

A COMPARATIVE STUDY OF RURAL FISHING
COMMUNITIES IN EASTERN VENEZUELA:
AN ANTHROPOLOGICAL EXPLANATION
OF ECONOMIC SPECIALIZATION

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Anthropology

1973

ABSTRACT

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Since the incipient phase of industrial capitalism, social scientists have shown a marked concern for the economical problems of the peasantry. It would now be a truism to assume that among these problems the most salient is that of economic specialization. Nevertheless, recent, increasing collaboration between economists and anthropologists provides a more objective basis for analysis. The mutual gathering of new illustrative data is conducive to a better understanding of peasant economic specialization on either a national, regional, or local level.

Though limited in scope and content, the present study is related to this problem of economic specialization. More specifically, it deals with the analysis of the economic organization of rural fishermen in Eastern Venezuela. The effects and consequences of economic specialization are examined by means of the comparative study of three communities, each characterized by a differential involvement in fishing activities. In the first one, Chiguana, halieutic

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activities represent a minimal source of income, as the people participate as well in agriculture, cattle raising, and wood cutting. In the second village, Guacarapo, fishing is more important and cattle raising is the only activity, apart from fishing, in which fishermen significantly invest. Lastly, in Santa Fé, there exists a large group of specialized fishermen who dedicate their time exclusively to fishing.

The study of economic organization in each community focuses mainly on production and exchange activities. The allocation of the fishermen's investment, the crews' formation and level of production, and the nature of their involvement in marketing remain the main selective axes for comparing and determining their degree of economic specialization.

In the last chapter, which tabulates and analyzes similarities and differences among the three communities, the problem of economic specialization is re-examined through the Marxist notion of mode of production. Such an approach permits one to distinguish two analytical levels: one external, which emphasizes the influence of the larger society upon local economic organization; the other internal, which seeks to point out the rationality of the community's economic system. The analysis shows that: (1) the present degree of economic specialization of the communities is related to their former involvement in a peasant or capitalist

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mode of production, (2) that the majority of present fishing groups are neither peasant nor capitalist, (3) that a greater specialization has nevertheless produced changes in the social relations of production, and (4) that the fishermen's economic future depends upon the ways by which the Venezuelan government will prevent a group of capitalist entrepreneurs from exploiting proletarianized fishermen.

ACKNOWLEDGMENTS

I am grateful to several persons for their assistance and support. I must thank all the people in Chiguana, Guacarapo, and Santa Fé who kindly contributed to the conduct of this study. Professor Juan Flores, Universidad de Oriente in Cumana; Professor Roberto Lizaralde, Universidad Central in Caracas; and Sr. Juan Salazar of the Fishery Office in Cumana facilitated my acquaintance with the fishing communities studied and gave me much useful advice for research.

Professor S. Cook, University of Connecticut; Professor L. Kasdan, Dalhousie University; and Professor T. Phenice, Michigan State University read the entire manuscript and offered valuable and thoughtful suggestions on the content and organization of the material in the text.

I am thankful to the Canada Council of Arts and the Latin American Studies Center of Michigan State University, which provided grants to conduct research in Venezuela.

These and many other individuals took time to help me and I appreciate their courtesy. However, I take full responsibility for any shortcomings and inadequacies in the text.

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INTRODUCTION

A. General Orientation of the Study

Fishing has long been a topic of inquiry in anthropology. Classic studies by late nineteenth and early twentieth century ethnographers and ethnologists contain numerous references to groups whose subsistence depends upon the exploitation of marine resources. However, it is only in the last decades that fishing communities have begun to be intensively analyzed and that their relevance for anthropological inquiry has been recognized (Anderson and Wadel, 1972; Comitas, 1962; Davenport, 1956; Faris, 1967; Firestone, 1967; Forman, 1966; Kootack, 1966; Orona, 1968; Gladwin, 1971). In this regard, the anthropologists' growing concern with "complex societies" and the emergence of economic anthropology as a subdiscipline within social and cultural anthropology had a positive effect.

To social scientists advocating a cultural-materialist approach and interested in reconstructing evolutionary sequences of the world's economic history (such as Morgan, Marx, Engels, Thurnwald), fishing was an activity of reduced importance. In fact, no society with a highly complex sociopolitical organization--that of a state--relied entirely upon fishing for subsistence or included groups of fishermen whose number bypassed that of agriculturalists. As the

interest in macro-history diminished and anthropologists focused their attention on smaller sequences of socioeconomic changes, fishing activities or cultural features of fishing groups were analyzed in greater detail. Anthropologists like Boas and Kroeber, for instance, provided numerous data on the conduct of fishing activities among the tribal groups of the Pacific Coast. But the Historians' and Diffusionists' particular theoretical orientations prevented them from fully illustrating the importance of fishing for anthropological inquiry. They tended to equate economy with technology, and as a result, they limited themselves to a mere description of fishing technology without demonstrating how fishermen differed from hunters or agriculturalists in socio-economic patterns.

With the advent of Functionalists, however, the situation began to change. Malinowski's study of Trobriand fishermen was the first anthropological study that gave a complete description of the socio-economic organization of a group of fishermen. But in spite of the quality of this study, most of the Functionalists continued to focus their investigations on tribal groups engaged primarily in land cultivation. Possibly, this was because the verification of an equilibrium model based upon the existence of strong social solidarity was more easily obtained through the examination of groups whose activities presented a significant regularity. Such characteristics were found among

agriculturalists, their work generally taking place in a well-defined spatial and temporal cycle.

But internal dissent among the Functionalists in the late forties--for instance, J. A. Barnes and Leach criticizing Radcliffe-Brown and Fortes' emphasis on kinship--revolving around the relative importance of social solidarity versus social change, led to a significant re-evaluation of their epistemology and method. First, they enlarged their field of investigation, focusing their interest not only on tribal society but also on groups forming a part of "a complex society." Second, though assuming the interconnectedness of social and economic facts, they demonstrated that the latter could be advantageously utilized to explain certain "social" phenomena. Raymond Firth is probably the anthropologist who best illustrates this reorientation. Interestingly enough, in one of his major attempts to introduce concepts and methods of economic science into anthropology and to show the importance of individual initiative and social processes in preindustrial society, he studied a group of fishermen. Firth's study of the Malay, preceded by that of the Tikopia fishermen, was related to his plea for a more processual anthropology. First, he defined the Malay fishermen as belonging to a cultural type more complex than that of tribal society, i.e. peasant, and showed that their economic organization was not a static phenomenon but a dynamic entity whose transformations depended upon both internal and external pressure. Second, he assumed that internal features of

fishing gave rise to particular situations which provided the individual with economic alternatives different from those found in agriculture. So Firth's analysis of Malay fishermen was more than a conventional ethnography whose immediate purpose lay in the enrichment of a corpus of anthropological data. It represented a well-planned strategy intended to focus anthropological attention upon the relevance of peasant society for the understanding of social change and to demonstrate the utility of economic concepts for anthropological research.

The assumptions made by Firth, almost 30 years ago, concerning the contribution that the analysis of fishing communities might make to economic anthropology and the study of social change in general, still have great operational value. They can be summarized as follows: Unlike the production of agriculturalists, that of fishermen is largely one of daily increments. With their daily income, fishermen must calculate against greater uncertainty and rely more upon short-term planning. Partly by tradition, but also by physical necessity, fishing is generally restricted to men. The division of labor in fishing gives rise to daily cooperation and generates more complex systems of distributing the earnings. Fish is a product that has to be processed rapidly, and its preservation requires more labor and outlay in equipment than agricultural products. Fishing equipment is, on the whole, more liable to sudden damage and loss and is rarely handed on in its initial form. Full-time fishermen

do not live exclusively on fish; therefore, they tend to be more significantly associated with an exchange economy than do full-time agriculturalists. For all these reasons, fishing attracts investors of a particular type (Firth, 1968, pp. 2-5). To the above, we can add that a fisherman's work schedule is highly variable, that the exploitation of marine resources does not generally depend upon the allocation of definite sites, and that fishing is found in more diversified types of environment than agriculture, existing even in arctic and desert zones.

These remarks should indicate some of the theoretical and methodological points of interest that the study of fishing activities might raise. The latter provides the anthropologist with unique situations in which he can examine problems or aspects developed to a lesser degree in other activities. Since the present study deals with the analysis of the economic behavior of fishing personnel in three Venezuelan communities, its epistemological and methodological orientation will be strongly influenced by the above.

But beside their potential contribution to the bettering of anthropological concepts and methods, especially those of economic anthropology, studies of fishing communities correspond to a more concrete necessity. In recent years, several anthropologists have manifested their growing concern for economic problems of underdeveloped countries and have tried, within the limits of their discipline, to enlarge the body of knowledge dealing with this crucial

problem. The majority agree, together with other social scientists, that in many cases economic specialization or concentration of energy and capital in the exploitation of a specific resource might not be the best solution. Underdeveloped countries need a greater economic diversification that will counterbalance the negative influence that a specialized "dependence" upon foreign markets might have. In this regard, many Latin American countries have undertaken a significant step in the last decade. Though as a rule the implementation of agricultural programs still represents an important sector of investment, several countries have become aware of the economic possibilities that the exploitation of mining and marine resources represents.

In light of this, some Latin American countries have recently extended their off-shore limits to 200 nautical miles. Development of fisheries is now seen as a viable alternative to agricultural development. At least, one of the major difficulties encountered in the application of agrarian reforms--redistribution of property or allocation of exploitative sites--does not exist in fishing. It is for these reasons that Venezuela, together with other countries, is now undertaking a serious effort to better its fishing technology, production, and market.

The present analysis of three fishing communities in Eastern Venezuela, besides its academic purposes, is also intended to provide factual material about the condition of fishing in that part of the country. The general orientation

of the study can be defined in theoretical as well as in applied terms.

B. The Research Situation and the Selection of Communities

Before undertaking a visit to fishing communities in Venezuela, I knew, through personal communication with scholars and a survey of pertinent literature, that there existed two major fishing zones in this country: a continental zone, including all the fishing conducted in lakes and rivers of the interior; and a maritime zone, covering the whole coastal area, subdivided into three subregions--western, central, and eastern (See Table 1). I immediately rejected the possibility of doing research in the continental and central regions for reasons I will now discuss.

Table 1.--Fishing zones in Venezuela (1969).

Zones		Number of Fishermen		Production Ts		Production in 3s	
		A	%	A	%	A	%
CONTINENTAL		14,900	39.0	7,000	7	8,319	7.95
MARITIME	Occidental	8,700	22.7	39,800	30	47,725	45.44
	Central	2,170	5.7	5,000	3	7,892	7.55
	Oriental	12,500	32.6	81,000	60	40,858	39.06

Source: Produccion pesquera en Venezuela, Mac-Pnud-Fao, 1970. No. 16.

The great dispersal of fishermen in the continental zone and their reduced number in the central region presented

some methodological difficulties. In both cases it would have been rather strenuous to assemble a significant number of informants and to obtain valid information about the general situation of fishing in their region. Moreover, both regions have clearly marginal production, representing only 7 percent and 3 percent of the total national output. These regions have received little attention from governmental agencies and have undergone minimal development in the last decades. So I did not hesitate to concentrate my efforts on the remaining regions, the western and eastern, given their high percentage of fishermen and volume of their production. The selection of either one would have provided me with a valuable basis for the verification of certain hypotheses concerning the characteristics of fishing in Venezuela. After some hesitation, I chose the eastern region. However, this choice was not entirely arbitrary. The western zone showed a marked industrialization (fishing equipment, boats, market facilities) compared to its eastern counterpart. It has fewer fishermen (8,700 compared to 12,500) and a smaller production (39,800 compared to 81,000 tons of fish in 1969), but its fishing personnel have an average income almost twice as high as their eastern counterparts. The exploitation of a species of high commercial value, shrimp, combined with the presence of good market possibilities--proximity to major cities like Caracas and Maracaibo as well as to major seaports adjacent to those cities, thus facilitating exportation to foreign markets,

especially the United States--explained this situation. I then thought that the more traditional nature of fishing in the eastern zone would correspond to a greater socio-economic homogeneity, thus enhancing the chance to conduct an anthropological study from a regional perspective. Given also its relatively high number of fishermen and high volume of production, I knew that governmental agencies intended to industrialize the region as they did in the western zone, this situation giving the study a practical significance and orientation as wished at the beginning.

However, after visiting several fishing communities in the state of Sucre, in the eastern zone, it was found that the homogeneity was not as strong as expected. In fact, there was local variation not only in the immediate environment, technology, accessibility, and size of the fishing zone, but also in the extent to which fishing was a specialized activity. In none of the communities was fishing an exclusive activity for the majority of the inhabitants. Then the initial attempt to construct a categorization solely upon ecological and technological features of fishing zones was of little operational value because quantitative variations led to qualitative differences. For instance, it was possible to establish a sample on the basis of fishing techniques. I rapidly ascertained that the presence of a muddy bottom in the fishing zone was generally associated with the utilization of floating nets (chinchorros) and prevented the use of hand-line (cordel) and fish-traps (nasa). But the

fact that in some communities of identical demographic size there were five floating nets and in others more than 20 had serious empirical and methodological implications for the study of the village economy. The establishment of partial correlations between the local and the numerical importance of certain techniques soon indicated that variations were not primarily due to a difference in the size of communities but rather to the presence or absence of other significant activities in the communities.

In some villages, fishing was an ancillary activity practiced by a few inhabitants whose production was assigned to relatives or restricted to local population. The people also participated in other activities such as horticulture, cattle raising, lumbering, or periodic wage labor. In other communities, fishing was conducted by the majority of the inhabitants, who simultaneously dedicated some of their time to another activity, usually horticulture or cattle raising. They had a significant production sold in a regional market. Finally, in other villages, fishermen formed a large specialized group, devoting their time exclusively to work at sea, while other specialized groups in the community were engaged in various activities. I therefore decided to choose three villages illustrating these situations. Though they do not constitute a complete sample of the kinds of communities encountered (in some cases, fishermen also work in salinas or live in cities in the portuary area), they

nevertheless permit me to depict and analyze the major characteristics of fishing economy in the area.

Some literature already exists about the socio-economic situation of fishermen in the eastern zone. Among those, Angelo Orona's study (1969) represents the most significant contribution to the understanding of socio-economic organization and cultural values of Oriental fishermen (on the island of Margarita). Mendez-Arocha (1963) gave a precise and useful analysis of the fishing technology in the whole area, and McCorkle (1965) described, from an historical perspective, community persistence and adaptation for one of the major native groups in the area, the Guayqueries. Finally, the FAO, together with the Venezuelan Ministry of Agriculture, has published some articles on technical aspects of fishing and oceanography in the region.

The above discussion shows that anthropological studies of peasant communities in the state of Sucre are not numerous. This is related to the general situation prevailing in Venezuelan anthropology; most of the work done so far deals with tribal groups of the interior to the neglect of peasant communities. Nevertheless, peasant groups, fishermen included, still represent the major proportion of the active labor force in the country. If industrialization intensifies in the eastern zone, efforts will undoubtedly be concentrated on this subregion or its immediate vicinity. It already possesses good transportation

and communication facilities, which could serve several urban centers.

The first community selected, Chiguana, is located at the lower end of the Gulf of Cariaco, on its northern shore. It has a population of 638 inhabitants, the majority of whom are black and who are mainly engaged in agriculture and cattle raising. A significant proportion, however, also practice fishing and wood cutting either during the whole year or occasionally. The plurality of occupations is partially due to the emergence of a negative economic context generated by the deterioration of local resources, thus explaining why, in the last 20 years, almost half of the native population left the village, looking for better opportunities in neighboring villages or urban centers. Fishing is conducted with a few techniques, namely the floating nets and harpoon, and nonmotorized boats. Production is minimal and on many occasions does not suffice to meet local demand.

The second community, Guacarapo, which has 438 inhabitants, the majority of whom are white and mestizos,¹ is also located on the northern side of the Gulf of Cariaco, a few kilometers west of Chiguana. In spite of its relative proximity to Chiguana, strong ecological differences give its economy unique characteristics. In Guacarapo, fishing

¹In Eastern Venezuela, the term mestizos refers to people whose blood and/or phenotype indicate an Indian and white origin. White refers to people of Spanish descent as well as to North Americans.

is the major activity, but a few inhabitants practice cattle raising and to a lesser extent agriculture. Fishing is conducted with more diversified techniques as well as motorized boats, and gives rise to a substantial output which is sold in a regional market. In contrast to Chiguana, a lower number of people have migrated from Guacarapo in recent years, and this community is more dynamic demographically than Chiguana.

The third community, Santa Fé, has a population of approximately 3,000 people, equally divided between blacks, mestizos, and whites. It is located half way between the major cities of eastern Venezuela, Puerto La Cruz and Cumana. Most of its fishermen, numbering more than 450, are full-time specialists, dedicating their efforts exclusively to fishing. Similarly, other activities such as agriculture or wage labor are conducted by specific occupational groups. Fishing is somewhat more industrialized than in Guacarapo, with a greater technical diversity and a greater variety of commercially exploitable species of fish. Besides having an important market place, to which people from the interior make weekly trips to obtain maritime products, the Santa Fé fishermen are engaged in the provision of a regional market, access to which is largely facilitated by good roads and major centers in the area. With the control of malaria in the region, the community has shown a significant demographic vitality in the last decades.

This brief characterization of the communities selected already indicates some of the features of the study. Chiguana, Guacarapo, and Santa Fé are differentiated in terms of population size, ethnic composition, resources, technology, production, and market facilities, giving fishing a distinctive intensity and nature in these communities.

C. Methodology

1. Field Tactics

Integration into a community is probably the most decisive phase in conducting an investigation. The length of the initial period of adjustment varies according to a series of factors which can be expected to be different as one goes from one community to another. Obviously, to work in three communities, within an approximate period of one year, entails some difficulties. Time spent in becoming acquainted with people had to be recovered by accelerated work at the end of the stay. The approach of the Christmas fiesta (Navidad) upon my arrival in Chiguana facilitated, to a certain extent, acceptance by the community. The drinking, dancing, and other celebrations created a festive atmosphere conducive to establishing rapport. Moreover, several Chiguaneros were returning from urban centers at that time so I was not the only "newcomer" in the village. Once the fiesta was over, I had already established enough contacts to operate normally, though some people became less receptive. Integration in Guacarapo was somewhat different.

Before starting the study of this village, I had the chance to make several informal trips with the Chiguaneros who had relatives or "compadres" there. In this way, I progressively became acquainted with several families. Although I undertook my investigation in Guacarapo during another fiesta, that of Semana Santa, during which several outsiders visit its sandy beaches, I felt I had never been accepted or integrated as completely as in Chiguana. People already identified me as the "stranger living in Chiguana." However, the smaller size of the community and the greater occupational homogeneity facilitated the gathering of comparative data. It was in Santa Fé that I spent the most time getting established. With a population of more than 3,000 individuals and with the dispersal of numerous fishermen in rancherías outside the village, I had to stake more on acquaintance with a reduced group of informants, relying mainly upon observation and indirect information for the rest of the community.

The economic focus of the study also entailed some particular methodological orientation. To know that I used participant observation, interviews, and questionnaires would not be sufficient to give the reader a precise idea of problems encountered in data gathering. The nature and the relative importance of those field techniques vary according to what interests the anthropologist. In fishing communities, at least in the communities mentioned above, the highly variable work schedule of fishermen required much flexibility

on the part of the observer. Since most of the fishing was done at night, fishermen's working hours were first determined or conditioned by the lunar cycle. They usually left the village just before nightfall, location of schools of fish being simplified by the phosphorescence of water after sunset. But this means that within a period of one month, the average daily time spent at sea varied between three and twelve hours according to the moon, with different leaving and returning hours. Thus, the economic anthropologist interested in gathering data on production has to be constantly alert and present at the right place at the right time.

In Chiguana, when fish were plentiful, I had but to cross the gulf at midnight and wait for the crews coming in to sell their production to the market of the Muelle de Cariaco, the front village. I was then able to gather data on the amount of fish sold and the amount kept for local consumption. But in other circumstances, such as during periods when fish were scarce, most of the teams returned directly to the village. Since in Chiguana, most of the fishermen used a personal wharf accessible only by water or by the front door of the house, it was rather difficult to gather data on boat inputs without awakening the entire family. In Guacarapo and Santa Fé, such problems did not exist since both villages have a large, open beach used by all fishermen. Observation could then be done in a more informal manner without losing precision.

On the other hand, information on capital assets in fishing had to be gathered very carefully, given the depreciation rate of the equipment and its simultaneous cost of maintenance and repair. Fishermen rarely make a precise quantitative evaluation of their outfit and are reluctant to give detailed information on their consumer expenses, because of the high variability of their daily or seasonal income.

However, field work in fishing communities also has some positive practical aspects. Observation of technology and work organization can be done rapidly, since the period of time for the overall activity is relatively short. A few trips with a crew might give one a helpful idea of the production and sharing processes, though there are inevitably minor variations according to the species exploited. Spending several hours in a boat with fishermen constitutes an ideal physical setting in which to conduct an interview. Informants cannot, as they sometimes do in the village, invoke reasons to politely avoid your questions. Finally, fishing is generally an activity in which the observer can easily participate after a short period of adaptation. Fishermen are very proud of their knowledge, and a demonstration to an outsider is for them a good occasion to prove their ability. The anthropologist, in a short time, will never learn what it has taken fishermen years to acquire, but his participation creates common points of interest

and a friendly atmosphere based on the inexperience and clumsiness of the observer.

Statistical data, which constitute a good part of this study, came first from systematic observation and interviews, and second from time schedules left to fishermen, in which they provided detailed information about output and price variation. However, this method was of limited use, given the restricted number of fishermen who were literate and motivated enough to undertake such compilation. In fact, only three informants in Chiguana and two in Guacarapo agreed to participate in this manner. Third, statistical information came from questionnaires. Besides being geared to gather general demographic data (age, sex, marital status, family size, household composition, migration), these questionnaires were devoted to economic data. In Chiguana and in Guacarapo, the questionnaires were applied to the entire households (respectively, 125 and 53), while in Santa Fé, I proceeded with a sample of 150 questionnaires, including all fishermen and some representatives from other occupational groups, the total representing approximately one-third of the community. The questionnaires focused mainly on capital assets involved in fishing, agriculture, or animal husbandry. The categories were slightly modified in the case of Santa Fé, because of its greater specialization in fishing. The application of the questionnaires at the beginning of the study would have been of some practical utility in providing me with data already categorizable,

that could have permitted a faster delimitation of the problems to be considered. But with the high individual variation in economic behavior and the confidential character of information when individuals questioned are involved directly, I felt that better precision and greater analytical control could be achieved by applying the questionnaires at the very end of the stay in the communities. Indeed, it paid off analytically, for my acquaintance with informants permitted me to correct, in certain cases, erroneous information.

Finally, governmental fishery offices in Cumana possess a good amount of statistical data on fish production and marketing in the region. Their data come mainly from "planillas" that fishermen are supposed to send in at the end of each month. Though the answering percentage is relatively high (between 80 and 85 percent according to personal verification), one has to be careful in utilizing those data. Fishermen rarely give precise information on the nature and amount of the catch, and often limit themselves to a rough estimate, especially with regard to price fluctuation on local and regional markets.

2. Plan of the Study

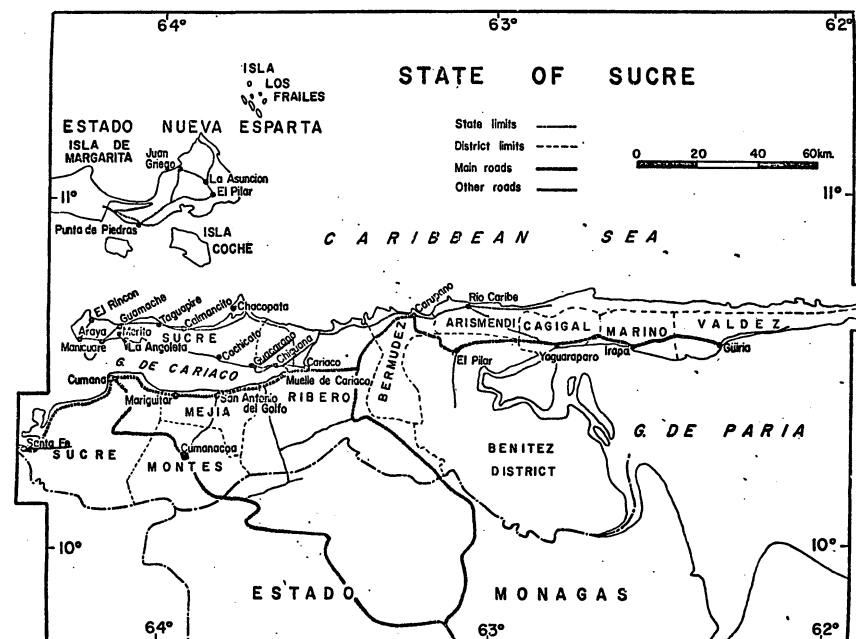
Independently of their substantivist or formalist orientation, economic anthropologists working in preindustrial societies are always faced with the problem of determining, within a given socio-cultural system, facts strictly

economic and the ways by which they relate to each other and to other behavioral spheres. In other words, anthropologists must dissociate, for analytical purposes, economic from other social facts in order to approximate their internal structure and functioning. But at the same time, they must identify factors external to the economic sphere that directly or indirectly determine its modalities. Such a perspective requires a method of analysis that goes from the general to the particular and into which economic actions, either idiosyncratic or group oriented, can be seen as influenced by and taking place within a series of behavioral frameworks (ecological, social, or ideological), whose actualization and importance vary according to situations.

Therefore, the first chapter, devoted to the examination of regional ecology, economy, and society, provides the reader with a general understanding of basic elements of production in the area (resources, technology, and human population). While permitting the reader to see the representativeness of the communities selected, this chapter demonstrates how the sharing of common or differential ecological features entails community specialization and constitutes general or specific frameworks for economic action. The three following chapters examine in detail the economic organization of Chiguana, Guacarapo, and Santa Fé, focusing

principally on fishing.¹ It then implies, in order to respect the methodological principle aforementioned, that the analysis of the economic behavior of fishing personnel be preceded by a more thorough description of the immediate ecology and ways of articulation of fishing with other activities. Thereafter, the analysis is devoted mainly to levels of investment and production, and exchange processes as related to fishing activities. The last chapter compares structural and organizational features in the three communities. It explains, through the notion of mode of production, the extent to which specialized or generalized economy generates specific frameworks for economic action and what their implications are for the present situation of fishing in Eastern Venezuela.

¹The reader should note immediately that the successive comparison of three communities is not intended to establish a "Redfieldian" continuum in which greatest specialization is associated with a greater acculturation. I already assume that fishermen in the most isolated villages do not differ essentially from those of villages closer to urban centers. The fact that in the latter fishing technology is more industrialized has to be explained first by differential opportunities of investment in exploitative activities, individuals judging more advantageous, given particular local and external factors, to invest in some activities and not in others.



CHAPTER I

REGIONAL ECOLOGY, ECONOMY, AND SOCIETY

A. Resources

The state of Sucre lies in the extreme northeast part of Venezuela, between 10°04' and 10°45' north and 64°36' and 61°50' west. With a total surface area of 11,800 km², it includes nine distritos whose size varies between 2,780 and 331 km². Though representing a relatively small area of the country--only fourteenth in rank among 23 states--the state of Sucre is characterized by a great geographical diversity, comprising desert as well as tropical zones, hills and basinal plains. In addition, it has open and protected littorals and includes several outlying islands in its western section. With its anvil shape, this state is almost entirely surrounded by water, either the Caribbean Sea, gulfs (Cariaco and Paria), or numerous rivers, a context that well explains the suitability of fishing as a viable domestic and commercial activity. As we already know, littoral populations also engage in well-diversified ancillary activities. This first chapter, intended to be a general presentation of regional ecological features underlying economic activities in the area, then emphasizes only resources which are of greatest importance for the people's subsistence. Thus it would be pointless to provide detailed

information of subsoil geology, given the nonexistence of mining in the area. Because the communities selected for investigation are located in the western part of the state, more attention will be given to the region adjacent to the Gulf of Cariaco.

1. The Aquatic Environment

To become familiar with the ecology of a marine zone requires long-term experience and an acute sense of observation. Unlike agriculturalists, who usually exploit small portions of land, fishermen often operate within relatively large zones, adjusting their mobility to fish migration. But fish migration, which explains intensity of fishing at given periods, is directly dependent upon the trophic intensity of the water. In turn, this trophic intensity is influenced by factors such as depth, temperature, currents velocity, tide, salinity, turbidity, planktonic life, and winds. Some of these factors are relatively stable, others change periodically, and still others change constantly. This affects the differential productivity of sites and the communities' specialization in some locations. Certain species of fish are common throughout the whole area, while others are present periodically at specific points. Fishermen, then, must identify not only those factors underlying transformations but also predict the result of their possible combination in particular locations. Therefore, fishing is constantly conditioned by marine elements whose interaction

cannot be apprehended in isolation but as forming part of a complex whole. In this regard, fishermen have developed sophisticated mechanisms of observation which enable them to distinguish stable from more variable elements and to adjust their activities to modifications of the marine ecosystem. In contrast to the central zone, the eastern region, whose major part revolves around the state of Sucre, has an important continental platform which goes from meridians $61^{\circ}50'$ to $65^{\circ}20'$, with an approximate width of 50 miles and an average depth of 100 brazos. It benefits from an affluence of detritus coming from the Orinoco River, the Guayana currents, and other rivers such as the Rio Neveri and Manzanares in the western part. The smaller region of the Gulf of Cariaco, the section of the maritime zone dealt with in this study, has a particular mechanism of nutrition. The trophic intensity is enhanced by the pumping up of bottom water by trade winds. The Gulf of Cariaco has a sill at its entrance with a maximum depth of about 75 meters, the Gulf's maximum depth being about 90 m. Much of the time the water is stagnant. But in the early months of the year, with the removal from the Gulf of surface water by the strong northeasterly trade winds, there are influxes of cool and oxygenated open-ocean water, over the sill at middepths (Griffiths and Simpson, p. 161). A special geological formation, the Fossa de Cariaco, which lies in the open sea to the west of Margarita Island, has a depth exceeding 800 brazos.

Differential tide and surf conditions prevail in the area. The strongest change in water level takes place in the Gulf of Paria adjacent to the Orinoco delta. On the northern side, around Margarita and the Gulf of Cariaco, tide is minimal with 12-hour variations of approximately 99cm. (This explains why fishermen do not generally need long wharves to take fish ashore, as is always the case in Labrador for instance.) Fishing villages located around the Gulf of Cariaco and at the mouth of this Gulf, where numerous islands lie, are generally less exposed to rough surf. A noticeable annual feature is the rising of the water level starting in September and lasting until early January. This rise, probably caused by rain accumulation during the summer months, causes problems to villages where homes are located close to the sea. On the other hand, such tides fill numerous lagoons and pools adjacent to the shore, whose subsequent evaporation leaves a layer of salt which is exploited commercially in certain areas, namely in the vicinity of Araya and that of Guaca on the northern side.

As mentioned earlier, a special ecological feature of the aquatic environment is reflected in the phosphorescence of the water, which permits the location of fish at night. Such luminosity is produced by microscopic plants and animals which fish feed upon and whose concentration varies according to the presence or absence of phosphates and nitrates. The first planktonic boom occurs in the springtime, and is caused by the returning strength and intensity

of the sun (during the dry season). The upwelling effect of winds in the first months of the year, which transport nutrient salts from the bottom to the surface layer of water, and bring up cold water, has a positive influence on the trophic process by increasing the planktonic life. At that time, luminosity is the strongest, glows of light being emitted by planktonic organisms. As an object moves through the water, it agitates the plankton, which in turn emits light. Fishermen can approximate with a small margin of error, not only the type but also the quantity of fish coming at a distance of two or three miles. Luminosity of water progressively diminishes toward the end of the year as the upwelling effect of winds diminishes and water temperature warms up (Cf. Orona, 1970, pp. 19-27). Fishermen adjust their time schedule to water phosphorescence, and in general prefer to fish in the late morning or at the end of the day from October through December.

Another feature intimately related to the phytoplanktonic cycle is the turbidity of water at certain periods of the year. Though fishermen cannot explain the appearance of this phenomenon, they observed that it is generally associated with the beginning of the dry season. They know that it occurs in specific ways in particular areas. A spot of water whose dimension is highly variable progressively loses its clearness, becomes red or pink, finally turning brownish or white, poisoning the fish entering it.

This phenomenon, locally called turbio, has a strong negative effect in restricted fishing zones where currents are minimal. This is particularly the case at the lower end of the Gulf of Cariaco, where the villages of Chiguana and Guacarapo lie. It often happens in that area that people have to devote most of their time to gathering dead fish lying on the beach rather than to fishing. In other areas, such as the northern side, spots of turbio can be crossed or passed around and fishing gear fixed in more fertile or productive water. In the case of a large turbio, fishing in a whole region might be strongly affected. It is believed that the beginning of the rainy season contributes to killing the turbio, and that heavy rain drives the evil organisms to the bottom. Variations of production in certain villages are largely explained by the presence or absence of turbio, and the higher frequency of this phenomenon in certain regions (e.g. the southern side of the Gulf of Cariaco) explains why people are more oriented to land activities there.

In the vicinity of Margarita Island and the northern shore of the state, surface current velocity averages 0.8 to 1.2 sm per hour in January and 1.2 to 1.6 in April and July. Surface water varies annually about 4.6 degrees C, with an average of 26.2 degrees C (Orona, 1970, p. 20). In the Gulf of Cariaco there is a noticeable absence of currents through most of the year, and surface temperature averages somewhat less than that of the northern shore, with a mean

total of 25.6 degrees C. Given the predominance of easterly winds in the Gulf, its southern section is generally colder (Griffith and Simpson, pp. 161-69). Minor variations in surface temperature directly affect fish migration, especially in the case of pelagic species living close to the surface. Scientific observations have demonstrated that such variations do exist, but given the limited nature of these observations precise correlations between variations and fish movements cannot yet be postulated.

Finally, current and wind velocities and directions, though affecting fish migration, are now less important in determining the fishermen's work schedule since sailboats are on the decline in the area.

Tropical waters are well known for their great variety of marine species of commercial value. Fishermen in the eastern part of coastal Venezuela derive their subsistence from more than 40 species, among which the most important are the lisa, jurel, pargo, bagre, carite, arenque, anchoa, cataco, cuna, cabaña, tajali, cojinua, corocoro, and cachoretta. Appendix A, a synoptic presentation of the above, shows a significant correlation between the commercial value of species and the limited length of the period during which they can be exploited, the most illustrative cases being those of the jurel, pargo, cojinua, and cabaña. Subsequent analysis of economic organization in fishing will clearly indicate that the presence of those species gives rise to strong competition and promotes cooperation of a

particular nature. From the above, the reader can deduce that some species are fairly common throughout the whole year. The list already provides information on general fish consumption patterns in the area. However, though largely representative of the species found in the eastern zone, this list has been established principally from data collected in the vicinity of the Gulf of Cariaco. The average time and depth of capture and their technical correlates might not be exactly duplicated in subzones which present slight differences in their marine ecology.

In essence, the aquatic environment constitutes a complex reservoir¹ of resources whose exploitation requires considerable ecological knowledge and adaptive capacity, giving to sea-oriented activities dynamic aspects not found in agriculture.

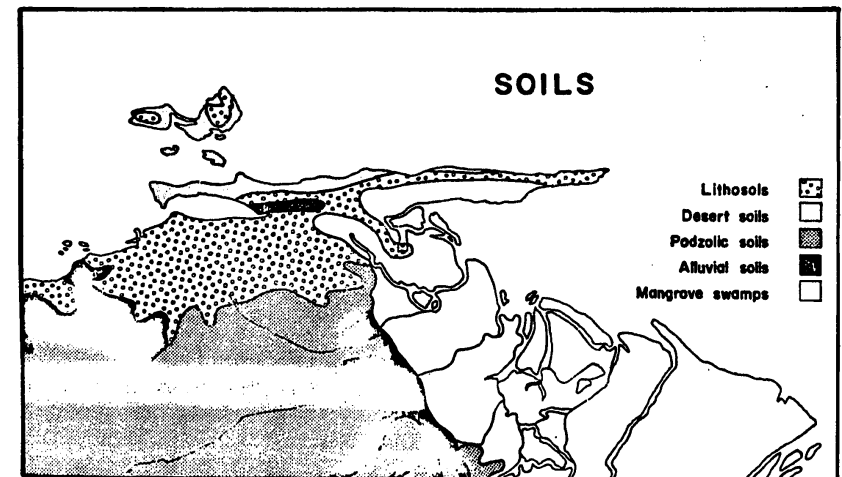
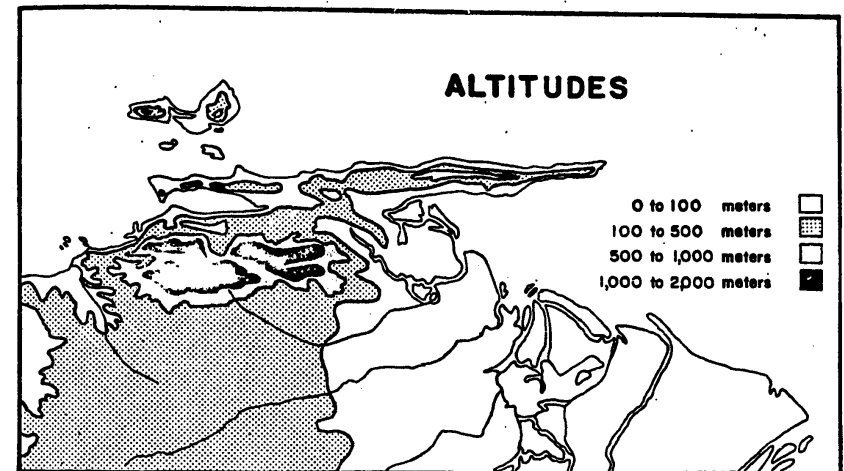
2. The Terrestrial Environment

Although devoted to the study of fishing activities, the foregoing analysis had to consider several features of terrestrial ecology in order to explain fishing intensity and its nature. As mentioned earlier, a typology of fishing communities emphasizing their degree of specialization cannot be achieved without reference to fishermen's participation in land-oriented activities.

¹For more detailed information about fish species of Venezuela, refer to Cervigon, 1966, Vol. I and II.

