Local Management Practice to Deal with the Effects of Tsunami Disaster in Thai Fishing Communities

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Introduction

- After the disaster, fishers lost income and lack of new source of investment
- The people concentrated to recover their occupation activities
- The activities concern for resource management and community development were stopped during this recovery period

Objectives

- to assess the effects of the Tsunami disaster on fishers' activities

- to investigate the practices of local people to deal with the negative effects on coastal resource utilization after the disaster

Methodology

- Population and Sample

  1) simple random sampling of fisher in each sub-district of study areas

  2) sample size: 141 respondents which divided into two groups by type of fishery activity

  (1) aquaculture fishers

  (2) capture fishers

- Data collection

  1) Secondary data

  - collecting the summary of damage and process of recovery from related organization; Provincial office, Sub-district Administrative Organization

  2) Primary data

  - interviewing affected people by structured questionnaire
  - interviewing leader of villages

Methodology<Ctd.>

- People's opinion toward the change of their activities concerning the sustainability of CRM in four aspects which was measured by a 5-point rating scale

  - The scale is ranked from Much increase – Increase - Not change – Decrease – Much decrease which score from 5 to 1

  - The overall opinion toward the change of fishery system was observes by adding score from four aspects

- Analysis

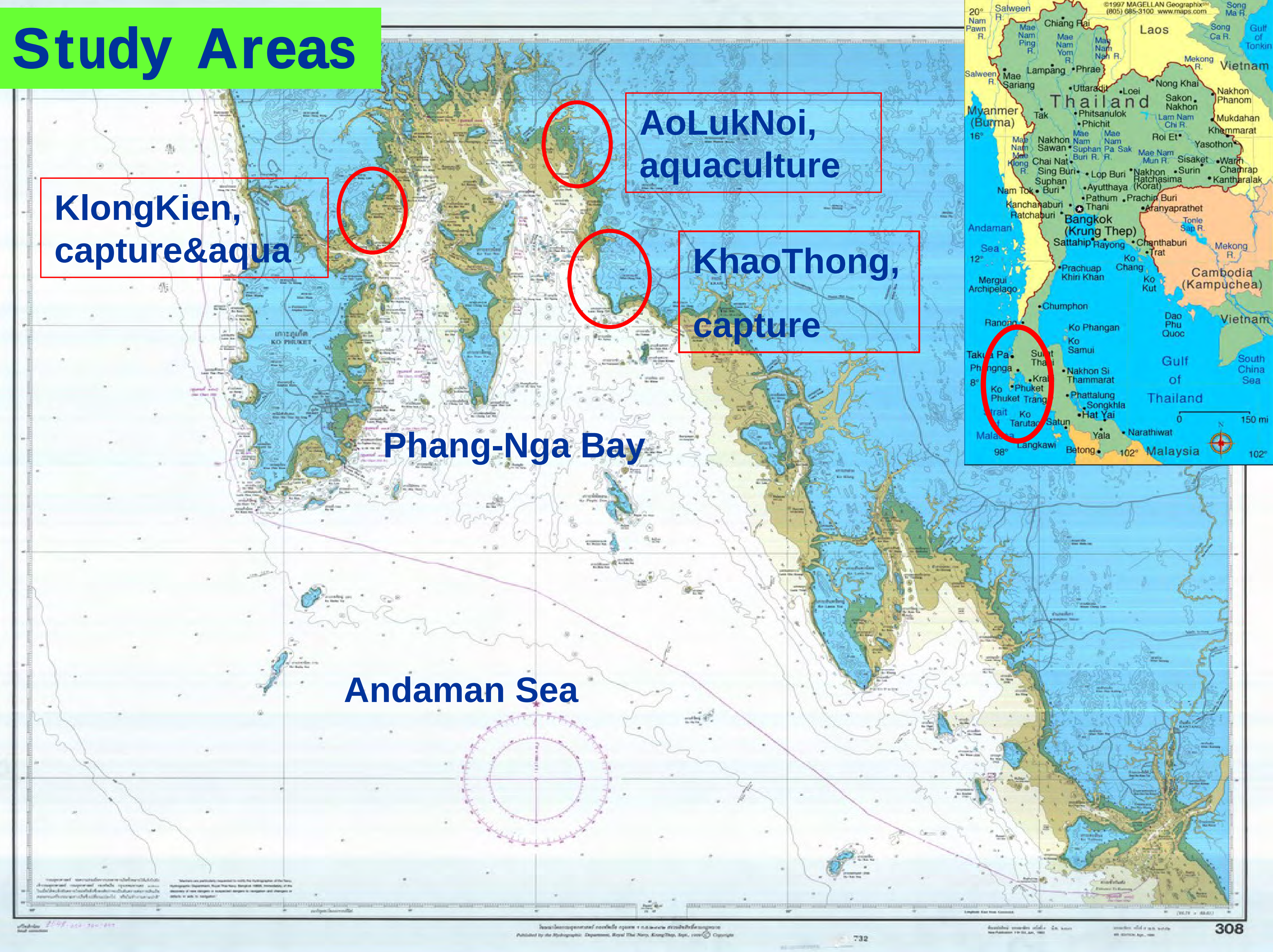
  - Descriptive statistics; frequency, percentage about people's opinion in each aspects

