

# **Fishing Conflicts on Guam**

## **A Report of Meetings and Interviews with Fishermen**



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## Contents

Summary .....	v
Acknowledgements.....	v
1. Introduction.....	v
1.1. <i>Project Objective</i> .....	1
2. Approach to Information Gathering.....	1
2.1 <i>Public Meeting with Local Fishermen</i> .....	1
2.2 <i>Semi-Structured Interviews with FAS Fishermen</i> .....	1
3. Results.....	2
3.1 <i>Public Meeting with Local Fishermen</i> .....	2
3.2 <i>Semi-Structured Interviews with FAS Fishermen</i> .....	3
3.2.1 Length of Residency on Guam.....	3
3.2.2 Classification.....	4
3.2.3 Fishing Intensity.....	5
3.2.4 Fishing Times.....	6
3.2.5 General Fishing Locations .....	7
3.2.6 Knowledge of Rules.....	7
3.2.7 Conflict .....	9
4. Conclusions.....	10
Appendix. Council-University of Guam 4-H Fishing Conflict Survey Questions .....	12
Table 1. Desired Sample Composition and Subgroup Sizes.....	2
Table 2. Actual Sample Composition and Subgroup Sizes.....	3
Table 3. Fishing avidity - days per week. ....	5
Table 4. Usual fishing times, in percentages. Shaded indicates the highest for each locale.....	6
Table 5. Familiarity with Formal and Informal Fishing Rules. ....	8
Table 6. The relative importance of fishing rule type.....	8
Figure 1. Residency on Guam in 3 year blocks.....	4
Figure 2. Fishing Motivation ranked most important by percent.....	5
Figure 3. Frequency of multiple daily fishing trips, in percentages .....	6
Figure 4. General fishing areas fished most often. ....	7
Figure 5. Relative importance of rule type by combined percentage. ....	9

Figure 6. Experience with fishing conflict. .... 9

## Summary

This document reports the results of activities to understand fishing conflicts on Guam between Guamanian fishermen and fishermen who have immigrated to Guam from Pacific Islands Freely Associated States (FAS). These states are the Federated States of Micronesia, Palau, and the Marshall Islands. In response to concern about fisherman safety and the condition of Guam's fishery resources, the Council conducted a public meeting with local fishermen (approximately 60 fishermen attended) and developed a survey of FAS fishermen (n=175 across six groups). These activities were conducted between November 2014 and May 2015. Meeting attendees reported that FAS fishermen are showing disrespect to the local culture by ignoring local fishery resource laws and norms; many of their trailers and boats have no lights and they do not appear to be practicing proper dive safety; and Guamanian fishermen are concerned with the integrity of nearshore fishery resources. Interviews with FAS fishermen show that they are aware of the local animosity and that because Chuukese fishermen fish differently from the other island groups we targeted in this study, this may be a Chuukese-centered problem. The data suggest where education, and perhaps enforcement, effort should be focused.

## Acknowledgements

**We thank members of Guam's fishing public for voicing their concerns, the 175 FAS fishermen who agreed to be interviewed for this study, the University of Guam 4-H program and the Micronesia students who served as interviewers, Guam's Council and SSC members, and the Guam Fishermens' Coop. We also thank Dr. Paul Callaghan, Ms. Judy Amesbury, and Ms. Sarah Pautzke for reviewing the draft report.**

## **1. Introduction**

During the past several years, members of the Guam fishing community have raised concern about fishing-based conflicts driven by differences between how Guamanian and fishermen from the FAS use the same fishery resources. These conflicts have been reported in both offshore, nearshore, and shore-based fisheries.

At its 159<sup>th</sup> meeting (March 2014), the Western Pacific Fishery Management Council (Council) directed staff to explore the issue and obtain information. In November 2014, Council staff, in partnership with the Guam Fishermen's Co-op, convened a meeting with Guamanian fishermen to discuss the history and current state of the conflict. Staff also met with the Republic of Palau Consulate on Guam during that time. In early 2015, the Council contracted the University of Guam 4-H Extension to learn more about FAS fishermen's fishing practices, local fishing norms and regulations, and conflicts with local fishermen. This report provides the findings from these activities.

