

# SOUTH VIETNAM: A FISHERY DEVELOPMENT SURVEY

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During January-April 1970, a general survey of the fisheries of South Vietnam was conducted at the request of the United States Agency for International Development (USAID). A summary of the findings and the recommendations is the basis of this report.

The gross national product (GNP) of South Vietnam has been increasing slowly over the past five years. At constant 1960 prices, the GNP increased from 107.6 billion piasters in 1965 to 122.4 billion in 1969. In current prices, however, the GNP for 1965 was 114.7 billion piasters; for 1969, 532 billion piasters. Current prices reflect the severe economic problems confronting South Vietnam--particularly inflation.

Fishery production has been satisfactory from the standpoint of total landings--especially during wartime. In 1965, production was 375,000 metric tons; in 1969, 463,800 metric tons. The use of motorized vessels increased from 12,240 in 1965 to 39,000 in 1969. Increased production under adverse conditions is the result of the motorization program begun on a major scale in 1965.

Several major problems confront the fishing industry and limit its expansion and the availability of fish to the consumer: lack of modern landing facilities, transportation units, refrigerated equipment, and modern fishing vessels. In addition, the military buildup has taken many highly skilled fishermen from the fleets.

## GENERAL ECONOMY

The status of the general economy must be considered when discussing possible means of improving the contribution of any segment of it: in this paper, fisheries. Adequate data are available on the economy to indicate the problems affecting fishery development.

The current exchange rate of 118 piasters per U.S. dollar is unrealistic. Imports are undervalued and exports overvalued. For

fisheries, this situation is both bad and good. The export of fishery products under the current exchange rate is not possible. For example, the current Saigon wholesale price for shrimp is the equivalent of something over \$2 per pound, heads off. On the other hand, the cost of modern equipment needed to develop the fisheries is available at a reasonable piaster cost. However, imports are subject to controls and the availability of foreign exchange. These limit modernization of the fishing industry.

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U.S. DEPARTMENT OF THE INTERIOR  
Fish and Wildlife Service  
Reprint No. 877

## Inflation

The inflationary factors affect fishing and other industries. The data in Table 1 are an indication of inflationary development. An optimistic projection made by USAID for the economy in 1970 contains an inflationary factor of 20% to 30%; this limits further the prospects for development of an export market. Fortunately, the domestic price of fish has kept pace with the general economy--permit-

ting continued production of fish without undue monetary harm to the fishing industry.

When you consider the problems facing S. Vietnam, it is not surprising that inflation has caused economic difficulties. What is somewhat surprising is that the problems are not more severe. When the level of hostilities is lessened, or the war ends, the Government will have to make difficult political decisions if export markets are to be developed. Either an export subsidy or devaluation appears necessary to expand exports, including fishery products.

|   | 1964  | 1965  | 1966  | 1967 <sup>a/</sup> | 1968 <sup>a/</sup> | 1969 <sup>b/</sup> |
|---|-------|-------|-------|--------------------|--------------------|--------------------|
| <b>I. CURRENT PRICES</b>  |       |       |       |                    |                    |                    |
| Private consumption   | 92.4  | 109.1 | 177.0 | 286.0              | 334.0              | 428.0              |
| Public consumption  | 25.0  | 32.5  | 52.9  | 75.3               | 88.0               | 115.0              |
| Gross capital formation   | 12.6  | 17.1  | 34.5  | 40.0               | 40.0               | 45.0               |
| Exports <sup>b/</sup>   | 7.8   | 12.0  | 30.5  | 33.7               | 34.0               | 40.0               |
| Less Imports <sup>b/</sup>  | -23.0 | -28.6 | -76.0 | -110.7             | -102.0             | -121.0             |
| Net factor income from abroad   | - .5  | 2.6   | 17.4  | 20.0               | 20.0               | 25.0               |
| GNP   | 114.3 | 114.7 | 236.2 | 344.3              | 414.0              | 532.0              |
| <b>II. CONSTANT 1960 PRICES</b>   |       |       |       |                    |                    |                    |
| Private consumption   | 76.4  | 77.9  | 77.6  | 87.5               | 80.7               | 84.8               |
| Public consumption  | 21.6  | 24.9  | 33.9  | 38.0               | 42.4               | 49.3               |
| Gross capital formation   | 11.0  | 13.4  | 19.5  | 18.0               | 18.0               | 17.8               |
| Exports <sup>b/</sup>   | 7.4   | 9.9   | 15.4  | 20.2               | 12.0               | 11.6               |
| Less Imports <sup>b/</sup>  | -17.1 | -20.4 | -45.5 | -56.8              | -48.6              | -48.2              |
| Net factor income from abroad   | - .4  | 1.9   | 8.3   | 6.5                | 7.2                | 7.2                |
| GNP   | 98.8  | 107.6 | 109.1 | 113.3              | 111.8              | 122.4              |
| <sup>a/</sup> Provisional   |       |       |       |                    |                    |                    |
| <sup>b/</sup> Goods and services except investment income at effective exchange rate. |       |       |       |                    |                    |                    |
| Source: National Bank of Vietnam (February 1970 Revision)                             |       |       |       |                    |                    |                    |

