



Artisanal Tuna Data Workshop
11th – 14th November 2013

Session 2 – Economic considerations for data collection





Overview – economic considerations

- Macroeconomic considerations
 - Current macroeconomic understanding of artisanal fisheries
 - Data gaps
- Socioeconomic considerations
 - Current socioeconomic understanding of artisanal fisheries
 - Data gaps
- Microeconomic considerations
 - Current microeconomic understanding of artisanal fisheries
 - Data gaps
- Policy implications and data needs



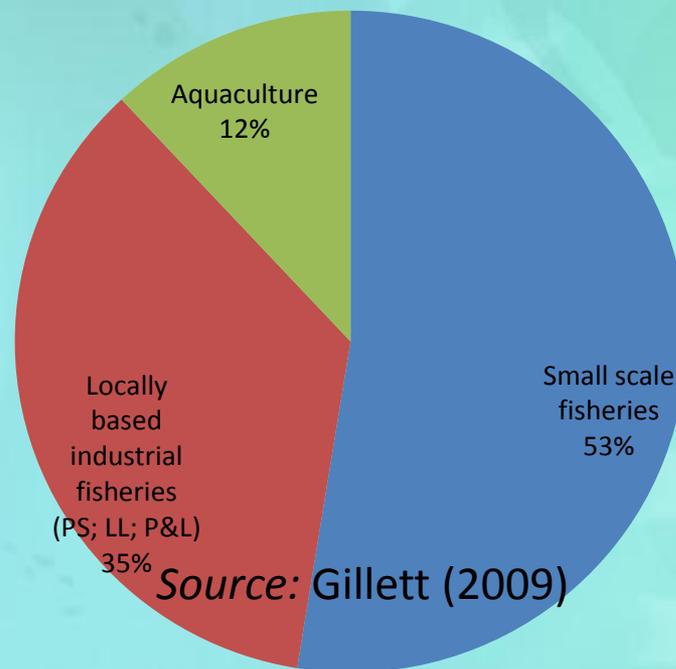


Macroeconomic considerations

What we know:

- Not a lot with certainty
- Artisanal fisheries are of significant economic importance
- Artisanal fisheries includes capture based: subsistence, coastal commercial (non-industrial) and freshwater fisheries
- They employ over 90% of the world's capture fishers and fish workers
- Small scale fisheries account for over half of fisheries total contribution to gross domestic product in the combined economies of the Pacific

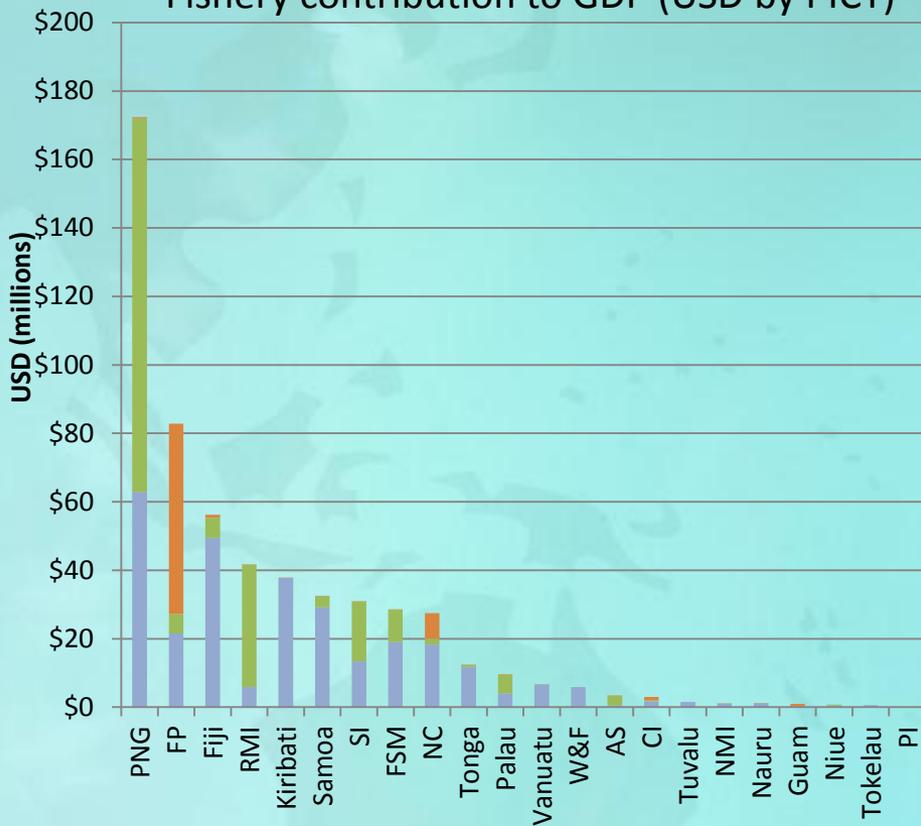
Fisheries total contribution to gross domestic product (2007) of all 22 PICTs



