16.17	17.36	23
Laos and Cambodia	7.64	8.79	9.87	11.10	12.31	40
Thailand	7.60	8.80	10.30	12.38	14.70	67

Source: IFPRI IMPACT model results 2009 (unpublished data).

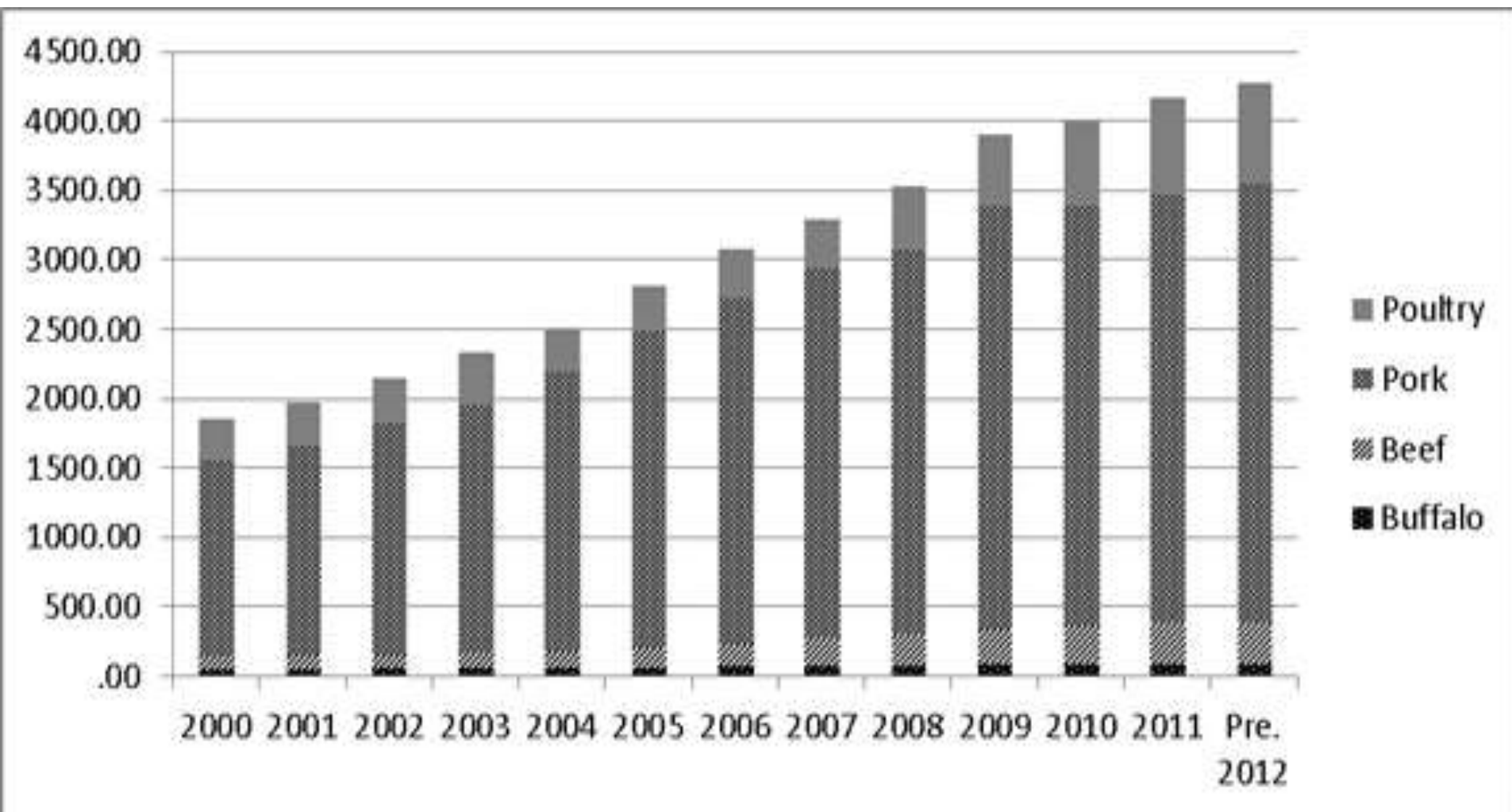
# Vietnam's Livestock Nettrade Projection to 2020

1000 MT



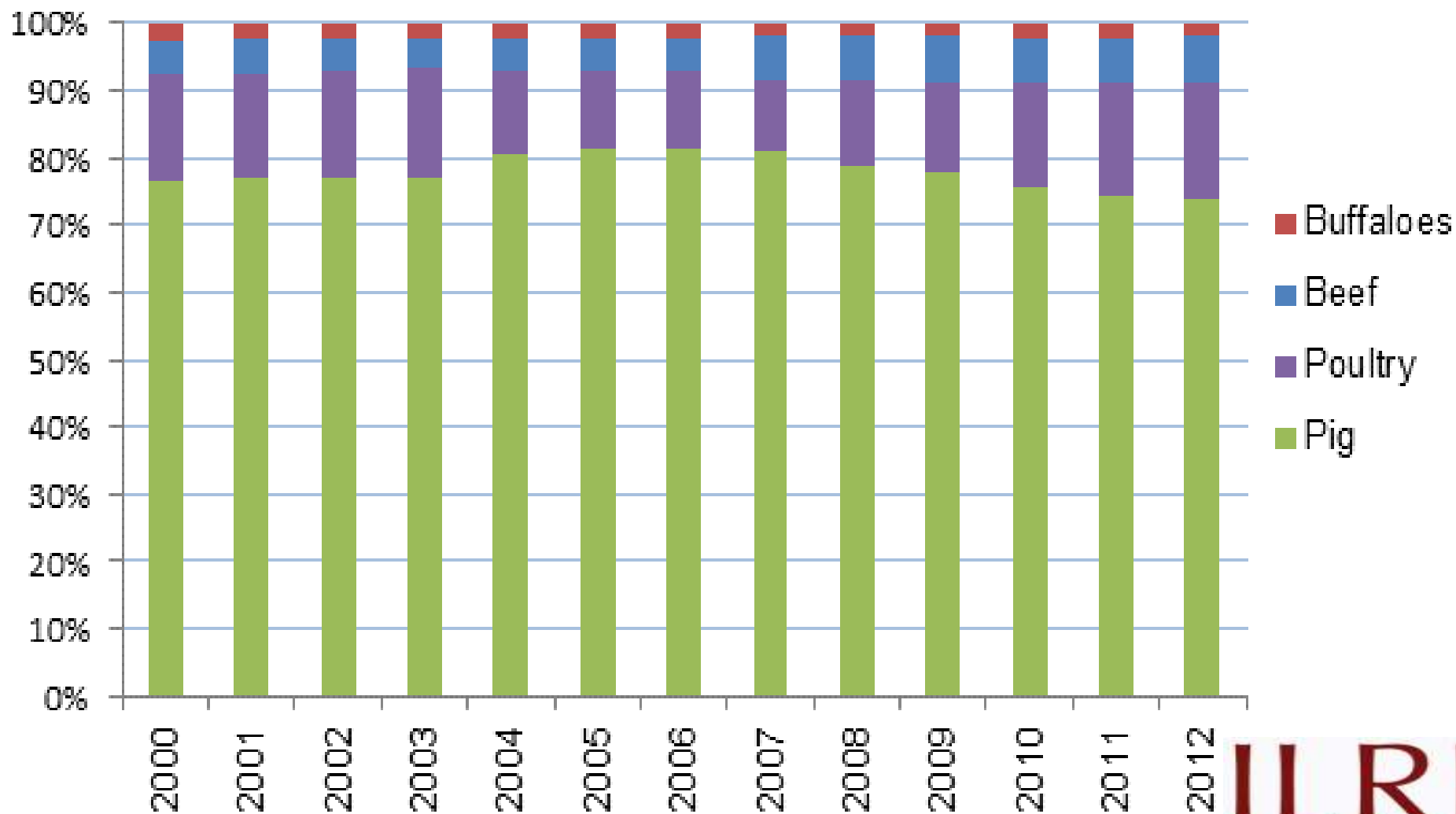
Source of data: IFPRI IMPACT model results 2009 (unpublished data)

# Meat Production in Vietnam, 2000-2012



Source of data: General Statistics Office, 2013.

