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**Capacity building and services to assist local farmers
to improve aquaculture management in Vietnam**

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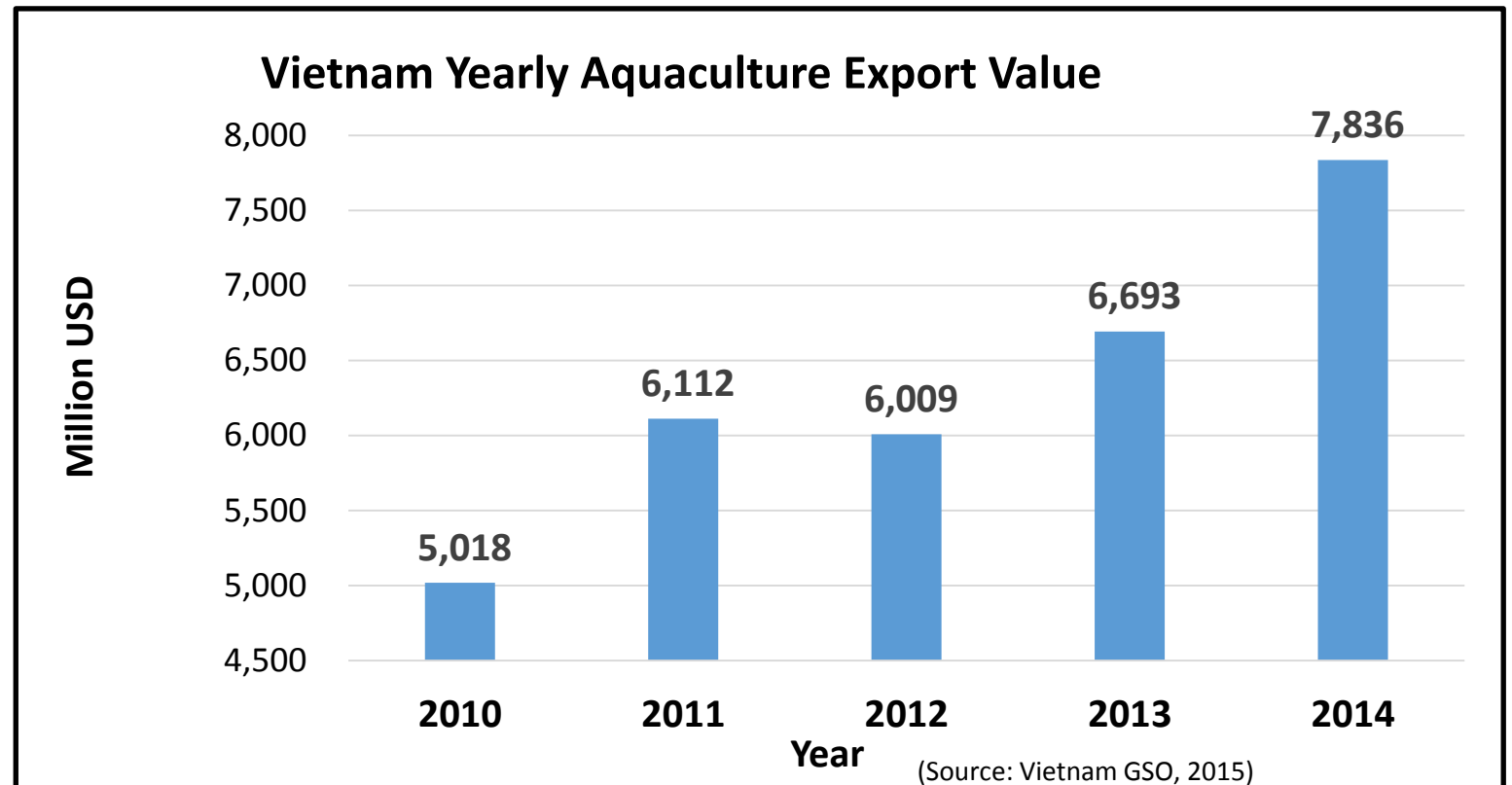


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CONTEXT

- In Vietnam, aquaculture has grown considerably in recent years with an average growth rate estimated at over 17% since 2000.
- An important part of aquaculture production is exported and thus helps to rebalance the trade balance deficit



CONTEXT

- Rural development and poverty reduction are of strategic importance for the Government of Vietnam and occupy a prominent place in the development of Plan Socioeconomic 2015-2020 (ESDP).
- The improvement of human resources is considered as pre requisite for further economic development; thus over 50% of the population active should be formed by 2020

CONTEXT

- Vietnam is the sixth country in the world in terms of the proportion of the population living in exposed coastal areas. In municipalities vulnerable to rising waters, hundreds of thousands of people depend wholly or partly of aquaculture resources. In addition, these areas include poor communities.
- Finally, aquaculture is essential to meet future demand for aquaculture products in both the domestic market and for export, because the limitation of fisheries resources (as a result of overfishing for several years in VN)

PROBLEMS TO SOLVE

- The traditional production systems of rice monopoly in coastal municipalities in Vietnam have been significantly changed since the 2000s: many rice farms and salt farms have converted the surfaces to aquaculture production.
- This new form of aquaculture is affected by pollution related to the use of agro-chemicals, the water quality, floods, pollution from areas of habitat and climate change. Moreover, the extensive global economic crisis have exposed farmers to harder conditions for dealing with variability in market demands and prices of inputs and outputs
- Faced with these voluntary initiatives, the Vietnamese authorities have supervised and supported these new producers in sustainable patterns of development both for aquaculture in freshwater, brackish, and salt water.

