



# Two institutions for one fisheries management:

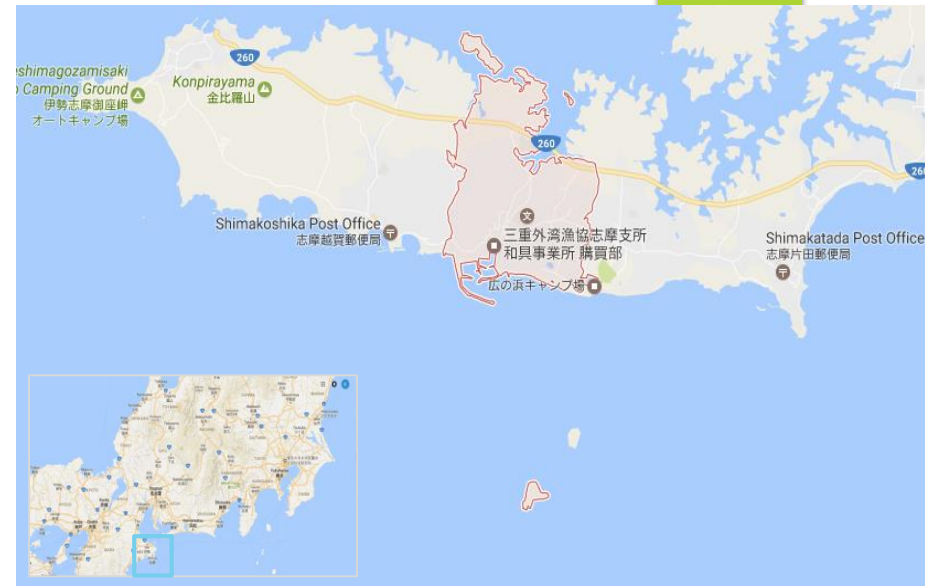
Pooling period and individual operation periods in  
Wagu spiny lobster fishery

**FAO Tenure and User Right Workshop  
@ Yeosu, South Korea, 10<sup>th</sup> -14<sup>th</sup> Sept 2018**

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## Case Study in Wagu district

- Shima Peninsula in Mie prefecture
- Top producer (#1 or #2) of spiny lobster in Japan
- Production: 20 - 40 metric ton
- Spiny Lobster Fishermen's Union ('Ebi-Ami-Domeikai'), under Mie-Gaiwan Fisheries Cooperative Association (FCA), manages the Lobster fisheries
- 26 household participate in Lobster fisheries



# Socio-Economic contribution of Lobster Fisheries

## ▶ Financial contribution

1. Sales from lobster = 1.8 million USD annually
2. High rate of full time fishermen (69.4% > national average 37.5%)
3. **Welfare system** for the elderly people = Revenue sharing during the pooling period

## ▶ Social contribution

1. Keeping the social ties within the community – Fishermen and helpers
2. Creating new social ties with the urban areas – festivals using lobster - Trammel Net Owner System

三重ブランド認定第一号 伊勢志摩和具漁港

**伊勢海老刺し網オーナー**

**大募集!!!**

大好評につき  
10年目

【募集期間】 8月18日~9月15日

★網揚げ実施日 11月18日(土) 受付/午前8時 志摩市 和具漁港

★募集口数 80口

★オーナー料金 1口 15,000円

**刺し網オーナーっ**

古来より、武勇と長寿の象徴とされている、おめでたい高級魚「伊勢海老」。10月1日より伊勢海老刺し網漁解禁となり、この時期には多くの水揚げがあります。今回は、その網にかかった伊勢海老とその他の魚を、応募して下さったオーナー網元で分けるといった年に一回一日限りの企画です！

