Set up "On Farm Performance Testing Schemes" as a component of village breeding programs for pigs in North Vietnam

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- Mountainous regions of North Vietnam:

    * cropping activities increasingly limited by high land pressure

    * extension of livestock husbandry by smallholders

- Low/unsteady resource availability:

    * intensification possibilities limited

    * improve production efficiency through improved resource utilisation

    * husbandry: need for sustainable breeding/management programs
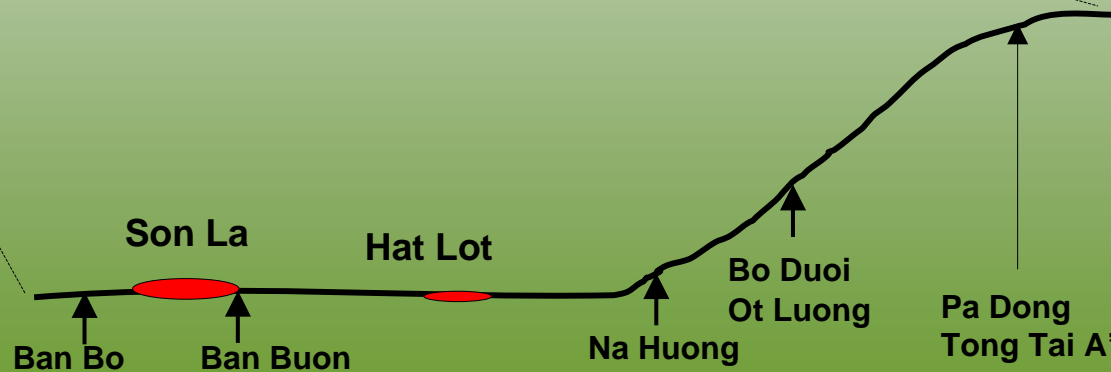

Research objectives of project D2, SFB 564:

- Identify livestock genotypes making most efficient use of scarce resources

- Develop sustainable village breeding/management programs based on

  those genotypes, for resource poor smallholder system

Ban

Mong Cai

LW x MC

Son La

Hat Lot

Ban Bo

Ban Buon

Na Huong

Bo Duoi
Ot Luong

Pa Dong
Tong Tai A'

| Near town Demand driven | Intermediate location System in transition | Remote location Resource driven |