### ***1.1. Project Objective***

The objective of this project was to provide fishery managers and other decision-makers with information about the conflict and its causes, and to support education, outreach, enforcement, and conflict mitigation measures.

## **2. Approach to Information Gathering**

### ***2.1 Public Meeting with Local Fishermen***

In mid-November 2014, the Council, with the assistance of the Guam Fishermen's Co-op, convened a meeting at the Co-op facility in Hagåtña. This meeting was publicly-noticed, though it was focused on the perceptions of local fishermen. Prior to the meeting, Council staff met with Council vice chair (Guam) Michael Duenas and Guam 4-H Extension agent Cliff Kyota at the University of Guam to discuss background, examples of the conflict, enforcement issues, and the local government response to date. The purpose of the meeting was to collect information, perspectives, and perceived consequences regarding FAS fishing and selling practices.

### ***2.2 Semi-Structured Interviews with FAS Fishermen***

To learn about FAS fishing practices and perspectives, the Council contracted the University of Guam 4-H Extension to conduct semi-structured interviews with FAS fishermen. The purpose of the interviews was to gather information about a number of themes, including:

- Fishing styles, gear, and methods;
- Fishing motivations;
- Frequency/avidity and times of day;
- Primary fishing locations;

- Types of fish targeted;
- Awareness of Guam fishing norms and regulations.

The 4-H Extension suggested 150 interviews<sup>1</sup> broken down as follows.

**Table 1. Desired Sample Composition and Subgroup Sizes.**

<b>FAS Locale</b>	<b>Sample Size (N)</b>	<b>Percentage</b>
Chuukese	75	50%
Yapese	12	8%
Kosraean	12	8%
Pohnpeian	18	12%
Marshallese	18	12%
Palauan	15	10%
<b>Total</b>	<b>150</b>	<b>100%</b>

In addition to advising the Council on sample composition and size, the 4-H Extension also suggested interview locations and made important modifications to the semi-structured interview form that had been drafted by Council staff. Finally, the 4-H Extension hired several FAS students attending the University of Guam as interviewers. We determined this to be the best way to gain access the tight-knit FAS community, members of which may have been suspicious of the project’s intentions or may have not otherwise participated.

Before proceeding, we advise caution against automatically generalizing from our completed sample to the entire population of the groups we sought out for this project. Neither the nature of our sampling approach, nor our sample sizes, lends itself to such. However, many of our findings appear to jibe with local perception and known attributes. At the least, our findings should be able to suggest starting points for communication, education, and conflict resolution.

### 3. Results

#### *3.1 Public Meeting with Local Fishermen*

Approximately 60 local fishermen attended the two hour evening meeting. Several attendees stated they believed the conflict centers mainly around how FAS fishermen fish around Guam and what they fish for. Attendees all seemed to feel that the situation has worsened in recent years; and conditions, both social and ecological, continue to deteriorate. Following are the most high-profile takeaways from the meeting.

- Local fishermen perceive Chuukese fishermen to be more responsible for the conflict than fishermen from other FAS groups.

<sup>1</sup> Interview form can be found in Appendix A.

- Many expressed that FAS fishermen are showing disrespect to the local culture by ignoring local fishery resource laws and norms. For example, several attendees commented that FAS fishermen will occasionally park their boats in the middle of a school that's being fished by other fishermen and that much anger ensues and sometimes a boat chase. Regarding the formal rules, locals believe that FAS fishermen either don't know the local regulations or don't care. Language and literacy may be part of the problem.
- Much concern was expressed about safety. Attendees report that many of the FAS trailers and boats have no lights and that fishermen do not appear to be practicing proper dive safety.
- There is a perception that the Guam police and even the U.S. Coast Guard have chosen not to stop FAS boats and vehicles hauling trailers because the authorities assume the FAS fishermen don't have any identification or money – so it's not worth time and effort.
- One attendee reports he carries a gun now for protection on the water, due to the conflict.
- Several attendees expressed concern for the integrity of the nearshore fishery resources, given the level of fishing effort and sale they observe on the part of many FAS fishermen.

