Establishment and Operation of a Regional System of Fisheries *Refugia* in the South China Sea and Gulf of Thailand

REPORT

TRAINING-WORKSHOP ON SOCIO-ECONOMIC STUDY AND VALUE CHAIN ANALYSIS OF FISHERIES

BANGKOK, THAILAND
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Prepared by
DEPARTMENT OF FISHERIES
THAILAND

SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER
TRAINING DEPARTMENT

Southeast Asian Fisheries Development Center

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REPORT OF THE WORKSHOP

1. OPENING OF THE WORKSHOP

1) **Ms. Praulai Nootmorn**, Senior Expert in Marine Fisheries, and Fisheries *Refugia* Focal Point for Thailand, opened the training-workshop by welcoming all participants and notified them of the objectives of the training-workshop that it aimed at building the capacities of the concerned officers to understand the principles of socio-economic study and value chain analysis of fisheries as well as the methods of data collection and research analysis in order to obtain the current status of economics and livings of the fishers. She noted that participants would be provided with a systematic tool which would allow them to understand the processes in the industry/company, and especially to know the costs related to various steps in the chain which linked all the steps in production, processing, and distribution, together. **Ms. Praulai** also highlighted that knowledge gained from this training-workshop could be applicable to the execution and evaluation of fisheries *refugia* project as well as the other research and development projects implemented in the future
2) Participants were then invited to introduce themselves. Their work spans over several projects and assignments were also mentioned. They also shared their expectations from the training and what they expected to learn.

2. PRE-TEST

3) Participants were asked to do the pre-tests on the knowledge of socio-economic study and value chain in fisheries. There were 20 questions in the test covering the items of methods and challenges of data collection for socio-economics in small-scale fisheries, classification of fishing households, sampling methods, categorization of fishing costs, and value chain compositions and processes in fisheries. It was found from the test that 13.33% of participants were well-knowledgeable, while 96.67% was less-knowledgeable.

3. THE STUDY OF SOCIO-ECONOMICS OF FISHERIES

4) **Dr Jintanee Ru Zhue**, Lecturer from the Economics Program, School of Management**,** Walailak University, gave the presentation on socio-economic study in fisheries composing of 5 components**:** 1) population and sample groups, 2) Research tools-questionnaire design, 3) fixed cost vs variable cost, 4) data collection, and 5) result analysis**.** . Regarding population and sample groups, she explained how to determine and classify the population and sample groups of fishing households, fishing vessels, and the duty of researchers. For research tools, she described how to select the appropriate research tools, and the process of developing socio-economic questionnaire for fisheries. Definitions of fixed cost and variable cost as well as their analysis were presented; and the ways for data collection were indicated. Result analysis and its challenges were pointed out in the final part, followed by giving examples and questions & answers. Details of each component were shown in annex 3.

4. VALUE CHAIN ANALYSIS OF FISHERIES

5) The topic of value chain analysis of fisheries was lectured by **Asst. Prof. Boontaree Chanklap**, Lecturer from the Business Administration Program in Logistics Management, School of Management, Walailak University. Prior to her presentation, participants were inquired for their fundamental knowledge of value chain and its analysis. She then began her lecture by introducing the concept of value chain analysis (VCA) and its definition, followed by the promotion of value added production. Schematic diagrams of value chain and reverse value chain analysis including details of fisheries supply chain from upstream to midstream and downstream were shown and explained. The lecture further included customer and public perception about business, importance of value in fish marketing systems, flow of track and

trace in value chain, and key challenges of fish value chains. **Asst. Prof. Boontaree** gave examples of value chains for some marine fish in some countries and made the conclusion subsequently. Details of her presentation on value chain analysis of fisheries were shown in annex 4.

6) **Asst. Prof. Boontaree** proceeded to the case study on value chain of blue swimming crab in Ban Don Bay of Surat Thani Province. The study included activities in the value chain of blue swimming crab, from fishermen to fish market and ended at food processing factories. Structures of supply chain and value chain for blue swimming crab in different areas in Ban Don Bay were shown; analysis of SWOT and problems in value chain were also presented. The presentation was shown in annex 5.
7) Following questions and answers, the workshop was conducted by grouping participants into four to create the value chains for 4 marine species: short mackerel, captured shrimps, cultured shrimps, and blue swimming crab. Value chains were processed and presented by each working group showing their understanding and experiences.

5. POST-TEST

8) Post-tests were done by participants after finishing workshop session. It was found that 76.67% of participants were well-knowledgeable, while 13.33% of those were found from pre-test. Comparing pre-test and post-test results, it was clearly shown that participants gained much better understanding of socio-economic study and value chain analysis of fisheries from this training-workshop.

6. EVALUATION AND RECOMMENDATION

9) Participants were finally asked to fill in the course evaluation forms covering 5 components: course program, lecturers, training procedures, facilities, and coordination for training. Evaluation scores showed that the majority of participants were highly satisfied with the course. There were some recommendations that the course should be extended to more than one day for more detail provided. Most of the participants agreed that the topics of socio-economics and value chain in fisheries were very interesting, but the time was quite limited for well-understanding.

7. CLOSURE OF THE MEETING

10) A course certification was handed out to each participant at the end of the course by **Ms. Praulai Nootmorn,** Senior Expert in Marine Fisheries, and Fisheries *Refugia* Focal Point for Thailand, and by the lecturers, **Dr Jintanee Ru Zhue** and **Asst. Prof. Boontaree**.
11) **Ms. Praulai** thanked all participants for their interests, attentions, and concentrations on the course. She expressed her hope that all participants would apply the knowledge gained from this course to each of their researches or jobs implemented in their respective responsibilities. She also urged the participants to disseminate the knowledge of socio-economic study and value chain analysis of fisheries to their colleagues and other concerned for the most benefit**. Ms. Praulai** finally thanked **Dr Jintanee Ru Zhue** and **Asst. Prof. Boontaree** from Walailak University for their supports of valuable knowledge and information.

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ANNEX 1

AGENDA

08:30 a.m. – 08.50 a.m.	**Registration**
08:50 a.m. – 09.00 a.m.	**Opening of the Training-Workshop**
09:00 a.m. – 09.15 a.m.	**Pre-Test**
09:15 a.m. – 12.00 p.m.	**The Study of Socio-economics of Fisheries**
12:00 p.m. – 01.00 p.m.	**Lunch**
01:00 p.m. – 04.15 p.m.	**Value Chain Analysis of Fisheries**
04:15 p.m. – 04.30 p.m.	**Post-Test**
04:30 p.m. – 04.45 p.m.	**Evaluation and Recommendation**
04:45 p.m. – 05.00 p.m.	**Closure of the Training-Workshop**

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ANNEX 2

LIST OF PARTICIPANTS

Lecturers

1.	Asst. Prof. Boontaree Chanklap (Ms.)	Lecturer from the Business Administration Program in Logistics Management, School of Management, Walailak University
2.	Ms. Jintanee Ru Zhue, Ph.D.	Lecturer from the Economics Program, School of Management, Walailak University

Training Participants

1.	Ms. Praulai Nootmorn	Senior Expert in Marine Fisheries, Department of Fisheries
2.	Mr. Kumpon Loychuen	Director, Eastern Gulf Fisheries Research and Development Center (Rayong), Department of Fisheries
3.	Ms. Wantana Chenkitkosol	Fisheries Technical Officer, Fishing Ground Rehabilitation and Development Group,Marine Fisheries Research and Development Division, Department of Fisheries
4.	Ms. Anyanee Yamrungrueng	Fisheries Technical Officer, Fishing Ground Fisheries Resource Assessment Group, Marine Fisheries Research and Development Division, Department of Fisheries
5.	Ms. Noppawan Muanmee	Fisheries Technical Officer, Fishing Ground Inspection and Certification Group, MarineFisheries Research and Development Division, Department of Fisheries
6.	Ms. Jeeratorn Yuttharax	Fisheries Technical Officer, Technical Group, Marine Fisheries Research andDevelopment Division, Department of Fisheries
7.	Ms. Pittayapat Suksudech	Fisheries Technical Officer, Deep Sea Survey and Reearch Group, Marine Fisheries Research and Development Division, Department of Fisheries
8.	Ms. Suphalak Ruaylap	Fisheries Technical Officer, Eastern Gulf Fisheries Research and Development Center (Rayong), Department of Fisheries
9.	Mr. Kriengkrai Attanartwong	Fisheries Technical Officer, Eastern Gulf Fisheries Research and Development Center (Rayong), Department of Fisheries
10.	Ms. Narakorn Somwanthana	Fisheries Technical Officer, Eastern Gulf Fisheries Research and Development Center (Rayong), Department of Fisheries
11.	Mr. Kanit Chuapun	Fisheries Technical Officer, Upper Gulf Fisheries Research and Development Center (Samut Prakan), Department of Fisheries

12. Ms. Sirinuch Khamsuwan	Fisheries Technical Officer, Upper Gulf Fisheries Research and Development Center (Samut Prakan), Department of Fisheries
13. Mr. Thitipon Cheumankong	Fisheries Technical Officer, Upper Gulf Fisheries Research and Development Center (Samut Prakan), Department of Fisheries
14. Mr. Napat Mahasawat	Fisheries Technical Officer, Upper Gulf Fisheries Research and Development Center (Samut Prakan), Department of Fisheries
15. Ms. Thumawadee Jaiyen	Fisheries Technical Officer, Central Gulf Fisheries Research and Development Center (Chumphon), Department of Fisheries
16. Mr. Jirawut Kumpirod	Fisheries Technical Officer, Central Gulf Fisheries Research and Development Center (Chumphon), Department of Fisheries
17. Ms. Orasa Petsalapsri	Fisheries Technical Officer, Southern Gulf Fisheries Research and Development Center (Songkhla), Department of Fisheries
18. Mr. Wirot Kongasa	Fisheries Technical Officer, Southern Gulf Fisheries Research and Development Center (Songkhla), Department of Fisheries
19. Ms. Thassanee Suppapruek	Fisheries Technical Officer, Upper Andaman Sea Fisheries Research and Development Center (Phuket), Department of Fisheries
20. Mr. Krissadakorn Hemwech	Fisheries Technical Officer, Trat Marine Fisheries Research and Development Station, Department of Fisheries
21. Ms. Minthita Joapad	Fisheries Technical Officer, Trat Marine Fisheries Research and Development Station, Department of Fisheries
22. Ms. Suda Chotjaroensuk	Fisheries Technical Officer, Ranong Marine Fisheries Research and Development Station, Department of Fisheries
23. Mr. Phusit Chanpetch	Fisheries Technical Officer, Surat Thani Fisheries Provincial Office, Department of Fisheries
24. Ms. Kanjana Ongpao	Fisheries Officer, Trat Fisheries Provincial Office, Department of Fisheries
25. Mr. Chalearmpon Chujit	Fisheries Technical Officer, Fisheries Commodity Standard System and Traceability Division, Department of Fisheries
26. Mr. Anucha Intana	Fisheries Technical Officer, Fisheries Commodity Standard System and Traceability Division, Department of Fisheries
27. Ms. Thitima Niyomsilpchai	Fisheries Technical Officer, Department of Marine and Coastal Resources
28. Ms. Chanakarn Thammavichan	Fisheries Technical Officer, Department of Marine and Coastal Resources
29. Ms. Chanokphon Jantharakhantee	Fisheries Technical Officer, Department of Marine and Coastal Resources
30. Ms. Metavee Chuangcharoendee	Fisheries Technical Officer, Department of Marine and Coastal Resources
31. Ms. Urairathr Nedtharnn	Lecturer, Faculty of Fisheries, Kasetsart University

