

1. Seaweed Development Fisheries Groups

1. General Information

Introduction

The trend of consuming healthy food, a main value of the Thai society at the present age is considered to be an important factor which helps people see the importance of seaweed resources. This has brought about demand of products and raw products including business of seaweed cultivation. Seaweed especially for sea grapes is a seaweed with popularity for cultivation due to its good taste and being healthy food with high nutritional values rich in several vitamins. Therefore, there are a large number of people who are interested in cultivating and processing the seaweed for health of this kind. Establishing a group of farmers for seaweed farming is grouping of farmers in the area of Laem Pak Bia sub-district and Bang Kaew sub-district, Ban Laem district and Hat Chao Samran sub-district, Muang district, Phetchaburi province and the area of sub-districts nearby due to the fact that most people make a living from conducting sea salt farming and coastal fisheries. Therefore, this is done to create a new occupation or a supplementary occupation bringing about incomes to families. Moreover, this is to promote seaweed to be well known, to expand markets and to propagate knowledge to farmers as well as for those who are interested in making a living from seaweed.

Initially, there were 26 applicants applying to be members of the group. There is an operation committee consisting of 9 people. The establishment of the Phetchaburi seaweed development fishery group is located at 118, Moo 1, Laem Phak Bia sub-district, Ban Laem district, Phetchaburi province.

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Geographical location

Latitude 100.2865. Longitude 13.0464

Start Date

The operation starts in 2022

2. Approach, aims, and enabling environment

Objectives of the approach

1. To create a new occupation or part-time self-employment bringing about incomes to families and to make use of areas with saline soil sustainably
2. To promote seaweed to be well known for market expansion
3. To build networks and propagate knowledge to farmers and exchange experiences
4. To build guarantee and equitable rights in accessing business of aquaculture for the type of algae cultivation
5. To access aid of government agencies and private agencies

Methods to be implemented

1. Training for propagating techniques and methods of cultivating and processing sea grapes
2. Assembling for establishing a group
3. Establishing as a group of farmers who cultivate sea grapes in order to obtain products enough to meet demand of the market and to have bargaining power
4. To build the network of those who cultivate sea grapes in the district of Ban-Laem

Procedures of operation

1. Department of Fisheries has extended research works by organizing the project of course training of cultivating and processing sea grapes in order to propagate knowledge, techniques and methods of cultivating and processing sea grapes.
2. Take the group member for a tour study to see sea grapes culture at Phetchaburi Coastal Aquaculture Research and Development Center and the Model Sea Farm Royal Development Project, Phetchaburi province
3. Gather the farmer group together to establish a group to exchange knowledge regarding techniques and methods of cultivating and processing sea grapes
4. Hold a meeting together for planning, determining directions, goals and appointing an operation committee to determine duties and responsibilities
5. Allow members to consider objectives and regulations of the group regarding details according to the document proposed by members

