



The Uplands Program

Research for Sustainable Land Use and Rural Development
in Mountainous Regions of Southeast Asia



Characterisation of smallholder pig production systems in mountainous areas of North Vietnam

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Background

NAH - VIETNAM

Differentiation of the mountainous regions of North Vietnam

Geographic location	Mountain valleys, areas near town	Upland regions, hilltops
Population density	High	Low
Land pressure	Higher	Lower
Infrastructure	Better developed	Less developed
Intensity level of pig production	Semi-intensive to intensive	Extensive
Predominant pig genotypes	High-yielding genotypes: Vietnamese improved + imported	Low-yielding genotypes: Vietnamese local
Replacement process of local pig breeds	Almost completed	Ongoing



Objectives

Assess the suitability of local pig breeds and high-yielding improved pig genotypes for smallholders in the research area Son La province

Identify potentials and limitations for future development of existing pig production systems

Comparison:

Vietnamese improved breed “Mong Cai” in a demand driven production system

vs.

Vietnamese local breed “Ban” in an resource driven production system

Integrate Ban pig in a breeding/ marketing program in the resource driven system?



Material and methods

NAH - VIETNAM

Fieldwork: 2 - 7/ 2001; 1 - 8/ 2002

Situation analysis

4 villages, 2001

Household interviews

64 hh, 4 repetitions, 2001/2

Communication tools

following PRA approach
2001/2

Performance recording

Weighing piglets
731 ind. measurements
4 repetitions, 2001/2

Suggestions for improvement

Training workshop for farmers 2002
Report to local authorities

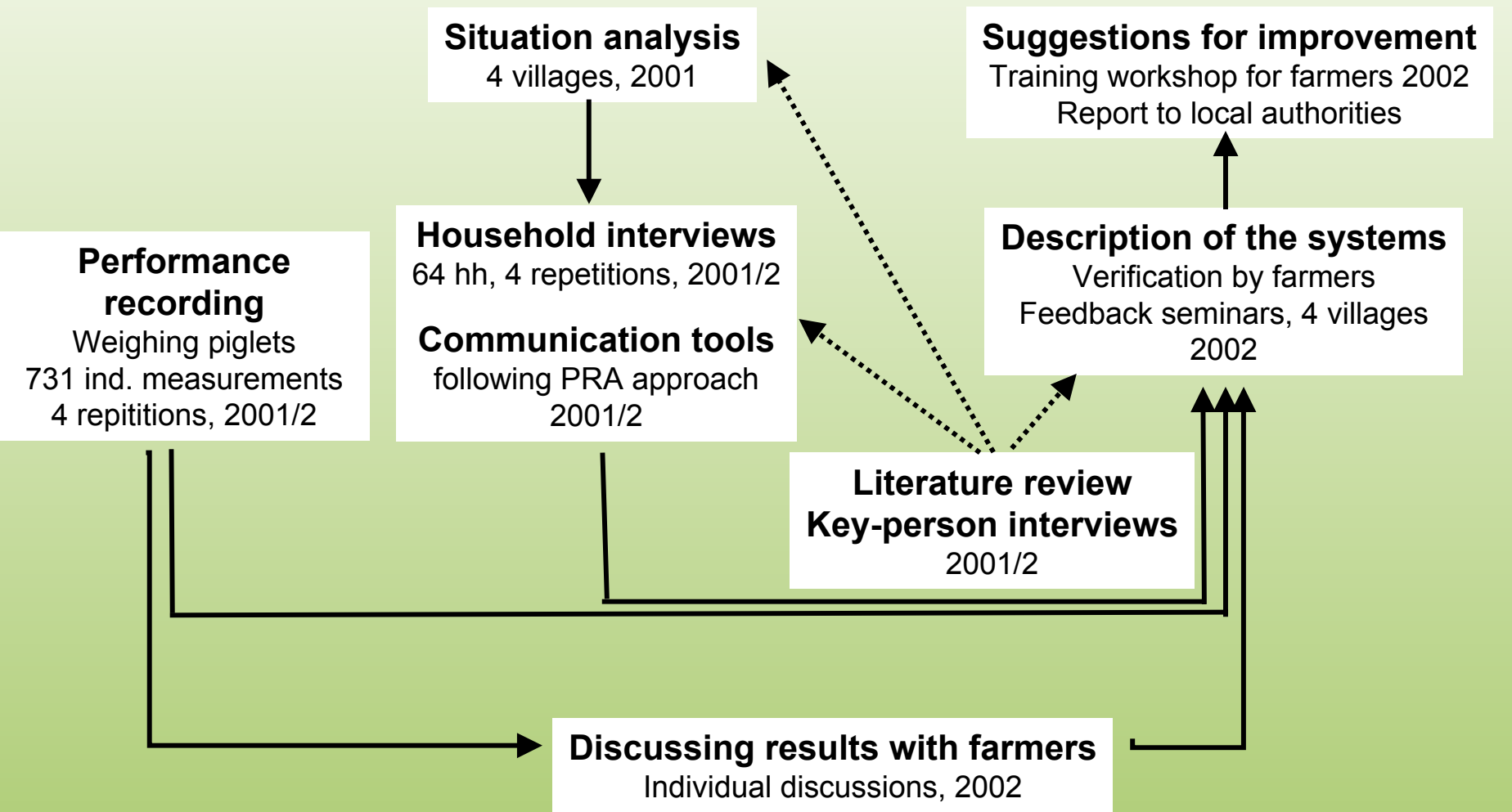
Description of the systems

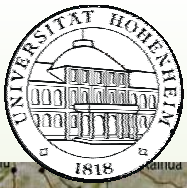
Verification by farmers
Feedback seminars, 4 villages
2002

Literature review
Key-person interviews
2001/2

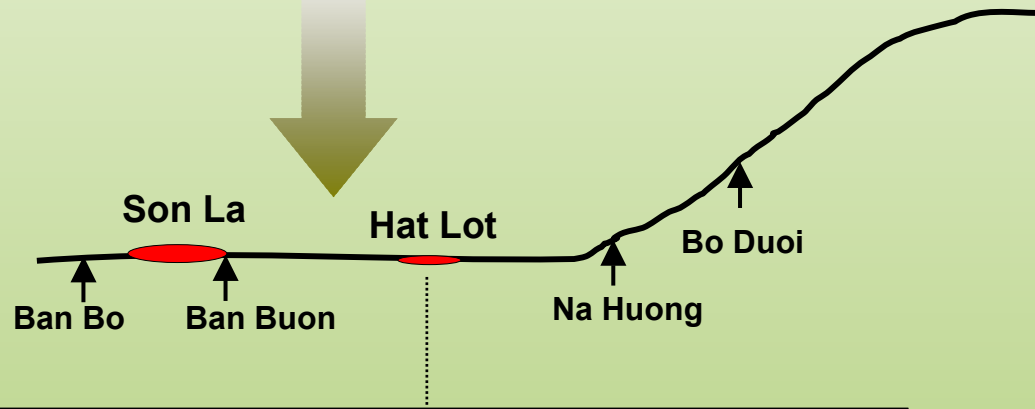
Discussing results with farmers

Individual discussions, 2002





Study location



Geographic location	Mountain valley Near to town		Hillside Far from town	
Production system	Demand driven		Resource driven	
Predominant pig breed	Vietnamese improved Mong Cai + MC crossbreds		Vietnamese local Ban	
Interviewed households (n)	17	16	16	15