**刺し網オーナーになるに**

今回4隻の漁船が担当します。裏面のプロフィールを参照の上、どの船のオーナー網元になりたいか決めて、1口15,000円で応募していただきます。お一人で何口応募されてもOKです！！伊勢海老以外にも、サズエや他の魚も網にかかります。当日の漁獲量（漁師の船次第であり「運まかせ」です。あなたならどの漁師さんのオーナー網元になりますか？～詳しくは裏面の後部プロフィールをご覧ください～

**網揚げ・網さばき体験 & バーベキュー**

希望されるオーナー網元は乗船し、自ら「網揚げ体験」をしていただき、すべの網を揚げた後、漁へもどる伊勢海老やその他の魚を網からはずす「網さばき体験」をしていただきます。その後、魚市場にて分割し解禁となりますが、バーベキューコンロを集合ご用意いたしますので、獲れたての新鮮な魚介類のバーベキューを堪能してませんか？





Poster for 'Trammel Net Owner system

## Background Fisheries management in Japan

- ▶ **TURFs** claim ownership on a spatial basis
  1. Well-defined spatial units
  2. Exclusive access rights given to well-defined groups of fishermen
- ▶ **Cooperatives** contractually control the actions of members

(Deacon 2012, Cancino et al. 2007)



## Spiny Lobster Fisheries Management in Wagu District

### General Input control

- ▶ Gear restriction
  1. Thickness of the net
  2. Number of nets
- ▶ No harvesting during full moon (lunar calendar days 13-18)
- ▶ Individuals <100g released to designated area



# Pooling Period and Individual Operation Period

Oct. 1

Dec or Jan

Apr. 30

Pooling System

Individual Operation

- Effort pooling & profit sharing
  - Designated areas for the pooling operation
  - 26 owner-operators x 2 nets
  - Group operation: 4 groups
  - President + vice president + 4 group leaders decide where to set nets
- 26 owner-operators x 9 nets
  - Each determine where to set their nets

## One day in Lobster Fisheries

- ▶ **Setting the Trammel net - 15:00 or 14:00**
- ▶ Pulling out the net – 7:00
- ▶ Taking the lobster off from the net – 7:00-8:00
- ▶ Auctioning at Wagu district - 8:30
- ▶ Repairing of the net – -12:00



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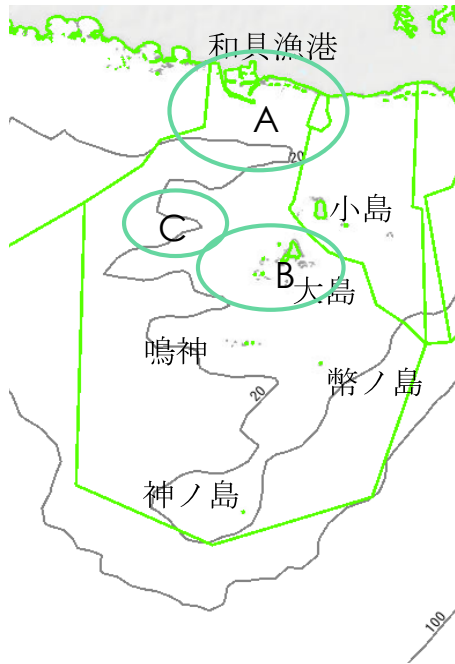


## Ecological fit

- ▶ Distribution: South of Chiba (poleward shift happening) to Taiwan
- ▶ Life history:
  - ▶ Spawning: End of Apr. – End of Sep.
  - ▶ Phyllosoma larvae travels off shore as far as Mariana Trench
  - ▶ Puerulus larvae come back and settles in shallow areas along Pacific ocean facing Japanese coast
- ▶ **High level of uncertainty in stock**
- ▶ Aquaculture technology is not established