3. Participation and roles of stakeholders involved

1. The stakeholders involving in this approach and the roles

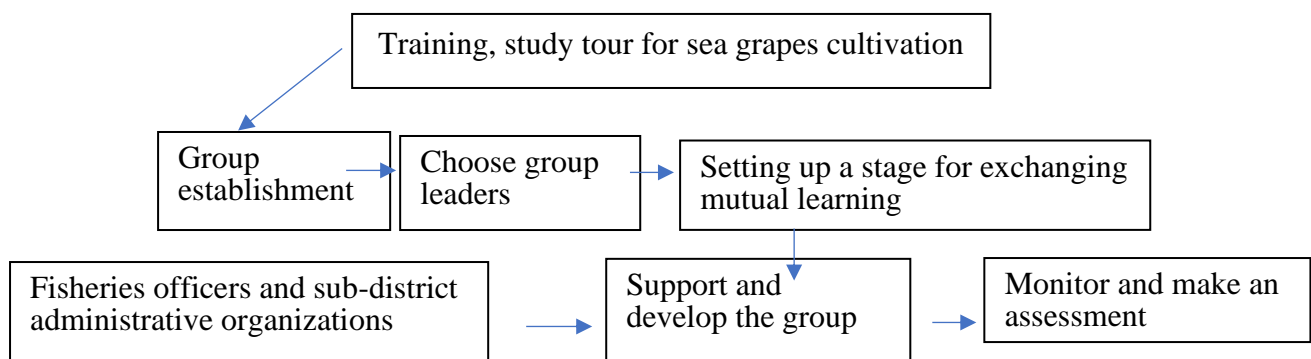
Stakeholders or organizations involving with this approach	Identify stakeholders	Explain roles of stakeholders or organizations
Local land users or local community	Group members accounting for 26 people	Taking actions together to make the group become strong and have bargaining power
SLM experts or agriculture consultants	Officers of Phetchaburi Coastal Aquaculture Research and Development Center	Give advice and knowledge in managing the group continuously
Researchers	Professor from Ratchapat Phetchaburi University	Conduct research regarding utilization of culled algae
Local government	Laem Phak Bia Sub-district Administrative Organization, Ban Laem district, Phetchaburi province	Participation and collaboration in establishing the group

2. Involvement of local land users or local communities in phases of the approach

Phase of the approach	Involvement of local land users or local communities	Identify those involved and explain activities
Initiative or motivation	Mobilize forces by oneself	Government agencies, group members propagating knowledge and making a study tour in order to adjust it in their own areas
Planning	Interaction and Mobilize forces by oneself	Officers from the model farm project and Laem Phak Bia

		Administrative Organization participate in helping plan group establishment.
Implementation	Interaction and Mobilize forces by oneself	The member group mutually helps draft group regulations and goods standards.
Monitoring or assessment	Mobilize forces by oneself	Monitor and check together with officers in order to bring about standards.

Diagram showing work procedures



Decision-making for selecting SLM technology : Land users are the ones who are the main decision makers supported by SLM experts

Decision-making is based on SLM knowledge assessment which has been well recorded (using data in making decisions) and from government agencies.

4. Technical specifications, implementation activities, inputs, and costs

1. Training has been set up for land users or other stakeholders whereby there are forms of training, namely

- Go to see the actual place / farmers vs. farmers
- Organize courses
- Use areas for demonstration

The training topic: Operational practice on sea grapes culture

2. Consulting services: Land users access consulting services available at the government agency which is Phetchaburi Coastal Aquaculture Research and Development Center.

3. Strengthening institutes (organizational development)

- Phak Bia Sub-district Administrative Organization gives aid and support in terms of the meeting venue and facilitates coordination.

- Phetchaburi Coastal Aquaculture Research and Development Centre gives aid in training, increasing knowledge and regulations of establishing the group.

4. Monitoring and assessment are part of the approach to bring about standards of the group.

5. Research: Professors from Ratchapat Petchaburi University conduct research on utilization of culled seaweed

4.1 Income and expenditure on technology

1. Initial costs and expenses in using the technology

Inputs	Unit	Quantity	Expenses per unit (Baht)	All expenses per inputs (Baht)	% of expenses incurred by land users
Labor					
Labor for planting in the area of 2 rai	Labor	1	300	300	100
Equipment					
Water pump of 0.5 horse power	Pump	1	2,500	2,500	100
Wheelbarrow	Item	1	6,000	6,000	100
Oxygen concentrator	Machine	1	5,000	5,000	100
Super Charge air compressor	Machine	1	4,000	4,000	100
Skimmer	Machine	5	500	2,500	100
500 liter plastic bucket	Bucket	5	2,000	10,000	100
Second-hand 120 hp. diesel sea water pump	Machine	1	15,000	15,000	100
8 inch water sucker	Machine	1	10,000	10,000	100
Water salinity meter	Machine	1	300	300	100
8 inch PVC tube with the length of 3 meters	Piece	3	1,000	3,000	100
Spin and dry machine	Machine	1	1,000	1,000	100
Yield storage basket	Item	5	400	2,000	100
Plant materials					
The variety used in the area of 2 rai	Kilogram	1,000	50	50,000	100
Service wage in building the nursery					
Materials and equipment in building the nursery including labor costs	Square meters	30	5,000	150,000	100
Digging the culture pond	Rai	2	20,000	40,000	100
Total expenses of establishing the technology				301,300	
Total expenses of establishing the technology (US dollars)				9,130	

