

SOME ECONOMIC CONSIDERATIONS
IN THE BANGOS INDUSTRY

by

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Research work on bangos production, under the Inland Fisheries Project (NSDB and USAID assisted) with the U.P. College of Fisheries as the implementing agency, has developed production procedures that offer the potential of increasing the output of bangos per hectare to 2,000 kilos.

Information available indicates that the increased output per hectare can be achieved with little additional increase in total production cost. The cost of harvesting and marketing, in total, will increase with the extra output, but the production and marketing cost per kilo and the price should drop, perhaps significantly.

As a result of the above-mentioned situation, the Special Studies Division (SSD) of the Department of Agriculture prepared a report entitled "Bangos: A Look Ahead!"^{1/} This was prepared as a basis for identifying when and under what circumstances a surplus of bangos might be available for uses other than for fresh consumption.

Processing Bangos

If costs and prices do drop significantly, the available knowledge of income elasticity of demand for bangos suggests consumption will increase. But it may not equal the expansion in production. If it does not, then alternative uses (other than "wet" or frozen) must be developed.

Instead of presenting details of the procedures used, only the summary data are given (Table 1).

This study assumed that the 1975-1980 period would represent, in economic terms, a continuation of the trends and relationships existing in prior years. If this is true, the projection bases used in the analysis should be reasonably accurate. Therefore, it appears that as a result of the positive effects of population growth and income growth through

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^{1/}Guerrero, C.V., F.L. Carandang, R.D. Torres and L.B. Darrah, "Bangos: A Look Ahead!", SSD, DA, 74-4, Feb. 1975.

income elasticity of demand, and the negative or positive effect of price elasticity of demand, the supply of bangos available for processing (i. e. for sale other than as "wet" or frozen) will be, under the 3 assumptions regarding growth in output per hectare, as follows:

- a. Low growth in output per hectare - None
- c. Average growth in output per hectare - None
- d. High growth in output per hectare - 1978 - 7,120 tons,
1979 -47,530 tons, &
1980 -52,200 tons.

A caution, however, should be exercised in interpreting this potential "surplus". The magnitude might be overstated by the amount to which bangos is substituted for other commodities, such as other fish or meat products, as a result of its potentially lower price relative to these items. Lacking exact data on the cross-elasticities of demand, this effect was not quantified. If bangos is substituted for other fish, the "surplus" may not occur in the supply of bangos but in the supplies of the lower classes or other kinds of fish.

Based on the study and given a sharp increase in output per hectare, some surplus should be available for processing from 1978 through 1980. This situation gives lead time for the development of processing technology and planning for bangos processing operations.

In 1973^{2/} it was projected that bangos processing could be economically feasible if:

1. Bangos cost ₱2.00 per kilo.
2. The dressing percentage was 60 per cent, or 600 grams, and
3. The output would be 3 cans of 200 grams each selling ex-plant at ₱1.50 per can.

This cost price (₱2.00 per kilo) was projected to be achieved under conditions of a relatively high (beginning in 1976) or average (beginning about 1978) rates of increase in output per hectare. With the low rate of output growth, processing would not be feasible. This is not to say, however, that a concentrated area of bangos production (as with a large hectare of fishpond estates) would not permit processing to be feasible. But even here, the fresh market prices may offer a more attractive alternative.

^{2/}Based on report of the Fish Processing Committee presented at Fishpond Estate Development Seminar held at U.P. Los Baños Oct. 28-30, 1973.

For the first two surveys

Therefore, it is evident that the Bureau of Fisheries and Aquatic Resources and other concerned agencies of government must exercise every available effort to get the new bangos production technology adopted as widely and quickly as possible.

Consumption Rates

Retail prices of bangos, as obtained through food consumption studies of the SSD, have about tripled during the past nearly four years - going from about ₱2.70 per kilo in 1970-71 to ₱7.35 per kilo in March 1975 (Table 2). This has made the previous analysis less useful than it would otherwise have been and created two new situations, one of which is good, the other bad.

Table 2. Average Price of Bangos Per Kilo and Rate of Use Per 1,000 People, 12 Surveys, Philippines

Survey	Price per Kilo	Rate of use per week per 1,000 people (Kilos)
Oct. - Nov. 1970	₱2.76	101.0
May - June 1971	2.66	107.4
Aug. - Sept. 1972	3.66	61.0
Feb. - Mar. 1973	4.01	41.0
June 1973	4.36	68.1
Sept. 1973	3.97	76.1
Dec. 1973	5.15	61.4
Feb. - Mar. 1974	6.10	52.9
May - June 1974	6.56	54.9
Sept. - Oct. 1974	6.09	65.2
Dec. 1974	6.71	80.4
March 1975	7.35	35.1

Source: SSD, DA.

The "good" is that fishpond operators should find bangos production to be quite profitable. SSD determined average production costs to be ₱2.25 per kilo in 1972^{3/} and ₱2.95 per kilo in 1974^{4/} with net income

^{3/}Carandang, F.L. and L.B. Darrah, "Bangos Production Costs", DANR-NFAC, 73-10, May 1973.

^{4/}Guerrero, C.V., and L.B. Darrah, "Bangos Production Cost by Type of Climate", SSD, DA, 74-21, Aug. 1974.

amounting to ₱0.61 per kilo in 1972 and ₱0.87 per kilo in 1973, prior to producer's marketing costs. Of course, costs have increased further since 1973 but they have not increased as much as prices due to the extent of fixed costs or nearly fixed costs involved in the production of bangos.