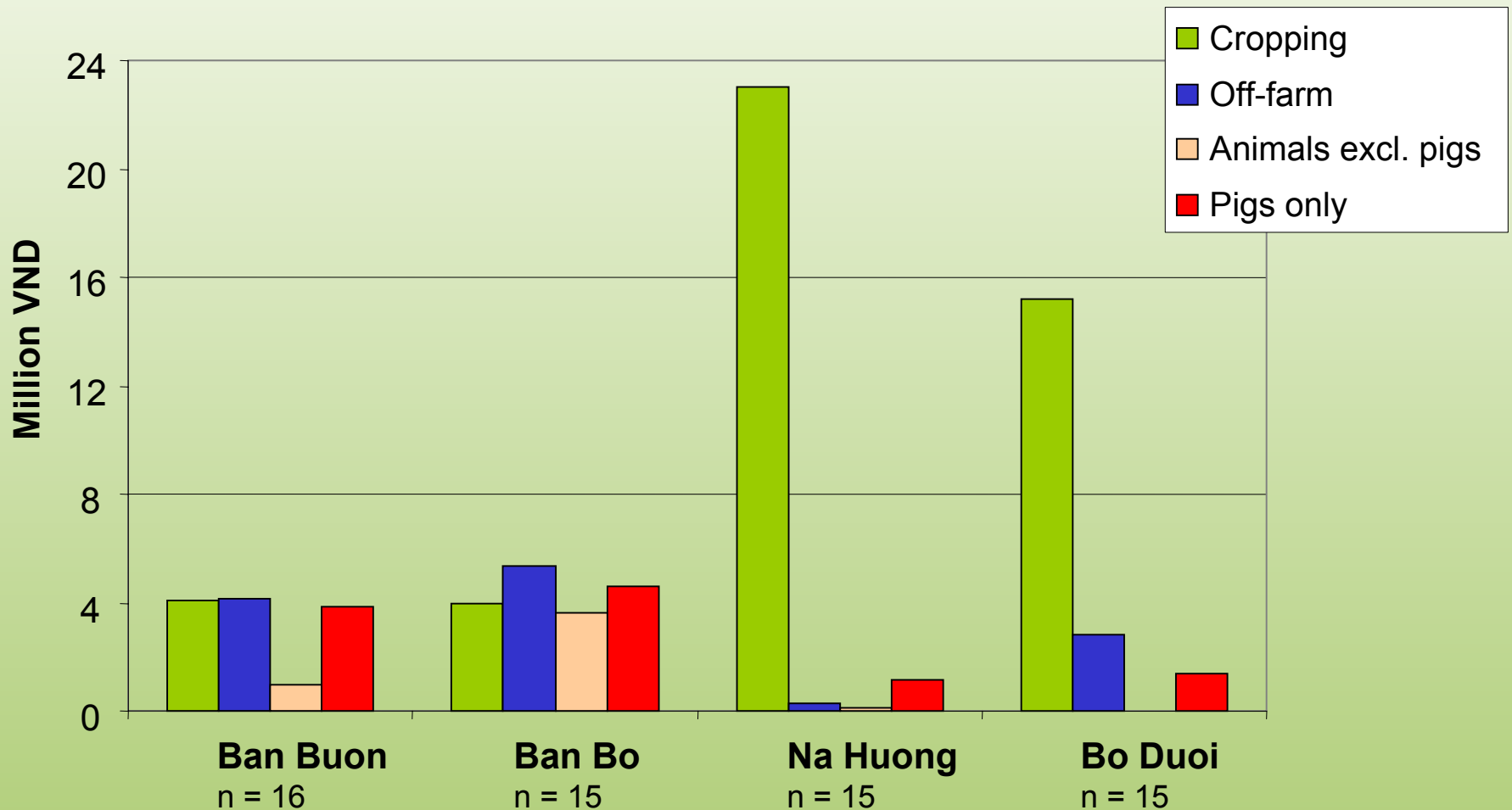


Household cash revenue

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Average cash revenue/ hh x year (2001/2);

weighted by percent of farmers getting the respective type of revenue/ off-farm income



Exchange rate 2002: 15,500 VND ~ 1 USD

Household interviews



“Why do you keep pigs?”

MAH - VIETNAM

Production system	Demand driven		Resource driven	
Village	Ban Buon	Ban Bo	Na Huong	Bo Duoi
Interviewed farmers (n)	15	15	15	15
Answers (n)	21	15	34	33
Reasons given by farmers (%)				
Get income	71.4	93.3	26.5	42.4
Saving	13.3	0.0	0.0	0.0
Pigs for slaughter, pork for special occasions	4.8	0.0	61.7	48.5
Pay hired workers	0.0	0.0	11.8	3.0

Further functions of pigs:

- **Manure**
- **Pigs as gift**
- **Pork consumption**
- **Tradition**

Reproductive performance of currently kept sows

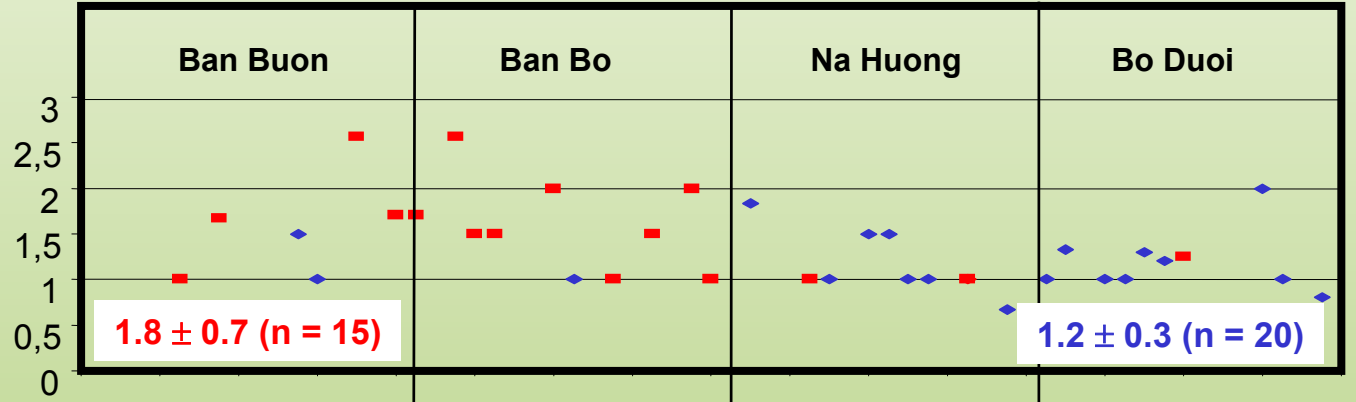


■ **Mong Cai**

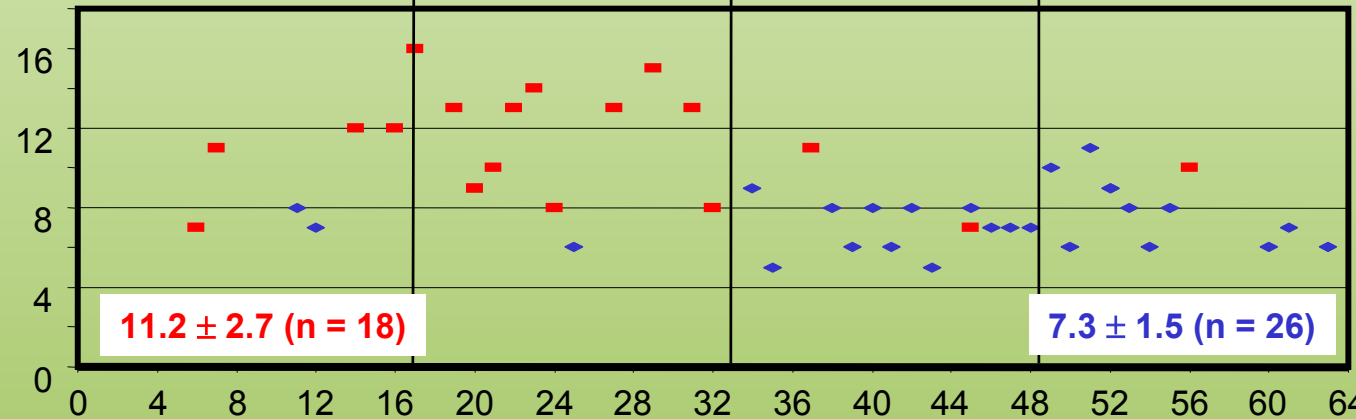