  - Categorize people's opinion into three level by dividing range of possibility score

    interval range = (Maximum score – Minimum score) / 3

  - Using Chi-Square test to compare people's opinion between group of samples

Study Areas



KlongKien,
capture&aqua
AoLukNoi,
aquaculture
KhaoThong,
capture
Phang-Nga Bay
Andaman Sea
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Gulf of Thailand
South China Sea
Malaysia
Chiang Rai
Lampang
Uttaradit
Phitsanulok
Nakhon Sawan
Nakhon Ratchasima (Korat)
Chumphon
Ranong
Takua Pa
Phangnga
Krabi
Phuket
Trang
Surat Thani
Ko Phangan
Ko Samui
Nakhon Si Thammarat
Phattalung
Songkhla
Hat Yai
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Yala
Narathiwat
Betong
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308

Findings & Discussion

(I)

People's opinion toward the effects of disaster

Category of people's opinion to effects

Aspect	Percentage of opinion			Mean	SD
	less	moderate	high		
Economic (score 10-50)	-	60.3	39.7	24.1	3.3
Social (score 8-40)	-	96.5	3.5	23.3	2.9
Environmental (score 6-30)	-	77.3	22.7	15.9	2.1
Institutional (score 9-45)	-	98.6	1.4	27.5	1.9
All aspects (score 33-165)	-	97.9	2.1	90.8	5.8

Mean difference between group

Aspects	Mean of people's opinion		χ^2 – test Asymp.Sig.
	Aquaculture	Capture	
Economic	23.4	24.4	0.032*
Social	23.9	23.0	0.061
Environmental	15.7	15.9	0.743
Institutional	27.6	27.5	0.469
All aspects	90.6	90.9	0.972

**Significant at 0.05 level*

The value of test shows the different between opinion of aquaculture fishers and capture fishers in economic point with significant at probability 0.05 level

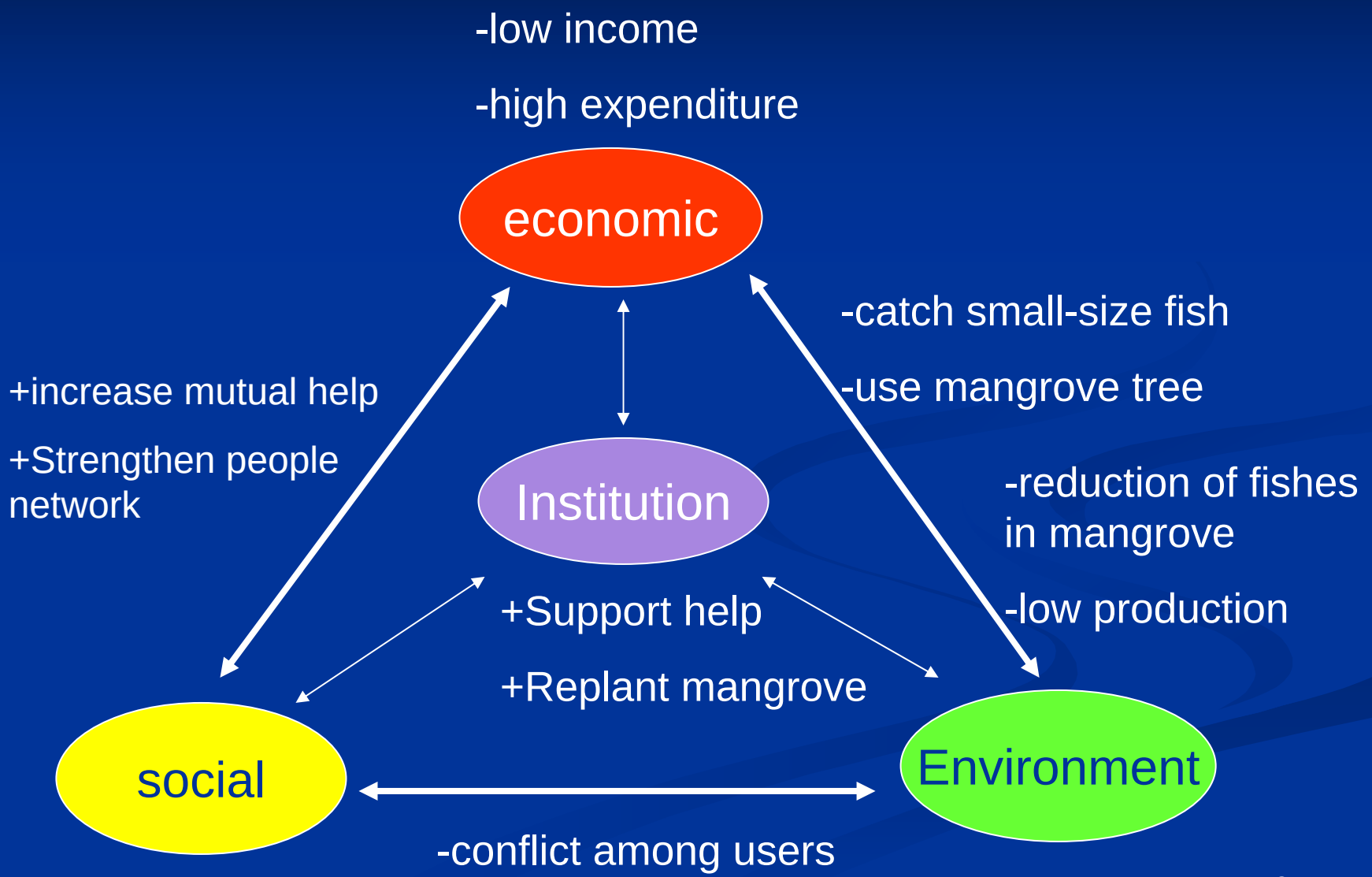
➡ the effect of disaster on economic aspect have relationship with the type of fishery engagement