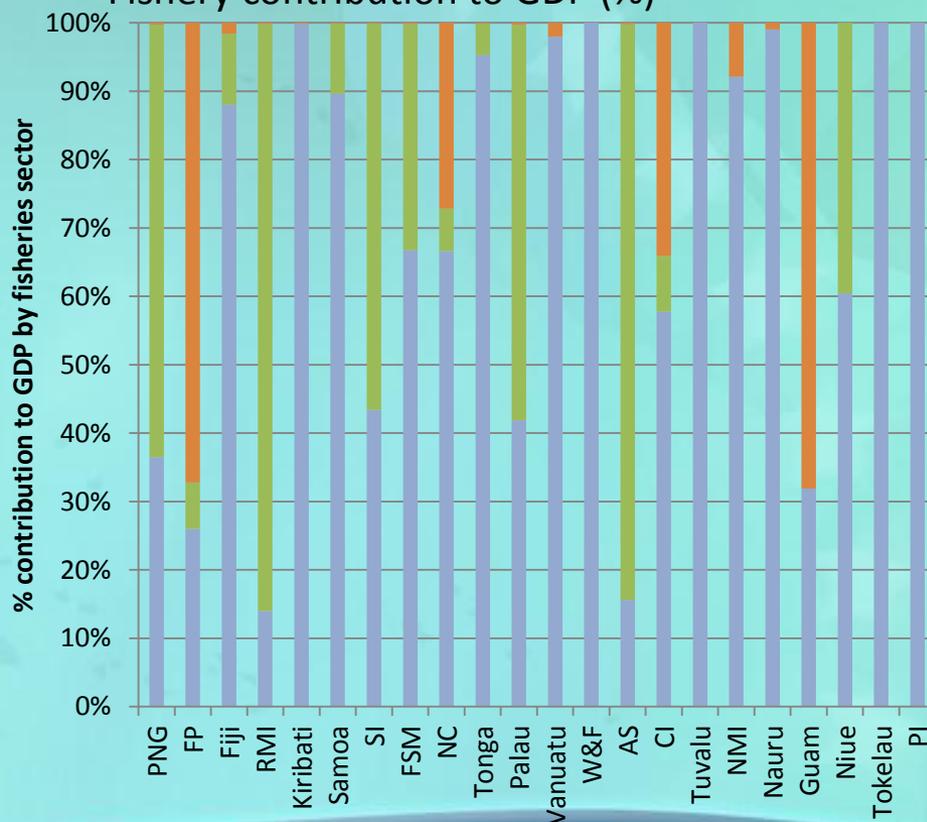


Macroeconomic considerations

Fishery contribution to GDP (USD by PICT)



Fishery contribution to GDP (%)



■ Small scale fisheries
 ■ Locally based industrial fisheries (PS; LL; P&L)
 ■ Aquaculture



Source: Gillett (2009)