32. Ms. Sasiwimon Khlongakkhara	Ph.D. Student, Faculty of Fisheries, Kasetsart University
33. Ms. Jirekha Tanpradit	Master Student, Faculty of Fisheries, Kasetsart University
34. Ms. Nuttharika Ponoy	Master Student, Faculty of Fisheries, Kasetsart University
35. Ms. Varuntorn Kaewtankon	Technical and Coordinating Officer, Sustainable Development Foundation
36. Ms. Triyada Trimaka	Technical and Coordinating Officer, Sustainable Development Foundation
37. Ms. Pannalak Srithong	Fisheries Refugia Project Staff, Department of Fisheries
38. Ms. Jutima Jangjaiboon	Fisheries Refugia Project Staff, Department of Fisheries
39. Ms. Chanokporn Muenchamnan	Fisheries Refugia Project Staff, Department of Fisheries

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ANNEX 3
THE STUDY OF SOCIO-ECONOMICS OF FISHERIES

The Study of Socio-economics of Fisheries

By Dr. Jintanee Ru Zhue
Economics Program
School of Management

ดร.จินตนีย์ รู้ซื่อ Jintanee Ru Zhue
อาจารย์ สาขาวิชาเศรษฐศาสตร์
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มหาวิทยาลัยวลัยลักษณ์

การศึกษา
เศรษฐศาสตรบัณฑิต (เกียรตินิยมอันดับ 1 เหรียญทอง)
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เศรษฐศาสตรมหาบัณฑิต จุฬาลงกรณ์มหาวิทยาลัย
Ph.D. (Economics) มหาวิทยาลัยเชียงใหม่

ประสบการณ์การสอน
- เศรษฐศาสตร์การจัดการ
- เศรษฐศาสตร์ธุรกิจการตลาด
- เศรษฐกิจสร้างสรรค์

Fishing Carrier

"Income" uncertain
but
"Expense" certain

Content

- Population and Sample Groups
- Research Tools—questionnaire design
- Fixed Cost vs Variable Cost
- Data Collection
- Result Analysis

Population and Sample Groups

- Of whom we want to study the socio-economic status?
- Who provides data?

Population and Sample Groups of Fishing Households

หมายถึง หน่วยเศรษฐกิจทั้งที่เป็นครัวเรือน และสถานประกอบการที่ดำเนินงานเกี่ยวกับการทำประมงทะเล/เพาะเลี้ยงชายฝั่งในรอบปีที่แล้ว ซึ่งจำแนกออกตาม

1. ประเภทของการดำเนินงาน ได้แก่
   1.1 ครัวเรือนประมงที่ดำเนินงานเป็นของตนเอง หมายถึง ครัวเรือนส่วนบุคคลที่ทำประมงทะเล/เพาะเลี้ยงชายฝั่งด้วยการลงทุนทุกอย่างของตนเองแต่ผู้เดียว
   1.2 ครัวเรือนประมงที่ดำเนินงานร่วมกัน หมายถึง หน่วยเศรษฐกิจที่ทำประมงทะเล/เพาะเลี้ยงชายฝั่ง ภายใต้การดำเนินงานร่วมกันของครัวเรือนตั้งแต่ 2 ครัวเรือนขึ้นไป ซึ่งอาจเป็นการลงทุนร่วมกัน หรือจัดหาเรือ เครื่องมือประมง ฯลฯ ร่วมกัน
   1.3 บริษัทหรือห้างหุ้นส่วนนิติบุคคลที่ทำประมงทะเล/เพาะเลี้ยงชายฝั่ง
2. ขนาดของการดำเนินงาน
   2.1 การประมงทะเล
   ในการสำรวจครั้งนี้ได้แยกครัวเรือนประมงออกเป็น 2 กลุ่มตามประเภทของเรือที่ใช้ทำประมง ดังนี้
   กลุ่มที่ 1 ครัวเรือนประมงขนาดเล็ก ได้แก่ ครัวเรือนประมง
   - ไม่ใช้เรือประมง
   - ใช้เรือมีเครื่องยนต์นอกเรือ (เรือหางยาว)
   - ใช้เรือมีเครื่องยนต์ในเรือที่มีระวางบรรทุกรวมน้อยกว่า 10 ตันกรอส

   กลุ่มที่ 2 ครัวเรือนประมงแบบธุรกิจ ได้แก่ ครัวเรือนที่ใช้เรือชนิดมีเครื่องยนต์ในเรือที่มีระวางบรรทุกรวมตั้งแต่ 10 ตันกรอสขึ้นไป
   2.2 การเพาะเลี้ยงชายฝั่ง
   ขนาดของการดำเนินงานของครัวเรือนในการเพาะเลี้ยงชายฝั่ง พิจารณาได้จากประเภทของการเพาะเลี้ยงหลักของครัวเรือน ดังนี้
   - การเพาะเลี้ยงกุ้ง
   - การเพาะเลี้ยงปลา
   - การเพาะเลี้ยงหอย
   - การเพาะเลี้ยงอื่นๆ
3. ลักษณะของการดำเนินงาน ได้แก่
   3.1 ครัวเรือนที่ทำประมงทะเลอย่างเดียว
   3.2 ครัวเรือนที่ทำการเพาะเลี้ยงชายฝั่งอย่างเดียว
   3.3 ครัวเรือนที่ทำทั้งประมงทะเลและเพาะเลี้ยงชายฝั่ง

Population and Sample Groups of Fishing Vessels

หมายถึง ยานพาหนะทางน้ำทุกชนิดที่ครัวเรือนประมงใช้ทำประมงในรอบปีที่แล้ว โดยแยกออกเป็น

1. เรือไม่มีเครื่องยนต์
2. เรือมีเครื่องยนต์นอกเรือ (เรือหางยาว)
3. เรือมีเครื่องยนต์ในเรือ โดยจำแนกขนาดเรือออกตามชั้นของระวางบรรทุกเรือ ดังนี้
   - น้อยกว่า 5 ตันกรอส
   - 5 และน้อยกว่า 10 ตันกรอส
   - 10 และน้อยกว่า 20 ตันกรอส
   - 20 และน้อยกว่า 30 ตันกรอส
   - 30 และน้อยกว่า 50 ตันกรอส
   - 50 ตันกรอสขึ้นไป

Population and Sample Groups of Small-scale and Commercial Fishing vessels

ต้องแยกให้ออกโดยใช้เกณฑ์มาตรฐานหน้าก่อนหน้านี้

Population and Sample Groups

Consider from research title and objectives

Duty of Researchers

Determine population and sample groups clearly– fishing households – general or specific

- Just the owners or fishing employees included
- Sizes of fishing vessels - inshore fishing vessels or commercial fishing vessels
- Categorize by fishing gears, e.g. blue swimming crab gill net, blue swimming crab trap, etc.

Population and Sample Groups --example--

Socio-economic status of blue swimming crab fishermen in Ban Don Bay of Surat Thani Province

Population and Sample Groups --example—

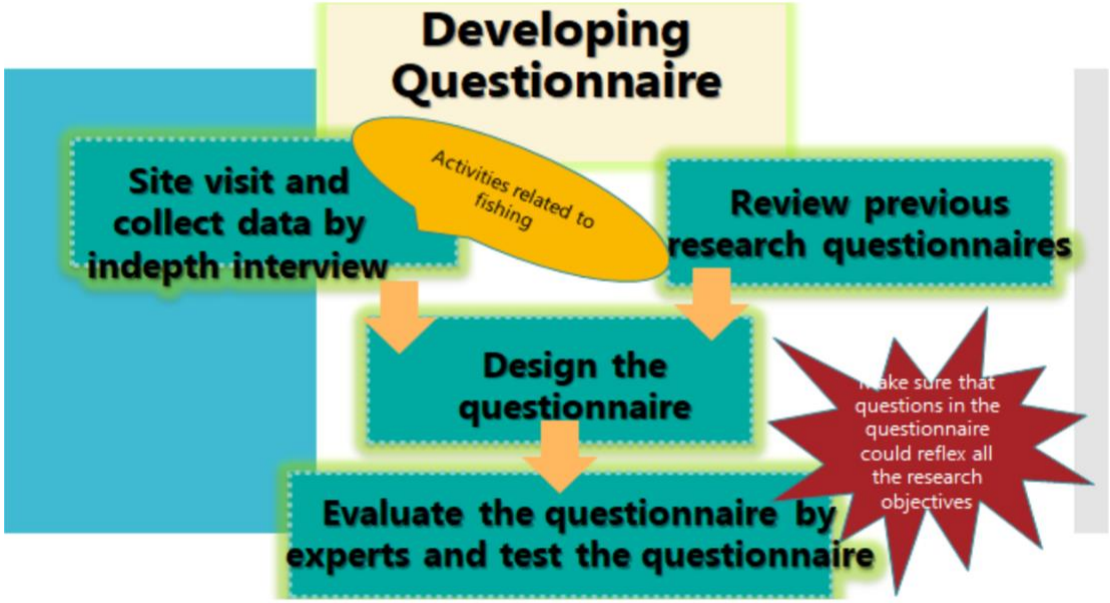
source: Suasung, H. (2009)

Samplings for the representatives of population

Research Tools—design

Select the appropriate research tools

สภาพเศรษฐกิจและสังคมชาวประมง ในความเห็นวิทยากรเครื่องมือที่เหมาะสมที่สุดคือ แบบสัมภาษณ์ เนื่องจากคำถามค่อนข้างละเอียดและซับซ้อนบางส่วนต้องมีการคำนวณจึงไม่เหมาะที่จะให้แบบสอบถามให้ชาวประมงกรอกข้อมูลเอง



Research Tools—questionnaire design

Interesting items to be additionally included in the fishery socio-economic questionnaire

- Numbers of fishing vessels in fishing households
- Types of economic activities
- Types of houses
- Sizes of fishing vessels
- Types of fishing gears
- GPS
- .....
- .....
- .....