Calculation of costs and expenses

Expenses are calculated to technology-based areas (Unit of size and area: 2 rai)

The currency used to calculate expenses with the unit as Baht

Exchange rate (to US. dollars) 1 US. dollars = 33.0 Baht

Average wage in hiring labor per day is 300 Baht

Most important factors having effects on expenses

1. Labor cost
2. Electricity cost
3. Fuel cost

2. Maintenance costs

Inputs	Unit	Quantity	Expenses per unit (Baht)	All expenses per inputs (Baht)	% of expenses incurred by land users
Labor					
Management during culture	Force	1	1,000 Baht/month	12,000	100
Yield management and management after harvesting	Force	1	1,000Baht/month	12,000	100
Others					
Electricity cost	Baht	12	1,600	19,200	100
Diesel costs	Baht	12	1,000	12,000	100
All expenses of technological maintenance				55,200	
All expenses of technological maintenance (US dollars)				1,672	

Incomes from selling products and net income

- In an area of 1 rai, yields can be harvested for 1,200 kilograms (already selected to remain 600 kilograms) and in 1 year, harvesting can be conducted for 10 times. Therefore, all yields will be obtained accounting for $600 \times 10 = 6,000$ kgs./rai/year

- The wholesale price in front of the farm is 120 Baht per kilo. The total income accounts for $6,000 \times 120 = 720,000$ Baht.

- The sorting out cost is 20 Baht per kilo. Therefore, the selection cost accounts for $1,200 \times 10 \times 20 = 240,000$ Baht.

- The net income/rai/year accounts for $720,000 - 240,000 = 480,000$ Baht.

5. Conclusion

Impact analysis and summary

1. Impact of the approach

The approach	Given answers
makes land users implement SLM technology and maintain conditions or not	moderately
improves cooperation and operation of SLM effectively or not	highly
mobilizes forces or improves financial sources access for SLM operation or not	highly
improves knowledge and abilities of land users in conducting SLM or not	highly
builds or makes the institute become strong or brings about firm cooperation among stakeholders	moderately
promotes the youth or offspring of land users to participate in SLM or not	moderately
improves market access or not	highly
leads to sustainable land use or energy sources or not	highly
leads to employment opportunities and incomes or not	highly

2. Main motivation of land users to implement SLM

- Profits (ability) ratio of expenses to increasing benefits
- Decreasing land degradation
- Environmental conscious
- Increasing SLM knowledge and skills

3. Sustainability of approach activities

Land users can make things practiced based on this approach sustainable whereby there are government agencies from Phetchaburi Coastal Aquaculture Research and development Center as advisors

4. Strengths

Utilization in the area with saline soil with the context changed from conducting only salt farming previously has caused more problems of saline soil. It is hard to fix the problem. This requires very high investment. Using this approach has brought about adjustment of land use which is suitable with the plant (seaweed) and saltiness is not much used. Moreover, this

also brings about more increasing good ecosystems. There is no sewage discharged from the system. Therefore, the environment has gradually become better up to the present time. Market (inputs procurement, selling products) and prices due to being close to the main communication route

5. Weaknesses/risks

When there is more production, there is always problems of competition for market shares, falling prices and labors. In some periods, there is shortage of labors. There are problems of expensive oil prices. Therefore, establishing a group is the approach to solve the mentioned problem in order to have bargaining powers to purchase items and equipment with lower prices. Moreover, goods standards can be upgraded.

Activities pictures



Pictures of the meeting of the Phetchaburi seaweed development fisheries group

VDO LINK : <https://www.youtube.com/watch?v=MPwMr4Ch3wc>