### ***3.2 Semi-Structured Interviews with FAS Fishermen***

All interviews were completed by the end March 2015. Surveys were conducted at boat basins, at shore locations, by phone, and in homes. Surveyors entered the data over the next two months and the data file was delivered to the Council in May. The 4-H Extension was able to conduct 175 interviews broken down as follows.

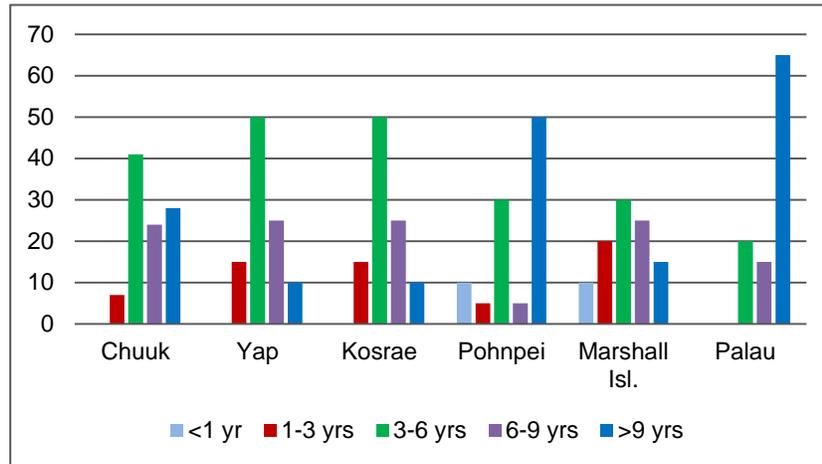
**Table 2. Actual Sample Composition and Subgroup Sizes.**

<b>FAS Locale</b>	<b>Sample Size (N)</b>	<b>Percentage</b>
Chuukese	75	43%
Yapese	20	11%
Kosraean	20	11%
Pohnpeian	20	11%
Marshallese	20	11%
Palauan	20	11%
<b>Total</b>	<b>175</b>	<b>100%</b>

#### **3.2.1 Length of Residency on Guam**

The length of time individuals and groups live in a place is likely to help explain behaviors that may run counter to established local custom and norms. Since this is presumed to be a Chuukese-centered conflict (see Section 3.1), we might expect Chuukese respondents as a group to indicate a shorter length of residence on Guam. However, across our sample, this was not the finding.

Several of the other island groups in the study had higher percentages of people who report having resided on Guam for less than six years (Figure 1).

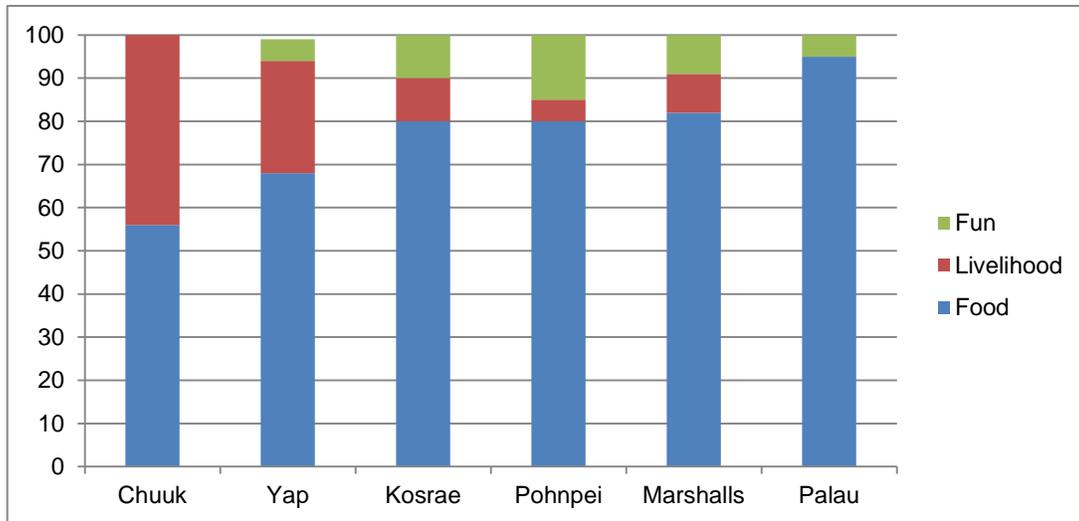


**Figure 1. Residency on Guam in 3 year blocks**

### 3.2.2 Classification

In much of the United States, fishermen are easily and appropriately classified as either commercial or recreational. However, these simple categories are often inadequate given the types of fishing practices and motivations that exist in Hawaii, American Samoa, Guam, and Northern Mariana Islands. Here, fishing consists of a complex mix of commercial, recreational, cultural, and subsistence fishermen whose artisanal fishing behavior, cultural motivations for fishing, and relative ease of market access does not align well with mainland U.S. legal and regulatory frameworks, thus complicating fishery management and monitoring.