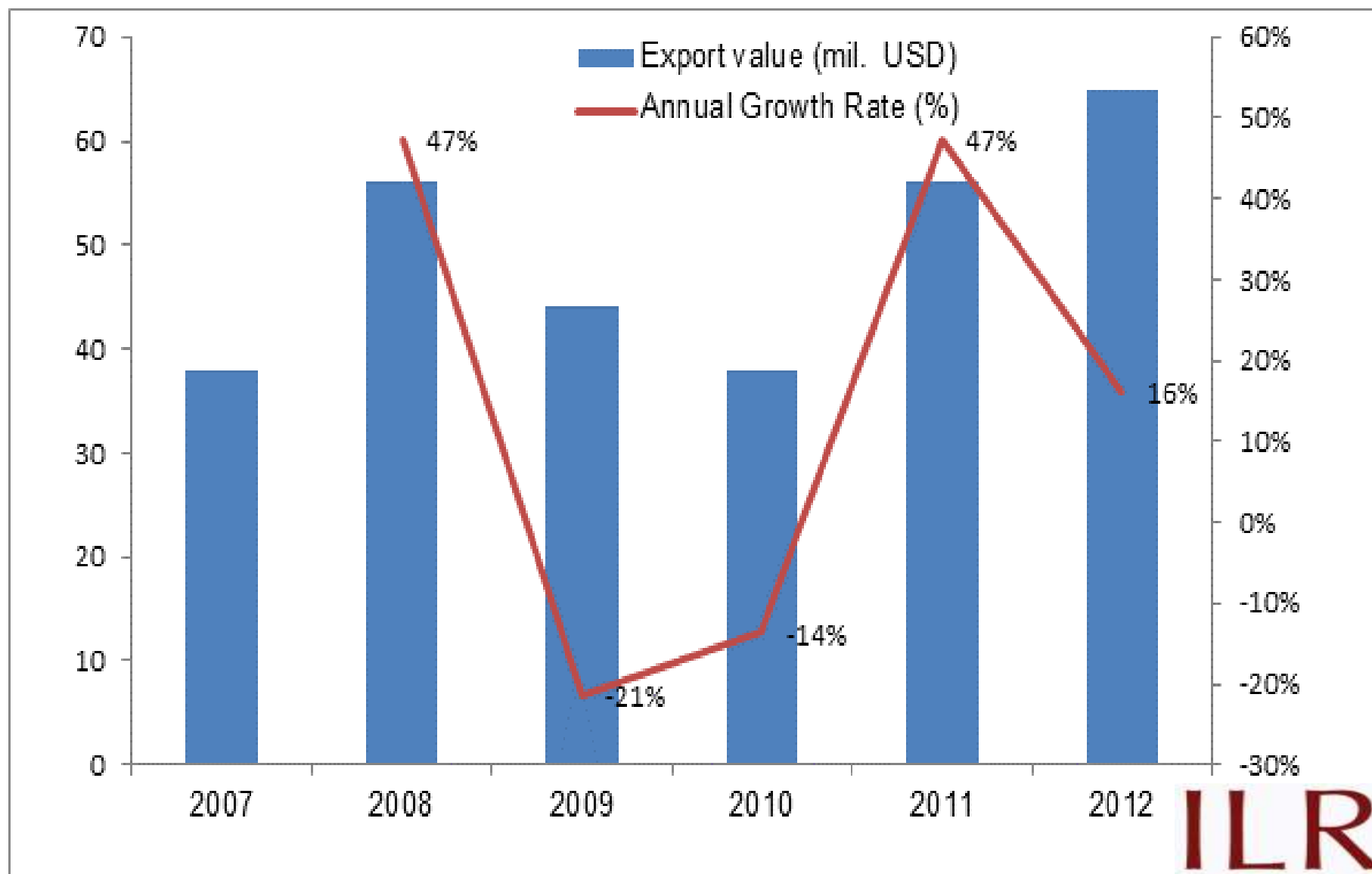
# Relative shares of meat types in livestock production, 2002-2012



Source of Data: General Statistics Office 2013.

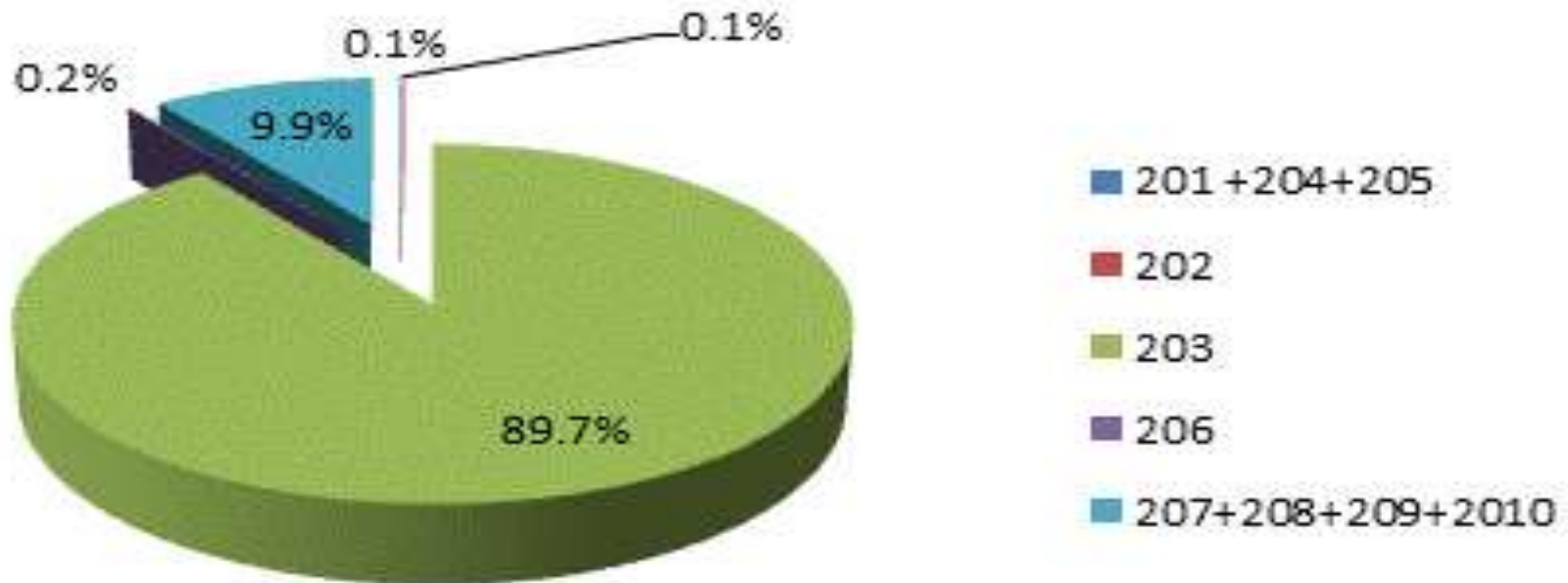


# Meat exports by Vietnam, 2007-2012



Source of data: Vietnam General Customs Office.

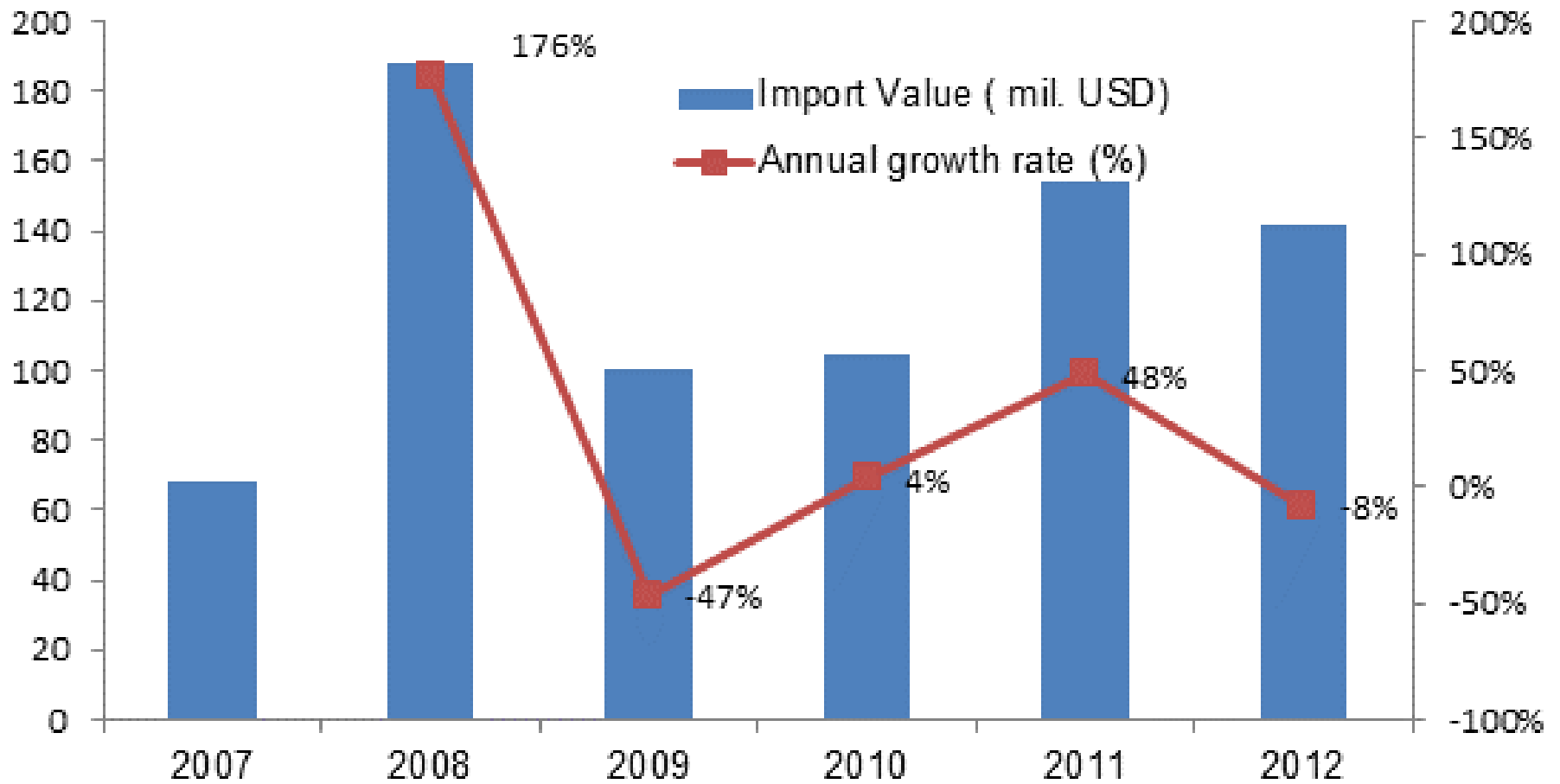
# Share of pork in meat exports by Vietnam, 2007-2012



**Note:** Item code 203 = Meat of swine, fresh, chilled or frozen including carcasses and half-carcasses, hams, shoulders and cuts thereof with bone in for fresh, chilled or frozen products

Source of data: Vietnam General Customs Office.

