

# THE PARADOXES OF CLAM FARMING IN THAIBINH PROVINCE, VIETNAM

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## PROBLEMS

- With over 3,260 km of coastal line and 112 estuaries, Vietnam is the 6th country in the world in terms of the population living in coastal areas. Vietnamese aquaculture average growth rate estimated at over 17% from 2000 with export value of \$6,700 mil in 2015 (VASEP, 2016).
- Vietnam had been ranked as 18<sup>th</sup> position in world risk index ranking in 2014, with the vulnerability index is 52 % (lack of coping capacities 77% and lack of adaptive capacities: 51%) (Mucke et al., 2014).
- Thaibinh province has the largest clam farming area and production among coastal provinces in the North Vietnam (Thaibinh DARD 2014). In period 06-12, clam farming positively contributed to improve the life of farmers in this coastal area. But since 2013, several shocks happened to clam farming sectors which significantly impacted to their livelihood
- Clam farming in Thaibinh area has many special characteristics, which caused several paradoxes in this sector.



## RESEARCH QUESTIONS

- Which are the characteristics of clam farming in Thaibinh province?
- Have those characteristics caused any paradoxes in clam farming in Thaibinh province? If yes, what are those paradoxes and its impacts to the clam farming performance and farmers?
- What are the implications for the intervention from government which could help to eliminate to negative impacts from those paradoxes to the clam farming performance and farmers?

## RESEARCH SITE

**Picture 1: Thai Binh Province**

3 communes located along Thai Binh coastal line, which have the longest history of clam farming

- ★ Thai Do commune
- ★ Dong Minh commune
- ★ Nam Thinh commune

Total area of clam production in some provinces along North coastal line of Vietnam (2013)

- Quang Ninh: 1,000 ha
- Thai Binh: 3,430 ha**
- Hai Phong: 450 ha
- Nam Dinh: 1,710 ha
- Thanh Hoa: 1,200 ha
- Ha Tinh: 200 ha

## METHODOLOGIES

### Data sources for analysis

- Secondary data:** Historical data in reports of loss in clam farming after each shocks in period 2006-2014; annual reports about clam farming performances ( from provincial level to commune level).
- Primary data:** Household survey had been carried out with the sample containing 157 households (randomly selected from 1,310 clam households in 3 communes). The data about the cost, profit of clam farming had been collected to measure the magnitude of damage with respect to mortality rate and loss (period 2006-2014).

### Data analysis methods

Quantitative methods	Qualitative methods
<ul style="list-style-type: none"> <li><b>Mathematical method:</b> The data about the cost, profit of clam farming had been calculated to measure the clam farming performance, the magnitude of damage with respect to mortality rate and loss (period 2006-2014)</li> </ul>	<ul style="list-style-type: none"> <li><b>Time series analysis:</b> to analyze time series data about clam farming in order to find the trends and characteristics of productions activities in this sector</li> <li><b>Ethnomethodology:</b> to define the shocks happened in clam farming in period 2006-2014 and evaluation of farmers about the clam farming risks.</li> <li><b>Comparative methods:</b> to compare and analyze the roles of man and woman in clam farming.</li> </ul>

## RESULTS AND DISCUSSIONS

### Basic characteristics of Clam Farming in Thaibinh province, Vietnam (Time period: 2006-2014)

Figure 1: JUVENILE CLAM RAISING MODEL

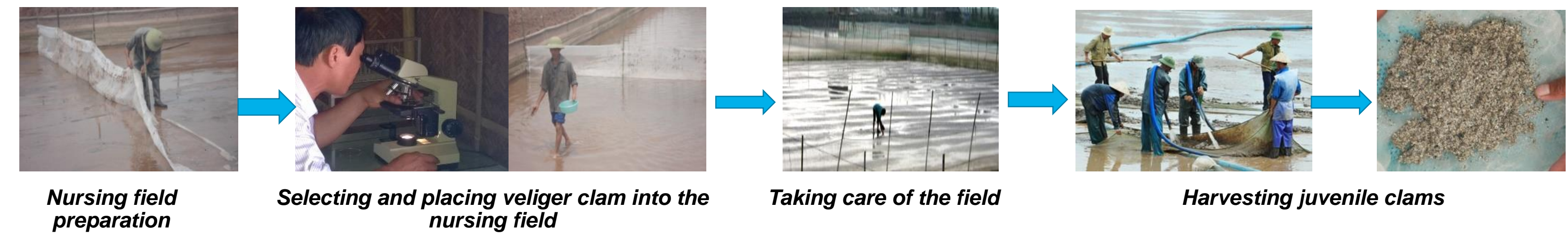
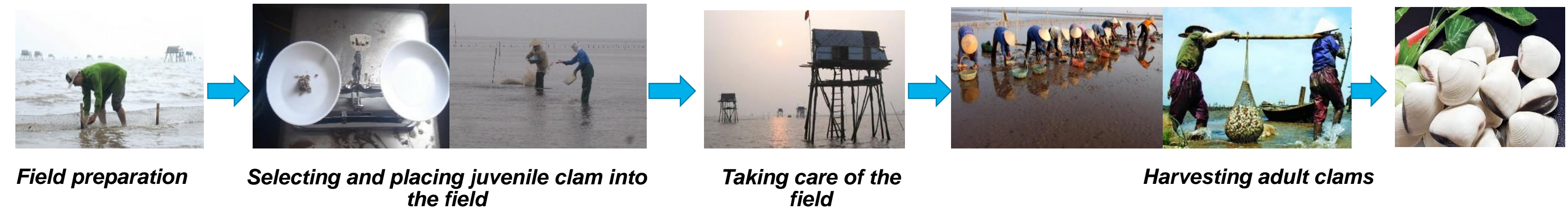