Major effects by aspect

Aspect	Rank	Percentage of people's opinion	
		Aquaculture	Capture
Economic	1	Price of fish 86.7% (decrease)	Income of fishing activities 85.2% (decrease)
	2	Expenditure for fishing 73.3% (increase)	Expenditure for fishing 74.7% (increase)
	3	Use of loan and other credit 68.9% (increase)	Use of loan and other credit 60.6% (increase)
Social	1	Nervous to next disaster 77.3% (increase)	Nervous to next disaster 82.8% (increase)
	2	Mutual help among people 51.1% (increase)	Mutual help among people 35.4% (increase)
	3	Being member of people's group 38.7% (increase)	Time spend for community meeting 29.2% (increase)

Aspect	Rank	Percentage of people's opinion	
		Aquaculture	Capture
Environmental	1	Fishery production 75.5% (decrease)	Fishery production 71.9% (decrease)
	2	Size of caught fish 50.0% (decrease)	Size of caught fish 46.9% (decrease)
	3	Fishes in mangrove area 26.6% (decrease)	Fishes in mangrove area 41.6% (decrease)
Institutional	1	Replantation of mangrove trees 44.4% (increase)	Supported facilities from Sub-district level 37.9% (increase)
	2	Supported facilities from Sub-district level 43.2% (increase)	Replantation of mangrove trees 27.4% (increase)
	3	Enhancement of fish larvae 25.6% (increase)	Utilization of small-size fish 27.1% (increase)

Linkage among effects



Findings & Discussion

(II)

