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Gender Analysis in Aquaculture Value Chain: A Case Study of Small-Scale Shrimp Aquaculture in Chanthaburi, Thailand



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Background Information Related Gender in Thailand



- Cultural and Society
- 30-90 days off for maternity leave
- After marriage Thai has an option to continue using her old lastname and Miss title.



“Cháng táo nã -
Cháng táo lǎng”
(interpreted as gender
discrimination)
fore legs taken a step
first => male
hind legs have moved
later => female

Government Policy “Ensuring Gender Equality”

- ▶ **Thailand Promoting Gender Center under “Minister of Social Development and Human Security Office of Woman Affairs and Family Development”**
- ▶ **Since 31 July 2001, Cabinet meeting instructed All ministries and departments should appoint a deputy permanent secretary, or a deputy director-general, to serve as Chief Gender Equality Officer (CGEO)**
- ▶ **Considering opportunities for women in DOF to participate at the national and community-level activities**

What is our Current Situation?

Gender issues has not been recognized as an obstacle in Thai society;

why

- I. the National Fisheries Development Strategy, there are many fisheries and aquaculture development projects has been implemented => **tremendous in almost levels;**
- II. Therefore, gender issues is not reflected in the project cycle (planning, implementation);

Opportunity

- Thailand has made gradual progress in promotion of woman status many years ago.
- Gender aspect has been indicated in national level, in the Government sector and provincial level (under voluntary basis).
- Under the previous Government administration, Thai Women Empowerment Fund has clear budgetary support gender issue at deferent levels (provincial, district, and villages)



กลุ่มเลี้ยงไก่ไข่ เสริมไอโอดีน

ต.บ้านจัต อ.กุ้อแก้ว จ.อุดรธานี

 กองทุนพัฒนา
บทบาทสตรี
จังหวัดอุดรธานี



Gender in Thai Aquaculture

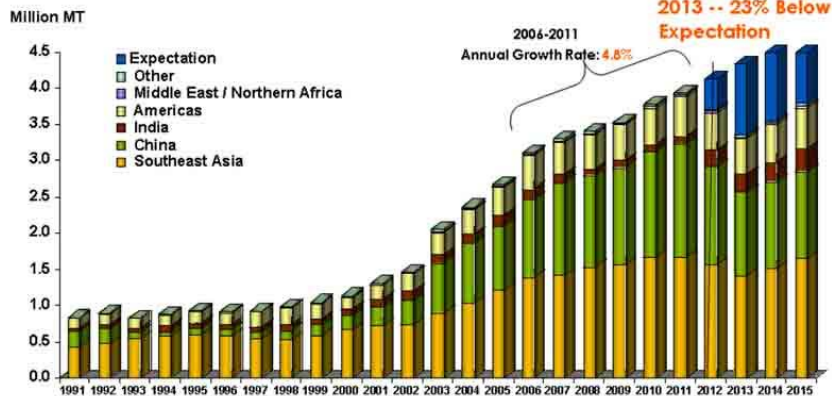
- It is difficult to estimate the role and contribution of women in aquaculture development in Thailand.
- A male domain because of its labour intensive nature.
- It is very common to see women in every role in all kind of occupations.
- Women's roles and the extent of their participation in aquaculture value chain, for fish and marine shrimp are extensive much higher than in capture fisheries.
- This is especially true in this region where women carry out 42 - 80 % of all aquaculture activities (Williams and FAO).

Gender Daily Activity : contribution in small-scale shrimp farm

Hours	Woman	Man
5 – 12	<ul style="list-style-type: none"> -Cleaning / Washing / Cooking breakfast - Laundry - Preparing children to go to school - Feeding the pets - <u>11.00 : 2nd Feeding the shrimp</u> 	<ul style="list-style-type: none"> - Access the news, social network - Preparing shrimp feed : mixing vitamins or medicine, measuring - <u>6.00 : 1st Feeding the shrimp</u> - 7.00 : Inspecting the unconsumed feed, water quality, shrimp performance and farm aeration, electricity supply Preparing shrimp feed
12 – 13	<ul style="list-style-type: none"> - Cooking Lunch 	<ul style="list-style-type: none"> - Lunch break and Rest
13 – 16	<ul style="list-style-type: none"> - Going for Grocery shopping etc. - Picking up children from school - <u>16.00 : 3rd Feeding the shrimp</u> 	<ul style="list-style-type: none"> - 13.00 : Inspecting the unconsumed feed, water quality, shrimp performance and farm aeration, electricity supply - Attending the training from the government (sometimes) - Preparing shrimp feed - Rest
17 – 20	<ul style="list-style-type: none"> - Bath the children / Cooking dinner / - Feeding the kids - <u>20.00 : 4th Feeding the shrimp</u> 	<ul style="list-style-type: none"> - 17.00 : Inspecting the unconsumed feed, water quality, shrimp performance and farm aeration, electricity supply
20 – 5	<ul style="list-style-type: none"> -Prepare beds - Record keeping - Socializing - Rest 	<ul style="list-style-type: none"> - 21.00 : Inspecting the unconsumed feed, water quality, shrimp performance and farm aeration, electricity supply - Securing facility overnight - Sleeping at the farm premises