## GENERAL FISHERY SITUATION

The latest complete fishery statistics are for 1969. Table 2 presents the general fishery situation for 1963 through 1969. There appears to be steady growth. However, certain factors affecting production are not apparent. Production in 1968 was affected adversely by the Tet and post-Tet offensives of the Viet Cong. There is little doubt that production was reduced in some provinces; and the marketing problems created by deteriorating security may have restrained production in some areas.

### Army Takes Fishermen

There are other problems: the lack of skilled fishermen and closure to fishing of certain areas of the coast due to security problems. No data are available on age structure of the fishing population; however, observations and discussions with provincial fishery directors indicated that the active fishing community consists primarily of boys and old men, plus some women. The more



Table 2 - Summary of Fishery Statistics, Vietnam, 1963-1969

| Item                                | 1963    | 1964    | 1965    | 1966    | 1967    | 1968    | 1969    |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Fishermen (No.) . . . . .           | 243,390 | 245,520 | 243,500 | 253,770 | 270,408 | 272,300 | 277,100 |
| Fishing Boats (No.):                |         |         |         |         |         |         |         |
| Motorized . . . . .                 | 9,220   | 9,710   | 12,240  | 16,770  | 23,195  | 29,968  | 39,001  |
| Nonmotorized . . . . .              | 44,530  | 46,760  | 46,240  | 48,380  | 52,995  | 47,991  | 42,955  |
| Catch (Metric tons):                |         |         |         |         |         |         |         |
| Marine fish . . . . .               | 299,340 | 314,000 | 289,000 | 287,450 | 319,500 | 321,645 | 355,488 |
| Freshwater fish . . . . .           | 49,900  | 52,000  | 57,000  | 64,710  | 59,500  | 51,045  | 63,673  |
| Crustaceans, mollusks . . . . .     | 29,430  | 31,000  | 29,000  | 28,340  | 31,700  | 37,310  | 44,683  |
| Processed Products:                 |         |         |         |         |         |         |         |
| Dried (Metric tons) . . . . .       | 18,370  | 19,410  | 17,500  | 16,000  | 15,000  | 20,205  | 20,769  |
| Cured (Metric tons) . . . . .       | 31,370  | 32,170  | 28,100  | 30,500  | 35,024  | 24,830  | 30,242  |
| Canned (Metric tons) . . . . .      | 234     | 215     | 232     | 205     | 185     | 100     | 20      |
| Fish sauce (1,000 liters) . . . . . | 60,000  | 63,000  | 57,000  | 59,000  | 61,000  | 59,000  | 60,850  |

Source: Directorate of Fisheries, Republic of Vietnam.

active and stronger fishermen, who would normally operate the boats are, for the most part, in the military services. The current fleet is not operating at highest efficiency.

#### Closed Coastal Areas

The closure of coastal areas existed through 1968 and 1969. Recently, some restrictions have been lifted. Further relief can be expected if security continues to improve. The opening of coastal areas will be an important factor in production by smaller boats--those limited in ability to fish in non-daylight hours. This would include majority of boats, but not necessarily major part of production capability. The larger and more efficient vessels are affected to a limited degree by the coastal closures, but they are able to continue production outside those areas. It is not possible, therefore, to determine the overall impact on total production resulting from the closures, but they have been a restraint.