SEQUENCE OF PROJECT ACTIVITIES

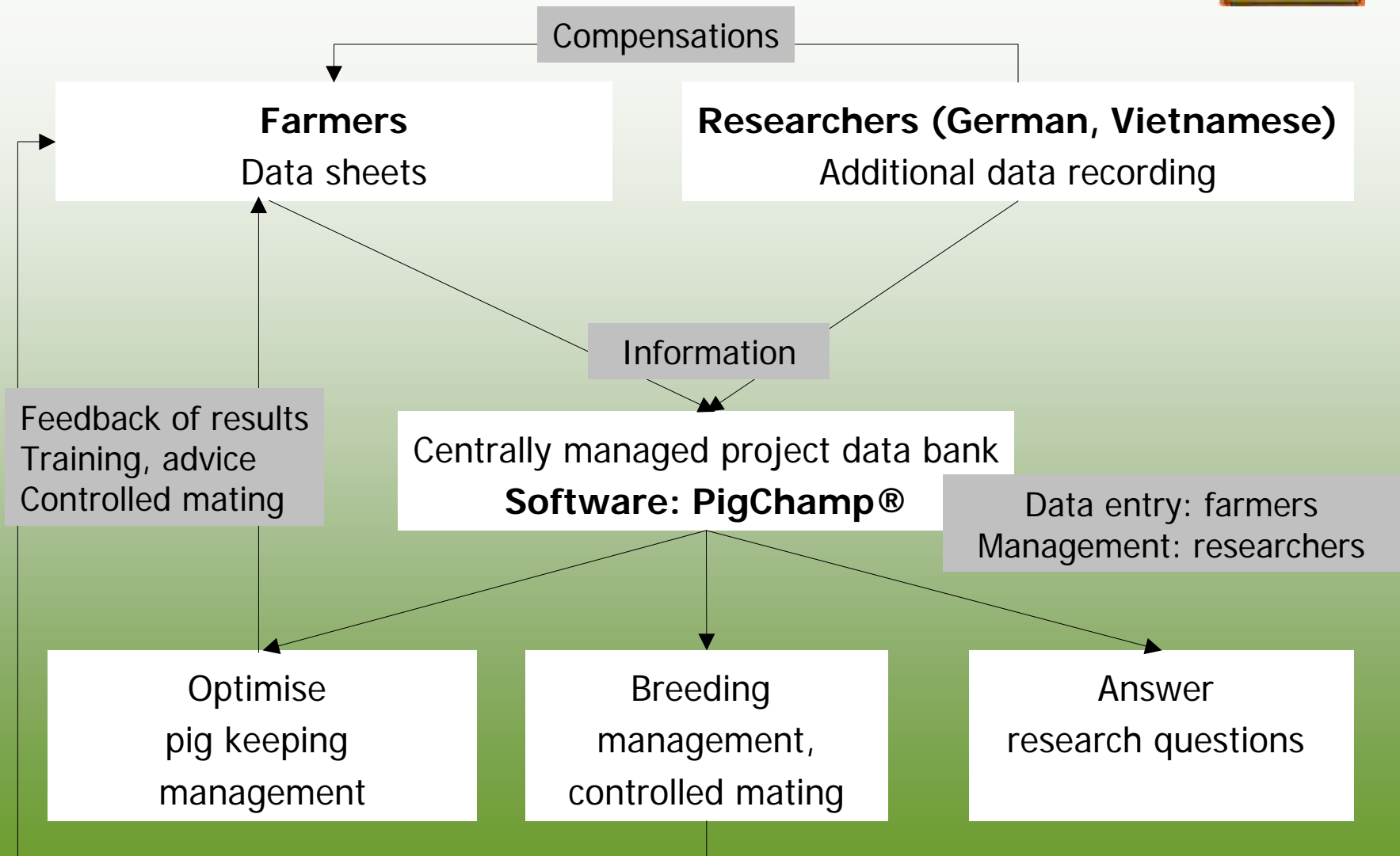| Activities	2001	2002	2003	2004	2005	2006
- Description, evaluation of pig production systems [1, 2, 3]	XXXX	XXXX				
- Set up On Farm Performance Testing Schemes (pilot phase) [3]			XX			
- Comparative performance testing of pig genotypes			XX	XXXX	XXXX	XX
- Identify genotypes with high productive adaptability						
- Set up organisational structures for breeding programs at village level						
- Integrate different pig genotypes in stratified village breeding programs [3]						

OBJECTIVES OF THE PILOT PHASE

- Select appropriate parameters for on-farm performance testing,
  to be used for regular herd monitoring by farmers

- Investigate suitable on-farm research methods

- Design and develop a data recording and management system,
  which combines data recording by farmers and
  data recording and back-checking farmers' records by researchers

- Train farmers in computer use

- Set up long-term stable data flow system between farmers and researchers

DESIGN:
DATA AND RESOURCE FLOW IN OPTS

Compensations

Farmers
Data sheets

Researchers (German, Vietnamese)
Additional data recording

Information

Centrally managed project data bank
Software: PigChamp®

Data entry: farmers
Management: researchers

Feedback of results
Training, advice
Controlled mating

Optimise
pig keeping
management

Breeding
management,
controlled mating

Answer
research questions

DESIGN:
COMPARATIVE PERFORMANCE TESTING

	Demand driven Near town		System in transition Intermediate location		Resource driven Far from town	
Breed of dam	Mong Cai	Ban	Mong Cai	Ban	Mong Cai	Ban
N sows expected	60		60	90	10	40
N matings with selected sire breed						
Mong Cai	60		50	60	10	20
Ban			20	60	10	60
Large White	60		50	60		
Genotype groups of expected offspring for performance testing						
	MC x MC LW x MC		MC x MC B x MC LW x MC	MC x B B x B LW x B	MC x MC B x MC	MC x B B x B