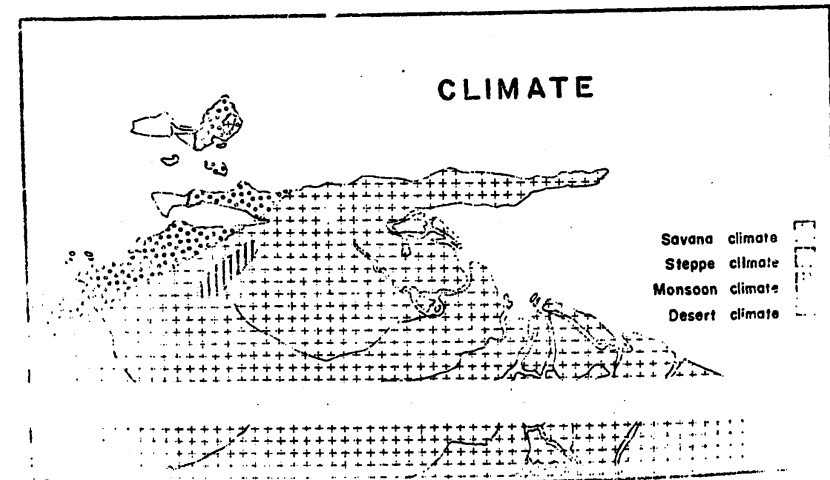
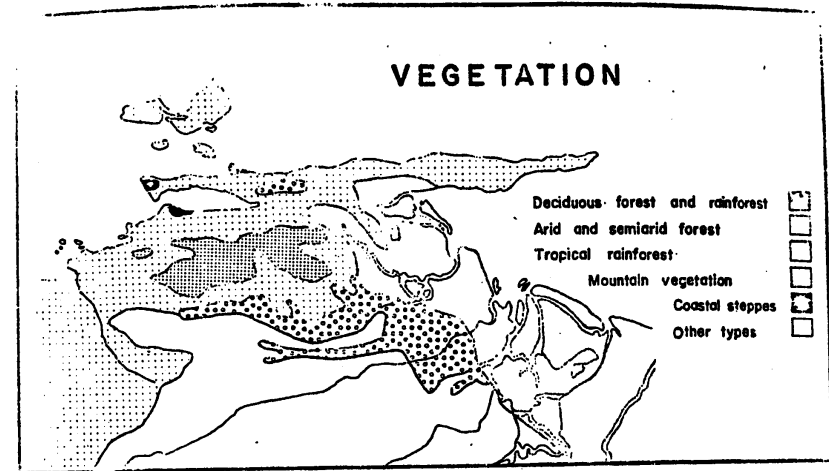
Topographically, the eastern zone is made up of a series of hills and mountains belonging to the Cordillera de la Costa. Absence of significant elevation is noticed to the west, along the basin of the Neveri River; to the east, in the large delta of the Orinoco; and to the north, at the bottom of the Gulf of Cariaco. The highest region, the Macizo Oriental, lies in the interior zone, south to the Gulf of Cariaco, between the state of Sucre and that of Monagas with an average altitude of over 2,000 m.

Juxtaposition of Figures 3 and 4 shows a fair correlation between types of soils and elevation, permitting us to isolate some general trends of agricultural specialization in the area. Alluvial soils and terrace deposits, types of soils best suited for productive and diversified agriculture, exist to the west along the Neveri basin, to the east at the very beginning of the Orinoco delta, and to the north, covering a small section adjacent to the lower end of the Gulf of Cariaco. The fact that Chiguana is located in the immediate vicinity of the latter area explains why many of its fishermen also practice agriculture. Except for a few saline or alkaline sections, alluvial areas permit the production of a wide variety of crops such as manioc, yams, sweet potatoes, carrots, beans, rice, maize, and several fruit species. Lithosols cover the largest part of the state of Sucre, especially the southern shore of the Gulf of Cariaco. In spite of their low fertility, they sustain the production of subsistence crops, around which



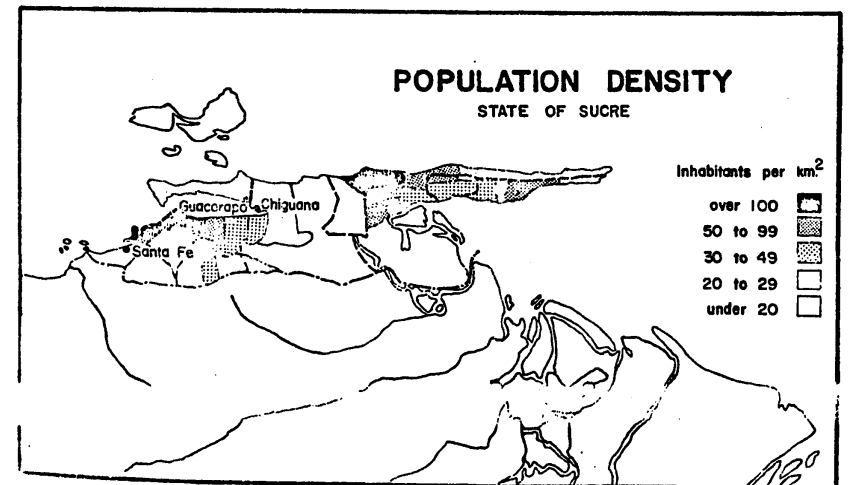
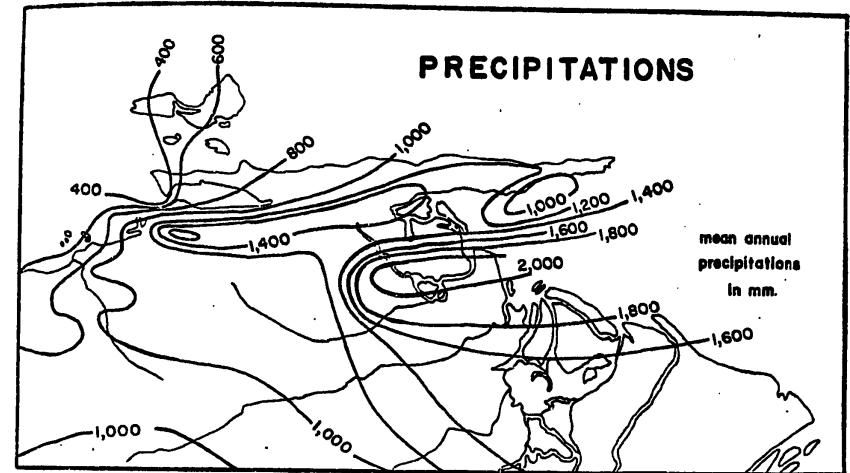
revolve the economy of most of the villages in the interior. Changes in elevation give rise to sectional production centered on monocultivation of either coffee, coconut, or sugar cane. Indeed, most of the plantations are located in this area. Podzolic and desert soils are found in areas of relatively low altitude, covering respectively the northern section of the state of Monagas and almost all the Peninsula de Araya, in the state of Sucre. Because of their high acidity, those soils are not suited for agricultural activities so that the major land-oriented activity in those regions is goat raising.

Natural vegetation also shows a marked diversity. Areas of deciduous forest and rain forest, whose wettest sections possess many epiphyte species, are somewhat restricted, existing only at the beginning of the Orinoco delta and in a very reduced portion of the Cariaco Valley, at the bottom of the Gulf of Cariaco. Once again, the location of Chiguana in the latter zone confers upon the village a strategic position in supplying wood for a relatively wide area. Knowing the importance of this resource in boat and house construction, the forest potential of Chiguaneros has contributed greatly to the diversification of their economy. The most frequently occurring wood species are the Guatacare, Guayacan, Pardillo, Cedro, and Palosano (Cf. Appendix B). The vital importance of deciduous forest in the Cariaco Valley is well illustrated by the presence of arid and semi-arid vegetation in almost the entire coastal



region of the state of Sucre. Such vegetation is mainly xerophyllous, consisting of low brush, cactus, and mountain scrub. Some sections on both sides of the Gulf of Cariaco are purely coastal steppes and halophytic meadows with damp saline soils where forest is nonexistent. It is in the latter spots that salinas are most common; salt is extracted from these after water that filled lagoons during high tide has almost completely evaporated.

Climate and precipitation follow similar lines of demarcation on an east-west axis. Desert climate, in which evaporation exceeds precipitation, characterizes the western section of Margarita Island and of the Peninsula de Araya. The average temperature oscillates around 26°C and precipitation does not go beyond 400 mm. Steppe climate (in which evaporation exceeds precipitation to a lesser degree) exists in the rest of the western coastal area of the state of Sucre. In this region, the warmest season occurs after the summer solstice, and the mean annual temperature is about 27°C, with an annual precipitation varying between 600 and 1000 mm. This region has four annual seasons, alternating between dry and wet. The first dry season begins around February and lasts until the end of May. Then follows a rainy season, which continues until the beginning of September. The following months of October and November are characterized by a relative drought, with a short and less intensive rainy season rounding off the annual cycle. Savanna-type climatic conditions predominate in the eastern



section of the eastern zone. Because its annual precipitation exceeds 200 mm in several places, this region has a high relative humidity during the whole year and a mean annual temperature of 30°C, reaching as much as 36°C at the end of the dry season (Villa, 1965, pp. 63-101).

Winds are predominantly east-northeasterly through the year, with a highest velocity during the early months. In areas exposed to open sea, such as the northern coastal region, velocity might reach as much as 10 km/h in March. In the Gulf of Cariaco, natural barriers such as the hills and mountains of the Peninsula de Araya considerably reduce wind velocity, which does not exceed 6.7 km/h at its strongest. In the following months, winds progressively lose strength, with some daily shifts to south-east at the end of the afternoon. These variations in wind direction occur mainly during April, May, and June and correspond to new cycles in maritime and terrestrial activities, signifying the beginning of the rainy season, the sowing period for agriculturalists, and the approach of important schools of fish such as the jurel and the cojinua for fishermen. Though easterly winds remain predominant during the rainy season of the summer months, southern winds occasionally occur at that time during the first part of the day. Those winds which bring intense heat are locally called the "terrenales." Generally, wind velocity reaches its maximum at midday, a time when fishermen rarely undertake trips on open sea. The absence of winds at night, combined with the luminosity of

water that facilitates the location of schools, explains why fishing in this area is generally a nocturnal activity.

In addition to agricultural crops and forest, terrestrial resources include a wide variety of animals that provides an important element in the food supply during periods of fish scarcity and periods preceding the harvest of agricultural crops. Among these animals, the most popular are wild birds such as the Pavos de monte, the Guacharaca, a kind of deer named venado, and a terrestrial turtle called morocoy.

This brief characterization of terrestrial ecology in the eastern zone already indicates some general trends of community specialization in the area. We saw that Chiguana, because of its location near a deposit of alluvial soils and a deciduous forest, has certain ecological features that give its economy a generalized or diversified character. Moreover, the existence of an important laguna, behind the village, permits the Chiguaneros to raise cattle on a commercial scale. Animal husbandry exists in the other villages of the Peninsula de Araya, but lack of water and of grassy lands explains why goat raising is predominant in the western section of the Peninsula. Similarly, absence of good soils and a more desertic climate limit the latter villages to more specialized subsistence patterns focusing upon fishing. Guacarapo, the second community studied, constitutes an intermediary type between Chiguana and other villages of the Peninsula. On the other side of the Gulf,

fishing is relatively less important. The proximity of good roads facilitates the migration of workers, a process linked traditionally to the plantation economy of the interior. The location of Santa Fé, in the western section of the eastern zone, an area well suited for agricultural activities, explains the existence in this village of well-differentiated occupational groups. In other words, the terrestrial environment offers a series of possibilities whose realization depends upon the presence of specific factors unequally distributed. Community specialization, though not entirely explained by physical elements, is nevertheless strongly influenced by the range of resources available locally. In this regard, a visual approach to terrestrial ecology provides useful information on the diversity of village economy and on the structure and modalities of intercommunity markets. Villages of the Peninsula de Araya are mainly fish producers and must import agricultural products. Those located at the lower end of the Gulf of Cariaco have more autonomy, given the greater diversity of their production. Those on the southern shore of the Gulf of Cariaco have greater commercial functions, due to their location between important fishing and agricultural zones and their proximity to urban centers. Because of this, the construction of a road in the district has transformed market relations in the area and diminished the importance of maritime transport.

B. The Technology

Any exploitative system is conditioned by technical rules derived from ecological, economic, and social constraints. This implies that the less complex its productive structure, the more the efficiency of an economy will depend upon the diversity of natural conditions within which it operates (Forde, 1956, p. 331). In this regard, the technology of Venezuelan peasant-fishing communities occupies an intermediate position. The exploitation of maritime and terrestrial resources gives rise to differential modes of production in which mechanized and nonmechanized sources of energy predominate alternately. Variations are found not only in the technological structure itself, but also in the amount of capital and labor required to make it operative.

Though primarily intended to provide general information on adaptive aspects of technology, this section is not a componential description. That is provided by the abundant literature already existing on the subject (Price, 1966, p. 1377; Comitas, 1962, pp. 26-50; BeNoist, 1972; and especially Mendez-Arocha, 1963). Here the discussion centers on the range of applicability of those techniques and parallels the results with community specialization in the area. Needless to say, though envisaged at the level of factors of production, the examination of the technological apparatus necessarily entails a consideration of social relations of production.

1. Fishing

The preceding mention of marine species exploited on a commercial basis in the area implicitly assumed the existence of a well-diversified fishing technology. For analytical purposes, technology can be divided into two main categories, one related to acquisitive procedures and the other related to locomotive functions. In turn, techniques of acquisition can be differentiated according to the main species that are captured--i.e. either demersal or pelagic species.

Technology of demersal fishing is relatively simple and unelaborate. It consists of instruments such as the harpoon, handline, trawl, and fish pots. Use of the harpoon for capturing large species requires great dexterity, a requirement that considerably reduces its utilization.¹ Handline is probably the most popular technique of demersal fishing, a situation largely explained by its low purchase and maintenance cost. In the region of the Gulf of Cariaco, handliners utilize two forms, depending on the stability of their boat. In the first case, an artificially baited hook is fixed to a line, either with feather or animal hair, and left attached to a boat in motion. This technique is called guapio or currican, and is more frequently employed for shark fishing in the fall. In the other, more usual, form,

¹The length of harpoon heads varies between 10 and 25 c. Similar variations are found in the size of hooks and lines, going from number one to ten.

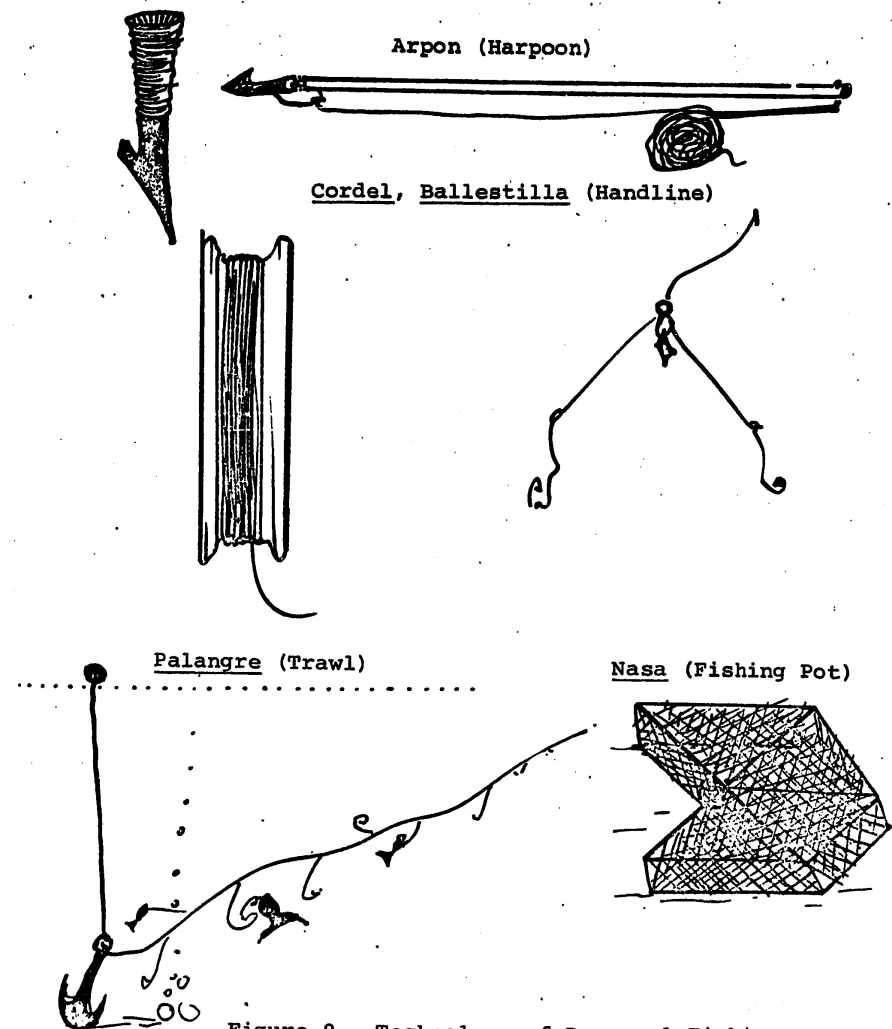


Figure 9.--Technology of Demersal Fishing.

fishermen use the ballestilla. It is a double-pronged iron support with hooks and natural bait fixed to the extremities. A sinker is attached to the median hole formed by bending the iron stem. Use of this technique requires a great quantity of bait (carna); to obtain the bait, fishermen sometimes have to undertake contractual relations with other crews or sellers from outside the village.¹

The trawl, like the currican, is used by very specialized crews during the fall. As in the case of the ballestilla, it requires a large quantity of bait, whose acquisition might force trawlers to depend on other crews or foreigners. The rentability of trawls is first related to the size of the fish caught. Fishermen must then fix the trawl in areas of deep water in order to increase their productivity. Thus they are obliged to travel far out to sea, at a great distance from the village. Time and effort spent in gaining access to exploitable sites then minimize the popularity of the trawl.

Lastly, use of the hexagonal fish pot is widespread in the area, and, as in the case of the former equipment, its relatively low cost promotes its use. It can be fixed at a shallower depth than the handline or the trawl, and is

¹When fishermen are short of hooks while working at sea, they move to specific spots where a fish called futre is to be found. This species is characterized by large, sharp teeth that easily cut the line, thus permitting the animal to accumulate in its stomach a large quantity of hooks. Fishermen then use wire at the end of the ballestilla to capture it.

more successful in small bays and coves. Bait is sometimes used in order to attract certain species, but is not generally required to assure the productivity of the pot.

The introduction of nylon and wire, replacing cotton line (guaral) and wild cane (caña brava), has somewhat modified the traditional occupational structure, diminishing the status and role of artisans who specialize in net and fish pot making. But in spite of higher costs,¹ new material confers greater durability, which minimizes maintenance cost and reduces time spent in net repairing. Adoption of these technological innovations permits the fishermen to increase their productivity by spending more time at exploitative activities. Characteristics of demersal fishing can be summarized as follows:

1. Well suited for the capture of large species living in areas of relatively deep water (except the harpoon for those species coming close to the shore).
2. Relatively simple, with low purchase and maintenance cost.

¹In several cases, the price of the equipment varies with its size or dimension. The following list consists of an estimation based on an average dimension, obtained through the detailed examination of fishing gear in Chiguana, Guacarapo, and Santa Fé. Cf. Chapters II, III, and IV for more detailed information.

Harpoon:	Bs 10	Cast-net:	Bs 30
Handline:	Bs 50	Gill-net:	Bs 500
Trawl:	Bs 100	Shore Seine:	Bs 4000
Fish Pot:	Bs 60	Purse Seine:	Bs 6000

3. Generally used in areas where sea bottom is stable and rocky.
4. Entails mechanism of orientation based on the utilization of landmarks, given the depth at which the species exploited live.
5. Gives rise to restricted form of cooperation, all the equipment being functional even though manipulated by a single person.

Technology of pelagic fishing revolves around net-made instruments: cast-net, gill-net, shore seine and purse seine. The cast-net is the least important because of its limited productivity. Its use is generally associated with requirements of domestic consumption, or it might occasionally provide bait for handliners or trawlers in periods of intensive demersal fishing. The cast-net is mainly operative in areas of shallow water, fishermen casting the net over a shoal of small fish directly from the shore. The gill-net is the most widespread technique of pelagic fishing, and is adapted to the capture of several species. Varieties of the gill-net are the red lisero, red lebranchero, red sardinero, trasmalla, specialized names related to differences in mesh size. In some cases, fishermen might put together a series of nets in order to increase their productivity. Such a series is called a tren, and is frequently used when large groups of fishermen work together. The gill-net's popularity is well explained by its costing less than other instruments of pelagic fishing such as the seine, and

its relatively high productivity, its handling not being influenced by the depth of the water.

The shore seine also consists of a floating net. Cork floats are at one edge and sinkers at the other. But the mesh is smaller and fish do not become entangled. Depending upon the ecological conditions prevailing during the operation, Eastern Venezuelan fishermen use the seine in three different ways. The first method, called boyante, which involves maintaining the gear at the surface of the water, is used in deep areas. The second, the ramero, consists of maintaining the instrument at median depth. This method is typically employed in reef areas. Lastly, the fondero, where the seine slides on the sea bottom, is most useful in areas of shallow water where the bottom is relatively soft.

Unlike other techniques, the purse seine was introduced around the mid-forties in this area. Its expansion has been one of the major changes in fishing technology since the beginning of the nineteenth century. In a way, it combines the advantages of both the gill-net and the shore seine; it is operative in all areas and permits the capture of large quantities of fish. The specific operational characteristic of the purse seine lies in the attachment of iron rings on the bottom rope of the net. Another rope passes through these rings and the fishermen, by hauling on it, are able to close the bottom of the net, thereby trapping the fish inside. As in the case of the shore

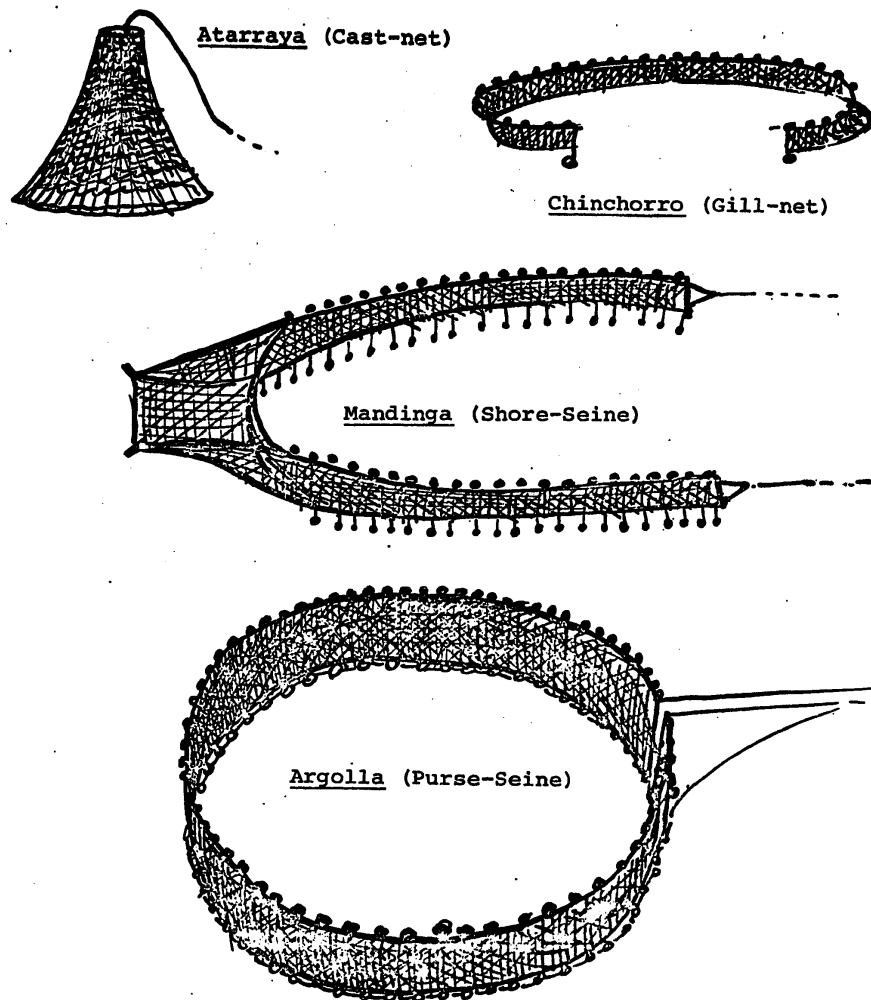


Figure 10.--Technology of pelagic fishing.

seine, operation of the purse seine requires several men, and its high cost explains the fact that very few can afford to buy it.

With a few exceptions for the cast-net, pelagic fishing is substantially different from demersal fishing in the following ways:

1. Technology well-suited for the capture of gregarious species living at various depths.
2. Relatively complex, with high purchase and maintenance cost.
3. Operative in several areas, given its nonrelation to the ecological features of sea bottom.
4. Entails mechanisms of orientation based principally on water luminosity or direct sighting of school of fish.
5. Gives rise to enlarged forms of cooperation.

If we relate this brief presentation of fishing technology to community specialization, we see that two main factors explain this specialization. The type of fishing depends first upon ecological conditions. For instance, in the case of the first village studied, Chiguana, the presence of a muddy bottom in the greater part of the fishing zone limits the success of demersal fishing, and the people must rely on technology of pelagic fishing. But in spite of ecological conditions and strictly technical considerations, the economic dimension (differential cost of the equipment) constitutes an important factor which might at times become

decisive in determining socio-economic patterns in fishing. In that case, the hypothesis developed by Comitas in Jamaican fishing communities can be applied to communities of Eastern Venezuela. Rather than being influenced in a determinant way by the sea conditions in his vicinity, or by his fellow fishermen, the fisherman adopts the fishing pattern conflicting least with another nonmaritime activity he might have (Comitas, 1962). This would explain, for instance, why the Chiguaneros, in spite of operating in an area well-suited to pelagic fishing, do not use shore seine or purse seine. Their involvement in other activities prevents them from investing a great amount of capital in these expensive fishing tools.

Locomotive fishing technology is also highly diversified. Though the replacement of sailboats by motor boats has promoted a certain uniformity, there still exist several types of boats adapted to particular fishing patterns and fulfilling specialized functions. (For traditional boats, see Appendix C.) Fishing craft can be classified into two main categories: one which is best suited for inshore activities in relatively calm zones and is usually manually propelled (cayuco, canoa); the other which is best adapted to open sea fishing and is motorized (piragua, lancha, caribe).

Present types of boats combine both old and recent patterns. The introduction of marine motors has not substantially affected traditional designs, but the fisherman

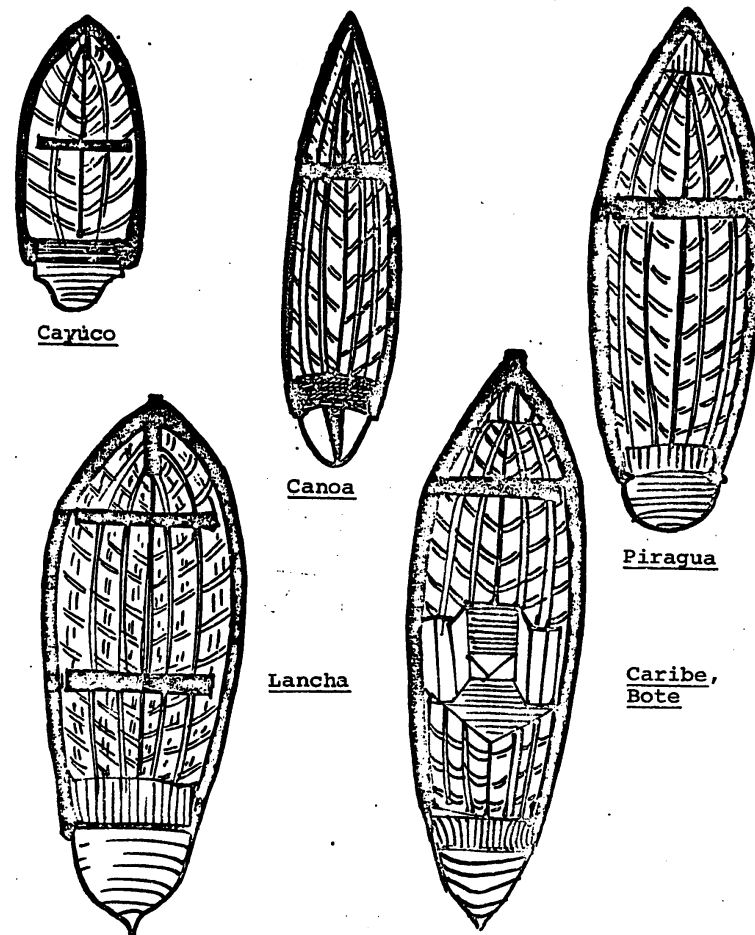


Figure 11.--Types of fishing craft.

converting his craft to engine power needs to make some modifications. High speed requires a reinforced boat, but at the same time the reinforcement must not reduce the relative lightness needed to navigate in shallow water and to haul the boat ashore periodically for maintenance and repair. In this regard, the cayuco and the canoa have not undergone significant alterations and conserve their traditional appearance, though they are now less numerous. The piragua, formerly one of the most popular types for pelagic fishing, now has a reinforced prow with thinner shells. The lancha and the caribe, the most popular types, have added a fish-well (vivero) that keeps the bait alive and fresh. Such an innovation (which permits the water to fill a rectangular box in the center of the boat, by means of wooden plugs fixed to the bottom of the boat) has been largely facilitated by the adoption of engine power. When the boat moves the stern rises up, thus permitting the water to withdraw.

Just as it influences fishing technology, the ecological setting sometimes influences the utilization of particular types of boats. For instance, one can easily notice that boats used on the northern side of the Peninsula de Araya, a region exposed to open sea, are larger than those encountered in the Gulf of Cariaco. But, once again, ecological factors are not the only important ones. The differential cost of a craft (ranging from Bs 300 to Bs 2000,

with an average price of Bs 2700 for marine motor¹) also plays an important role and helps to indicate why a local specialization in boating does not exist and why representatives of most types are found in all fishing communities.

The national census indicates that in 1968, the eastern zone had more than 500 motorized lanchas and caribes and about 1400 boats of smaller size, 80 percent of which had motors (Nascimento, 1970, pp. 5-6). This percentage demonstrates the strength of mechanization in the area. It also shows that the strongest technological modifications took place in the sphere not directly related to acquisitive processes, but rather in techniques conditioning the access to fishing sites.

2. Agriculture

Unlike fishing, agriculture involves the exploitation of sites owned either privately or with individual usufruct rights in the case of communal ownership. Agricultural technology is simple; the machete, the hole digger, and the donkey (burro) are the only means of locomotion. The economic dimension of factors of production in agriculture is more related to tenure patterns than to technology. This has serious implications for the peasant-fisherman

¹The prices mentioned below are an average estimate. For more detailed information, see Chapters II, III, and IV. One Bolivar represents 0.225 of an American dollar.

Cayuco	Bs 300	Lancha	Bs 1200
Canoa	Bs 600	Caribe	Bs 2000
Piragua	Bs 900		

engaged simultaneously in maritime and agricultural activities, for each entails substantially different modes of investment and planning.

Agricultural techniques can be divided into two categories, according to the crops cultivated (e.g. vegetable seeds or fruit species). The first type generally requires a more elaborate process that might sometimes spread out over several years. This process consists of clearing areas for planting by means of burning the cover. The first operation is the most strenuous and requires the most time and effort. It is conducted by large work groups, either kin-based or contractually assembled, who remove stumps and large roots along with trunks and branches, leaving the surface as bare as possible. Before planting, the field is plowed with the hole digger, serving both to bury weeds and to aerate the soil. Crops are planted in even rows. Periodic weeding takes place between sowing and harvesting. In the case of maize and beans, the stems or stalks are left and turned under in the spring plowing, after which the same crops may be replanted or another may be substituted (Meggers, 1971, p. 21). As in the case of initial clearing, harvesting activities demand work groups larger than the relatively small production units operative during planting and periodic weeding.

Cultivation of fruit necessitates less elaborate processes, since the trees exploited exist either naturally or have been planted in restricted areas. Fruit trees have

a long life span and can be exploited without obliging the agriculturalist to move periodically. Coconuts, bananas, and mangos are found in several communities whose inhabitants are fully engaged in fishing. They fit into this situation well because of the small amount of labor required for their cultivation, once the initial planting is done. In these cases, most of the garden plots or trees are located in the immediate vicinity of the house.

More intensive agriculture based on the cultivation of cash crops such as coffee, sugar cane, and cacao exists in the Peninsula de Paria, at the extreme northeast of the state of Sucre, and in the interior zone adjacent to the northern shore of the Gulf of Cariaco. The nature of the production units in those agricultural domains and the high amount of capital involved in their technology of transformation largely bypass the realm of this study. Nevertheless, they have an indirect influence on the economy of rural fishing communities through periodic wage labor undertaken by some fishermen or small-scale agriculturalists at harvesting time.¹

In the Gulf of Cariaco, the region with which this study is more immediately concerned, horticulture is most prevalent on the southern shore, in the villages strongly engaged in commercial activities. At the lower end of the

¹Irrigation techniques are still at an incipient stage in the state, existing in a very reduced portion of the Cariaco Valley, near the town of Cariaco and introduced recently by governmental agencies.

Gulf, near Chiguana, both agriculture and horticulture have a significant place in the village economies. Interestingly enough, further examination of agriculture in Chiguana (cf. Chapter II) reveals that the productive period of agricultural plots is relatively long compared to other areas in which slash-and-burn techniques prevail. It is well known that in cases of exhaustive clearing, total removal of pre-existing vegetation prevents restoration of any of the stored nutrients to the soil. On the other hand, partial deforestation, though reducing shade and protection from erosion, considerably offsets the detrimental effects of heavy rains and solar radiation. The Chiguaneros have therefore chosen a mixed type of cropping, planting vegetable seeds among the trunks of fruit trees.

In general, agriculture seems to be more strongly related to ecological conditions than is fishing, a situation that diminishes the importance of the economic dimension in the analysis of the communities' agricultural specialization. Intensity of agriculture is primarily related to the availability of arable land; technology is of little importance because of its low and nondifferentiated cost.

3. Animal Husbandry

As in agriculture, the economic dimension of factors of production in animal husbandry depends first upon the appropriation of an "exploitative" site. In addition, a substantial amount of capital might sometimes be spent at

the initial phase of the activity for the purchase of animals. Fence building is a supplementary cost of exploitation in areas where land cultivation and animal husbandry are carried on simultaneously.

The economic dimension of the activities also varies according to the type of animal kept for domestic consumption or market exchange. In this regard, three situations can be distinguished. First, animal husbandry may be a generalized activity consisting of raising pigs, chickens, and ducks for domestic needs and interhousehold exchange. Such a situation is common to most villages in the eastern zone, independent of their maritime or agricultural specialization. An intermediate situation exists in arid and mountainous areas, where xerophytic vegetation sustains the raising of large flocks of goats, as on the northern side of the Peninsula de Araya. Lastly, cattle raising is predominant in the valley of Cariaco, a region well suited to agricultural activities and possessing a diversified vegetation that includes forest as well as grassy areas and in which sufficient water resources are present throughout the whole year. In that area, there are large lagunas whose water level is relatively constant. Ecological features, then, appear to be important for specialization in cattle raising. But in spite of this ecological conditioning, the intensity of the activity must be analyzed in taking into account the temporal dimension, the herd possibly becoming larger by natural reproduction. Lastly, economic performance in

other activities might give rise to a surplus converted into liquid capital, permitting the purchase of a greater number of animals.

4. Ancillary Activities

In almost all villages in the eastern zone, there are artisans engaged in the production and repair of boats, mule saddles and harnesses, fishing pots, hammocks, and other current objects. Unlike preceding activities, the factor of production which predominates in craftsmanship lies in acquiring the knowledge and ability to transform raw material into an end product. The cost of technology is insignificant, and access to and control of resources does not entail regulative mechanisms of exploitation between practitioners.

Artisan activities have, however, lost much of their importance in the last years with the introduction of new material or manufactured goods. The best example would be that of Manicuaire, a village located in the western section of the Peninsula de Araya, which previously specialized in pottery making and had commercial relations with all the villages in the Gulf of Cariaco. The only village in which artisans still form a large occupational group is Cerezal, located at the lower end of the Gulf of Cariaco near the road going to Cumana; the community is still fully engaged in basketry. Such specialization has been maintained by the fact that fishing is still the major activity in the

region, most of the production consisting of baskets used in the transportation of fish. The establishment of important fishing companies at the mouth of the Gulf of Cariaco in the last 15 years has even permitted the inhabitants to enlarge their production, and the companies have undertaken important contractual relations with basket producers.

The other commercial activity of limited practice is wood cutting. The preceding examination of terrestrial ecology revealed that this activity, because of particular conditions, is limited to a small number of villages located at the lower end of the Gulf of Cariaco. In these villages, people engage periodically in wood cutting and sell their production in neighboring villages, sometimes as far away as the Island of Margarita. But several factors now minimize its importance; although wood cutting does not require a costly technology (axe and donkey for transportation), it demands much time and effort. Intensive exploitation and deforestation due to migratory agriculture have increased the distance between the village and the exploitative zone.¹ Lastly, introduction of new materials such as cement blocks and plywood into housing perturbed the traditional market with the result that the activity is less and less rentable.

The foregoing discussion should dispel whatever preconceptions might have existed about absolute uniformities

¹The most intensive period of exploitation occurred after the earthquake that destroyed the town of Cumana in 1929.

in the technology of production in the eastern zone. Indeed, activities are differentiated externally, with various intensities and modalities according to the villages, and internally, with each activity entailing different modes of access and control of resources, cost of technology, skill-training requirements, and social relations of production.

C. The People

The ecological basis of any productive system cannot be understood fully without reference to the ways in which human actors organize themselves to pursue exploitative activities. In other words, though the social relations of production are conditioned to a certain extent by technical requirements, they are also culturally defined, taking place in a larger framework of social organization which dictates general forms of competition and cooperation. The following section is intended to demonstrate how this framework originated and what its major present characteristics are.

1. Historical Sketch

Given the strong overlapping, in time and space, of facts and situations, it is rather difficult to define precise historical periods which would depict all modalities of acculturation processes in eastern Venezuela. Nonetheless, major juridico-political changes entailing specific socio-economic exploitative systems can be used as guidelines for the determination of the nature and intensity of those

acculturation processes from which present-day peasant communities emerged.

Colonial Period (1500-1830).--In Eastern Venezuela, the initial attempt at colonization by Spain took place in a restricted area, that of the outlying islands of Cubagua, Coche, and Margarita. The native population of these islands, predominantly Guayquiries, was easily brought under colonial control through a combination of trade and the perseverance of missionaries. Historical records reveal that the Guayquiries always maintained peaceful relations with the Spaniards, volunteering in large numbers for pearl fishing and cattle raising, and even accompanying Spaniards on their incursions inland. Once the Spaniards succeeded in subduing the more warlike Cumanagotos on the coastal area, by the middle of the sixteenth century, the Guayquiries followed their Spanish allies into the region of the Gulf of Cariaco. Around 2000 settled in the area near Cumana in the following years (McCorkle, 1965, p. 29). Oral tradition gives account of many battles which took place in the coastal region during the sixteenth century. (The Santa Fesinos know the exact location of what would be the first monastery in the area, about eight miles back of the village. The monastery was afterwards destroyed by Indians of the interior. In the immediate vicinity of the community, Indian burials and Spanish swords have recently been discovered. Identical objects were found in Chiguana a few years ago during the construction of a road.) The intensive exploitation of

pearls was accompanied by reliance upon other sea resources, fish being an important food supply for the colonists. The development of fishing activities was also promoted by the presence of salt deposits in the Peninsula de Araya, the vital importance of which for the colonial economy is illustrated by the construction of a huge fortress (still present) at the western part of the Peninsula, which the Spaniards used in defending themselves from attacks by French and Dutch invaders. Also, the Spanish developed a lucrative commerce with the Indians of the coastal region. With the progressive Spanish occupation of the continent, agricultural activities gained importance. Encomiendas and plantations of sugar cane and cacao rapidly developed around the Gulf of Cariaco, especially on the southern shore, requiring more and more human labor.