# Meat imports, 2007-2012



Source of data: Vietnam General Customs Office

# Meat imports (tons)

Types of meat	2011	2012	Growth rate(%)
Meat and offal of buffalo, goat, sheep	19.651	13.211	-32,77
Pork and pig's offal	6.002	3.287	-45,23
Poultry and offal	76.521	74.196	-3,04
Heart, liver, kidney of bovine animals	727		-100,00
Heart, liver, kidney of poultry	4.528	1.138	-74,87
<b>Total</b>	<b>107.429</b>	<b>91.832</b>	<b>-14,52</b>

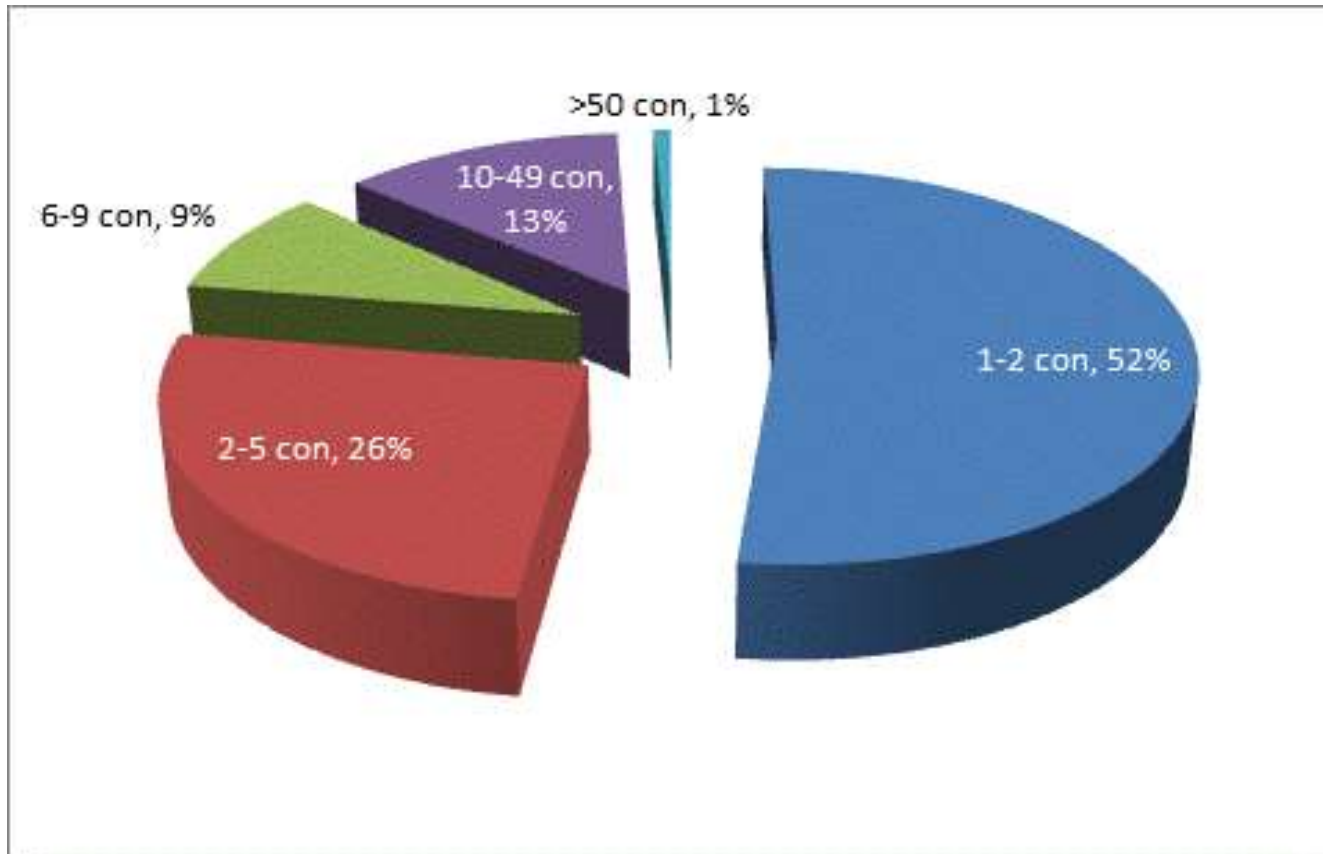
# Meat tariff (WTO)

HS	Description	Current (2007)	WTO commitment			AFTA		AC-FTA		AK-FTA	
			At date accession	Destination	Implementation	2006	2010	2008	2010	2008	2010
<b>0203</b>	Chilled pork	30	30	25	2012	5	5	0	0	25	20
	Frozen pork	30	30	15	2012	5	5	0	0	25	20
<b>0206</b>	Edible Offal	15	15	8	2011	5	5	0	0	15	10
<b>1601</b>	Meat products	40	40	22	2012	50	30	30	30	35	35
<b>2301-230</b>	Bran	10	10	7	2010	5	5	10	10	10	8
	Soybean meal	0	5			0	0	0	0	0	0
	Feed	10	10	7	2010	5	5	10	10	10	8

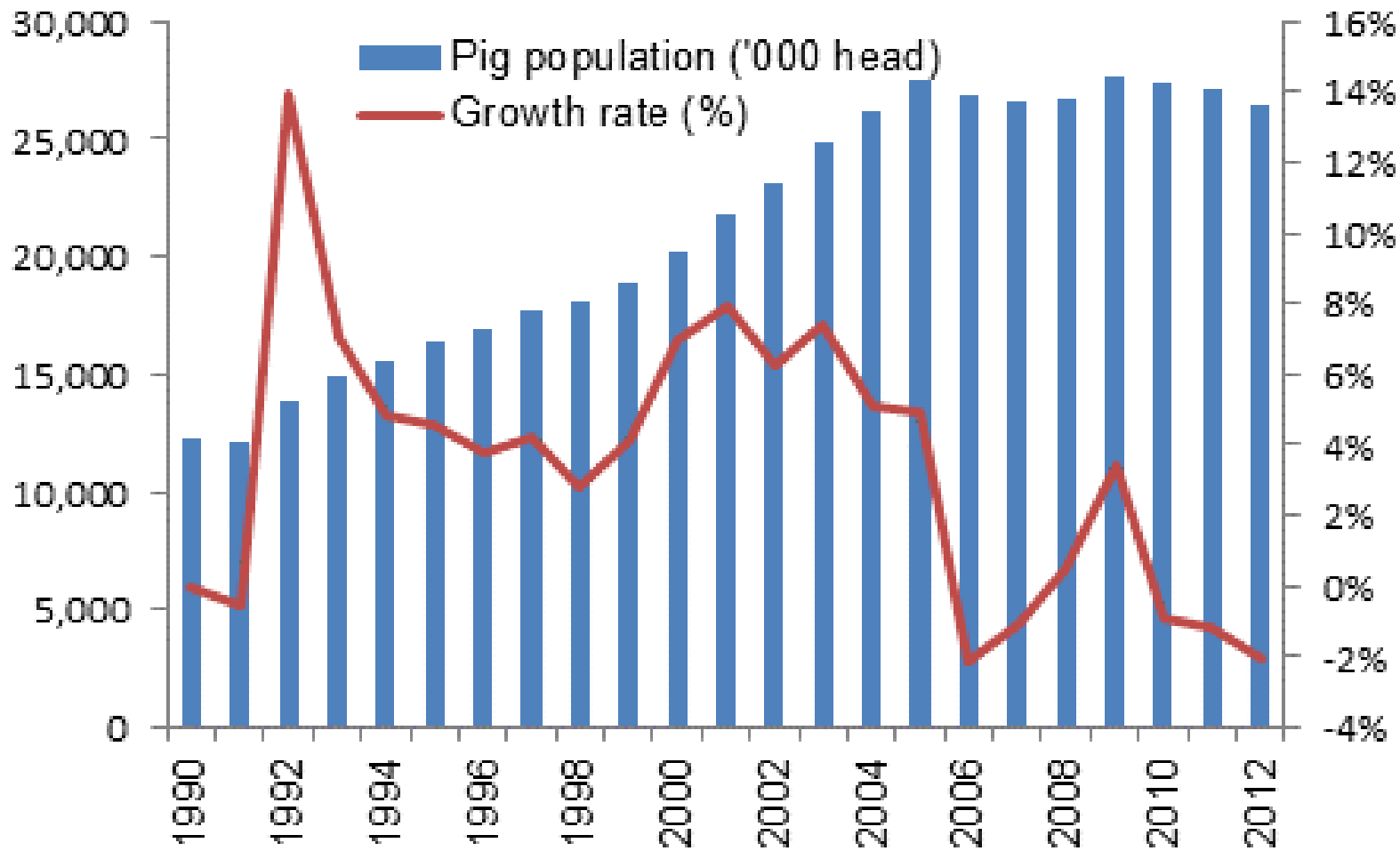
Source: Vietnam Chamber of Commerce and Industry 2007

# Pig Production

- Pork meat share is about 75% of the total meat
- Scale: small, medium, large (commercial farms)



# Growth of the pig sector



# Pig production holdings in Vietnam, by scale

Holding type	Herd size	% of national herd (1999)	% of national herd (2006)	Breed
Smallholders or backyard	1–10 pigs	80	64	North: mostly local South: mostly cross with exotic
Small-medium	5–20 sows or 30–100 fattening	10	20	Cross and exotic
Medium	20–500 sows or 100–4000 fattening	5	10	Exotic
Large	>500 sows or >4000 fattening	5	6	Exotic

Source: Kinh & Hai 2008.