ACTIVITIES IN THE PILOT PHASE

Pilot phase in 2 villages (near town, intermediate location); 4 month

Activity	Details on conducted activities	March	April	May	June
Introduce working concept	Farmers' meetings	XXX			
Data recording	Develop data sheets	XXX	X		
	Distribute data sheets for April, first explanation		XXX		
	Copy filled data sheets, distribute data sheets for next month			XXX	XXX
Feedback results	Develop feedback data sheets, feedback seminars			XXX	
Optimisation	Data sheets, data collection system			X	XXX
Data management	PC course for farmers		XXX	XXX	X
	Set up, management of project data bank			XX	XXX

- **Immediate data recording**

- **Data sheets in Vietnamese**

- **Cover sheet (checklist), 4 data sheets (data tables) on:**

    * Reproduction (heat, mating, birth, litters size, piglet mortality)

    * Off-take (sell, slaughter, gifts), purchase of new animals

    * Disease occurrence, disease prevention + treatment, losses

    * Buying feed (type, amount, prices)

Hãy điền các số liệu về con lợn nái của ông (bà) nếu nó được phối giống:

Ngày phối giống?	Con nái nào?	Con lợn đực nào?		Giá cho mỗi lần phối
		Giống của con đực chọn phối:		VND
		Con đực phối ở bản:		
		Tên của người nuôi con đực giống:		
		Giống của con đực chọn phối:		VND
		Con đực phối ở bản:		
		Tên của người nuôi con đực giống:		

- During on-farm visits

- Back-checking/copying data sheets of farmers

- Additional measurements/recordings:
    * Individual identification of pigs, assessment of body/health condition
    * Body weight, (body measures) of pigs
    * Feeding on test day
    * Farmers' purchase of veterinary products

EXAMPLE OF RECORDED DATA AND POSSIBLE APPLICATION OF RESULTS

Feeding ration for pregnant sows on test day, Ban Buon village (n = 18 sows)

	Min.	Max.	mean
Energy (MJ ME/sow/day)	7.4	64.2	31.1
Protein (g CP/sow/day)	113	691	331
Feed costs (VND/sow/day)*	936	9,652	4,240

* Exchange rate ~ 18,000 VND = 1 €

- Identify feeding below requirements

- Determine feed costs

- Give examples for more suitable rations

- Feedback seminars
- Individual trouble shooting

DATA COLLECTION BY FARMERS - SUCCESS AND PROBLEMS

Village	Ban Buon	Bo Duoi
Households participating in the project (n)	30	28
Households attending the preparatory meeting in March (% hh)	87%	93%
Literate households (% hh) *	100%	85%

* One or more household members literate

DATA COLLECTION BY FARMERS - SUCCESS AND PROBLEMS (cont.)

Village	Ban Buon		Bo Duoi	
	%	n	%	n
Data sheet not filled in	**6.7**	30 [1]	**25.9**	28 [1]
Data sheet completed, but **single events missing**	**33.0**	276 [2]	**30.0**	170 [2]
All events mentioned, but **details of events missing**	**18.3**	792 [3]	**8.3**	496 [3]

[1] n households

[2] n total events recorded

[3] n detail information recorded

PROBLEMS ENCOUNTERED IN THE PILOT PHASE

Data recording by farmers

- Data collection, researchers' visits > time consuming for farmers

- Data collection system compensation-based, farmers unaware of benefits

- Incompleteness of data collected by farmers

Data recording by researchers

- Monthly farm visits > time consuming

- Data collection, control, entry and general management > labour intensive

- Traditional identification system (not functional, not compatible with animal welfare)

Data management system, data flow

- PigChamp® > English software, difficult to handle for farmers

- Farmers' software training lacks behind need for consistent data entry

- Result feedback and training activities irregular, on selected topics only

CURRENT APPLICATION OF OPTS

- Optimisation of successful approach
- Extension of the approach   * total of 4 villages (9/2003)

                                                * total of 7 villages (9/2004)

- Optimisation of data sheets (picture-based sheets)
- Ear-tag-based pig identification system
- Reduction of compensation payments (first step - by 50%)
- Regular, frequent training for farmers; need to improve feedback
- PigChamp® (superior analytical modules); VietPig® (adaptation ongoing)
- Data entry: currently employee, further training of farmers from 10/04 onwards

Current main task: comparative performance testing of pig genotypes, applying successfully implemented On Farm Performance Testing Schemes