#### No Deep-Water Ports

In general, there are no deep-water ports for the fishing fleet, so greater use of larger

modern vessels is limited. Currently, the traditional boats land during high tides at many points on the coast. The one exception is the port of Saigon, where large vessels can land.

Fishing-port development plans should cover two general categories: 1) ports suitable for improvements that would benefit existing fleet; 2) ports with potential for development as deep-water ports for large modern fishing vessels.

#### No Cold-Storage Facilities

There are no cold-storage facilities at any major coastal fishing ports. In some areas, there is a severe shortage of ice. This boosts ice prices and limits its use. Fortunately, the Vietnamese are skilled in producing fish sauce. They make use of all fish produced and thus solve problem of preservation. Nonetheless, additional supplies of fresh fish are needed. The lack of cold-storage facilities, other than those recently constructed in Saigon, has hampered fishermen's ability to meet that need.

## Catch Value

No statistics are available on production by species, or prices, so it is not possible to place an accurate value on production. The species used for fresh consumption probably average 80 piasters per kilo paid to the fishermen, while fish used for fish sauce are lower priced. If an overall vessel price of 60 piasters per kilo is used as basis for determining catch value, it would exceed 27 billion piasters for 1969, roughly 5% of gross national product. However, the price used is arbitrary, and accuracy of production statistics is questionable.

## More Motorized Vessels

The most significant factor in Table 2 is rapid expansion in use of motorized vessels. Production has been maintained and, to some degree, increased as result of motorization program. The 1968 Tet offensive and draft of skilled fishermen tended to negate effect of motorization program. Unfortunately, the program may be creating problems by increasing the effectiveness of vessels operating in limited geographic areas and on limited resources--thereby reducing yield and possibly resulting in overfishing.

## POTENTIAL PROBLEMS

Solutions to many problems facing fishery development are not readily determined, but some potential problems should be pointed out.

### Production

Fishing effort is concentrated in a narrow belt of sea from the beach to approximately

20 kilometers off shore. In some areas, the inshore fishery is limited by security restrictions but, in general, the zone begins at the beach. Even with relatively inefficient units, their sheer number is placing tremendous pressure on existing resources.

Strangely enough, there are a few resources in the heavily exploited area that do not appear severely pressured, primarily because of the gear used. Examples are the lobster and shrimp populations along some areas. In general, however, fishery resources are heavily exploited.

Caution should be exercised in expanding fishing effort within the exploited zone. Preliminary studies should be made on catch per unit of effort and estimates of populations. It does not appear that the offshore fisheries will have problems of overexploitation in the near future--assuming foreign fleets do not expand operations.

### Vessels

About 12 large vessels fish off shore and land catches in Saigon. Most of these vessels are used pair trawlers purchased from Japan. If such purchases continue, there is a serious danger that the limited foreign reserves will be wasted. Investments would produce some profit in immediate future but would not be satisfactory for competing with foreign fleets or new imported vessels operating in the same waters.

South Vietnam should seriously consider limiting funds to buy used vessels and insist on investing in new, efficient vessels. Ideally,



the Government should encourage the use of domestic facilities to construct new fishing vessels. This would save some foreign exchange and develop broader base of expertise in marine construction.

#### Transportation

At present, it is not possible to use the railroad or highways from Da Nang to Saigon to transport perishable foods. When the war ends, this situation will be corrected to some degree, and highway conditions improve. However, transportation of fishery products will not be reliable in the near future. Only a few transportation units are available for movement of perishable products. No refrigerated trucks are available. There appears to be no need to transport fish from northern areas to Delta area. Rather than expand efforts to move fish in a north-south direction, efforts should be directed toward movement inland, or to develop an exportable product.

#### Marketing

The distribution and marketing of fishery products will remain a problem. At present, the coastal areas seem to have adequate supplies to meet nutritional needs, albeit at high prices, if based on official rate of exchange. However, the upland areas lack adequate supplies. It may be years before their needs can be met.

Lack of transportation and export market may result in relatively limited market. The fishing industry may receive declining returns on investment if production increases substantially. This may not be entirely bad because consumer might benefit somewhat.

But it does make possible a situation where middlemen can manipulate prices with relative ease.