Current Situation in Shrimp Industry

Global Production of Farmed Shrimp 23% Below Expectations Due to EMS Epidemic



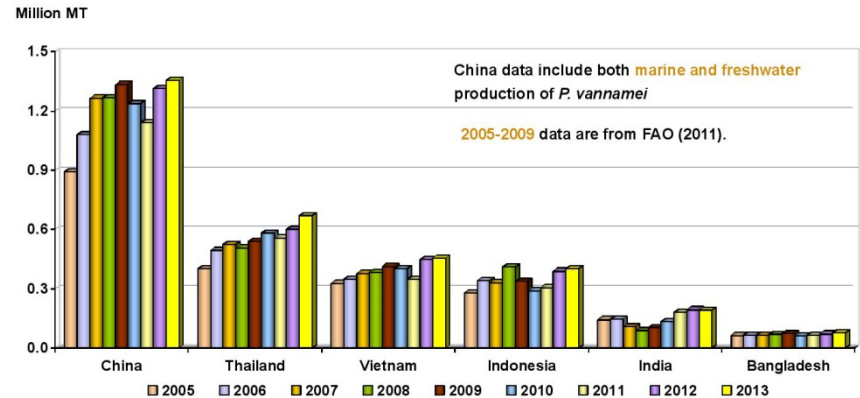
EMS (early mortality syndrome) damages the digestive system of shrimp and causes mortality

China => 2009; Vietnam=> 2010;

Malaysia => 11; Thailand => 2012;

Mexico => 2013; India => 2014 ??

Shrimp Aquaculture in Asia: 2005 – 2013



Thailand, as the world's largest exporter of shrimp, exported around 400,000 tons in 2011, for the exclusive consumption of its three main markets: the United States, Japan and the European Union.

In 2013 the shrimp production in Thailand has dropped by 50 per cent because of the spread of a deadly outbreak.

Chanthaburi is one of the top shrimp producing provinces in the country, contributing 13.34% in 2012 and 8.96% in 2013 of the total shrimp production of Thailand.