When we asked about fishing motivations, we found that majorities within each group reported being primarily motivated to fish for food (Figure 2). However, some individuals in almost all of the groups reported fishing primarily for income – Chuukese especially so. Here, Palauans were the exception; no Palauan respondents reported being primarily motivated by sustenance needs.



**Figure 2. Fishing Motivation ranked most important by percent.**

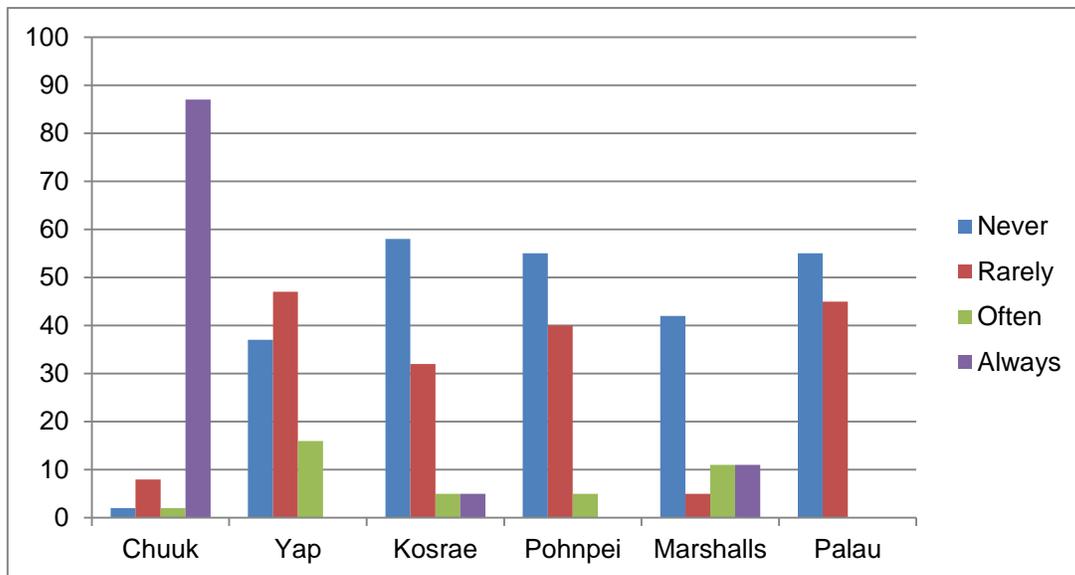
### 3.2.3 Fishing Intensity

An often-heard complaint at the November 2014 public meeting was that FAS fishermen are fishing the resource too hard. Several attendees told stories of boats coming in only to drop off catch and change crew. The boats, with fresh crew and fuel, immediately headed back to sea, in a near continuous operation. Therefore, we asked respondents two avidity questions. In the first, we asked how many days per week they typically fish. Here, Chuukese and Marshallese respondents seem to fish harder than others. For example, the Chuukese sub-sample had a much higher percentage of respondents who report fishing three days per week (Table 3).

**Table 3. Fishing avidity - days per week.**

Days	Chuuk	Yap	Kosrae	Pohnpei	Marshall Isl.	Palau
1	8	93	93	75	42	100
2	7	7	0	20	37	0
3	85	0	7	5	2	0
4	0	0	0	0	5	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0

We also asked how often respondents make more than one fishing trip per day. Typically, noncommercial fishermen would not be expected to make more than one trip per day, and even commercial day fishermen usually make only one trip per day in many parts of the world. However, making more than one trip is relatively easy for nearshore artisanal fishermen in the Pacific Islands. Across our sample, few respondents indicated they make more than one trip per day with the exception of Chuukese respondents, nearly 90% of whom said they “always” make more than one trip per day (Figure 3).