Try to fill in

Cost Analysis of Blue Swimming Crab Fisheries
(ข้อมูลตัวอย่างกรุณาอย่าใช้อ้างอิง)

Fixed Cost
- เรือ
- เครื่องยนต์
- อวน
- ค่าซ่อมบำรุงและอุปกรณ์ต่าง ๆ
- ต้นทุนที่สูงสุดคืออวนประมาณ 99,000 บาทต่อปี
- ต้นทุนเครื่องยนต์เฉลี่ย 30,000 บาท

Variable Cost
คิดต้นทุนผันแปรจากจำนวนการออกเรือโดยคิดเฉลี่ยออกเรือ 10 วัน/เดือน
- ค่าแรง
- ค่าวัสดุ
- ค่าน้ำมันเชื้อเพลิง
- ค่าน้ำมันหล่อลื่น
- ค่าอาหาร
- ค่าขนส่งและอื่น ๆ
- ค่าแรงมีมูลค่าสูงสุดคือ 108,000 บาท/ปี เป็นค่าแรงที่เป็นตัวเงิน 72,000 บาท

Total Cost
ต้นทุนรวมในการทำประมงปูม้า มีมูลค่า 433,500 บาท/ปี
- ต้นทุนที่เป็นตัวเงิน 385,500 บาท/ปี
- ต้นทุนรวมไม่เป็นตัวเงิน คิดเป็น 48,000 บาท/ปี

Data Collection

Who Where When

Who
- ข้อมูลรายได้ค่าใช้จ่ายของครัวเรือนประมง อาจจะไม่ได้รู้ข้อมูลเพียงแค่คนเดียวจึงอาจต้องถามหลายๆคนในครัวเรือนพร้อม ๆ กัน

Where and When
- เวลาของชาวประมงจะไม่ตรงกับการทำงานออฟฟิศทั่วไป นักวิจัยต้องทำความเข้าใจกับธรรมชาติของอาชีพ
- โดยปกติแล้วชาวประมงพื้นบ้านจะออกเรือหัวรุ่งและกลับมาสายๆ ทั้งนี้ขึ้นอยู่กับชนิดประมง ฤดูกาล ด้วย
- เวลาที่เหมาะสมในการสัมภาษณ์ คือ ช่วงที่ชาวประมงและคนในครัวเรือนช่วยกันทำความสะอาดและเก็บอวนเพราะหลังจากนั้นแต่ละครัวเรือนจะมีภารกิจที่ต้องแยกย้ายกันไป

Data Collection

- ควรใช้ภาษาที่ง่าย ไม่ซับซ้อน
- การเก็บข้อมูลผลผลิต ควรเก็บเป็นช่วงเวลาแล้วนำมาคำนวนค่าเฉลี่ย เช่น
  - ช่วงที่ได้ผลผลิตมาก-น้อย
  - ปริมาณผลผลิตที่เก็บได้ในช่วงมาก-น้อย
  - ราคาที่เก็บผลผลิตได้มาก-น้อย
- ปฏิทินชาวประมง

Example of Data Collection Tools

แบบสอบถามสภาวะเศรษฐกิจ สังคม และต้นทุนผลตอบแทนของชาวประมงปูม้าพื้นที่อ่าวบ้านดอน

Fixed Cost vs Variable Cost

- **ต้นทุนคงที่ หรือ Fixed Cost** คือ ต้นทุนที่จะไม่แปรผันตามปริมาณการผลิต ไม่ว่าผู้ผลิตจะผลิตสินค้ามากแค่ไหนไม่ว่าจะผลิตสินค้ากี่หน่วยหรือแม้แต่ไม่ผลิตก็ยังคงต้องจ่าย ต้นทุนคงที่ (Fixed Cost) ต่อไปเรื่อยๆ
- **ต้นทุนแปรผัน หรือ Variable Cost** คือ ต้นทุนที่เปลี่ยนแปลงไปตามปริมาณการผลิต กล่าวคือ เมื่อระดับกิจกรรมเพิ่มขึ้น Variable Cost ก็จะเพิ่มสูงขึ้น และน้อยลงเมื่อระดับกิจกรรมลดลง (ผลิตมาก ต้นทุนมาก ผลิตน้อย ต้นทุนก็น้อย)

Goods are the fishing products

Level of activities, e.g. number of fishing trips

Fixed Cost vs Variable Cost

Which of these are fixed cost (FC) or variable cost (VC)?

vessel fuel ice traps nets maintenance
Labour food and drink vessel registration

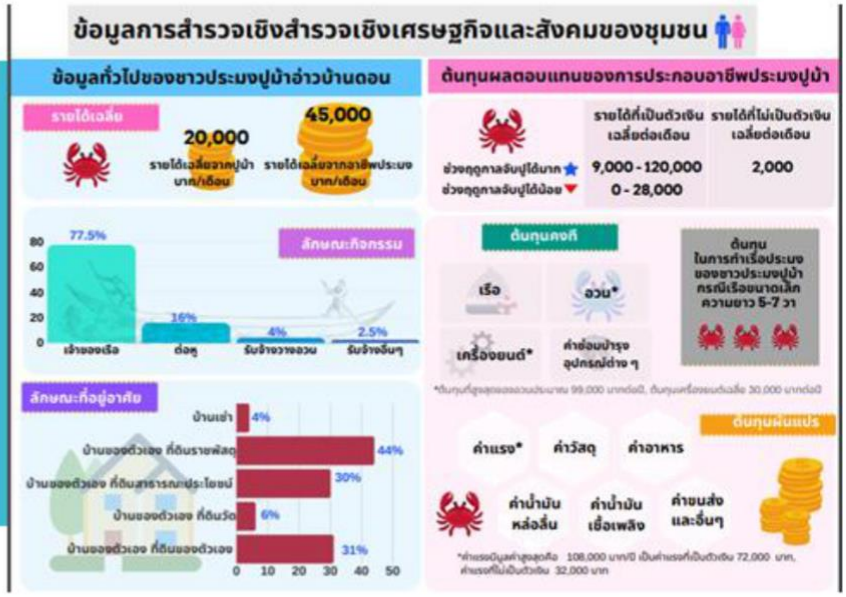
FC	VC
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Result Analysis

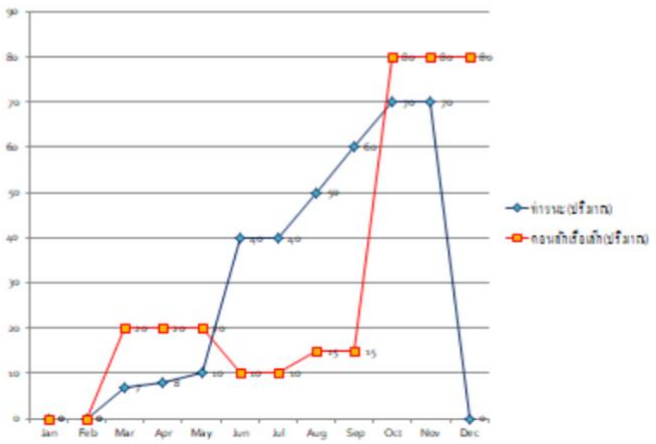
ความท้าทาย

- ข้อมูลการกระจายมาก ดังนั้นต้องแบ่งกลุ่มให้ดี ๆเช่น แบ่งตามขนาดเรือ เครื่องมือที่ใช้ พื้นที่
- การวิเคราะห์หน่วยข้อมูลให้เหมาะสมและสอดคล้องกับวัตถุประสงค์เช่น ผลผลิตต่อเที่ยวเรือรายรับ-ต้นทุนต่อเที่ยว ต้นทุน-กำไรต่อกิโลกรัม
- การวิเคราะห์ข้อมูลเชิงเปรียบเทียบ