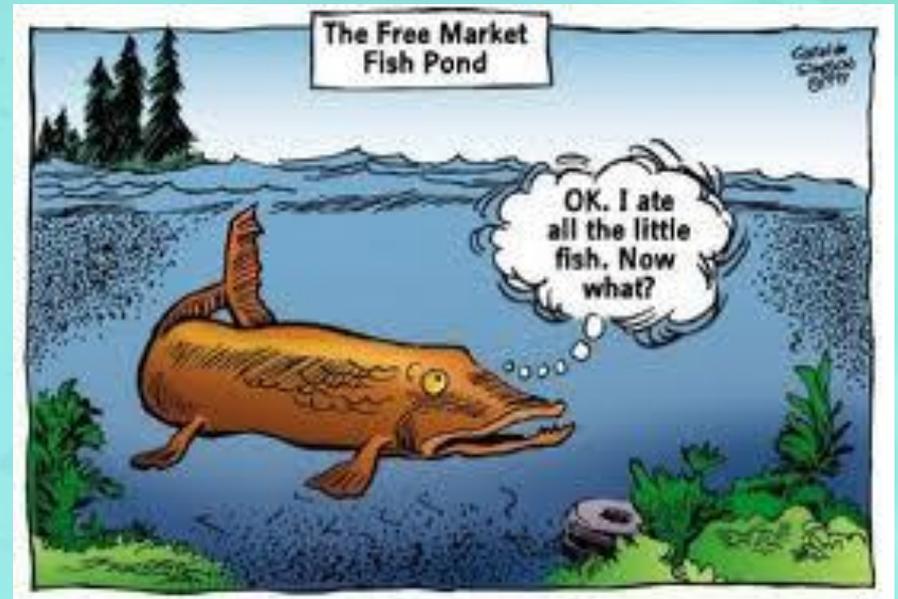




Macroeconomic considerations

Data gaps:

- Disaggregated economic data
- Total value (quantity and price) of domestic production
 - Subsistence
 - Traded
 - Value added
- Value of artisanal exports (ToT; BoP)
- Direct, indirect and induced effects of sports fishing based tourism
- Return on national infrastructure investments
 - FADs
 - Fishing centres / ice plants
 - Warf and market infrastructure
- Contribution to GDP and GNI
- Employment (formal and informal)





Example: Data to facilitate decision making

Objective: Maximize economic value derived from the tuna resource

Problem: Potential trade off between industrial fishery development and artisanal fishery prosperity (or survival)

Government Questions: *What* are the current benefits that industrial and artisanal fisheries provide? *How* are these benefits realized? *What* is the cost-benefit of promoting one or the other?





Example: Decision making framework
 ~ cost-benefit analysis ~



INCREASING INDUSTRIAL TUNA FISHING			
Benefits	Data?	Costs	Data?
License revenue	Yes	Localised depletion	Yes
GDP	Yes	Low resource rents	Yes
Employment	Yes	Artisanal interaction	No
Global food security	Yes		

PROTECTING ARTISANAL FISHERS			
Benefits	Data?	Costs	Data?
Food security	No	Reduce license revenue	Yes
Livelihoods	No	Reduce GDP (?)	Yes
Employment	No	Reduce employment	Yes
Trade	No		





Example: Conclusion

Government decisions are often based on economic analysis, which is informed, in part, by data. Lack of awareness, understanding and availability of artisanal fishery data often results in undervaluation of this fishery and policy decisions that do not reflect its economic value.

Data collection is critical to governments making good fisheries management decisions!

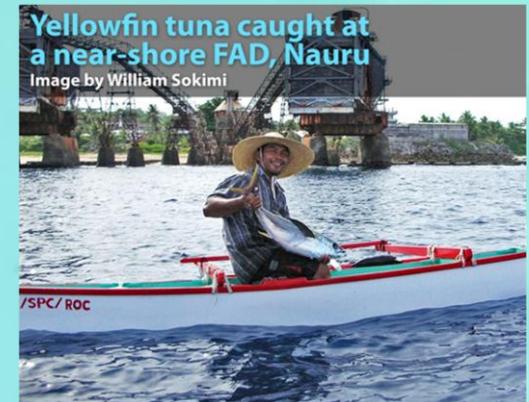




Socioeconomic considerations

What we know:

- Pacific islanders eat a lot of fish (10kg < x < 150kg per capita per annum)
- Participation in fisheries is high – food and income
- Fisheries have cultural and recreational value
- Artisanal fisheries are complex:
 - Multi gear
 - Multi purpose
 - Multi species
 - Geographically dispersed
 - Informal
- Uncertainty around the future productive capacity of coastal fisheries





Socioeconomic considerations

Data gaps:

- Disaggregated socioeconomic data
 - Fish consumption by species / fishery
 - Household income by species / fishery
 - Full / part time participation by fishery
- Consumer tastes / preferences – reef / pelagic
- Health benefits - combating NCDs; ciguatera





Example: Transferring fishing effort from reef to ocean

Objective: Reduce fishing pressure on the reef via the deployment of FADs

Problem: Is this option socioeconomically viable?

Government Questions: *What* is the current status of the reef? *How* can fishing effort be reduced or transferred? *Are* FADs effective in achieving this?





Example: Consequences of no data

Scenario 1: Reef is healthy – government assumes it isn't and deploys a network of FADs; wasted government funds.

Scenario 2: Reef is not healthy – government knows this and deploys a network of FADs; people don't have the means to access FAD or dietary preference for pelagics; wasted government funds

Scenario 3: Reef is not healthy – government knows this and deploys a network of FADs; FADs aren't working.





Example: Conclusion

This is an example of a situation where a lack of socioeconomic (and ecosystem; economic) data from the fishery could result in the government making poor decisions that result in misallocation of resources

Data collection is critical to governments making good fisheries management decisions!



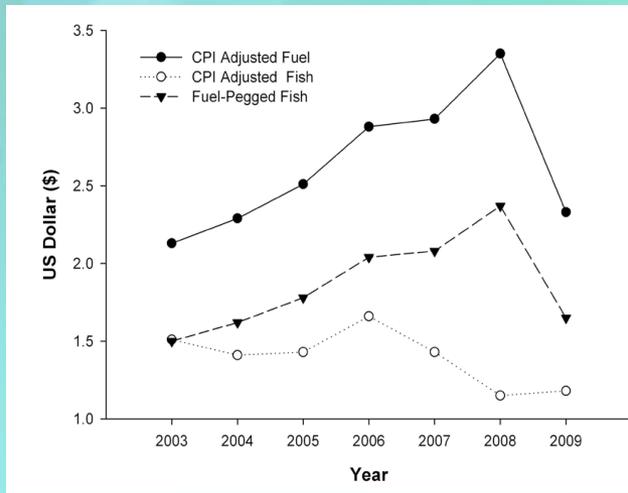


Microeconomic considerations

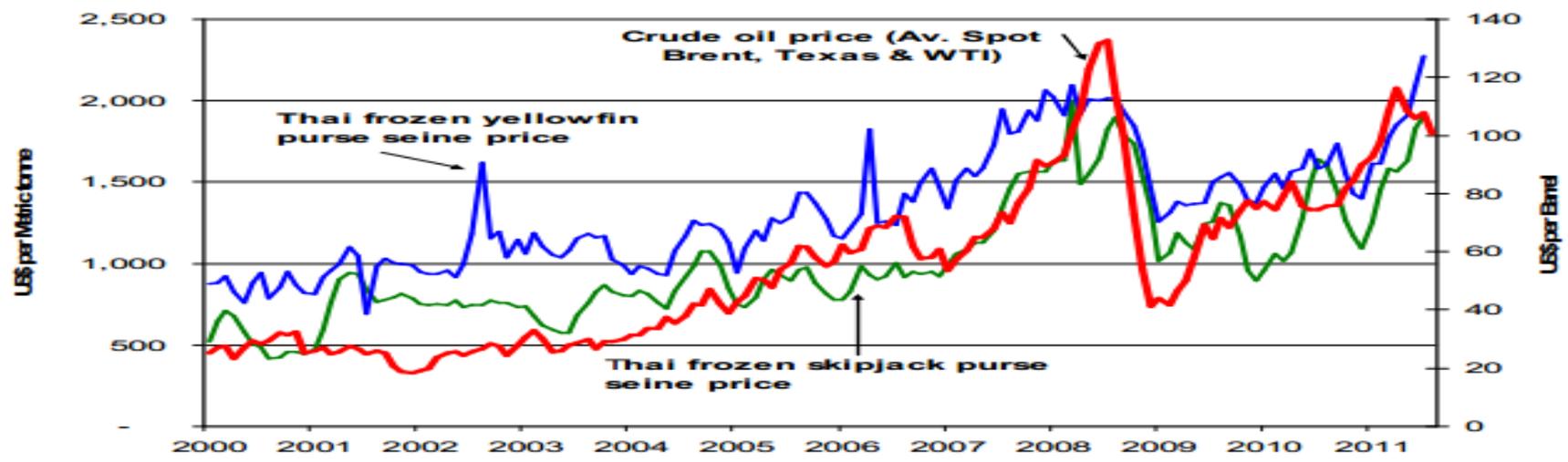
What we know:

- Cost of fishing (fuel, inputs) is increasing
- Depending on the location, FADs are an effective means for improving artisanal fisher efficiency

PALAU: comparison of observed CPI-adjusted wholesale reef fish prices, fuel prices and fuel-pegged wholesale reef fish prices. (CPI 2004 = 100)



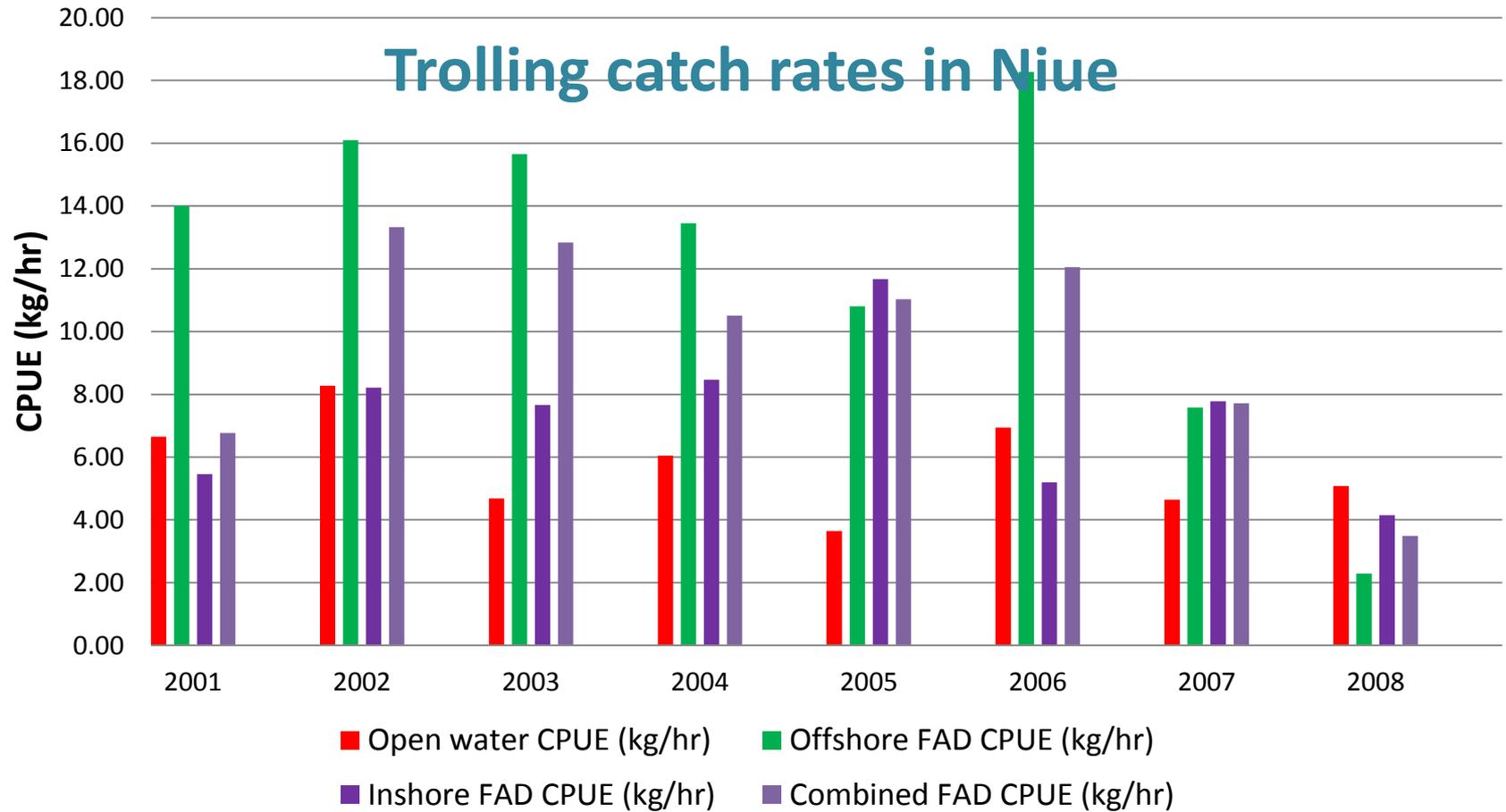
Crude oil price vs Thai YFT and SJT purse seine price (USD)