PROBLEMS TO SOLVE

- It is usually that farmers have various options in managing agricultural risks that they apply in different contexts with specific risks occurred to minimizing their vulnerability as well as to improve their resilience towards risks.
 - Staying in the position 18 in world risk index ranking in 2014, the vulnerability index of Vietnam is 52 %, composing with the lack of coping capacities and lack of adaptive capacities are 77 % and 51% respectively (Mucke et al., 2014).
- ⇒ It's crucial to understand the situation and organize the lessons of experiences in a scientific framework to better manage exploitations, as well as to define build up capacity and service to assist Vietnamese aquaculture farmers.

RESEARCH ACTION ORIENTED TO CLAM'S FARMS

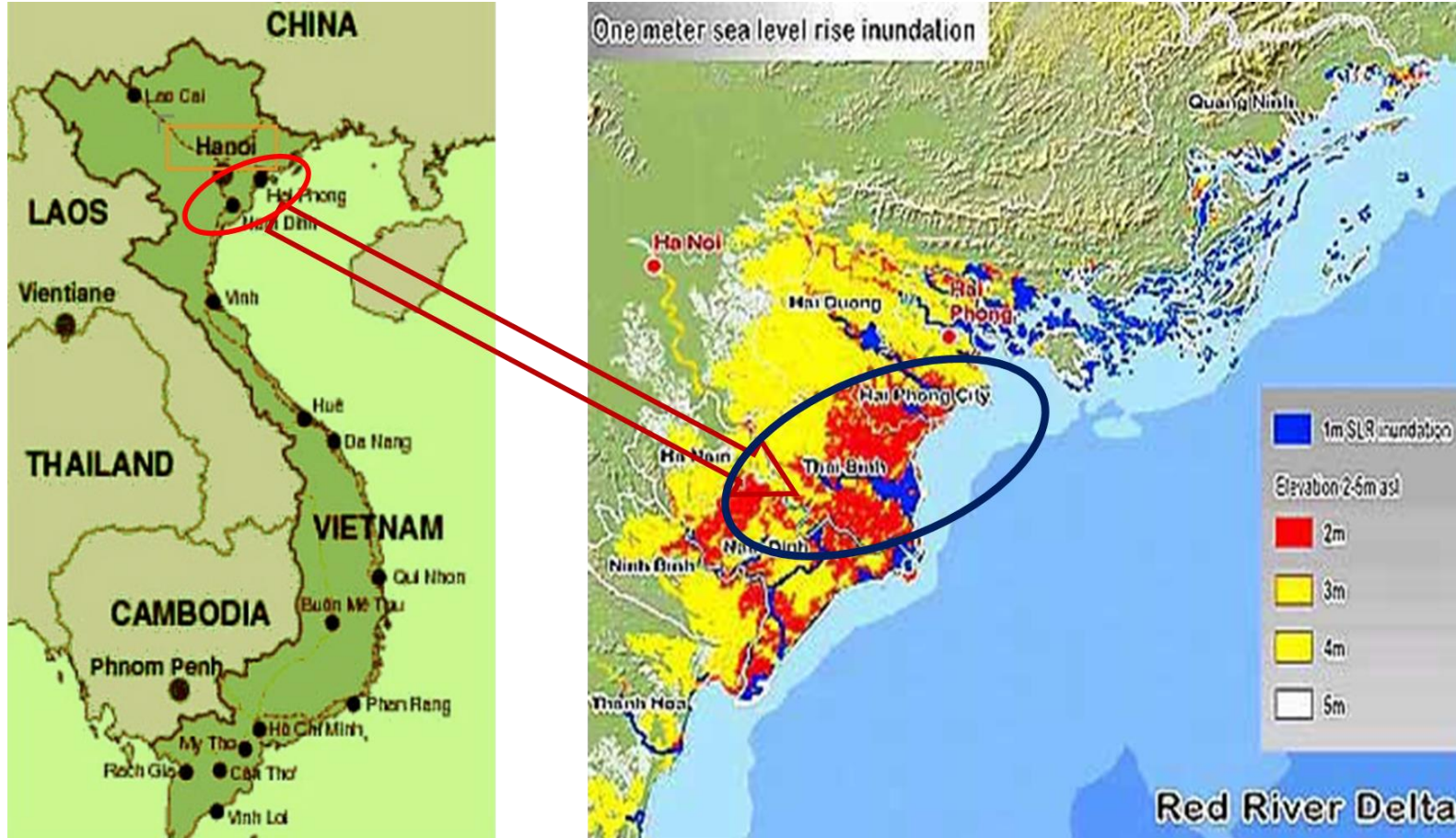
- Hard clam *Meratrix lyrata* is a species of high value mollusk kept and harvested in “culture based catching beds” in coastal Vietnam.
- Similar to aquaculture farming, clam farming in the coastal provinces of Vietnam has notably developed since the last decade. Producing 50,000-60,000 tons of hard clams every year
- Clam farming generated high income, improve socio-economic development for many local communities (WA and CA, 2009).
- However, many clam raising farms were facing difficulties of farm management, disease control, markets and systems of quality control (AD, 2011; Tuan, 2005).