With the development of the Spanish agricultural economy, the aborigines inhabiting the continent were forced to settle in lowland areas to which they were not particularly well adapted. Combined with abusive work conditions and nonimmunity against European diseases, this migration resulted in a rapid decrease of the native population.¹ Begun around 1525 on Margarita, the traffic in Negro slaves gained intensity with the progressive diminution of the

¹For more information on acculturation processes among Indians of the interior, see Schwerin's excellent survey of the Karinya (1966).

aboriginal population.¹ The present distribution of the Negro population reflects its initial dispersal; today Negroes occupy lowland areas well suited to agriculture, especially in the Cariaco Valley and around the Neveri Basin. Probably of Bantu origin,² the Negro slaves successfully adapted to the coastal environment in which malaria was common. This environmental limitation operated until recently to discourage colonization of certain areas by whites and mestizos. The best example would be that of Santa Fé, where rapid demographic increase took place in the years after the ending of malaria, and of Chiguana, where the population has always been predominantly black.

Post-Colonial (1830-1930).--The Independence War (1810-1830) and subsequent abolition of slavery (1834-1854) gave rise to strong political agitation that somewhat modified the economy and promoted greater population dispersal. Most of the villages dealt with in this study were established during the latter half of the nineteenth century (those located around the Gulf of Cariaco). Though many

¹Figuerola, 1966, p. 97. The author estimates that 6,595 Negro slaves entered legally into Venezuela during the sixteenth century, 10,147 in the seventeenth, and 34,009 in the eighteenth. Adding 50,000 who entered illegally, he gives an approximate number of 100,000 Negroes as the total slaves imported during the colonial period.

²Cf. Bastide, 1967, p. 179. This origin is explained by the existence of the velorio, a nine-day period of ceremonies and festivities which follows one's death.

manumitted slaves continued to work on plantations, others settled in separate areas and engaged in subsistence agriculture. This was the case with Chiguana, whose initial occupation goes back approximately 150 years and whose inhabitants have since dedicated most of their time to agricultural activities. In general, blacks remained in areas into which they were first brought by Spanish colonizers. The whites and mestizos occupied more areas along the Gulf and the Caribbean Sea, and engaged mainly in fishing. The settlement of the whole Peninsula de Araya followed a process of transformation of isolated rancherías (including an exclusive group of fishermen) into larger and more sedentary settlements. Such has been the case of Guacarapo, which was first established as a seasonal fishing camp and was subsequently inhabited on a more permanent basis by fishermen from Cumana. The mode of production prevailing at the end of the eighteenth century, based on ethnic specialization and regrouping, partially influenced the present community specialization. During this period in Venezuelan history, a national "culture" encompassing distinctive regional subcultures emerged, and the nature of the relations between hinterland dwellers and the dominant urban centers became better defined. The following section discusses in greater detail the relations that rural fishermen have with their larger society.

Recent Period (1930-1972).--The other significant period, that of industrialization, began at the turn of the

century with the discovery of petroleum resources in several parts of the country. Not before the 1930's, however, did the eastern zone feel the effects of the petroleum industry.¹ Traditional economic patterns were then strongly modified by the construction of a highway in the state of Sucre, promoting significant changes in the internal marketing system and creating possibilities of migrant labor in all parts of the country. Some villages in which the economic situation was stagnant lost many inhabitants; in others, cooperative mechanisms were greatly transformed by periodic absence of personnel.

Villages located on the southern shore of the Gulf of Cariaco, where the road passes, became more commercialized. It is not without significance that Santa Fé, for instance, which always specialized in commerce but could not support a large population because of malaria, has undergone in the last decades a profound demographic increase because of commercial development. With rapid population growth in urban centers like Cumana (100,000), Puerto La Cruz (50,000), Carupano (35,000), and Cariaco (10,000), industrialization has also brought a new form of settlement which indirectly affects rural ways of life. Tourists now seasonally invade several coastal villages with sandy beaches, and their presence has gradually transformed some aspects of the villages' economy.

¹In 1933, the first well was drilled in the state of Anzoátegui, next to the state of Sucre.

This brief historical outline should indicate that sedentarization, even though it first occurred centuries ago, is still an ongoing process. Although attenuated by miscegenation and cultural convergence, the diversity of ethnic groups engaged in sedentarization partially explains the present structure of intercommunity specialization and division of labor.

2. Fishermen in a Complex Society

The foregoing discussion pointed out that a common feature of rural communities in Eastern Venezuela is their continuous interaction with the larger society to which they belong. Even if several villages are relatively isolated, their socio-economic organization has always been influenced by national laws and institutions since the establishment of Spanish control.

Without raising a terminological discussion about the merits of applying particular terms (such as peasants, post-peasants, etc.) to depict these fishermen's ways of life, I would like to illustrate the ways by which their economic behavior has often been conditioned by the larger juridico-political structure of their society.

During the last century, intensive fishing was conducted by a restricted number of skippers who worked with large crews recruited in the coastal villages. The mode of production was very similar to that of the plantations of the interior. Crew size sometimes reached as many as 200

people (Mendez-Arocha, 1963, p. 45). Given the limitations of a preindustrial technology and a lack of capital and credit, fishing equipment was concentrated in the hands of a few individuals. Full-time fishing was more characteristic of these large, well-equipped crews, while part-time fishing was conducted on an individual basis with a very simple technological apparatus (that of demersal fishing). Nonetheless, all owners of equipment had to pay a registration fee, and to declare the nature and value of their fishing gear as well as the amount of their production. The government's control, designed to evaluate national production and to regulate foreign commerce, was greatly facilitated by its progressive acquisition of the salinas (salt deposits) in the region. Government representatives distributed salt according to fishermen's investment and output (Mendez-Arocha, p. 51).

With the advent of the Gomez regime, at the beginning of this century (from 1908 to 1928), the number of fishermen increased with a concomitant reduction in the crew size. This situation brought about a decentralization of governmental control; fee collecting and censusing of equipment and of the fishing population became the responsibility of municipal and state authorities. Most of the present inspectorias (fishery offices) were created at this time. The increased number of skippers did not result in an improvement in the economic situation of the majority of fishermen. By governmental order, small owners could

utilize only the cast net technique of pelagic fishing. Those who were caught using the seine, for instance, were severely fined and their equipment was confiscated. Several Chiguanero and Guacarapanero informants mentioned that some of their relatives had been jailed in Cumana even if their action was justified by the scarcity of food at given periods. On the other hand, privileged owners maintained good socio-political relations with the state and municipal authorities. They exploited the coastal populations who, in many cases, had no choice but to work with these entrepreneurs. In appropriating the best fishing stations (the main technique of pelagic fishing at that time being the shore seine), the privileged owners considerably reduced the production of small, independent fishermen and got rich at the latter group's expense. This situation still influences the present-day socio-economic organization of fishing. After the Gomez regime, these restrictive laws favoring a reduced number of skippers were abolished. This juridical change promoted the emergence of several small owners. Nevertheless, sons and close relatives of former skippers inherited partial exploitation rights of significant importance in certain types of fishing. For instance, mackerel fishing (pesca de jurel) in Santa Fé can be done only in specific places along the coast (e.g. in small and deep coves, near which lie elevated points necessary to locate schools of fish). All the shore adjacent to those sites is privately owned with exclusive use rights at the time of

fishing and usually has been transmitted within the owners' families since the end of the last century.

In 1936, when independent owners had increased in number, the government promulgated a fishing law (Ley de Pesca) based on previous exigencies and adding new regulations. All the fishing boats had to be registered with the MAC (Ministerio de Agricultura y Cria). Boats operating with crews of three or more members had to conform to a regulation color scheme in order to identify them as belonging to the national fleet (e.g. a yellow stripe from bow to stern). Fishermen were required annually to secure a fishing permit. They had to submit a fishing plan to the MAC, mentioning the species they intended to fish and the methods to be employed. They had to provide detailed statistical information on their output. Literacy was required of all fishing crew leaders. Gasoline lamps, used to attract fish, were forbidden in areas within three miles of the coast, and the use of toxic chemicals was condemned. More specific action occurred in 1955, when many fishermen who did not own a purse seine (argolla) protested its utilization in the coastal area, arguing that this technique was directly responsible for the diminution of fish in the region. Although purse seines had been utilized since 1940, the government prohibited their use in areas located less than five miles from the coast.

Present-day fishing is still directly influenced by the original Ley de Pesca. Government officials continue to

make periodic trips to fishing stations to register fishing equipment and personnel. They must settle frequent disputes among fishermen, which arise when fish are located in restricted areas and the techniques of demersal and pelagic fishing are used simultaneously. In some cases, final agreement can be obtained only with the intervention of the army. The government's control over the price of fish is also increasing. Sellers now need to register, as do skippers and their crew members. They must also conform to more hygienic conditions for transportation, and offer products of good quality on pain of being required to reimburse customers (as happened a few times in the summer of 1971 in Santa Fé).¹ In recent years, however, governmental agencies have published, through newspapers and posters, regulative prices and lawbreakers can be prosecuted and fined.

Fishing, although being conducted in a local community setting, is therefore strongly influenced by the national juridico-political system. Rural fishermen, although relatively autonomous, must obey national laws. Dependence upon the larger society for administrative purposes is also found in other spheres. Each village belongs to a municipio, which is itself part of a distrito within a

¹Holy week (Semana Santa), a national holiday in Venezuela; several tourists invade the eastern zone, which is well known for its hospitality and sandy beaches. Some merchants tried to take advantage of an increased demand for sea products by raising prices.

state. Members of small communities, whether specialized in agriculture, fishing, or other activities, depend upon larger administrative centers for civil registration, marriage, and military service. Small communities that exist on the coast of the eastern zone, therefore, have formed, for a long time, an integral part of a nation. The intensity of this integration varies with the nature of production in the community and with their degree of access to larger administrative centers. If we add to this embeddedness into a larger juridico-political sphere the strong dependence of the productive system upon natural resources, rural fishing communities of Eastern Venezuela can be analytically defined as intermediate between communities oriented exclusively toward subsistence and those which are fully engaged in a capitalist economy.

3. Social Organization

It might be fruitful, at this point in the analysis, to mention some features of social organization that may have a direct influence upon economic actions and processes. Although geographically distinct from the Caribbean area, eastern coastal Venezuela shares many cultural characteristics with that area. Among the most significant are the importance of consensual unions, marital instability and illegitimacy; the matrifocal tendency of the families, and ethnic differentiation often rooted in occupational hierarchization.

My interest does not lie in determining the origin or tracing the evolution of those features,¹ but in analyzing the ways in which they interrelate and how they can influence social relations of production. This will be done with statistical data gathered in three communities.

Like other parts of Latin America, Eastern Venezuela is characterized by a great demographic expansion.² The constant reduction of mortality (6.5/1000 in 1961), because of joint efforts of the Venezuelan government and international organizations such as the FAO, combined with the maintenance of high natality (37/1000 in 1962), has resulted in a significant increase of local population over the last half century. From a total of 333,600 people in 1950, the population of the state of Sucre reached 402,000 in 1961. This was a notable increase, especially since the population was reduced because of out migration following the expansion of the oil industry in the eastern zone. For instance, in 1950, almost 23 percent of the people born in the state of Sucre lived in other parts of the country. In-state migration is also prevalent and the concentration of population in urban areas (centers with over 1000 people according to

¹Cf. R. T. Smith's explanation of matrifocality in terms of man's marginality and lower status of black people (1956), Herskovits' interpretation as a result of diffusion of African customs (1947), and M. G. Smith's rationalization in terms of modes of mating and social classes (1962).

²At the time of the study, the last census had been taken in 1961.

Venezuelan census) has increased in recent decades. In 1961, 40 percent of the population lived in urban centers, 27 percent of whom lived in Cumana and Carupano. This rural-urban categorization might, however, lead to qualitative misinterpretation. Strong similarities still exist, at the level of social organization, between rural communities and lower-class urban communities.

The examination of mating patterns in 324 households in the villages included in this study indicates that almost one-half of the couples live in consensual unions. Only three were married by the Church, while 110 were married by civil law. Variations in mating patterns cannot therefore be explained by ethnicity, since consensual unions are important in all the aforementioned villages. Table 2 does not depict completely the importance of illegitimacy, since it does not include all single mothers and does not mention all polygamous unions, either permanent or temporary, that prevail in several cases.¹

Table 2 shows that 20 percent of the households are headed by a female. This is but one measure of their tendency to matrifocality. More important is the nature of kinship ties between the family heads and residents who are not members of their nuclear family. Among 324 households

¹Precise information on this matter would have required a longer stay in each community. Only in Guacarapo did I have the chance to gather objective data on the subject because of the reduced size of the community.

only 152 are made up of nuclear families consisting of both parents and their children, the rest being reduced forms including either parent with children or composite forms including other relatives. In the above sample, 249 people, either consanguineal, affinal, or foster relatives, live in the household as nonmembers of the nuclear family of the head. The significant fact is that among them, 227 or 91 percent are matrilocally related to the family head, nephews and nieces (nietos-as) representing almost half of this total (119 of 247). (See Table 3.)

The existence of matrifocality refers to merely one aspect of the kinship system, that of residential units. Nominally bilateral,¹ this system is characterized by partible inheritance, and a third-degree exogamy excluding both matrilineal and patrilineal parallel and cross-cousins. Moreover, it might happen, since fishing activities are generally restricted to men, that cooperation in economic activities be agnatically oriented, especially if the activity requires appropriation of specific areas for handling of fishing gear and fish processing. Strong situational variations then exist. The characterization of the kinship system must take into account the influence of parental relations in the social as well as in the economic sphere.

¹For detailed study of the kinship system, see Orona (1968, pp. 40-102).

Table 2.--Structural features of social organization in Eastern Venezuela.

Villages	Number of Households	Sex of Household Head		Household Size	Marital Status of Household Head					Number of Nuclear Families
		M	F		R.M.	M.C.	C.U.	W.	Sep.	
Chiguana	121	91	30	5.0	-	49	36	15	21	56
Guacarapo	53	45	8	6.6	-	10	35	4	4	28
Santa Fé	150	124	26	6.6	3	51	78	4	14	68
Total	324	260	64	6.0	3	110	149	23	39	152

Nevertheless, the importance of matrifocality in household composition confers certain modalities to the village's economy. Women in charge of families must rely more on extra-domestic activities in order to feed their people. Similarly, other female members of such households often show much initiative in the economic sphere; they are not reticent to engage in activities such as trading, where men still predominate. On the other hand, male relatives of female household heads have increased responsibility and are often obliged to help the women in their work. Since fishing is reserved to men and a significant part of the food supply consists of fish, many fishermen undertake interhousehold exchanges.

Lastly, while ethnicity seems to have little influence on household composition and forms of mating, a situation that indicates a significant sharing of common values and behavior, it does serve as a criterion for differentiation that sometimes strongly affects social and economic relations. Black people often allege, in front of the stranger, that whites do not discriminate against them. But one cannot deny that membership in the latter group often corresponds to a privileged situation. Blacks are in a minority in the area, and stereotypes developed during colonial periods are still present in many circumstances. This is particularly the case in fishing communities, where partly by technical tradition but also by white domination, blacks were prevented from significant investment. As a

Table 3.--Kinship ties between household heads and resident nonmembers of the household heads' nuclear family in three Eastern Venezuelan communities: 1971.

Villages	Nonmembers of the Household Head's Nuclear Family	Types of Kinship Relations			Matrilateral Filiation
		Consanguine	Affinal	Foster	
Chiguana	61	43	16	2	57 (93%)
Guacarapo	49	35	14	-	46 (93%)
Santa Fé	139	54	81	4	24 (90%)
Total	249	132	111	6	227 (91%)

result, important owners of fishing equipment and patrons of large fishing crews are white or mestizos in most cases; blacks are confined to secondary roles or engage in demersal fishing (which requires little investment) in small, independent teams.

The preceding discussion has demonstrated that the communities' economic specialization depends upon a series of local and external factors, none of which, taken separately, can be given a major role. An economic system is determined by both the relationship of men with their natural resources (through technology) and of men among themselves (through social organization and culture).

CHAPTER II

CHIGUANERO FISHERMEN: A GENERALIZED ECONOMY

Introduction

As mentioned in the discussion of methodology, the forthcoming analysis presupposes a method that goes from the general to the particular. Chapter I provided general information on the ecological basis of production at a regional level. The analysis will be conducted now at a more microscopic level, illustrating how these basic principles are actualized in particular communities and how, though influenced by the sharing of a common context and values, economic action of fishing personnel is diversified and takes place within a matrix of choices and alternatives. In fact, economic behavior can be seen as conditioned by a series of superimposed frameworks, its conscious character being proportional to closeness and degree of individualization of the latter. In other words, economic action is in the short run an individual process but its modalities are, nevertheless, determined by the presence of other individuals who also engage either in production, exchange, or consumption. This is particularly the case in peasant societies, where production is still largely based on human energy and kin-based cooperation.

A fisherman, for instance, will proportion his energy expenditures and plan his work according to his immediate needs and aspirations and to those of his household. His economic behavior is also determined by the position he occupies within a crew as well as by its size, the equipment at its disposal, and its authority structure. Similarly, one crew's behavior depends to a certain extent upon the behavior of other crews. The relative inactivity of some crews in periods of high demand for fish might cause a particular crew to furnish supplementary efforts, a situation that is repeated when the presence of valuable species brings about strong competition among all fishermen. Fishermen's behavior is also dependent upon external factors such as the economic situation of other occupational groups in the community. They know, for instance, that the agriculturalists' demand for fish is higher during the period immediately preceding the harvest, because they are then short of foodstuffs, and also immediately after the harvest because they then have more cash available to spend. Finally, fishermen plan their action according to a set of extra-local factors such as the prices' variations in regional markets, knowing exactly when certain types of fish are in high or low demand. Although principally focused on the economic behavior of fishing personnel, this analysis seeks to emphasize factors external to fishing that directly influence fishermen's behavior, either at a local or extra-local level. The interest lies in demonstrating

how economic action of individuals is molded at one end by local ecological conditions and at the other by the regional economic context.

Chiguana is a village whose economy involves a variety of productive activities. The majority of its fishermen also engage in nonmaritime activities, deriving an income from agriculture, cattle raising, wood cutting, and migrant labor; their participation in these activities strongly affects the conduct of fishing.

A. General Remarks

1. The Setting

Chiguana is located at the lower end of the Gulf of Cariaco, on the northern shore, in the Municipio of Cariaco and the distrito Ribero (Figure 12). Eighty-five kilometers separate it from the state town of Cumana, while the distance between the village and the municipal town of Cariaco is about 14 kilometers. The front village, the Muelle de Cariaco, an important maritime center at the beginning of this century, is about three kilometers from Chiguana. Between the municipal town and Chiguana lies Campoma, an agricultural community, while seven kilometers to the west lies Guacarapo, a fishing community (analyzed in Chapter III). The construction of a road between Cariaco and the other villages to the west was undertaken about five years ago. But given its unserviceability during the rainy season and the small number of people owning cars or

trucks (only two cars in Chiguana), Chiguaneros must rely principally on maritime navigation to reach the front village, El Muelle de Cariaco, when they have to travel to larger administrative centers.

The village is located in a complex ecological niche. It includes a gulf (merging with the Caribbean Sea) which permits fishing activities, and a river, which until recent years has served as a water supply and has permitted communication with the municipal town. In addition, there are shallow lagoons, which facilitate cattle raising during the dry seasons, and a mainland characterized by relatively productive soils sustaining agriculture and horticulture and by rich vegetation which gave rise to the exploitation of forests on a commercial basis. The location of the community midway between an agricultural zone (the Valley of Cariaco) and a fishing zone (the Gulf of Cariaco) allows Chiguaneros to practice several activities and to benefit from varied sources of income.

The present characteristics of the Chiguaneros' economy cannot be fully understood, however, without some reference to the internal modifications that have taken place in the local ecosystem and to the transformations produced by more than 150 years of human exploitation.

The maritime zone, which covers about 15 square kilometers, has lost much of its productivity in recent decades. Although of restricted size and depth, this zone formerly gave rise to the capture of numerous species, the

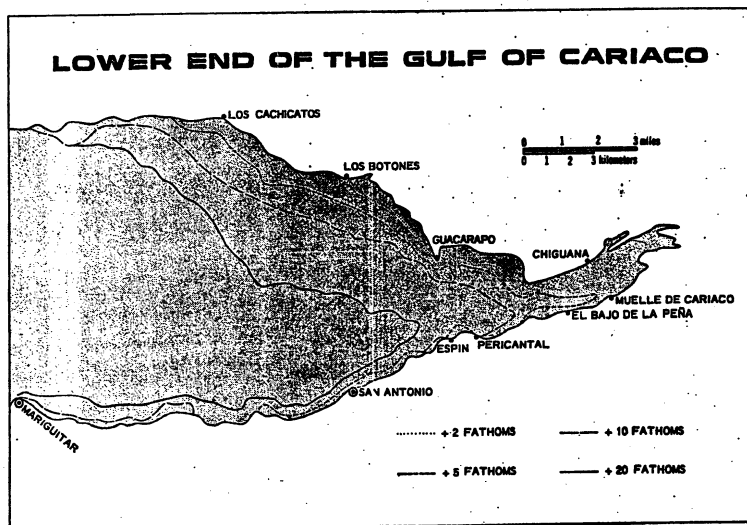


Figure 12.--Lower end of the gulf of Cariaco.

location of which was facilitated by their high concentration at the lower end of the Gulf. Such is not the case today, for fishing is concentrated on only one species (lisa). Because of refuse accumulation caused by the river flood in the rainy season, the depth of the water has been progressively reduced and the sea bottom has become muddy with the disappearance of the rocky spots (pedrezal) necessary to handline and fish pot techniques. Periodic flooding of the river also carries several tree trunks and branches that prevent Chiguaneros from using large nets and power crafts. Such internal modifications also enhance the frequency of turbios, a phenomenon characterized by fish poisoning because of the concentration of microorganisms that rarify the oxygen.

Fishermen believe the most striking effect of human occupation on environment has been the establishment of large fishing companies at the mouth of the Gulf in the last 20 years. These companies specialize in sardine fishing. According to official statistics (Nascimento and Cordona, 1970), this is the only species whose catch has constantly increased in the last decade.¹ Fishermen then assume that over-exploitation (in fact, there exist no limits) produced strong migrational changes among this species, resulting in its diminution at the lower end of

¹Those companies are: Productos Mar, established in 1939; Conservas Alimenticias La Gaviota, 1948; Conservas Cumana, 1960; Productos Pesqueros, 1962; and Companie Anonima Industrial de Pesca.

the Gulf. As the sardine constitutes an important nutriment for bigger species, the latter no longer frequent this fishing zone.

The presence of several lagoons in the vicinity of the seashore explains why good beaches are uncommon. When returning from the sea, fishermen are obliged to come together in restricted areas or assemble near small wharves behind their houses.

The agricultural vocation of the community is, on the other hand, well illustrated by the present arrangement of houses; the oldest are not adjacent to the beach but are located in the center of the village, on a small elevation. This site was initially chosen because muddy beaches were then covered with mangroves (manglares). Fishing was relatively unimportant compared to agriculture and horticulture, and the annual ocean tide caused flooding of the lower section. These floods still bring much hardship to households located near the beach. Topographically, the village is divided into three parts, the division corresponding to differentiation in terms of occupation and living standards. Most of the full-time agriculturalists occupy the central area and the area farthest from the shore; full-time and part-time fishermen are concentrated in the area closer to the shore, while people engaged in service activities, such as teachers, mechanics, and traders, live in the eastern section. This section has been recently settled and contains several new houses constructed under

a government program designed to improve living conditions (vivienda rural)¹ and to eliminate malaria; thatch-and-pole and bahereque houses are notorious breeding grounds for mosquitos. People inhabiting the eastern section are generally conferred a higher status, a situation that sometimes affects economic relations in the community and gives rise to specific modes of exchange which will be further discussed.

The axis of social relations, as in many peasant villages in Eastern Venezuela, revolves around local bars. The bar located near the beach (bar de la playa) is usually frequented by skippers and merchants, while the bar near the church (bar del centro) hosts mostly agriculturalists and part-time fishermen. Only during local fiestas and other special events will people travel from one bar to another independent of their residential area and occupation. About six years ago, a new school was constructed; it is an object of pride for the inhabitants, but is attended very irregularly by youngsters who must spend much time assisting their parents in different activities. The construction of the church was stopped about two years ago, because of a lack of funds; the building is used only occasionally and no permanent priest serves the community.

¹Among the 17 houses constructed under this program, 11 are located in the eastern section; occupants pay a men-sual rent until versements total 5,000 Bs (\$1,110 dollars).

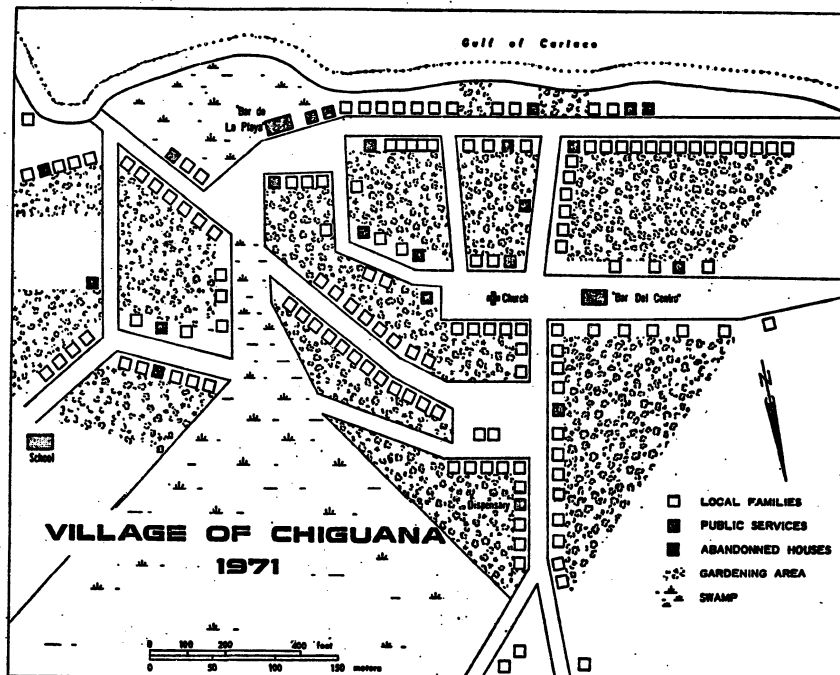


Figure 13.--Village of Chiguana: 1971.

For the majority of the inhabitants, the bettering of living conditions is associated with the construction of a water main connected to the water system of the town of Cariaco about four years ago. Until then, water storage was a strenuous activity obliging men to cross the Gulf or to go up the river to carry back fresh water in barrels. But water provisioning still causes many problems, especially during the dry season. It is then available only half an hour a day, and is shut off sometimes for several days in a row. Electricity, another recent innovation in the community, was introduced simultaneously with the water main. But the service is likewise characterized by periodic blackouts. Behind the village, a new cemetery is now under construction with government funds, the former site being difficult to reach during the rainy season.

Figure 13 shows that houses are built along a series of small streets (calles). Each house has an adjacent area for gardening and poultry raising; each family's plots are fenced.

All around the village are numerous paths and trails leading to the forest area and the agricultural plots (conucos). Between the village and the agricultural area is a lagoon (Laguna Lagua) that is used to quench the thirst of cattle during the dry season. Because of the intensive exploitation of the forest region, important species are now relatively far from the community. But enough vegetation still exists in the vicinity to permit

the periodic gathering of firewood. The Chiguaneros' communal lands occupy an area of approximately 50 square kilometers, through which old and new agricultural plots are scattered. Cattle raising takes place between the conucos, which are protected by fences. The conucos are, however, concentrated in the eastern area, because there are numerous hills and depressions in the western section. The entire zone is criss-crossed by a large number of brooks that overflow during the rainy season, consequently limiting the size of agricultural plots (averaging four to five hectares). Not far from the agricultural area lies a chain of mountains that crosses the entire Araya Peninsula and inhibits communication with villages on the other side near the Caribbean Sea. This natural barrier explains why Chiguaneros have always engaged in more commercial activity with communities on the southern side of the Gulf of Cariaco. On the other hand, the number of abandoned and ill-kept conucos demonstrates that the intensity of agriculture is not as high as it was previously. Informants attribute this decline in agriculture in the last decade to droughts and to increased competition with agricultural communities of the Valley of Cariaco, some of which have irrigation and plow agriculture.

2. Population Characteristics

The constant migration of young adults of both sexes is probably the most salient feature of the demographic

structure of Chiguana. A first look at Table 4 shows a real discrepancy between the first three age groups and the 15-24 group. More than half of the population is below 15 years of age; the active labor force (15-64) represents 44 percent of the total. The numerical importance of children indicates that birth rate and fecundity are relatively high-- 37‰ and 858‰, respectively.¹

Table 4.--Population of Chiguana by sex and age: 1971.

Age Group	Male	Female	Total	Dependent and Active Pop.			
				Male No. %	Female No. %	Total No. %	
0 - 4	57	40	97				
5 - 9	52	51	103				
10 - 14	61	55	116	170 26.0	146 23.0	316 49.0	
15 - 19	28	25	53				
20 - 24	5	14	19				
25 - 29	9	15	24				
30 - 34	6	16	22				
35 - 39	12	11	23	120 18.9	154 25.2	274 44.0	
40 - 44	6	13	19				
45 - 49	14	16	30				
50 - 54	15	15	30				
55 - 59	13	10	23				
60 - 64	6	19	25				
65 - 69	7	6	13				
70 +	18	19	37	19 2.9	25 3.9	44 6.8	
Total	309	325	634	47.8%	52.1%	100%	

¹Natality rate: Births during the year: Total pop. in the middle of the year.

$$\frac{(0-1) \times 1000}{620} = \frac{23 \times 1000}{620} = 37\text{‰}.$$

Fecundity rate: Births during last five years: Women in age of procreate.

$$\frac{(0-4) \times 1000}{F.(15-49)} = \frac{97 \times 1000}{113} = 858\text{‰}.$$

During the last five years, almost nine out of ten women who are able to bear children have been pregnant. However, birth rate and natural increase have diminished in the last years, considering that the first age group includes fewer people now than the next two groups, in spite of a significant reduction of infantile mortality with the improvement of living conditions. The sex ratio is somewhat similar, women being in a small majority, but sex distribution varies greatly within the young active labor force. The age groups 20-34 include only 20 men compared to 45 women.

Emigration is not a recent phenomenon in Chiguana, but its importance has considerably increased in the last decades because of the gradual deterioration of the natural environment and greater opportunities for wage labor outside the community. The present population of Chiguana is about the same as it was ten years ago. There are almost 20 abandoned houses in the village. The census indicates that 343 people (173 men, 170 women), close relatives of the present family heads, have left the community in the last decades; 138 now live in Caracas, 79 in Puerto La Cruz, 69 in Cumana, and the rest in centers of lesser importance. Correlations between the age of emigrants, their date of departure, and their present residence show that migrational movements first took place in centers closer to Chiguana, namely Puerto La Cruz, that developed in the fifties with the establishment of the oil industry in Eastern Venezuela.

The young people now go farther, preferring to live in larger cities like Caracas, because work opportunities in smaller urban centers have not increased significantly since their initial boom.

Among the 206 deceased parents of present household heads (for whom information was obtained) who lived in Chiguana, 105 were born outside the community, coming principally from Cariaco (24), Margarita (23), Guacarapo (12), and Cumana (10). Of this total, 60 were men. Today, only 58 people out of 634 were not born in the village, a fact that illustrates the appearance of a higher degree of local endogamy as the population enlarged. The establishment of correlations between the sex of in-migrants and the distance of their native communities shows, however, that exogamic patterns were formerly strongly associated with differential male and female participation in marketing. At that time, both men and women engaged in commercial activities with neighboring villages. Women traveled on foot, selling fresh fish that they carried in baskets to the villages close to Chiguana. Men, traveling with mules, covered greater distances selling salted fish and agricultural products. It followed that female partners taken outside the community generally came from greater distances than males. Nonetheless, the relatively equal proportion of in-migrants of both sexes shows clearly that exogamy did not give rise to unilineal modes of grouping and confirms once again, in spite of the matrifocal tendency of

Table 5.--Household heads by sex, age, and marital status: Chiguana, 1971.

Age Group	Male					Female					Total				
	C.M.	C.U.	W.	Sep.	S.	C.M.	C.U.	W.	Sep.	S.	C.M.	C.U.	W.	Sep.	S.
20 - 24	1	1									1	1			
25 - 29	5										5				
30 - 34	4	2									4	2			
35 - 39	8	5									8	5			
40 - 44	2	4									2	4			
45 - 49	10	3				1	2				10	3	1	2	
50 - 54	8	5					3				8	5		3	
55 - 59	4	3	1		1	2	5				4	3	3	5	1
60 - 64	2	4				3	3				2	4	3	3	
65 - 69	3	2	1				2				3	2	1	2	
70 +	2	6	3	1		4	5				2	6	7	6	
Subtotal	49	35	5	1	1	10	20				49	35	15	21	1
Total	91					30					121				

Key: C.M. = Civil Marriage
W. = Widow (widower)
S. = Single
C.U. = Consensual Unions
Sep. = Separated

the residential units, the bilateral character of the kinship system.

Table 6.--Structural types in household composition according to sex of household heads: Chiguana, 1971.

Composition	Sex of Household Heads		Total
	Male	Female	
- Ego, wife, children	56	-	56
- Ego, wife, children, mother	1	-	1
- Ego, wife, son, daughter's children	7	-	7
- Ego, wife, children, parents-in-law	2	-	2
- Ego, wife, children, sister-in-law	1	-	1
- Ego, wife, children, son of godfather	1	-	1
- Ego, wife, mother	1	-	1
- Ego, wife, sister-in-law	1	-	1
- Ego, wife	11	-	11
- Ego, brother	1	-	1
- Ego	7	9	16
- Ego, children, daughter's children	1	6	7
- Ego, daughters	-	7	7
- Ego, father	-	1	1
- Ego, daughters, mother	-	1	1
- Ego, children, sister, sister's children	-	1	1
- Ego, children, sister, daughter-in-law	-	1	1
- Ego, sister, sister's children	-	1	1
- Ego, sister's children	-	1	1
- Ego, children, daughter's children	-	1	1
- Ego, children, daughter's husband, son's wife, daughter's children	-	1	1
Total	91	30	121

Table 5 indicates that one-third of the households are headed by females, but in all cases the female head is more than 45 years of age. Matrilocality is, therefore, strongly influenced by age and does not prevail in young unions where marital stability is stronger. Among the 30 female household heads in Chiguana, 20 are "separated," the term referring not to legal divorce but to definitive departure of the male partner, who either relocates outside the community or chooses a younger spouse in the village itself. The average age difference between partners married by civil law is about 6.2 years, while that between people living in consensual unions averages 10.1 years, with a greater range of variation. The average household size is smaller in Chiguana than in the other villages where the census was applied, i.e. five persons. Once again, emigration partially explains this situation. Sixteen individuals of advanced age live by themselves in single households. Tables 6 and 7 show a wide variety in household composition and that generational depth is shallower in households with male heads than in those with female heads. On the other hand, though the number of nonmembers of the nuclear family of household heads is almost equally distributed according to the sex of the household head (28 compared to 33), it can be noticed that in the case of households headed by females, consanguineal relatives (namely daughter's children) are more numerous than affinal relatives, while in the case of households headed by males, the

proportion of consanguineal and affinal relatives is similar. As mentioned before, the matrifocal tendency of the residential units is clearly illustrated by the fact that 93 percent of nonmembers of the nuclear family of household heads are "matrilaterally" related to them (nonmembers of their patrilineage, analytically speaking).

Table 7.--Kinship relations between household heads and resident nonmembers of household heads' nuclear family: Chiguana, 1971.

Kinship Relation to Household Head	Male Head	Female Head	Number of People
<u>Consanguine</u>			
- Mother	1	1	2
- Brother	1	-	1
- Sister	-	2	2
- Daughter's children	12	19	31
- Daughter's daughter's children	-	6	6
- Mother's sister's daughter	-	1	1

<u>Affinal</u>			
- Husband's sister daughter	-	1	1
- Mother-in-law	7	-	7
- Father-in-law	3	-	3
- Sister-in-law	2	-	2
- Daughter's husband	-	1	1
- Son's wife	-	2	2

<u>Symbolic</u>			
- Children of godfathers	2	-	2

Total	28	33	61

Thirty-one surnames were registered in Chiguana, the most important being Sanchez with 113 individuals, Reyes with 47, Diaz with 40, Bello with 36, Ramirez with 33, and Brito with 27. Since children born of parents living in consensual unions take the mother's family name, and several men married by civil law have children from other women, it is inappropriate to use terms like "patronym" or "matronym" to depict belonging to a familial group. Peoples' knowledge of their relations of consanguinity is more operative in social and economic activities than their nominal inclusion in a given group.

B. Economic Organization

The preceding chapter showed that analysis of the production system has to be done by analytically differentiating its technological and social basis, though both aspects belong to the same entity or reality. In the case of a generalized economy like that of Chiguana, such distinction is of primary importance since people participate simultaneously in a wide range of activities. Each activity thus gives rise to a series of production units whose forms of cooperation vary according to the task performed. Since the interest lies in determining the extent to which the nature and the intensity of fishing are influenced by the practice of other activities, the analysis of the Chiguaneros' productive system will be undertaken by studying the economic organization in activities other than fishing. Thereafter,

it will be easier to measure their real or potential effects on people's exploitation of the maritime environment..

1. Occupational Structure

Table 8 shows that agriculturalists form the main occupational group in the community; 47 persons are engaged in land cultivation on a full-time basis, while six work at it part time. On the other hand, only 26 full-time fishermen were found, while 22 people indicated they participated in fishing on a part-time basis.

Table 8.--Occupations according to sex: Chiguana, 1971.