Powerful of Communication via facebook Petchaburi Model under Royal Project



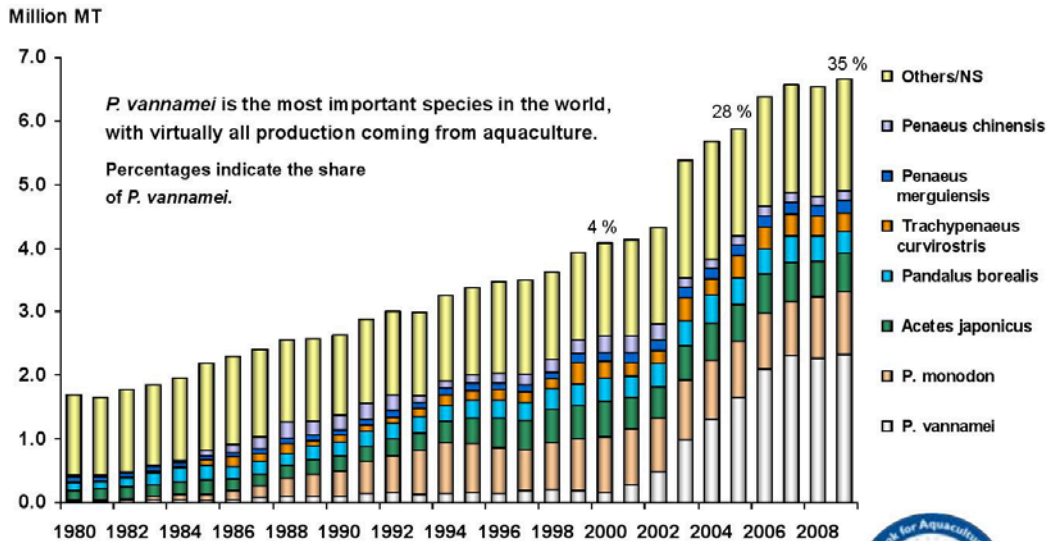
Gracilaria fisheri

Overview of Shrimp Aquaculture Value Chain

- **Market Demand**
- **Supply**
- **Value Chain Participants**
 - Input Supply
 - Production Technology
 - Trading
 - Processing
 - Consumers
 - Supporting Products and Services

Market Demands

World Production of Shrimp by Species Capture Fisheries & Aquaculture Combined



Source: FAO (2011).

Notes: *M. rosenbergii* is not included.

Freshwater production of *P. vannamei* in China is included.



Supply (Up to Sept'04)

- In Thailand, production has thus far remained below last year's.
- EMS disease
- weather conditions affected shrimp farming during the first two months of the year with extremely cold weather
- in April and May with the delayed monsoon and hot weather.
- Many processing plants have been forced to stop operations because of the raw material shortage.
- 200 000 tonnes (TFFA)

Value Chain Participants

Input Supply

- Brood stock : Farm, Import
- Post-larvae : Hatchery
- Feed supply : feed companies

Production Technology

- Small-scale Intensive Culture
- Closed system
- GAP certified by DOF



Trading

- Collectors and buyers
- Microcredit

Processing

- Processors / Exporter
- Thai Frozen Foods Associations
 - Setting direction for the industry
 - International body of knowledge development and services
 - The sustainable competitive capability enhancement

Consumers

- Japan / USA /EU

Supporting Products & Services

- DOF
- Association
 - Thai Shrimp / Thai Marine Shrimp Farmers / Thai Frozen Foods / The Thai Fishmeal Producers
- Feed Industry etc.

Objectives

- 1. To map the gender roles in small-scale shrimp culture in Chanthaburi, Thailand**
- 2. To identify and analyze the role and activities of women and men in the shrimp grow-out stage, including the gender dimensions with respect to division of labor, decision making process, benefit sharing, and access to resources including knowledge and information**
- 3. To identify the gender issues, needs and opportunities in areas such as fish health, farm management, food quality, safety and marketing in shrimp culture**

Methodology

- **Population**

- **30 Shrimp farmers in Chanthaburi**



- **Data collection**

- **Secondary data**

- **Primary data**

- Key informants interviews
- Sample respondents interviews
- In-depth interviews



- **Data Analysis**

- **Quantitative & Qualitative descriptive and comparative**

- **SWOT analysis**

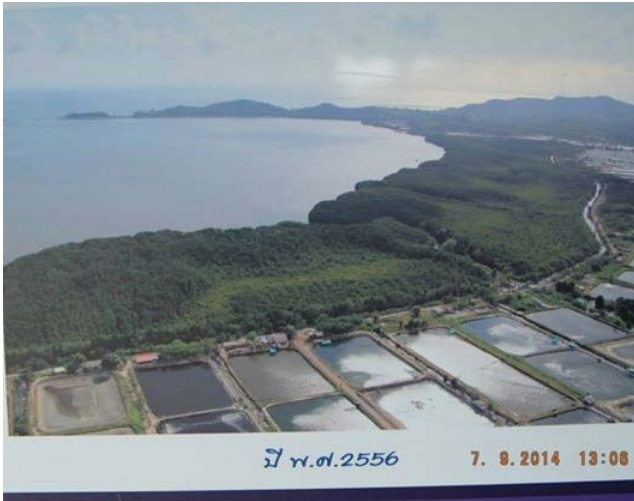


Research Area

Kung Krabaen Bay Royal Development Study Center

Chanthaburi located in the east of Thailand.





DrNoi.com



Results : 1. Social profile of the respondents

- Total number of the respondents for this study was 30 marine shrimp farmers. They were 50% male and 50% female.
- Avg. age of 52.4 years old.