Clams farms



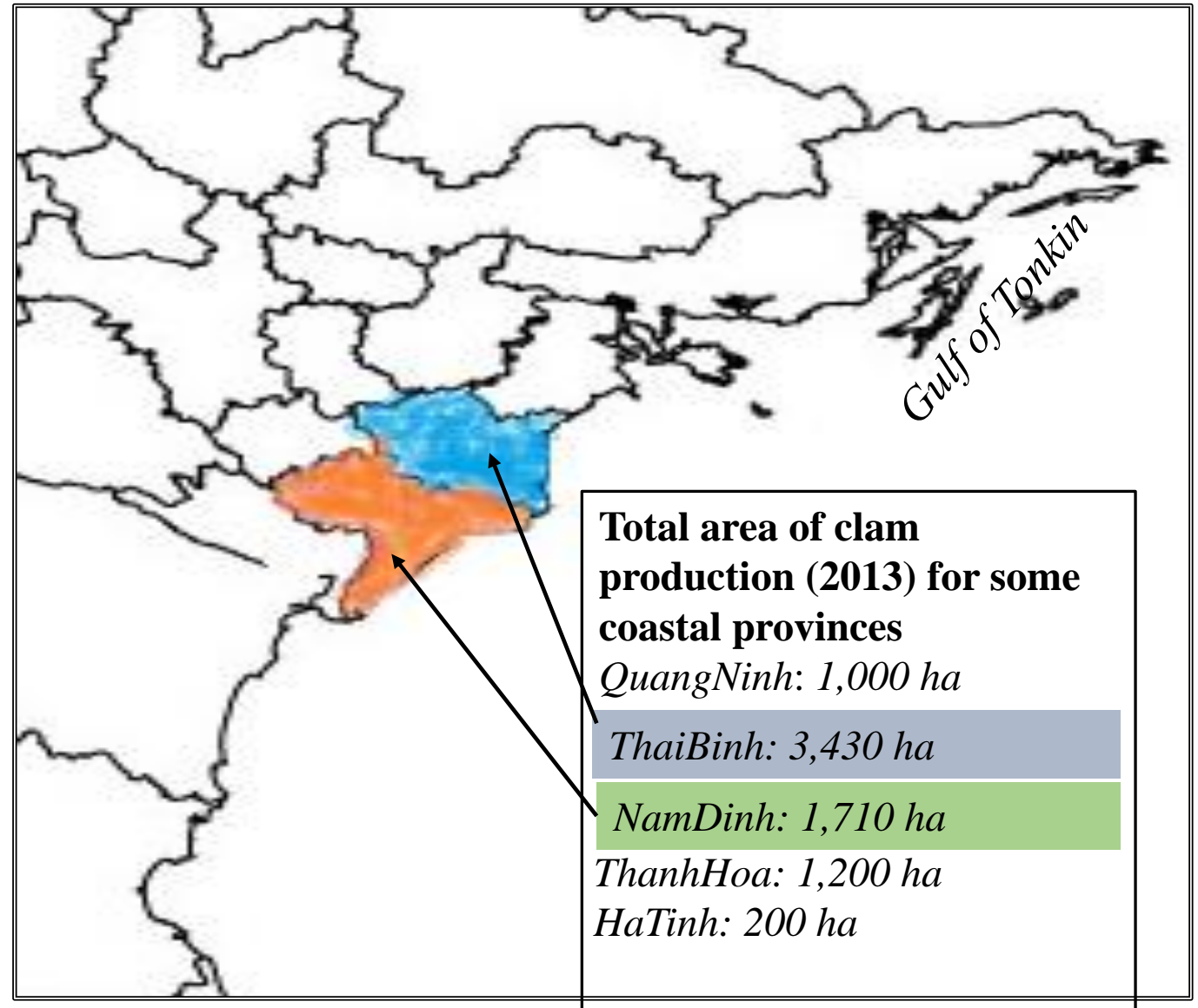
Research Sites



RESEARCH SITES

NamDinh province and ThaiBinh province
have been selected as study sites because:

- These two coastal provinces are located in the Northern area and have the highest productivity and quantity of clam raising farms in Vietnam;
- Farmers in these two provinces have a longer time experience in clam raising compared to other provinces in Vietnam;
- Clam raising is the key economic activities in these two provinces.



DATA SOURCES FOR ANALYSIS

- Fieldwork has been carried out from 1/2014 to 5/2015 through collection of secondary archive data, semi-structures key informants' interview from all level of local government and household survey
- **Sample size:**

Research	Place	Scope of time	Sample size
Study about cost monitoring in clam farm	NamDinh & ThaiBinh Province	2013	125 households in 2 districts NamDinh province: NghiaHung District ThaiBinh province: TienHai District
Study about the support of government in capacity building and services to assist clam farmer	ThaiBinh Province	2006-2014	157 households in 3 communes of 2 dictricts: <ul style="list-style-type: none"> • TienHai district: <ul style="list-style-type: none"> ✓ DongMinh Commune ✓ NamThink Commune • ThaiThuy district: <ul style="list-style-type: none"> ✓ ThaiDo Commune