**Figure 3. Frequency of multiple daily fishing trips, in percentages**

### 3.2.4 Fishing Times

Most fishermen in the sample reported that they fish during the daytime. However, more Pohnpeians and Marshallese reported they fish at night than during the day. This finding may suggest that education regarding lighting on boats and boat trailers could be directed at non-Chuukese fishermen.

**Table 4. Usual fishing times, in percentages. Shaded indicates the highest for each locale.**

Fishing Time	Chuuk	Yap	Kosrae	Pohnpei	Marshalls	Palau
6am-noon	35	54	32	30	14	65
noon-6pm	59	19	37	10	0	10
6pm-midnight	5	19	32	30	67	25
Midnight-6am	0	8	0	30	19	0

### 3.2.5 General Fishing Locations

Survey participants were asked where they most often fish. Answers may assist with understanding where to target fishery-specific education and outreach. Unlike the other groups, Chuukese reported much more fishing in inshore areas. For example, while more than 90% of Chuukese respondents fish inshore most often, Pohnpeians have a fairly mixed distribution of fishing effort inshore, offshore, and bottomfish areas, and Yapese, Kosraean, Marshallese, and Palauan fishermen appear to favor offshore fishing areas<sup>2</sup>.

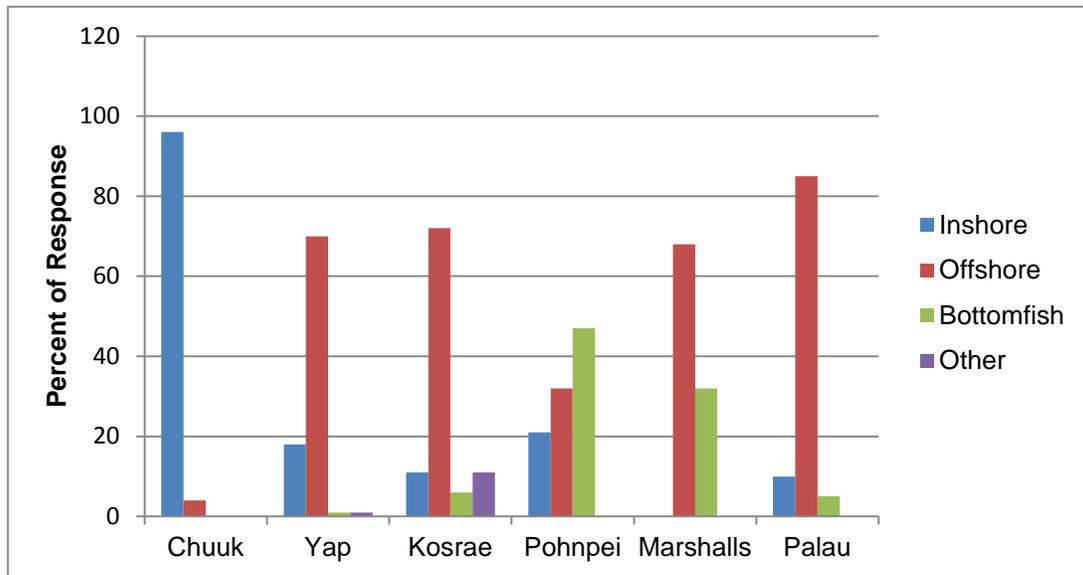


Figure 4. General fishing areas fished most often.

### 3.2.6 Knowledge of Rules

It is possible that these fishing conflicts are underpinned to an extent by a lack of awareness of formal and informal fishing rules. Formal rules are government regulations, enforceable by conservation or police officers, whereas informal rules are local norms, customs, and cultural traditions that are “enforced” by sharp looks, scolding, notes left on cars, physical altercations, etc. We examined awareness by asking respondents about their familiarity with formal and informal rules in Guam and their home islands. Table 5 illustrates that for almost all groups, familiarity with Guam’s formal fishing regulations and informal fishing norms was fairly low. Respondents appear to be somewhat to much more familiar with fishing regulations and norms on their home islands.