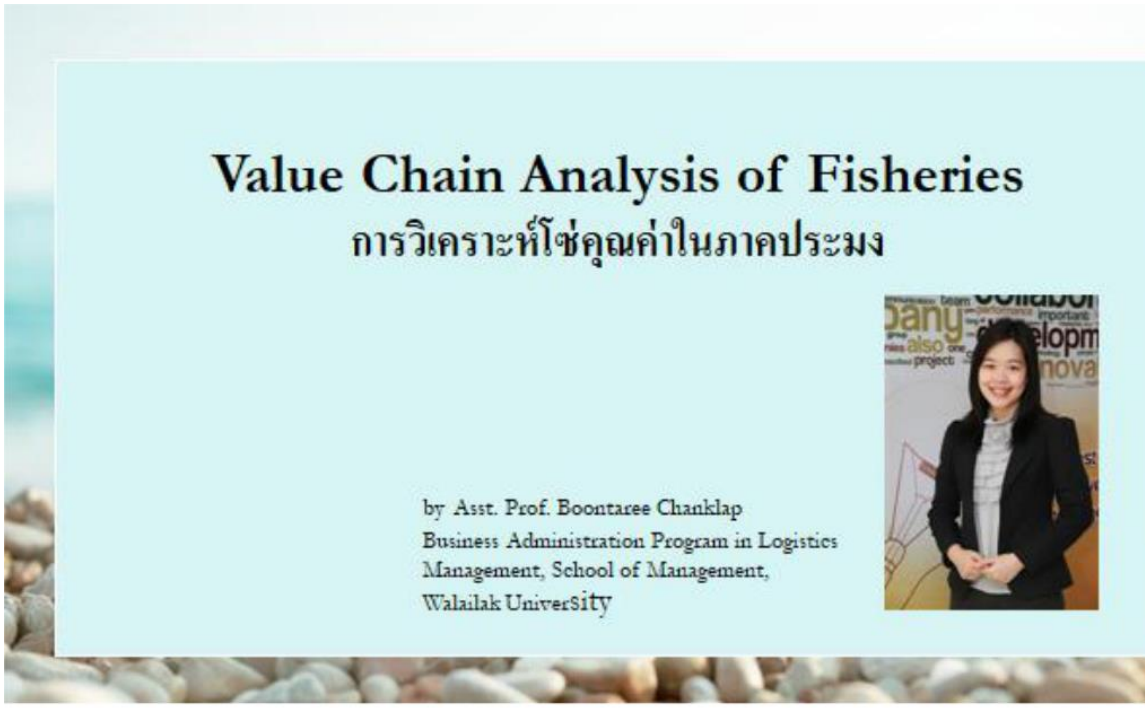
Example

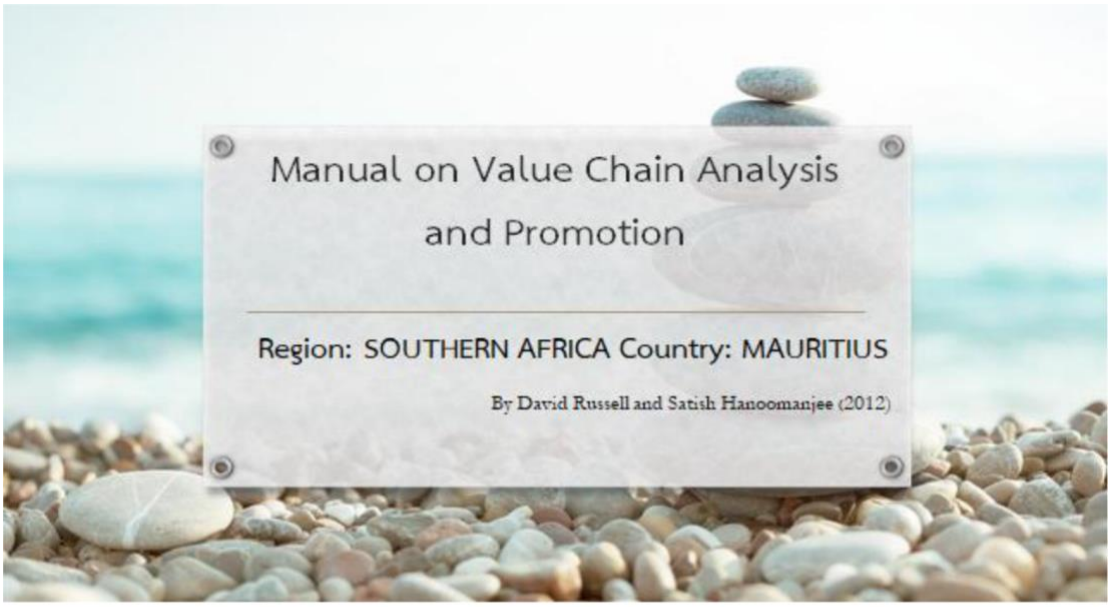


Example of Fishing Calendar



ANNEX 4
VALUE CHAIN ANALYSIS OF FISHERIES





Concept of Value Chain Analysis

Value chain analysis (VCA) provides government policy makers and fishing company management with a systematic tool which allows them to understand the processes in the industry/company, and especially know the costs related to the various steps in the chain. The concept of the value chain simply links all the steps in production, processing, and distribution, together - and allows us to analyze each step in relation to the preceding steps and the steps that follow.

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What is value chain analysis?

A value chain is a chain of activities where products pass through all activities of the chain in sequence, and at each activity the product gains some value. The chain of activities gives the products more added value than the sum of added values of all activities. It is important not to mix the concept of the value of the product with the costs of producing it.

The most important implication of applying the value chain approach, however, is that all decisions made at one step in the process, have consequences for the following steps - and such decisions may be irreversible. For example, if you kill and dress the fish when you catch it, this means you cannot sell it as a live fish later!

The value chain consists of primary activities such as creating and delivering a product (e.g. producing fish fillets); support activities that are not directly involved in production, but are likely to increase the effectiveness or efficiency (e.g. research and development). Also, some primary and support activities can be outsourced.

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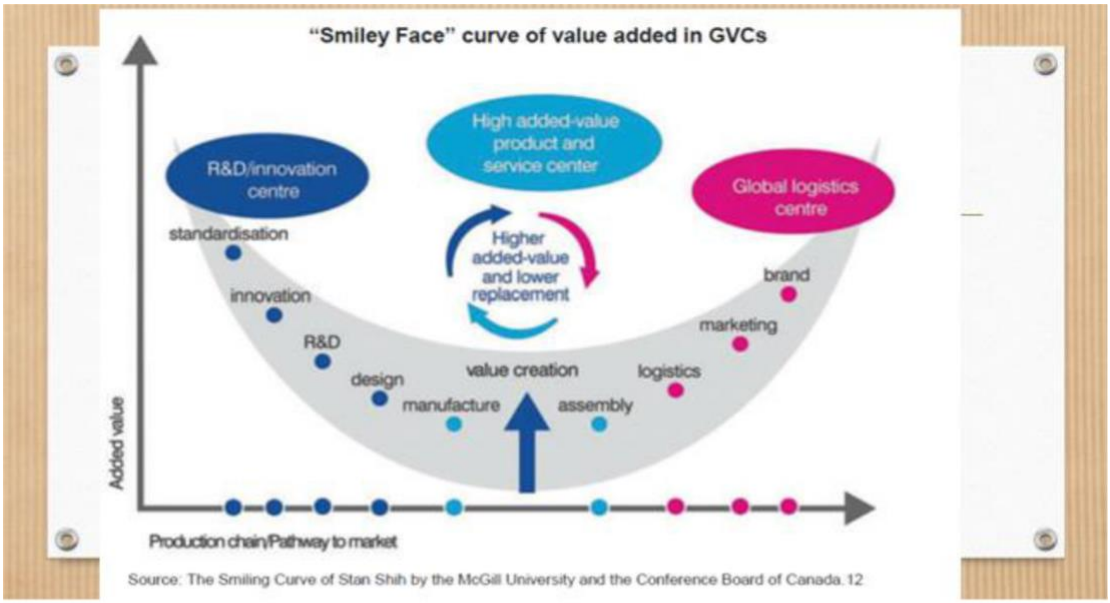
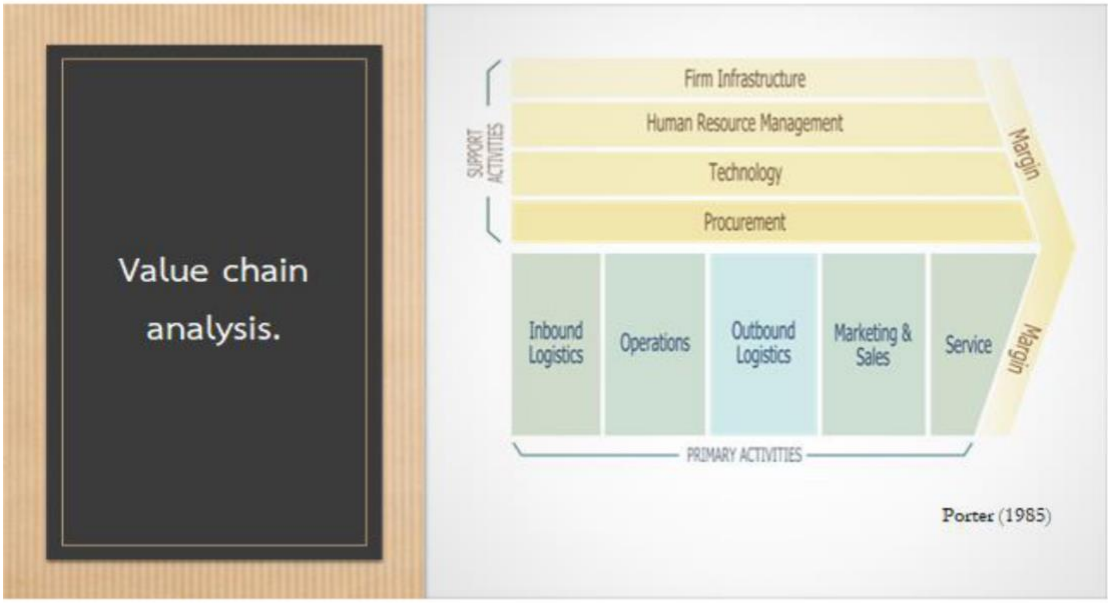
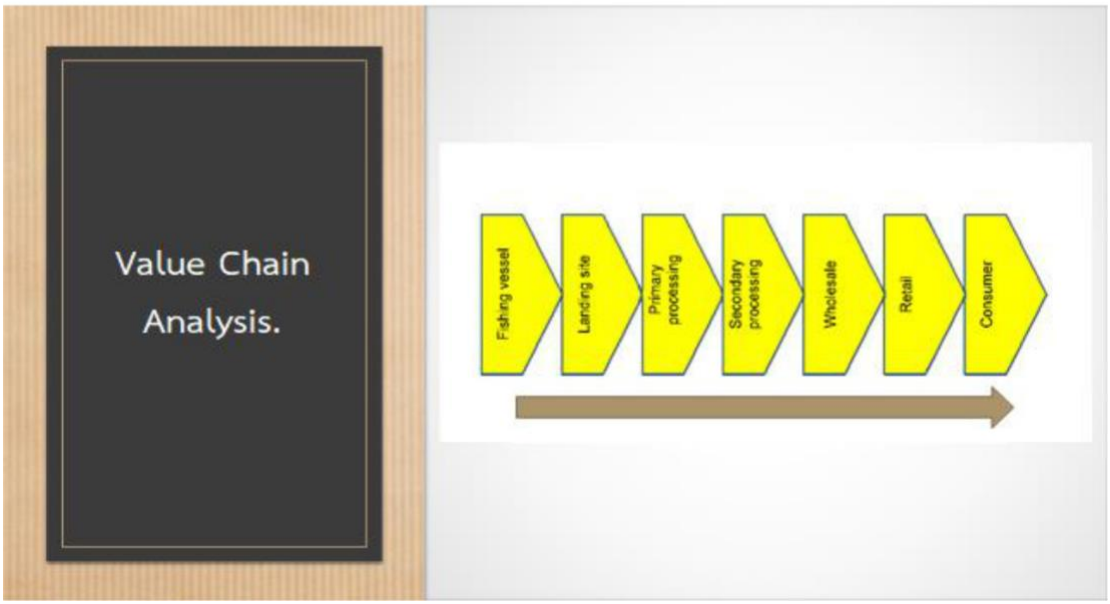
Reasons for promoting value added production.

- Higher profits.
- More stable market conditions, as prices for consumer products show less variation than commodity prices.
- Job creation.
- Diversification of products and markets.
- Down stream economic benefits through industry support sectors becoming more involved.
- Our strategic position should be one of maximizing overall value.

Remember: The sum of the value chain should create a value that is greater than the sum of each individual activity. In other words, it should create a profit margin.

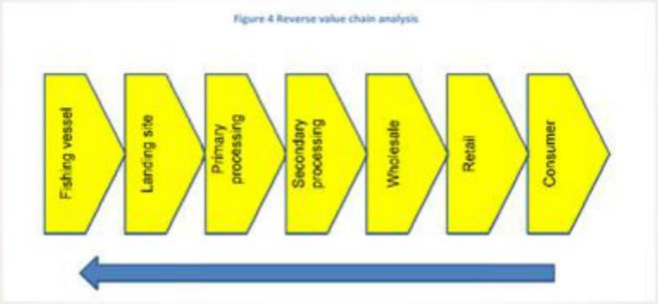

"Smiley Face" curve of value added in GVCs
R&D/innovation centre
High added-value product and service center
Global logistics centre
standardisation
innovation
R&D
design
manufacture
value creation
assembly
logistics
marketing
brand
Higher added-value and lower replacement
Added value
Production chain/Pathway to market
Source: The Smiling Curve of Stan Shih by the McGill University and the Conference Board of Canada.12


Value chain analysis.
Firm Infrastructure
Human Resource Management
Technology
Procurement
SUPPORT ACTIVITIES
Margin
Inbound Logistics
Operations
Outbound Logistics
Marketing & Sales
Service
Margin
PRIMARY ACTIVITIES
Porter (1985)


Value Chain Analysis.
Fishing vessel
Landing site
Primary processing
Secondary processing
Wholesale
Retail
Consumer

Reverse Value Chain Analysis.