Local practice to deal with the effects

Case of AoLukNoi Sub-district

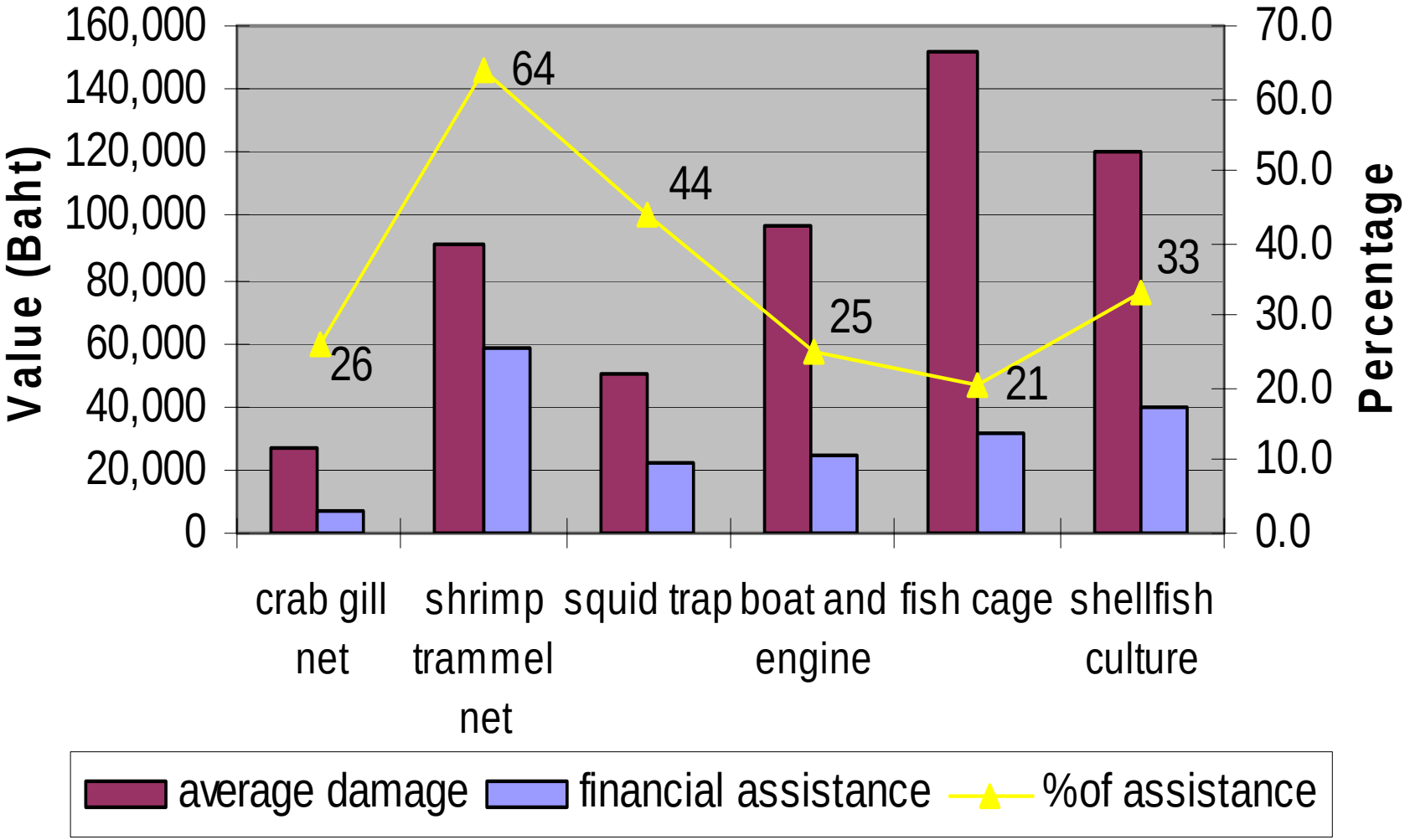
Aquaculture Fishery

Area background

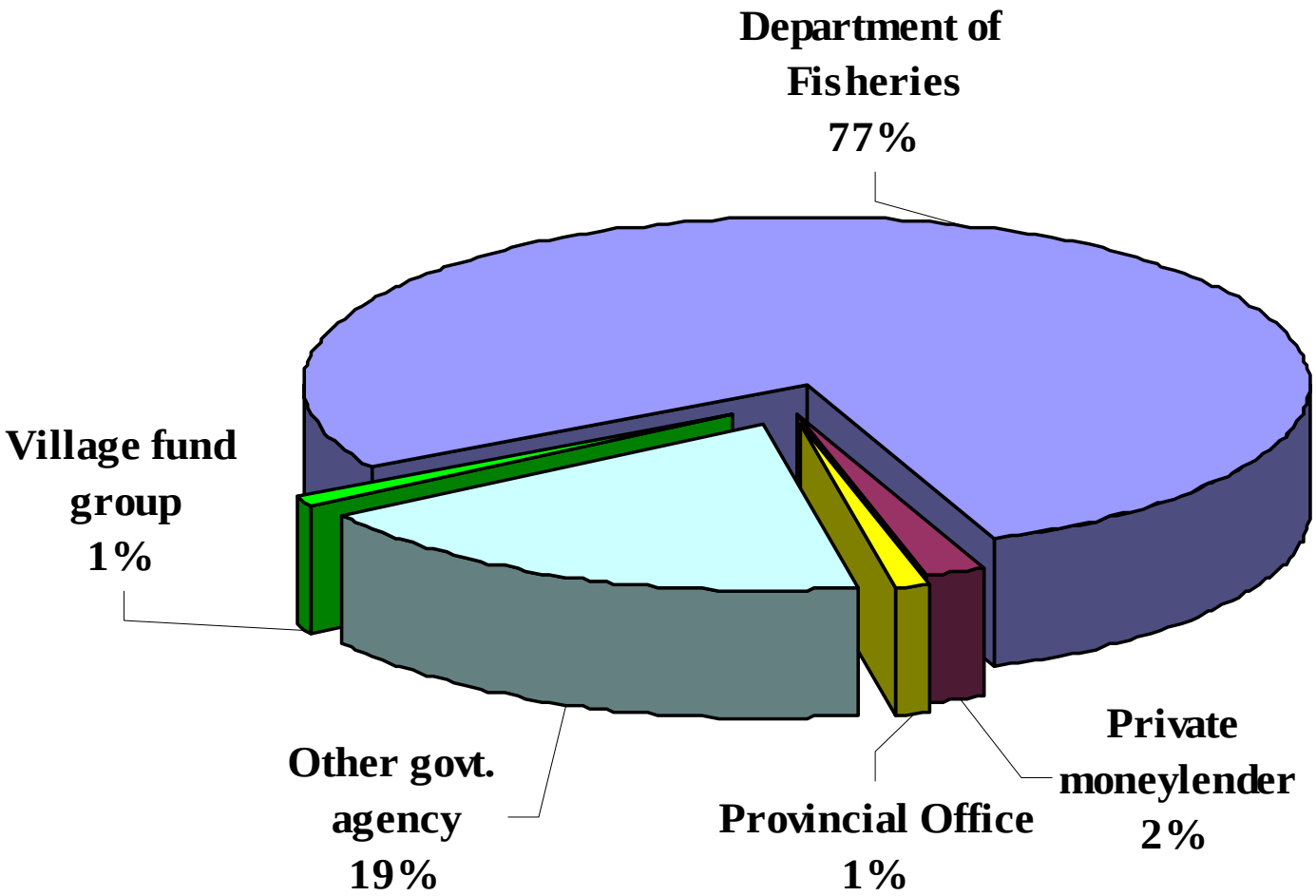
Cage culture activity	- floating raft cage culture and hanging rope for shellfish culture - species: Grouper, Oyster and Green mussel - small scale culture with 4 to 40 cages - large scale culture with more than 40 to132 cages
Affected fishers	- 65 cage fishers, both small and large size operation - 830 cages size 3*3*2 m (width*height*depth) - 57,000 losing Grouper and Sea Bass
Total estimated of damage	20,847,000 Baht (*100 Yen = 32 Baht*)