Items	Persons	Total	Male (%)	Female (%)
Education				
< primary	1	3.3	0	3.3
Primary - grade 4	17	56.7	26.7	30.0
Primary - grade 6	3	10.0	10.0	0
Junior high school	2	6.7	0	6.7
High school	2	6.7	3.3	3.4
Others	5	16.6	10.0	6.6

Items	Persons	Total	Male (%)	Female (%)
Marital Status				
Single	1	3.3	0	3.3
Married	21	70.0	30.0	40.0
Divorce	5	16.7	16.7	0
Widow	3	10.0	3.3	6.7
Status within the family				
Family head	21	72.4	41.4	31.0
Member	6	20.7	0	20.7
Children	2	6.9	6.9	0
Status within the community				
None	24	80.0	36.7	43.3
Official posts	6	20.0	13.3	6.7

Items	Persons	Total	Male (%)	Female (%)
Group membership				
None	2	6.7	0	6.67
Yes	28	93.3	50.0	43.3
Home origin				
Local origin	23	76.7	36.7	40.0
Other districts	5	16.7	13.4	3.3
Other provinces	2	6.7	0	6.7

2. Economic status of the respondents

Items	Persons	Total	Male (%)	Female (%)	Min	Max	Avg
Primary income sources	30						
Shrimp farming	23	76.6	33.3	43.3	-	-	-
Fruit gardening	3	10.0	6.7	3.3	-	-	-
Fishing	1	3.3	3.3	0	-	-	-
Hired labour	1	3.3	3.3	0	-	-	-
Government service	1	3.3	0	3.3	-	-	-
Merchant	1	3.3	3.3	0	-	-	-

Items	Persons	Total	Male (%)	Female (%)	Min	Max	Avg
Spouse's main income sources (n=22)							
Shrimp farming	11	50.0	13.6	36.4	-	-	-
Hired labour	5	22.7	13.6	9.1	-	-	-
Gardening	2	9.1	4.5	4.6	-	-	-
Others	4	18.2	9.1	9.1	-	-	-

Items	Persons	Total	Male (%)	Female (%)	Min	Max	Avg
Respondents' annual income, baht					50,000	700,000	194,440
100,000 or less	11	36.7	20.0	16.7			
100,001 – 200,000	9	30.0	16.7	13.3			
200,001 – 300,000	8	26.7	13.3	13.4			
More than 300,000	2	6.6	0	6.6			

Items	Persons	Total	Male (%)	Female (%)	Min	Max	Avg
Household income, baht					60,000	1,146,000	296,173
100,000 or less	4	13.3	3.3	10.0	-	-	
100,001 – 200,000	9	30.0	16.7	13.3	-	-	
200,001 – 300,000	9	30.0	13.3	16.7	-	-	
300,001 – 400,000	2	6.7	6.7	0	-	-	
400,001 – 500,000	4	13.3	3.3	10.0	-	-	

Items	Persons	Total	Male (%)	Female (%)	Min	Max	Avg
Assets owned (multiple responses)							
Land	27	90.0	46.6	43.4	-	-	-
House(s)	28	93.3	46.6	46.7	-	-	-
Motorcycle(s)	27	90.0	50.0	40.0	-	-	-
Car(s)	17	56.7	30.0	26.7	-	-	-

Items	Persons	Total	Male (%)	Female (%)	Min	Max	Avg
Debt sources (multiple responses), persons					baht	baht	baht
Finance institutions	23	76.7	40.0	36.7	40,000	1,460,000	440,565
Unofficial sources	0	0	0	0	0	0	0
Relatives	7	23.3	16.6	6.7	15,000	300,000	100,714
All sources	24	80.0	40.0	40.0	40,000	1,590,000	501,652

3. Food security issue

	Frequency	Total	Male (%)	Female (%)
Own production	8	26.7	10.0	16.7
Purchase	21	70.0	40.0	30.0
Purchase & own production	1	3.3	0	3.3
Total	30	100.0	50.0	50.0

4. Type of Shrimp Farming in Chanthaburi

	Frequency	Total	Male (%)	Female (%)
White shrimp	14	46.7	13.4	33.3
Tiger prawn	8	26.7	16.7	10.0
Mix	8	26.7	20.0	6.7
Total	30	100.0	50.0	50.0

