Economic Performance and Status of American Samoa Longline Fishery[1]

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Overview: The purpose of this report is to document dynamic changes in the economic status of the American Samoa longline fishery as these have occurred between 2001 and 2013. This summary paper provides: (1) comparison of fleetwide cost-earnings estimated for the 2001 and 2009 operating years, and (2) analysis of trends in net revenues for the period 2006 to 2013. The analyses indicate declining profit margins across the fleet over time and provide insight into factors associated with a continuing downturn in the fishery in 2013.

Cost-Earnings Status of 2009 Operations: The cost-earning study completed by Arita and Pan (2013) clearly indicates that significant economic challenges were being encountered by the American Samoa longline fleet as early as 2009. Average per vessel revenue was $448,817 that year – just slightly higher than total expenditures. Profits were therefore minimal in 2009, with owners and operators earning only $6,379 on average.

Table 1 illustrates a downward trend in fleetwide economic performance during the 2000s. Among 23 active vessel owners or operators surveyed in 2009, 48% reported net operational losses. Fuel costs, which accounted for approximately 27% of total expenditures, coupled with diminishing catch per unit effort (CPUE) for albacore, were the major factors leading to poor economic performance.

Comparison with 2001 Cost Earnings Study: The economic status of the American Samoa longline fleet worsened significantly between 2001 and 2009. For example, the average operation generated $177,207 in profits during 2001. But as noted above, average profits totaled only $6,379 in 2009 – a 96% decrease over the course of eight years. Detailed cost-earnings data for the 2001 operating year are depicted in Table 1 (cf. O'Malley and Pooley 2002).

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Table 1. American Samoa Longline Fishery Cost-Earnings Performance: 2001 and 2009.

	2009	2001	% Change
Average Annual Revenue per Vessel	448,817	657,063	-32%
Average Annual Trip Costs per Vessel	268,016	200,923	33%
Fuel	121,648	73,314	66%
Oil	6,064	5,085	19%
Freezer Operations	8,389	10,090	-17%
Bait	53,312	60,318	-12%
Provisions	20,109	22,739	-12%
Communication	3,846	n/a	
Fishing Gear	22,843	29,378	-22%
Misc. Trip Costs	31,804	n/a	
Average Annual Labor Costs per Vessel	78,167	177,894	-56%
Total Captain Share	30,594	68,421	-55%
Total Crew Payments	47,573	109,474	-57%
Average Annual Fixed Costs per Vessel	96,256	101,039	-5%
Mooring	3,365	6,480	-48%
Bookkeeping	3,467	1,609	115%
Insurance	24,970	26,533	-6%
Loan Payments	19,251	35,578	-46%
Other Fixed Costs	3,413	8,180	-58%
Drydock Costs	16,541	4,077	306%
Overhaul Costs	5,584	1,558	258%
Major Repairs	10,761	3,333	223%
Routine repairs	8,904	13,691	-35%
Average Total Annual Expenditures per Vessel	442,438	479,856	-8%
Average Annual Net Return per Vessel	6,379	177,207	-96%

Data sources: 2001 data are from O'Malley and Pooley (2002), and 2009 data are from (Arita and Pan, 2013)

Two principal changes are notable in the cost-earning status of the American Samoa longline fleet between 2001 and 2009. First, average total revenue generated during the 2009 operating year was 32% less than that generated during 2001. Again, diminished albacore CPUE appears to be the underlying cause of the problem. In 2009, CPUE was approximately 14.8 albacore per 1,000 hooks, which is 56% lower than the year 2001 CPUE of 34 fish per 1,000 hooks. If we measure CPUE by fish per set (as opposed to fish per hooks), CPUE fell from 66.5 albacore per set in 2001 to 45.5 per set in 2009 – a 32% decline.

Second, annual trip costs increased by 33% between 2001 and 2009. This was largely the result of a 66% increase in fuel costs during the period. Notably, average annual fixed costs were 5% lower in 2009 than in 2001, and average annual labor costs declined by 56% during the period. This means that crew members received significantly lower payments for their work in 2009 than in 2001.