FIRST FIELD STUDY FINDINGS

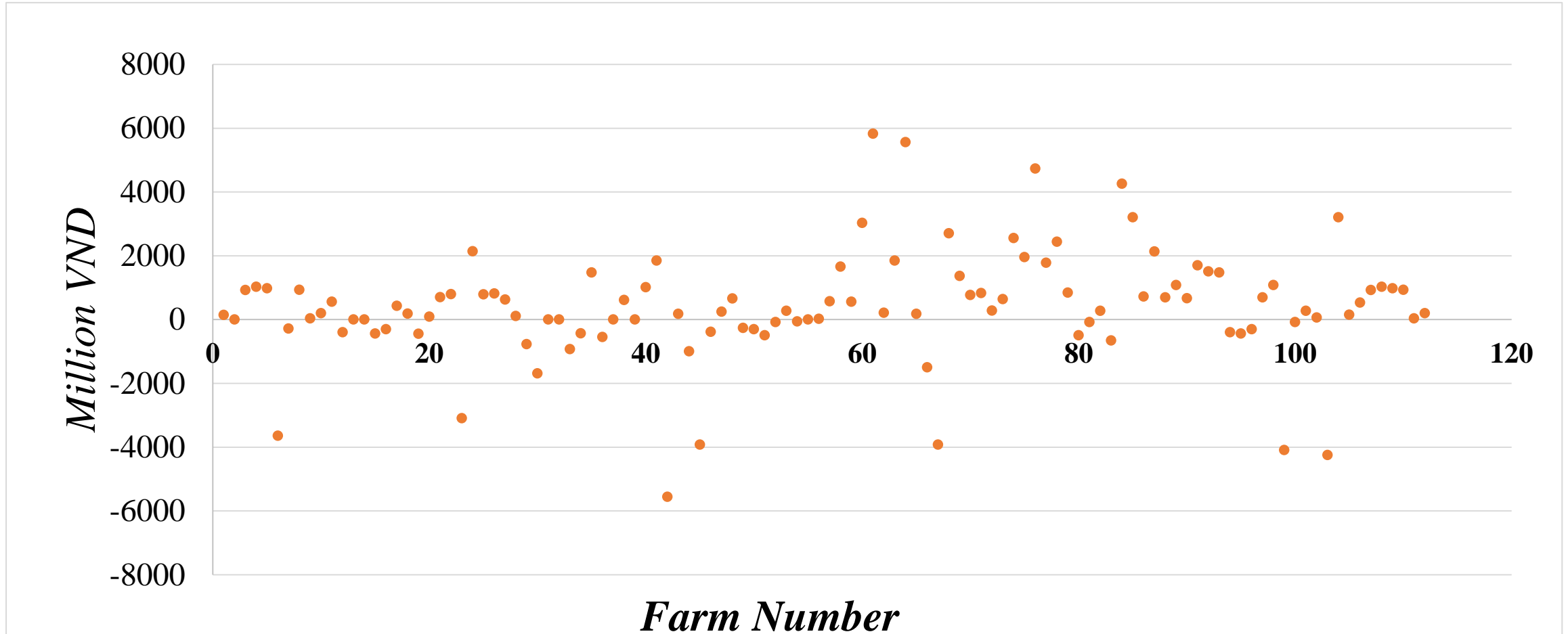


Figure 2: Gross profit of clam farms in 2013

FIRST FIELD STUDY FINDINGS

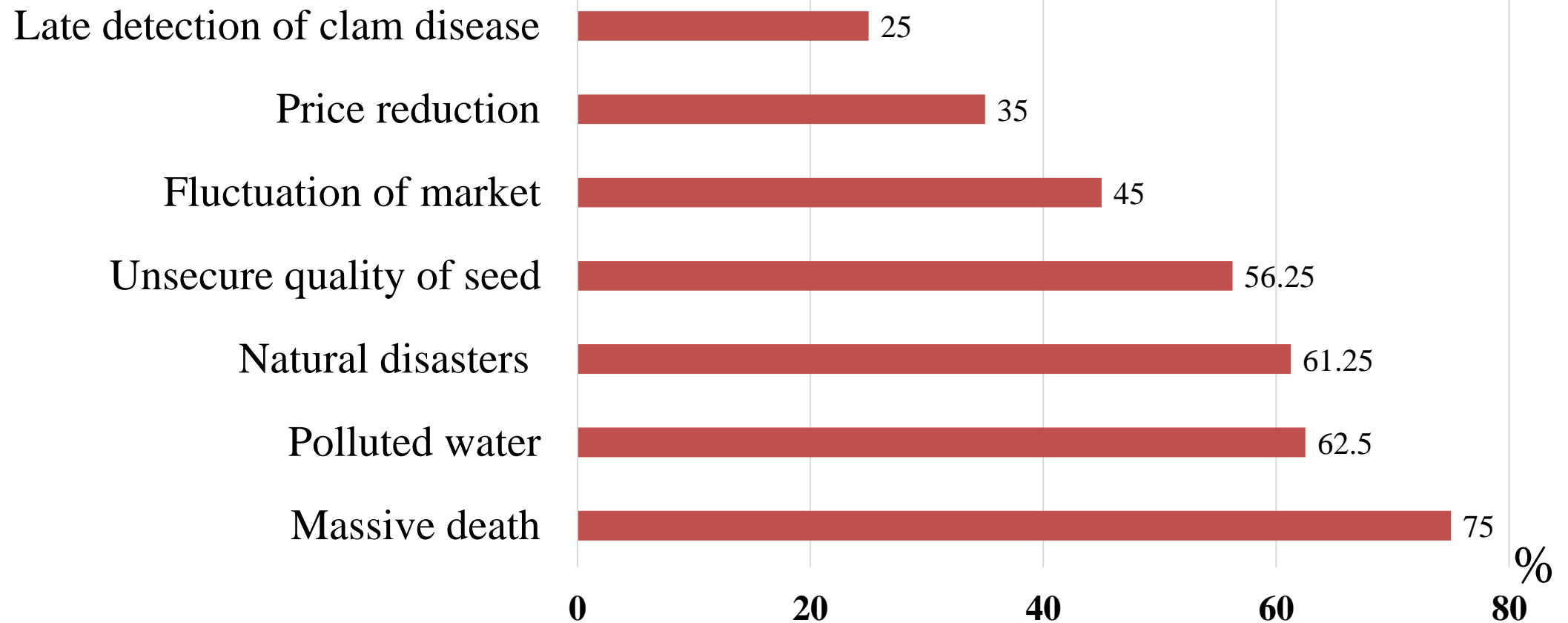


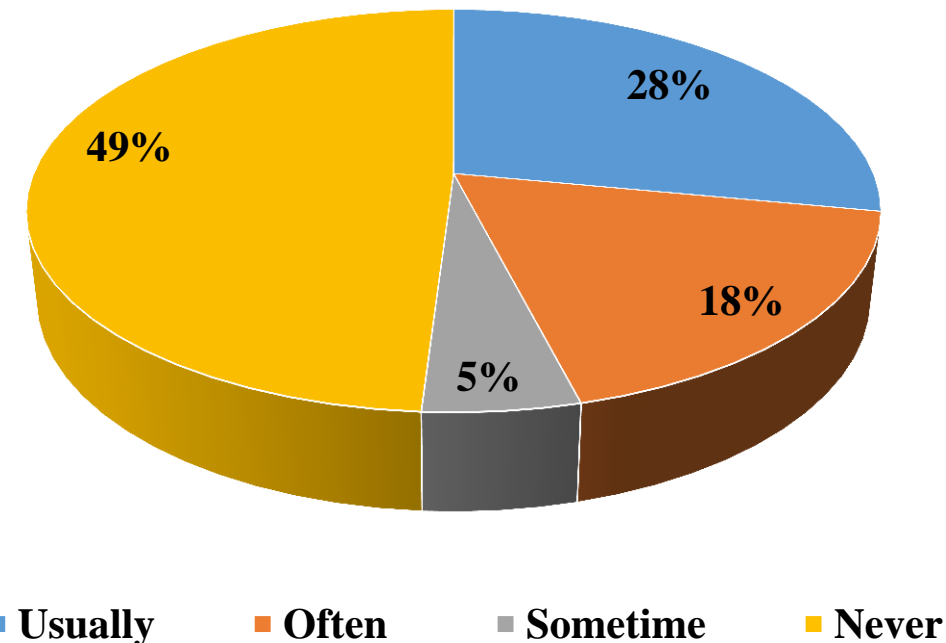
Figure 1: Frequency of facing with risk in farms in 2013

FIRST FIELD STUDY FINDINGS:

About Cost Monitoring in Clam farms

- The clam farmers did not have a habit of monitoring their cost based on the recording.
- There were many farmers who thought that cost management was not important and not necessary to manage
- None of them use computer or any scientific sample of recording to manage their cost.

Figure 3: Percentage of household with the frequency of cost recording (2014)



FIRST FIELD STUDY FINDINGS

About Cost Monitoring in Clam farms

- 39% transaction recorded by the time of remember; and they normally remembered only the main cost or recording main actual cost.
 - Clam farmers did not know how to monitor their production process: 53% surveyed farmers recorded the cost transaction, in which there were only 28% of them that recorded the revenue.
- => The farmers complained that the cost of production was quite high but they did not know exactly the total cost, and which cost they can save to increase their income