Source: AoLukNoi Sub-district Administrative Organization's report

The damaged value and assistant value by type of fishing gear



Source of financial assistance in AoLukNoi



Situation of cage culture

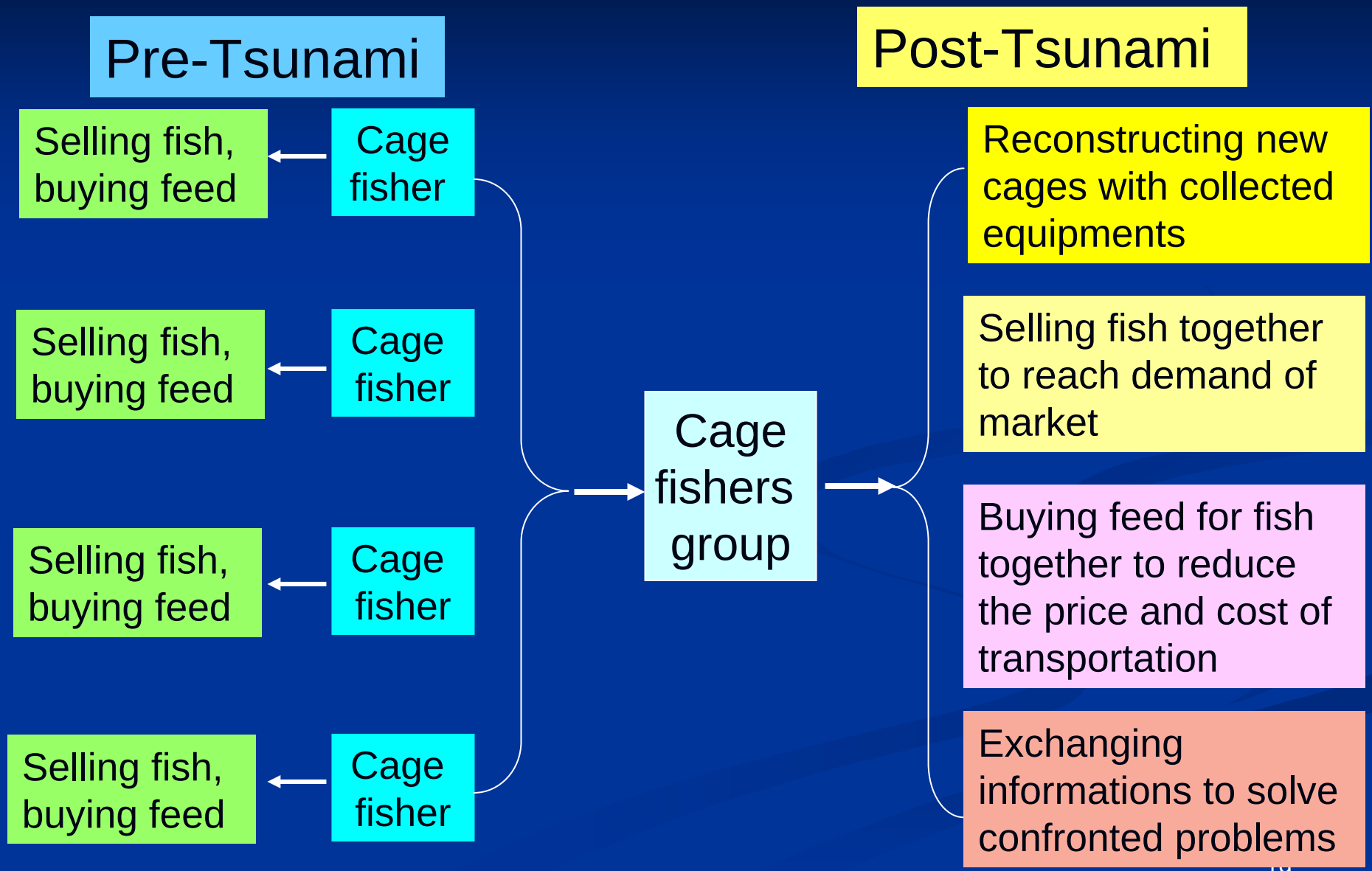
Pre-Tsunami

- System of employ cage culture as who come first who reserve the place first
- Normally, reserve the place of culture in front of house that convenient to work
- They adjust the place of cage to avoid conflict with other
- Individually operate in culturing process

Post-Tsunami

- Gradually set up the cage with small number since lack of source investment
- Set up cage at the same place as it was before
- Some fishers who cannot afford to reinvest new cage, but they still have the same place to set up cage
- Group operation in culturing process