When comparing economic performance status between 2001 and 2009, it is important to note that the authors of the prior American Samoa longline cost-earnings analysis (O'Malley and Pooley 2002) suggest that fleetwide revenue may have been overestimated for 2001 since the figure was calculated based on performance during the latter part of the calendar year when albacore are relatively abundant around American Samoa (Domokos et al., 2007). In contrast, the revenue data used to evaluate economic performance during 2009 were derived from a full year of logbook reports.

Continuing Decline of the Fishery in 2013: At the end of 2013, the majority of vessels in the American Samoa longline fleet were tied up at the docks in Pago Pago, and according to the *Samoa News* (2013), "For Sale" signs had been posted on 18 of the 22 vessels. Based on our analysis, the situation in 2013 was clearly associated with poor economic performance resulting from: (a) a continuous decline in albacore CPUE, (b) increasing fuel prices, (c) a sharp drop in market prices for albacore, and (d) a baseline of already limited profit margins (Arita and Pan 2013) .

Preexisting problems very likely contributed to the situation observed in 2013. For example, in 2009, the albacore CPUE was 14.8 fish per 1000 hooks and the market price for the species was $2,200 per metric ton, or approximately $1.00/pound. Sensitivity analysis reveals that if market

price and other exogenous factors are held constant, and if CPUE is less than 14.3 fish per 1,000 hooks, net cash return on investment would be negative for any given vessel in the fleet. Thus, most owners and operators were operating very close to the red in 2009. But in 2013, CPUE for albacore fell to 11.9 fish per 1,000 hooks, with little if any improvement in market prices. The situation yielded extensive losses across the fleet.

PIFSC's ongoing economics monitoring program (see Pan et al. 2012) indicates that fishing costs continued to increase after 2009. As noted in Figure 1 below, expenditures finally exceeded revenues in 2013. The costs of fishing are many and various, in this case including costs associated with: diesel fuel, engine oil, bait, freezer operations, fishing gear, provisions, communications, and miscellaneous items. Labor costs are not included in our calculations.

Figure 2 further illustrates poor economic performance across the fleet in recent years. As can be noted in the table, net revenues in 2011 and 2012 were $244 and $713 per set, respectively – significantly lower than the $1,307 per set assessed in 2009. Per-set net revenues declined even further in 2013, ultimately reaching negative $372 that year.

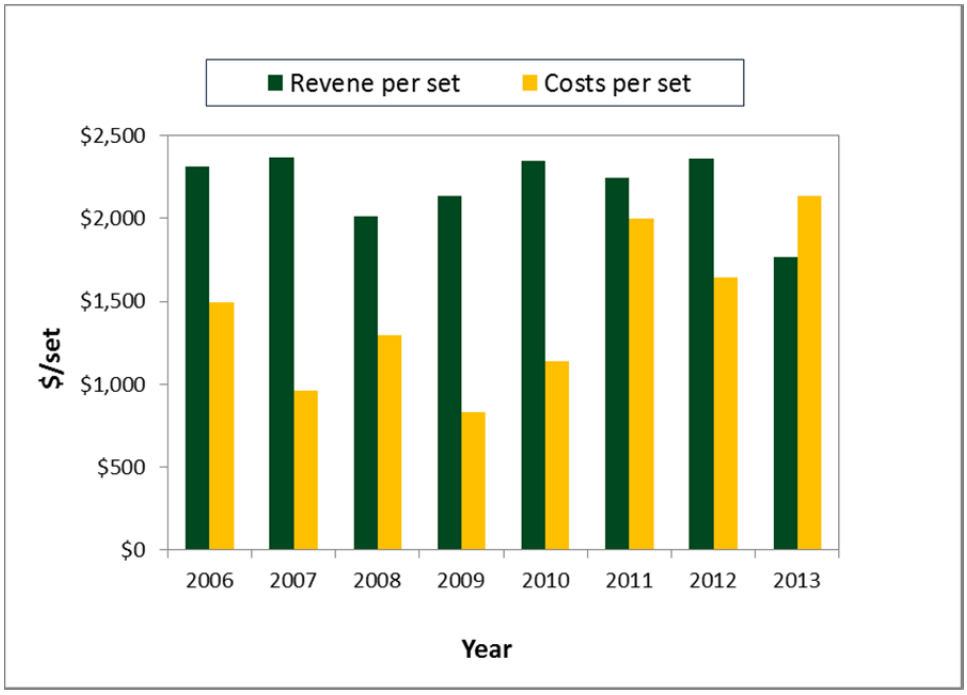

Figure 1. Revenue and cost per set of American Samoa Longline Fishery, 2006-2013.