Microeconomic considerations

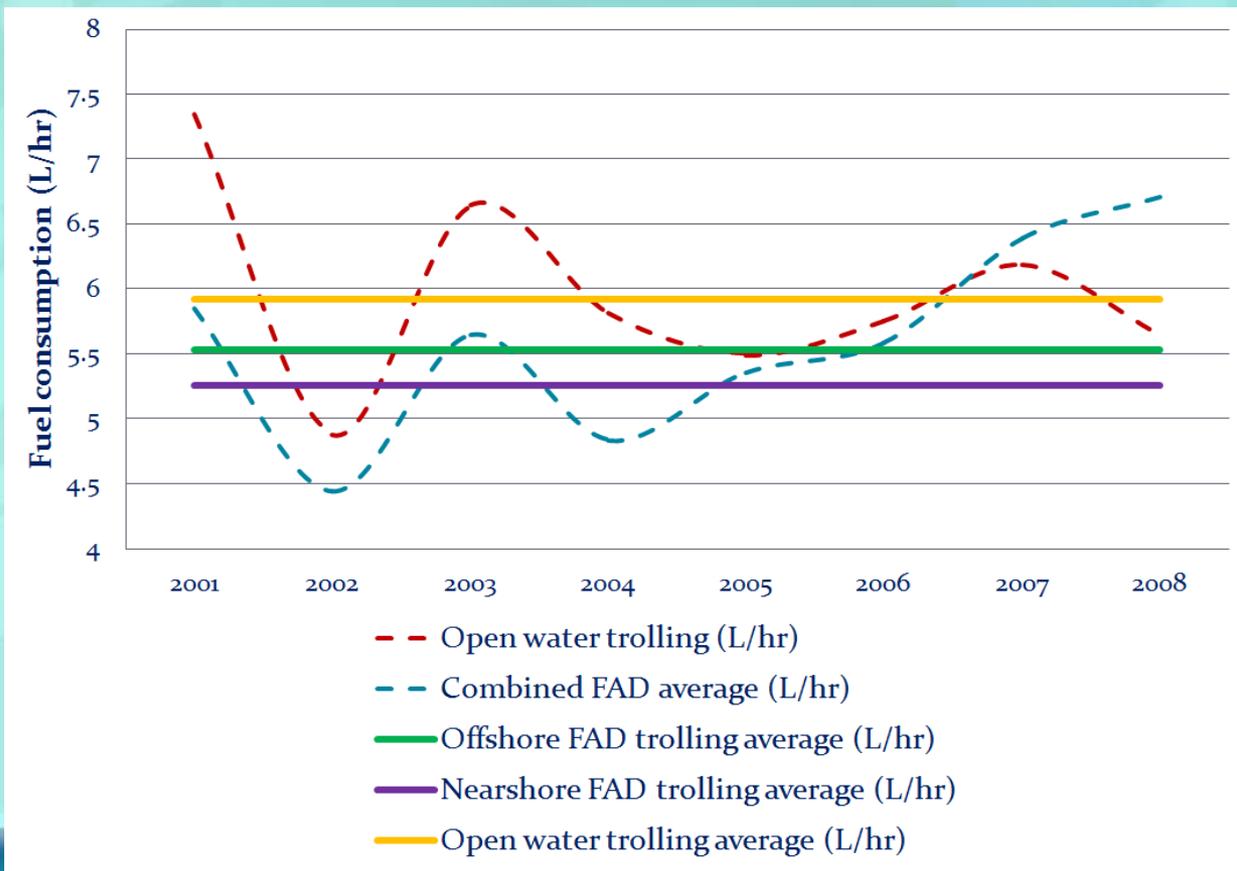
Trolling catch rates in Niue





Microeconomic considerations

Trolling fuel consumption in Niue

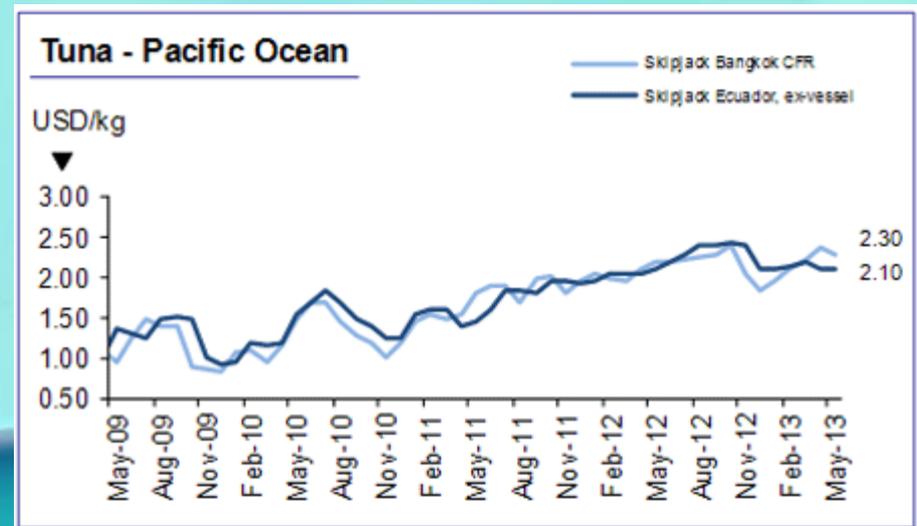




Microeconomic considerations

Data gaps:

- Disaggregated catch and effort data:
 - FAD economics
 - Optimisation (e.g., gear)
- Market price and quantity
 - Time series
 - Price elasticity of demand/supply
 - Supply and demand interactions
- Production economic variables
 - Revenue
 - Variable costs
 - Fixed costs
 - Gross margin





Example: Policy to support artisanal fishers

Objective: Support, through economic intervention, small scale fishers

Problem: Small scale fishers are not economically viable?

Government Questions: *What is the typical value of catch? Are fishers profitable? Can economic intervention help?*





Example: Consequences of no data

Scenario 1: Fishers are not profitable – government assumes they are and does nothing; domestic production decline.

Scenario 2: Fishers are profitable – government assumes they aren't and subsidizes fuel; fishers increase profitability at tax payers expense

Scenario 3: Fishers are not profitable – government assumes they aren't and subsidizes fuel, but at levels that are too low; fishers still not profitable





Example: Conclusion

This is an example of a situation where a lack of microeconomic data from the fishery could result in the government making poor decisions that result in misallocation of resources

Data collection is critical to governments making good fisheries management decisions!





Policy implication and data needs

Macroeconomic:

- Need for informed policy
- Raise profile of artisanal fisheries
- Sectoral underinvestment
 - Infrastructure and development
 - Monitoring
 - Planning and management
- Underdeveloped marketing channels
- Investment analysis

Socioeconomic:

- Need for greater understanding
- Disaggregation of:
 - Species consumption
 - Income source
 - Fishery participation
- Understand consumer tastes/preference in policy development
- Promote health benefits

Microeconomic:

- Need for vessel economic modelling - production
- Understand market dynamics and impact of policy / development programs
- FAD economics
- Interactions with industrial fishery





Thank you and discussion