SECOND FIELD STUDY FINDINGS

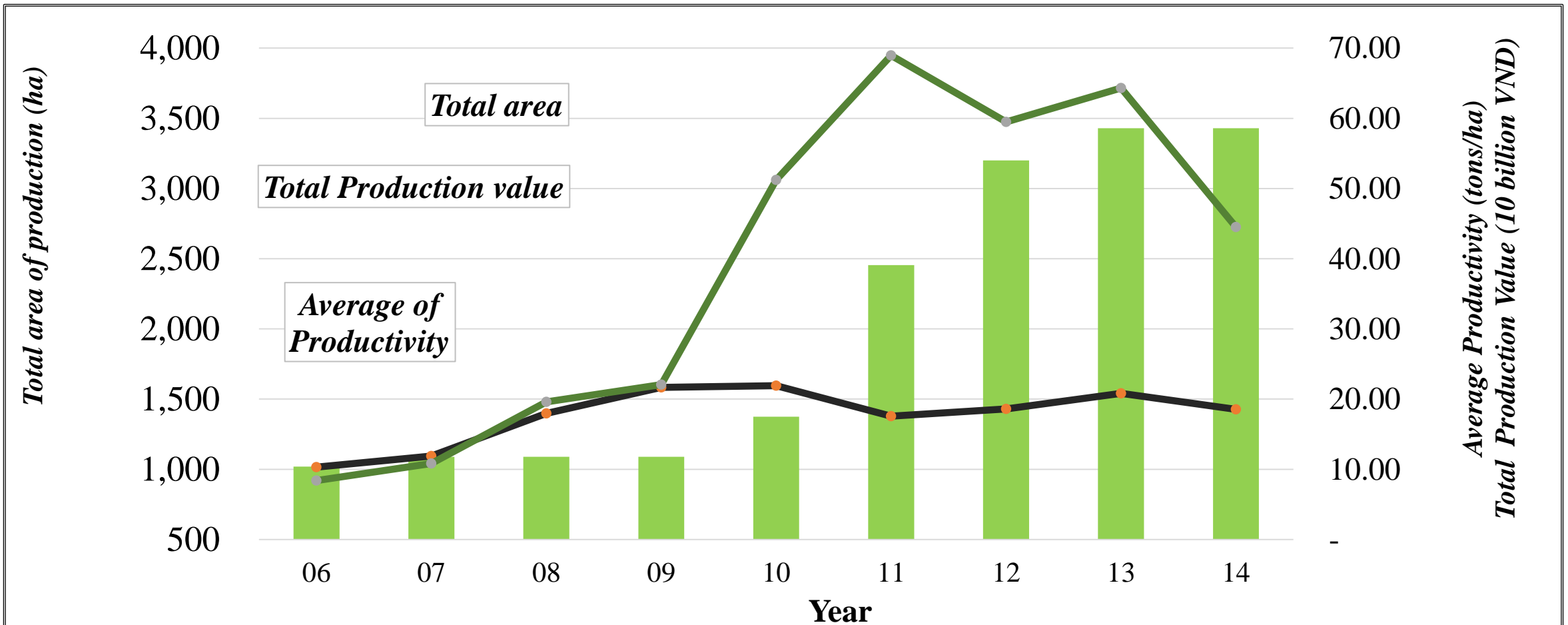


Figure 3: Clam Production in Thai Binh (06-14)

(Source: Thai Binh Statistical Department, 2015)

SECOND CASESTUDY FINDINGS

- **Research scope:** The differences of clam farms' performance of 157 households in Thai Binh province, with the impacts of shocks, risk management strategies of each households and the support of government in household capacity building.
- The dependent variable is "Total Profit" indicator, which is calculated from total profit of each household; and each plot, for the period from 2006-2014.
- The impact factors are considered including aquaculture risks, household capacity and support of government (from central to local) in farmer capacity building.

SECOND CASESTUDY FINDINGS

ISSUE: Impact of Experiences

EXPLANATIONS:

Table 1: The result of Independent-samples T-test for the hypothesis about “the impact of experiences and the “Total Profit of Household in period 06-14”

Groups	N	Mean	Std. Deviation	Std. Error Mean
Without experience before	85	232.64	1517.20	164.56
With experiences before	72	1576.88	2840.80	334.80

- *Levene's Test for Equality of variances : Sig: 0.000*
- *T-Test for Equality of Means (in case Equal Variances not assumed): Sig.(2-tailed): 0.000*

Group definition:

- **“Without Experience”**: The group of people have never raised clam before starting their own farm in 2006-2014.
- **“Have experience”**: The group of people have more than 1 year experiences in clam raising before 2006.

The differences between two groups :

- Experiences in choosing starting time for clam cycle (in spring or autumn) and in weather forecasting to have appropriate responses, such as selling or improving “net system” for clam fields.
- Experience about supply source of seed clam or evaluation about clam’s health situation

SECOND FIELD STUDY FINDINGS

KNOWLEDGE CAPACITY BUILDINGS: Facts about support of extension services in knowledge training

- There is no any permanent (full-time) fishery/aquaculture extension worker in the personnel of the Commune People's Committee who can give technical adviser for clam farmers
- In some years, Extension Department at district level have offered the technical training course but it did not really create supports in knowledge improvement for clam farmers.

Figure 4: Percentage of clam farmers participating in technical training courses

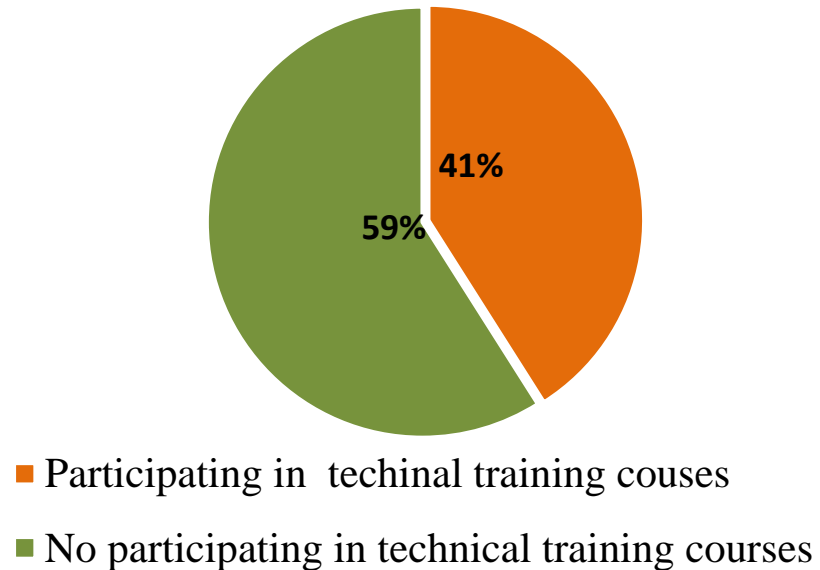
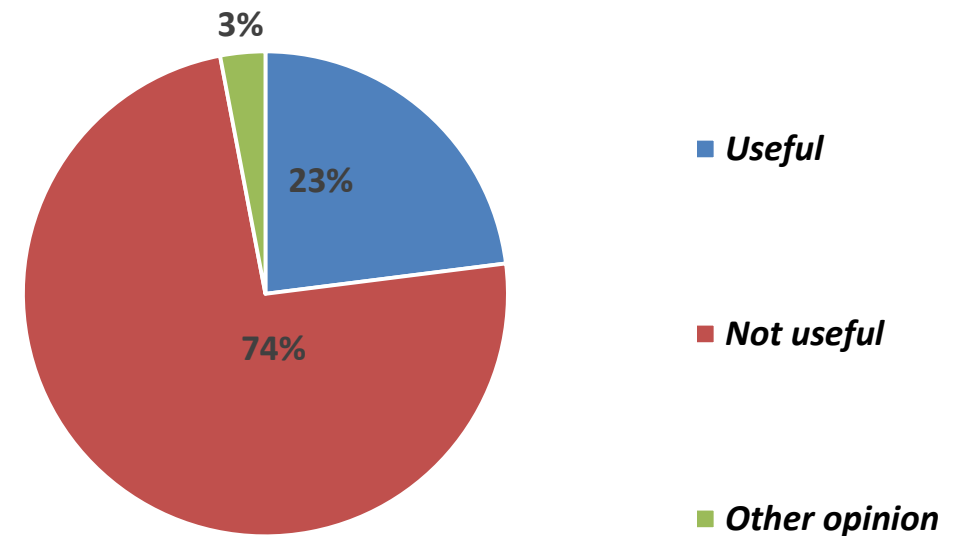