Types	Principal		Secondary		Total		
	Male	Female	Male	Female	Male	Female	Total
Agriculturalist	47	1	6	-	53	1	54
Fisherman	26	-	22	-	48	-	48
Storekeeper	6	-	1	-	7	-	7
Fish seller	4	-	-	3	4	3	7
Dressmaker	-	3	-	6	-	9	9
Carpenter	4	-	2	-	6	-	6
Laborer	6	-	-	-	6	-	6
Maid	-	4	-	-	-	4	4
Teacher	3	2	-	-	3	2	5
Nurse	-	1	-	-	-	1	1
Mechanic	1	-	-	-	1	-	1
Saddle maker	1	-	1	-	2	-	2
Taxi (with boat)	1	-	-	-	1	-	1
Butcher	-	2	-	-	-	2	2
Total	100	12	32	9	132	22	154

Fishing, then, constitutes, more often than agriculture, a secondary source of income for family heads or young adults. This has to be related to the shorter cycle of production and to the technical requirements of the activity. Interestingly enough, though the majority of family heads have invested capital in animal husbandry, particularly in cattle, none of them sees this activity as a specialized occupation. This outlook will be further considered in examining the nature of the tasks required by animal husbandry. A total of 154 occupations was registered in the community, 22 of which are reserved to women, i.e. less than 14 percent. Next to the exploitation of land or sea resources comes participation in commercial activities. Seven persons are store keepers and seven others engage principally in marketing. Thus the dominant feature of the occupational structure lies in the link between agriculture and fishing. Cattle raising is practiced widely, but does not interfere significantly with the conduct of other activities. On the other hand, one should not forget that this categorization corresponds to a nominal definition provided by informants concerning their main occupation. Several men also engage periodically in ancillary activities such as wood cutting and migrant labor when they are short of cash and when fishing is not profitable.

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Dressmaker	-	3	-	6	-	9	9
Carpenter	4	-	2	-	6	-	6
Laborer	6	-	-	-	6	-	6
Maid	-	4	-	-	-	4	4
Teacher	3	2	-	-	3	2	5
Nurse	-	1	-	-	-	1	1
Mechanic	1	-	-	-	1	-	1
Saddle maker	1	-	1	-	2	-	2
Taxi (with boat)	1	-	-	-	1	-	1
Butcher	-	2	-	-	-	2	2
Total	100	12	32	9	132	22	154

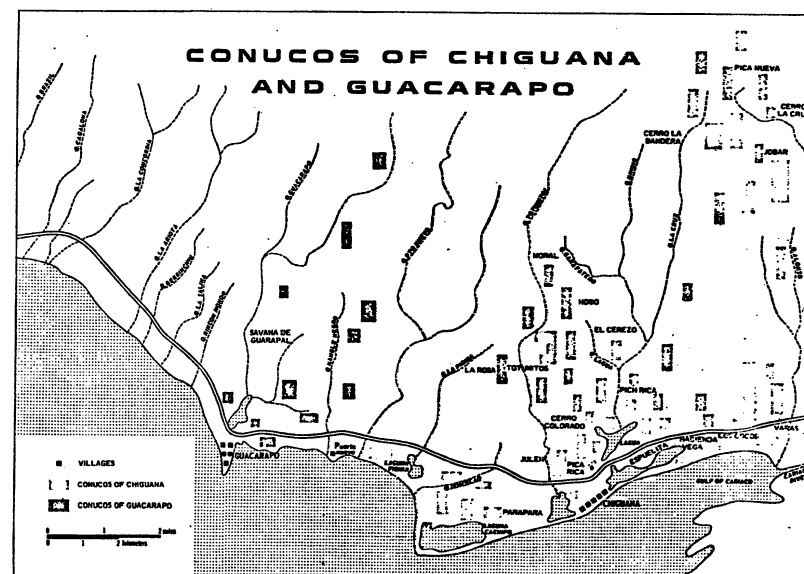
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2. Economics of Agriculture

In Chiguana, the agricultural cycle is characterized by two periods grossly corresponding to the two rainy seasons. During the first period, the longest, Chiguaneros plant mainly corn. Seeding takes place at the end of May and the beginning of June, when the first rainy season starts. The crop is harvested in September. Then follows a second seeding consisting principally of vegetable crops such as yams, sweet potatoes, and manioc, harvested at the end of December and January. The dry season lasting from February to April is therefore one of relative inactivity for agriculture. The cycle is renewed when the agriculturalist undertakes the clearing of his plot for corn seeding at the beginning of June.

Fifty-nine people declared themselves owners of agricultural plots in Chiguana. Among them, 53 cleared their plots themselves, two bought them from godfathers, two from brothers-in-law, and two inherited them from their fathers. The small number of owners who acquired an already-made "conuco" thus indicates that the life span of agricultural plots is too short (averaging 12 years in Chiguana) to give them a significant status in the inheritance process.

A total of 267 hectares is cultivated around the village, the average size of a conuco being 4.5 hectares. This size, relatively large for slash-and-burn agriculture, is related to the fact that most Chiguaneros simultaneously practice agriculture and horticulture. The presence of



several fruit species with important foliage protects the soil from rapid erosion and solar radiation. Unlike agricultural products, fruits are generally reserved for domestic consumption. Only one owner of a large agricultural plot has enough coconut trees to sell his products commercially.

Another organizational feature of agriculture is the distance of the conucos from the community. In Chiguana, such distance averages 5.4 kilometers, with a range of 1/4 to 15 kilometers. This has some implications for work organization. Generally, when a conuco is located at more than 10 kilometers from the owner's house, he will need a shelter for temporary residence there. He then lives near his plot when substantial work is required, since the daily round-trip to the conuco and the community takes too much time.

Table 9.--Size of agricultural plots (conucos) in Chiguana, 1971.

Size in Hectares	Number of Plots	Cumulative Size
1	2	2
2	4	8
3	15	45
4	19	76
5	7	35
6	5	30
7	3	21
10	3	30
20	1	20
Total	59	267 Hectares
Average size	4.5 Hectares	

Table 10.--Distance of agricultural plots from the village: Chiguana, 1971.

Distance in Kilometers	Number of Plots	Cumulative Distance
1/4	2	0.5
1/2	3	1.5
1	6	6
2	7	14
3	5	15
4	7	28
5	4	20
6	3	18
7	5	35
8	5	40
9	1	9
10	5	50
12	2	24
14	1	14
15	3	45
Total	59	320 kilometers
Average distance	5.4 kilometers	

Agricultural production encompasses a series of specific processes which entail different energy expenditures, labor requirements, and operation costs. Cooperation is influenced by the nature of work to be done and the amount of time within which it must be performed. The initial clearing of an area (tree cutting and burning) requires much effort. It is done by large groups of men hired on a cash basis. Depending upon the agriculturalist's assets and the amount of land to be cleared, the work might be achieved within a month or it might take several years. Once the area is prepared for cultivation, the agriculturalist must perform, by himself or with the help of others, different

tasks according to the nature and quantity of the crops he will cultivate.

The first operation consists of piling up and burning corn stalks and weeds from the preceding harvest. The number of hired workers varies with the size of the plot, and owners of neighboring plots often cooperate. In a conuco of four hectares, an average size in Chiguana, the work can be done in four days with two men working rapidly. Then comes the seeding with the hole digger. This operation must likewise be conducted rapidly, and is usually performed by two men within less than three days.

Chiguaneros measure land by hectares (100 square meters), but in areas of hilly or stony land, they gauge it by the volume of seed planted. In the case of maize, for instance, they know that one "almudo" (10 kilos) is sufficient to seed one hectare.

Between the seeding and the harvest, the agriculturalist must weed his plot twice, which he does alone in only a few days. Though the possibilities of planning are greater in agriculture than in fishing, the agriculturalist still cannot estimate exactly the amount of his production before the harvest. He knows the possible yield of a given quantity of maize seeded and the possible yield of his plot by taking into consideration its period of utilization; but he cannot predict the intensity of rainfall, upon which maize growth is directly dependent. Nevertheless, his estimates become more accurate as harvest time approaches.

Harvesting is the only process in which women participate significantly. Once again, the size of harvesting groups varies with the distance and the size of the plot. Owners of conucos located far from the community always have some difficulty in recruiting enough helpers, since workers are not paid for the time spent traveling to the conuco. If rainfall is exceptional, one almudo might give as much as 20 fanegas of maize (one fanega = 120 kilos). Thus an average conuco of four hectares would yield 80 fanegas. Since workers can gather two fanegas a day, the whole operation would require 40 man-days of labor, or last four days with ten hired workers. But this situation would correspond to an optimal output, which in fact is not achieved by the majority of agriculturalists. (The example given in Table 11 is more representative of the actual situation.) Immediately before the arrival of workers, the owner doubles the stalks at the upper end to facilitate the ripening of the ears. The majority of women work on a rotating basis, going from one owner to another. They are paid Bs 2.00 a fanega, each receiving in addition two or three kilos of maize a day during the whole operation.

Besides supervising the women's work, the agriculturalist must transport maize to the village. The traveling might last several days, since a mule usually carries half a fanega per trip. The distance of the agricultural plot from the community also influences the length of this operation. In the village, owners of large conucos have

Table 11.--Farming account of a Chiguanero, 1971.

	Number of Workers	Number of Days	Total Man-Days
<u>Labor Cost in Farming</u> (in man-days):			
- First annual clearing	3	4	12
- Seeding	2	4	8
- First weeding	1	6	6
- Second weeding	1	4	4
- Preparation for harvest (doubling)	1	3	3
- Harvesting	6	3	18
- Transport	2	7	14
<u>Labor Cost in Tuber Crops Farming:</u>			
- Seeding	1	4	4
- Weeding	1	3	3
- Harvesting	2	6	12
- Transport	2	4	8
<u>Production, Expenses and Profit--Corn:</u>			
- 1. Gross Production:	30 fanegas x Bs 80 = Bs 2,400		
- 2. Expenses:			
- Seeding (40 kilos)	Bs	60	
- Gifts (36 kilos)	Bs	50	
- Taxes	Bs	10	
- Cost of workers (Bs 10 a day)	Bs	520	
- Domestic needs (7 fanegas)	Bs	560	
- Miscellaneous	Bs	100	
	Bs	1,300	Bs 1,300
- 3. Profit:			Bs 1,100
<u>Tuber Crops:</u>			
- 1. Gross Production	700 kilos x Bs 1 = Bs 700		
- 2. Expenses:			
- Seeding (50 kilos)	Bs	50	
- Gifts (20 kilos)	Bs	20	
- Cost of workers	Bs	50	
- Domestic consumption	Bs	300	
	Bs	420	Bs 420
- 3. Profit:			Bs 280
TOTAL PROFIT			Bs 1,380

double-floor sheds (trojas) where maize not immediately sold is smoked and preserved for several months. The second seeding, which is done between the rows of maize stalks, requires less time and labor. Since production is centered on tuber crops, weeding is not as extensive as in the case of maize. In addition, the harvest can be done with fewer people and over a longer period, as these crops do not ripen as rapidly. Some crops such as manioc might last until the end of the dry season.

Most of the maize producers are cash oriented, selling a good part of their harvest outside the community. A few decades ago, when good roads were almost nonexistent and maritime communication highly developed, the selling of maize was far more individualized and took place over a relatively long period. Buyers came principally from villages more fully engaged in fishing and in which agricultural production was insignificant. Since Chiguana was one of the main agricultural communities around the Gulf of Cariaco and was accessible by sea, most of the selling was done on a partnership basis. The relations between the producer-seller and the buyer were perpetuated over several years. For instance, large producers always sold their maize to middlemen from Margarita. The latter bought large quantities and resold them in the villages of the island. But with the construction of a road and the agriculturalists' increased need for cash, most of the selling is now conducted with a single entrepreneur from the town of Cariaco. His trucks

come directly to the producers' houses. The price paid for maize is higher than before--Bs 80.00 a fanega compared to Bs 30.00 20 years ago. In undertaking commercial transactions with this entrepreneur, the agriculturalist obtains cash more rapidly, is sure of selling all he wants to dispose of, and does not have to engage in strenuous activities such as the transportation of maize to the beach and into the schooners. The process can be seen as a decline of competition on the demand size of the agricultural products market, and a growth of monopoly.

People not engaged significantly in agricultural activities, such as full-time fishermen, rely more and more on local storekeepers or merchants from the exterior for the acquisition of consumer goods they do not produce, principally maize. They now prefer to buy it already ground, even if they must spend an additional amount of money. On the other hand, with the great variety of products offered by itinerant merchants from the exterior, local agriculturalists now tend toward a less diversified production. And even if agriculture still represents an important source of income for almost half of the family heads, fewer and fewer people rely on it as a secondary activity.¹ Some families do not even possess gardening plots, a situation that did not exist before.

¹Chiguaneros have a syndicate of agriculturalists which has been affiliated with the Federacion Compesina de Venezuela for more than 20 years. Membership is Bs 2.00 a month.

In general, agriculture is still conducted with traditional methods of cultivation, while, at the same time, the local population is more dependent upon outside sources of agricultural produce. The agriculturalists' explanation of this situation is that rainfall is scarce and good agricultural plots are not available. This is a partial explanation which has to be related to the more general context of the regional economy. An increased dependence on and integration with external markets has minimized incentives that prevailed at the time inhabitants had to produce more locally to make a living.

In spite of these internal modifications, the cyclical organization of production in agriculture continues to influence the intensity of fishing. Further study of this activity will reveal that, since it is now centered around the exploitation of one species, the lisa, fishing is more productive in the fall, i.e. between the harvest of September and December. Since the second harvest does not require as much time and effort as the first one, many agriculturalists work at sea on a part-time basis during this period. Some even possess a substantial amount of equipment and form their own crews.

3. Economics of Animal Husbandry

As mentioned previously, animal husbandry is a significant activity in Chiguana. The census indicates that the capital assets related to this occupation reached almost

Bs 160,000 in the summer of 1971 (approximately \$35,000 U.S. dollars). This amount is almost twice as high as that invested in fishing. Cattle is the most valuable item, representing four-fifths of the total investment. One wonders why people who do not define themselves as cattle raisers invest such a sum in this activity rather than in others. In order to answer this question, however, it is necessary to examine the context within which cattle raising developed in Chiguana.

During the period of settlement 150 years ago, no inhabitant possessed cattle. Major activities consisted of agriculture and wood cutting. Fishing was of secondary importance, because of the restrictive juridical framework that prevailed for the exploitation of the maritime environment. The high demand for wood in housing and boating (there were no cement blocks, and maritime transport was generalized), combined with the fact that Chiguana was the only village around the Gulf of Cariaco to possess enough forest resources to undertake commercial exploitation, gave rise to a significant involvement of Chiguaneros in wood cutting. The exploitation of forest areas reached its peak, however, at the beginning of the thirties, after the earthquake that destroyed Cumana in February of 1929. Informants mentioned that for a few years almost nobody engaged in fishing or migrant labor in neighboring haciendas. More money could be earned by wood cutting, which was conducted by large groups of workers operating under the direction of individuals who had previously obtained permits from municipal authorities.

Some of the richest families presently in Chiguana owe their status to former lumbering rights in the vicinity of the village.

The selling of numerous kinds of wood which fulfilled diversified needs (cf. Appendix C) was facilitated by the relatively easy access to the community by sea. Sea transportation permitted the hauling of large loads by letting the wood float behind the boats. But the intensity of lumbering operations resulted, after a few years, in the deforestation of the areas near the community. Lumberers then had to absorb greater operation costs as the distance of suitable stands of trees increased. In the long run, the activity became less and less profitable when conducted on a large scale. There was increasing difficulty in recruiting personnel over long periods. Afterwards, the introduction of cement blocks in housing and the diminution of maritime transport lowered the demand for forest products. Lumbering became a minor activity, and is now reserved to a few people in immediate need of cash.

Intensive exploitation of the forest produced ecological changes resulting in the progressive appearance of grasslands in the area surrounding the village. With the presence of several lagoons in their vicinity, Chiguaneros did not hesitate to invest in cattle and to conduct this activity on a commercial scale. Although no precise information has been obtained about the intensity of cattle

raising at its beginning, it seems that it became significant in a relatively short period at the end of the thirties.

Unlike other activities which involve work groups of variable sizes, cattle raising is conducted on an individual basis within a framework of communal cooperation. For instance, joint effort was needed for fencing the communal land and the agricultural plots and is still required for periodic repairs. During the first years, cows were milked daily, and some women engaged in milk selling in neighboring communities. But this practice was quickly abandoned because the milk had a salty taste and could not be preserved over long periods, given the high temperature prevailing in the area. Since cattle run freely in communal lands, informal cooperation occurs when a cow has calves. The first individual to see the animal and its calf is expected to take them back to the owner in the village. The latter then pays according to the distance at which the animal was first located and to the conditions of traveling, which is generally more difficult during the rainy season. The sum paid varies between Bs 5.00 and Bs 20.00. The owner can therefore take care of the cow and milk it during the first few weeks. He also brands the new-born animal. Each owner has a distinctive branding iron obtained from a blacksmith in the town of Cariaco. Occasional cooperation also occurs when animals get stuck in shifting sands near the lagoons and mangrove areas. This happens generally during the rainy season, when the animals come closer to the

village because of the proliferation of mosquitoes in the remote forest areas.

Table 12 shows that significant correlations between the age of the owners and the amount of capital invested in animal husbandry exist, especially in the case of female owners. Female ownership of cattle is directly explained by the characteristics of matrifocal households in which all the heads are more than 45 years old. The 98 households engaged in animal husbandry have average capital assets of Bs 1,626.00, but Table 13 demonstrates that the distribution varies from less than Bs 500 to Bs 10,000. Only one-third of the owners possess more than Bs 2,000 (\$500), of whom only five are women.

Table 12.--Capital assets in animal husbandry: Chiguana, 1971.

	Number	Price in Bs	Total Value in Bs
Cattle	260	Bs 500.00	Bs 130,000.00
Pigs	368	Bs 40.00	Bs 14,720.00
Mules	100	Bs 100.00	Bs 10,000.00
Goats	75	Bs 25.00	Bs 1,875.00
Chickens	435	Bs 5.00	Bs 2,175.00
Horses	2	Bs 250.00	Bs 500.00
Total			Bs 159,270.00

Table 13.--Distribution of capital invested in animal husbandry according to sex and age of the owners: Chiguana, 1971.

Capital in Bs	Age Groups						Number of Owners
	20-39		40-59		60+		
	M	F	M	F	M	F	
0 - 499	5	-	10	5	3	2	25
500 - 999	7	-	8	1	4	1	21
1000 - 1499	2	-	4	1	3	-	10
1500 - 1999	-	-	7	2	2	2	13
2000 - 2499	-	-	4	1	-	-	5
2500 - 2999	1	-	2	-	4	1	8
3000 - 3499	1	-	1	-	1	-	3
3500 - 3999	1	-	2	-	1	-	4
4000 - 4499	-	-	-	1	-	1	2
4500 - 4999	1	-	1	-	1	-	3
5000 - 5499	1	-	1	-	-	1	3
5500 - 10500	-	-	-	-	1	-	1
Total	19	-	40	11	20	8	98

The Chiguaneros' pursuit of cattle raising arose as a response to the decline of fishing and wood cutting. Furthermore, given the nonexistence of cattle raising in other communities surrounding the Gulf of Cariaco (cf. terrestrial environment), meat has always been a product much in demand, and could be sold easily. A cattle raiser in need of liquid capital can sell an animal at almost any given time of the year for an average price of Bs 500. The animal is bought by a local middleman who re-sells it to the local households or at the market of the front village, the Muelle de Cariaco. On the other hand, recent emigration that strongly affected agriculture and fishing did not have

significant repercussions on the practice of cattle raising. Some individuals now living outside the community even send money to members of their households still in the village in order to buy more cattle. In spite of the general economic decline that prevailed in the community in recent years, cattle raising is an activity which has developed substantially and in which people have not hesitated to invest compared to other activities. It is not without significance, however, that the agriculturalists' syndicate, almost inoperative in the latter activity, has taken some steps to conserve the communal lands whose limits have recently been contested by outside cattle raisers operating near Guacarapo, the neighboring village.

4. Economics of Fishing

Given the orientation of this study, fishing is now the activity that merits most of our attention. Although incomplete, the preceding analysis of production and exchange processes in land-oriented activities has pointed out that both agriculture and animal husbandry are characterized by specific modes of production differentially influencing the conduct of fishing. I will now proceed with a more detailed analysis of fishing itself, and try to grasp its internal mechanisms of production, distribution, and exchange.

4.1) Fixed Capital in Fishing.--The examination of the nature and the amount of investment that Chiguaneros make in fishing will clearly illustrate that they are

businesslike in investing with regard to an expected return and calculation of risks. In Chapter I, some details were given of types of boats and fishing gear and their cost as items of equipment in the technological process of production. I will now examine the nature and the allocation of fixed capital that Chiguaneros have invested in fishing technology.

There are several methods of estimating this amount. The first consists of calculating the value of the equipment at the time of initial purchase when it was new. The second way is to consider the actual purchase price of the equipment. The third method is to take into account the number of years of utilization of the equipment and to estimate investment on the basis of its current value or on what it would fetch at current market prices should it be transferred to other owners (Firth, 1967, pp. 54-55). Since there is a depreciation rate on equipment according to the time of utilization, the last method seemed to be the most accurate way to estimate the value of fishing equipment owned by the Chiguaneros. But as the census went on, there were so many variations in the fishermen's answers that I became doubtful as to its validity. First of all, there were variations in the types of boats and nets. Secondly, even within identical types, the dimensions differed. Last, but not least, the amount of money that owners spent in maintaining and repairing their equipment varied greatly from one owner to another.

I then decided to proceed with a seemingly more neutral criterion such as the dimension of the gear or the boat, obtaining for the categories of each type a basic price by averaging values given by owners of identical gear. Afterwards a scale measure was established according to the dimensions of the equipment. For instance, a chinchorro of 200 x 5 meters costs Bs 800 on the following basis. A kilo of nylon, which costs Bs 50, is enough to twine 100 m² of net. One thousand square meters, then, represents Bs 500. Since a kilo of rope costs Bs 3 and covers 20 meters, the same net will require 400 meters of rope (top and bottom rope) for the price of Bs 60. One kilo of lead, costing Bs 3.50, is needed for each 5 meters of the bottom rope. Therefore, the net requires 40 kilos of lead, representing a sum of Bs 140. Finally, the floats, made of tacarigua, one stick of which costs Bs .75 and supports 5 meters of the top rope, represent Bs 30, the total reaching Bs 730. A sum of Bs 70 was added to cover miscellaneous expenses. It should be noted that the length of the instrument is an important factor when the time comes to buy a net. For a net of identical surface as the one above, i.e. 1000 square meters, but with different dimensions, 100 x 10 m instead of 200 x 5 m, the price would be Bs 115 lower if calculated on an identical basis. This, then, explains the high variation in dimensions of the equipment presently owned by Chiguaneros.

Tables 14 and 15, respectively representing the amount of capital in fishing technology according to types of boats and nets, indicate that Chiguaneros' assets in maritime technology total Bs 67,340 (\$15,000.). The most striking feature of this tabulation is that almost 70 percent of the amount consists of investment in locomotive technology, i.e. boats and marine motors, nets valuing only Bs 14,540 (\$3,230.). The description of fishing crafts shows that the lancha is the most popular type. Twenty-six of the 32 boats belong to this category, among which the three-meter model is the most frequent. This choice can be explained by the fact that during the fishing, all boats are propelled manually. Chiguaneros, then, generally opt for a type of boat which can be moved easily but at the same time can accommodate a relatively large quantity of nets or people. On the other hand, identical frequency or technological concentration is found in the nomenclature of fishing gear, most of the nets being of the chinchorro type. As mentioned earlier, this is mainly due to the small variety of marine species now frequenting the exploitative zone of the Chiguaneros; most of their catches consist of lisas. For this reason, though included in the census, the mandinga and the tren lebranchero are not often used and constitute fixed capital with little influence on the production level of their owners.

Table 14.--Investment in fishing crafts: Chiguana, 1971.

Types of Crafts	Length in Meters	Number	Individual Value	Total Value
CAYUCO	2m	1	Bs 200	Bs 200
	3m	-	-	
	4m	-	-	
	5m	-	-	

CANOA	2m	-	-	
	3m	1	Bs 500	Bs 500
	4m	-	-	
	5m	1	Bs 600	Bs 600

LANCHA	2m	3	Bs 500	Bs 1500
	3m	13	Bs 800	Bs 10400
	4m	8	Bs 900	Bs 7200
	5m	2	Bs 1000	Bs 2000

CARIBE	2m	-	-	
	3m	-	-	
	4m	2	Bs 1200	Bs 2400
	5m	1	Bs 1500	Bs 1500

Total		32		Bs 36300
Marine Engines		6	Bs 2750	Bs 16500
TOTAL				Bs 52800

Table 15.--Investment in fishing gear: Chiguana, 1971.

Types of Nets	Size in Meters	Number	Individual Value	Total Value
Chinchorro (tren lisero)	200 x 5	3	Bs 800	Bs 2400
	100 x 10	7	Bs 700	Bs 4900
	200 x 3	1	Bs 600	Bs 600
	100 x 5	1	Bs 400	Bs 400
	150 x 3	3	Bs 350	Bs 1050
	100 x 3	2	Bs 300	Bs 600
	40 x 6	1	Bs 250	Bs 250
	60 x 4	1	Bs 250	Bs 250
	60 x 3	3	Bs 200	Bs 600
	56 x 3	1	Bs 180	Bs 180
	40 x 4	1	Bs 170	Bs 170
	50 x 3	4	Bs 160	Bs 640
	40 x 3	1	Bs 150	Bs 150
	12 x 4	1	Bs 100	Bs 100

Mandinga	200 x 3	2	Bs 500	Bs 1000

Tren Lebranchero	200 x 7	1	Bs 1000	Bs 1000

Atarraya	3	5	Bs 70	Bs 350

TOTAL				Bs 14540

Note: Method of estimation: 1 kilo of nylon = Bs 50 = 100m²;
 1 kilo of rope = Bs 3 = 20m; 1 kilo of lead =
 Bs 3.5 = 5m; 1 stick of floats = Bs .75 = 5m.

Tables 16 and 17, which mention the average length of utilization of the instruments according to types, reveal much insight into the nature of the present investment of Chiguaneros. Traditional types of boats like the cayuco and the canoa are used only occasionally. The same applies to the mandinga and the tren lebranchero; these techniques were employed when the maritime ecology was more permissive, but have been characterized by decreasing productivity in the last decade.

Table 16.--Time of utilization of fishing crafts: Chiguana, 1971.

Number of Years	Types				Total Number
	Cayuco	Canoa	Caribe	Lancha	
1	-	1	-	4	5
2	-	-	1	6	7
3	-	-	1	2	3
4	-	-	-	2	2
5	-	-	1	6	7
6	-	-	-	-	-
7	-	-	-	2	2
8	1	-	-	-	1
9	-	-	-	-	-
10	-	-	-	-	-
11	-	-	-	2	2
12	-	-	-	2	2
13	-	-	-	-	-
14	-	-	-	-	-
15	-	1	-	-	1

Total	1	2	3	26	32
Average age	8	8	3.3	4.4	4.8

Table 17.--Time of utilization of fishing gear: Chiguana, 1971.

No. of Years	Atarraya	Mandinga	Tren Lebranchero	Tren Lisero	Total Number
1	3	-	-	5	8
2	1	-	-	6	7
3	-	-	-	3	3
4	-	-	-	-	-
5	1	-	-	-	1
6	-	-	-	6	6
7	-	-	-	1	1
8	-	-	1	3	4
9	-	1	-	-	1
10	-	1	-	7	8
Total	5	2	1	31	39
Ave. age	2	9.5	8	5.2	5.0

Twenty-six people declared they derived income mainly from fishing, while 22 others said they participated in it occasionally, bringing the total of fishermen to 48. The total number of people owning equipment of some sort, however, is 34, making an average investment of Bs 1980 (or \$450) per owner. But such an average is somewhat misleading and needs greater attention. Among the 34 above owners, six are not directly involved in fishing. We already know that Chiguana does not possess good land means of communication with larger administrative centers and that only two vehicles are found in the village. This implies that most of the people generally cross the Gulf in order to travel outside the village. The equipment of these six owners, among whom

two are middlemen, consists mainly of boats and represents a sum of Bs 13,000, thus reducing the capital effectively invested in productive fishing to Bs 54,340.

Table 18.--Allocation of investments in fishing equipment: Chiguana, 1971.

Level of Investment	Number of People
Bs 0 - 499	7
Bs 500 - 999	11
Bs 1000 - 1499	5
Bs 1500 - 1999	2
Bs 2000 - 2499	2
Bs 2500 - 2999	-
Bs 3000 - 3499	-
Bs 3500 - 3999	2
Bs 4000 - 4499	1
Bs 4500 - 4999	1
Bs 5000 - 5499	2
Bs 5500 +	1
Total of owners	34
Total Investment	Bs 67340
Average individual investment	Bs 1980

Investment can likewise be analyzed with regard to the owner's degree of specialization. A first compilation reveals, as logically expected, that full-time fishermen own more equipment than those working at sea on a part-time basis, i.e. Bs 44,830 compared to Bs 9,510. Among the 26 full-time fishermen, 16 own equipment valued at an amount varying between Bs 500 and Bs 8,000, the average investment being Bs 2,865. Among the 22 part-time fishermen, 12 possess

fishing equipment varying in value between Bs 200 and Bs 1,450, for an average investment of Bs 792. On the whole, full-time fishermen individually own 3-1/2 times more equipment than part-time fishermen. Most of the 20 fishermen, working at sea either on a continuous or periodic basis, who do not have fixed capital in fishing are relatively young (below 20 years of age), a situation that explains their lack of ownership of capital assets of fishing. Lastly, investment in fishing can be better understood and explained by taking into account the owner's involvement in other activities, given the generalized character of the Chiguaneros' economy.

The first striking feature of Table 19 is that full-time fishermen invest less than part-time fishermen in other activities, but while their total investment in fishing is more than 3-1/2 times that of the latter, their capital assets in animal husbandry or in agriculture are half as much as those of part-time fishermen. The significant fact is that only two full-time fishermen, owning equipment of some kind, do not invest in other activities. An identical situation prevails among part-time fishermen having capital assets in fishing. This then implies that, independently of their degree of specialization, owners of fishing equipment tend to invest in other spheres in order to minimize risks or uncertainty of production in fishing. This is a major feature of the economic organization of Chiguana that does not exist in other villages further studied. It already

Table 19.--Fishermen's investment according to their degree of specialization:
Chiguana, 1971.

Degree of specializ. of work at sea	Tot. of Fisherm.	Fisherm. Owning Fishing Equip.	Cap.Assets in Fishing in Bs	Fisherm. Owning Cattle	Cap.Assets in Animal Husbandry in Bs	Fisherm. Owning Agric. Plots	Surface Area in Cultiv.
Full-time	26	16	Bs 44830	12	Bs 11690	5	24 hec.
Part-time	22	12	Bs 9510	12	Bs 22815	11	56 hec.
Total	48	28	Bs 54340	24	Bs 34505	16	80 hec.

indicates some general trends of inter-household exchange in the village. At one end, there are agriculturalists, and at the other are fishermen. In the middle is a shifting occupational group which tends to invest equally in the three activities while the others, without rejecting investment in secondary spheres, concentrate their capital in their sphere of specialization. The above tabulation presents a fair illustration of the influence of nonmaritime activities upon the specialization and the level of investment in fishing. It also indicates that beyond a certain amount, averaging Bs 2000, investment in fishing is perceived as too risky, a situation very different from that existing in the other fishing communities described below.

4.2) Fishing Membership.--The existence of differential investment according to the owner's degree of specialization and his participation in other activities presupposes a certain fluidity in composition of fishing crews. Some owners possess more equipment than others and are more independent. Others have to rely on fellow fishermen in order to assemble enough equipment to allow them to undertake significant fishing. On the other hand, some crews work on a full-time basis and need, to remain operative, a greater stability than crews working at sea over short periods.

Official records show that seven owners of equipment are registered with the Fishery Office. If we divide the sum total of fishermen by the number of registered owners, a team would, on the average, include between six and seven

fishermen. At first, this result seems logical since the red lisero, the main fishing technique in Chiguana, is most productive when there are at least six men, working in groups of three on two boats. Each group then has the responsibility for one part of the net, the parts being attached during the operation and untied when taken ashore. But a closer look at the overall teams reveals that the situation is somewhat more complex. We already know from Table 18 that 28 people, directly involved in productive fishing, own equipment among whom seven possess an outfit valued at more than Bs 3,500. These are the seven owners registered with the Fishery Office. But this does not imply that all fishermen working for these skippers are full-time fishermen. In fact, two of these owners are part-time fishermen working with part-time sharemen. In addition, some owners, having crews of their own or affiliating with one or several other small owners, do not register with the Fishery Office. This situation is partly due to the decline of fishing production in Chiguana in the last decade. Officers now concentrate their time and effort on villages where catches are larger, reducing their control in localities in which fishermen are relatively less productive.

Since fishing can be conducted only with the requisite equipment and since Chiguanero fishermen are not equally involved in fishing, the analysis of membership in fishing crews must take into account the owner's degree of specialization and the amount of his investment. On this basis, three types of crews can be distinguished:

1. crews relatively permanent over long periods.
2. crews permanent over short periods (such as one fishing season).
3. crews purely occasional and dissolving once the operation is ended.

Although kinship plays a significant role in determining one's participation in a crew, the nature of the relations between the owner and his sharemen is first contractually defined, independently of the time the crew is together. A shareman verbally agrees to work for a skipper during a certain period, at the end of which his participation must be renewed contractually to be effective again. Nonetheless, since the share system is institutionally defined, not much discussion takes place when both decide to work together. Although there are no real sanctions against a fisherman's dropping out of a team without significant reason, such cases are extremely rare. Automatically, the deserter would considerably reduce his chance of working with another team in the future.

The crews characterized by a relatively permanent composition are made up essentially of full-time fishermen. In these crews, cooperation is carried over through several temporadas (fishing seasons), and in some cases it lasts several years. Therefore, membership in these crews was more easily defined.

The striking feature of these crews lies in the importance of kinship ties among their members. Eighteen

Table 20.--Kinship relations between the skipper and sharemen in full-time fishing crews: Chiguana, 1971.

Number of Crew	Kinship Relations							Number of Sharemen	Total
	So.	Br.	BrSo.	BrBrSo.	SiSo.	SiHus.	Others		
1	3	-	1	-	1	-	-	5	6
2	1	-	-	1	1	1	-	4	5
3	2	-	1	-	-	1	1	5	6
4	1	2	-	-	-	-	1	4	5
5	1	1	2	-	-	1	-	5	6
Total	8	3	4	1	2	3	2	23	28

sharemen out of a total of 23 are blood relatives of the skipper, among whom 16 are agnatically related to him. The small size of the community partially explains the existence of such kinship ties. It also reflects the fact that almost all the fishermen working in these crews are full-time fishermen (only two sons participate in fishing on a periodic basis), and full-time fishing is often a family affair. The fact that eight sharemen are skippers' sons well illustrates this point. The adaptive feature of these crews, then, consists in the common availability of most of their members; a skipper hires part-time fishermen only on very rare occasions. Secondly, strong kinship ties between crew members, though not essential to task performance, play an integrative role and seem to be very effective for maintaining collaboration over long periods.

The number of teams which are permanent over short periods (fishing temporadas) is variable from season to season and from year to year. As mentioned previously, most part-time fishermen fully engage in fishing between the months of October and December. Among them, two owners are registered officially at census time. Both have enough equipment to operate a crew of their own. The analysis of kinship relations among these owners and their sharemen shows a somewhat greater range in the choice of relatives, six sharemen being affinally related to the skipper. But we cannot solely on this basis advance any generalization as to the loosening of kinship relations between the teams' members

and their lesser degree of specialization. Nevertheless, skippers of these teams declared that the composition of their crews generally varies from season to season, except for one or two sharemen whose collaboration is always assured. Recruiting for part-time crews, then, seems more fluid than that of full-time crews. Many people assume that the amount of money individually obtained with the first agricultural harvest in September has a direct influence upon one's decision to engage in fishing for a temporada. In addition, Table 21 shows that the average age of part-time fishermen is almost nine years lower than that of full-time fishermen, with as many as eight people being below 15 years of age. This confirms to a certain extent the scarcity of personnel and the greater difficulty of recruiting experienced help by owners operating on a part-time basis.

Table 21.--Age of fishermen according to their degree of specialization: Chiguana, 1971.

Age	Full-Time	Part-Time	Total
10 - 14	-	8	8
15 - 19	4	4	8
20 - 24	3	-	3
25 - 29	2	-	2
30 - 34	3	1	4
35 - 39	3	1	4
40 - 44	1	1	2
45 - 49	3	1	4
50 - 54	3	2	5
55 - 59	4	2	6
60 - 64	-	2	2
65 +	-	-	-
Total	26	22	48
Ave. age	36.0 years	27.7 years	32.4 years

In the fall of 1970, another team, not registered with the Fishery Office, was working out of Chiguana. It was composed of two small owners who combined their outfits and comprised between three and six sharemen. Therefore, its membership was characterized by a greater fluidity than the other part-time fishing crews, since the number of its sharemen varied with the availability of part-time fishermen already working for other teams. Finally, throughout the whole year, there are ad hoc teams whose members are part-time fishermen. They usually go to sea for a single trip and their catch is designed for domestic purposes only. Information gathered for 12 such teams suggests the relations between the members are so variable that it would be insignificant to consider kinship as an adaptive feature. Their formation depends primarily upon individual needs and the cycle of production in other activities.

4.3) Levels of Production.--Given the variability in the number of fishermen and in the volume of production from one season to another, it is rather difficult to obtain exact figures for the total annual fishing output in Chiguana. Two methods can be employed to get an approximate figure. One would consist of using official statistics or information that owners send monthly to fishery officers. But as mentioned before, one has to be careful in using these data since they are often rough estimates of fishermen's catches. In addition, since not all fishermen are registered with the Fishery Office, these statistics would not cover all production.

The second method would be to proceed with individual cases and to use them as a sample. Once again, seasonal variations in production (combined with the fact that I spent only four months in Chiguana) prevented me from obtaining satisfactory results with this procedure alone. I thereby had to rely on both, using the sample to determine the extent to which official information corresponded to the real amount of fish caught.

The recording of the weekly production for five teams of full-time fishermen during a four-month period showed that they caught approximately 13,800 kilos of fish. On the other hand, the comparison of their actual output with the total declared in the forms sent to the Fishery Office revealed that the five owners overestimated their production by 1320 kilos, i.e. an error of approximately 10 percent. But the error in estimates varies greatly from one owner to another. Two of them sent rather accurate information, while the other three declared amounts with an average distortion varying between 800 and 1000 kilos.

On the other hand, the compilation of official statistics for a period of one year (June, 1970-May, 1971) indicates a total catch of 68,970 kilos of fish. This would represent an average catch of 1724 kilos for each fisherman officially registered. This average is somewhat smaller than two tons a year per fisherman in the eastern zone (Nascimento, 1970, p. 10). In fact, taking into account the above data, this average would be at least 10 percent lower. But, since

official statistics do not include the production of eight part-time fishermen who are not registered and owners do not generally count the fish captured during relatively unproductive trips (fish being then designed for domestic use only), the total amount obtained from official records, though still only an approximation, can be considered an acceptable estimate for Chiguana. As shown below, the situation is not exactly the same in neighboring fishing communities, where other factors explain variations existing between official records and actual catches.