<sup>2</sup> We note that there may be a lack of uniformity regarding what constitutes inshore and offshore. For example, some fishermen may feel that inside a lagoon is inshore and outside a lagoon is offshore.

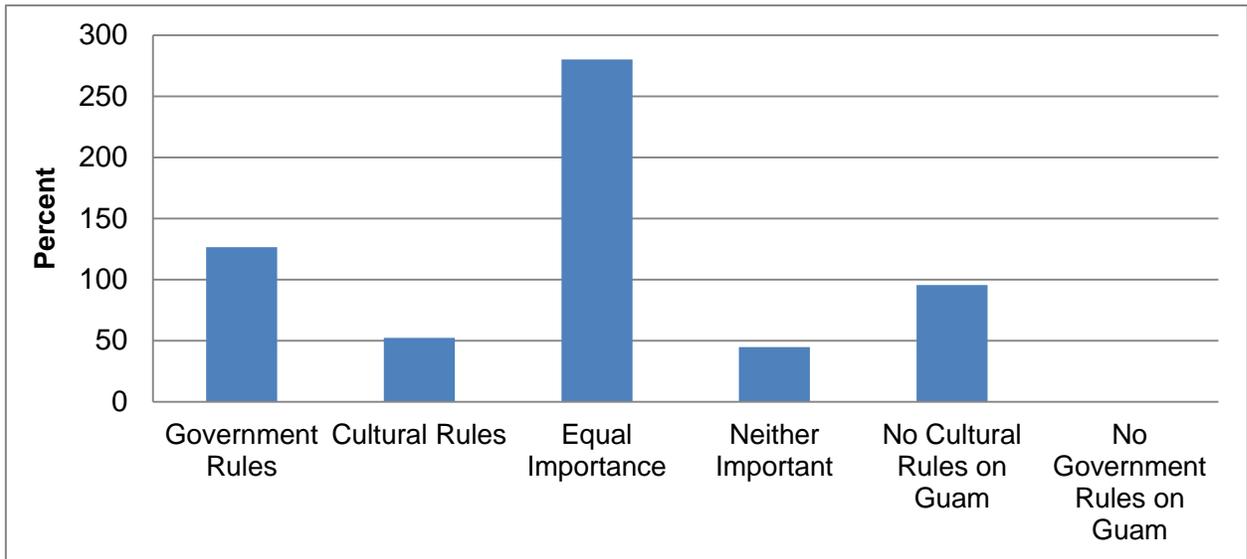
**Table 5. Familiarity with Formal and Informal Fishing Rules.**

How Familiar with:	Marshall						
	Chuuk	Yap	Kosrae	Pohnpei	Isl.	Palau	
Guam's Formal Regulations?	Not familiar	87%	22%	47%	22%	75%	10%
	A little	13%	72%	37%	72%	20%	25%
	Very familiar	0	6%	16%	6%	5%	65%
Home Island's Formal Regulations?	Not familiar	35%	6%	26%	15%	50%	0
	A little	92%	28%	47%	75%	40%	5%
	Very familiar	5%	67%	26%	10%	10%	95%
Guam's Informal Regulations?	Not familiar	99%	99%	39%	99%	89%	15%
	A little	1%	0	39%	0	11%	50%
	Very familiar	0	1%	22%	1%	0	35%
Home Island's Informal Regulations	Not familiar	1%	6%	32%	80%	47%	0
	A little	89%	17%	42%	15%	42%	5%
	Very familiar	10%	78%	26%	5%	11%	95

We also asked respondents to identify which kind of rules they believe are more important to follow and included in the question the option to state that there are no cultural or no formal fishing rules on Guam. Table 6 provides the subgroup response. It may be of interest that only Chuukese and Marshallese respondents stated that Guam has no cultural fishing rules. Figure 5 shows the response according to combined percentages across the subgroups and suggests that many respondents place equal value on formal and informal fishing rules.