People establish a group for self-help



Case of KhaoThong Sub-district

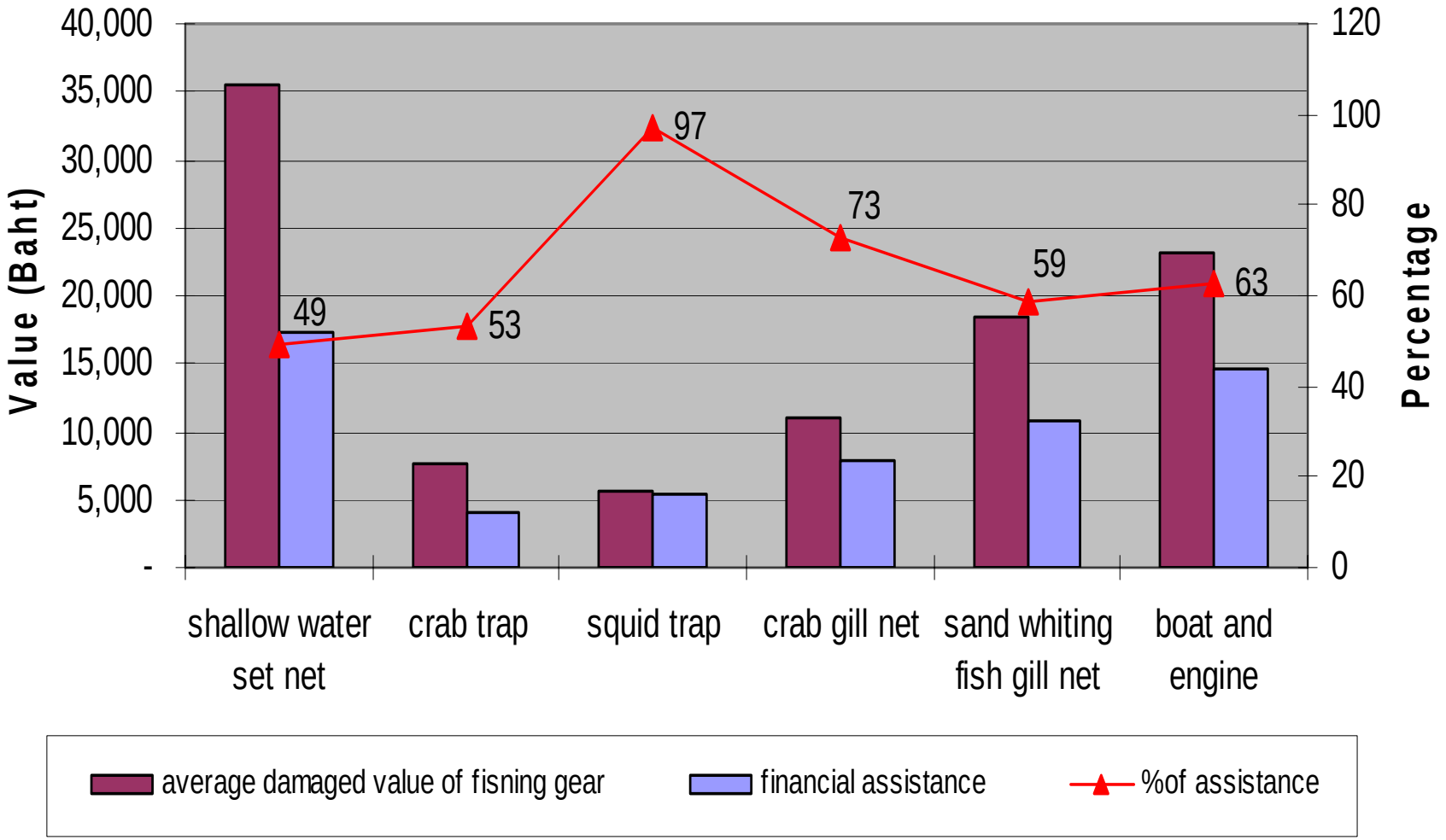
Capture Fishery

Area background

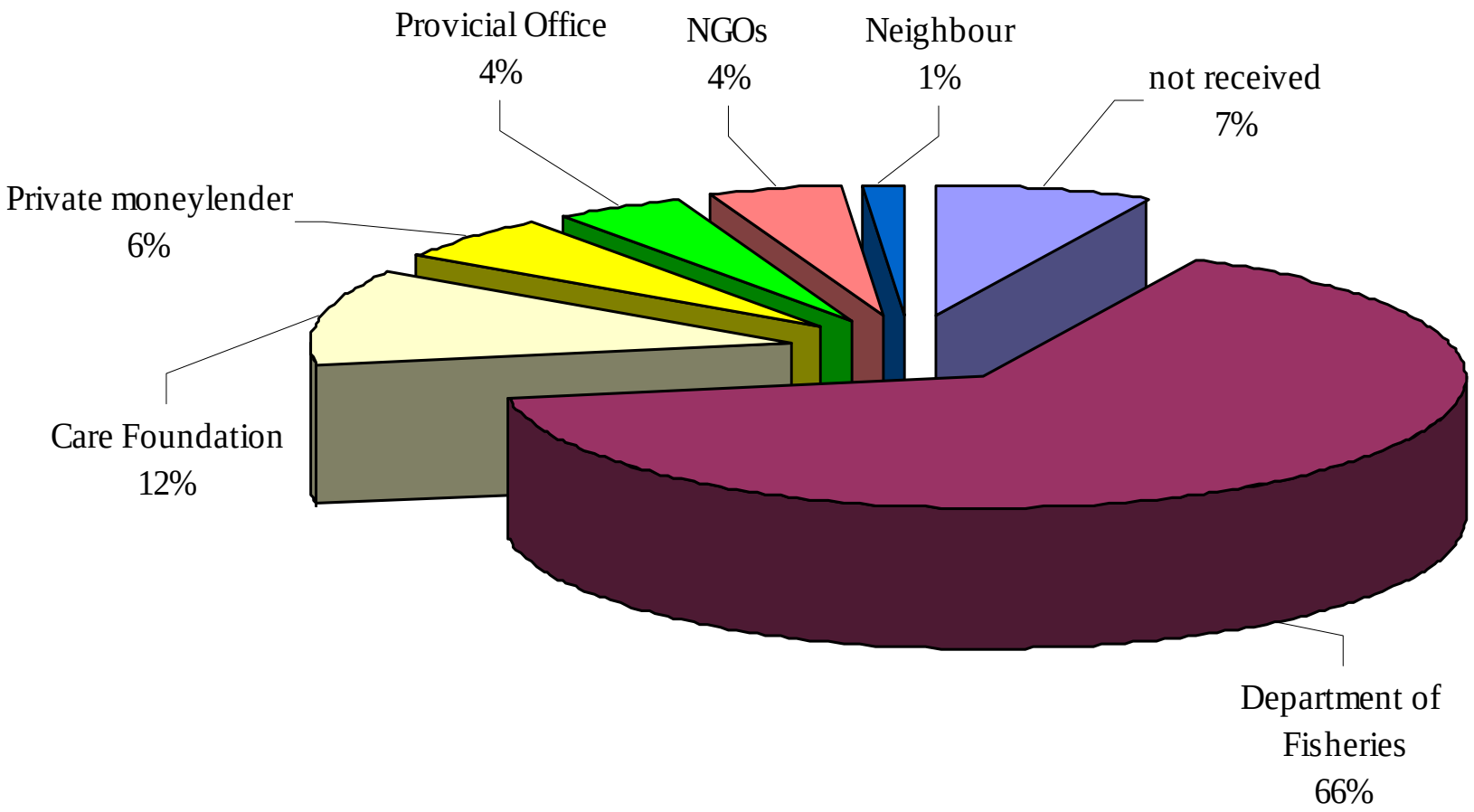
Capture fishery activity	- 100 fishing boats - fishing gear: squid trap, crab trap, shrimp trammel net, mackerel gill net - 150 unit of shallow water set net which establish in the tidal zone
Affected Fishers	- 198 fishers - 49 damaged boats - losing more than 5,180 units of squid trap, crab trap and gill net - 150 Collapsed shallow water set net
Total estimated of damage	5,350,000 baht

Source: KhaoThong Sub-district Administrative Organization's report

The damaged value and assistant value by type of fishing gear