The discussion of marine ecology has already provided some indications of the cyclical character of production in Chiguana. The interconnectedness of fishing with land-oriented activities has some influence upon the intensity with which Chiguanero fishermen exploit their maritime zone. Figure 15 gives details about monthly variations in the volume of production.

The figure shows that during the first months of the year, the production is relatively low. The high productivity of the fall season permits fishermen to accumulate some cash, thus diminishing incentives to work at sea on a regular basis afterwards. From the middle of December until the middle of January, little time is spent at sea because of the numerous festivities taking place during Christmas time. Several Chiguaneros living outside the community return to their village for this fiesta, which is the most important of the year. Once the fiesta is over,

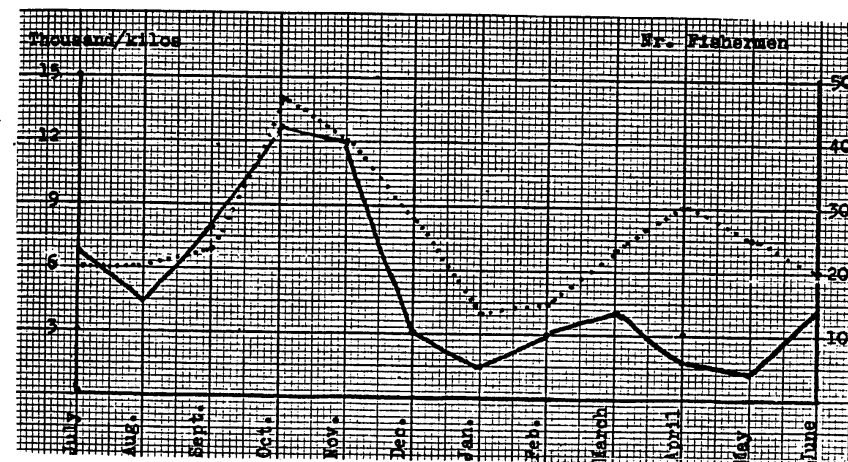


Figure 15.--Monthly variations in fishing output: Chiguana, 1971.

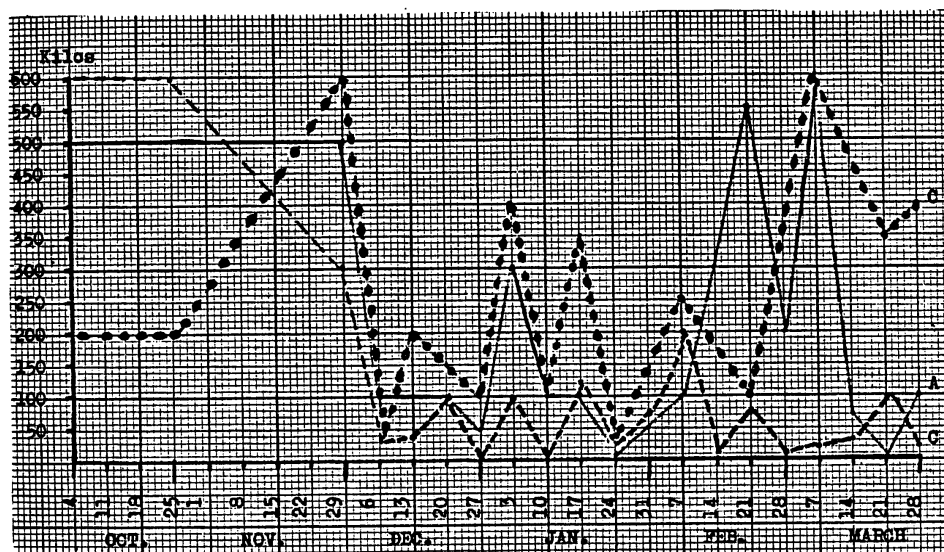
very few teams are yet operative on a regular basis, because several fishermen are engaged in the second harvest of agricultural products. A greater intensity is reached by the end of March at the approach of the Semana Santa, during which period the eastern zone is invaded by tourists from all parts of the country. As fish is the food traditionally preferred during this period, fishermen tend to increase their productivity knowing that they can sell all they produce at a very good price. During the fiesta almost nobody goes fishing, with the result that, at the end of the week, fresh fish is scarce.¹

Late April and May are periods of low productivity because of the cyclical turbidity of the water. There is a significant resumption during the summer months, but with a small decline in the number of participants because of labor needs in agricultural activities. Then follows the fall season, during which production is the highest and the participants most numerous. With the effect of the ocean tide, a great quantity of lisas invades the lower end of the Gulf and the intensity of fishing reaches its maximal level for seven or eight weeks.

¹Though the inactivity of fishermen during this period is explained by their high degree of participation in local festivities, Holy Week, even before the development of tourism, was a period during which nobody worked at sea because of a taboo stipulating that they would turn into fish if they went fishing.

From the above, it can be said that there exists a fair correlation between the volume of production and the number of people engaged in fishing at a given time. The only partial deviation would be at the end of April and May, when almost all full-time fishermen work at sea but because of the negative ecological conditions, their efforts barely suffice to satisfy the local demand. On the other hand, the restricted size of the Chiguaneros' fishing zone tends to minimize the differentiations in individual team production. If there are fish, fishermen with relatively identical equipment and spending equal amounts of time at sea probably have the same chances of obtaining similar yields. But this is not always the case, as other factors intervene during the process such as the experience of the skipper, the alertness of the crew, and the presence of buyers at given hours during the night (cf. exchange).

Figure 16, which analyzes the weekly output of three teams of full-time fishermen over a six-month period, gives some insight into this problem. Though for the whole period the production of each team is not very different (teams A and C each caught 7350 kilos while team B produced 5750 kilos), there do exist variations in the weekly production of the crews. I do not possess precise statistics on the overall time spent at sea during the above period, but these teams are the most productive in the community and their fishermen spend, on an average, from 20 to 25 hours a week fishing. This would give a weekly production of 262 kilos



Note: Data for the months of October and November consist in average weekly outputs obtained by dividing the total catches of these months by their number of weeks. For the remaining period, data were recorded weekly from the skippers.

Figure 16.--Weekly output of three fishing crews between October, 1970, and March, 1971: Chiguana.

per crew, or 30 kilos an hour per crew. The noticeable feature of Figure 16 lies in the fact that all the teams caught more than half of their total catch for this period during the months of October and November. The production of team B was very high at the beginning but lowered in the following months, while the opposite happened to team C. Team A maintained a constant level of production during the same period. Thereafter follows a period of high individual variation, but for 11 consecutive weeks the highest catches do not go beyond 400 kilos a week. In the remaining weeks, teams A and C increased their production, while that of team B continued to be relatively low. This case illustrates that production in fishing is not always proportionate to time and energy expenditure. It often happened that some teams, after having spent the whole night at sea, came back to the village with just enough fish for their daily household consumption while others, within a few hours, caught enough fish to make a significant profit. The highest catch I recorded was close to 1000 kilos (of lisas and other pelagic species), representing a sum of Bs 900 or \$200. Some crews did not even reach this level with a month of full-time fishing.

Thus, in spite of factors which uniformly affect all fishing teams, such as the conditions of the aquatic environment at a given time (degree of turbidity, water temperature, entry of school of fish, etc.), production is to a large extent unpredictable and randomly conditioned.

The above discussion shows that there are no average limits at given periods of the year with which fishermen can estimate return and plan their production accordingly. Unlike conditions that prevail in agriculture, fishing production remains largely characterized by uncertainty. The daily variability of the fisherman's catch is such that he cannot really be sure of his output until the very end of the fishing season. Given the relatively low level of fishing production in Chiguana, one understands why, unlike fishermen of other communities, Chiguaneros have invested little money in fishing equipment in the last years. The low level of production generates a slow accumulation of capital. With the higher productivity of the maritime zone in former times, part-time fishermen participated more actively in fishing. They now prefer to engage significantly in fishing only during the fall. With the abundance of fish at that time, their production often equals that of full-time fishermen who possess better equipment and a better knowledge of the fishing zone.

As participants in a cash economy, Chiguanero fishermen work for a profit that they can convert into capital assets or consumer goods. Their association according to their degree of specialization and the adjusting of their participation according to the ecological changes of the maritime zone show that they tend to maximize their production. They must, however, adapt to a changing context.

Production has constantly declined during recent years, and emigration is so strong that young adult fishermen are in short supply. Like agriculturalists, who are now faced with competition from neighboring communities with more modern production and marketing systems, Chiguanero fishermen tend to invest less in fishing. The major reasons for this situation will be delineated in the analysis of the exchange system.

4.4) Distribution and Exchange.--

4.4a) The Sharing Process and Levels of Income.--The sharing system that prevails among the Chiguanero fishermen is common to most peasant-fishing communities. Two measures serve to determine the amount (of fish or of money) each member of the production unit is entitled to: the amount of work he provides and the amount of capital he invests in the equipment. In a small community like Chiguana, where fishing is not conducted by large work groups and where there are recruitment difficulties for some skippers, the evaluation of one's amount of work does not give rise to much discussion. Every worker, independently of his age, theoretically performs equivalent tasks. Adolescents (over 12 years old) therefore receive a share identical to that of adult fishermen. Such was not the case formerly, when the use of other techniques like the mandinga (shore seine) promoted collaboration among members of large production units. The roles were then more diversified, and the age of the participant (and consequently his physical strength) was of

primary importance in determining his share. The relative scarcity of fishing personnel now forces the skippers to give up a part of their income in order to attract enough people to ensure the productivity of their crew.

In spite of this uniformity at the level of task performance, the sharing system gives rise to differentiated income among the members on the basis of their investment (see Table 22). But this does not imply that fishermen performing similar operations and having an identical amount of capital invested in equipment will receive similar shares. One's investment has first to be related to the crew's total investment; the proportion it represents will determine the amount of his share. Thus in the case of two fishermen affiliated with different crews, owning nets of identical size and value, one might get a whole share for his net and the other only half a share. This has a certain influence upon one's decision to work with a particular crew. The association with a crew in which technology already represents an important amount of capital will diminish the importance of the share he might get for his equipment. On the other hand, the crew with a lot of equipment has greater chances of productivity. In addition, fishermen who invest in technology in order to increase their share are faced with several alternatives concerning items on which investment can ensure the best returns. Within the half of the total production that goes to the owners of the equipment, one part goes to the boat, one part

to the net, and one part to the outboard motor. Since the latter is seldom used in Chiguana, it has little effect on the general situation. Fishermen then have the choice of investing either in boats or in nets. The purchase of a craft represents a sum higher than the purchase of a net. It can be used for activities other than fishing, but its maintenance is particularly expensive. On the other hand, even if it costs less at the time of purchase, a net has to be constantly repaired. Its utilization thus requires additional time and money.

Table 22.--Model of distribution in fishing: Chiguana, 1971.

Members of the Crew	Labor	Technology	Total
Skipper	1/12	Boat no. 1 = 2/12	3/12
Shareman A	1/12	Boat no. 2 = 2/12	3/12
Shareman B	1/12	Net = 2/12	3/12
Shareman C	1/12		1/12
Shareman D	1/12		1/12
Shareman E	1/12		1/12
Total	6/12	6/12	1

If we apply the above rules to the present crews, most of which have six fishermen, we see that each fisherman is entitled only to 1/12 of the total output for his labor, the other part being determined by the amount and nature of

his investment within the total investment of the crew. With such a system, an individual owning all the equipment will get an income seven times higher than the other members of the crew. But this situation is not encountered in any production unit in Chiguana. Some individuals own an important amount of equipment (some owners have even invested as much as Bs 8000), but only one part of it is used at a time so that it does not intervene in the distribution that follows each catch. In all the Chiguanero fishing crews, the equipment is shared by at least two members of the crew. This feature has already been corroborated by the relatively high number of fishermen owning equipment of some sort (28 out of 48). As a general rule, concentration of investment in equipment is higher among full-time fishermen. This is explained by their higher level of investment and the stronger correspondence between their work groups and residential units, one-third of the sharemen being the skippers' sons.

The fishermen are paid either in product or in cash. The amount of production generally plays a determinant role in the skipper's decision concerning the modalities of payment to his sharemen. In the case of a small catch, fish is divided individually until one's part is completed. In Chiguana, this operation is facilitated by the fact that almost all the catches consist of lisas of identical size and similar commercial value. Fish are then distributed one by one until the boat is empty. In the case of a large catch,

each member of the crew takes what he needs for his household (generally two to three kilos a day) and one member of the crew, the skipper or another fisherman, sells the fish either on the local beach or at the market of the front village, El Muelle de Cariaco. The fishermen are then paid their share of the total cash value of the catch.

It is rather difficult, given the reluctance of fishermen to talk about monetary problems and the high variation in the sum of their production, to obtain precise information on their level of income. One has to consider their level of participation in other activities, their degree of specialization in fishing, and the share they receive within their crew. I can only deal with approximate averages and a restricted number of illustrative cases. The analysis of the level of production revealed that the average production per fisherman is around 1700 kilos a year. Considering the price of Bs 1 for one kilo of fish as a fair average (this average being confirmed by study of price variation over six months at the market of the front village), fishermen would earn annually an income varying between Bs 1500 and Bs 2000. This average is far from reflecting individual variation, but will at least constitute an interesting basis of comparison with the situation of fishermen in other villages. In order to give the reader an opportunity to see what types of differentiation exist between the incomes of full-time fishermen, I have selected two examples from my records to illustrate the situation.

Case One: José is 47 years old, is legally married, and has seven children whose ages range from 6 to 18 years of age. He is considered a very active fisherman. His father made a large amount of money at the time forest resources of Chiguana were commercially exploited on a large basis. He was also significantly engaged in fishing and owned several boats and nets. José partly inherited his father's equipment after his marriage. He undertook the clearing of a plot of land now reaching 10 hectares. He presently owns 15 cows. For the year of 1970, José estimated his income was over Bs 10,000 (\$2,200) on the following basis. In his fishing crew, he owns one boat and a net. He is then entitled to 5/12 of the production each time his crew goes to sea. He estimated he had earned Bs 6000 from fishing. The harvest of maize and other agricultural plots gave him Bs 3000. He also sold three cows before each important fiesta of the year (Navidad, Semana Santa, and San Juan) for the sum of Bs 1500. Of this total, his estimated savings were around Bs 1700, the rest being spent in the maintenance and repair of fishing equipment (Bs 1000), household furniture and food (Bs 5000), and miscellaneous items such as traveling (Bs 350) and pension for two sons going to school in Cumana (Bs 2400). Although not considered the richest man in the village, José is given a high status because of what he presently owns, his standard of living, and his perseverance at work. He owns one of only four television sets in the community, and

is one of the few villagers whose children attend school outside the village.

Case Two: Pedro is 32, also legally married, and has three children whose ages range from two to seven years old. His father was an agriculturalist owner of a plot of average dimensions, but who never succeeded economically because of a physical handicap. While working with his father, Pedro accumulated enough capital to purchase a boat. In addition, he owns four cows and a small conuco of two hectares. In his fishing crew, he gets one-fourth of the total catch. During 1970, Pedro estimated he earned about Bs 2000 from his work at sea. The sale of agricultural products gave him Bs 850, and he sold a cow for a sum of Bs 500. He also did part-time mechanic work, a job that he learned during the year spent in Caracas a few years ago. This job brought him around Bs 600, for an income of Bs 3450. From this total, he saved nothing, and even had to borrow Bs 200 from the bank of Cariaco to pay debts at local stores. Pedro's situation is very common among individuals of his age. He feels that now that he is married and too old to leave the village, he has no choice but to try to make a living in Chiguana. He had to start on his own and could never accumulate much capital, because of the depressive conditions of the local economy. His standard of living is thus relatively low, even if he is considered to be a very active man. Although far from depicting the overall situation that prevails in Chiguana (some individuals are in a better economic

position than that illustrated in the first case, others in a worse condition than that presented in the second case), the above illustrations point out a very important characteristic of the present economic situation of the Chiguanero fishermen. The most successful fishermen come from families who accumulated capital through the exercise of other activities, especially lumbering. In the last decade, given the constant deterioration of the local economy at the level of production and marketing and increased consumer needs, very few individuals have succeeded in investing significantly in productive technology. One understands why young adults now prefer to leave the village on a permanent basis.

4.4b) Fish Marketing.--Because of the restricted productivity of their fishing zone, it is mainly in marketing that Chiguaneros still have the best opportunities for increasing their income. The above examination of the distribution process demonstrated that fishermen are paid either in product or in cash, depending on the size of the catch. Except for the small portion of the total output that each member of the crew takes for his domestic needs, fish are sold in different forms (fresh or salted) and to different classes of buyers (local inhabitants, local intermediaries, buyers from the exterior). The fishermen then are faced with several alternatives. The decision concerning the form of selling rarely comes from the skipper alone. Most of the time, he consults his sharemen and opts for the form conflicting

the least with the attitudes of the majority. Though there does exist a general conditioning framework based on the fishermen's experimentation in previous situations, the decision is not always easy to make, since several factors intervene before reaching a definite choice.

The form of selling that generally gives the best returns is the direct retail transaction with local inhabitants. Fishermen go to the local beach with their share of the catch and sell in small quantities. The prices so obtained are higher than those paid by middlemen, who always buy larger quantities. Retail selling, however, requires additional work. Fish must be cleaned, washed, and weighed. Retail sales also represent a greater time expenditure for the seller, who may spend several hours selling if fish are plentiful or if customers are not too numerous. During most of the year, fishing is conditioned by the degree of moonlight and the luminosity of the water. The arrival of the crews in the village might then take place anywhere between one and six o'clock in the morning. But since customers tend to be more numerous around sunrise, fishermen do not always sell their fish to local inhabitants in periods of full moon, when they must quit fishing early at night.

In addition to the higher price obtained in retail selling, fishermen have other advantages when they opt for it. The local market is the only one they know perfectly and in which they can predict variations in demand. Although theoretically every fisherman can sell his product to anybody,

each crew has its regular customers whose needs are well known by the members of the crew. When he chooses this alternative, the fisherman is almost always sure of selling all he produces, thus not being obliged to spend additional time in salting the unsold fish for preservation.

While direct selling to local customers is the best way to maximize their profit, fishermen cannot always undertake such commercial transactions for several reasons. We already know that the first determinant is the amount of the production of the crew. Beyond a certain point, fishermen would have little chance to sell all their fish to local inhabitants. They are then obliged to deal with the local middlemen. But since the latter also buy in limited quantities, the amount of production of other crews becomes an important factor in one's choice of a form of selling. In this regard, the restricted size of the fishing zone permits the Chiguanero fishermen to evaluate easily the production of other crews. They often talk to each other, inquiring about the presence of schools of fish, and can estimate another's production on the basis of the time spent in hauling the nets. Given the limited purchasing power of local middlemen, in nights of high productivity, there is strong competition among the crews to be the first seller. But the first to arrive at market has spent less time fishing, thus possibly reducing the amount of production. On the other hand, local middlemen may at times become strong competitors with fishermen. Some of them accumulate large stocks of salted fish,

bought at a price lower than that paid by local inhabitants; they then have good bargaining power. There is a tacit agreement among fishermen not to permit a local middleman to accumulate too large a quantity of fish over short periods. This would impede fishermen in obtaining a higher price in times of scarcity of fresh fish. The relations between fishermen and local middlemen are therefore very hard to define. While there is competition between them, they must help each other and need a certain amount of mutual trust. The situation is complicated even more by the fact that two (out of four) of them are the local butchers to whom cattle might be sold. These middlemen take advantage of this situation and sometimes succeed in accumulating large quantities of fish because of their privileged position for the selling of meat. The fishermen's choice of marketing alternatives is also influenced by their degree of participation in other activities. In periods of agricultural harvesting, for instance, time is an important factor and some members of the crew might opt for the quickest form of selling in order to spend more time at their agricultural plots.

But these are not the only alternatives left to Chiguanero fishermen. They can also go to the market of the front village, El Muelle de Cariaco, where eight permanent buyers and a variable number of buyers from larger urban centers operate. With the high number of buyers in this market, fishermen are always sure to sell all they produce.

In addition, since most of the teams use manually propelled boats, the six kilometer round-trip to the front village represents much time and energy expenditure. Fishermen generally undertake such a trip when they know that a good part of their catch cannot be sold to local inhabitants or to local middlemen. It might happen that local middlemen have already bought what they need or offer too low a price. The decision to go to the front village nevertheless carries much uncertainty. Although there exists for the fishermen and the buyers a common basis of calculation (generally, a higher price is paid in periods of moonlight because fish are scarcer and vice-versa),¹ several uncontrollable factors cause variations in price. The crew's decision to go to the market, after having evaluated the possibilities of profit at the local level, is based not only on their amount of production and that of other local crews but also on that of crews of neighboring communities who likewise frequent the Muelle de Cariaco. In the latter case, the estimation is very difficult since the Chiguanero fishermen can approximate their production solely on the basis of the number of boats going to the market.

As in the transactions with local middlemen, the first crew to arrive at the market has more bargaining

¹Analysis of price variation for the species lisa is done in the study of Guacarapo. Data over a period of six months were obtained from fishermen for several villages of the lower end of the Gulf of Cariaco who come to the market of the Muelle de Cariaco.

power because the buyers are ignorant of the exact amount of fish that fishermen will catch. By arriving early, a crew necessarily reduces its catch, spending less time fishing. On the other hand, the higher number of middlemen would theoretically increase the bargaining power of fishermen since demand is generally high. These buyers each have two or three helpers, and buy large quantities of fish that they process rapidly (dry fish). They afterwards sell them in the villages of the interior or to the local population of the Mue'le. But the fishermen's bargaining power is considerably reduced as time goes on and more and more boats anchor at the market. In addition, the buyers know that Chiguaneros who undertake such a trip will rarely return to their village with their whole catch, as against fishermen of other communities who possess outboard motors. Chiguaneros are at a disadvantage on this point.

For only a few years have buyers from larger urban centers come to the market of the Muelle de Cariaco. Initially, they were warmly welcomed by the fishermen, who saw them as competitors with the permanent buyers of the market. In fact, the price for fish did go up for a while. Several disputes arose between the two parties, but they finally came to an agreement to the detriment of the fishermen. These buyers from the exterior own cavas, a kind of refrigerated truck permitting the transportation of fresh fish. They come from major sea ports like Cumana and Carupano, where they can easily get fish from boats engaged in deep-sea

fishing. So when they travel to the Muelle de Cariaco, they not only buy fish but also sell a certain quantity, generally species not found at the lower end of the Gulf of Cariaco. As a result, middlemen buy fish not only from the fishermen but also from the middlemen of the exterior, thus reducing considerably the bargaining power of the Chiguanero fishermen. Chiguaneros are then more handicapped than before, since their level of production is constantly smaller than that of neighboring communities. Even if their catches are minimal, they cannot expect a good price since buyers can always pay lower prices for fish coming from other villages. In addition to a lowering of production, there has been a constant decrease in the diversity of products obtained by Chiguanero fishermen; most of the catches now consist of lisas. Since customers like to diversify their consumption, Chiguaneros have more difficulty in selling their product. Local buyers and even local inhabitants often prefer to buy fish from these outside sellers, because of the diversity of the products they offer. In essence, Chiguaneros have less and less control over the price paid for their fish. The situation is becoming so bad that in periods of intensive fishing, such as during the fall, the fishermen do not even try to haggle over the price by going to the market of the front village. All of them sell their production to local middlemen, who buy the fish directly at sea from the fishermen's boats.

This brief examination of marketing indicates that it is becoming more and more difficult for fishermen to

increase their income. It suggests, together with the deterioration of fishing at other levels, that fishing will be of reduced importance in the coming years. At the beginning of the sixties, the village still counted more than 15 local middlemen, men and women, who did not hesitate to undertake long trips outside the community to make a good profit by selling fish. This activity is now reserved to a few people and, as in the case of agricultural products, more and more fish consumed locally come from outside the community. It seems that the incentive of fishermen to invest more in fishing, to spend more time at sea, and to dedicate more hours to fish sales and processing is progressively disappearing. In other words, the economic conditions of fishing are constantly deteriorating.

Conclusion

The preceding analysis depicted the main structural and organizational features of the Chiguaneros' economy. It did not give a complete picture of economic activities and processes, but rather emphasized what seem to be the most significant ones in the functioning of the village economy. Since the Chiguanero production system depends upon the exploitation of several natural resources, by means of a relatively simple technology powered mainly by human energy, attention has been given to: (a) the relations between the ecological (resources-technology-people) and the production processes in land- and sea-oriented activities, and

(b) the type of adjustment and flexibility required by the simultaneous practice of several activities.

Chiguana began as an agricultural community, developed with the exploitation of its forest resources, and later engaged in animal husbandry and fishing. But of all these activities, only cattle raising seems to have acquired importance in recent years. The deterioration of production and market conditions in land-oriented activities brought a lowering of investment in fishing. This was enhanced by the decreasing productivity of the fishing zone itself. In addition to these negative ecological and local economic conditions, most of the Chiguanero fishermen had to face stronger competition in a developing regional market. The Chiguaneros who used to be agriculturalists, part-time fishermen, wood cutters, fish sellers, and cattle raisers, no longer have the means to compete with more specialized and larger-scale producers. For a while, they benefited greatly from the generalized character of their economy. Their participation in several activities conferred on them a relative autonomy, and the sale of diversified products permitted them some success in earning a livelihood. In fact, some families became relatively rich. But they are the only ones whose descendants specialized rapidly enough and maintained a good level of investment and production. The majority try to subsist on several activities but cannot maintain a level of investment in all the activities that will permit them to produce more and better products.

The most striking effect of the deterioration of the local economy at the social level is probably the increased emigration of young adults. But more space would be needed to treat in detail the influence of the economic situation upon the social sphere. Several Chiguaneros now have a low standard of living. They all know that their economic future is highly uncertain. Although new consumer goods have been introduced into the village in recent years, the Chiguaneros see that people from neighboring communities have greater purchasing power and better living conditions than they do. Hence they become frustrated and try to evaluate life in their village, no longer by its economic situation, but by its social ambience. As a result, the majority of Chiguaneros spend more time at bars than people from neighboring villages, and are extremely proud of their fiestas. This is so true that even people from other communities admit that Chiguaneros are the best drinkers and dancers in the region, and that it is in Chiguana that one can have more fun. In addition to the relative under-employment of several local inhabitants, other factors such as the periodic return of Chiguaneros working in urban centers promoted such a situation. When a Chiguanero comes back into the village, there is always a party at the bar with friends and relatives.

One could always assume that the great amount of time and money spent in entertainment could be used in a more "productive" way. But to define this behavior as "irrational"

would be ethnocentric. It might be the only way, as several of them put it, to continue to make a living in Chiguana.

A. General Remarks

1. The Setting

Guacarapo lies seven kilometers west of Chiguana, on the same side of the Gulf of Cariaco, in the easternmost part of the municipio de Manicuare and the distrito de Sucre. The road that goes from the town of Cariaco to Chiguana also passes through Guacarapo, ending in the fishing community of Los Cachicatos, 10 kilometers west of Guacarapo. In spite of its relative proximity to Chiguana, Guacarapo presents specific ecological features that allow its inhabitants to have a more specialized economy.

Its fishing zone is also located in the Gulf of Cariaco. But the width of the Gulf increases considerably in front of Guacarapo. The distance that separates Guacarapo from its front villages is about seven kilometers, twice that existing between Chiguana and the Muelle de Cariaco (cf. Figure 12). Guacarapaneros must thus travel as many as 10 kilometers to reach this market center. But they are also located at an equal distance from another important commercial town, San Antonio del Golfo. Although Guacarapaneros must undertake longer trips when deciding to sell their fish outside the community, they are luckier than Chiguaneros because they have a choice between two important markets. As in Chiguana, only two people in the village own motorized vehicles, and navigation remains the principal means of communication with larger administrative centers. As Guacarapaneros belong to a municipio and distrito whose towns are

CHAPTER III

GUACARAPANERO FISHERMEN: A SEMI-SPECIALIZED ECONOMY

Introduction

The preceding chapter described production, distribution, and exchange processes in a community where fishermen engage in several activities to make a living. The objective of this chapter is to analyze the same processes in another community, in which fishing constitutes a more specialized activity, without being the only source of income for the majority of the inhabitants. Although a handful of Guacarapaneros practice agriculture, almost half the family heads own cattle. It might be interesting, then, after an examination of the general local economic context, to study the internal mechanisms of fishing and to evaluate the effect of the people's lesser involvement in land-oriented activities upon their maritime productive system. In this regard, Guacarapo represents a transient type between the generalized economy of Chiguana and the extremely specialized economy of Santa Fesino fishermen.

located toward the west, and as the road continues for only a few kilometers in this direction, they rarely go around the gulf by land but prefer to cross it directly by boat.

The maritime zone exploited by Guacarapanero fishermen is about 90 square kilometers, an area six times larger than that of the Chiguaneros. Its depth is considerably greater, averaging 20 fathoms. The ecological changes that characterized the Gulf of Cariaco in the last decades and which contributed largely to the lowering of Chiguaneros' maritime production were also felt in Guacarapo. But their effect was not as negative. Although fishermen admit that catches are not as good as before, they still have the possibility of exploiting several demersal and pelagic species besides the lisas. And more significantly, they have been able to adjust their technology to changes in fish migration, thus retaining a relatively high level of production.

Fishing started in Guacarapo long before the village was inhabited on a permanent basis. The brief historical outline in Chapter I showed how several villages of the Gulf of Cariaco were first visited periodically by large groups of fishermen. Since at that time fish marketing revolved principally around salted fish, fishermen needed a great deal of space for processing their product. Guacarapo, with its nice sandy beaches and good landing areas, possessed all the necessary characteristics for this operation. By the end of the last century, three Margaritenos, living in Manicuare, had migrated to Guacarepo. Today, almost everybody

in the community is genealogically related to these first settlers. The fact that Guacarapo was initially inhabited by whites and mestizos already specializing in fishing, and that its maritime zone presented good conditions of exploitation, explains why fishing has always been the predominant economic activity in the village. To the newcomer, the present disposition of the houses would indicate the sea orientation of most of the inhabitants. All the houses are parallel to the shore, with a small concentration in the western sector.

Most of the innovations experienced by Chiguana a few years ago took place in Guacarapo at about the same time. People now benefit from electricity, a water main, and a new school. But they have no church and no priest visits the community on a regular basis. On the other hand, the Guacarapaneros' involvement in the government program of vivienda rural has been considerably larger than in Chiguana. Although the village includes half as many households as Chiguana (53 as compared to 121), 24 new houses were constructed under this program. With the development of tourism in the last few years, people seem to be attaching more importance to the appearance of their community and are making efforts to keep it attractive. Many family heads engage in the periodic cleaning of the beach. This situation contrasts with Chiguana, where streets are muddy and covered with debris and where there are several abandoned houses.

The greater personal and collective initiative that seems to characterize the Guacarapaneros is likewise illustrated by the relatively high number of bars and local stores. In spite of a population half that of Chiguana, Guacarapo has five bars and four small groceries. As shown further on, specific features of social organization explain this proliferation of commercial areas. Unlike Chiguana, social life in Guacarapo does not revolve around large socio-economically differentiated residential segments, but rather around large family groups whose members work together at sea. Almost all the owners of bars are important skippers.

Close to the village, there is a lagoon which sustains cattle raising. But given its closeness to the sea, it cannot serve as a water supply for cattle during the fall season, when the tide partially fills the lagoon with salt water. Cattle owners must then drive the animals further inland. Since this period corresponds to the end of the first rainy season, there is nevertheless sufficient water in more remote areas to permit the cattle to survive. The biggest problem encountered by cattle owners is not scarcity of water, but rather availability of land. As mentioned in the description of the regional ecology, the progressive proximity of the mountains to the sea shore as one moves eastward into the Peninsula de Araya causes the flat areas in the vicinity of the community to be relatively small. A good part of this area is already occupied by outside cattle raisers from Cumana, for whom a few inhabitants work. As a

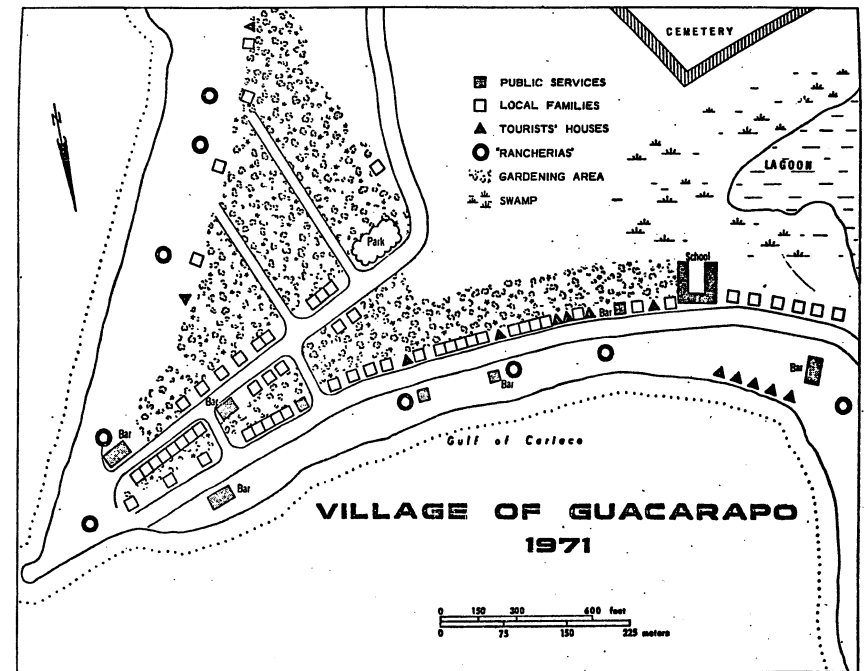


Figure 17.--Village of Guacarapo: 1971.

result, Guacarapaneros will face many difficulties if they hope to enlarge their cattle herds in the coming years. On the other hand, one understands why agriculture has never been a major activity in the community.

2. Population Characteristics

A first examination of the demographic structure of Guacarapo shows that the distribution of population by age groups is fairly regular, with the exception of a slight diminution of population in the categories 25-29 and 30-34. Out of the total of 352 inhabitants at the time of the census, 172 or 49.2 percent were under 15 years of age; the male population represented a total of 188 individuals (53.6 percent). The most striking difference between Guacarapo and Chiguana therefore lies in the greater proportion of the male active population (23.2 percent compared to 18.9 percent) and the smaller number of old persons (3 percent compared to 6 percent).

The relatively high number of individuals in the first three age groups illustrates conclusively the demographic vitality of the community. In the year preceding the census, the birth rate oscillated around 37‰ and the fecundity rate was 771‰, the latter indicating that during the last five years almost 8 of 10 women able to bear children became pregnant.

The effect of migration is not as strong as in Chiguana. Only 60 persons, 33 men and 27 women, have left

Table 23.--Population of Guacarapo by sex and age: 1971.

Age Group	Male	Female	Total	Dependent and Active Population					
				Male		Female		Total	
				No.	%	No.	%	No.	%
0 - 4	29	25	54	99	28.5	73	20.7	172	49.2%
5 - 9	39	19	58						
10 - 14	31	29	60						
15 - 19	24	17	41	82	23.2	86	24.4	168	47.6%
20 - 24	10	15	25						
25 - 29	9	6	15						
30 - 34	4	7	11						
35 - 39	9	11	20						
40 - 44	10	7	17						
45 - 49	8	7	15						
50 - 54	4	6	10						
55 - 59	1	5	6						
60 - 64	3	5	8						
65 - 69	3	2	5	7	1.9	5	1.3	12	3.0%
70 +	4	3	7						
Total	188	164	352	53.6%		46.4%		100%	

the village in the last 15 years. Among them, 14 migrated to Caracas, 9 to Valencia, 8 to Cumana, and the rest to urban centers of lesser importance. As in Chiguana, the discovery of oil resources in Eastern Venezuela in the thirties, in the vicinity of Puerto La Cruz, caused the departure of young adults and married men. But the migration lost significance progressively after the initial boom. The somewhat abnormal reduction of population in the age groups 25-29 and 30-49 is thus partially explained by this situation. An examination of the present characteristics of migration demonstrates that the Guacarapaneros' economic situation is viable enough to encourage the majority of young adults to remain in the village.

Among the 53 deceased parents of present family heads who formerly lived in Guacarapo and for whom information was available, 27 were born outside the village--17 men and 10 women.¹ The majority of the in-migrants came from neighboring fishing communities located on both sides of the Gulf of Cariaco. Today, only 55 persons out of 352 were born outside the community. In this regard, local endogamy would be less significant in Guacarapo than in Chiguana, since it includes as many in-migrants in spite of a population half as large. But the latter characteristic

¹Theoretically, this would represent barely half of the parents of present household heads. But the number is nevertheless significant given the numerous polygamic unions that exist in Guacarapo.

Table 24.--Household heads by sex, age, and marital status: Guacarapo, 1971.

Age Group	Male				Female				Total			
	C.M.	C.U.	W.	Sep.	C.M.	C.U.	W.	Sep.	C.M.	C.U.	W.	Sep.
20 - 24	-	-	-	-	-	-	-	-	-	-	-	-
25 - 29	-	4	-	-	-	-	-	-	-	4	-	-
30 - 34	1	2	-	-	-	-	-	-	1	2	-	-
35 - 39	2	7	-	-	-	-	-	-	2	7	-	-
40 - 44	4	5	-	-	-	-	-	-	4	5	-	-
45 - 49	2	3	1	-	-	-	1	-	2	3	2	-
50 - 54	1	3	-	-	-	-	-	2	1	3	-	2
55 - 59	-	1	-	-	-	-	1	-	-	1	1	-
60 - 64	-	4	-	-	-	-	-	-	-	4	-	-
65 - 69	-	2	-	1	-	-	-	1	-	2	-	2
70 +	-	4	1	-	-	-	-	-	-	4	1	-
Total	10	35	2	1	-	-	2	3	10	35	4	4

justifies to a certain extent this differential feature. The inhabitants of a small community are obliged to rely more on the populations of outside villages to find marital partners. The significant feature remains that, independently of the periods of migration, this process involved individuals of both sexes in a relatively equal proportion. It thus underlines, in spite of the matrifocal tendency of the residential units, the nonexistence of unilineal marital residence patterns. Rather, matrifocality represents a structural feature within the larger developmental cycle of the household.