◆ **Ban**

Litters/ year



Piglets born alive/ litter



Ban



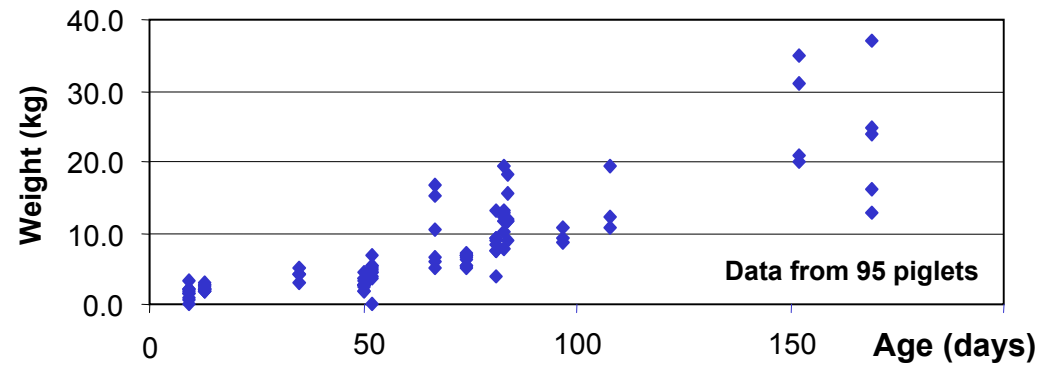
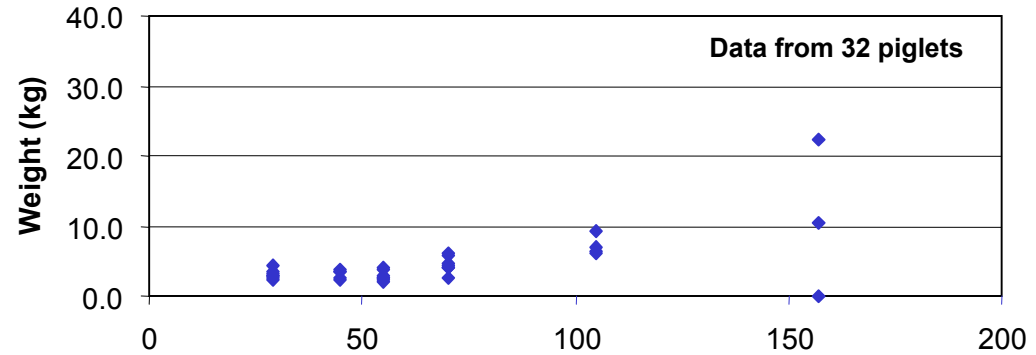
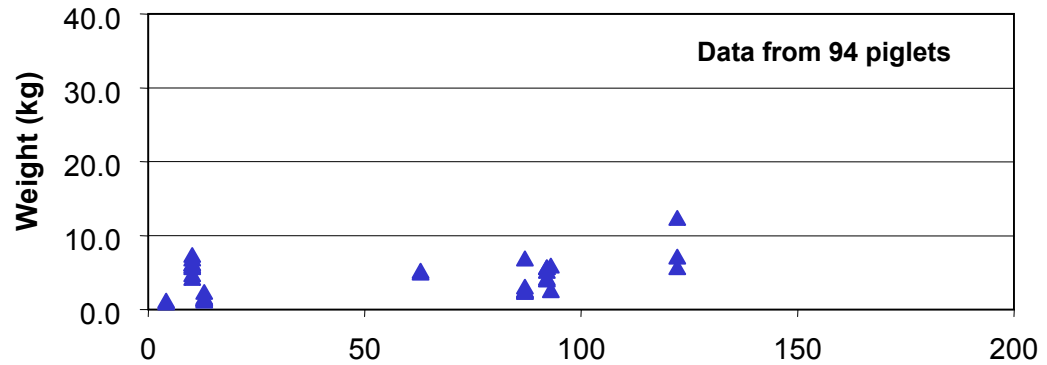
LW x Ban