Figure 2: ADULT CLAM RAISING MODEL

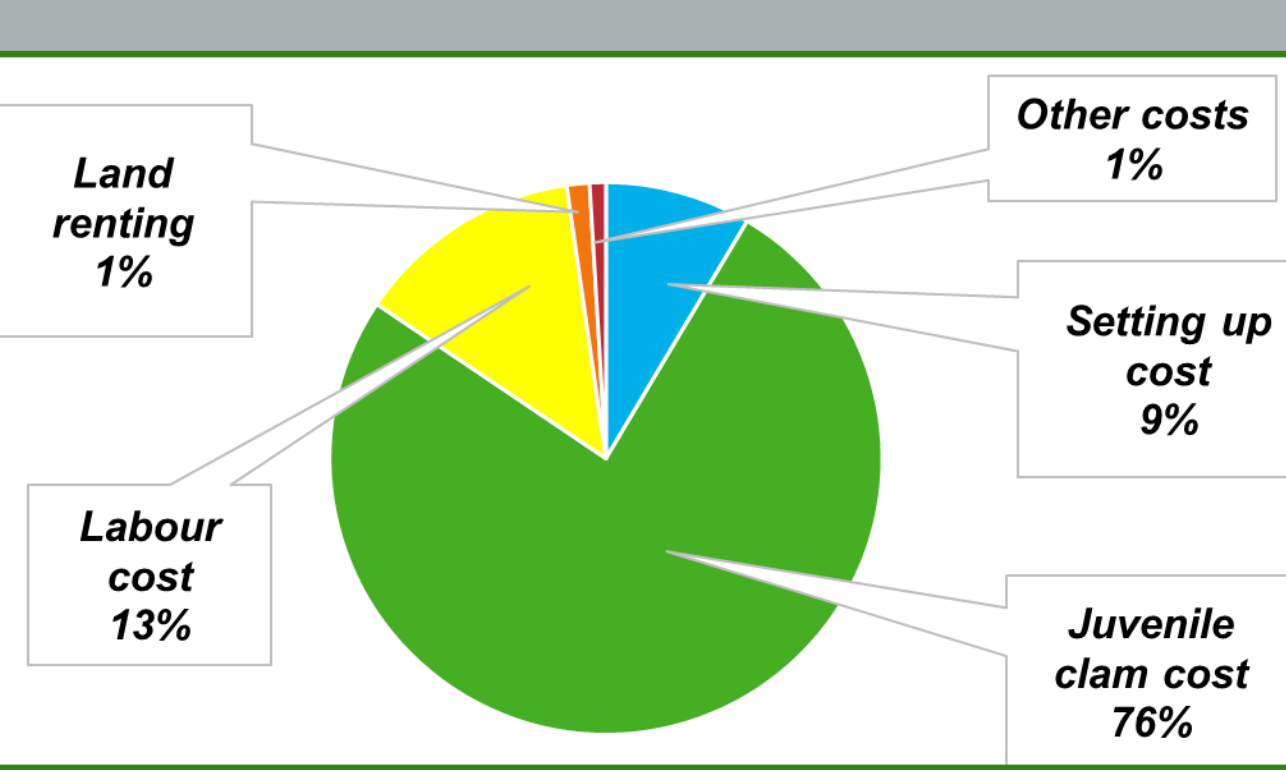


- Notes:**
- Adult clam raising model: 1000 heads/kg --> 70 heads/kg; Cycle time: 18 months; Density: 500 heads/m<sup>2</sup>
  - Average invested capital for adult clam raising model in 18 months is 17,000 - 18,000 USD/ha

Table 1: Clam farming size

	Mean	Min	Max	
Number of clam plot/ HSH	1.82	1	5	
Total clam production area/ HSH	Ha	2.63	0.2	20
<b>Classification HSHs based on total clam production area of HSH</b>				
• <= 1ha	30%			
• 1ha < And <=2ha	27%			
• 2ha < And <= 3 ha	20%			
• 3ha < And <= 5 ha	13%			
• > 5 ha	10%			

Figure 3: Cost structure of "Adult Clam raising model"



### Other special characteristics of clam farming:

- Clam is extremely sensitive to the environment conditions, so that easily be impacted by the climate change.
- Clam raising model is kind of "Non-fed raising model" but very risky. In Thaibinh province, the probability of loss in clam production investment in each raising cycle is estimated at 52%.
- Biologically, after 18 months in field, clam products can be ready for sale. However, in reality, the length of clam crops have been heavily depended on market conditions.