Another salient feature of the social organization of Guacarapaneros lies in the predominance of consensual unions among the mating forms. Unlike Chiguana, Guacarapo has 35 consensual unions, only 10 civil marriages, and 8 households run by widowers and separated persons. This could be explained first by the distance of Guacarapo from its municipal and district towns; the round trip to Manicuaire and Cumana is approximately 110 kilometers. But Guacarapaneros also assume that the consensual union is the best form of mating for a fisherman, since he is frequently absent at night and for indeterminate periods. Moreover, a man living in a consensual union can leave his partner and deny all his responsibilities without fearing any legal complications. Guacarapaneros see this situation as the best way to prevent their wives from committing adultery. However, this remains a rationalization and, on the whole,

Table 25.--Structural types in household composition according to sex of household heads: Guacarapo, 1971.

Composition	Sex of Household Heads		Total
	Male	Female	
- Ego, wife, children	28	-	28
- Ego, wife, children, daughter's children	4	-	4
- Ego, wife, children, brother	1	-	1
- Ego, wife, children, sister-in-law, children	2	-	2
- Ego, wife, children, daughter's children, adoptive children	2	-	2
- Ego, wife, children, adoptive children	1	-	1
- Ego, wife, adoptive children	1	-	1
- Ego, wife, children, brother, father's sister, daughter	1	-	1
- Ego, wife	4	-	4
- Ego, children	1	5	6
- Ego, children, daughter's children	-	1	1
- Ego, children, brother, sister	-	1	1
- Ego	-	1	1
Total	45	8	53

considerable sexual liberty exists in the community. Most of the important skippers have two female partners; one even has three. Guacarapaneros were less reluctant than Chiguaneros to admit to living in consensual unions, but were very embarrassed about their polygynous status.¹ They nevertheless engage more overtly in polygyny than their Chiguanero counterparts. In the latter case, the predominance of civil marriage and the more precarious economic situation of the inhabitants prevent them from engaging in this form of union.

Table 24 shows that a very small proportion of households are headed by females, only 8 out of a total of 53. More significant is the fact that the average age of female household heads is lower than in Chiguana. This lets us suppose that some of these women do not engage in overt polygyny but are nevertheless supported by irregular male partners, since they all have young children. On the other hand, the relative unimportance of civil marriage explains why the age difference between the partners having opted for either form of mating is very small, a variation respectively

¹By polygyny I refer to relatively stable unions in which the male partner provides subsistence for more than one female and her children. It was only a few weeks after the census that I became aware of the polygynous unions. During the census, the women living alone with their children declared themselves single or separated, without mentioning their male partner. People believe that for the stranger, polygyny is defined negatively. In the above tabulation, the men having two or more wives living in separated households were counted as family heads of these households, when it could be clearly established that the union was stable.

of 3.4 years in civil marriage and 4.7 years in consensual unions. But, as in Chiguana, the age variation is greater among partners living in consensual unions, the male being between 10 years younger and 31 years older than the female. The total average age difference is 4.5 years, half as great as in Chiguana. This situation already indicates the greater opportunities for accumulation of capital in Guacarapo.

The average number of persons per household is 6.6. As shown in Table 25, the nuclear family is the predominant type of residential unit; 28 families out of 53 are made up of parents and their children. Nevertheless, almost half the households are made up of either incomplete nuclear families or relatives of some kind. Table 26, which analyzes the type of kinship relation between the household heads and the resident nonmembers of the nuclear family, indicates that the 25 incomplete or extended households include 48 relatives of this kind. Of this total, only eight are found in households with female heads. But as in Chiguana, 46 or 96 percent of these relatives are matrifocally related to the household heads, the most numerous representatives being the daughter's children. The next category in importance is that of criados or adoptive sons in male-headed households. The term refers to children the female partner had with other men before undertaking a more stable union.

Table 26.--Kinship relations between household heads and resident nonmembers of their nuclear family: Guacarapo, 1971.

Kinship Relations	Male Head	Female Head	Total
<u>Consanguineal</u>			
- Brother	1	1	2
- Sister	-	1	1
- Father's sister's daughter	1	1	2
- Daughter's children	20	5	25

<u>Affinal</u>			
- Wife's sister's children	5	-	5

<u>Foster</u>			
- Adoptive sons ^a	13	-	13
Total	40	8	48

^aGuacarapaneros use the term criado for designating children a woman had with another man before living in a stable union.

B. Economic Organization

1. Occupational Structure

A brief look at the occupational statistics shown in Table 27 is sufficient to demonstrate the relatively specialized character of the Guacarapaneros' economy; 80 individuals among 97 deriving their subsistence mainly from work at sea. Only five people are fully engaged in agriculture.

Table 23 has already shown that the active male labor force includes 86 persons. Therefore, a few people under 15 years and over 65 years of age actively participate in the economic life of the village, since 97 principal occupations were registered in the census, among which only four belonged to women. The small number of females earning a wage must be related to household characteristics. The majority are headed by males. Lastly, though not revealed by the above tabulation, only half the family heads of Guacarapo practice animal husbandry, as compared to three-fourths in Chiguana. On the whole, Guacarapaneros are less involved in land-oriented activities than Chiguaneros. Nevertheless, a brief examination of the Guacarapaneros' economic possibilities in this sector will precede the analysis of their fishing organization. This will permit us to determine the extent to which a lesser involvement in agriculture and animal husbandry affects fishing, and to compare the results with the situation prevailing in Chiguana.

2. Economics of Land-Oriented Activities

2.1) Agriculture.--The following discussion is intended to depict in statistical terms the main features of agricultural activities in Guacarapo, to determine quantitatively the more specialized character of its economy.

What has been said about organizational features of agricultural activities in Chiguana remains valid for Guacarapo. The production cycle is likewise characterized by the

Table 27.--Occupations according to sex: Guacarapo, 1971.

Occupation	<u>Principal</u>		<u>Secondary</u>		Total
	Male	Female	Male	Female	
Fisherman	80	-	18	-	98
Agriculturalist	5	-	6	-	11
Carpenter	3	-	5	-	8
Store Keeper	1	1	3	-	5
Fish Seller	1	-	-	-	1
Laborer	2	-	-	-	2
Nurse	-	1	-	-	1
Teacher	-	2	-	-	2
Mechanic	1	-	-	-	1
Total	93	4	32	-	129

cultivation of maize during the first rainy season and of tuber crops in the second. Agricultural tasks are performed by work groups of variable sizes. But because of the small number of people engaged in land cultivation, the sale of agricultural products does not give rise to significant commercial relations with outside middlemen; most of the production is sold to local stores. In addition, a few Guacarapaneros possess gardening plots close by their houses, in which they cultivate fruit species mainly for domestic use.

Table 28 shows that there are 11 conucos in the neighborhood of Guacarapo. The conucos average 3.6 hectares, almost one hectare smaller than those of Chiguana. The total surface area in cultivation in Guacarapo is 39.5 hectares, as compared to 267 in the latter village.

Table 28.--Size of agricultural plots: Guacarapo, 1971.

Size in Hectares	Number of Plots	Cumulative Size
1.5	1	1.5
2	1	2
3	2	6
4	5	20
5	2	10
Total	11	39.5 hectares
Average size: 3.6 hectares		

Examination of the distance of agricultural plots from the community reveals, on the other hand, that Guacarapaneros face the same problem as Chiguaneros. Some of them have to travel as far as 10 or 12 kilometers to reach their conucos, the average being six kilometers (cf. Figure 14).

In addition, the Guacarapaneros' plots are less productive, because of their location west of Chiguana, in a hilly and stony area. This, together with the scarcity of land due to the proximity of the mountains crossing the

entire Peninsula de Araya, explains why Guacarapaneros are more oriented toward the exploitation of their maritime environment. Finally, the minor importance of agriculture in the village forces the people to undertake more significant commercial relations with the exterior to obtain agricultural products. This indicates that fishing has to be more productive since the inhabitants are less self-sufficient economically.

Table 29.--Distance of agricultural plots: Guacarapo, 1971.

Distance in Kilometers	Number of Plots	Cumulative Distance
1.5	1	1.5
2	1	2
3	2	6
5	1	5
6	1	6
7	1	7
8	2	16
10	1	10
12	1	12
Total	11	65.5
Average distance: 5.9 kilometers		

2.2) Animal Husbandry.--As with agriculture, animal husbandry is less important in Guacarapo than in Chiguana. The census revealed that the Guacarapaneros' total capital

assets in this activity totaled Bs 95,050, as compared to Bs 159,270 for the Chiguaneros. The scarcity of good land remains a major explanation for this situation. Nevertheless, examination of the level of investment shows that on the average, Guacarapaneros invest 2-1/2 times more than Chiguaneros, their average investment being Bs 4132 (\$900.00). Therefore they have a greater purchasing power than Chiguaneros, a fact already felt in the previous description of their houses.

Table 30.--Capital assets in animal husbandry: Guacarapo, 1971.

	Number	Price in Bs	Total Value in Bs
Cattle	177	Bs 500	Bs 88,500
Pigs	90	Bs 40	Bs 3,600
Mules	18	Bs 100	Bs 1,800
Goats	8	Bs 25	Bs 200
Chickens	190	Bs 5	Bs 950
Total			Bs 95,050

The study of the distribution of capital according to the sex and age of the cattle owners reveals that there are striking differences between Guacarapo and Chiguana. Eleven individuals in Guacarapo own more than \$1000 in cattle, while only three Chiguaneros possess an identical sum. One Guacarapanero even owns close to \$5000 in cattle,

while the most important owner in Chiguana did not have more than \$2000. On the other hand, differential features of households explain why only three females, compared to 19 in Chiguana, are significantly engaged in this activity.

Table 31.--Distribution of capital invested in animal husbandry according to sex and age of the owner: Guacarapo, 1971.

Capital in Bs	Age Groups						Number of Owners
	20 - 39		40 - 59		60 +		
	M	F	M	F	M	F	
0 - 499	1	-	1	1	1	1	5
500 - 999	1	-	-	-	-	-	1
1000 - 1499	1	-	-	-	-	-	1
1500 - 1999	-	-	-	-	-	-	-
2000 - 2499	-	-	1	-	-	1	2
2500 - 2999	-	-	1	-	-	-	1
3000 - 3499	-	-	-	-	-	-	-
3500 - 3999	-	-	-	-	1	-	1
4000 - 4499	-	-	-	-	-	-	-
4500 - 4999	-	-	1	-	-	-	1
5000 - 5499	1	-	3	1	3	-	8
6000 - 6499	-	-	-	-	-	-	-
6500 - 6999	-	-	-	-	1	-	1
8500 - 8999	-	-	1	-	-	-	1
23000 - 25499	-	-	-	-	1	-	1
Total	4	-	8	2	8	1	23

Socio-economic exigencies of the activity are very similar to those prevailing in Chiguana. In spite of individual ownership, task performances require much communal collaboration. Meat is sold through the intermediary of a local butcher, who resells the product to the local population or at the market of the front villages. The fact

that the Guacarapaneros' average investment in this activity is higher than that of Chiguaneros and that they nevertheless spend more time in the exploitation of their marine zone demonstrates, on the other hand, that carrying out this activity does not significantly interfere, in terms of labor and energy expenditure, with other activities. But it surely has implications on the level of investment. The above, then, shows that in spite of a lesser involvement in land-oriented activities, Guacarapaneros' involvement in fishing is nevertheless partially conditioned by their degree of participation in these activities. The internal features of fishing activities will now be analyzed, relying on the above data for facts or situations that cannot be explained by the examination of fishing by itself.

3. Economics of Fishing

3.1) Fixed Capital in Fishing.--The problems inherent in determining the Guacarapaneros' capital assets in fishing are very similar to those encountered in Chiguana. I shall therefore adopt the same method of calculation, which consists of obtaining, after making an inventory of fishing gear and crafts, a basic cost by averaging values given by owners of identical gear (same type and size).

Tables 32 and 33, respectively representing the amount of capital according to types of boats and nets, indicate that the Guacarapaneros' assets in maritime technology reach as high as Bs 185,925 (\$41,878). This investment

Table 32.--Investment in fishing craft: Guacarapo, 1971.

Types	Size	Number	Ind. Price in Bs	Total Value in Bs
Cayuco	2 m	1	Bs 200	Bs 200
	3 m	1	250	250
	4 m	-		
	5 m	-		
Canoa	3 m	-		
	4 m	-		
	5 m	-		
	6 m	-		
Caribe	4 m	1	1200	1200
	5 m	6	1500	9000
	6 m	5	1700	8500
	7 m	5	2000	10000
Lancha	3 m	4	800	3200
	4 m	8	900	7200
	5 m	7	1000	7000
	6 m	3	1200	3600
	7 m	1	1500	1500
Piragua	4 m	-		
	5 m	-		
	6 m	4	700	2800
Total	46 boats			Bs 54,450
Marine Engines	17		2750	Bs 46,750
Total Value				Bs 101,200

Table 33.--Investment in fishing gear: Guacarapo, 1971.

Type	Size in Meters	Number	Ind. Price in Bs	Total Value in Bs
Chinchorro (Tren lisero)	80 x 2	1	190	190
	120 x 5	3	450	1350
	120 x 18	1	1200	1200
	150 x 5	5	450	2250
	150 x 6	4	500	2000
	150 x 3	6	350	2100
	150 x 8	1	600	600
	150 x 4	1	400	400
	100 x 2	1	270	270
	100 x 6	1	425	425
	100 x 8	6	575	3450
	100 x 10	3	700	2100
	160 x 14	1	950	950
	140 x 7	2	600	1200
	160 x 5	1	500	500
	160 x 12	1	1200	1200
	200 x 3	1	600	600
Tren Lebranchero	250 x 8	1	1000	1000
	300 x 5	1	1200	1200
	300 x 3	1	800	800
Tren Lebranchero	200 x 10	1	2500	2500
	180 x 10	1	2500	2500
	170 x 12	1	2500	2500
Mandinga	200 x 10	4	3000	12000
	250 x 4	1	3000	3000
	250 x 12	1	3000	3000
	300 x 10	1	3000	3000
	400 x 6	1	3000	3000
Argolla	100 x 22	1	3000	3000
	250 x 25	1	5000	5000
	180 x 28	1	4000	4000
	170 x 30	1	4000	4000
	180 x 30	1	4000	4000
Tren	200 x 10	1	4500	4500
Jurelero	250 x 12	1	5000	5000
Atarraya	3 meters	2	70	140
Total Value				Bs 84,925

is almost three times that of the Chiguaneros, and shows the greater importance of fishing in Guacarapo. A closer look at these tables shows us that, unlike Chiguana, investment is almost equally divided between fishing gear and boats in Guacarapo (i.e. Bs 14,540 vs. Bs 52,800 as compared to Bs 84,925 vs. Bs 101,200). Guacarapaneros also invest a great deal of money in boats because they frequently have to cross the Gulf to go to market towns. Thier investment in this sector is not, however, primarily explained by communication needs. It is rather related to their strong dependence upon fishing for a living.

The nomenclature of fishing crafts shows that the caribe and the lancha types are very popular, 40 of 46 crafts belonging to these categories. Both types are well suited to the use of outboard motors, the cost of which total nearly half the investment in locomotive technology (Bs 46,750). Taking into consideration the fact that the caribe is a relatively recent innovation in Eastern Venezuela and its price is higher than that of the lancha, Guacarapaneros manifest a significant tendency toward investment in new items. Seventeen of them own boats of this type, as compared to only three in Chiguana.

Identical remarks can be made concerning their fishing gear. Although the chinchorro is the most common gear, other types of nets such as the tren lebranchero, the mandinga, the argolla, and the tren jurelero are far more numerous than in Chiguana. More important yet is the proportion the

latter represent within the total investment in fishing gear (i.e. Bs 63,000 out of Bs 84,925). Like the caribe, the argolla is a relatively new item in fishing equipment and is fairly expensive. Nevertheless, Guacarapaneros do not hesitate to diversify their technology in order to increase their productivity, in contrast to their Chiguanero counterparts.

Tables 34 and 35, showing the average length of use of fishing equipment according to types and categories, give us a better insight into the nature of the present structure of investment in Guacarapo.

Table 34.--Length of use of fishing craft: Guacarapo, 1971.

Years	Types					Total Number of Boats
	Cayuco	Canoa	Caribe	Lancha	Piragua	
1	-	-	1	2	-	3
2	1	-	2	1	-	4
3	-	-	5	2	-	7
4	-	-	1	4	-	5
5	-	-	-	6	-	6
6	1	-	2	1	-	4
7	-	-	4	2	-	6
8	-	-	1	2	-	3
9	-	-	-	2	-	2
10	-	-	-	-	4	4
15	-	-	1	-	-	1
23	-	-	-	1	-	1
Total	2	-	17	23	4	46
Ave. age	4.0	-	5.2	4.0	10.0	6.0

Table 35.--Length of use of fishing gear: Guacarapo, 1971.

Years	Types						Total
	Atarraya	Mandinga	Tren Lebranchero	Tren Jurelero	Tren Lisero	Argolla	
1	-	-	-	-	2	-	2
2	-	-	-	-	10	-	10
3	1	-	-	-	3	1	5
4	-	-	-	-	6	1	7
5	-	-	-	-	4	2	6
6	-	-	-	1	-	-	1
7	-	-	-	-	3	-	3
8	1	1	1	-	1	-	4
9	-	-	1	-	-	-	1
10	-	2	1	1	2	1	7
12	-	2	-	-	-	-	2
15	-	2	-	-	1	-	3
20	-	1	-	-	-	-	1
Total	2	8	3	2	32	5	52
Ave. age	5.5	12.7	9.0	8.0	4.2	5.4	6.0

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Some equipment, like the piragua and the mandinga, is very old (averaging 10 years for the former and 13 years for the latter). The maintenance of used gear can therefore be interpreted as a negative attitude toward investment. But it might also be seen as a more profitable way of spending capital. Annual repairs keep the nets operative but at a cost lower than the purchase of a new one. Fishermen are thus characterized by differential financial orientations. Nevertheless, the relatively long period of use for some types of equipment has to be partially related to ecological changes that have taken place at the lower end of the Gulf during the last decade. With the decline or the progressive disappearance of some species of fish, some nets are kept but not frequently used. Such would be the case for the tren lebranchero and the tren jurelero.

The previous examination of occupational structure revealed that 80 people derive their income mainly from fishing, while 18 others participate in it occasionally, thus forming a total of 98 fishermen. Table 36 indicates that of this total, only 28 own equipment of some sort, with average assets of Bs 6,754 (\$1,520). This is in contrast to Chiguana, where almost three-fourths of the fishermen possess equipment, with an average investment of Bs 1,980 (\$450). In Guacarapo, the allocation of investment in fishing is therefore characterized by a greater concentration. Such a situation should entail differential patterns of work organization. Table 36 also shows that the correlation

between the owners' age and the amount of their investment is rather weak, indicating, by the same token, that capital accumulation in fishing, unlike agriculture, does not depend entirely upon access to and control of the means of production. There exist unpredictable variables, linked to the nature of production itself (e.g. a series of lucky catches), which explain why some skippers succeed in accumulating a substantial amount of equipment even at a young age.

Table 36.--Allocation of investment in fishing equipment: Guacarapo, 1971.

Levels of Investment	Age Group				Number of Owners
	30-39	40-49	50-59	60+	
0 - 999	3	1	1	3	8
1000 - 1999	-	1	-	1	2
2000 - 2999	1	-	-	2	3
3000 - 3999	1	-	-	-	1
4000 - 4999	-	2	-	-	2
5000 - 5999	-	3	-	-	3
6000 - 6999	-	-	-	-	-
7000 - 7999	0	1	0	1	2
8000 - 8999	-	-	-	-	-
9000 - 9999	-	1	-	-	1
10000 - 10999	-	-	-	-	-
11000 - 11999	-	-	-	-	-
12000 - 12999	-	-	-	-	-
13000 - 13999	2	-	-	-	2
14000 - 14999	-	1	-	-	1
19000 - 19999	-	-	1	-	1
22000 - 22999	-	1	-	-	1
29000 - 29999	-	-	1	-	1
Total	7	11	3	7	28
Ave. investment	Bs 6,754				

Table 37, which analyzes the fishermen's investment according to their degree of specialization, gives additional information on the accumulation of capital in the community. Full-time fishermen-owners not only possess more fishing equipment than part-time fishermen, but they also control most of the investment in secondary activities such as animal husbandry and agriculture. If we place their capital assets in these sectors in a parallel with the total investment of the community, we see that they control three-fourths of the capital invested in animal husbandry (Bs 78,550 of Bs 95,050). The same applies to their involvement in land cultivation, since they own 25 hectares out of a total of 39.5 hectares (cf. Tables 28 and 30).

The Guacarapo economy contrasts significantly with that of Chiguana. Fishing does not constitute a subsector conditioned by the practice of land-oriented activities. The latter are rather dependent upon fishing. People who do not invest in fishing rarely accumulate capital in animal husbandry or agriculture. The major part of the total investment is controlled by a handful of individuals, a situation that confers upon the economic organization a more rigid structure. About nine skippers (those who in Table 36 possess more than Bs 7000 invested in fishing) largely control the community's economic life. The study of investments indicates that the tendency toward economic specialization is far more advanced in Guacarapo than in Chiguana.

3.2) Fishing Membership.--The foregoing discussion

has already suggested some general features of recruitment in fishing. Since most of the fishermen work at sea on a full-time basis, crews should be characterized by a greater stability. Such a statement also explains why it would be rather insignificant to establish differential patterns of crew formation according to the fishermen's degree of specialization. In fact, only two fishermen, of a total of 18 who work at sea on a part-time basis, own fishing equipment. But neither has enough capital to sustain independent crews. The study of recruitment in fishing must therefore be conducted through the analysis of the relationships between important owners of fishing equipment and their sharemen.

Official records show that 13 owners are registered with the Fishery Office. If we divide the sum total of fishermen by the number of registered owners, a team would, on the average, include between seven and eight fishermen. But this average, although it sometimes corresponds to a real situation, is not sufficient to depict the alternative ways by which fishing personnel are recruited and crews made operative.

The first noticeable feature of crew formation is that all the fishermen are grouped into large crews. The nine aforementioned owners can, at times, monopolize the majority of the fishermen in the community. The size of the crew then varies on the average between 9 and 10 people. Such crews are needed for the manipulation of the mandinga

Table 37.--Fishermen's investment according to their degree of specialization:
Guacarapo, 1971.

Degree of Specializ.	Total of Fishermen	Nr. Fish. Owning Fishing Equipment	Capital Assets in Fish. (Bs)	Nr. Fish. Owning Cattle	Capital Assets in Animal Husbandry (Bs)	Nr. Fish. Owning Agric. Plots	Surface Area in Cultiv. (Hectare)
Full-time	80	26	183,125	16	78,550	6	25
Part-time	18	2	2,000	4	12,400	3	11
Total	98	28	185,125	20	90,950	9	36

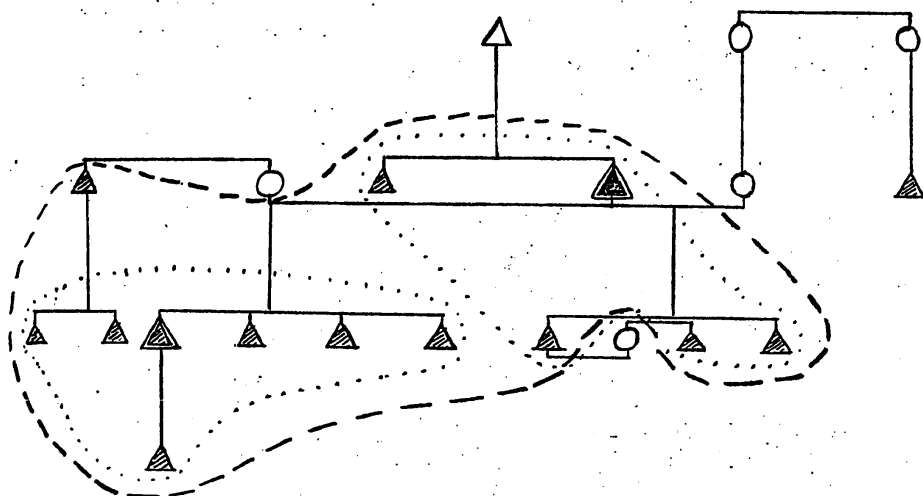
and the tren jurelero. But since these techniques are not in use throughout the whole year and since Guacarapanero fishermen rely on several other techniques for which enlarged forms of cooperation are not required, partners of large teams can split into subgroups of five or six fishermen. This is particularly the case when demersal species are abundant or when fishermen use the chinchorro for catching pelagic species. This potential fission process explains why four owners, also registered with the Fishery Office, occasionally operate on an independent basis with a reduced number of sharemen. The adaptive feature to be emphasized here is that fishermen working in small groups are always recruited within the larger crew to which they belong. The flexibility of recruitment or the variation in the crew composition is therefore conditioned by the membership in an original crew whose formation is relatively stable.

At a more internal level, the census indicated that the sons of the skippers are in the majority among the sharemen in almost all the teams. Two facts explain this situation. As formerly mentioned in the brief characterization of social organization, Guacarapaneros who have a good economic position overtly practice polygyny; the majority have two wives (one even has three). It follows that some members of a single team, although born of different mothers, have the same father. On the other hand, this close patrilineal grouping seems to be related to the fact

that acquisitive fishing is always reserved for men and that cooperation between father and sons is actualized at an early age.

The short period of time spent in Guacarapo did not permit me to gather complete genealogical data for all the families. This explains why I do not possess statistics on kinship relations within all the crews. I nevertheless consider the example presented in Figure 18 as a useful illustrative case. Among the 13 sharemen, 7 are the sons of the skipper (owner of the mandinga); 2 others are close patrilineal relatives (Br. and So.So.); the remaining 4 are political or affinal relatives (Wi.Br. and Wi.Br.So.). The example also shows how the fission operates when technical requirements permit working in subgroups. The main axis for division or fission is not generational, but rather collateral. The seven sharemen sons of the main skipper work in different teams when the chinchorro is used, on the basis of a real sibling identification, since they constitute two groups of "half-brothers."

All these remarks show that there exists a striking difference in fishing group formation between Chiguana and Guacarapo. While in the former community kinship played a significant role mainly in the specialized teams and several teams were purely occasional or semi-permanent, fishing is a "family affair" in Guacarapo. Fishermen are morally obliged to work constantly with the same people and at the same time have the possibility of associating



----- * Mandinga crew

..... = Chinchorro crew

▲ = Main skipper for the mandinga crew

△ = Skipper for the chinchorro crew

▴ = Shareman

Figure 18.--Kinship relations in a Guacarapanero fishing crew.

themselves, depending upon the techniques used, with a reduced number of co-workers. Since in fishing, technology (and consequently capital assets in this sector) is the main productive force, the differences between fishing groups in Chiguana and Guacarapo must be related to the nature of the fishermen's investment in each community. Their degree of specialization then becomes a key factor for explaining their differences.

Table 38 reveals that the average age of the fishermen hovers around 25 years, an average of 10 years lower than in Chiguana. Almost half the fishermen are below 20 years of age. The significant participation of youngsters and young adults in fishing also explains the importance of consanguineal kinship in most of the teams.

Table 38.--Age of fishermen according to their degree of specialization: Guacarapo, 1971.

Age Group	Full-Time	Part-Time	Total
10 - 14	13	8	21
15 - 19	21	2	23
20 - 24	9	1	10
25 - 29	8	1	9
30 - 34	5	-	5
35 - 39	5	2	7
40 - 44	7	1	8
45 - 49	4	-	4
50 - 54	2	1	3
55 - 59	2	-	2
60 - 64	2	1	3
65+	2	1	3
Total	80	18	98
Ave. age	26.9 years	23.8 years	25.3 years

On the other hand, such a situation permits us to rectify, to a certain extent, remarks concerning the allocation of investment in fishing. In fact, among the 35 persons over 30 years of age engaged in fishing, 28 own equipment of some sort. If we subtract from this total the five part-time fishermen who do not have capital assets in fishing, we see that 26 of the 30 full-time fishermen (over 30 years of age) have invested in fishing technology. This finding is important. In spite of the monopolization of capital by a few individuals, there are in all the teams fishermen who receive something in addition to their share for labor for their participation in the capital assets of the crew. As shown in the study of the distributive processes in Chiguana, a minimal participation in capital assets might entitle a shareman to substantial additional income, since the sharing does not depend upon one's investment within the total equipment of the crew, but only within the equipment used in a given operation.

The study of fishing membership, then, shows that Guacarapanero fishing crews are more or less corporate. Although belonging to a crew does not ultimately depend upon kinship and though the structure of authority prevailing during fishing operations is partly contractual, most of the work groups consist of a core of kinsmen, among whom the father-son relation is predominant. Nevertheless, the fact that in some crews sharemen are not all genealogically or affinally related to the skipper indicates that the main

determinant for recruitment is the number of men required to manipulate technology and accomplish the overall tasks of fishing. Kinship decisively influences the recruitment of personnel and plays an integrative role, but the technical exigencies of the operations are, in the end, more important than partnership between kinsmen. Guacarapanero skippers try to combine both aspects, and the adaptive feature of the crews' formation lies in this compromise between technical exigencies and social commitments.

3.3) Levels of Production.--The gathering of statistical data on fishing output in Guacarapo presented methodological difficulties identical to those encountered in Chiguana. Direct investigation in the community lasted only a few months. In addition, some skippers were reluctant to provide detailed information about their income while others simply did not keep records of their catches. Consequently, it was impossible to obtain exact figures for all the teams over a year's time. The alternative was to rely both on official statistics and individual cases (subsequently used as samples). Merging them permitted me to approximate the community's total annual output.

As mentioned before, official statistics were collected at the Fishery Office in Cumana. They came from planillas that each registered skipper sends in every month to government officials. But in comparing these statistics with my own records (without the knowledge of the skippers), I discovered several discrepancies. I then

became doubtful as to their validity. Meanwhile, several fishermen frankly admitted that the monthly sending in of data on their production was meaningless to them and they ignored their possible usefulness. Further checking on the information they provided revealed that only one skipper sent in objective and detailed information (i.e. the exact amount for each species of fish). The others simply mentioned a gross approximation of the number of kilos they caught, without really differentiating between the species. This would have been a minimal shortcoming, since I was mainly concerned, at this point, with the total number of kilos rather than subtotals for all the species. But the majority of skippers lowered their estimate of production when sending out information to the Fishery Office. This contrasted with Chiguana, where both over- and under-estimation were common. When they were asked to explain this situation, most of the Guacarapanero skippers stated that these discrepancies were purely accidental, supporting their assumption by the highly variable nature of production itself. But a greater insistence on their providing incorrect information to officers revealed, for several of them, a fear of increased taxation by governmental agencies. Their rationale was that by maintaining their "official" level of production below their "actual" output, they prevented the putting into effect of a more rigid control by government officers. To corroborate this possibility, they all referred to the recent transfer of their former "inspectoría,"

from San Antonio del Golfo to Cumana. They believe the government wishes to further centralize its control over fisheries in the near future, and productive fishing communities will be submitted to more severe regulations. Secondly, a few tourists now possess houses in Guacarapo. By having their land delimited by government surveyors, they introduced a concept of individual property to which Guacarapaneros were not accustomed. All these events have caused the fishermen to believe the government will soon impose taxes upon all they possess and/or what they earn. By lowering their "official output," fishermen believe the government will delay the application of such a measure in the community, by beginning with villages in a better economic position.

The recording of the production of three teams during a period of four months (February to March, 1971) showed that they caught 11,400 kilos of fish. The information the same individuals provided to the Fishery Office indicated 2400 kilos less, i.e. a lowering of approximately 20 percent. This correction rate was therefore applied to official monthly outputs for a period of one year. I am aware of the arbitrariness of the method, but I nevertheless judge it more objective than the direct application of official statistics. On the other hand, one should note that fishermen can falsify information about their production only within certain limits. Fishery officers are familiar with the cyclical character of fishing, and can

predict approximate variations in output at different periods of the year. In periods of high productivity, such as in the fall, a fisherman who intentionally lowers his production considerably might draw the attention of the officers.

Taking the above facts into consideration, the compilation of official statistics for the period between June, 1970, and May, 1971, indicates a total of 147,000 kilos of fish. This represents an average catch of 1500 kilos per fisherman. At first this average seems surprising, since it is 224 kilos lower than in Chiguana. But the tabulation must be ponderated by the presence of numerous youngsters (almost half the fishermen are below 20 years of age), whose incomes are pooled with their fathers'. On this basis, Guacarapanero families would have an income relatively higher than the Chiguaneros. If the annual catch is divided by the number of registered owners, Guacarapanero skippers would, on the average, catch 2510 kilos more annually than the Chiguaneros.

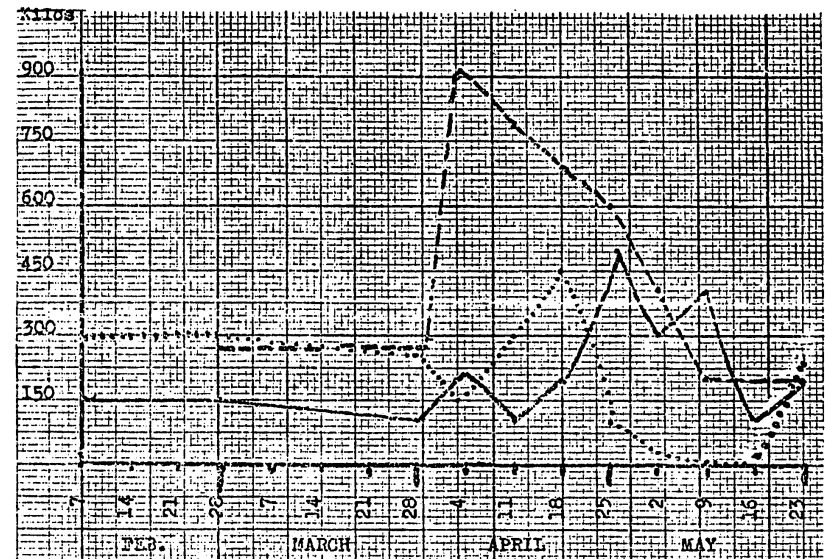
Figure 19 shows, on the other hand, that cyclicity in production is, with minor variations, very similar to that prevailing in Chiguana. The most productive temporada (fishing season) coincides with the fall season, when numerous pelagic species invade the lower end of the Gulf. The months of February and March are characterized by low productivity, because of the presence of turbio (fish poisoning) at different points of the fishing zone. But



Figure 19.--Monthly variations in fishing output: Guacarapo: 1970-71.

in April and May, Guacarapaneros' production considerably increases, while that in Chiguana remains at a low level. In spite of their proximity, specific ecological features of the Guacarapaneros' fishing zone explain these differences. At the beginning of the spring, it is almost completely free or turbios, while this phenomenon still strongly affects Chiguana, given its residual location at the very end of the Gulf. Guacarapanero fishermen can therefore engage significantly in the capture of cachorretta, anchoa, and corocoro, which do not reach Chiguana. In addition, Guacarapaneros are not involved in agriculture; thus they spend most of their time at sea. Some of them even leave the village for several days and live in rancherías (fishing stations) farther west on the coast. So, unlike Chiguana, fishing production in Guacarapo is not characterized by a single peak (i.e. in the fall). Output is also relatively high during the spring.

Figure 20, which analyzes the weekly output of three fishing crews during a four-month period, is intended to show that individual teams' production in fishing is variable and that this variability is higher when fish are plentiful. A parallel between Figure 19 and Figure 20 points out that during the month of February and the beginning of March, a period during which the total output is rather low, individual team variations are weak and rather regular. But come April and May, the teams are characterized by significantly different productivities. Although



N.B. Data for the months of February and March consist of average weekly output obtained by dividing the total catches of these months by the number of weeks. For the remaining period, data were collected weekly from the skippers.

..... A
 - - - - B
 _____ C

Figure 20.--Weekly output of three fishing crews between February and May, 1971: Guacarapo.

teams A, B, and C all increase their production during this period, they are in turn the most productive teams. These teams were selected for comparison on the basis of similar equipment and an identical number of participants. Although no exact figures for the amount of time each team spent at sea were collected (except partial data for team C), these teams are known to be very active. Even during Holy Week, a period during which several tourists invade the community, these fishermen went to sea every day. This is in striking contrast to the complete abandoning of fishing activities in Chiguana at this time. In spite of an approximately identical effort, the teams' output varies greatly, team A obtaining 3400 kilos, team B 5200, and team C 2800. Nevertheless, the differences in the number of kilos of fish caught do not necessarily correspond to similar variations in the level of income. Some teams might get less fish than others, but concentrate their effort on the catch of species of higher commercial value. This was the case with team A, which dedicates most of its time to jurel fishing.

3.4) Distribution and Exchange.--

3.4a) The Sharing Process and Levels of Income.--

The study of the Guacarapaneros' investment and forms of participation in fishing has already suggested that the distribution of the product between the members of production-units is somewhat more complex than in Chiguana. The amount

of work a fisherman provides and the amount of capital he invests in a particular fishing operation still serve to determine the amount of his share. But the different ways in which these measures are applied vary according to the dimensions of the crews. In studying recruitment, we isolated two main forms of grouping: a large one related to the use of the mandinga and a smaller one using the chinchorro. The latter technique entails sharing processes very similar to those prevailing in Chiguana. Every fisherman is entitled to a full share for his labor, independent of his age. And the half share of the total output, which is dependent upon investment, is shared out according to one's degree of participation in this sector. Since in Guacarapo 26 of the 30 full-time fishermen over 30 years of age own equipment of some sort, a single participant will rarely receive the half share of the total output reserved to investment when the chinchorro is used. Generally two, if not three, members of a team are entitled to additional income on the basis of their capital assets (during a single fishing trip), besides their share for their labor.

But the distribution is not exactly the same when the mandinga is used. This technique requires a large number of fishermen (between 9 and 12 people), and it may happen, when fish are plentiful, that additions to the labor force are recruited from among the fishermen's wives, especially if the fish caught are very small. Their handling and processing require a great amount of time and energy.

The mandinga crews are characterized by a more rigid structure of authority, because they include a large number of participants. This feature is very adaptive, since the operation must be carried out with celerity. But this structure of authority implies, on the other hand, differential responsibilities for the participants. Consequently, the amount of labor one provides does not refer simply to energy expenditure but also to technical knowledge and ability. The sharing process is therefore more complex and more elaborate than in the chinchorro crews.

Table 39.--Ideal model of distribution in a mandinga crew: Guacarapo, 1971.

Total Catch	
Parts for Investment	Parts for Labor
1/2 of total catch	1/2 of total catch
1 part for boats	1-1/2 part for the skipper (patron)
	1-1/2 part for the fishing expert (vigia)
1 part for motors	1-1/4 part for the diver (buseo)
	1 part for the rower (ramero)
2 parts for nets	1 part for the hauler (arrastrador)

Table 39 gives us an ideal model of sharing in a mandinga crew. Although to the newcomer the model may seem simple to operationalize, he has to consider that the division

is complicated by the number of items found in each category of equipment (e.g. there may be three boats and two motors) and the number of individuals in each role or labor category. The reference to an empirical case illustrates the complexity of the process (see Table 40).

Table 40.--The sharing process in a mandinga crew: Guacarapo, 1971.