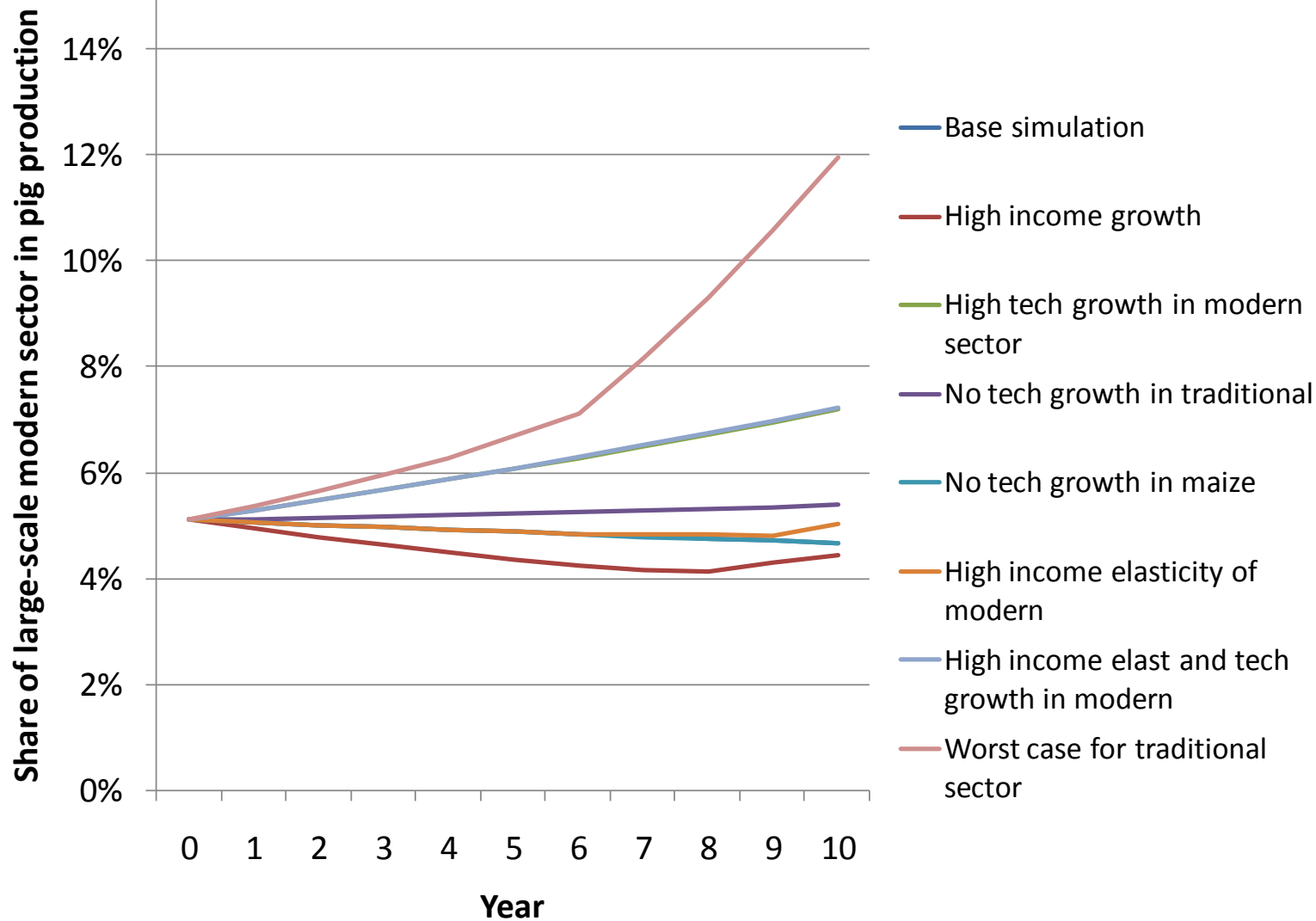


# Distribution of pig producing households, by scale

No. of pigs	Share of pig producing households (%)
1-2	51.9
3-5	25.7
6-9	8.9
10-49	12.8
>50	0.8

Source of Data: General Statistics Office 2011.

# Projected share of pork supply from large-scale producers

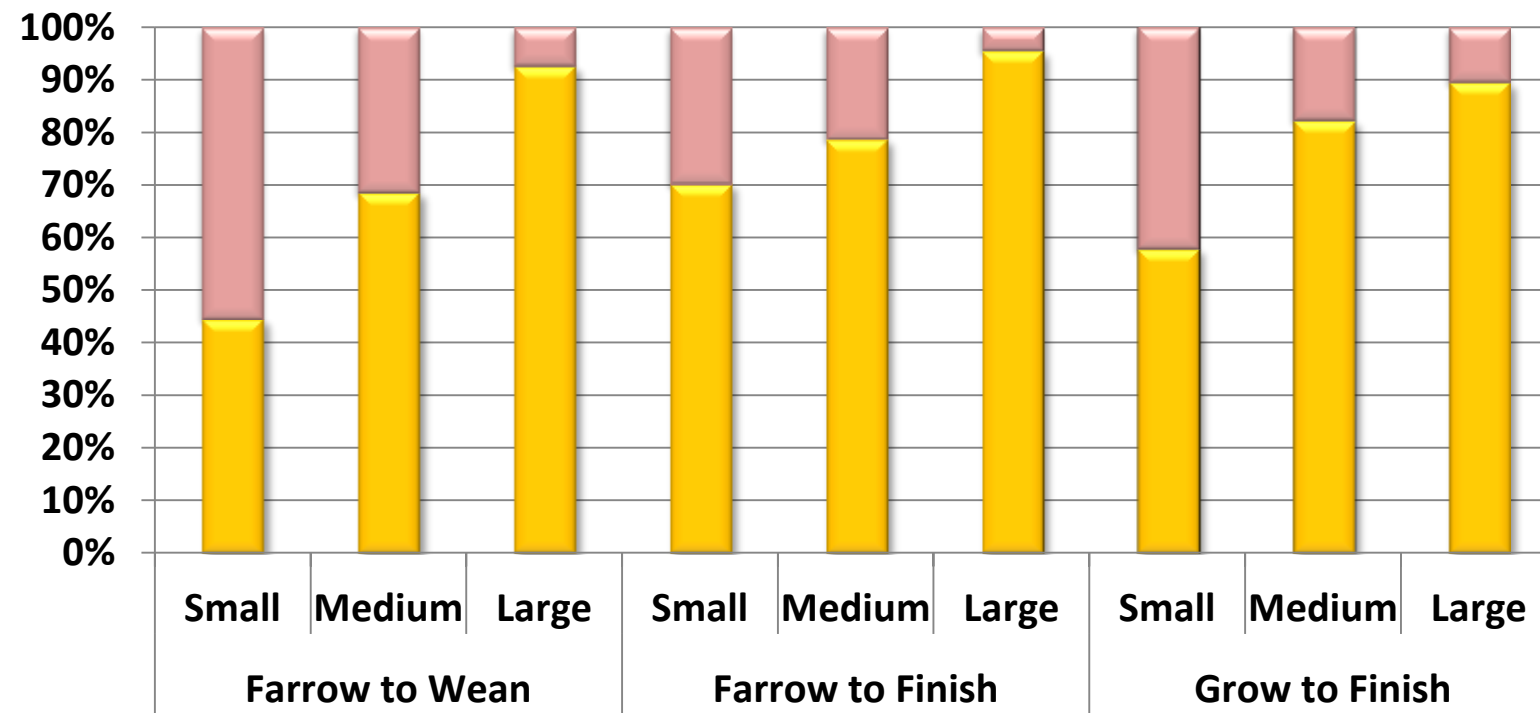


# Updated results of the Vietnam Pig Sector Model

- Recent updates (2013) of VPM showed no significant change from 2009 estimates in the share of modern pork sector in domestic supply of pork in the next decade.
- With tariff reductions in pork imports from ASEAN Plus and TPP countries, VPM projections show no significant difference between base estimates, i.e., 3.5% in base vs. 4.3% in 2025. Note that imported pork is frozen pork, while Vietnamese consumers have strong preference for fresh, unchilled pork.