Figure 5: The evaluation of farmers who have joined training provided by extension service



SECOND FIELD STUDY FINDINGS

ISSUE: Impact of Field size

Table 2: The result of T-test for the hypothesis about the impacts of “field size and the Profit Per Cost indicator”

Groups	N	Mean	Std. Deviation	Std. Error Mean
Plots <3 ha	482	0.22	0.83	0.38
Plots >= 3ha	157	0.40	0.91	0.72

- *Levene's Test for Equality of variances : Sig: 0.059*
- *T-Test for Equality of Means (in case Equal Variances assumed): Sig.(2-tailed): 0.025*

EXPLANATIONS

- **The differences between two groups :**
 - ✓ **Cost:** both variable & fix cost is found to be inversely correlated to the field sizes (Hang & Nga, 2013)
 - ✓ **Density:** Fields in group 2 has lower density, therefore less mortality rate if in the same condition with field in group 1. And in the same time, clam in group 2 growth faster due to higher nutrition condition => less cycle time => less risks.
 - ✓ **Combined models:** In a fields >=3 ha, farmers can divide in to many small plots (by simple net system) for different clam size, from “juvenile” to “adult” clam. Hence, reduce mortality rate compare with buying seed from outside. Moreover, the rate of “moving out clam” caused by strong wave also smaller in a big field than in small one

SECOND FIELD STUDY FINDINGS

CAPACITY BUILDINGS: Facts about land allocation policy of local governments

- The local governments follow the redistribution purpose rather than increasing efficiency, especially in land allocation, so that average field size is less than 3 ha in all 3 communes(see table 3)

LAND SUPPORT POLICY

- 2012:** Regulation for auction for land renting fee, applied for land for agricultural production and business – Issued by ThaiBinh Provincial Government
 → The level of renting fee is from 3 million VND – 12 million VND/ ha
- 2014:** State Government approved promoting program for aquaculture development, containing regulation to exempt aquaculture land renting fee.

Table 3: The average farm size of 3 communes in research site (2014)

Commune	District	Average field size (ha)
DongMinh	TienHai	2.46
NamThinh	TienHai	2.90
ThaiDo	ThaiThuy	1.68

SECOND CASESTUDY FINDINGS

ISSUE : Impact of borrowings from unofficial financial market

Table 4: The result of Independent-samples T-test for the hypothesis about “the borrowing sources and the Total Profit in one clam cycle”

Groups	N	Mean	Std. Deviation	Std. Error Mean
Borrow from unofficial source	121	45.24	1252.68	113.88
Borrow from official source	250	344.27	1234.97	78.11

- Levene's Test for Equality of variances : Sig: **0.718**
- T-Test for Equality of Means (in case Equal Variances assumed): Sig.(2-tailed): **0.031**

EXPLANATIONS

- **Group definition:**
 - ✓ (1) “*From unofficial source*”: The group of plots which farmers had to borrowing from unofficial financial market to invest
 - ✓ (2) “*From official source*”: The group of plots which farmers had to borrowing from official financial market to invest
- **The differences between two groups :**
 - ✓ In unofficial financial market : easier to access, no limitation about total amount → **Higher interest cost for clam farmers** when borrowing from this financial market .
 - ✓ **Higher pressure from high-interest rate** in unofficial market => more depended on external factors

SECOND FIELD STUDY FINDINGS

FINANCIAL CAPACITY BUILDING: Facts about official financial services and support policies