Role and Ownership	Total Catch (1200 kilos)						Total Kilos
	Investment (600 kilos)			Labor (600 kilos)			
	Ind. Shares	No. of Kilos		Ind. Shares	No. of Kilos		
A) Skipper and fishing expert owning two boats and the nets	2-2/3	400		3	144		544
B) Rower owning one boat and one motor	5/6	125		1	48		173
C) Rower owning one motor	1/2	75		1	48		123
D) Diver	-	-		1-1/4	60		60
E) Diver	-	-		1-1/4	60		60
F) Rower	-	-		1	48		48
G) Rower	-	-		1	48		48
H) Hauler	-	-		1	48		48
I) Hauler	-	-		1	48		48
J) Hauler	-	-		1	48		48
Total	4 shares	600		12-1/2 shares	600		1200
	Value of a share = 150			Value of a share = 48			

As shown in Table 40, the total output must be shared among 10 individuals who participate differentially in investment and labor. The operation can be carried out empirically by spreading out the fish in different piles, or in a more abstract way by a literate member of the crew if the distribution rules are applied to the amount of money obtained from the direct sale of the fish. First, the total catch is divided into two parts, one for investment (600 kilos) and the other for labor (600 kilos). The theoretical value of a share in each category is afterwards determined by dividing the total number of shares by the number of kilos (600 divided by 4 = 150 kilos and divided by $12\frac{1}{2}$ = 48).

One's income or return is therefore obtained by multiplying the number of shares he has in each category by the respective value of the shares. Since in this case only three members of the crew have capital invested in technology, the participation in investment is very profitable. The share in this category is three times that of the share for labor (150 vs. 48 kilos).

Given the relative stability of the mandinga crews, one's initial investment is made with regard to the existing equipment in one's own crew. For instance, since in the half part of the total catch reserved for capital assets in equipment boats and motors are of identical value (cf. Table 39), a fisherman will invest in the category in which items are less numerous. If in a crew there already exist three boats, the purchase of a new boat will give its owner only one-fourth

of a share. But if there exist only two motors, the purchase of a new one will entitle him to one-third of a share. On the other hand, the addition of a new item must be perceived as operative by the other members of the crew, since it theoretically reduces the share they are used to receiving from their investment in a particular category. One's decision to acquire or to invest in fishing technology is only one of a series of alternatives, and is at the same time conditioned by the general situation in the crew. This would explain why four full-time fishermen over 30 years of age decided to invest only in cattle rather than in fishing.

Because of the enduring structure of authority in the mandinga crews and the importance of kinship in their formation, one can see how in Guacarapo, unlike Chiguana, capital assets of fishing are concentrated in the hands of a few individuals. The main skippers not only direct fishing operations but also influence the decisions related to investment. They have the means to keep their shares intact, while sharemen must compete with each other to enhance their participation in this sector. Capital accumulation is strongly conditioned by social relations within the crew.

The variations in the whole structure of ownership of equipment and in the modalities of distribution processes make the study of the levels of income rather difficult. If we add to these shortcomings the variable nature of production and the fishermen's differential involvement in secondary

activities, the exact determination of a person's annual income seems almost impossible.

Nevertheless, the previous analysis of Guacarapaneros' investments and levels of production indicated that some individuals earn more money than others. Obviously, the skippers owning mandinga and argolla are in a privileged position. Next would come the smaller owners who nevertheless receive a greater part than sharemen who possess nothing. The sharemen who derive an income only from providing labor within the crews would come last. Although this simple categorization might suggest the existence of three subgroups economically differentiated among the fishermen, it should not be interpreted exactly in the same sense as in Chiguana, where I distinguished residential segments characterized by different positions in the economic and social hierarchy. That is, in Guacarapo three levels of income can roughly be determined without presupposing the existence of strong relationships among members of different groups. We previously assumed that the community's economic life revolved around groups of fishermen, rather than various occupational groups, with the result that each group is internally differentiated and competitive. The main skippers are those who invest more in cattle, who possess bars and grocery stores, and who practice polygyny.

The measurement applied in Chiguana to approximate the fishermen's level of income consisted of dividing the community's total fishing output by the number of fishermen.

Used in Guacarapo, such a measure results in an average production of 1500 kilos. If we apply to this total an average price of Bs 2.00 a kilo (Guacarapaneros catch not only lisa but other species of higher commercial value), we obtain an average annual income of Bs 3000 per fisherman.

Given the crews' composition and the distribution rules, the average annual income for an adult fisherman would be higher. Although I cannot give an exact figure, an average income of Bs 5000 is a fair estimate for the majority of family heads engaged in fishing. This sum represents double that of the Chiguaneros. Although approximate, this estimate seems acceptable if we take into account not only the Guacarapaneros' investment in fishing, but also their capital assets in cattle and their greater involvement in the governmental program of vivienda rural (construction of new houses).

It might be interesting at this point to rely on qualitative material to corroborate this statement. Chiguaneros often assume that Guacarapaneros are in a better economic position because they possess a more productive fishing zone and they can increase their income with the recent development of tourism. The importance of the latter phenomenon need not be exaggerated, however. Tourism is still in an incipient phase and only has a real impact upon the village's economic life during restricted periods of the year (Holy Week and Christmas). It is profitable mainly to the few individuals who own bars and grocery stores

(i.e. the main skippers). More relevant might be the assumptions concerning the Guacarapaneros' consumption patterns. They are said to be very selfish, stingy, and to eat and drink very little. While these statements are highly rationalized, they are partly verified. After a few weeks in the community, it was noticeable that Guacarapaneros spent less time in bars than Chiguaneros, and their level of consumption was less diversified, consisting mainly of fish and casabe (a kind of hard bread made with manioc). The former difference is explained by a greater involvement in acquisitive activities, while the latter is due to the unimportance of agriculture in the community. In general, Guacarapaneros manifest a greater spirit of entrepreneurship; they participate more actively in savings and investments, and obtain higher returns than their Chiguanero counterparts. Specific features of their socio-economic organization give rise to competition among a series of work groups, all of whom depend on fishing for a living. The community's relatively good economic position would therefore be explained by the incentive that creates the maintenance of subgroups of identical status.

3.4b) Fish Marketing.--Since in Guacarapo almost all the family heads derive their income mainly from fishing, fish marketing presents variations substantially different from those prevailing in Chiguana: (1) Local marketing or inter-household exchange of fish is rare. In each household one or several members are directly engaged in the

exploitation of sea resources. Sporadic exchanges therefore occur only in specific circumstances, when members of a particular domestic group cannot produce all they need or when tourists visit the villages during vacation times. (2) The greater level of production entails a higher degree of involvement with outside markets and buyers. (3) Since fishermen do not engage significantly in agriculture, they allocate a greater amount of time for primary processing of the fish, either by salting or drying, thus increasing their returns.

The preceding examination of the distribution process noted that fishermen are paid either in product or in cash, depending on the size of the catch. In the case of a small output, the crew is reluctant to undertake the 12 kilometer round-trip to the markets of the front villages (i.e. El Muelle de Cariaco or San Antonio del Golfo). On several occasions, the money obtained from the sale would not be sufficient to cover the cost of traveling. The fish are then directly divided up among members of the production-unit, who consume or accumulate them for further selling. When production is substantial, fishermen do not hesitate to frequent outside markets and to spend time in bargaining. These remarks can be seen as two general principles or rules that influence the fishermen's disposal of their products. A more detailed analysis, however, reveals the existence of a series of intermediary situations. Their examination might be conducive to a better understanding of the fishermen's profit-seeking orientation.

The study of fish marketing in Chiguana has already provided information about the functioning of the market at the Muelle de Cariaco. In this market, eight permanent buyers and various outside buyer-sellers--owners of cavas (refrigerated trucks)--operate. Guacarapo is also located at an identical distance from another market town, San Antonio del Golfo (cf. Figure 12). A crew's decision to sell its production in outside markets thus implies agreement on the market to be visited. To define more precisely the nature of the alternatives faced by Guacarapanero fishermen, the market of San Antonio del Golfo must be briefly described. In this town, the population is twice as large as that of the Muelle de Cariaco, but there is no special building where sellers and buyers can assemble. All transactions are made directly on the beach, and professional buyers are very few. This implies that the decision to go to this town is influenced by different factors. If the amount of production is not too high, the fisherman can dispose of it by undertaking transactions with the few professional buyers. If his production is substantial, he must consider the time at his disposal, since he will often have to engage in direct retail transactions with the local inhabitants to sell out his stock. But the latter operation will permit him to increase his income, since local clients pay higher prices than professional buyers. In other words, fishermen go to this town when the price is low at the Muelle of Cariaco and when they are sure to have

enough time to undertake retail selling. Nevertheless, the overall decision carries some uncertainty, since some people of San Antonio also engage in fishing and fishermen from other fishing communities, namely Los Cachicatos, also frequent this town.

In the case of a large catch, fishermen usually prefer to go to the Muelle de Cariaco. Since all fishing teams possess good outboard motors, no individual in the community serves as middleman between local fishermen and professional buyers, as is the case in Chiguana. The many buyers at the Muelle de Cariaco provide Guacarapaneros with good bargaining possibilities. At least, they are always sure to sell all they wish. Since Guacarapaneros are the most productive fishermen at the lower end of the Gulf of Cariaco, their amount of production is determinant in the price variations at this market. Fishermen are well aware of this situation, and use it to enhance their bargaining power. I often recorded cases in which buyers paid higher prices to Guacarapanero fishermen than to Chiguanero for identical quantities of fish. The professional buyers are not unaware that they strongly depend upon Guacarapaneros for a living. Therefore, they make more concessions and are less rigid with them in order to insure their future provisioning. The higher degree of specialization and level of production of these fishermen thus provides them with a privileged position in fish marketing, to the detriment of fishermen from other fishing communities. Nevertheless, this

does not imply that Guacarapaneros and professional buyers always come to an agreement easily. Tensions and conflicts are partly reduced by the necessity for both parties to maintain mutual trust and dependence. But there are days when they cannot reach an agreement. On various occasions I saw teams returning to their village without having sold a single fish.

Depending on variations in demand on the regional market (with which fishermen are more or less familiar, since fish sold at the Muelle de Cariaco are re-sold in villages on the mainland) and changes in production, there exist certain limits that buyers cannot bypass. Similar remarks apply to the fishermen-sellers. To gain a better insight into the mechanisms of price variations, at regular intervals during my stay in communities located at the lower end of the Gulf of Cariaco I noted the price obtained for one of the major fish species in the area--the lisa. The information was gathered over a four-month period at the market of the Muelle de Cariaco.

A first glance at Figure 21 shows that the price varies periodically during the whole period. But variations present a greater regularity (take place at identical intervals) during the months of January, February, and March, and are characterized by greater discrepancies in April.

At the beginning of January, the market was not functioning because of the fishermen's involvement in local

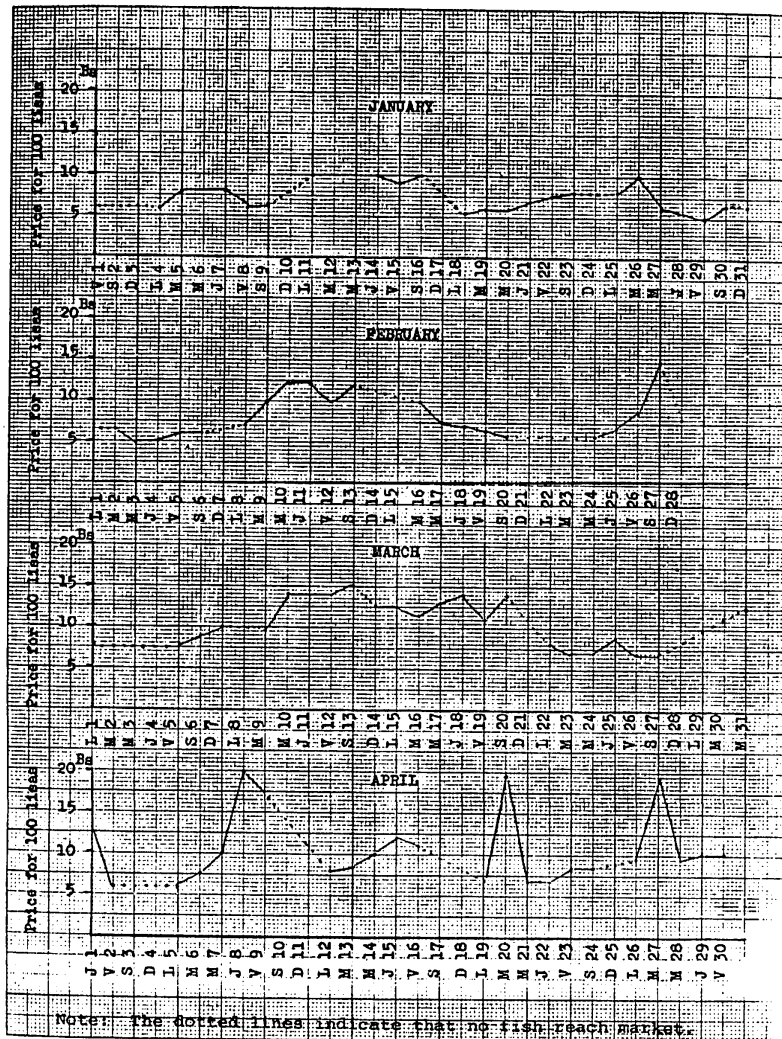
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Figure 21.--Daily variations in the price for 100 lisas at the market of the Muelle de Cariaco between January and April, 1971.



festivities in continuation of the Christmas fiesta. Moreover, this period follows the fall season, during which fishermen reach their most productive levels. Fish accumulation then contributes to maintaining the price at a relatively low level, around Bs 6.00 for 100 lisas (al ciento). The first significant increase occurs between the eleventh and the sixteenth day, when moonlight is strong. The price then reaches Bs 10.00. The examination of regional ecology already indicated that the capture of pelagic species, among which the lisa is the most numerous, is strongly dependent upon water luminosity at night. In periods of moonlight, the water phosphorescence is very weak and catches are generally small. With the progressive reduction of moonlight during the next days, the level of production is higher and the price of fish falls, hovering once more around Bs 6.00. The price rises again on January 27 because for three days in a row (the twenty-third being a national holiday commemorating the end of the Gomez regime) no fish arrive at the market.

In February, variations also present a certain regularity and coincide with the positive or negative effects of the lunar cycle on production. The period from the twentieth to the twenty-fourth day is one of relative inactivity because of carnival time. But upon the resumption of commercial activities the price remains low because there is a reduced demand from customers and a higher number of cavas-owners than usually frequent the market. But between the twenty-fifth and the twenty-seventh day, no outside buyer-sellers

come to the market and a strong turbio starts to affect the lower end of the Gulf. Buyers then pay a good price because they are afraid that production will fall considerably during the coming days. Effectively, during March, the price remains high for a relatively long period and reaches as high as Bs 15.00. Not only does the moonlight reduce production, but the turbios continue to neutralize the fishermen's efforts.

Finally, significant variations occur during the month of April. For the first time since January, the price reaches as high as Bs 20.00. The first marked increase takes place during the days preceding Holy Week. This is the period during which the demand for fish is highest in the eastern zone. Not only is fish a culturally prescribed food, together with the terrestrial turtle (morocoy), but the fishing communities are invaded by thousands of tourists, who often pay prices higher than the local population. Other increases occur on the twentieth and twenty-seventh day, but they are rather accidental. It happens that exceptionally big lisas frequent the lower end of the Gulf of the Cariaco. Since lisas are sold by the unit, buyers pay higher prices because the fish are bigger.

The preceding remarks show that it would be rather insignificant simply to assume that fish marketing follows the law of supply and demand. The mechanisms of the latter cannot be fully grasped without some reference to factors influencing variations in production and in the amount of

fish reaching the market. Such examination indicates that economic aspects or profit-seeking orientations of the transactions between buyers and sellers are embedded in ecological, social, and religious frameworks. The fishermen's involvement in marketing cannot really be understood in strictly economic terms. Haggling and bargaining are weighted by a series of elements, and agreement between the participants is reached when both parties apprehend and interiorize the possible interaction of these factors.

We have mentioned as another important alternative for Guacarapanero fishermen, when they cannot or do not want to sell their production, their possible undertaking of fish processing. Such an action requires additional time and energy, but is profitable since the salted or dry fish are sold at a price 1-1/2 or two times higher than that of fresh fish.

Guacarapaneros will opt for this activity rather than for direct sale of their production when the size of the catch does not justify the trip to the market, when they cannot obtain a satisfactory price at the market, or when they have enough capital to assume the operational costs of fishing for a while, fish accumulation and processing thus being a way of increasing their revenue. Compared to Chiguaneros, Guacarapanero fishermen process fish more often and in larger quantities. This manifests stronger incentives toward capital accumulation. But one should not forget, however, that Guacarapaneros do not engage significantly in

agriculture. They thus dispose of a greater amount of time. In addition, most of the fishermen work within large crews. This is an important element in fish processing, since pelagic species are very small and their transformation might take several hours.

This brief examination of fish marketing in Guacarapo shows that these fishermen have several economic advantages over the Chiguaneros. This explains, together with the better ecological possibilities of their marine zone and their greater productivity, the importance of their investments not only in fishing but also in cattle raising. At the end of my stay in Guacarapo, a few owners of cavas occasionally came into the village for the first time. This innovation greatly pleased the Guacarapaneros, and is one of many indicators that fishing will possibly gain importance in the future. In addition, the increasing number of tourists now possessing houses in Guacarapo will enlarge the possibilities of local fish marketing and at the same time will help the inhabitants to pressure municipal and state authorities to obtain better roads. Initiative and optimism rather than pessimism characterize the village's economy.

Conclusion

In undertaking the analysis of the economic organization of Guacarapo, my intention was to depict the situation of a group of fishermen with a significant degree of

specialization in fishing, who nevertheless engage to some extent in land-oriented activities (in Guacarapo, cattle raising).

There are several ways to summarize and compare features of economic organization of Guacarapo with those of Chiguana. However, the analysis already contains numerous references to their similarities and differences. I do not now wish to make a more exhaustive and detailed comparison. It would be more interesting to elaborate on the specific articulations between the social and economic life of the community.

Guacarapo developed as a fishing community and has always maintained this orientation. Its first inhabitants, white and mestizo, were already specialized in fishing when they settled permanently in the village. This is an important factor in explaining Guacarapanero involvement in the exploitation of sea resources. The technical tradition and cultural background of the first settlers caused fishing to become the primary sector of investment and the main activity in the community. Guacarapaneros could have engaged more significantly in agriculture but did not do so. On the contrary, they quickly adopted cattle raising, following the introduction of this activity in Chiguana. But this adoption has been greatly promoted by the technical exigencies of the activity, which do not interfere with those of fishing. In so doing, Guacarapaneros manifested some sense of enterprise, knowing that capital in cattle can be

quickly converted to cash and reproduces itself with a minimum of effort.

Another factor whose importance is hard to determine but which nevertheless bears some significance for the articulation between social organization and economy is the population size. With its 352 inhabitants, Guacarapo has a population one-third as large as that of Chiguana. Although it might be fruitless to predict the possible effects of a significant demographic increase on Guacarapaneros' economic specialization, it can be assumed that the presence of a greater number of residents would entail some technical changes in fishing or would be conducive to a diversification of the economy. The small population that presently lives in Guacarapo gives the whole community a certain homogeneity. In the social sphere, the predominance of consensual unions is a fair illustration of this affirmation. Polygynous unions are not generalized but reserved to skippers of different fishing groups. This is at the base of the striking similarities in the overall crews' composition and functioning.

At a more general level, the community does not include a series of groups differentiated by professions or occupations. Rather, it is characterized by a series of groups (which are not familial but also work groups) of an approximately identical status, each being differentiated internally according to their members' role and participation in fishing. As a result, the community's relative social

homogeneity conditions the allocation of investment among eight or nine major fishing groups. No particular individual or domestic group possesses a decisive influence on the village's social and economic life.

This apparently or seemingly equalitarian basis remains a major factor in understanding the functioning of the economy. The maintenance of an identical status among fishing groups is the main incentive for investment. The acquisition of a new item by a group (not only as regards fishing technology, but also for consumer goods such as houses, food, clothing, record players, etc.) is immediately followed by similar initiatives from the others. Such attitudes might, however, be conducive to more or less profitable investments. The presence of five large bars in the community would be a good example of this.

The foregoing analysis therefore suggests that the community will progress economically if the fishermen, without rejecting completely their search for identical status and homogeneity, do not invest exclusively with regard to this end. The examination of the economic history of their village and of their present economic organization indicates that they have a good chance of succeeding.

A. General Remarks

1. The Setting

Located on the southern shore of the Gulf of Santa Fé, the community of Santa Fé belongs to the distrito and municipio de Sucre. About 35 kilometers separate it from the mouth of the Gulf of Cariaco. The location of the community halfway between two major cities of Eastern Venezuela, Cumana, the state capital, and Puerto La Cruz, is a geographic feature of great importance in explaining the community's economic life.

With a population of over 3,000 inhabitants, the village of Santa Fé occupies a relatively large land area. Most of the houses stand on the western shore of a small river surrounded by mangroves and swamp. These geographic elements explain why malaria, until recently, prevented a larger settlement in the area. Only in the last decades has the population enlarged considerably.

Santa Fé began as a commercial station after the arrival of Spaniards in Venezuela in the early sixteenth century. For several years, the present site of the village was inhabited by a few people whose major function consisted of shipping out the products of the haciendas of the mainland. Meanwhile, the outside coastal region included several fishing stations attended regularly by large groups of fishermen who belonged to different villages and towns around the Gulf of Cariaco. Around 1940, the construction of a good road linking the village with the main cities of

CHAPTER IV

SANTA FESINO FISHERMEN: A SPECIALIZED ECONOMY

Introduction

The study of the community of Santa Fé is the last in the series of analyses of three rural fishing communities in Eastern Venezuela. It was chosen because the majority of its fishermen rely mainly upon the exploitation of sea resources for a living. Its selection will then give us the opportunity to discuss further the hypothesis developed at the beginning of the study concerning the effect of economic specialization on the conduct of fishing.

It is important to mention, however, that not everyone in Santa Fé is directly engaged in fishing. The community also includes agriculturalists, migrant workers, merchants, and people with other occupations. But fishing constitutes the major economic activity in the village and fishing personnel are highly specialized. Such characteristics of the economic organization thus confer on the community a specificity not encountered in the villages formerly studied. Also, the analysis of the fishing organization in Santa Fé provides a major basis for the discussion, in the following chapter, of the transformations that are taking place in the Venezuelan peasant fishing economy.

Eastern Venezuela and the improvement of public services (church, school, electricity) attracted to the community, several inhabitants of the mainland as well as those living in the outside rancherías. Although Santa Fé formerly was a small village, for several centuries many people have exploited the resources of the area which surrounds it. Real settlement, however, took place only after the elimination of paludism. Thus the sea-orientation of the community is not recent. More important yet, Santa Fé has always been associated with commercial activities, and this articulation of fishing with commerce explains its more specialized character.

The large number of persons now living in the community entails a spatial arrangement different from that prevailing in the communities formerly studied (cf. Figure 22). One of the most interesting aspects of the social morphology is that the inhabitants tend to group themselves according to occupation. While it is not possible to use the term "barrio" to fully depict the community's social and political life, people nevertheless identify the part of the village they live in by a particular name. Most of the fishermen live in La Boca, near the river close to the Gulf of Santa Fé. A few others live in Cochaima, together with the numerous tourists who periodically visit the community. At the Centro are found the majority of people engaged in public services, such as middlemen and store keepers. The area near the road going to Cumana and Puerto La Cruz, that

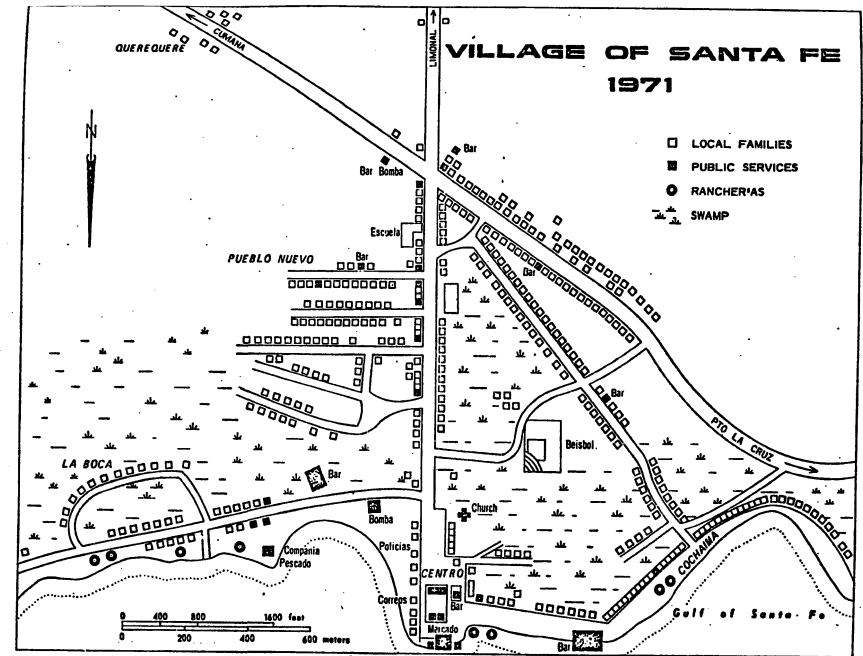
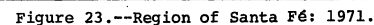


Figure 22.--Village of Santa Fé: 1971.

Of some importance for the understanding of the economic organization of fishing are the ecological features of the maritime zone. While possessing similarities with the Gulf of Cariaco (in terms of seasonal fish migration, presence of turbio, changes in water temperature), the Gulf of Santa Fé presents specific elements which explain the greater productivity of fishing in this area.

The Santa Fesino fishermen exploit a zone much larger than those of the Chiguaneros and Guacarapaneros. Fishing activities take place within an area of approximately 400 square kilometers (cf. Figure 23). The Gulf of Santa Fé, a natural harbor, is about 10 kilometers long by 6 kilometers wide. It has direct access to the Caribbean Sea. The presence of several sandy beaches and deep coves all along its northern shore, combined with elevated spots in proximity to the fishing stations (permitting the localization of schools of fish), confers on this zone productive possibilities which do not exist along the Gulf of Cariaco. In addition, all around the northern arm of the Gulf lie numerous islands between which the depth of the water varies considerably, thereby contributing to further diversification of production. Species of great commercial value such as the pargo, cuna, and calamar, which have now disappeared at the lower end of the Gulf of Cariaco, still are a major source of income for the Santa Fesino fishermen.



They can therefore afford to be more specialized, because their maritime zone offers them better possibilities at the production level, and their geographic position gives them direct access to good markets.

2. Population Characteristics

The numerical size of the community and the small amount of time spent in Santa Fé prevented me from gathering complete information on the village's demographic features. I therefore proceeded with a sample of 150 domestic groups, covering about one-third of the total population. The census includes all the family groups whose economic activities were directly related to fishing. They comprise about one-half of the families of the sample. The rest of the families consist of representatives of other occupational groups in the community.

A first look at Table 41 shows that the distribution of the population by age and sex is regular. Nonetheless, the high proportion of young people is notable; more than 50 percent are below 15 years of age. Similarly, the sex ratio reveals a slight numerical superiority of men over women, but only in the first age group is there a significant difference (96 men compared to 71 women). For the year preceding the census, the birth rate hovered around 32.8‰, a rate somewhat smaller than in Chiguana and Guacarapo (37‰). The examination of the fecundity rate reveals, however, that the birth rate has been relatively constant in the last

five years (774‰). During this period, of every four women able to bear children, three became pregnant.

Table 41.--Population by age and sex: Santa Fé, 1971.

Age Group	Male	Female	Total	Dependent & Active Population					
				Male		Female		Total	
	No.			No.	%	No.	%	No.	%
0 - 4	96	71	167						
5 - 9	90	88	178	274	27.2	234	23.2	508	50.5
10 - 14	88	75	163						
15 - 19	67	52	119						
20 - 24	40	42	82						
25 - 29	27	30	57						
30 - 34	20	14	34						
35 - 39	20	31	51	248	24.0	234	23.2	472	47.2
40 - 44	24	19	43						
45 - 49	10	29	39						
50 - 54	14	7	21						
55 - 59	11	5	16						
60 - 64	5	5	10						
65 - 69	4	4	8	13	1.2	12	1.2	25	2.4
70+	9	8	17						
Total	525	480	1005		53.0		47.0		100.0

The normal distribution of population according to age groups indicates that emigration has had little effect on the community. It was mentioned previously that Santa Fé has undergone a strong immigration in recent years. Examination of the general demographic features shows that immigration implies the arrival not of individuals but of whole

family groups. According to the official census, Santa Fé included 1168 persons in 1961. The population would therefore have increased threefold in the last decade. A closer look at the place of origin of the individuals included in the census conclusively illustrates the above. Of a total of 1005 persons, 466 were born outside the community, of whom 239 were men and 227 women. The equal number of in-migrants of both sexes reiterates once more the bilateral character of the kinship system. For several domestic groups in Santa Fé, marital residence implies neolocality, and no unilineal mode of grouping seems to have an influence upon the partner's residence patterns. Another interesting feature concerning the above is that in-migrants come from 55 different localities. This will be of some importance in characterizing the type of social control prevailing in Santa Fé.

Among the localities whose inhabitants have migrated to Santa Fé, Cumana comes first with 109 people. Then follow San Pedro, a small town on the mainland, with 63, Barcelona with 45, and the Island of Margarita with 20. The juxtaposition of the place of origin of the in-migrants with their number of years of residence in the village shows that previously maritime communication strongly conditioned migration into the community. Of a total of 35 individuals who migrated to Santa Fé more than 30 years ago, 31 came from fishing communities (cf. Table 42). Improvement of the means of communication with the interior region contributed

Table 42.--Time of residence of in-migrants according to their place of origin: Santa Fé, 1971.

Place of Origin	Number of Years of Residence in <u>Santa Fé</u>							Total
	0-9	10-19	20-29	30-39	40-49	50-59	60+	
<u>Cumana</u> ^a	51	33	14	6	2	2	1	109
<u>San Pedro</u>	34	23	5	-	1	-	-	63
<u>Barcelona</u> ^a	22	10	4	3	6	-	-	45
<u>Margarita</u> ^a	9	4	2	4	1	-	-	20
<u>Los Altos</u>	9	4	5	2	-	-	-	20
<u>Nurucual</u> ^a	10	5	1	1	-	-	-	17
<u>Mochima</u> ^a	3	9	1	-	-	-	-	13
<u>Puerto La Cruz</u> ^a	2	9	-	-	-	-	-	11
<u>Rio Caribe</u> ^a	2	-	3	2	2	-	-	9
<u>Guanta</u> ^a	3	3	1	-	-	-	-	7
<u>Barbacoa</u>	3	4	-	-	-	-	-	7
Others	64	47	9	1	-	-	1	123
Total	224	160	47	19	12	2	2	466

^aFishing centers.

to enlarging the number of localities whose inhabitants established residence in Santa Fé. With such significant immigration, it is not surprising to see that only 14 people related to nuclear families included in the census had left the village in recent years. Such a low rate of departure indicates that economic opportunities in Santa Fé are, if not better, at least comparable to those of neighboring communities.

The examination of the sex and marital status of the family heads shows that 124 households are headed by males, compared to 26 by females. This does not constitute a marked contrast with household features prevailing in Guac-arapo, where the proportion was somewhat identical. But it does with Chiguana, where more than one-third of the households were headed by females. On the other hand, in the 150 domestic groups of the sample, only three include partners married by the Church, 51 couples are married by civil law, 78 live in consensual unions, and the rest either are widows or separated. Civil marriages are most numerous in the Centro, where most of the merchants and middlemen live. Table 43 shows, on the other hand, that age strongly influences the females' marital status. Younger women engage more significantly in consensual unions, while those over 45 years of age are the only ones who run a household.

The average age difference between partners hovers around 5.7 and 5.4 years for those married by civil law or

Table 43.--Household heads by sex, age, and marital status: Santa Fé, 1971.

Age Group	Male					Female					Total				
	C.I.	C.C.	C.U.	W.	Sep.	C.I.	C.C.	C.U.	W.	Sep.	C.I.	C.C.	C.U.	W.	Sep.
15 - 19	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-
20 - 24	-	1	6	-	-	-	-	4	-	1	-	1	10	-	1
25 - 29	-	6	4	-	-	-	-	1	-	-	-	6	5	-	-
30 - 34	-	6	6	-	-	-	-	2	-	-	-	6	8	-	-
35 - 39	1	10	10	-	-	-	-	1	-	-	1	10	11	-	-
40 - 44	1	10	6	-	-	-	-	1	-	5	1	10	7	-	5
45 - 49	-	6	14	-	-	-	-	1	1	2	-	6	15	1	2
50 - 54	-	4	7	-	-	-	-	-	-	1	-	4	7	-	1
55 - 59	1	5	5	-	1	-	-	-	-	3	1	5	5	-	4
60 - 64	-	1	2	-	-	-	-	-	1	1	-	1	2	1	1
65 - 69	-	1	2	1	-	-	-	-	-	-	-	1	2	1	-
70+	-	1	5	-	1	-	-	-	-	-	-	1	5	-	1
Total	3	51	67	1	2	-	-	11	2	13	3	51	78	3	15

living in consensual unions. The latter type of mating does not therefore correspond to a greater economic instability as it does in Chiguana. An examination of the age distribution between partners engaging in this form of mating nevertheless shows that age variation is greater, going from minus 18 to plus 35 years compared to minus 2 to 20 years for civil marriages.

Another salient feature of demography in Santa Fé lies in the diversity that characterizes the households' composition. With an average size of 6.6 persons, households represent more than 35 structural types (Table 44). The nuclear family type is the most numerous, with 68 representatives--47 percent of the total. Then follow the domestic groups in which, besides the nuclear family, are found "criados," i.e. children the women had with other men before undertaking a stable union (15 cases). Next come the matrifocal families, which comprise the female head and her children (10 cases). The overall distribution is therefore remarkable, because more than 53 percent of the domestic groups are made up of either incomplete nuclear families or of nuclear families with other relatives of some kind.

Table 45, which analyzes the type of kinship relations between the family head and the resident nonmembers of the nuclear family, indicates that 82 incomplete or extended domestic groups include 139 relatives of this kind.

Table 44.--Structural types in household composition according to sex of household heads: Santa Fé, 1971.

Composi' on	Sex of Household Heads		Total
	Male	Female	
- Ego, wife, children	68	-	68
- Ego, wife, children, adoptive children	12	-	12
- Ego, wife, children, brother	2	-	2
- Ego, wife, children, mother	1	-	1
- Ego, wife, children, daughter's children	7	-	7
- Ego, wife, children, adoptive daughter's children	3	-	3
- Ego, wife, children, wife's sister's children	5	-	5
- Ego, wife, children, sister-in-law	2	-	2
- Ego, wife, children, sister, sister-in-law	1	-	1
- Ego, wife, children, daughter's children, son's wife	1	-	1
- Ego, wife, children, wife's cousins	2	-	2
- Ego, wife, children, mother, wife's mother's sister	1	-	1
- Ego, wife, children, brother, sister-in-law, wife's nephews	1	-	1
- Ego, wife, children, adoptive children, son's wife	1	-	1
- Ego, wife, children, adoptive children, mother-in-law	1	-	1
- Ego, wife, children, adoptive children, wife's nephews	1	-	1
- Ego, wife, children, adoptive children, mother	1	-	1
- Ego, wife, adoptive children	4	-	4
- Ego, wife, daughter's children	4	-	4

Table 44.--Continued.

Composition	Sex of Household Heads		Total
	Male	Female	
- Ego, wife, brother, brother's children, godfather	1	-	1
- Ego, wife, wife's sister's children	1	-	1
- Ego, wife, daughter's children, son's wife, godfather's children	1	-	1
- Ego, father's brother's son	1	-	1
- Ego, children	-	10	10
- Ego, mother	-	1	1
- Ego, children, daughter's children	-	5	5
- Ego, children, daughter's husband	-	1	1
- Ego, children, brother	-	1	1
- Ego, children, mother	-	1	1
- Ego, children, daughter's children, godfather's son	-	1	1
- Ego, children, daughter's children, daughter's husband	-	1	1
- Ego, children, daughter's children, daughter's husband, brothers and sister's children	-	1	1
- Ego	-	4	4
Total	124	26	150

Of this total, 115 live in male-headed households and only 24 in female-headed households. Nevertheless, the matri-focal tendency of the families is illustrated by the fact that only 15 persons of a total of 139, considered as

resident nonmembers of the nuclear family of the male heads, are patrilineally related to them.

Table 45.--Kinship relations between household heads and resident nonmembers of household heads' nuclear family: Santa Fé, 1971.

Kinship Relations to Household Head	Male Head	Female Head	Total People
<u>Consanguine</u>			
Mother	2	1	3
Brother	5	1	6
Brother's son	3	-	3
Father's brother's son	5	-	5
Daughter's children	18	19	37
<u>Affinal</u>			
Brother-in-law	4	-	4
Daughter's husband or son's wife	5	2	7
Father or mother-in-law	2	-	2
Wife's sister's children	9	-	9
Adoptive daughter's children	16	-	16
Wife's mother's sister	1	-	1
Wife's mother's sister's son	1	-	1
Adoptive children	41	-	41
<u>Symbolic</u>			
Godfather	1	-	1
Godfather's children	1	1	2
Stranger	1	-	1
Total	115	24	139

Although comprising a larger number of people and being characterized by different special arrangements, the community of Santa Fé presents similarities, at the level of general demographic features, with Chiguana and Guacarapo. These will be important for the overall comparison since they indicate that, in spite of a certain local specificity, communities of Eastern Venezuela share identical cultural models.

B. Economic Organization

1. Occupational Structure

Table 46 shows that 216 people hold a remunerated job, of whom 215 are men and only 11 are women. This tabulation refers to persons who have a steady occupation, but does not correspond to the number of people nominally included in the category of active population. Table 42 indicated that the age group 15-64 comprises 472 persons. Among the above "active" workers, only 35 can be assumed to earn a significant income from a secondary occupation. The specialized character of the economy of Santa Fé does not therefore lie in the existence of a single field of activity for the majority of the inhabitants. On the contrary, the sample rather demonstrates that occupations are highly diversified. The specialized character of the occupational structure then stems from the low number of persons holding a secondary job. Almost everyone is a full-time specialist in a particular economic sphere. This entails economic behavior and

alternatives somewhat different from those prevailing in Chiguana and Guacarapo.

Table 46.--Occupations according to sex: Santa Fé, 1971.