# Fishing ground used for pooling period



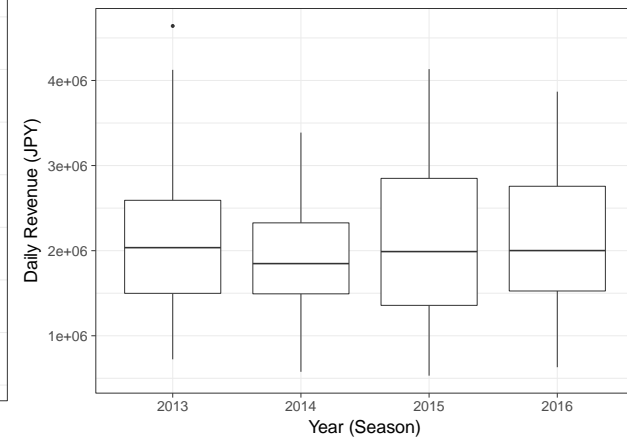
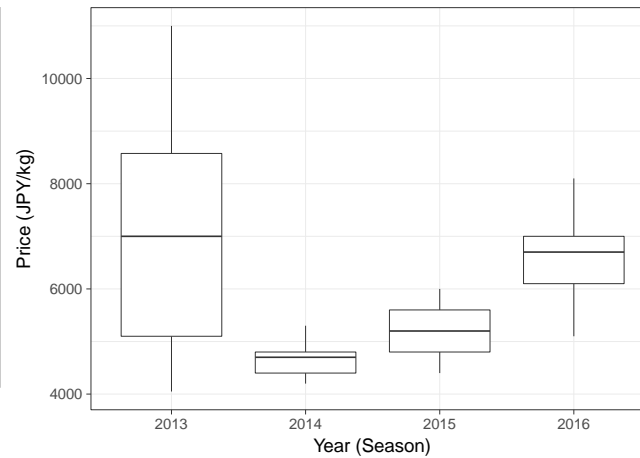
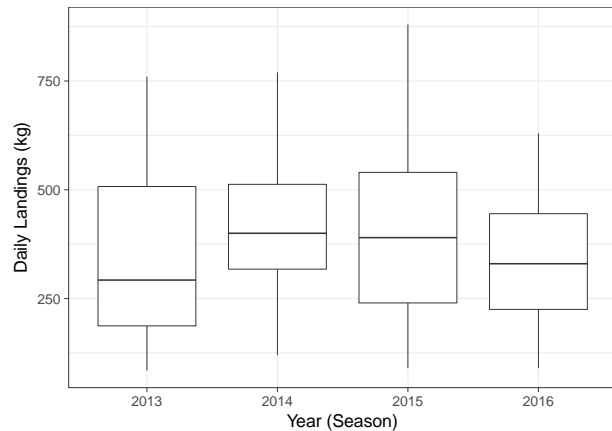
- 22 fishing grounds within the TURF
  - A: Newly created in the 1990s
  - B: Traditional (cultural significance)
  - C: Productive