LW = Large White

LW x MC



MC = Mong Cai

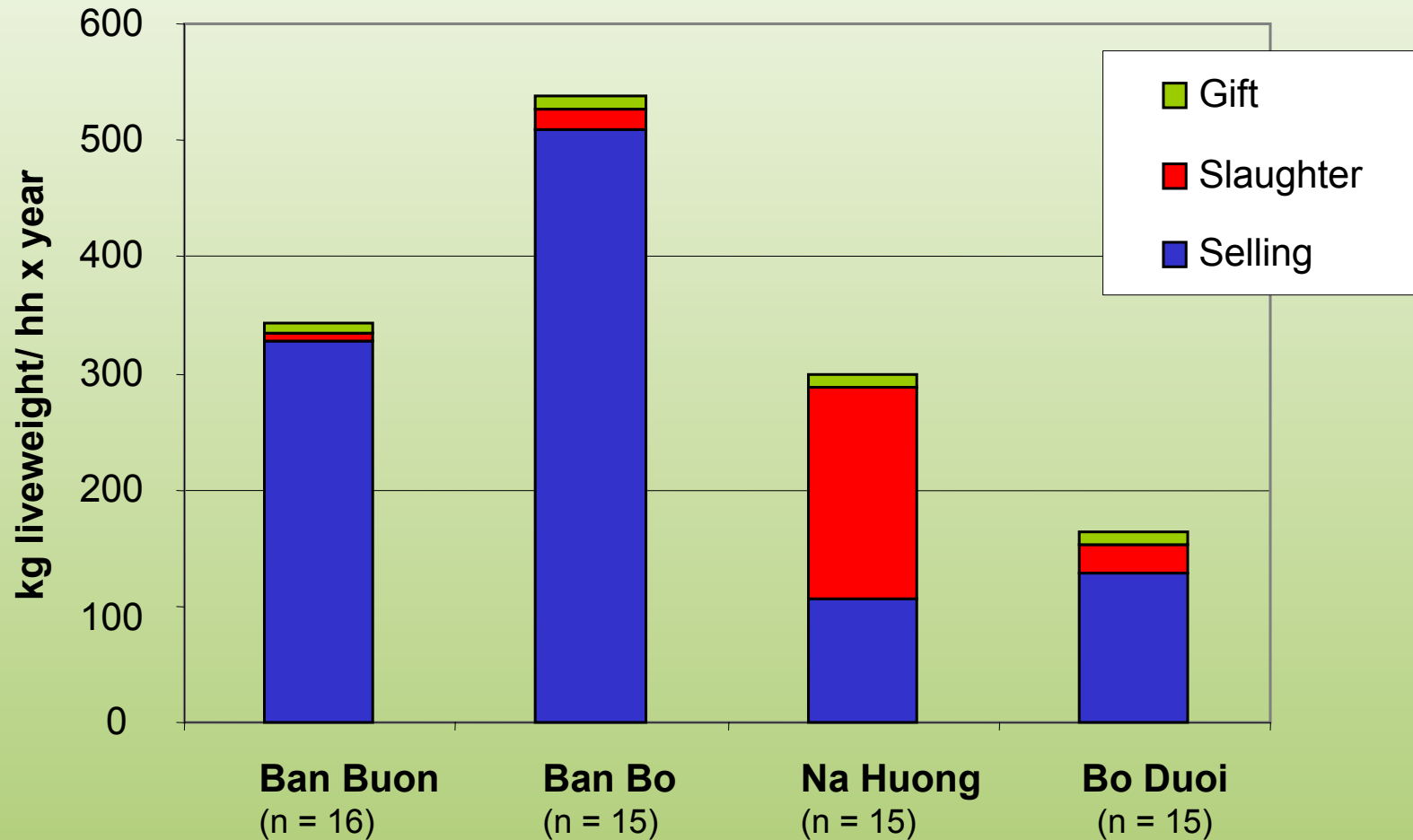




Extraction from the pig herd

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Average pig extraction/ hh x year;
weighted by percent of households selling/ slaughtering/ giving pigs as a gift