Source of financial assistance in KhaoThong Sub-district



Situation of shallow water set net

Pre-Tsunami

- Set net was installed along the coastal area of sub-district
- They adjust the place of set net to avoid conflict with other fishing gear
- Some fishers have license of set net but they did not install
- They preferred to earn income by other fishing gear

Post-Tsunami

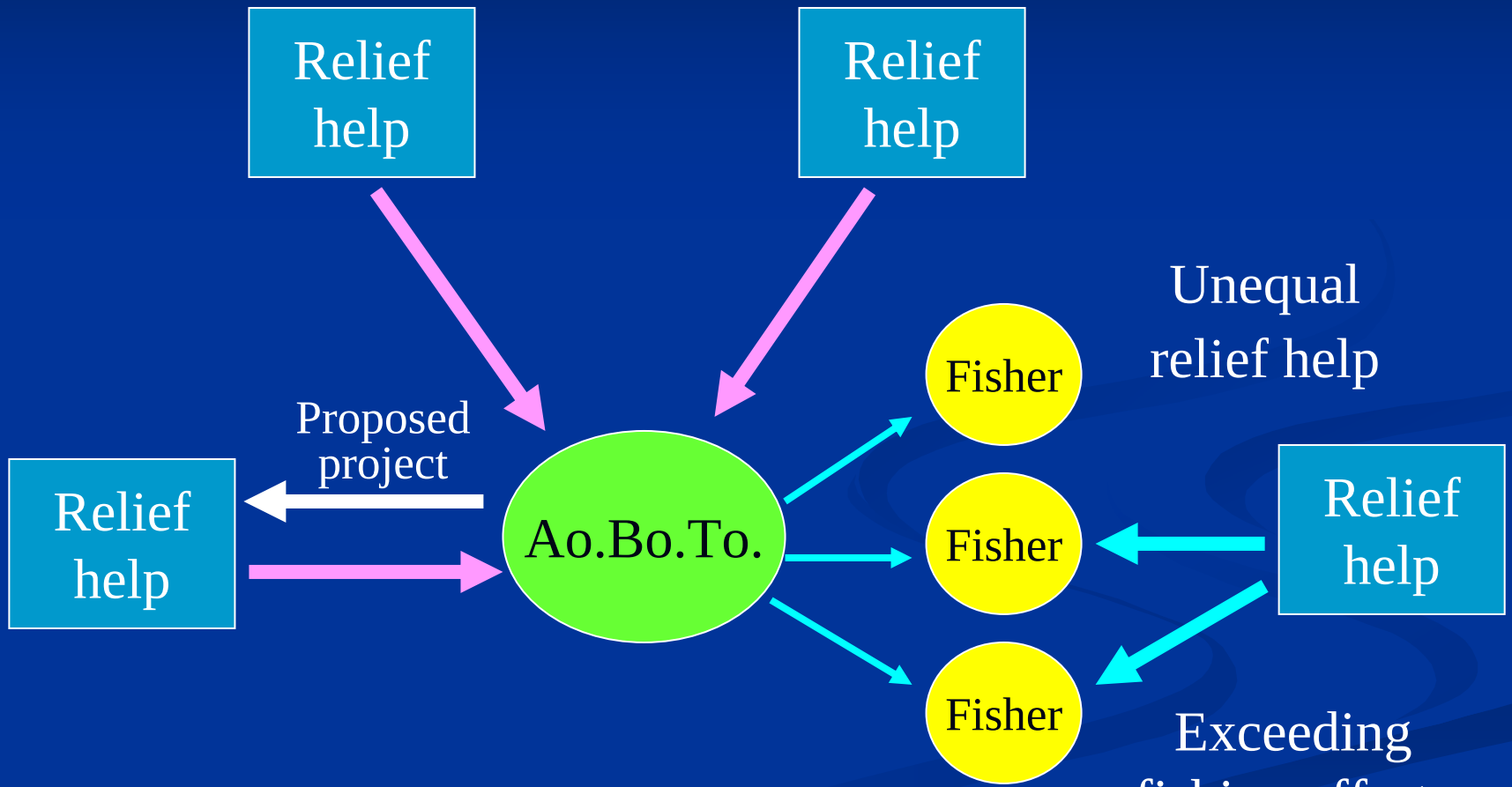
- Rapidly re-install set net with the mutual help among fishers
- Many fishers want to install set net since they fear to go out for fishing
- Fishers make agreement to control number of set net by allowing only who have license to install in the same place
- Not allow to expand the area of installing set net