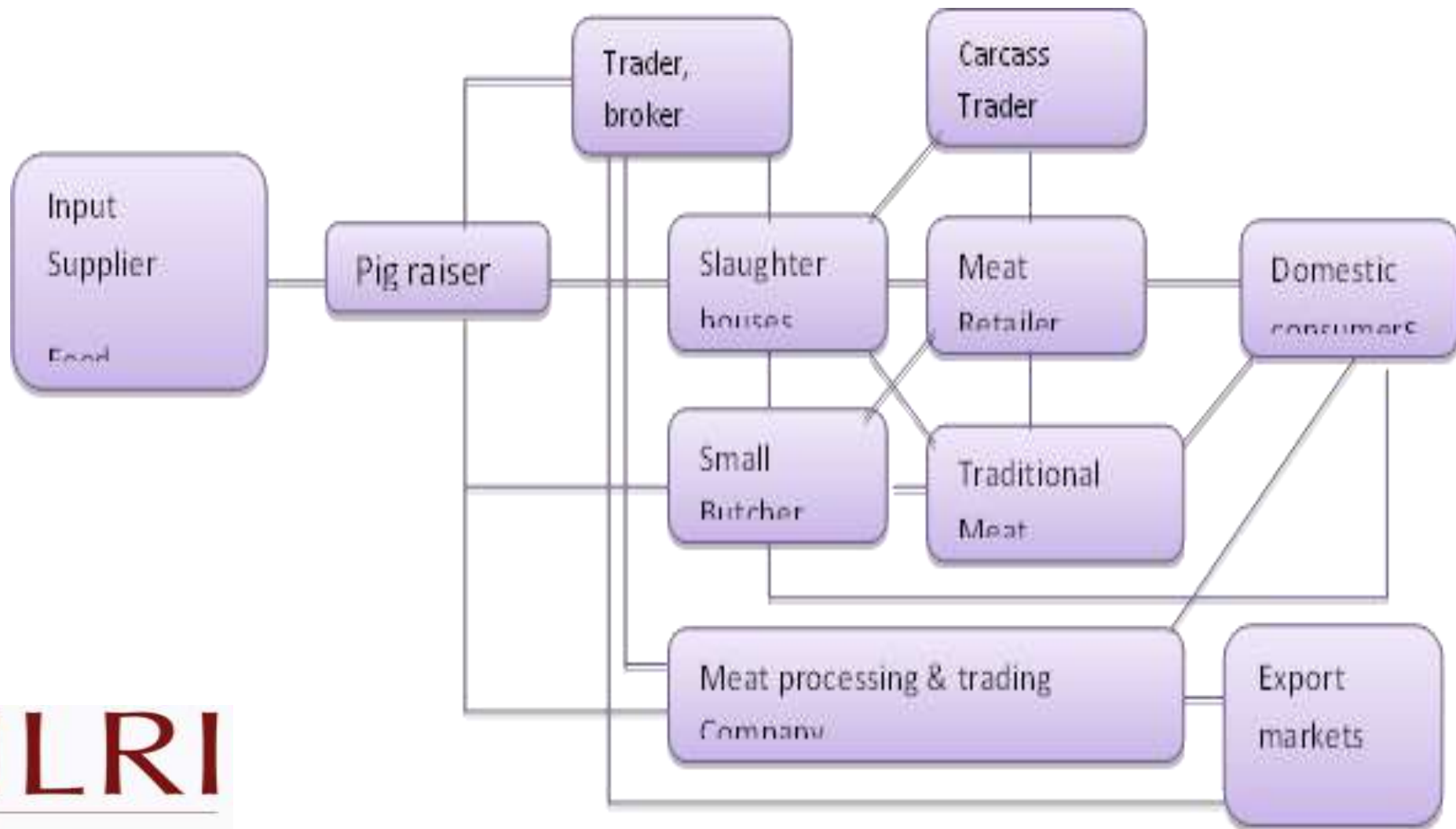
# Structure of Feed Cost by Production System and Scale

■ Purchased feed     
 ■ Own produced feed

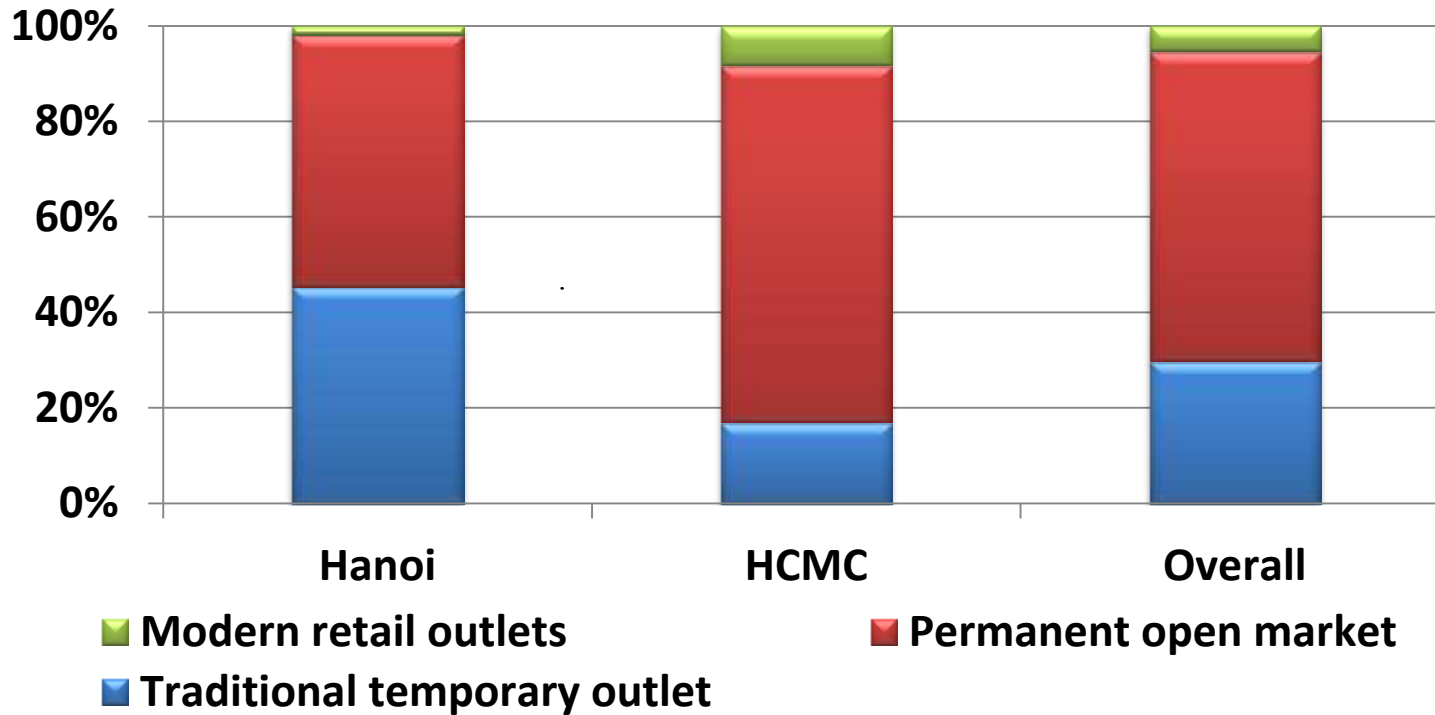


**Increasing the proportion of own-produced feed to total feed use can decrease total feed cost. This provides cost advantage to small producers that use higher proportion of own-produced feed.**

# The pig value chain in Vietnam



# Preferred market outlets for fresh pork



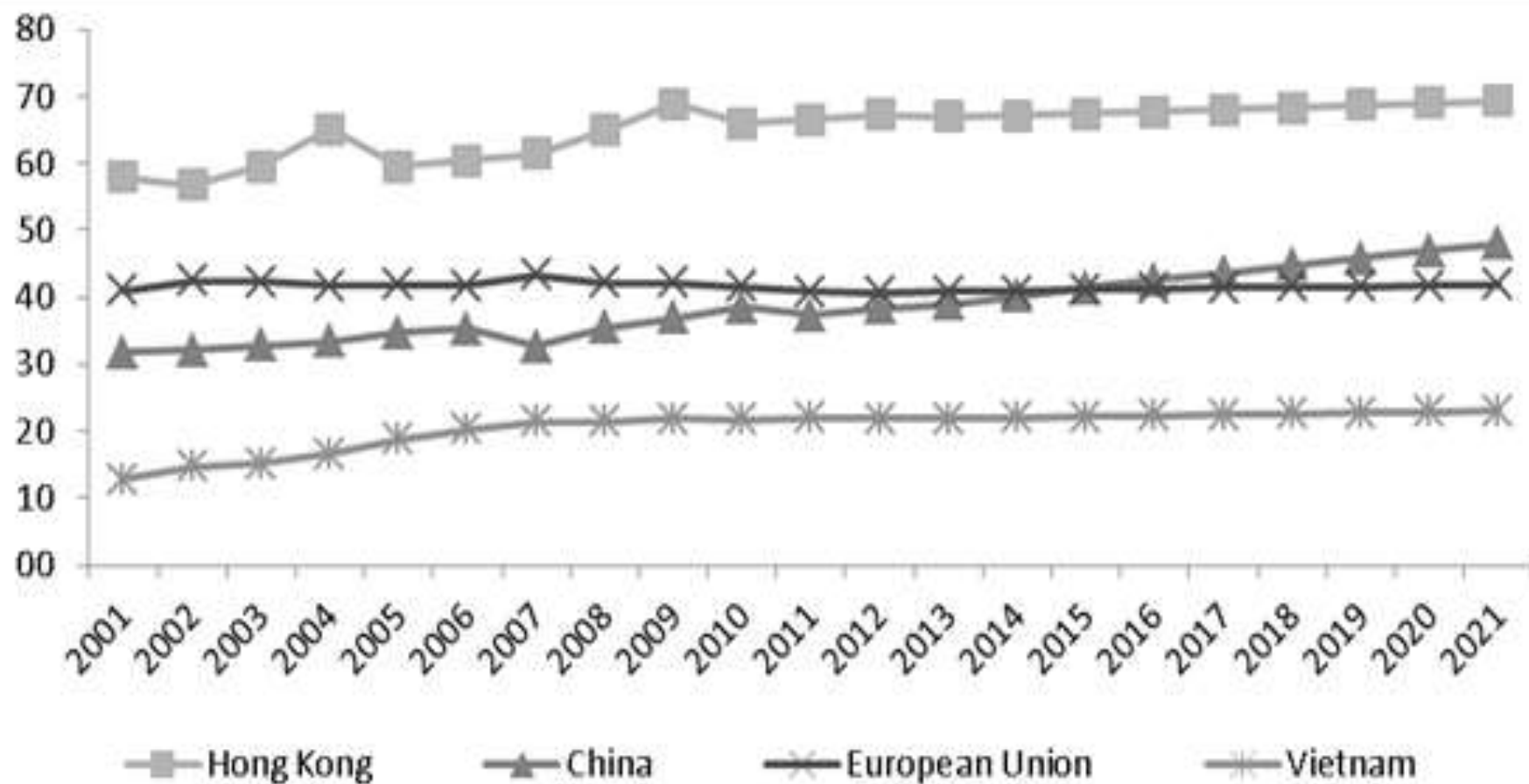
**Traditional market outlets remain the most preferred purchase outlets for fresh pork by Vietnamese consumers.**