### Paradoxes of clam farming in Thaibinh Province, Vietnam (Time period: 2006-2014)

**Paradox 1:** The farmers had to suffer high risk in clam farming but almost of those risks were "human-caused"

Table 2: Causes of the risks: "human-caused" more than "natural-made"

Type of Risk	Causes	Natural-made	Human-caused
Production Risk	Bad weather (Extreme weather events)	x	
	Polluted waste water		x
	High density		x
Market risk	Overexpansion and unstable market		x
	Sudden changes of price and latency of response		x
Financial Risk	High barrier to access formal credit market		x
	High interest rate in informal market		x



**Paradox 2:** The farmer kept increasing the clam juvenile cost while the more the increase was, the less effective it was

Figure 4: Level of juvenile clam cost (2006-2014)

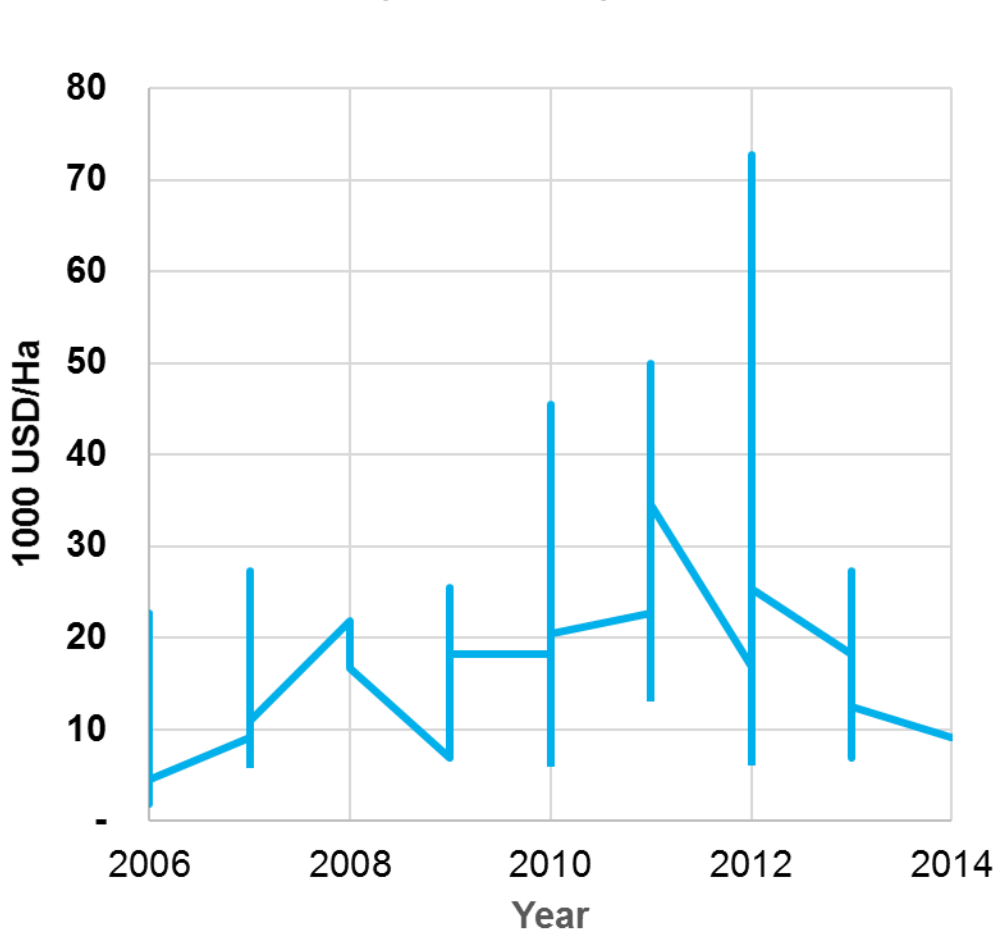
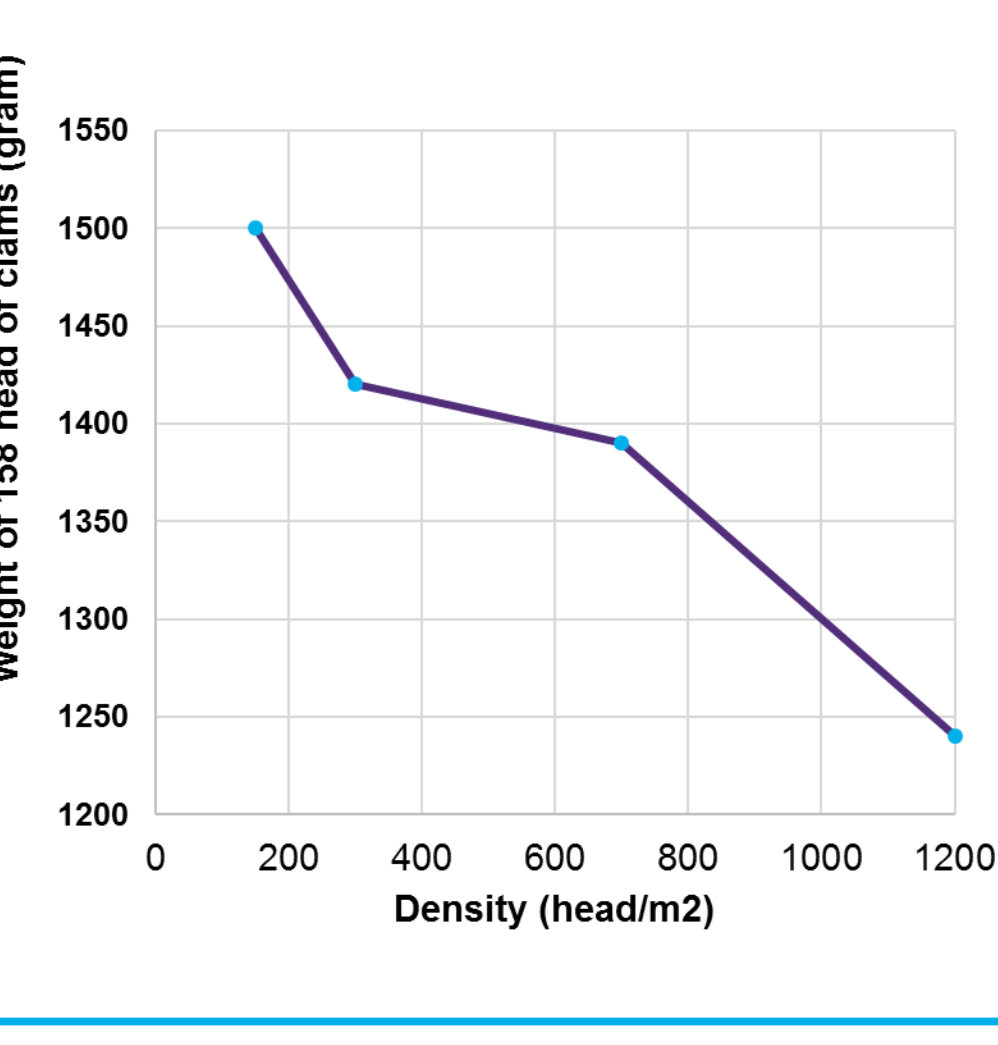