Perhaps the most irritating problem that can be expected to continue is the power of the middlemen. One of the major reasons why they have not been eliminated from the marketing system is the simple fact that they perform a service no one else is prepared to perform. They collect enough fish from small fishermen scattered over a wide area to get economic transportation rates to the markets. They lend money with no collateral or formal agreements. So far, all suggestions to change the system have either been ineffective or unrealistic.

Fishermen pay a high price for these services, but no one else but middleman is prepared to perform similar services. Until efficient and convenient landing facilities and easy credit are available, middlemen will continue to play major role.

One bright spot in the picture is the possible establishment of a competing marketing system by owners of the large fishing vessels now beginning operation. The owners have capital, or can obtain it, to establish cold storages for orderly marketing of their catch. It would become possible then to divert some production of small units through marketing channel established by larger operating units. The change would reduce significantly the middleman's influence.

#### Competition

Because statistics are lacking, it is nearly impossible to project the possible demand for

fish compared with demand for other protein foods. Studies have been made of Saigon market. There appears to be a relationship between price of fish and price of other animal protein food on any given day. Apparently a large supply of chickens or hogs on the local market causes a rapid reduction in fish price, assuming normal supplies of fish are available. On the other hand, a heavy supply of fish tends to reduce price of chicken and pork, but not to the same degree as the reverse situation.

#### Foreign Trade

At present, no surplus of fishery products exists that could be exported under the present price structure and official exchange rates. A potential exists, particularly for such luxury items as shrimp and lobster. However, no facilities exist for processing fishery products at landing sites. Any exported fishery product must compete on the world market in price and quality.

For example, new shrimp grounds are being developed off South America's coast. Current estimates of potential production indicate area could be a major producer. Experienced shrimp fishermen and processors are investing in that area; therefore, it may be assumed that the product will meet world standards in quality and price. Under current conditions in Vietnam, it does not appear possible that an acceptable product could be produced, even if product were competitive in price.

Other fishery products may be exportable--red snapper and other finfish. The same conditions apply to these products: they

must compete. There is an apparent abundance of red snapper in the South China Sea. No estimates are available on potential production, but the Directorate of Fisheries has estimated that in Rach Gia it could reach 200 to 300 metric tons per month with existing units of production, if the incentive existed. Red snapper is not considered a highly desirable species in Vietnam. It is doubtful, however, that the product would be competitive on world market under existing conditions.

#### Imports

Some canned fish are imported. Much fish meal is imported: about 2,865 metric tons in 1968, and a predicted 1972 level of 10,000 metric tons. There has been a strong interest in Vietnam to produce fish meal and canned fish primarily for domestic consumption, but also for exporting canned fish. Under current conditions, it is unrealistic to consider such products for export.

There are no can-making facilities in Vietnam; all cans are imported. The current estimated price of fish in Vietnam is at least \$500 U.S. per metric ton--unrealistic to carry for export, especially with likely species: anchovy, sardines, squid, and mackerel.

If estimated price at producer's level is about right, production of fish meal is impossible if world prices are guideline. Limitations on fish-meal production could change if 2 events happened: a significant devaluation of piaster, and if Government determined import substitution was so important that heavy subsidies would be granted fish-meal industry. Both factors have much political



significance for Government. It is difficult to predict what it would do.

#### Other Problems

The following potential problems are significant to affect long-run development of the fishing industry.

#### International Considerations:

In recent years, efforts have been made to define more clearly the rights of coastal fishing nations. Currently, resources of the continental shelf are reserved to the coastal fishing nation if such resources meet the criteria established by 1958 Geneva Convention on the Continental Shelf. From observations made of the various species landed in Vietnam, there does not appear to be a large production of resources that would be protected by the Convention; however, such resources may be available but not exploited.

It is possible that new principles of international law will be developed in the near future that would protect coastal fisheries; however, such changes usually include provisions for historic rights of fishing nations. Vietnam should follow closely developments in international law that may affect fishery development. If necessary, she should participate actively in international conferences that deal with rights of coastal fishing nations to insure that her industry will be adequately protected and have opportunity to expand operations. Foreign fleets may intrude on continental shelf of Vietnam in areas not now exploited.

#### Cooperatives:

Most recommendations for fisheries of less-developed countries include development of cooperatives in agriculture and in fisheries. Here, these institutions are presented as problems rather than solutions. On paper, there are many fishery cooperatives. Few are operating. Fewer still perform any effective function that benefits the fishermen. For all practical purposes, cooperatives have been established to purchase fuel, ice, and motors--but none to market fish.