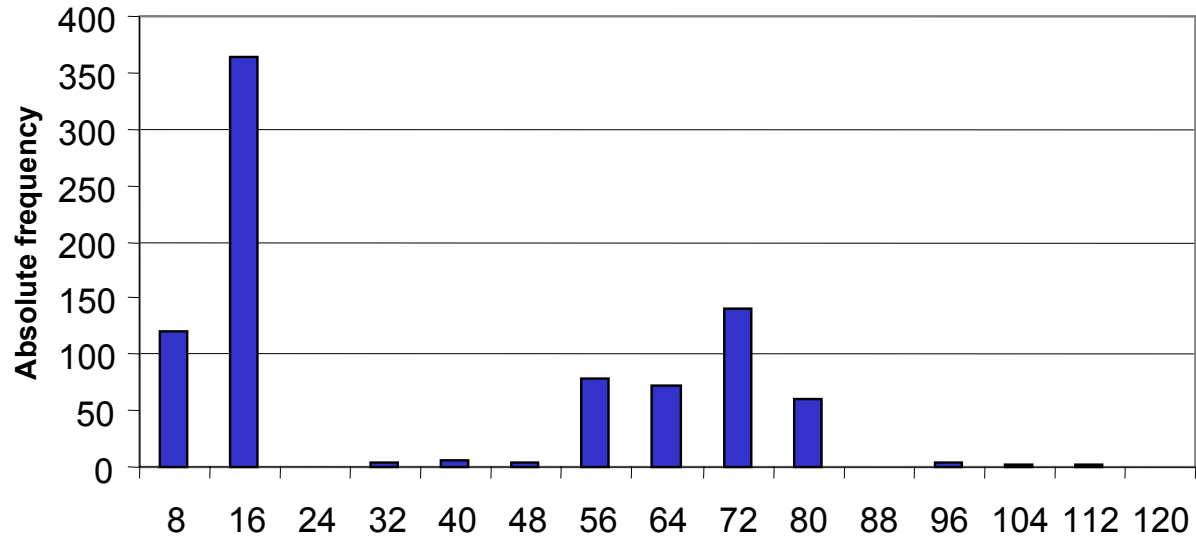




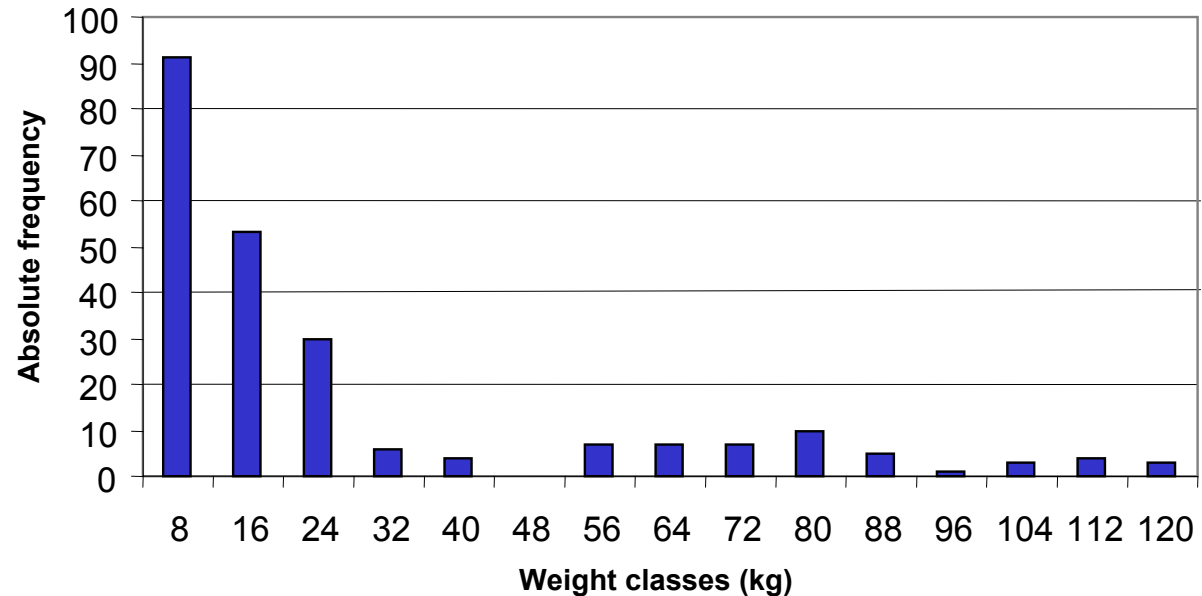
Weight distribution of sold pigs

NAH - VIETNAM

Demand driven system
n = 862 sold pigs



Resource driven system
n = 231 sold pigs





Feeding management in times of abundance and shortage

NAH - VIETNAM

	Demand driven	Resource driven
Concentrate feed	Higher amount/ day x pig Regular purchase Purchase by more farmers, credits	Lower amount/ day x pig Irregular purchase Purchase by more farmers, but still less than in demand driven system, no credits
Maize	Higher amount/ day x pig Produced maize mainly for feeding Buy additional maize, credits	Lower amount/ day x pig Produced maize mainly for selling Replace by vegetable, cassava, rice bran
Cassava	Lower amount/ day x pig Same or smaller amount/ day x pig Purchase by few farmers	Higher amount/ day x pig Increase amount/ day x pig > replacem. No purchase

- Same feed components
- Different share of components in the ration
- Different feeding management in times of shortage

Blue: Feeding management in times of feed abundance Red: Feeding management in times of feed shortage

