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AIR-SHIPPING OF FRESH FISH FROM AMERICAN SAMOA TO MARKETS IN HAWAII

by

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Often circumstances arise in marketing that will directly stimulate changes in the manner in which products are sold or handled. One such circumstance that has arisen in American Samoa is competition to established fresh fish producers from new sources. The change, exporting of fresh fish by air.

Although retail prices for fresh fish in American Samoa, usually around \$1.75 per pound at the Fagatogo Public Market, are high by Pacific Island standards, competition for the limited number of consumers in the relatively small local community has become quite substantial, limiting income. This competition comes from harbour traders dealing in frozen miscellaneous catch from tuna longline vessels, and from the increasing casual sales of "trash fish" from tuna purse seiners. Together these two sources of supply have virtually eliminated sales of fresh bottomfish to restaurants and most retail stores. The resultant task of marketing a volume adequate to make a living, even at \$1.75 per pound, has become more and more time consuming and frustrating for local fishermen, turning them into fishmongers two to three days out of the week.

In 1982 the Office of Marine Resources, Government of American Samoa, received funding from the Pacific Tuna Development Foundation to investigate, and if possible develop, alternative markets and means of marketing for the fish landed by the small fishermen of American Samoa. The following is a summary account of the results of these efforts, managed and conducted by the author, which has resulted in the establishment of an air-shipped fresh fish trade to Hawaii.

We realised early on that the prices of locally landed fish could not sustain lowering to be competitive since the competition fish was being sold casually by vessels for pocket money at between 50c and \$1.00 per pound. These prices could drop even further without difficulty if fresh fish prices become competitive, so it was decided to minimise the need for local marketing by exporting as much catch as possible.

Since I had previously been able to initiate the air-shipping of high value fresh fish from Guam to Hawaii in 1981, leading to a substantial trade there, we felt that successful demonstration of air-shipping of small lots could apply equally in the American Samoa situation.

Before embarking on such a venture, however, several basic criteria indicating feasibility had to be met. These were:

- (1) Are the local fishermen landing or are they capable of landing species of high enough value and demand overseas to warrant the shipping and related costs?
- (2) Are there means available to send air-shipments directly or with limited transshipment on a regular basis?
- (3) Is the quality of the fish presently landed high enough to be readily acceptable to the market, or, if not, are training means available to upgrade quality?
- (4) Is there sufficient land transport, ice-making capacity, cold storage, etc., available at local ports to handle fish without degradation or long delays?
- (5) Is there interest amongst fishermen to possibly increase income by producing a high quality product? Will they take the extra care?
- (6) Can the market overseas be conveniently entered without incurring excessive costs or duties?
- (7) If stock sizes are known are they adequate to warrant substantial exploitation?

In the case of American Samoa, most of the criteria could readily be met. The fishermen involved with capturing deep-water snappers were fairly adept thanks to SPC training in the late 1970's, and were landing fish with a much higher potential value on an export market. They were being hurt locally and they were eager for change, ice was available, transport was adequate, air freight was direct to Hawaii and a chill store of modest proportions was located at the terminal. Entry to the United States was not difficult, duty was not charged and airport handling charges were such that customs brokerage fees could be borne without difficulty. The stock sizes of deep bottomfish were not known, but were believed in a near virgin state due to low effort in the past; in future catch per unit of effort would be carefully monitored.

The only drawback to immediate initiation of the trade, which is a drawback in almost all areas of the Pacific facing export, was the quality of the fish being considered for sale. However, working initially with a small group of fishermen, training sessions and demonstrations were conducted, and quickly enhanced overall quality to the market standards mandatory for the Hawaii consumer. We instructed fishermen in a number of basic set procedures that must govern the manner in which they handle fish at sea. Briefly speaking, it is imperative that all fish be killed by penetration of the brain by a sharp instrument from beneath the gill cover: they must then be placed in a salt water/ice slush until they are completely chilled, straight and firm; and finally repacked in crushed or flake ice with good drainage after four to eight hours in the slush and held with as little handling, motion or transferring as possible until flight time. Simple as the procedures may seem they require care and practice so that the all-critical slush medium is of optimum chilling capacity, fish killed do not lose scales through motion in the brine, discoloration is avoided, especially at the bottom of the pack, etc.

The landings of fish at the beginning of the project indicated to me that there were a good number of species that did indeed have high market potential in Hawaii, especially the deepwater snappers. The species that have been exported during this project are presented in table 1, with names customarily applied in Hawaii.