Also, discussions with provincial fishery directors and fishermen left impression that membership in the cooperative is a disadvantage to fishermen. For example, the Rach Gia cooperative appears managed by the same businessmen who control the availability of ice and are major purchasers and transporters of fish. A study in late 1969 and early 1970 by contractors revealed that the cost of shipping fish through Rach Gia cooperative exceeded costs of similar shipment through private broker.

As a second example, the Phan Thiet cooperative serves as a source of motors and other supplies, but loans to fishermen for major purchases using funds available to cooperative from Agricultural Development Bank are at a rate double that charged by the Bank. Bank loans to cooperative are 3%; fishermen pay cooperative 6%. It is normal for a cooperative to charge a higher rate of interest to cover costs, but double is extreme. Secondly, fishermen landing catch at market's cooperative area are required to pay all taxes

and other charges applicable to fish landings; in Phan Thiet, over 12% of catch value. While all fishermen are subject to such levies, the difficulty in collecting the charges results in a lower rate of real cost for most fishermen. In other words, fishermen landing in the area of the cooperative are charged at a higher real rate than other fishermen. It would appear, therefore, that in the two ports where an effort was made to obtain information on cooperatives, there are definite disadvantages to being a cooperative member.

While the normal answer to forming effective cooperatives is to institute a program of training for cooperative managers, discussions with USAID personnel indicated such a program has not been effective. The shortage of trained personnel makes the skill obtained through training in management of cooperatives a highly priced commodity; therefore, personnel completing the training have found it more profitable to enter private business than to manage cooperatives.

An immediate solution is not apparent. Government regulation is no answer because Vietnam does not have sufficient skilled personnel to manage and police cooperatives. Direct Government control has been ineffective where it has been attempted. Perhaps the only answer is patience and training. Eventually, effective purchasing and marketing cooperative may be formed. This goal seems a long way off.

#### Military Activities:

Military activities have the highest priority. However, the consequences of some should be considered seriously from view-

point of long-term recovery of the national economy. In particular, the program of defoliation could have serious short- and long-term effects on the fisheries. An intensive program of defoliation in the area of estuaries, or where chemical runoff would enter the estuaries, could have an immediate effect through destruction of immature marine life using the area as a nursery. Detrimental long-term effects could come from a drastic change in the ecology of the area through destruction of trees and ground cover. These factors should be given serious consideration in any program of defoliation. The application of chemicals should be limited to areas where absolutely necessary.

#### RECOMMENDATIONS

1. Efforts should be made to assist the small fishermen in increasing their income. The use of such gear as baited hoop nets and shrimp pots, both easily fabricated from available materials, should increase catch of lobster and shrimp.

2. The insulation of fishing boats and transportation units should be given high priority.

3. The USAID Fishery Advisor should be sent publications and reports on latest developments in fisheries. This information should be passed on to Vietnamese counterparts.

4. Specialists in refrigeration, fishing equipment and methods, fishing product processing and packing, international trade in fishery products, sanitation, and marine



biology should be made available on a temporary-duty basis for service in Vietnam.

5. The Government of Vietnam should facilitate construction of cold-storage facilities by the private sector.

6. Port development for the fishing industry should be given high priority.

7. Transportation facilities for fishery products must be increased, either through domestic fabrication of refrigerated equipment or through import of such equipment.

8. Domestic construction of modern fishing vessels should be encouraged.

9. The Government should plan development of exports of some fishery products, even to extent of earmarking products for export rather than for domestic consumption.

10. The existing program of reducing restrictions on fishing areas should continue.

11. Consideration should be given to implementing regulations that prohibit fishing by large modern vessels in coastal zone presently worked by existing fleet. Vessels licensed to fish for shrimp should be exempted, but strict controls should be placed on where they may fish.

12. The collection of fishery statistics should be expanded to include landed and wholesale prices, landings by species, sizes of vessels, number of ice plants, production of ice, and number of transportation units. Additional useful statistics should be collected.

13. The training of Vietnamese, including women, in the technical aspects of fisheries should be expanded.

(See photo spread pages 64-66.)