5. Farm registration by the respondents

Registration	Frequency	Percent
Registered	30	100

6. Respondents' practice

	N	Min	Max	Average
Distance from home to farm (meters)	29	3.0	43,000	2,159
Experience in shrimp farming (years)	30	2	30	18.1
No. shrimp ponds in their farm	30	1	5	1.67
Pond size (m ²)	30	1,120	9,600	4,941
Pond construction cost (baht/pond)	29	12,000	500,000	88,300
No. of crop per year	30	1	3	2
Raising period per crop (months)	30	2	4	3.33
Stocking density (seed/m ³)	30	8.15	156.25	71.0
Stocking size (PL)	30	7	21	13.3
Seedlings cost (baht)	30	0.05	0.21	0.12
Survival rate (%)	30	15	100	62.93
Harvest size (gm/fish)	30	5.53	31.25	14.90
Total production (kg/year)	30	350	19,000	4,599
Selling price (baht/kg)	30	86	355	202.13
Income from shrimp (baht/year)	30	50,000	1,800,000	352,326

7. Labours used on the shrimp farms

	N	Min	Max	Average
Labour used on farm	30	0	3.00	1.57
Household labours on farm	30	0	3.0	1.50
Household labours - Male	30	0	2.00	1.03
Household labours- Female	30	0	1	0.47
Hired labours (male)	30	0	1	0.07

8. Respondents' primary fish production selling sources

Buyers	Frequency	Percent	Male (%)	Female (%)
Themselves	0	0	0	0
Middlemen	30	100.0	50.0	50.0
Total	30	100.0	50.0	50.0

9. Operation cost (Baht/year)

Items	N	Min.	Max.	Average
Seed	30	3,599.04	72,960	31,363.27
Feed	30	60,000	1,000,000	266,792.17
Hired labour	30	0	84,000	5,466.67
Chemicals and substances	30	500	58,750	18,779.37
Electricity	30	12,000	360,000	110,080
Fuel	30	0	40,000	4,921.67
Others	30	0	8,000	511.67
Pond maintenance	30	0	250,000	14,366.67
Machinery maintenance	30	0	50,000	10,623.33
Total cost	30	89,760	1,282,750	462,904.80
Average cost per kg	25	55.2	226.5	120.53

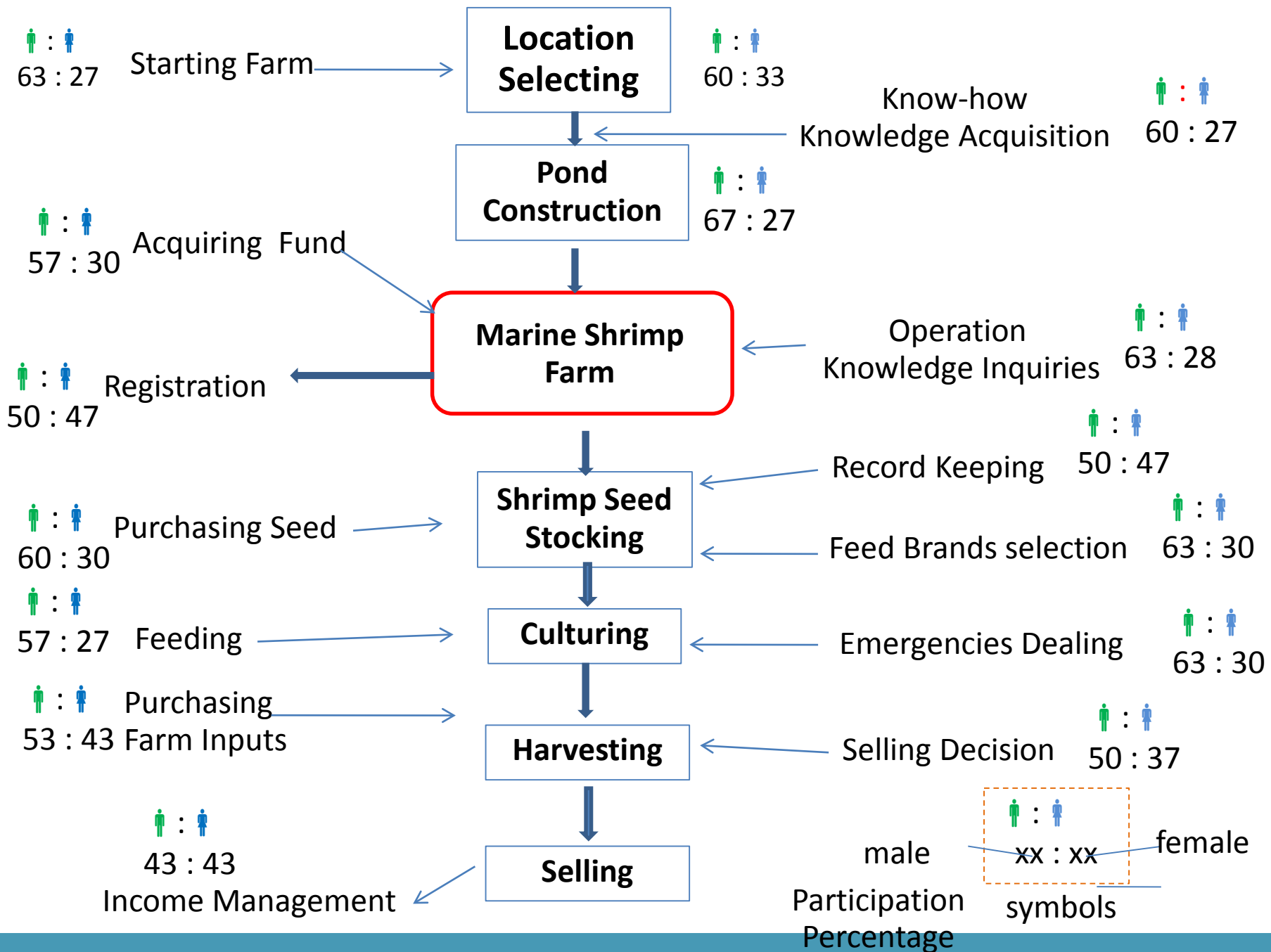
10. Gender roles in marine shrimp farming