Figure 4 Reverse value chain analysis



Reverse Value Chain Analysis.

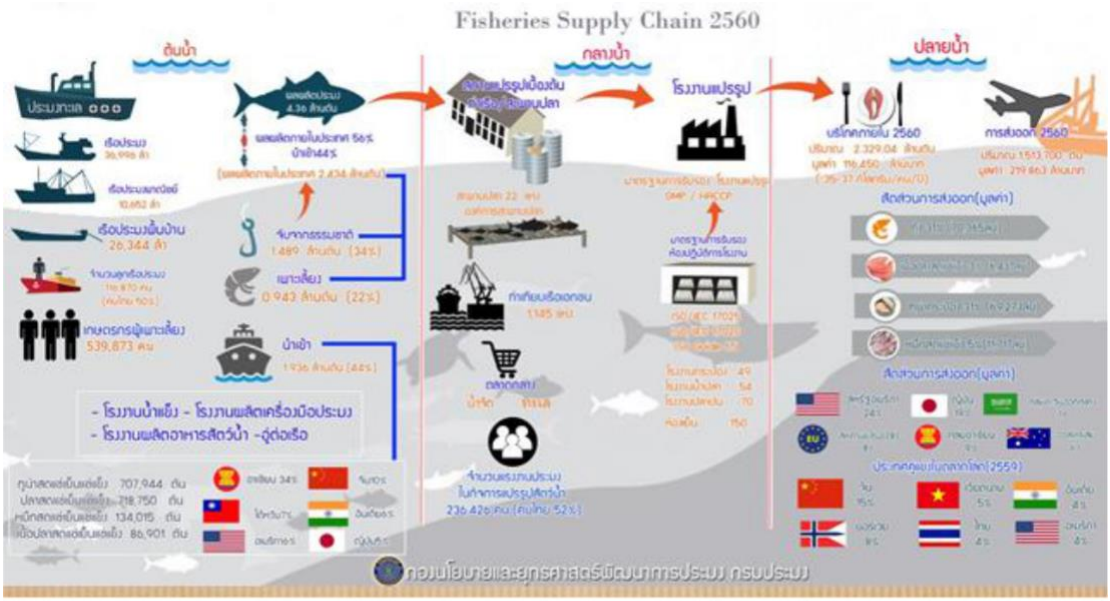
Remember that buyers and sellers remain connected along the value chain:

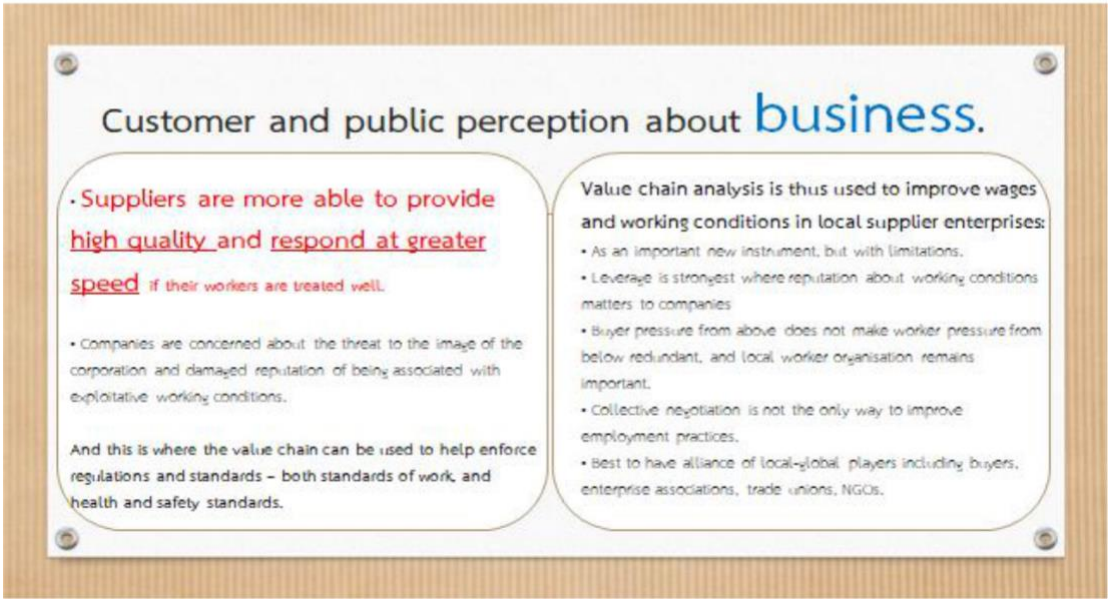
- **Value chain analysis helps to explain the connection between all actors in the chain of production and distribution**
- It provides producer-buyer links in which all parties can act freely
- In **labour intensive industries**, the power can shift from producers to traders or retailers
- Pressure on leading companies of global value chains can improve working conditions amongst **suppliers.**

The buyer-driver approach.

Figure 5 A schematic value chain in fisheries

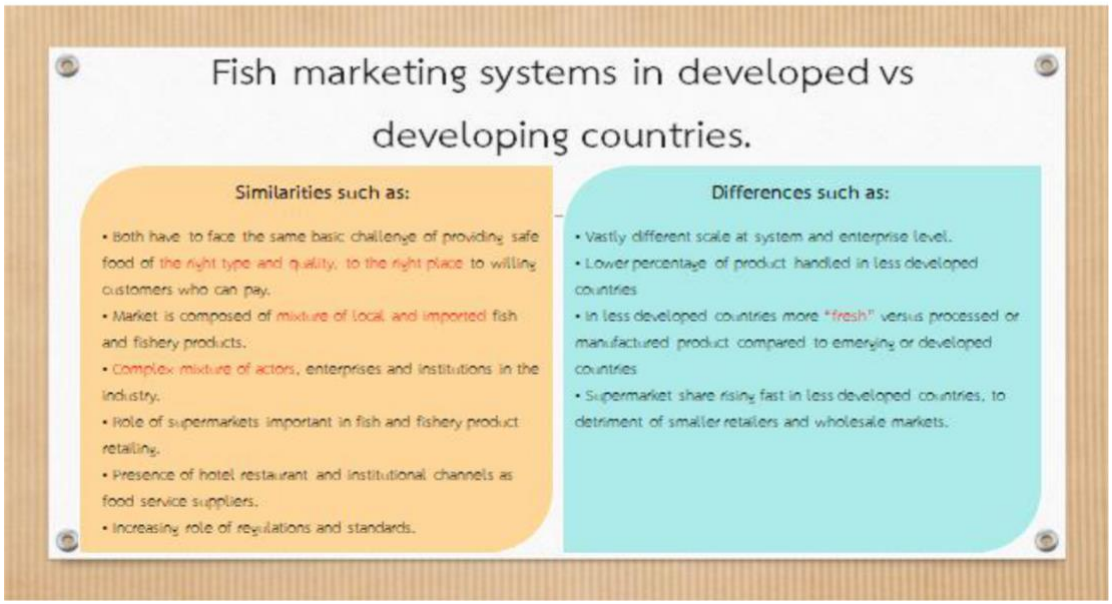
Source: Young, Jimmy, April 2010.


Fisheries Supply Chain 2560
ต้นน้ำ
กลางน้ำ
ปลายน้ำ
โรงงานแปรรูป
- โรงงานน้ำแข็ง - โรงงานผลิตเครื่องมือประมง
- โรงงานผลิตอาหารสัตว์น้ำ -อู่ต่อเรือ


Customer and public perception about business.
• Suppliers are more able to provide high quality and respond at greater speed if their workers are treated well.
• Companies are concerned about the threat to the image of the corporation and damaged reputation of being associated with exploitative working conditions.
And this is where the value chain can be used to help enforce regulations and standards – both standards of work, and health and safety standards.
Value chain analysis is thus used to improve wages and working conditions in local supplier enterprises:
• As an important new instrument, but with limitations.
• Leverage is strongest where reputation about working conditions matters to companies
• Buyer pressure from above does not make worker pressure from below redundant, and local worker organisation remains important.
• Collective negotiation is not the only way to improve employment practices.
• Best to have alliance of local-global players including buyers, enterprise associations, trade unions, NGOs.


Getting seafood to market and the need for careful handling.
The main emphasis here is the need for good quality products which in turn promote realization of a better price at market. Quality assurance starts right from the time the fish is caught till it reaches the consumer. The need for market information and market research are also very important. Value to products requires us to:
• Value OUR product.
• Know OUR role.
• Maintain high standards.
• Know OUR customer.
• Communicate with each step in the value chain.


How do consumers decide on value?
Remember that:
Price is a key factor, but most consumers do not buy on price alone
Quality is assessed to determine value
Value = Quality / Price
Price is the money charged and costs incurred (convenience, location etc.)
Quality is multi faceted and variable.
Price fluctuation is another aspect that influences the performance of the various steps in the value chain.


Fish marketing systems in developed vs developing countries.
Similarities such as:
• Both have to face the same basic challenge of providing safe food of the right type and quality, to the right place to willing customers who can pay.
• Market is composed of mixture of local and imported fish and fishery products.
• Complex mixture of actors, enterprises and institutions in the industry.
• Role of supermarkets important in fish and fishery product retailing.
• Presence of hotel restaurant and institutional channels as food service suppliers.
• Increasing role of regulations and standards.
Differences such as:
• Vastly different scale at system and enterprise level.
• Lower percentage of product handled in less developed countries
• In less developed countries more "fresh" versus processed or manufactured product compared to emerging or developed countries
• Supermarket share rising fast in less developed countries, to detriment of smaller retailers and wholesale markets.

Key challenges of fish value chains.

Value chains are however not a magic word to solve all a company's problems. An awareness of common challenges that most fisheries businesses face up to at some stage, helps to position a company to confront its own particular giants. Among these key challenges are:

- **Different locations of fish resources and markets.**
- **Complex global trading links and patterns of exchange.**
- **Diverse raw materials require transformation and allocation to specialised value chains satisfying varied market needs.**
- **Chains & activities are interdependent and have a mutual impact.**
- **Delivered quality levels and value adding options depend upon earlier chain activities.**
- **Vertical communication networks and chain management.**
- **Consumers are the ultimate determinant of value.**

Comparisons of benefits versus limitations of value chains.