# Retailers

- Wet markets
- Supermarkets, shops



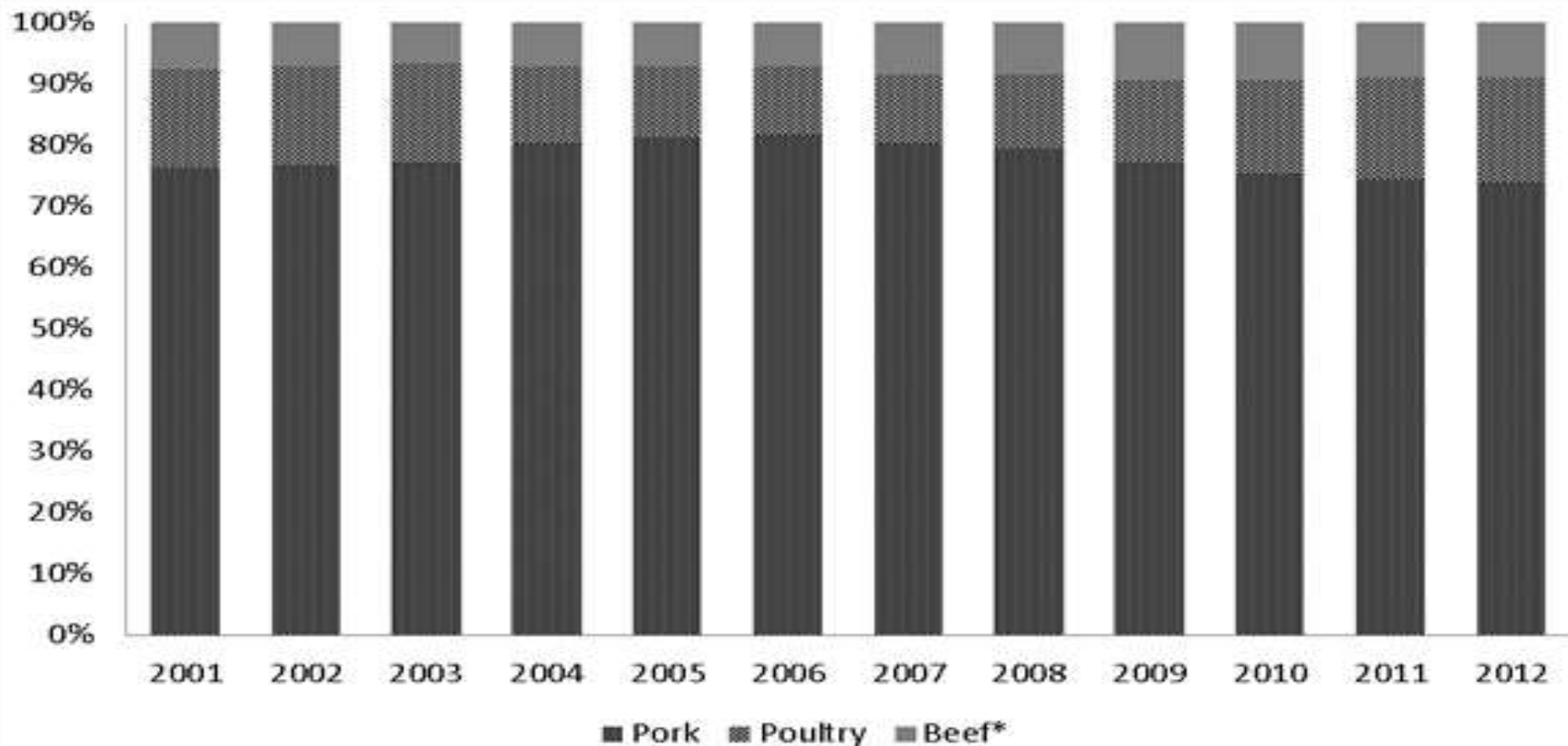
# Comparison of per capita pork consumption



Source of data: FAOSTAT 2013.



# Household meat consumption, by type of meat



Source of data: Vietnam Household Living Standard Surveys 2002, 2006, 2008, 2012.

# Per capita pork consumption in Vietnam, by region, 2002-2012

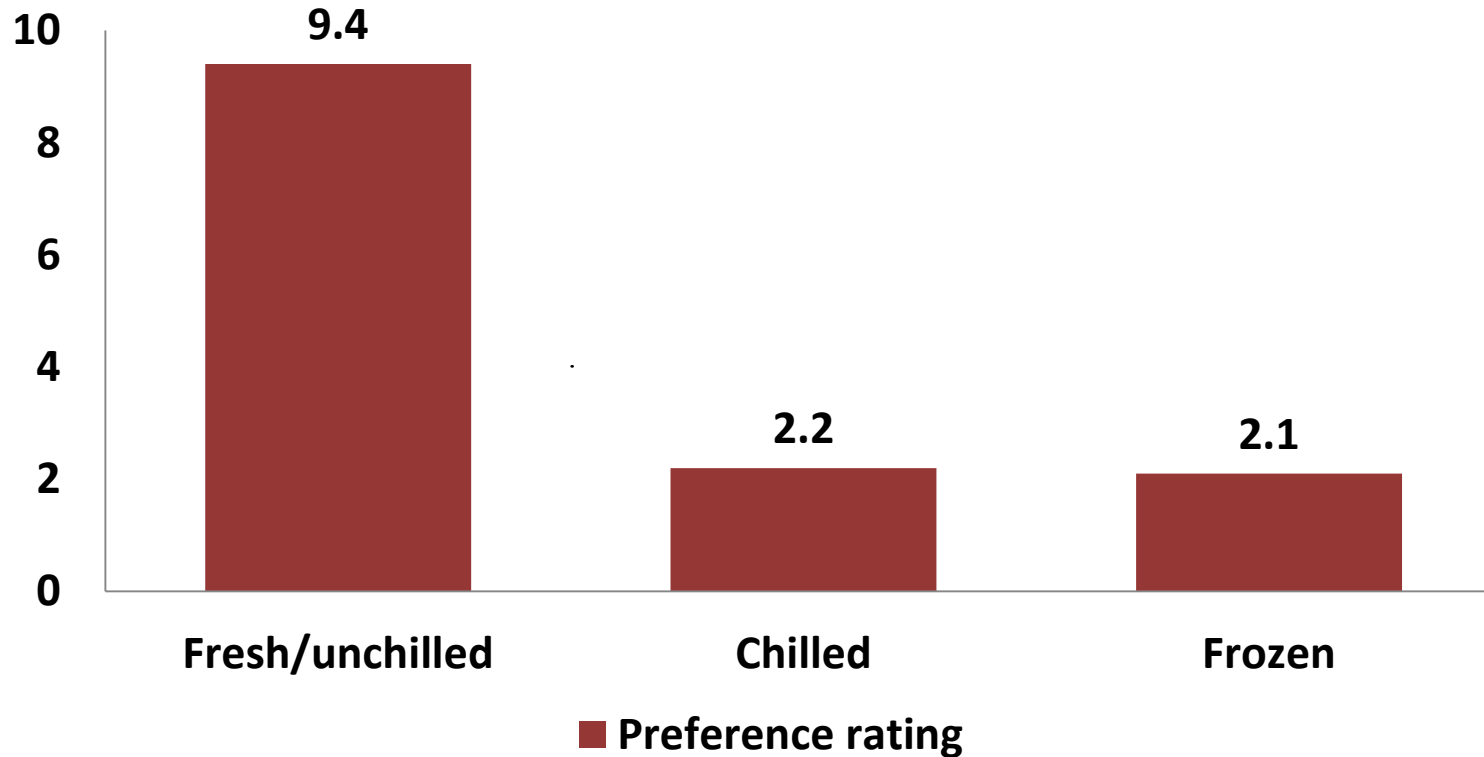
Region	2002	2004	2006	2008	2010	2012
Red River Delta	11.5	12.5	13.8	13.0	16.0	12.8
North East	10.1	12.2	13.4	11.1	16.5	12.6
North West	7.0	7.4	8.9	7.9	12.3	7.3
North Central Coast	7.1	8.6	9.2	7.9	11.5	8.9
South Central Coast	5.9	6.9	7.5	7.1	9.3	7.8
Central Highlands	7.0	8.0	9.4	8.3	11.2	9.6
South East	9.9	13.2	14.6	12.3	12.2	10.6
Mekong River Delta	7.7	9.6	11.9	8.7	11.5	9.3
Whole country	9.0	10.6	12.0	10.3	13.1	10.3

Source of data: Vietnam Household Living Standard Surveys 2002, 2004, 2006, 2008, 2012.