The CRM activities during recovery

- Reduce the critical of investment cost
  - Promoting alternative job to fishers' family
  - Promoting money savings
- The mutual help and network among people was strengthen to solve the facing problem
- Protect natural resource for long term utilization
  - Planning to replant mangrove trees in Sub-district area to increase the nursery ground of aquatic animal
  - Enhancing fish larvae to mangrove area

Systematizing
the channel of relief helps

The channel of relief helps to community



Existing local organizations and their authorities

- Sub-district Administrative Organization

  This organization is the primary local government unit that has responsibility for community development and people's welfare within a sub-district area.

- Village committee

  The village committee consists of the people who are selected as the representative of village. They have traditionally duty in village governance, with the police function by law to protect the village society peacefully.

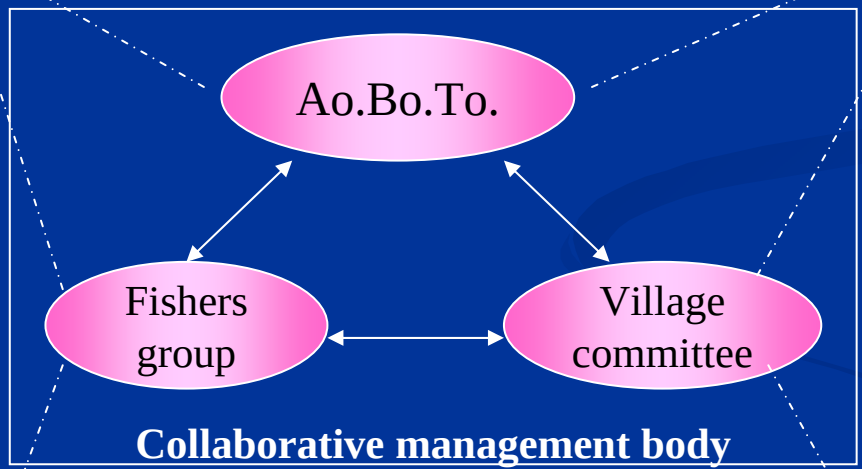
- Fisher's organizations

  The purposes of establishment are to deal in production and marketing problems and promote coastal resource conservation.

Management body at local level

- Enhance capacity of Ao.Bo.To. on budget allocation
- Train the member and staffs of Ao.Bo.To. on related laws to self-regulate the management measure within jurisdiction

- Build awareness on sustainable resource use
- Encourage people to participate in management process



- Support enforcement facility to village committee
- Train volunteer on monitoring coastal activities

Conclusions & Recommendations

Conclusions

- Impact from Tsunami has affected to fishing communities mostly to their income and their activities on coastal management
- Top priority of recovery from the disaster is to rebuild fishers' household income
- The degree of effect by disaster on economic aspect is depend on type of fishery activity
- Social network is the important link among local people to solve economic problems that may reduce the pressure of unsustainable resource use

Conclusions <Ctd.>

- Even the fishery resource was not damage much by disaster but it was affected by fishers' activities
- The sustainable resource use was lesser concerned during fishers recover their occupation
- The local organization is an important facilitator to help people relieved from critical situation both in economic and coastal resource management
- The awareness from people on coastal resource is needed to get successful management

Recommendations

- The efficient and systematic processes of relief help is the important factor to recover fishing community quickly
- The relief help support to fishers should concern the difference between type of fishery activity
- The relief help should be aware of the exceeding capacity of fishing effort that may cause the danger of sustainability of CRM
- Strengthening the social network in community and awareness of natural resources will achieve sustainability of self-management on CRM


Thank you for your attention