Table 2: Comparisons of benefits versus limitations of value chains

Benefits of value chain	Limitations of value chain
Effective in tracing product flows	Actors often operate within set rules (e.g trade rules) and blockages
Shows value adding stages	Value chain analysis should be well informed about rules and standards requirements
Identifies key actors and relationships with other actors in the chain	Difficult to make information specific and meaningful
Effective in tracing product flows	Transaction costs: Buyer reluctance to buy from multitude of suppliers
Shows value adding stages	Conflict with buyers' own competence: buyers only contribute to further own interests
Identifies key actors and relationships with other actors in the chain	

Some of these limitations have manageable solutions:

Transaction costs and buyer reluctance to buy from a multitude of suppliers can be solved by small producers organizing horizontally so that buyers interact with one collective organization, e.g. a cooperative society. (Cooperative societies have the added benefit of purchasing in bulk for its members at reduced cost, thus lowering the production costs).

Challenges for developing country suppliers.

Developing countries also have additional difficulties specific to economic realities, including

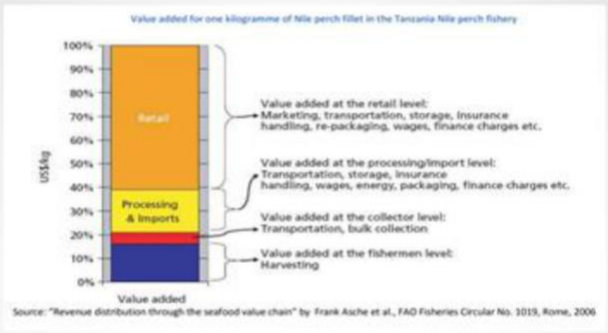
- Choosing between commodity and specialty markets
- Retaining and expanding market access
- Gaining and holding a position in lucrative value/supply chains
- Penetrating, holding, expanding better markets
- Raising productivity and competitiveness
- Increasing value added
- Dealing effectively with emerging standards

Reducing value losses.

Reducing value losses along the value chain then requires anticipating and minimising problems, and planning ahead to maximise value. Some strategies include:

- Decrease product variability.
- Improve product quality.
- Streamline administration.
- Reduce handling and movement.
- Improve plant layout
- Optimise the use of equipment and inputs
- Improve staff productivity
- Reduce damage and theft.

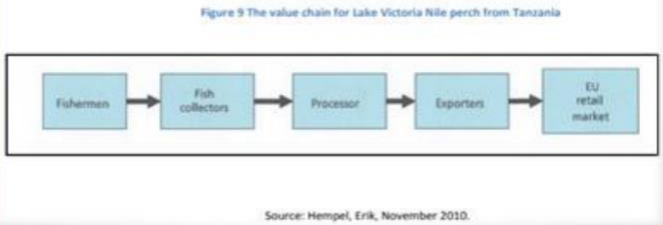
So where does the money go?



Processors get a relatively small share. The big winner in the Nile perch industry is the retail sector, including marketing, transportation, storage and packaging. This sector gets over 60% of the total retail value.

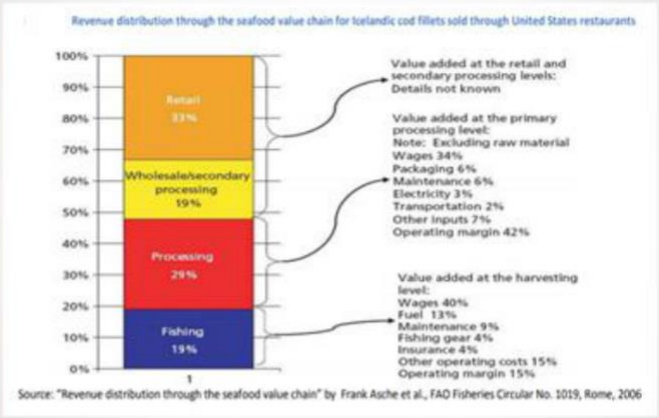
This is reflected in the distribution of value within the value chain. The fishermen get about 15% of the value of the retail price for Nile perch while fish collectors obtain about 5% of the retail value, the same share as the Icelandic cod fishermen, a little less than 20%.

So where does the money go?



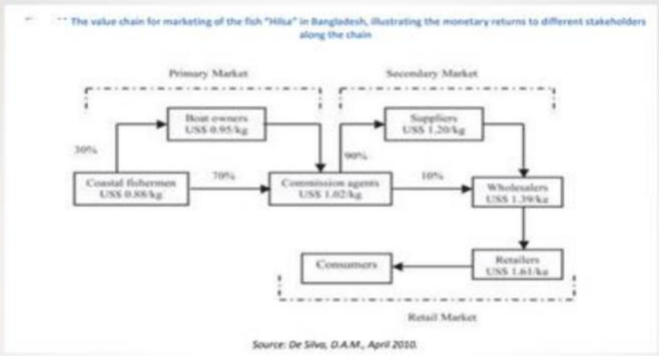
Source: Hempel, Erik, November 2010.

Revenue distribution through the seafood value chain for Icelandic cod fillets sold through United States restaurants.



Source: "Revenue distribution through the seafood value chain" by Frank Asche et al., FAO Fisheries Circular No. 1019, Rome, 2006

Calculating monetary gains along the value chain.



Source: De Silva, D.A.M., April 2010.

Marketing financial data was gathered from each of the key value chain stakeholders as illustrated in the above flow diagram. The profit to each stakeholder was then calculated using the following simple formulas:

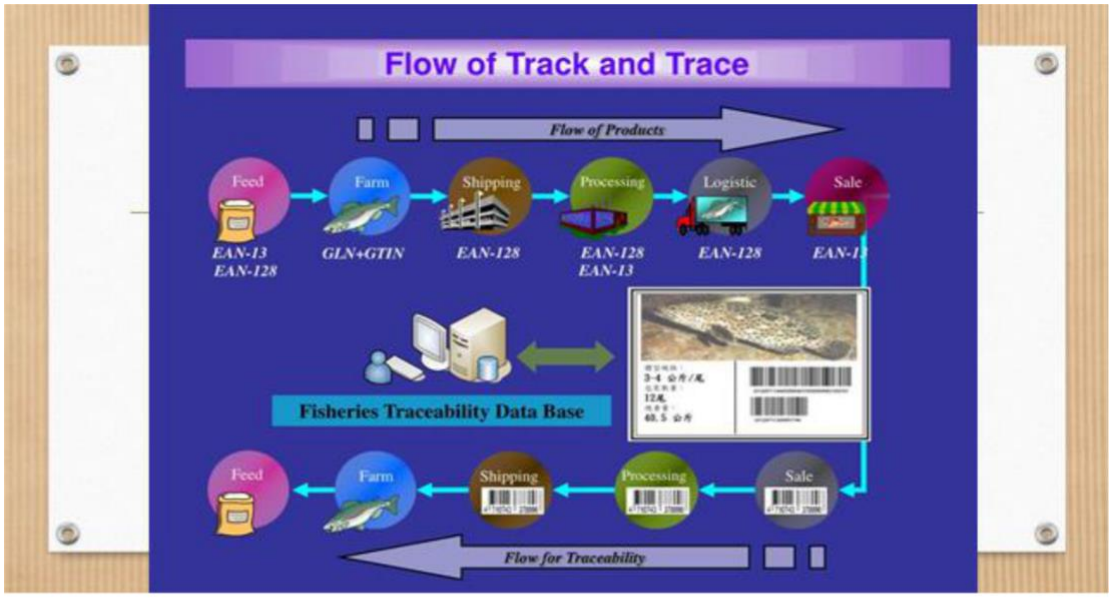
Marketing Margin (MM) = Sales Price (SP) minus Purchase Price (PP)

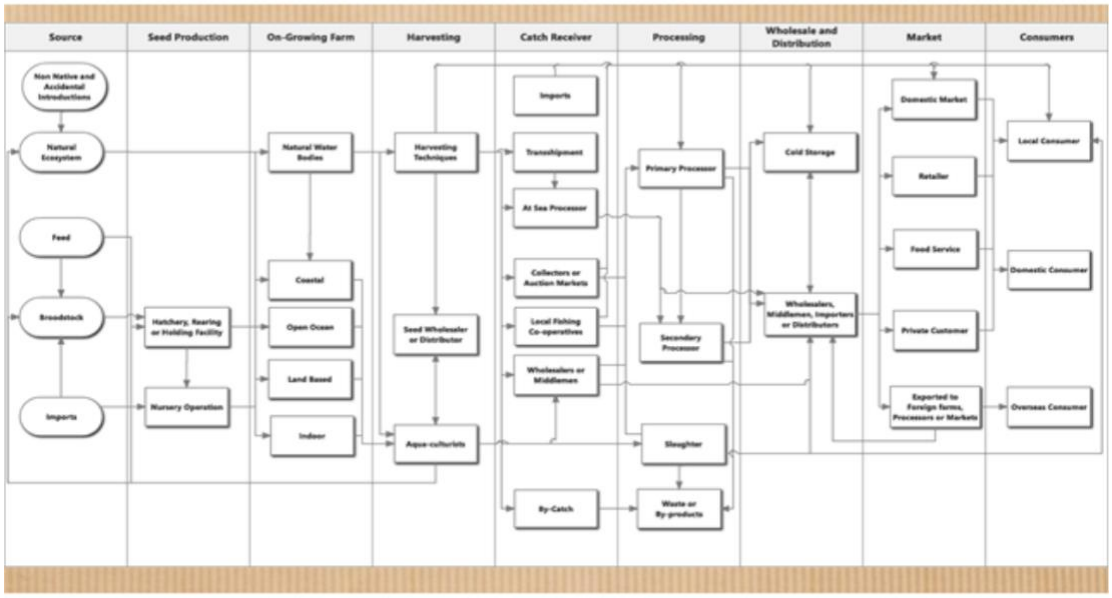
Marketing Profit (MP) = Marketing Margin (MM) minus Marketing Cost (MC)

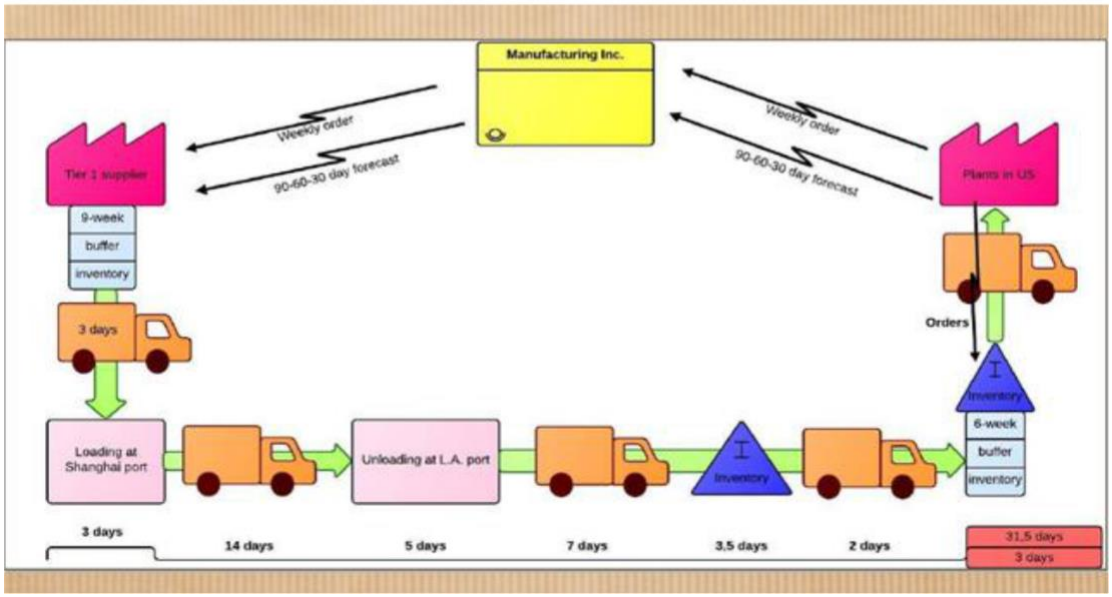
Primary market	
Purchase price (PP)	0.88
Marketing costs (MC)	0.05
Sales price (SP)	1.02
Market margin (MM=SP-PP)	**0.14 (8%)**
Marketing profit (MP=MM-MC)	0.09