Table 1 : Species airshipped to Hawaii

<u>SCIENTIFIC NAME</u>	<u>MARKET NAME (HAWAII)</u>
<u>Etelis corruscans</u>	Onaga, ula
<u>Etelis carbunculus</u>	Ehu
<u>Aprion virescens</u>	Uku
<u>Pristipomoides flavipinnis*</u>	Yelloweye Opakapaka*
<u>P. filamentiosus</u>	Opakapaka
<u>P. multidens</u>	Lineface Opakapaka*
<u>P. zonatus</u>	Gindai
<u>Aphareus rutilans</u>	Lehi
<u>Paracaesio stonei*</u>	Stone's Snapper*
<u>P. kusakarii*</u>	Kusakar's Snapper*
<u>Epinephelus morrhua*</u>	Striped grouper*
<u>Caranx lugubris</u>	Gunggang
<u>Coryphaena hippurus</u>	Mahi mahi
<u>Acanthocybium solandri</u>	Ono

*Does not occur in Hawaii.

The fish that are exported are sold by consignment at the Honolulu Wholesale Auction. Buyers who trade here are very particular with regards to flesh quality and appearance since many fish, such as Etelis corruscans can command extremely high prices throughout the year based on their desirability as a gift of high prestige. The buyers are very well schooled from years and generations of experience so that the highest attainable quality cannot be substituted for if one expects a proportional return. Each fish sold is judged according to its individual merit, the ideal condition being a fish such as that in figure 1.

The project commenced with the shipping of the catch from a single fisherman, a 'highliner' of considerable skill, through a single buyer, who helped foster the project by providing shipping information, boxes and contacts. He also paid freight and offered a set, year-round FOB price. The shipping was accomplished by packing pre-chilled fish in wetlock type fish shipping cartons, the fish being wrapped in insulating papers. We could not consider shipping cartons or other containers of fish with ice due to the weight aspect, so we shipped dry. At first this may seem risky, but it is not if care is taken to ensure constant refrigeration. After the fish are packed they are placed into the chill box until flight time, when they are carefully loaded into a non-controlled atmosphere space in the planes belly, such as the general cargo bay. Since the temperature will soon drop as the aircraft comes to flight altitude, the space effectively becomes a refrigerator until landing, when the cartons are removed and placed in another airport chill until being delivered to the consignee.