The "bad" is that incomes of consumers have not kept up with the retail prices of bangos and the rate of use has declined sharply (Table 2). For the first two surveys (in 1970 and 1971) the rate of use was seasonally high at just over 100 kilos per 1,000 people weekly. In the most recent survey, with prices averaging ₱7.35 per kilo, the rate of use averaged only 35 kilos per 1,000 people. Note in examining the consumption data (especially that for 1973 and 1974) that the rate of use varies seasonally, being relatively low in the first part of the year, rising to a peak in the September-October period then declining. Floods and typhoons caused problems that have and may in the future disrupt the seasonal pattern that SSD data show. Also note that when prices decline from one survey period to another (Table 2) the rate of use increases.

The implication of all this is that fishpond operators must adopt the new production methods that have been developed to increase yields per hectare and thereby reducing costs which should, in turn, lead to lower consumer prices. Otherwise, they may be faced with high costs and lower prices if production becomes heavy. The point is consumers probably cannot afford to eat all that might be produced at ₱7.35 per kilo.

Farms in SSD's 1973 study^{5/} that sold 1,169 kilos per hectare had a production cost of ₱2.79 per kilo compared with ₱3.71 per kilo for the farms that sold only 312 kilos per hectare - nearly a peso difference. If the farms had produced 2,000 kilos per hectare, I would estimate the production cost to have been well under ₱2,000 per kilo in 1973. This is the goal, adjusted for cost changes, to which efforts must be extended if consumers are to be brought back to the bangos retailers in large numbers more often and if we hope to produce bangos at a cost that will permit processing.

Loss of Bangos

One of the disturbing facts about bangos production is the loss that occurs. In the 1972 study, loss of bangos averaged 46 per cent; in the 1973 study, 45 per cent. But this varies widely: A 1974 study^{6/} in the Cagayan Valley area, showed the loss to average 76 per cent.

^{5/}Guerrero, C.V., and L.B. Darrah "Bangos Production Cost by Type of Climate", SSD, DA, 74-21, Aug. 1974.

^{6/}Apolinario, C.H., L.S. Sayaboc, J.D. Aguda, M.C. Guzman and C.V. Guerrero, "Farm Management Studies in Cagayan Valley", SSD, DA, 75-12, May 1975.

A SSD Study, currently underway, covering 120 fishpen operators shows a loss of around 53 per cent. (It should be noted that this loss is for the fishpen operators. It may not be a total loss to society as Laguna Lake could become the nation's largest fishpond for bangos. The 120 farms bought 32.8 million fingerlings. With a loss of about 53 per cent of purchases and inventory, about 17.4 million bangos could have been freed in the Lake. Consider also that about 1,000 fishpen operators were reported in Laguna Lake in 1974, 8 times more than the survey covered).

Prices reportedly paid per fry or fingerling by bangos producers were as follows:

	<u>1972 study</u>	<u>1973 study</u>	<u>1974</u>
	<u>i n c e n t a v o s</u>		
Fry	2.3	2.9	4.5 (Cagayan Valley study)
Fingerling	9.3	11.2	28.2 (Laguna Lake study)

The increase in and present level of prices of fry and fingerlings make it imperative that losses be reduced. No poultryman or piggery operator could survive with comparable losses. How about bangos producers? This certainly is one way to reduce production costs and increase the effective supply of fry. With fingerlings at 28.2 centavos each and 53 per cent loss, the fingerling cost per kilo of bangos (four pieces per kilo) would be ₱2.40 - an extreme example. But even with fry at 8 centavos each (May 1975) and a 45 per cent loss, the cost would be about ₱0.58 per kilo.

Rationalizing Marketing

Two bangos marketing studies conducted by SSD^{7/} show a substantial need for improved marketing - to make it more direct rather than as circuitous as now exists.

Instances were discovered where brokers transferred bangos to other brokers and wholesalers transferred bangos to brokers. These are usually abnormal product movements and lead to increased marketing costs. There is reason to believe that this represents under or over supplies available to selected dealers and a need to acquire extra supplies or to sell quickly

^{7/}Creencia, J.R., A.M. Valiente, Jr., and F.L. Carandang, "Bangos Marketing", DANR-NFAC, 73-20, Nov. 1973.

Guerrero, C.V. and L.B. Darrah, "Bangos Marketing, 1974, SSD, DA, 75-2, Jan. 1975

any excess supplies. A system of market intelligence and planned marketing is needed so that supplies may be diverted to those who need extra bangos or withheld until the dealers can accept supplies without problems.

"Whisper" Selling

The marketing studies, previously mentioned, showed that prices paid to brokers by buyers differed widely from those brokers reported to producers as having been received, even after the commission had been deducted. For example, Luzon producers reportedly received an average price of ₱3.71 per kilo from brokers in early 1974. Those who bought from the producers may not have reported the proper prices received from brokers. It appears that brokers did not report the proper prices received from producers, either deliberately or because of some special arrangement that existed. This is where "whisper" selling comes into the picture. With "whisper" selling, there is no easy way to check prevailing prices and price reporting is made extremely difficult. The system should be changed.

An auction-type market should be established for bangos. In such market, selling prices are announced in public orally. Thus, all involved in bangos marketing will know the true prices that exist and can be guided accordingly. And market reports will be more meaningful.