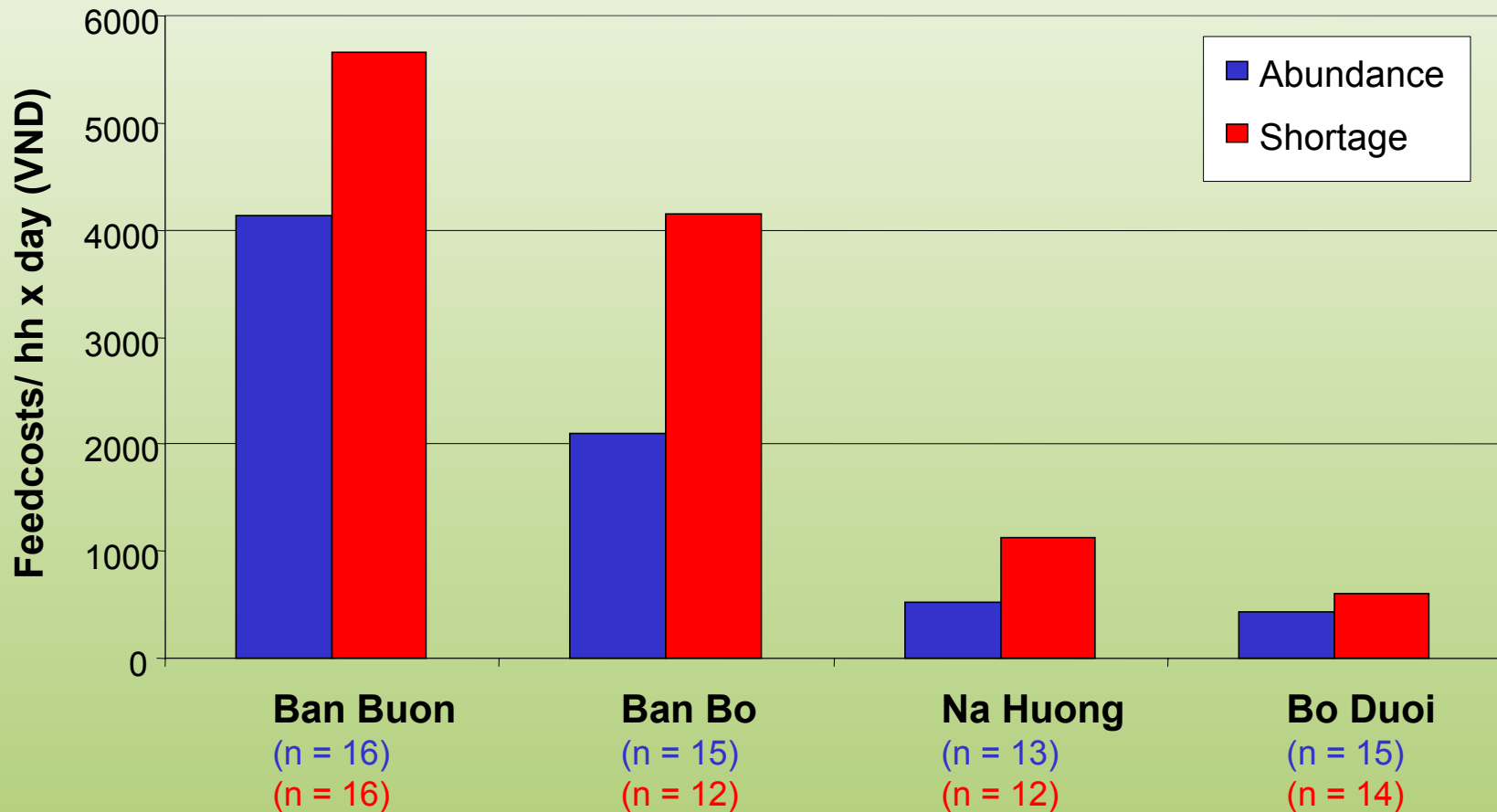
Household interviews, communication tools



Feed costs in times of abundance and shortage



Average feed costs/ hh x day; for times of **relative feed abundance** and **relative feed shortage**; weighted by percent of households buying feed





Appreciation of the local Ban breed

NAH - VIETNAM

Production system	Demand driven	Resource driven
Sample	23 Non-Ban keepers	29 Ban keepers
Keep Ban, no incentives required (%)	0.0	51.7
Keep Ban, but higher performance or economic incentives required (%)	91.3	44.8
Keep Ban under no circumstances (%)	8.7	3.4

“Output from Ban too low“

Prospects for Ban rather negative



“Input in non-Ban too high“

Prospects for Ban rather positive

Household interviews
Following modified WTA approach
(WTA = Willingness to accept compensation)



Conclusions

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Smallholder pig production

- Demand driven system: Income generation
- Resource driven system: More diversified functions
- Differences in production conditions and resource availability

⇒ **System-adapted development strategies required**

Pig genotypes

- Different production performances
- Kept under different management strategies

⇒ **Production efficiency of genotypes in two systems not yet fully assessed**

Local pig breed “Ban”

- Appreciated by farmers in resource driven system
- Increasing market-orientation in resource driven system: Further role doubtful

⇒ **Special breeding and marketing strategy for local Ban breed required**



Acknowledgements

NIAH - VIETNAM

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