**Table 6. The relative importance of fishing rule type.**

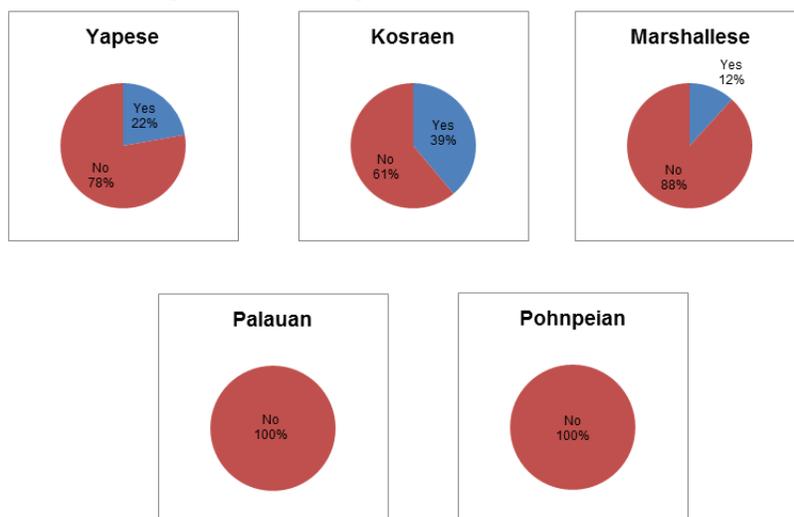
Which Rules are More Important?	Chuuk	Yap	Kosrae	Pohnpei	Marshall Isl.	Palau
Government Rules	8%	17%	39%	17%	36%	10%
Cultural Rules	0	17%	6%	17%	14%	0
Equal Importance	5%	67%	33%	67%	18%	90%
Neither Important	0	0	22%	0	23%	0
No Cultural Rules on Guam	87%	0	0	0	9%	0
No Government Rules on Guam	0	0	0	0	0	0



**Figure 5. Relative importance of rule type by combined percentage.**

### 3.2.7 Conflict

One of the final questions we asked respondents was whether they had experienced, witnessed, or have heard about conflicts with local fishermen. It is sometimes the case in natural resource conflicts that one or more of the parties is unaware of animosity. These conflicts are known as *asymmetric* conflict. The results in Figure 6 suggest that FAS fishermen are aware of local animosity and provide additional evidence that some FAS groups have assimilated to Guam’s formal and informal fishing rules (for example, none of the Palauan or Pohnpeian fishermen we interviewed reported having experienced, witnessed, or heard of conflicts with local fishermen). Note: results for Chuukese response is not reported here due to insufficient data.



**Figure 6. Experience with fishing conflict.**

Additional evidence for conflict awareness comes from the fact that a large majority (73%) of those surveyed said these fishing-based conflicts are a problem that needs to be solved. We asked for respondents' understanding as to why these incidents happened. Several reasons were provided:

- Fishing on private property beach
- Caught too many fish
- Selling for too much money
- Non-locals fishing Guam waters
- Non-locals taking all Guam's fish
- Fishing in restricted areas
- Fishing method not compatible with nearby swimming

Finally, we asked respondents whether they fish on Guam in ways they would not have fished on their home islands. Most said they fish the same on Guam. Those that indicated they use different practices provided the following information:

- Two stated they use scuba tanks on Guam but they would not do so on Chuuk
- One commented that he probably takes more fish on Guam than he would on Chuuk
- One person stated he uses a scuba tank on Guam but he would not do so on Yap
- Two people stated they use boats to fish on Guam but did not have access to a boat before they arrived on Guam

#### **4. Conclusions**

The FAS-based fishing conflict on Guam is real, and both local fishermen and newcomers are aware of it. Local perception going into this study was that the conflict appears to center largely on the activities of Chuukese fishermen and our data would seem to bear this out. In many measures, Chuukese fishermen fish differently: they fish harder, are more motivated by income, and are less aware of Guam's fishing rules and norms. The data patterns provided in this report suggest where government, non-governmental organizations, and the Council may focus their education, conflict resolution, and enforcement efforts.

As reported earlier in this report, several fishermen were adamant at the public meeting held in November 2014 that Guam's nearshore fishery resources are declining because of FAS fishing practices and effort. Therefore, the Council recommends that Guam's Division of Aquatic and

Wildlife Resource pay close attention to abundance trends – especially in reef species and in any areas where their fishing activities are concentrated.