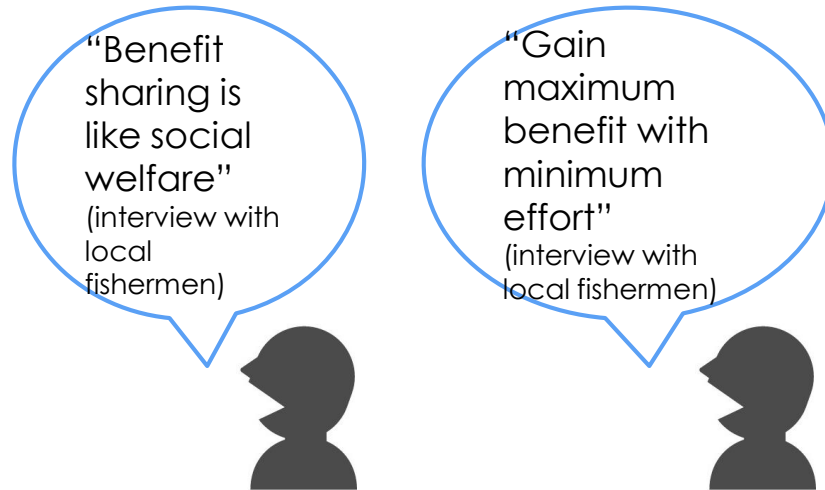
# Income adaption – Economic fit

► Equal distribution among the 26 households – **Income adaptation**

1. Price and landing fluctuate
2. Revenue is stable (around 2 million JPY)



# Pooling period as social welfare system



► Pooling period has expanded since its introduction in 2000s

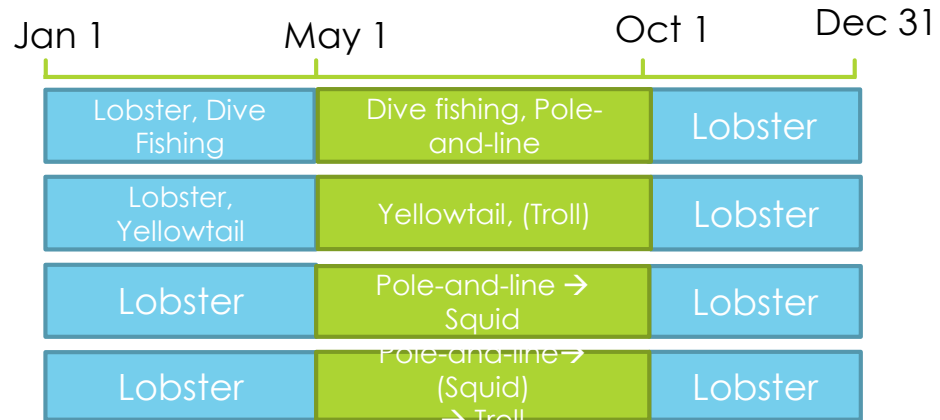
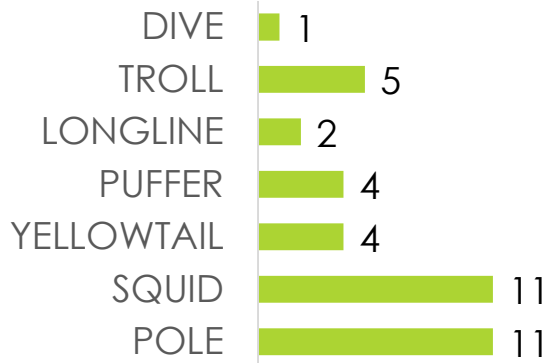
1. Area
2. Time

**Is it better or socially ‘fit’ to abolish individual operation period?**

# Opportunity cost of Pooling period

- ▶ **Opportunity cost:** value of the next best option forgone
- ▶ Alternative fishing conducted by the lobster fishermen

N = 15 (out of 26)  
Multiple answers allowed



Source: Interview & survey (April 2017) conducted by the pr

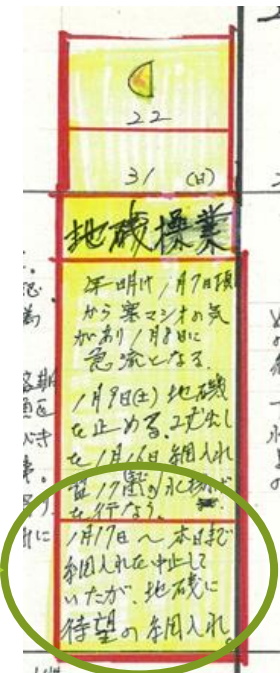


# Social fit

## Heterogeneity of population

- ▶ Older fishermen – Empty nesters with pension
- ▶ Younger fishermen – Young family – in need of cash
- ✓ Motivation for fishing – different
- ✓ Current management system - 'Fit' to meet different demand

Fishing diary from older generation fishermen; 'long-awaited start of the individual operation period'



# Conclusion

Current combination of two periods in Wagu Spiny Lobster management:

- ▶ **Ecological sustainability of spiny lobster** is achieved to certain extent.β
- ▶ However, the intention of fishermen is to achieve **stable economic income to meet their needs.**