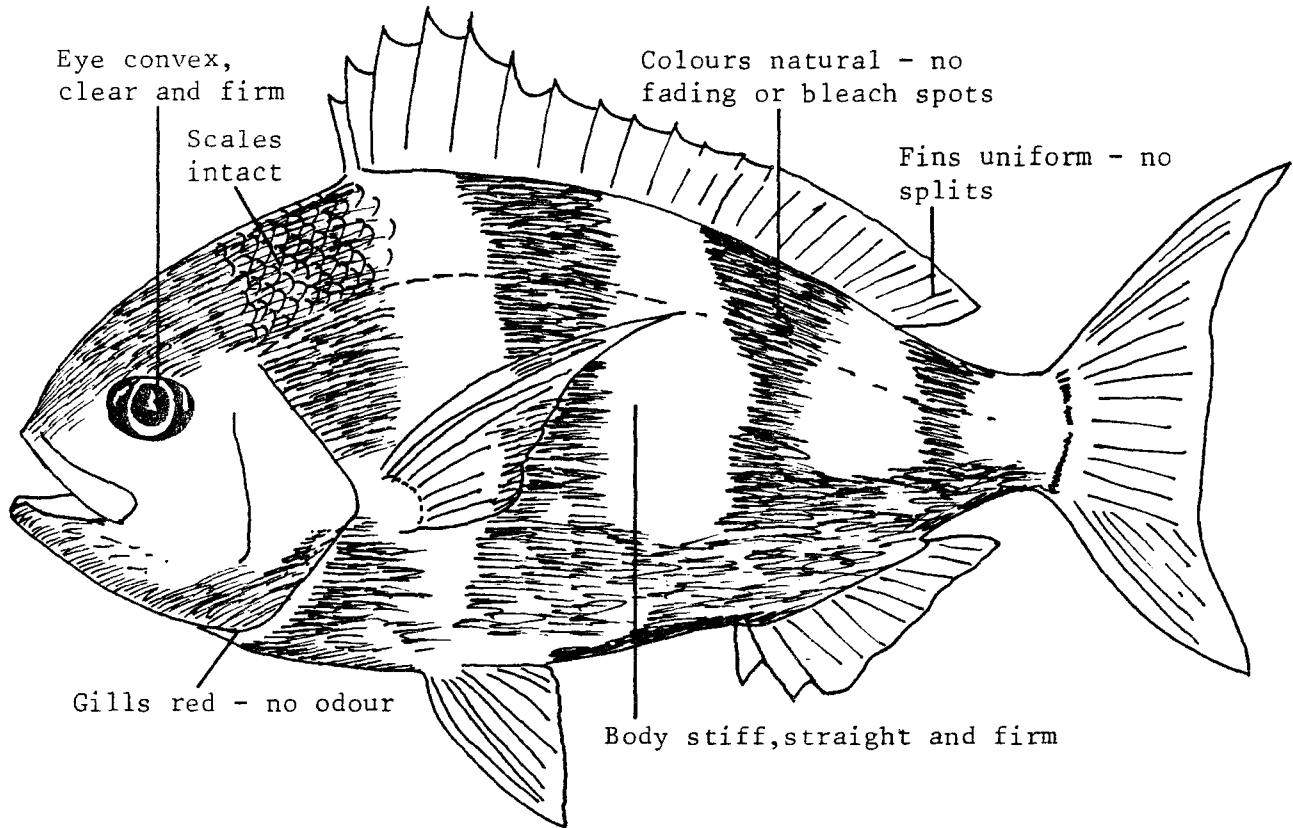


Figure 1: Some Quality Indicators

Using this arrangement we shipped over 9,000 pounds of fish during the year without a single loss. The tare weight was usually between 5% and 7% of the gross weight as opposed to up to 50% with containers of fish and ice, a very important factor. The shipping commenced in May and by September we had shipped 2,000 lbs of selected fish to the buyer. In September we decided to switch to marketing directly via the Honolulu Wholesale Auction for the following four reasons: firstly, the Auction acts on a percentage-of-sale basis, so it actively engages in selling fish, which influences prices accordingly; secondly, a great variety of tropical species that have demand in Hawaii can be marketed there daily; thirdly, through this exposure the fisherman can establish a reputation among fifteen to twenty buyers which can enhance his market security; fourthly, since the auction is regular, deals in volume, and markets a wide variety of species, the variable nature of the Island fisherman's catch can be accommodated best by this form of market, which absorbs quantity and variety. Between September 1982 and May of 1983 more than 6,000 pounds of fish were marketed through the Auction with a sales value of \$US21,811 or an average sales price of \$3.60 per pound for all species combined. Table 2 gives the species, poundage, total sales value, price range and average price for these sales.

Table 2 : Fish Sales

<u>SPECIES</u>	<u>POUNDS SHIPPED</u>	<u>TOTAL SALES</u>	<u>AVERAGE SALES PRICE</u>	<u>PRICE RANGE</u>
		<u>\$</u>	<u>\$/LB</u>	<u>\$</u>
<u>Etelis corruscans</u>	1,911.0	9,274.34	4.85	2.50 - 9.55
<u>E. carbunculus</u>	1,407.8	3,812.64	2.54	1.50 - 5.45
<u>Aprion virescens</u>	1,011.5	4,649.00	4.59	2.00 - 8.00
<u>Pristipomoides spp</u>	292.5	1,105.15	3.77	1.00 - 8.40
<u>Aphareus rutilans</u>	850.5	1,930.91	2.27	0.75 - 5.45
<u>Epinephelus morrhua</u>	153.5	239.07	1.55	1.25 - 2.30
<u>Coryphaena hippurus</u>	53.0	208.35	3.93	3.25 - 5.15
<u>Acanthocybium solandri</u>	64.0	253.55	3.96	3.30 - 4.35
<u>Caranx spp</u>	113.5	219.32	1.93	1.65 - 2.15
<u>Tropidinius zonatus</u>	28.5	64.79	2.27	1.25 - 3.05
Misc.	53.5	54.82	1.02	0.50 - 2.45
Total	6,029.30	21,811.94	3.60	

As time goes on adjustments are being made to make the sales at auction more rewarding. For instance: groupers (Epinephelus spp.) and trevallies (Caranx spp.) have never risen in price or volume, and, since these are not valuable enough to ship in small lots, shipping may be discontinued; the low volume of mahi mahi (Coryphaena hippurus) and wahoo (Acanthocybium solandri) indicates our recent start with these. Effort will increase here, since the demand is heavy; of the miscellaneous fish, we have begun to receive good feedback and a rising market price on test lots of Paracaesio stonei and P. kusakarii, and we anticipate considerable impact from the introduction of these species to Hawaii's consumers.

The results of these developments on the small fleet of deep-water bottom fishermen in American Samoa has been dramatic. Before the export effort commenced, as noted earlier, fishermen were facing increased competition by low value fish in their markets and the sale of valuable fresh fish had become a tedious task. The difficulty of their plight became clear when we realized that they were attempting to sell large (sometimes exceeding 20 pounds) fish such as Etelis corruscans and E. carbunculus, outside of a constricting, limited, restaurant trade, in a marketing situation where whole fish in the one to five pound range are generally favoured. As it stands now the six fishermen who are routinely shipping to the auction can sort their catch as to market, pack and despatch it in one or two hours, and sell the excess small fish without problems.

The long term prospects for the fishery seem bright provided that the stocks are not overfished. A reputation for excellence in quality has been established and long term prices are trending steadily upward. This could well provide a very good income to the nucleus of professional fishermen in American Samoa for the foreseeable future.