Figure 5: Impacts of density to growth level of clams



**Paradox 3:** In clam farming, women had less voice in decision making, but they were more vulnerable

Figure 6: Gender in clam farming

Clam farming activities	Capital raising (for clam investment)		Buying/Renting land		Building guarding house/ Plot preparation		Buying juvenile clam		Guarding clam plot/ Raising practices		Harvesting and selling clam	
	M	F	M	F	M	F	M	F	M	F	M	F
Making decision	100%		100%		100%		92%	8%	100%		92%	8%
Carrying out activities	50%	50%	92%	8%	100%		95%	5%	100%		4%	96%
Loss and economical /social consequences after loss	<b>Financial burden/debt</b>		<b>Health problems</b>		<b>Human loss in clam farming</b>							
	M	F	M	F	M	F						
	50%	50%	10%	90%	15%	85%						



## CONCLUSIONS

- In addition to risks originated from nature that have been increased in the context of climate changes, several paradoxes had occurred in clam farming and contributed somewhat to exacerbate hardness for farmers.
- The origins of those paradoxes were the special characteristics of clam farming, but it does not mean that it couldn't be changed.
- It is necessary to have more active interventions of governments (from central to local levels), such as: (1) Setting up the control system for polluted wastewater discharged from paddy production and other industrial activities; as well as to reduce other man-made risks in clam farming; (2) Providing technical training courses, constructing demonstration, and technical information to enhance clam farmer's knowledge, from which they can make better decisions for their clam farming and for protecting them from health and life risks; and (3) Enhancing role of women in decision making so that their experience and talent can be further integrated into household's clam farming, as well as improving working conditions for them.

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