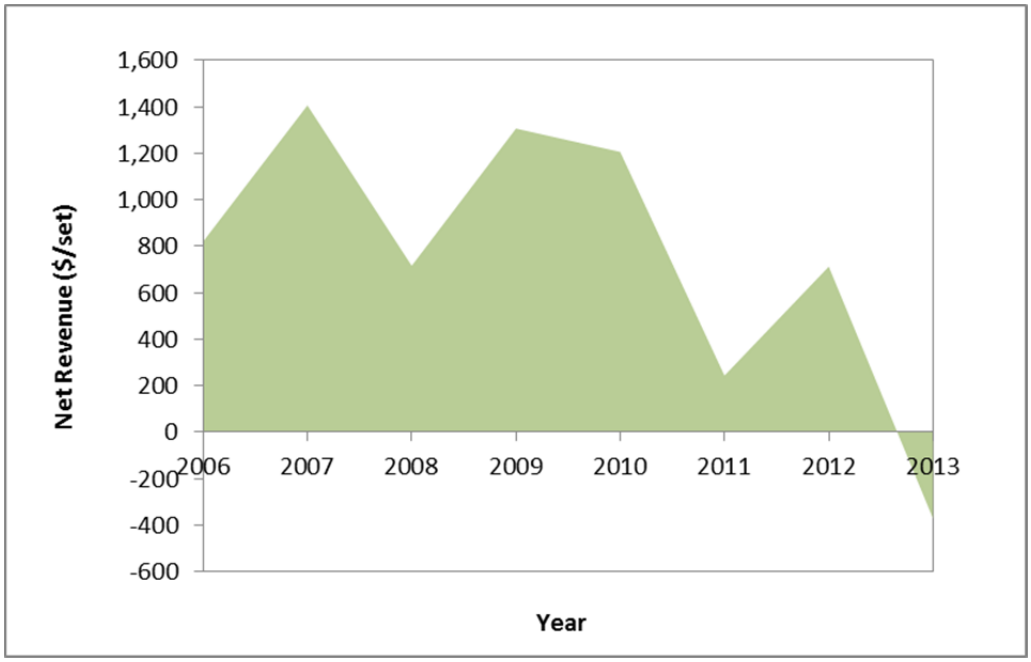

Figure 2. Net Revenue per Set of American Samoa Longline Fishery, 2006-2013.

(Data sources for Figures 1 and 2: cost information are from PIFSC's continuous economic data collection program (see Pan et al. 2012), and trip revenues are calculated using data collected by NOAA's WPacFIN Program (see http://www.pifsc.noaa.gov/wpacfin/as/Pages/as_data_5.php).

Conclusion: In conclusion, analysis of recent trends in the American Samoa longline fishery makes clear that owners, owner-operators, and crew members earned scant profits during 2009. This was part of a downward trend that worsened significantly by 2013, when negative returns on fishing effort were reported by most participants in the fleet. Lack of profitability is linked in large part to diminishing CPUE and poor market prices for albacore. Rapid recovery of the fishery will necessitate near-term improvements in catch and prices paid for albacore tuna, and an easing of costs associated with commercial fishing.

Cited References:

Arita, S., and Pan, M. 2013. Cost-Earnings Study of the American Samoa Longline Fishery Based on Vessel Operations in 2009. PIFSC Working Paper WP-13-009, issued 12 July 2013.

O'Malley, J.M. and Pooley, S.G. 2002. A description and economic analysis of large American Samoa longline vessels. Joint Institute for Marine and Atmospheric Research, SOEST Publication 02-02, JIMAR Contribution 02-345. University of Hawaii at Manoa. Honolulu.

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