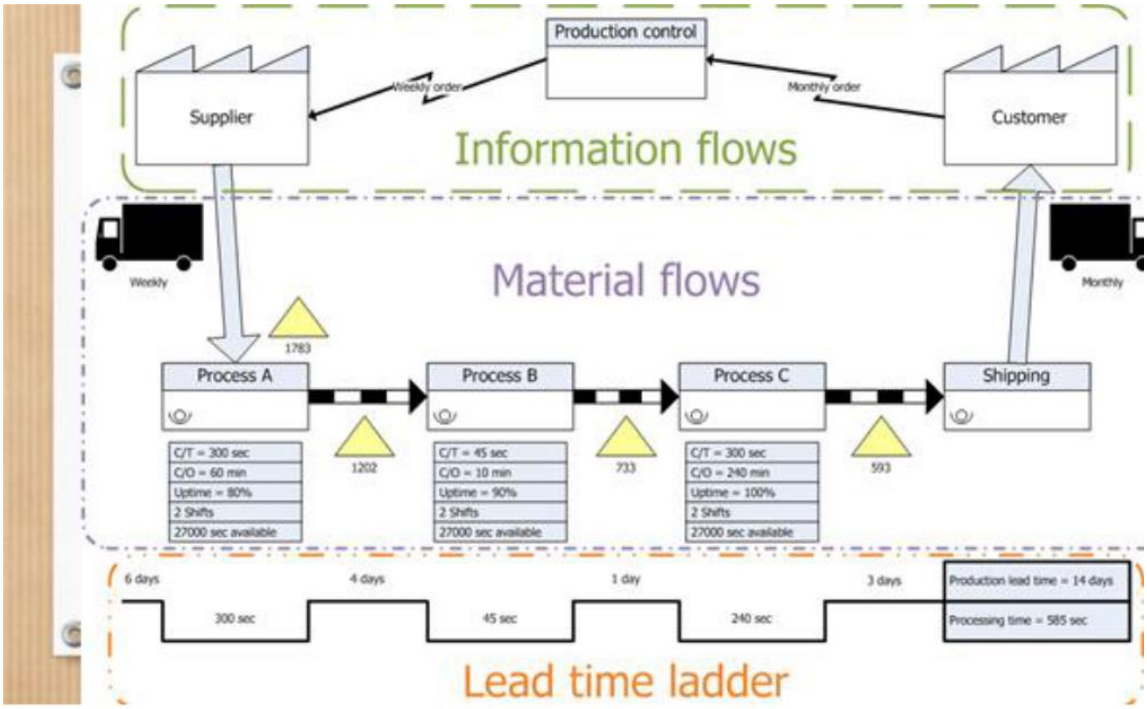
Secondary market	
Purchase price (PP)	1.02
Marketing costs (MC)	0.07
Sales price (SP)	1.39
Market margin (MM=SP-PP)	**0.37 (23%)**
Market profit (Mp=MM-MC)	0.30

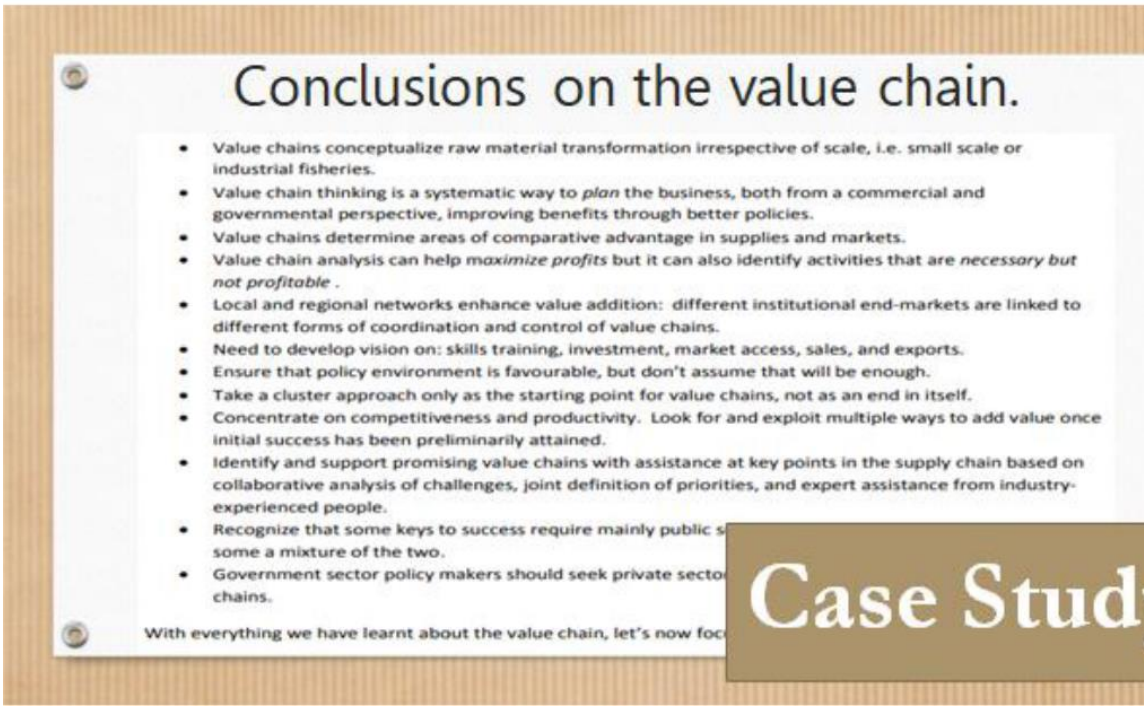
Retail market	
Purchase price (PP)	1.39
Marketing costs (MC)	0.04
Sales price (SP)	1.61
Market margin (MM=SP-PP)	**0.22 (14%)**
Market profit (Mp=MM-MC)	0.18


Flow of Track and Trace
Flow of Products
Feed
Farm
Shipping
Processing
Logistic
Sale
EAN-13
EAN-128
GLN+GTIN
EAN-128
EAN-128
EAN-13
EAN-128
Fisheries Traceability Data Base
Flow for Traceability

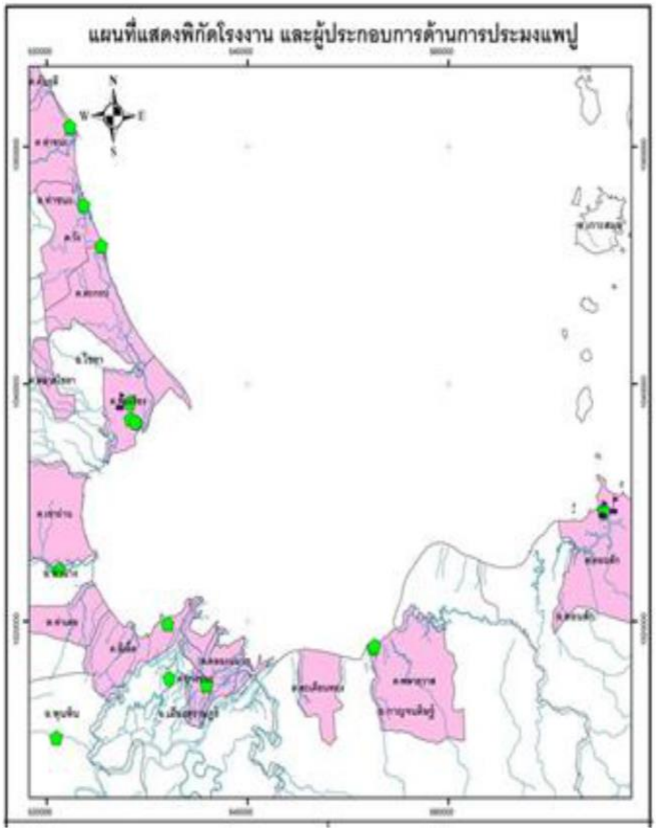

Source
Seed Production
On-Growing Farm
Harvesting
Catch Receiver
Processing
Wholesale and Distribution
Market
Consumers


Manufacturing Inc.
Weekly order
90-60-30 day forecast
Weekly order
90-60-30 day forecast
Tier 1 supplier
9-week
buffer
inventory
3 days
Plants in US
Orders
Loading at Shanghai port
Unloading at L.A. port
Inventory
Inventory
6-week
buffer
inventory
3 days
14 days
5 days
7 days
3.5 days
2 days
31.5 days
3 days


Production control
Supplier
Weekly order
Monthly order
Customer
Information flows
Material flows
Weekly
Monthly
1783
Process A
Process B
Process C
Shipping
C/T = 300 sec
C/O = 60 min
Uptime = 80%
2 Shifts
27000 sec available
1202
C/T = 45 sec
C/O = 10 min
Uptime = 90%
2 Shifts
27000 sec available
733
C/T = 300 sec
C/O = 240 min
Uptime = 100%
2 Shifts
27000 sec available
593
6 days
4 days
1 day
3 days
300 sec
45 sec
240 sec
Production lead time = 14 days
Processing time = 585 sec
Lead time ladder


Conclusions on the value chain.
Value chains conceptualize raw material transformation irrespective of scale, i.e. small scale or industrial fisheries.
Value chain thinking is a systematic way to plan the business, both from a commercial and governmental perspective, improving benefits through better policies.
Value chains determine areas of comparative advantage in supplies and markets.
Value chain analysis can help maximize profits but it can also identify activities that are necessary but not profitable .
Local and regional networks enhance value addition: different institutional end-markets are linked to different forms of coordination and control of value chains.
Need to develop vision on: skills training, investment, market access, sales, and exports.
Ensure that policy environment is favourable, but don't assume that will be enough.
Take a cluster approach only as the starting point for value chains, not as an end in itself.
Concentrate on competitiveness and productivity. Look for and exploit multiple ways to add value once initial success has been preliminarily attained.
Identify and support promising value chains with assistance at key points in the supply chain based on collaborative analysis of challenges, joint definition of priorities, and expert assistance from industry-experienced people.
Recognize that some keys to success require mainly public s
some a mixture of the two.
Government sector policy makers should seek private secto
chains.
With everything we have learnt about the value chain, let's now foc
Case Stud