**1. Where are you from (It is important to designate which country and state as there are many islands in some of these countries. There are 79 islands in Chuuk State alone)**

**2. About how long have you lived on Guam?**

- a. Less than 1 year
- b. More than 1 year but less than 3 years
- c. More than 3 years but less than 6 years
- d. More than 6 years but less than 9 years
- e. More than 9 years

**3. Which of the following are reasons you fish?**

- a. Food
- b. Fun
- c. Livelihood (money, cash)
- d. Other

**4. If you have more than one reason for fishing, which would you say is your most important reason?**

- a. Food
- b. Fun
- c. Livelihood (money, cash)
- d. Other

**5. Do you consider yourself a good fisherman or an expert fisherman?**

- a. Good
- b. Expert

**7. About how often do you fish?**

- a. One day per week
- b. Two days per week
- c. Three days per week
- d. Four days per week
- e. Five days per week
- f. Six days per week
- g. Seven days per week

**8. Do you ever take more than one fishing trip in a day?**

- a. Never
- b. Rarely
- c. Often
- d. Always

**9. What is your favorite time to fish?**

- a. Morning (6:00 AM – noon)
- b. Afternoon (noon – 6 pm)
- c. Evening (6 PM – Midnight)
- d. Overnight (Midnight – 6 AM)

**10. Why is this your favorite time to fish?**

**11. Where do you fish (list all that apply)?**

- a. Offshore (pelagic) (tuna, marlin, wahoo, mahi, etc.)
- b. Inshore (coral reef) (parrotfish, surgeonfish, groupers, snappers, etc.)
- c. Bottomfish (Snappers, groupers, etc.)
- d. Other

**12. If you listed more than one, is there one you fish most often?**

- a. Offshore (pelagic) (tuna, marlin, wahoo, mahi, etc.)
- b. Inshore (coral reef) (parrotfish, surgeonfish, groupers, snappers, etc.)
- c. Bottomfish (Snappers, groupers, etc.)
- d. Other

**13. Does your home island/state and country have formal (government) fishing rules and regulations about where, when, what kinds, and how much fish you can take?**

- a. No
- b. Yes
- c. Not sure

**14. Does your home island/state and country have informal (cultural) rules about where, when, what kinds, and how much fish you can take?**

- a. No
- b. Yes
- c. Not sure

**15. If your home island/state and country has formal fishing regulations, how familiar are you with them?**

- a. Not at all familiar
- b. A little familiar
- c. Very familiar

**16. If your home island/state and country has cultural fishing rules, how familiar are you with them?**

- a. Not at all familiar
- b. A little familiar
- c. Very familiar

**17. Of these two, which do you feel is more important to pay attention to?**

- a. Government regulations
- b. Cultural rules
- c. Equal importance
- d. Neither are important

**18. Why?**

**19. Does Guam have formal (government) fishing regulations about where, when, what kinds and how much fish you can take?**

- d. No
- e. Yes
- f. Not sure

**20. Does Guam have informal (cultural) rules about where, when, what kinds and how much fish you can take?**

- d. No
- e. Yes
- f. Not sure

**21. If Guam has formal fishing regulations, how familiar are you with them?**

- d. Not at all familiar
- e. A little familiar
- f. Very familiar

**22. If Guam has cultural fishing rules, how familiar are you with them?**

- d. Not at all familiar

- e. A little familiar
- f. Very familiar

**23. Of these two, which do you feel is more important to pay attention to on Guam**

- e. Government regulations
- f. Cultural rules
- g. Equal importance
- h. Neither are important

**25. Why?**

**26. Have you ever**

- **Been involved in**
- **Witnessed**
- **Heard about**

**any run-ins or complaining with/from people on Guam about where or how you were fishing?**

- a. Yes
- b. No (skip to question 32)

**27. If yes, please explain:**

**28. If yes, did they explain what they were upset about?**

**29. If yes, did you ever experience anything like this on your home island/state/country?**

**30. If yes, have you changed anything about your fishing in response to what you have seen or heard about?**

- a. No
- b. Yes

**31. If yes, please explain:**

**32. Do you feel that these fishing-based conflicts are a problem that needs to be solved?**

- a. No
- b. Yes

**33. Finally, have you ever fished in way on Guam that you wouldn't do back home?**

- a. No
- b. Yes