Activities	Male		Female		Both	
	No.	%	No.	%	No.	%
❖ Who made decision to start the farm?	19	63.3	8	26.7	3	10.0
❖ Who was responsible for farm location choosing?	18	60.0	10	33.3	2	6.7
❖ Who was responsible for pond construction	20	66.7	8	26.7	2	6.7
❖ Who was responsible for acquiring knowledge when starting the farm?	18	60.0	8	26.7	4	13.3
❖ Who was responsible for acquiring knowledge for farming operation?	18	60.0	8	26.7	4	13.3
❖ Who was responsible for finding fund to support the farm operation?	17	56.7	9	30.0	4	13.3
❖ Who make the decision about purchase shrimp seedlings?	18	60.0	9	30.0	3	10.0
❖ Who did the farm record keeping?	15	50.0	14	46.7	1	3.3

Activities	Male		Female		Both	
	No.	%	No.	%	No.	%
❖ Who made decision about brands of feed used?	19	63.3	9	30.0	2	6.7
❖ Who do the feeding?	17	56.6	8	26.7	5	16.7
❖ Who made decision about purchasing farm inputs?	16	53.4	13	43.3	1	3.3
❖ Who made decision when there is an emergency problem in the farm, i.e. fish disease, water quality?	19	63.3	9	30.0	2	6.7
❖ Who made decision concerning selling shrimp production?	17	56.7	9	30.0	4	13.3
❖ Who responsible for farm registration?	15	50.0	14	46.7	1	3.3
❖ Who is responsible for income management in the farm?	13	43.3	13	43.3	4	13.4
Average		57.6		33.1		9.3

Gender Roles in Marine Shrimp Farming in Chanthaburi





In-depth Interviews

- **Most female shrimp farmers had to split their time between household chores additional occupation and shrimp farm work,**
- **There was no other obstacle for female shrimp farmers to participate in the shrimp farming,**
- **They received fair share of benefits from the shrimp farming.**
- **Shrimp farming was very much closely tied to the households in terms of labour, fund, decision making, income management and others, therefore it is more practical to view the shrimp farm and the family as a whole**

Conclusion

- **The small-scale marine shrimp farming in Chanthaburi was participated by both male and female shrimp farmers.**
- **Male shrimp farmers participated more than female shrimp farmers in all the activities in the shrimp farms.**
- **Most of the female shrimp farmers also had to take responsible for the household chores, they spent less time for the shrimp farming.**

Implication

- **Establish women groups or networks in marine shrimp farming to encourage women to participate more in the marine shrimp farming,**
- **Set up government and/or private hatcheries to supply certified and proven quality shrimp seedlings**
- **Reconsider household chores which mostly taken care by women in the house as a part of the marine shrimp farming activities in the study of gender roles in marine shrimp farming.**



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Thank you all so much

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