# Demand for pork

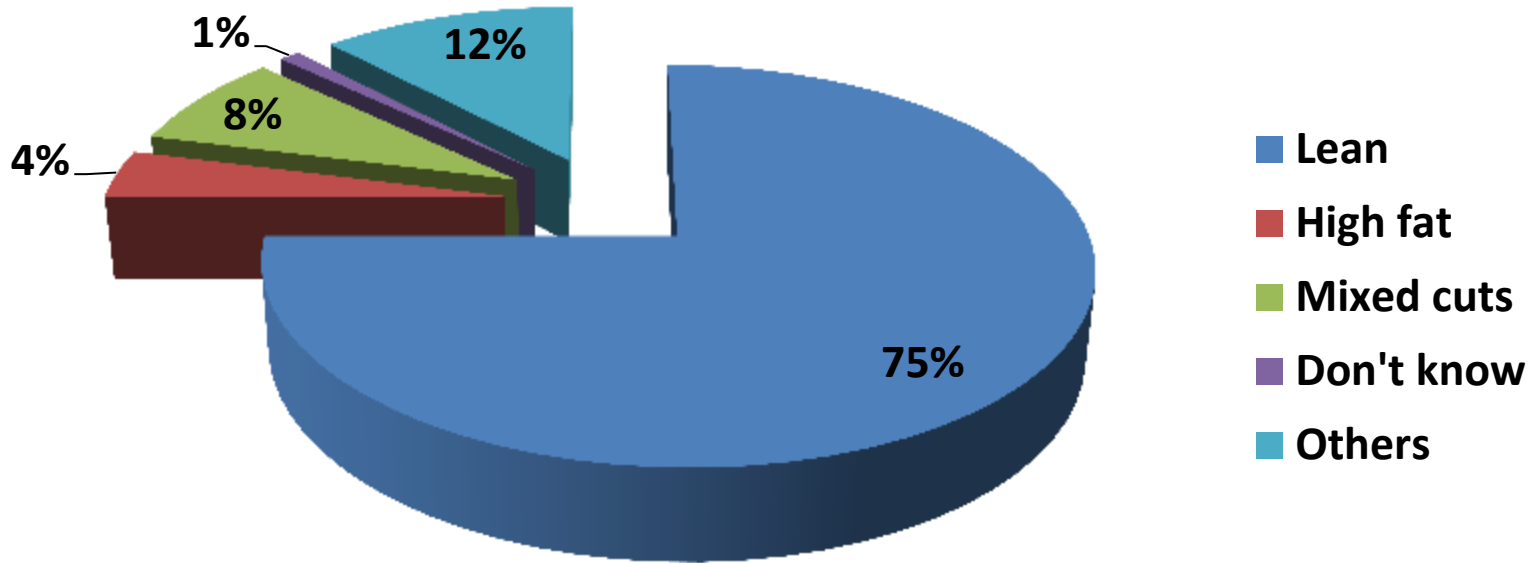
- Strong preference for fresh, unchilled pork; natural protection from imports
- Preference for lean pork
- Fresh pork demand is inelastic to own price
- Poultry, eggs, and seafood are complements to fresh pork
- Pork demand rises with income

# Preference rating for pork



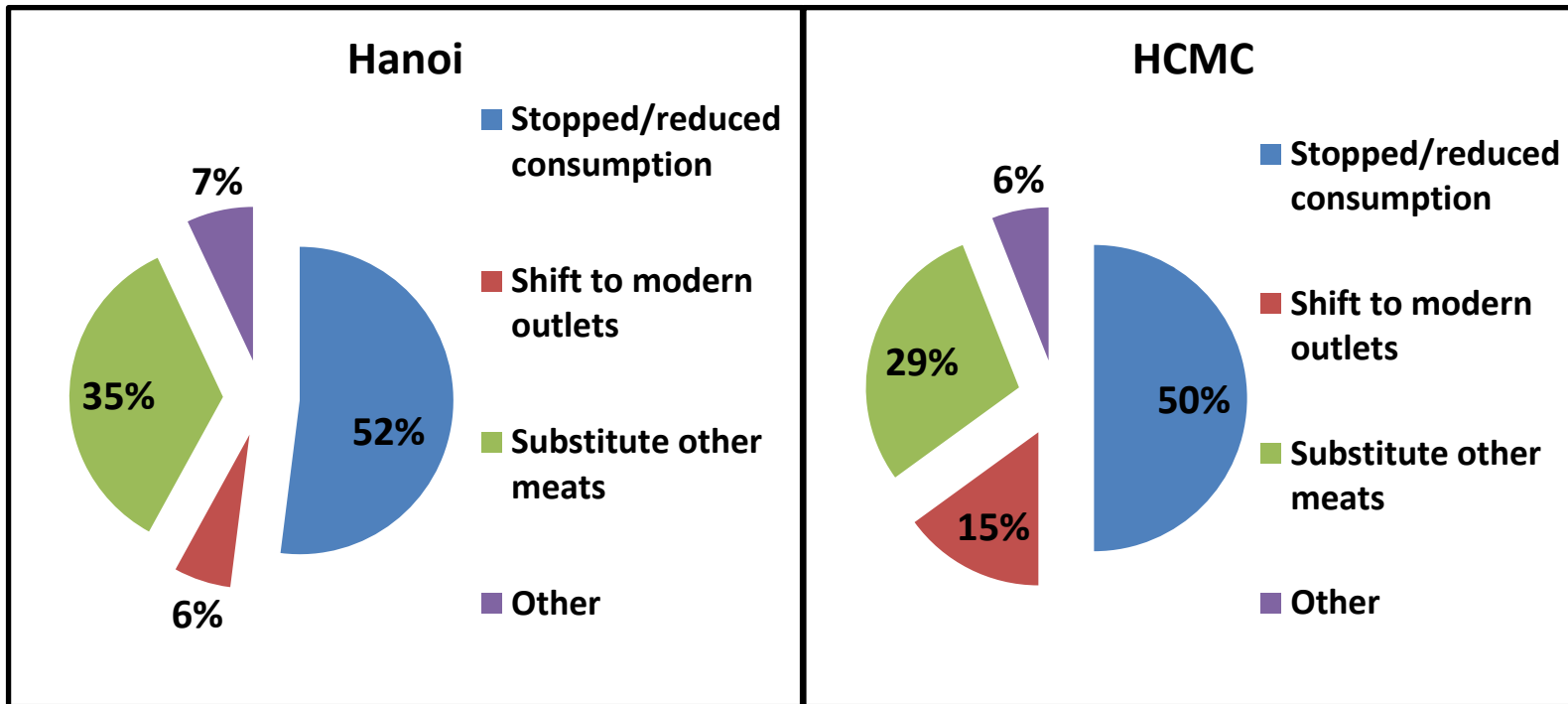
**Vietnamese consumers have a strong preference for fresh, unchilled pork; this provides natural protection from imported pork.**

# Changing nature of demand for pork



The majority of Vietnamese consumers indicated preference for lean pork compared to other types of pork. No significant change in lean meat consumption from 10 years ago, but significant reduction in consumption of high fat meat from 10 years ago.

# Consumer response to pig disease outbreak



- About half of consumers either stop or reduce pork consumption; about one-third substitute other meats.
- More consumers in HCMC than in Hanoi shift to modern outlets for pork.

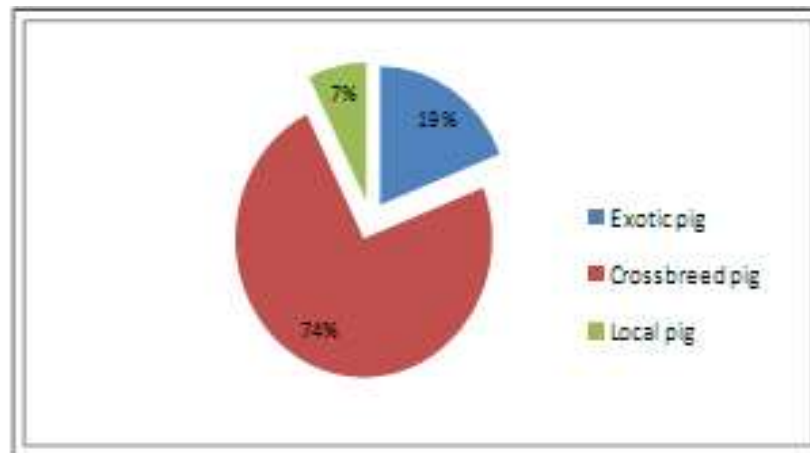
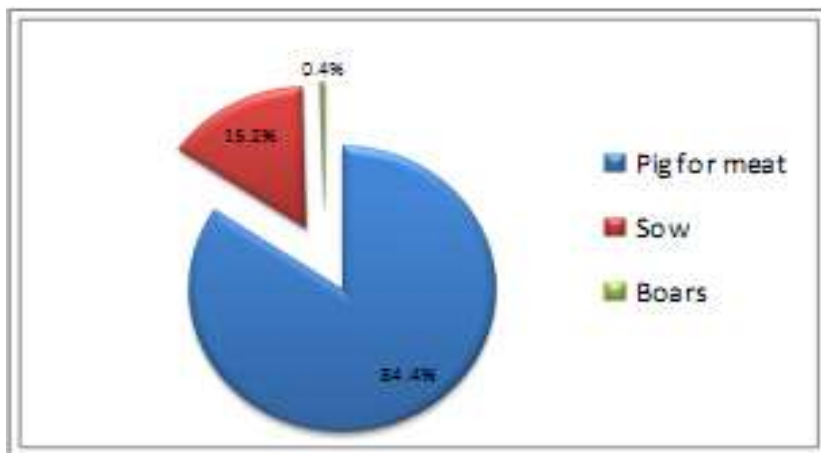
# Average ranking of major concerns about meat safety

	HN	HCMC	All
Diseases of livestock	1.2	1.1	1.2
Hormone used in animals	2.8	3.0	2.9
Antibiotic use	3.0	2.9	3.0
Hygiene in market outlet (including meat seller)	3.8	2.6	3.2
Hygiene in slaughtering	3.9	2.8	3.4
Concentrate feeding of animals	3.7	4.1	3.8
Other	3.5	3.1	3.2