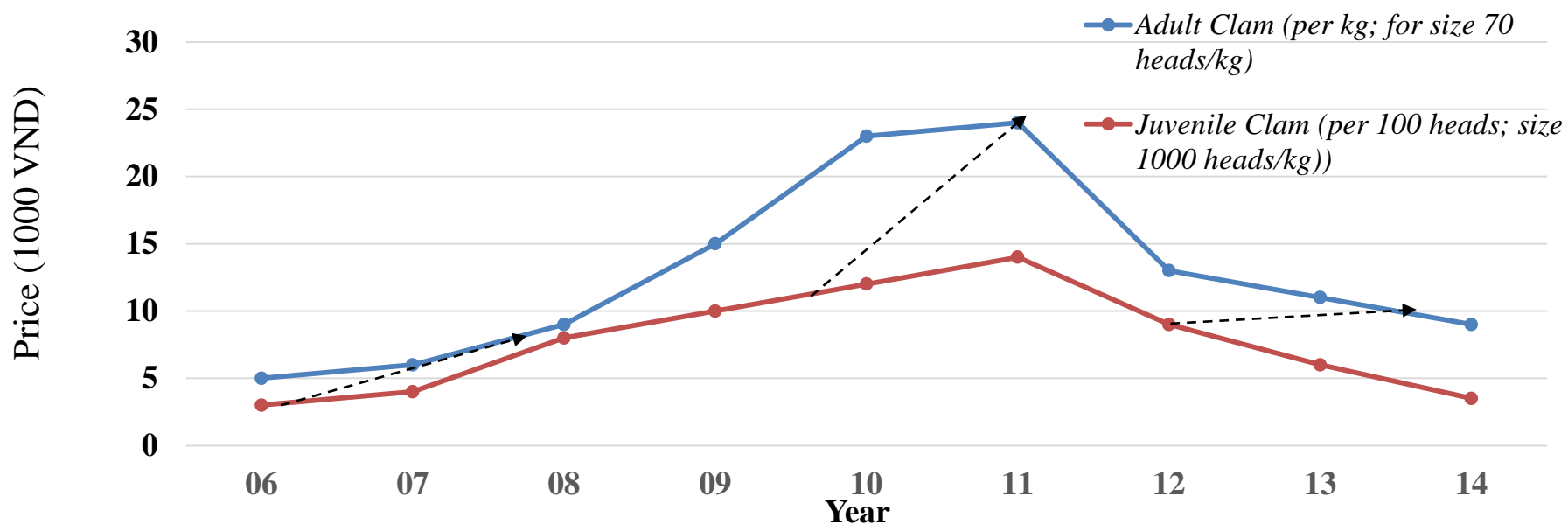
- Credit is crucial for clam farmers because of the capital-intensive nature in production (*more than 400 million VND /ha, in average*). But in official financial market, the “credit risk management policy” of the banks always set high barrier for clam farmers to access (such as high value mortgage with “red book” or other official documents as evidences,...), because clam production is always considered as high risk investment.
- Up to September 2013, total loan that clam farmers borrowed from bank were 457.6 billion VND, just equals to one-third of total of capital requirement (Long, 2013). The remaining has been borrowed from unofficial financial market, with very high rate (10-15% higher than bank rate), which in turn had caused the bankruptcy situation of clam farmers
- **From 2009:** Government approved “Financial supports for the aquaculture production in the case of loss caused by natural disasters”: 3 Million VND – 5 Million VND for the loss more than 70%; 1 Million VND- 3 Million VND for the loss from 30%-70%
- **From 2010:** Issue the capital credit support program for agriculture production, including clam; *with maximum level 50 million VND/household*.
- **From 2013:** Upgrade financial supports for clam production in the case of loss caused by natural disasters: 40 Million VND – 60 Million VND for the loss more than 70%; 20 Million VND- 30 Million VND for the loss from 30%-70%

SECOND FIELD STUDY FINDINGS

ISSUE: Fluctuation of markets

EXPLANATIONS

Fig.5 : The fluctuation of price of Juvenile Clam and Adult Clam



Note:

- The dot line connects two points (start and ending point) of one clam cycle- normally 18 months)
- Normal clam cycle lasts in 18 months; the normal loss rate is 30%

⇒ The slope of the dot line shows the profit rate in normal condition (elimination the impacts of other shocks)

- Before 2012, 50-60% of total ThaiBinh clam was sold to China through un-official export channel, 30% to EU market and only 10% in domestic market.
- From middle 2012, the forbidden of China Government in importing clam through unofficial channel caused the suddenly stop of buying activities of Chinese middle mans in ThaiBinh area

SECOND FIELD STUDY FINDINGS

MARKET ACCESSING CAPACITY BUILDINGS : Facts about the role of local government

- **100% of interviewees did not realize the importance of contract farming in clam production**
 - Market information is limited. Clam farmers do not have any official source of information about seed prices, good suppliers or demands of the markets, making farmers disadvantaged in negotiations with suppliers, collectors or in production and marketing decisions. **95% of interviewees said that they do not know exactly the where the buyers came from**
 - **There is no interventions/supports from local government for clam farmers in finding output market, no warning about the fluctuation of price and output demand in the market, no protection when clam farmers working with strange foreigners in local area ...**
- ➔ The absence of supports from governments here lead the farmers come to the “**weak positions**”, which mean they were really “**passive in the game**”: the price of seed and meat clam is always imposed by suppliers and collectors/traders.

CONCLUSIONS

- Clam farming in the coastal provinces of Vietnam has notably developed and provides farmers a chance of getting high income parallel with high risk of massive death and low performance results.
- Capacity of farm cost control; farmers' experience, skill, technique in clam raising; the farm size; the financial sources and the unstable market and unsuitable market channel were the four major factors affecting the performance of clam raising farms.
- Despite these difficulties, many surveyed farms still want to expand or will continue their production. In order to promote the value added for clam raising farmers, major problems should be taken into consideration.

RECOMMENDATIONS

- The first and most is that the capacity of cost monitoring of the farmers should be improved. This will help them to improve their production performance situation and enhance their profit and benefit.
- The second thing should be done is to improve the ability of the farmers to manage their farms. If the management capacity of farmers improves, they could be able to cope with the risk situation in their clam production practices and their livelihood situation.
- Finally, it is necessary for the government and local authorities to support, create and, maintain a stable market for clam raising farmers; as well as the “open official financial system” for clam farmers to easy access. In turn, they can stimulate production, create employment opportunities for rural labor, improve community income, and improve their livelihood situations.