ANNEX 5
VALUE CHAIN OF BLUE SWIMMING CRAB













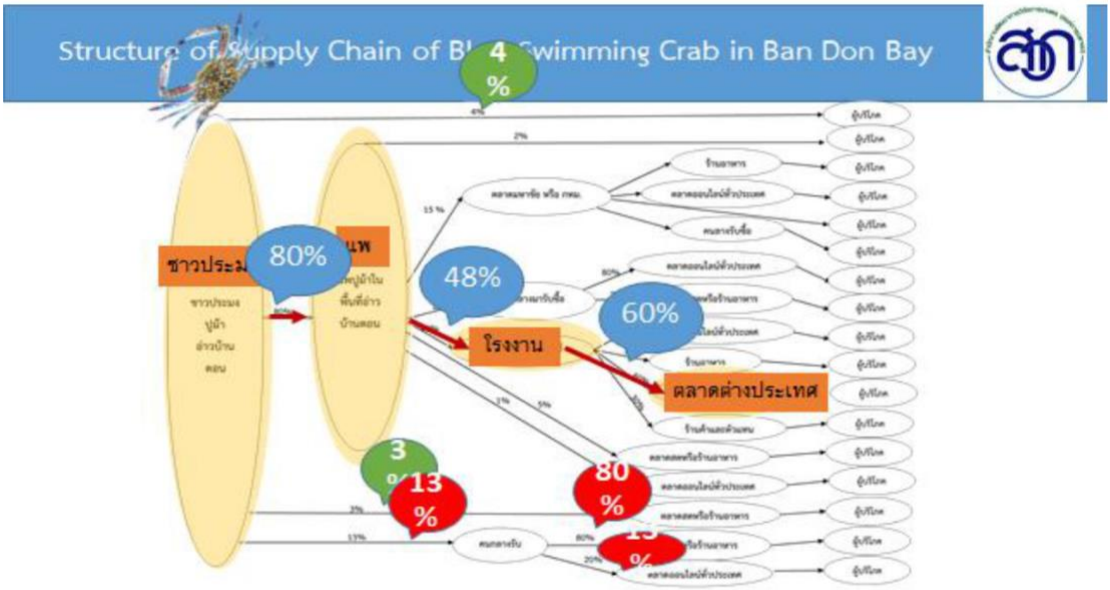



Phillips
CRAB
CRAB
CRAB
CLAW FINGERS

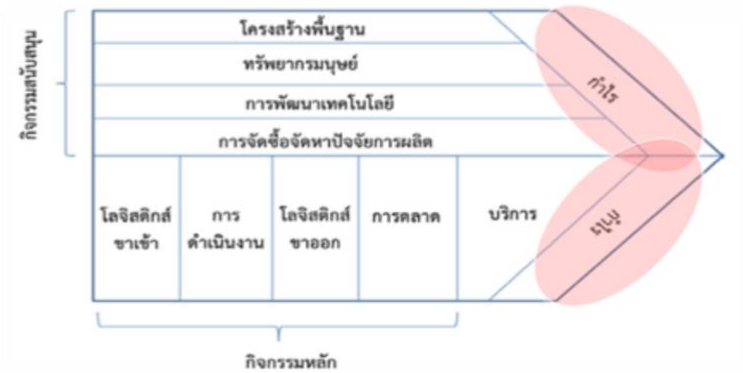
SPECIAL
COLOSSAL
JUMBO
SUPER LUMP


Viya Crab


Viya Crab


4 %
80%
48%
60%
โรงงาน
ตลาดต่างประเทศ
3 %
13 %
80 %

Value Chain

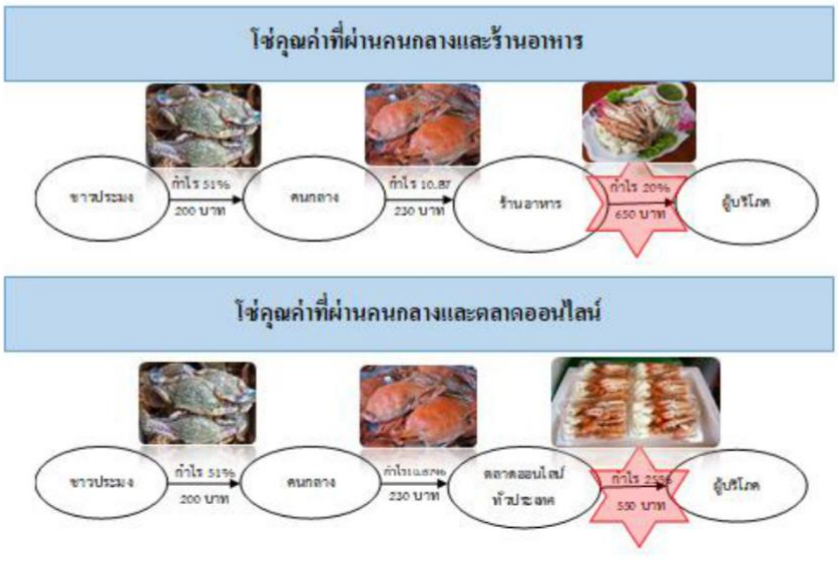

โครงสร้างพื้นฐาน
ทรัพยากรมนุษย์
การพัฒนาเทคโนโลยี
การจัดซื้อจัดหาปัจจัยการผลิต
โลจิสติกส์ขาเข้า
การดำเนินงาน
โลจิสติกส์ขาออก
การตลาด
บริการ
กำไร
กิจกรรมหลัก

โครงสร้างโซ่คุณค่าที่ในพื้นที่ ตำบลพุมเรียง อำเภอไชยา(ปูม้าแบบคละไซส์)

	ชาวประมง			แพปูม้า			โรงงานแปรรูป		
	ช่วงปูมาก	ช่วงปูน้อย	เฉลี่ย	ช่วงปูมาก	ช่วงปูน้อย	เฉลี่ย	ช่วงปูมาก	ช่วงปูน้อย	เฉลี่ย
ต้นทุน	64.10	170.93	85.47	150+10=160	270+10=280	210+10=220	180+154=334	300+163=463	240+158=398
ราคารับซื้อ	-	-	-	150	270	210	180	300	240
ราคาขาย	150*	270*	210*	180**	300**	240**	514***	514***	514***
มูลค่าที่เพิ่มขึ้น	85.90	129.07	124.53	20	20	20	180	51	116
% มูลค่าที่เพิ่มขึ้น	58%	34%	59%	11%	6.6%	8%	35%	10%	22.5%

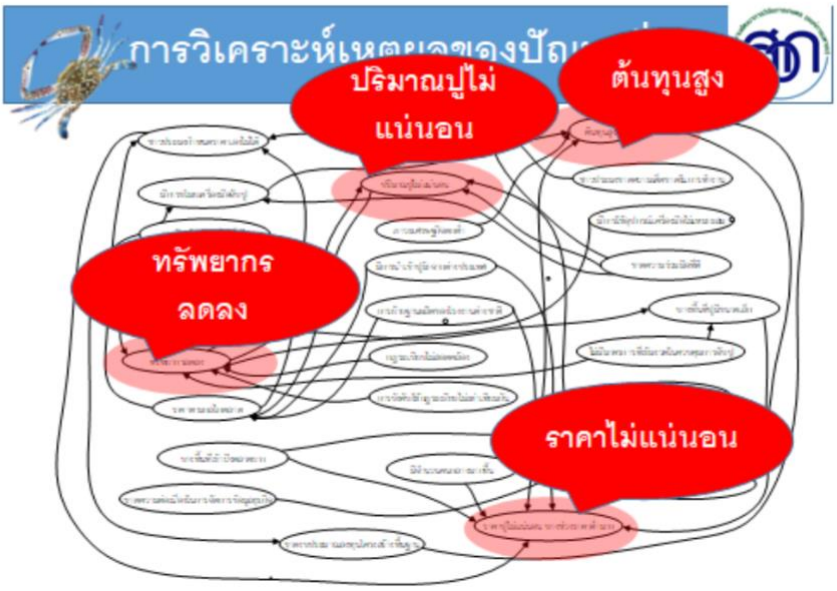
โครงสร้างโซ่คุณค่าที่ในพื้นที่ อำเภอดอนสัก (ปูม้าแบบคละไซส์)

	ชาวประมง			แพปูม้า			โรงงานแปรรูป		
	ช่วงปูมาก	ช่วงปูน้อย	เฉลี่ย	ช่วงปูมาก	ช่วงปูน้อย	เฉลี่ย	ช่วงปูมาก	ช่วงปูน้อย	เฉลี่ย
ต้นทุน	86.78	151.22	110.34	170+10=180	260+10=270	215+10=225	200+39=239	290+165=455	245+147=392
ราคารับซื้อ	-	-	-	170	260	215	200	290	245
ราคาขาย	170*	260*	230*	200**	290**	245**	506***	506***	506***
มูลค่าที่เพิ่มขึ้น	83.22	108.78	119.66	20	20	20	177	51	114
% มูลค่าที่เพิ่มขึ้น	49%	42%	52%	10%	6.8	8%	35%	10%	22.5%




Helpful
Harmful
Internal
Strengths
S
Weaknesses
W
External
Opportunities
O
Threats
T


SWOT ANALYSIS
จุดแข็ง S
STRENGTH
จุดอ่อน W
WEAKNESS
โอกาส O
OPPORTUNITY
อุปสรรค T
THREAT
ควบคุมได้
ปัจจัยสภาพภายใน
รู้เรา
รู้เขา
ปัจจัยสภาพภายนอก
ควบคุมไม่ได้
5 M's
M- คน
M- อุปกรณ์ เครื่องมือ
M- เงิน
M- วัตถุดิบ
M- ระบบบริหารทุกด้าน
4 P's
P- สินค้า
P- โครงสร้างราคา
P- ช่องทางจัดจำหน่าย
P- การส่งเสริมการขาย
S - สังคมวัฒนธรรม
T - เทคโนโลยี
E - เศรษฐกิจ
P-การเมือง กฎหมาย
G - ภูมิศาสตร์
C- คู่แข่ง
B- ผู้ซื้อ
S- ผู้ขาย
P- ผู้มีศักยภาพเข้าใหม่
Sub - สินค้าทดแทน


ปริมาณปูไม่แน่นอน
ต้นทุนสูง
ทรัพยากรลดลง
ราคาไม่แน่นอน

ANNEX 6

TRAINING-WORKSHOP ATMOSPHERE