**Animal diseases tops the list of major concerns of urban consumers about meat safety.**

# Pig Genetics

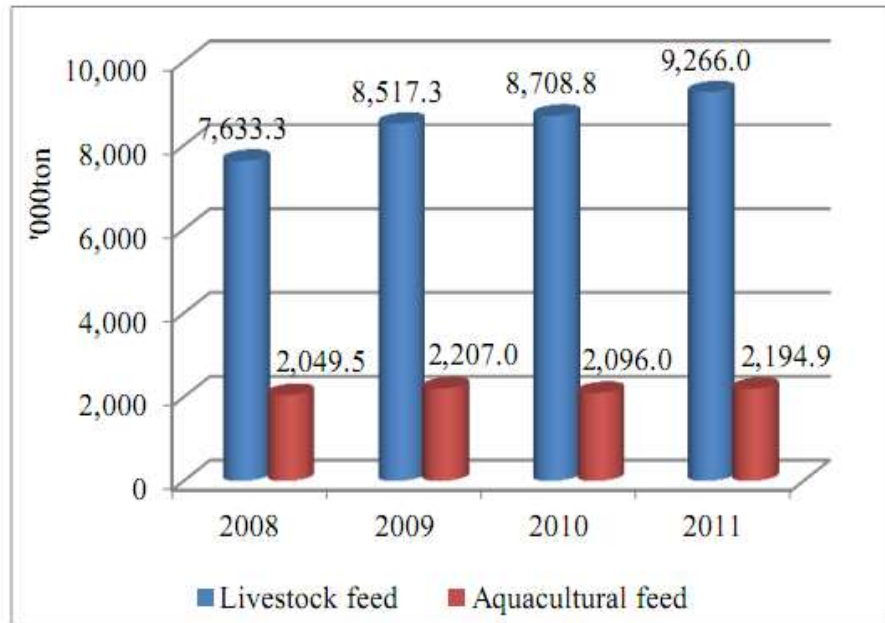
- Institutions, agents involved
  - Public (MARD, Research Institutes, universities)
  - Private (Private companies)
  - NGOs
- Composition of pig herd by type and breed in Vietnam in 2010



- The AI method had significant contribution to the quality improvement of national pig herd, pig productivity and efficiency of pig sector due to its advantages.
- **Still some constraints of AI method:** Small numbers of boars in AI facilities; the limited accessibility to AI sources of pig producers as well as the lack of pig farmers' knowledge on AI; and the less educated AI technicians and veterinarians.



# Animal Feed



Livestock and aquacultural feed production in Vietnam, period 2008-2011

## Constraints and challenges:

- (1) The lack of a long term development of raw material areas for feed processing industry;
- (2) High unit cost of feed production and low technology;
- (3) A few research on this issue (public investment)

## Importation of raw materials for livestock and fishery industrial processing feeds in Vietnam period 2010-2012.

	2010		2011		2012	
	Quantity	USD (bill)	Quantity	USD (bill)	Quantity	USD (bill)
<b>Tổng</b>	7,77	2,68	8,91	3,68	8,87	3,99
<b>TA giàu năng lượng**</b>	3,15	0,75	3,86	1,24	4,35	1,32
<b>TA giàu đạm**</b>	4,41	1,84	4,80	2,34	4,29	2,01
<b>TA bổ sung</b>	0,21	0,10	0,25	0,11	0,23	0,65

# Animal Health

- Dominantly led by public sector which is systematically organized from national up to commune levels .
- Private animal health sector also plays an important role in providing animal health services; regulated and monitored by the public sector.
- Major constraints to animal health services delivery:
  - Diagnostic capacity
  - Timely transmission of information to local Vet workers
  - Treatment of infected pigs
  - Quarantine
- Lack of effective national coordination that links the central veterinary services with the field is most important limitation.
- Lack of standardized knowledge and skills from field veterinarians and veterinary para-professional staff and issues with stakeholder compliance (particularly farmers) also hinders progress.

# FMD in pigs in Vietnam, 2007-2012

Year	Number of affected provinces	Number of affected districts	Number of affected sub-districts	Number of infected pigs	Number of culled pigs
2007	24	71	172	10,851	10,763
2008	5	9	12	67	39
2009	16	23	35	499	429
2010	14	30	39	1,670	836
2011	35	239	1,809	42,134	31,993
2012	12	29	59	2,979	1,222

# PRRS in Vietnam, 2008-2012

Year	Number of affected provinces	Number of affected districts	Number of affected sub-districts	Number of infected pigs	Number of culled pigs
2008	25	99	953	308,901	299,988
2009	N/A				
2010	N/A				
2011	15	49	264	42,317	26,519
2012	28	95	453	90,688	51,761

Source of data: MARD annual reports, 2008 -2012.

# Other types of pig diseases in Vietnam

- Classical swine fever (CSF):
  - 2011: 1,613 infected; 1,218 died or culled
  - 2012: 4,375 infected; 1,843 died or culled
- Porcine high fever disease (PHFD)
  - 2008: >300,000 carcasses disposed in 26 of 63 provinces
- Swine influenza (H1N1): in Hanoi slaughterhouses, seroprevalence peaked in winter 2009 at 55.6%

# Knowledge System

- Agricultural extension system in Vietnam is mainly based on a top-down approach. Agricultural extension system is step-by-step developed from central to local levels associated with agriculture sector, farmers and rural development.
- However, there was still higher percentage of budget used for the agricultural extension activities and services on crop cultivation (32%) compared to that in promoting livestock production (22%) at central level;
- Human resources are lacking in both quantity and quality;
- The specializations of extension workers do not yet meet the requirements for helping farmers achieve the potential productivity levels;
- Extension has focused mainly on hunger alleviation and poverty reduction. It has not yet really developed to provide support in the processing and marketing of products;
- The system of monitoring and evaluation of extension activities is still lacking and working improperly.

# Credit services

- Presently, the current rural credit sector in Vietnam is delineated into three sectors: formal, semi-formal and informal;
- The major source of credit that is accessible to farmers is through the Vietnamese banking system via a diversified system of specific banks and credit institutions.
- Smallholders still face many difficulties in gaining access to state-owned credit programs because of their inability to meet the screening requirements and borrowing procedures.

# Pork processing

- Small scale, traditional products: Competitive
  - Steamed meat (head meat), tail, leg (trotter), and intestinal tracts (small and large intestinal tract), blood sausage, liver, lung, gall bladder, stomach;
  - Ear meat is steamed, sliced, and mixed with special rice powder to make “nem tai”;
  - Pork loaf is made from lean meat (gio lua) and other variations of pork loaf depending on added materials (i.e. lean pork loaf with ear meat);
  - Salted shredded meat (pork floss) is a common product, made from loin;
  - Vietnamese/ Chinese pork sausage is made from intestinal tract, lean meat, fat meat, pepper, and other spices;
  - Roasted pork is made largely from belly / shoulder butt, or ham; suckling pig, or whole young pigs.



# Pork processing

- Modern pork products processing:
  - produced by food and meat processing companies in Vietnam, and these include sausage, pate, ham, canned meat, salted pork, pork loaf, fermented pork products, meat ball, and others;
  - development of meat processing industry in Vietnam due to investment by large companies (e.g. Vissan, C.P), the expansion of modern retail distributors (e.g. Big C, Coop mart, Hapro mart), and changing life style of Vietnamese consumers.

# The policy environment

- ❖ Livestock Development Strategy to 2020 (2008, updated in 2010, MARD)
  - Underscores importance of food safety issues in livestock
- ❖ Food Safety Law (2011)
  - Mandates assured food safety in both domestic and export products (meat, fish, fruits, vegetables)
  - Delegates three leading bodies responsible for food safety: MOH, MARD, Ministry of Industry and Trade
- ❖ Restructuring of the Agricultural Sector Plan (2013)
  - Improving value added of agricultural products through improved food safety, among others.

# Livestock Development Strategies and Activities

- Expanding the share of livestock production, when compared to total agricultural production to 42% in 2020 (the current share is between 26% and 28%);
- Increasing meat and poultry production to 5.5 million tones by 2020 (in which, 63% is pig meat), when per capita consumption will have reached 56kg, with commercially produced meat accounting for 40% of production in 2020;
- Establishing standing inventories of 12.5 million beef cattle and 35 million pigs by 2020;

# Livestock Development Strategies and Activities

- Pig production: fast increase in the scale of exotic pig herd following the industrial/intensive farm model;
- Promoting the development of the feed processing industry in terms of expanding production scale, using modern technologies, improving feed quality, and reducing unit costs of feed produced. Total domestic industrial feed output is expected to increase by a 7.8%/year and reach 19 million tons by 2020.
- Building the appropriate scales for slaughtering and processing units having modern technologies, advanced facilities associated with the intensive livestock production areas, and diversifying processed livestock products in order to satisfy consumer demand.

# Food Safety

- Safety concerns are growing as pork is a potential source of several economically important microbial pathogens, including *Clostridium perfringens*, *Staphylococcus aureus*, *Listeria monocytogenes*, *Campylobacter jejuni*, and *Salmonella*;
- These biological hazards can occur at any point along the pork supply chain, from production through processing, and finally at the end consumer, particularly for consumers who prefer to buy freshly slaughtered meat from traditional wet markets.
- There are a number of factors influencing quality of food safety control practices such as:
  - (1) Poor quality of infrastructure for food safety management (laboratory equipment),
  - (2) Weaknesses in the food safety surveillance system,
  - (3) Lack of resources for food safety management,
  - (4) Low level of awareness of food safety,
  - (5) Weak capacity in risk assessment, and
  - (6) Weak coordination among actors in food chain.

# Hygiene in slaughterhouses



# Safety in meat processing



# Competitiveness

- If smallholder pig producers can produce at lower per unit cost than large producers in the fresh pig meat market, then they will have a chance to remain competitive in that market;
- Smallholder pig producers in Vietnam are competitive in producing pork that meets the demand requirements of the fresh meat market;
- Smallholder pig producers still use a large proportion of own-produced feeds such as crop by-products and forages;



# EXTERNALITIES

- The development of livestock sector in general, and pig production in specific have negative impacts on environment in terms of waste management, feed competition and impact on ecosystem health, and GHG Emission.
- It also has some public health concerns such as nutritional impact and food safety when consuming pork (nutrition, food security)



# Issues and prospects for sustainability

- Competitiveness
  - Productivity gap
  - Cost efficiency
  - Feed use efficiency
- Externalities from intensification
  - Waste management and GHG
  - Land use and NRM
  - Public health and nutrition
- Policies and institutions
  - Industrialization and geographic concentration
  - Access to services
  - Markets

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