Types	Principal		Secondary		Total	
	M	F	M	F	M	F
Fishermen ^a	66	-	18	-	85	-
Middlemen ^a	26	1	-	-	26	1
Carpenter ^a	7	-	3	-	10	-
Sailors ^a	3	-	-	-	3	-
Mechanics ^a	1	-	-	-	1	-
Ice seller ^a	1	-	-	-	1	-

Cultivator	33	-	3	-	36	-
Store keeper	22	-	3	-	25	-
Laborer	30	-	2	-	32	-
Taxi	8	-	-	-	8	-
Policeman	2	-	-	-	2	-
Pharmacist	2	-	-	-	2	-
Dressmaker	-	2	-	-	-	2
Bar keeper	2	1	-	-	2	1
Teacher	1	4	-	-	1	4
Post officer	1	-	-	-	1	-
Soldier	2	-	-	-	2	-
Telegraphist	1	-	-	-	1	-
Secretary	-	1	-	-	-	1
Maid	-	2	-	-	-	2
Other	1	-	1	-	2	-
Subtotal	205	11	35	-	240	11
Total						251

^aOccupations related to fishing.

A total of 251 (main and secondary) occupations were tabulated. Among those, 127 concern fishing. Eighty-five people define themselves as fishermen, 27 earn an income from the purchase and sale of fish, 10 are engaged in boat construction, 3 are involved in maritime transport, and 1 individual sells ice. The fact that jobs related to fishing represent about half of the total number of jobs included in the census is not purely coincidental. The census comprised a relatively equal proportion of families whose activities were related to fishing and families engaged in other spheres. Among the latter, agriculturalists, laborers, and store keepers were the most numerous with 36, 32, and 25 representatives, respectively.

The juxtaposition of the occupations of individuals with their place of origin gives an additional insight into the community's economic specialization. The majority of fishing personnel born outside the community came from other coastal villages, and most of the agriculturalists migrated from villages which already specialized in land cultivation. But the 30 laborers were all born in Santa Fé. In-migration therefore implies that the newcomer establishes himself in keeping with his specialization. The fact that 30 people in the census did not mention any particular occupational skill might, on the other hand, indicate that Santa Fé is now reaching a point where not everybody in the community can engage significantly in traditional activities. In-migration will then possibly be reduced in the future.

Table 47.--Occupations of the in-migrants according to their place of origin: Santa Fé, 1971.

Place of Origin	Occupation						Total
	Fisherman	Cultivator	Store Keeper	Middleman	Laborer	Other	
Cumana	22	1	1	4	-	3	31
San Pedro	-	4	5	1	-	3	13
San Pedrito	-	3	-	1	-	2	6
Barcelona	3	2	2	2	-	3	12
Margarita	4	1	3	4	-	-	12
Los Altos	-	3	3	1	-	-	7
Nurucual	-	2	1	-	-	1	4
Mochima	4	-	1	3	-	-	8
Guanta	-	1	-	-	-	-	1
Barbacoa	2	-	-	2	-	-	4
Rio Caribe	2	-	2	-	-	2	6
Others	-	6	4	3	-	14	27
No. of people born outside the community	37	23	22	21	-	28	131
No. of people included in the sample	66	33	22	27	-	39	216

Finally, all the store keepers came from outside the community. This reveals some features of the entrepreneurship of these individuals and is of some importance, although no detailed study of consumption was done, to understand patron-client relationships in commercial activities.

I will now proceed with the analysis of the economic situation of fishing personnel in Santa Fé.

2. Economics of Fishing

In the preceding section, mention was made of the fishing personnel living in the village of Santa Fé. But these people are not the only ones to practice fishing in the region of Santa Fé. As shown in Figure 23, the entire coastal region is inhabited by groups of fishermen scattered in more than 25 rancherías. Since these rancherías include between 7 and 25 inhabitants and only 12 of them belong to people living in the village, it can be assumed, a priori, that more than half the total number of fishermen exploiting the fishing zone of Santa Fé do not have a fixed residence in the community. In fact, seven rancherías are made up of people from Cumana, one from fishermen from Araya, and another seven comprise inhabitants of Manicuare, communities all located at the mouth of the Gulf of Cariaco. But these people, though admitting to membership in communities other than Santa Fé, cannot be neglected in the present study. They form an integral part of the economic organization of Santa Fé. Moreover, the majority of them have some property

in the zone immediately adjacent to the village and have exploited or inhabited specific spots of the maritime region for several decades. In some cases, agnatic inheritance of the fishing rights and grounds has been operative since the middle of the last century. This flexibility of residence patterns must be related first to the particular characteristics of fishing in Santa Fé. The great diversity of the techniques employed, as well as the species exploited, causes the fishermen to be scattered among different fishing stations in proximity to the immediate working area. The subsequent references to Santa Fesino fishermen will then imply all the fishermen or fishing personnel whose activities are related to or derive from the exploitation of the Santa Fé marine zone to a significant degree. In this regard, the previous census indicated a total of 86 fishermen; additional censuses in the coastal region have increased their number to 400, a total 10 times higher than in Chiguana and 5 times higher than in Guacarapo.

2.1) Fixed Capital in Fishing.--The large number of fishermen and their differential location prevented me from gathering exhaustive or detailed information on their capital assets in fishing. I mean that I did not have the time, as I did in former villages, to interview each owner of fishing equipment and to make an inventory of all he possessed. I thus had to rely on statistics provided by the census of the Fishery Office in Cumana. Although some criticism has previously been made about this source of information, regarding

the fishermen's level of production, it does not apply to the Office's data on fishermen's equipment. The great importance of fishing in Santa Fé causes the officers to be more careful in evaluating the fishing equipment, and personal verification demonstrates that their information is valid.¹

Table 48.--Investment in fishing gear: Santa Fé, 1971.

Types	Number	Ind. Value in Bs	Total Value in Bs
Cordel (handline)	217	Bs 50	Bs 10850
Nasa (fish pot)	67	Bs 60	Bs 4020
Palambre (trawl)	5	Bs 80	Bs 400
Atarraya (cast-net)	2	Bs 50	Bs 100
Arpon (harpoon)	2	Bs 10	Bs 20
Argolla (purse seine)	8	Bs 5000	Bs 40000
Mandinga (shore seine)	9	Bs 4000	Bs 36000
Chinchorro (gill-net)	60	Bs 3000	Bs 180000
Red jurelero (mackerel net)	15	Bs 6000	Bs 90000
Total			Bs 381390

The compilation of the amount of money that represents the fishing gear possessed by the 64 owners registered with the Fishery Office gives a total of Bs 381,390 (\$16,600).

¹At the time of my departure, fishery officers planned to choose the community of Santa Fé as a pilot area for re-evaluating their methods of estimation of the fishermen's production. This was because of the possible introduction of a better credit system by governmental banks.

The categories in which investment is highest are those of the chinchorro or gill-net, used in different types of pelagic fishing, at Bs 180,000, and the red jurelero, or mackerel net, at Bs 90,000. Then follow other specialized nets for pelagic fishing such as the argolla and the mandinga, representing respectively Bs 40,000 and Bs 36,000. The salient feature of the tabulation consists not only in the importance of equipment for pelagic species, but also its great diversity which reflects the specialized character of fishing in the community.

Identical remarks apply to the examination of investment in fishing crafts (Table 49). It totals Bs 309,200, the most important item being the bote, in the amount of Bs 135,000. As in the former villages, marine motors represent about half the investment in transport technology. The total cost of fishing gear and fishing crafts is Bs 690,590 (\$30,700), and the average investment hovers around Bs 10,790 per registered owner.

Examination of the allocation of investment gives us a better insight into the economics of fishing in Santa Fé. Although the average investment is around Bs 10,000, Table 50 reveals that nine owners have invested more than Bs 18,000, one even having as much as Bs 80,000. Such differential investment did not exist in the communities previously studied; this already indicates that the greater specialization of fishing in Santa Fé entails capitalization processes which lead to a more significant social hierarchy. The

Table 49.--Investment in fishing crafts: Santa Fé, 1971.

Types	Size in Meters	Number	Ind. Value in Bs	Total Value in Bs
CAYUCO	2	1	200	200
	3	5	250	1250
	4	1	300	300

PIRAGUA	7	1	900	900
	8	1	1000	1000

LANCHA	3	4	800	3200
	4	11	900	9900
	5	10	1000	10000

BOTE	4	13	1200	15600
	5	13	1500	19500
	6	18	1700	30600
	7	18	2000	36000
	8	4	2200	8800
	9	1	25000 ^a	25000

Subtotal		101		Bs 162450

Marine motors		45	Bs 2750	Bs 123750
		1	Bs 23000 ^a	Bs 23000

Total				Bs 309200

^aSpecially equipped boat.Table 50.--Allocation of investment in fishing equipment:
Santa Fé, 1971.

Categories in Bs	Number of Owners
0 - 999	1
1000 - 1999	3
2000 - 2999	3
3000 - 3999	7
4000 - 4999	8
5000 - 5999	3
6000 - 6999	8
7000 - 7999	-
8000 - 8999	5
9000 - 9999	2
10000 - 10999	3
11000 - 11999	3
12000 - 12999	3
13000 - 13999	2
14000 - 14999	4
15000 - 15999	-
16000 - 16999	-
17000 - 17999	-
18000 - 18999	-
19000 - 19999	1
20000 - 20999	2
21000 - 21999	-
22000 - 22999	1
23000 - 23999	1
24000 - 24999	-
25000 - 25999	1
26000 - 26999	-
27000 - 27999	-
28000 - 28999	1
35000 - 35999	1
79000 - 79999	1

Total	64 owners

Average investment	Bs 10790

following will demonstrate that crews' productivity is highly diversified and that investment, though not the only determinant factor, plays a decisive role in crews' formation.

Finally, the relatively long period of utilization of fishing equipment, as shown in Table 51, reveals some aspects of investment in the community. It points out that fishermen do not hesitate to spend money to care for their equipment, and that the community is large enough to sustain specialized carpenters for boat repairing.

Table 51.--Time of utilization of fishing crafts: Santa Fé, 1971.

Number of Years	Types of Crafts				Total of Years
	Cayuco	Piragua	Lancha	Bote	
1	-	-	1	2	3
2	-	-	1	-	2
3	-	-	1	-	3
4	-	-	3	2	20
5	-	-	-	2	10
6	-	-	3	10	78
7	1	-	-	-	7
8	1	1	2	5	72
9	-	1	3	3	67
10	-	-	1	-	10
11	-	-	-	1	11
12	-	-	-	-	-
13	-	-	-	3	39
14	-	-	-	3	42
15	-	-	-	1	15
16	-	-	-	-	-
17	-	-	1	4	85
18	-	-	1	3	72
19	-	-	-	2	38
20	-	-	1	-	20
25	-	-	-	1	25
Total	2	2	18	42	610 years
Ave. time of utilization	7.5	8.5	8.0	10.4	9.6 years

The examination of the Santa Fesinos' capital assets reveals an average investment higher than that prevailing in Chiguana and Guacarapo, and demonstrates the effects or consequences, at the level of capital accumulation, of their greater specialization. The latter implies not only full-time work in a particular sphere, but specialized activities within fishing itself which force the skippers to diversify their means of production.

2.2) Fishing Membership.--The study of the settlement patterns and of the allocation of investment in fishing presupposes the existence of different types of groupings for the exploitation of marine resources in Santa Fé. If we add to the above the diversity of the techniques used and the various degrees of specialization of the crews, we understand why the analysis of membership or crews' formation in fishing cannot be done by simply selecting broad axes, as we previously did in Chiguana and Guacarapo, related to the fishermen's degree of involvement in marine activities. I mean that the utilization of categories like full-time and part-time fishermen would not be very useful to depict ways and characteristics of fishing groups' formation in Santa Fé.

In the official census of the Fishery Office, 440 fishermen, of whom 64 are skippers, declared they practice fishing in Santa Fé. This gives an average of six fishermen per team. Obviously, this average does not throw much light on the study of membership in fishing groups. It is

nevertheless interesting to see that this average is fairly similar to that prevailing in other communities like Chiguana and Guacarapo. It at least indicates that, independent of its immediate utility or nonutility, there must be a common basis for the articulation between means and force of production in marine activities in the entire region of Eastern Venezuela.

A first salient feature of crews' composition comes from the fact that almost half the 440 fishermen registered with the Fishery Office are classified as tripulacion eventual, i.e. as having no stable membership in a particular work group. They therefore work with various teams at different periods of the year, while others have a fixed membership in a particular crew. A first way of obtaining an operational categorization would therefore consist in isolating the crews which possess a variable number of fishermen and those formed exclusively by permanent members. The census indicates that among the 64 teams officially registered, 42 belong to the former category. Further investigation shows that these teams are almost all located on the outlying islands and around the northern arm of the Gulf of Santa Fé. So specific features of fishing in the coastal region entail mechanisms of cooperation which result, for crews operating in this area, in differential characteristics of membership. We therefore obtain two main types of fishing groups, each including specialized personnel or full-time fishermen, but

one with fixed or regular members, the other with irregular personnel in addition to a stable number of fishermen.

Table 52.--Size of fishing groups according to types of membership: Santa Fé, 1971.

Stable Membership			Temporary Membership		
Size of the Group	No. of Cases	Total Fish.	Size of the Group	No. of Cases	Total Fish.
1	7	7	1	1	1
2	18	36	2	12	24
3	12	36	3	2	6
4	5	20	4	9	36
5	10	50	5	2	10
6	4	24	6	6	36
7	2	14	7	2	14
8	3	24	8	5	40
9	1	9	9	1	9
10	1	10	10	-	-
11	1	11	11	1	11
12	-	-	12	1	12
Total	64	241		42	199
Total of Fishermen				440	

Although more satisfactory than the previous one, this classification nevertheless needs additional elements to be operative. The high number of fish species exploited in Santa Fé, as well as the full-time involvement of most of the fishermen in the exploitation of marine resources, implies that the majority of the crews use a wide range of techniques requiring a differential labor force. The above

already indicates that the composition of fishing groups inhabiting the coastal area is influenced by these technological exigencies since several teams enlarge or reduce their personnel depending on the fishing season (temporada). The procedure followed to obtain a better insight into this problem therefore consisted in asking each skipper which technique or equipment represented the highest investment within his own crew and how many regular sharemen were needed to make it operative. Although not a perfect measure since it does not consider the crew's total equipment and does not give an idea of the variations in the number of fishermen for a single crew, this way of proceeding provides us with useful information. It shows that according to the main technique used by the crews, the latter can be grouped into seven categories all characterized by a differential size or labor force which ranges from 3 to 10 persons (cf. Table 53). The technique requiring fewer personnel is the handline, with teams including on the average three fishermen, while those requiring the most persons are the argolla (purse seine) and the tren jurelero (mackerel nets). Table 54, which juxtaposes the type of membership, the residence, and the main technique used by the crew, is not intended to define additional subtypes. Its purpose is to describe rather than classify. It permits us to characterize furthermore the teams having a fixed residence in the community and those living in the outside region on a permanent basis. One of the striking features of this tabulation is that almost half

Table 53.--Size of fishing crews according to the fishing technique which represents the most valuable item within the crews' total investment: Santa Fé, 1971.

Size of the Crew	Fishing Techniques					
	Cordel	Argolla	Chinchorro	Tren Sardinero ^a	Mandinga	Tren Jurelero
1	-	-	-	-	-	-
2	5	-	-	-	-	-
3	4	-	3	-	-	-
4	-	-	2	-	-	-
5	3	-	-	8	-	-
6	3	1	-	4	-	1
7	-	1	-	-	5	-
8	-	2	-	-	4	1
9	-	-	-	-	5	-
10	-	-	-	-	3	2
11	-	-	-	-	-	-
12	-	1	-	-	-	2
13	-	-	-	-	1	1
14	-	1	-	-	-	-
15	-	1	-	-	-	-
No. of fishing groups	15	7	5	12	18	7
Ave. size of fishing groups	3.0	9.2	3.4	5.8	8.5	10 people

^aSpecial type of chinchorro.

the fishing groups declare residence in the community (27 cases). But one must not forget that although they have a residence in the village, seven groups (those using the mandinga and the argolla) also inhabit fishing stations in the coastal region at different periods of the year (cf. Figure 23). This would leave only 20 teams who use the village of Santa Fé as a basis of operation during the whole year, i.e. 15 using the cordel (handline) and 5 using the tren lisero (gill-net for lisa). In multiplying the number of men whom these techniques require on the average by the number of teams, we obtain the total number of fishermen included in the census of the village, that is to say around 65.

Table 54.--Specialization of fishermen according to their residence and stability of their membership: Santa Fé, 1971.

Membership	Residence			
	In the Village		In the Coastal Region	
	Main Technique	No. of Teams	Main Technique	No. of Teams
With fixed personnel	Cordel	15		
	Chinchorro	5		
			Mandinga	2
With irregular members in addition to fixed personnel	Argolla	2	T. Jurelero	7
	Mandinga	5	Argolla	5
			T. sardinero	12
			Mandinga	11
Total		27		37

The above information, then, results in the following characterization:

The Crews in the Village

- Most of them are made up of fixed or regular personnel (20 out of 27).
- In these crews, demersal fishing is as important as pelagic fishing.
- The average number of fishermen per team is relatively low, given the importance of demersal fishing, which entails restricted forms of cooperation.
- For identical reasons, their equipment constitutes a minimal part of the community's total investment in fishing.

The Crews in the Coastal Region

- Most of them have, in addition to a stable core of fishermen, members working on a temporary basis (35 out of 37).
- Most of them specialize in various types of pelagic fishing, with one predominating.
- They generally include a relatively large number of fishermen, since pelagic fishing entails enlarged forms of cooperation.
- Their equipment forms the major part of the community's total investment in fishing.

So the flexibility or variation in the numerical size of fishing crews in Santa Fé presents some similarities with the situation prevailing in Chiguana and Guacarapo. I mean

that identical techniques generally require a labor force of similar size. But the specificity of membership in fishing in Santa Fé lies in the greater variation encountered in the size of the groups. This is explained by the existence of a wider range of techniques and a higher degree of specialization of fishermen. In addition, circumstantial factors such as the length of the period of residence in the area help to accentuate this diversity. For ecological reasons already mentioned, the groups living in the outside region have exploited the maritime zone for a longer time than those living in the village. This entails a differential capitalization directly influencing characteristics of membership in the fishing groups.

Difficult conditions of fieldwork in Santa Fé (related to the amount of time spent in the village and the geographic distance separating the numerous rancherías from the community) prevented me from gathering precise qualitative information on fishing groups' composition. I did not have the time, as in Chiguana and Guacarapo, to undertake the analysis of the kinship relations between the skippers and their sharemen on a detailed basis. I nevertheless assume that kinship plays an integrative role in most of the teams and that a real compilation of kinship relations within the crews would not have resulted in characteristics substantially different from those encountered in Guacarapo and Chiguana.

Given the bilateral character of the kinship system (a fact confirmed by the preceding analysis of demography), recruitment in fishing is characterized by a certain fluidity. But since the activities of acquisition or the material appropriation of fish is reserved to men, there is a tendency to agnatic grouping among members constituting the core of the group. I recorded at least four cases of agnatic inheritance in rancherías of the coastal region, inheritance being related to the restricted number of good fishing stations and to their differential productivity. In addition, since fishermen living in those rancherías lead a very frugal life and do not benefit from material commodities existing in the villages, often for several months at a time, the skipper has the advantage of recruiting personnel within his kindred to maintain a social cohesion which compensates for the bitterness and boredom deriving from residence in this area.

At a more general level, partial statistics on the fishermen's age show a marked difference between those living in the village and those inhabiting the coastal region (36.5 compared to 29.2 years of age). The only satisfactory explanation would come from the larger size of the crews operating in the latter area. This forces the skipper to recruit youngsters and young adults who, in many cases, can perform operations as well as adults while permitting the skipper to reduce his operating costs. The system of distribution often takes into consideration the age of the participants. Otherwise, the average age of fishermen is very

close to that prevailing in Guacarapo, where fishermen are almost full-time specialists.

Table 55.--Age of fishermen according to their residence:
Santa Fé, 1971.^a

Age Groups	Living in the Village		Living in Coastal Region	Total of Fish.
	Fish. as Main Act.	Fish. as Sec. Act.		
10 - 14	--	4	10	14
15 - 19	11	3	13	27
20 - 24	11	1	5	17
25 - 29	6	1	7	14
30 - 34	5	4	3	12
35 - 39	6	1	9	16
40 - 44	5	-	2	7
45 - 49	9	2	3	14
50 - 54	5	2	3	10
55 - 59	1	1	-	2
60 - 64	-	-	2	2
65+	7	-	4	11
Total	66	19	61	146
Ave. age	36.5	34.2	29.2	32.9

^aThe number of fishermen included in the above tabulation is not the total number of fishermen exploiting the marine zone of Santa Fé. In the second category (fishermen living in the coastal area), information was gathered only in five rancherías on a total of 27 fishermen.

The study of membership in fishing reveals that specialization in fishing does not mean uniformity in size of groups. On the contrary, it demonstrates that full-time

dedication to the exploitation of marine resources might result in different types of fishing groups, each characterized by specific technical and social exigencies, and that a single team might at a different time possess different characteristics. It also points out that specialization does not necessarily limit the alternatives facing the economic actor. Although restricting the economic field within which the actor can behave, it forces him to go more thoroughly into the behavioral possibilities of his particular sphere. This will be further illustrated by the forthcoming analysis of their levels of production and system of repartition.

2.3) Levels of Production.--Gathering precise statistics on production over a long period in Santa Fé was a major difficulty, as was the case in the other fishing communities with which this study was concerned. Because of the variable nature of their production, fishermen can rarely provide exact information on the volume of their catches. In Santa Fé, these shortcomings were enhanced by the large number of fishermen, the diversity of their residence, and the variability of both the techniques used and prices obtained for fish.

Thus, not too many alternatives were left to obtain approximate figures of the community's total output over a year's time. I had to rely on the statistics provided by the Fishery Office. I must say, however, that my reluctance to use this source of information for the study of production

in Chiguana and Guacarapo was not as strong in the case of Santa Fé. I previously referred to facts that demonstrated that the control of the Fishery Office seemed more effective in this community. In addition, personal verification showed that there existed discrepancies between the real output of the fishermen and the total declared to officers but the discrepancies were not, on the average, as high as in Chiguana or Guacarapo, and in several cases, the information was objective.

The compilation of official statistics for the period between August, 1970, and July, 1971, reveals a total output of 1,173,121 kilos of fish, for an average monthly catch of 97,760 kilos or an average daily catch of 3,300 kilos at the community's level. Such a total clearly indicates the importance of production in Santa Fé. These fishermen catch in one day almost as many fish as Chiguaneros do in a month. The division of the total annual output by the total number of fishermen gives an average production of 2,600 kilos a year per fisherman--the highest average encountered so far. If we take into account the fact that about 100 fishermen living in the outside rancherías spent only a few months a year in Santa Fé, this average would be effectively higher.¹

¹These fishermen come to Santa Fé at the end of the spring and live in their fishing stations until the end of the summer. Most of them specialize in jurel fishing (mackerel). They live in the following stations: La Peña, Chapín, Siete, Capas, Puerto Estrella, Playa Muerto, Cruz de Las Patas, and Los Cotorros.

Conversion of the number of kilos into bolívares is not as simple, however, as in Chiguana. The average price of Bs 1 a kilo used in Chiguana (since the lisa is the most current species) cannot be operative in Santa Fé because numerous species are caught and prices vary greatly from one species to another. In other words, the total number of kilos cannot be converted into an equal number of bolívares to estimate the value of the fishermen's production or gross annual income. The operation has to be ponderated by an average price for each species and take into account the monthly variations in price for some species (cf. Appendix D).

Table 56 shows that the amount of money obtained by the Santa Fesino fishermen from the direct sale of their fish over a year's time hovers around Bs 705,814, or 567,307 units fewer than the total number of kilos. The discrepancy is largely explained by the fact that during some months, especially in the fall, the Santa Fesinos capture a lot of arregue (sardines) which considerably increase the total number of kilos, but for which the price is very low. Thus the average annual income per fisherman is reduced to Bs 1,604. This average must not be taken, however, as an average annual income for a family head. As in the case of the total number of kilos, it is lowered by the inclusion of the total number of fishermen, among whom several do not live in Santa Fé on a permanent basis. Moreover, it does not take into account the differential distribution rules that prevail within the crews. On this basis, the average

annual income that an adult fisherman would obtain directly from the exploitation of sea resources would oscillate between 3 and 4,000 bolivares.

Table 56.--Monthly output in fishing between August, 1970, and July, 1971: Santa Fé.

Months	Total Catches in Kilos	Total Value in Bs
August	132664	82435
September	187762	73858
October	207000	68550
November	210000	55000
December	103697	38767
January	58007	23170
February	78236	37125
March	199120	41240
April	105693	54099
May	187602	63516
June	135000	97000
July	112630	71104
Annual Output	1173121	705814
Average Monthly Output	97760	58817
Average Individual Annual Output	2666	1604
Average Individual Monthly Output	222	133

Figure 24, which juxtaposes monthly variations in fishing output and value, shows that there exists a cyclicity in production somewhat similar to that encountered in Chiguana

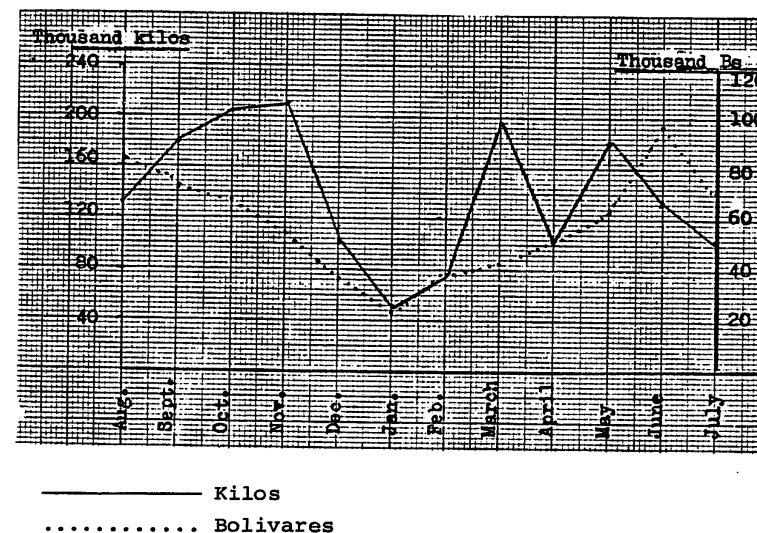


Figure 24.--Monthly variations in fishing output: Santa Fé, 1971.

and Guacarapo, thus indicating that during a year's time, identical ecological changes affect the entire fishing zone of Eastern Venezuela. For instance, the fall season is also the most productive and output becomes significant by the end of the spring season. But the figure also gives us a major explanation for the more specialized character of fishing in Santa Fé: On the whole, productivity is submitted to fewer variations than in the former villages. This is largely due to the fact that the Santa Fesino fishermen can rely on the exploitation of several species, of which some are current and others seasonal, and not on only a few species as is the case with Guacarapaneros and Chiguaneros.

The examination of the price variations indicates a general correspondence between supply and demand, but this correspondence is not always perfect. The high number of kilos caught in the fall explains why the price falls at the end of the year. But in addition to quantity, quality of fish caught influences the price. In this case, most of the catches consist of arrenque, the average price of which is very low, i.e. Bs 0.10 and Bs 0.50 a kilo. But in May, even if output again reaches a relatively high level, the prices remain high because the species that now form the major part of the catches are of great commercial value (jurel, cabaña). In this regard, unlike fishermen of other fishing communities, the Santa Fesinos would make more money by the end of the spring season than during the fall. The diversity of the species exploited and their differential

commercial value means that the level of production and the level of income are not strictly similar at certain times of the year.

At a more microscopic level, I could have examined in Santa Fé the variations in production of individual teams. Such a procedure, followed in the analysis of production in Chiguana and Guacarapo, would only have confirmed once more what we already know concerning the fishermen's output: Fishing is characterized by short-term planning; production is daily and consequently highly variable. It was therefore more significant, to obtain an additional insight into the levels of production in Santa Fé, to pay more attention to the differential productivity of the crews according to the main techniques they used or the type of fishing they practice.

I thus set out to observe fishermen arriving at the market. I proceeded with a complete inventory of their catches, specifying the amount of production per species. I noted the number of participants and took information on the number of hours spent in acquisition. I finally observed the group until all transactions were over, thus obtaining the exact price for each species and the total value of the catches.

This permitted me to determine a rate of productivity per man/hour for different techniques. The overall tabulation is not entirely objective. I possess more numerous data for techniques of demersal fishing than for techniques of

Table 57.--Levels of production in fishing according to the technique used, number of fishermen, and time spent at sea: Santa Fé, 1971.

Techniques	No. of Fish.	No. of Kilos	Value in Bs	No. of Hours	Ind.Pr. /man/hr.	Ind.Inc. /man/hr.
Cordel	3	88	60	3	9.7	6.6
	2	21	39.75	4	2.6	4.9
	3	25	85.50	6	1.9	4.7
	3	77	93	3	8.5	10.3
	2	74	88	7	5.2	6.2
	2	94	99.50	8	5.8	7.1
	2	180	112	7	12.8	8.0
	3	55	83	10	1.8	2.7
	4	33	45	7	1.1	1.6
	4	158	113.50	6	6.5	4.7
	3	31	34	5	2.0	2.2
	2	11	13	5	1.1	1.3
	3	53	74	7	2.5	3.5
	5	166	169	12	2.7	2.8
	4	38	38	12	0.7	0.7
.....	4	70	20	11	1.5	0.4
	49	1840	1197.25	113	3.2	3.2
Nasa	3	107	111	6	5.9	6.1
	1	15	30	10	1.5	3.0
	2	18	28	6	1.5	2.3
	2	100	189	10	5.3	8.4
	2	9	27	8	0.5	1.1
.....	10	255	385	40	3.3	5.0
Tren	15	790	120	2	26.0	4.0
Sardinero	10	1370	197	2	68.5	9.8
.....	4	300	450	2	37.5	56.2
	29	2460	767	6	42.4	13.2
Chinchorro	6	280	224	3	15.5	12.4
	8	169	85	6	3.5	1.7
	10	800	200	5	16.9	4.0
	12	1200	300	8	12.5	3.1
	8	400	332	8	6.2	5.1
	12	500	300	7	5.9	3.5
.....	56	3409	1441	37	9.4	4.0
Mandinga	13	1730	2500	3	75.0	104.1
	6	480	120	3	26.6	6.6
	9	2300	560	4	63.8	15.5
.....	28	4510	1035	9	56.3	12.9
Argolla	8	1800	2500	3	75.0	104.1
	10	3000	1000	3	100.0	33.3
	10	5000	500	6	83.3	8.3
.....	28	9800	4000	12	85.9	35.0

pelagic fishing, since the teams I had more chances to observe (those from the village) were mainly engaged in the former type of fishing. Nevertheless, the tabulation comes from direct observation and can be used as a general framework for explaining the crews' differential productivity. It at least provides us with statements that can serve as future guidelines.

1. Fishermen using techniques of demersal fishing have an average productivity lower than those practicing pelagic fishing. The rate of productivity is about three kilos per man/hour for the former, while it varies from 9 to 85 kilos per man/hour from the latter.

2. Fishermen using techniques of demersal fishing also have an average income lower than those practicing pelagic fishing. Their income varies between Bs 3 and Bs 5 per man/hour compared to Bs 4 and Bs 35 for the latter.

Once again, it is necessary to insist on the fact that the above data come from statistical correlation and depict an average situation, and thus do not explain variations encountered at the idiosyncratic level. Although it proves the technical superiority of certain fishing gear over others, it must not be immediately interpreted as demonstrating the superiority of the former over the latter in terms of economic profitability. Techniques of pelagic fishing are more expensive than techniques of demersal fishing. In addition, even if they permit a large catch over a short period of time, the above tabulation does not take into

account the numerous hours fishermen have to spend on the shore watching for and pinpointing the schools of fish. Finally, pelagic fishing gives rise to enlarged forms of cooperation and entails differential distribution rules which greatly benefit some individuals (the owners of the gear) to the detriment of others. As a result, a fisherman possessing nothing in a large crew engaged in pelagic fishing might earn less money than another working in a small crew practicing demersal fishing.

The examination of the levels of production therefore indicates that the more specialized character of fishing in Santa Fé generates a variability in fishing output somewhat different from that prevailing in Chiguana and Guacarapo. Even if fishermen spend most of their time in the exploitation of marine resources, the latter activity is conducted within a greater range of techniques, each entailing particular forms of capitalization and differential output. On the whole, Santa Fesino fishermen produce more than fishermen of other communities; however, we must not forget that individual variations make up the statistical average. This will be important in the overall comparison and discussion of the economic specialization of these fishermen.

2.4) Distribution and Exchange.--

2.4a) Sharing Processes and Levels of Income.--

The preceding discussion has already given us some indications of the ways in which the Santa Fesino fishermen share their

products. At a general level, no substantial difference from the situation existing in other fishing communities has been noted. Within all the fishing crews, distribution is influenced by two social relations of production, the allocation of investment in fishing equipment and the structure of authority or division of labor between the members. Obviously, the importance of the latter varies according to the size of the group and in large groups, such as those operative in the coastal area, the age of the participant plays a determinant role during the sharing of the product.

Nevertheless, some specific aspects of distribution are worth mentioning. The study of capital assets has revealed the existence of 64 owners, among whom 9 possess more than Bs 18,000 in fishing equipment. Since these owners maintain residence in the coastal region but do not all spend the whole year in their fishing stations, several crews borrow equipment from them when they are outside the community. The specialized character of fishing therefore generates in Santa Fé a process which exists only at a very incipient stage in the communities previously studied. In several teams, there are "primary claimants" (leClair, 1959, p. 20) who do not participate directly in fishing but nevertheless receive a good part of the production. Those who actively practice this transfer of equipment are the mackerel fishermen who come to Santa Fé only during the summer season. The majority prefer, however, to undertake

transactions with fishermen who practice handline fishing for the following reasons. In this type of fishing, the boat or the motor represents the major part of the equipment. The lenders are therefore entitled to one-fourth or one-fifth of the total output each time the crew goes fishing. Since the operation lasts several months, the nonproductive owners derive an important income from this form of participation. Different means are used by these owners to check on the real output of the crews, but the most frequent one consists in designating one member and paying him a supplement for his action. Although it would seem easy for the fishermen not to declare the exact amount of their production to the nonparticipating owners, such cases happen very seldom because of social control.

Another aspect of distribution, which is found to a greater extent in Santa Fé, concerns the transfer of the means of production. Most of the crews living in the coastal area have inhabited the same site for several decades and use for mackerel fishing the sea area immediately adjacent to their station. While the sea is communal or government property, there is an agreement, at the community level, about the "private" character of these areas. They can be exploited, at certain periods of the year, only by the personnel authorized by the "owner." Although the term inheritance might not be fully applicable to depict the transmission or preservation of these rights, the latter are nevertheless kept within the family in several cases; fishery

officers give a legal aspect to the transactions by collecting annual fees for the utilization of these areas. But with the increasing number of fishermen and the greater incentives for production, some fishermen have begun to enter more overtly into competition with neighbors for the access to these particular areas. This action, during my stay in Santa Fé, was conducive to strong rivalry between neighboring teams on several occasions. I recorded at least three cases in which the fishery officers were unable to settle disputes between fishermen and had to call on the national guard to make both parties reach an agreement. On one occasion, the only way to reconcile the opponents was to permit both groups to fish the same area every 24 hours in turn during the whole season of mackerel fishing. A greater specialization, therefore, seems to increase fishing in certain areas, a situation that, in the long run, might modify substantially a traditional pattern of access to and control of certain means of production.

Finally, in several groups living in the coastal region, the distribution of products is still done in a traditional manner--not immediately after each catch, but after each of the four fishing seasons. These groups include a large number of fishermen and possess a lot of equipment. They often practice different types of fishing in which the same equipment might entitle them to a different proportion of the total output according to the species sought. For all these reasons, the sharing process is a strenuous operation

which requires much attention from the person responsible. Generally, one member of the crew is responsible for the bookkeeping. He notes all the expenses deriving from food, fuel, and repairs to fishing equipment, and totals up the daily catches. At the end of the season, he deducts these expenses from the total output and proceeds with the repartition of the product between the members of the crews. This procedure permits the crew to save time. In addition, since the fishermen spend almost all their time in the coastal area and rarely come to the village, they do not need much cash during the fishing season. This way of proceeding does not therefore incur criticism and reinforces the crews' identity.

Given the diversity of the distribution rules (caused by variations in capital assets and in structure of authority) and the differential production of each crew, precise information on the levels of income of the majority of fishermen was impossible to gather during the short time spent in Santa Fé. What has been said previously in the section discussing the levels of production can serve as a general guideline for the overall comparison. It is nevertheless worth noting that in Santa Fé some individuals derive an income greatly superior to the majority. Because of their high participation in investment they form a class of privileged owners whose control is becoming stronger and stronger. They are able to invest not only in crews in which they do not participate actively, but also begin to

invest in fish marketing. Two of them now possess their own cavas with waged personnel.

In other words, there are categories of persons who derive a differential income from their participation in fishing, the average annual income hovering between 3 and 4000 bolivares. The important point to mention for Santa Fé, however, is that variations in income are much wider than in other fishing communities. In Chiguana and Guacarapo, fishing revolves around a pre-capitalistic mode of production, the majority of adult fishermen participating in investment. In Santa Fé, economic specialization is generating a more capitalistic mode of production. Capital assets are becoming concentrated in the hands of a few individuals and several fishermen participate less and less in investment. There is now appearing a group of "proletarianized" fishermen who have no control over their means of production.

2.4b) Fish Marketing.--The degree of specialization and level of production of the Santa Fesino fishermen have pointed out that, within the economic organization, exchange activities are of primordial importance. Their analysis will therefore permit us to grasp in a more significant way the effects or consequences of the Santa Fesinos' greater involvement in fishing.

Santa Fé includes a large number of inhabitants who are not all engaged in fishing. In addition, the community is located half way between two major urban centers

of Eastern Venezuela and is linked to other centers of the mainland by good road communications. The Santa Fesino fishermen therefore benefit from excellent marketing possibilities. Unlike Chiguaneros or Guacarapaneros, they have a specialized production that can be sold in large quantities either within or outside their village.

One of the first salient features of fish marketing lies in the existence of a specialized personnel who dedicate most of their time to this activity. This is in striking contrast with the situation that existed in the communities formerly studied. It has already been mentioned that Santa Fé began as a commercial station for shipping out products of the haciendas of the mainland (and/or shipping in products of fishermen inhabiting the coastal region). The role of middlemen is then deeply rooted in the community and the recent demographic increase, linked to the improvement of communications, has even enhanced the popularity of this occupation.

Until a few years ago, a kind of sectional market was operative in Santa Fé, four days a week. Besides the actual site of the village, places like Nurucual and Reycero to the east and Arapito to the west were regularly visited by the same group of middlemen. All these places could be reached by boat and served as meeting points for commercial transactions both for people of the mainland and of the coastal region. But with the construction, eight years ago, of a large building especially equipped for marketing and

with the centralization of public services in Santa Fé for the whole district in recent years, the market is now held only in Santa Fé.

Although the market is operative six days a week, the volume of transactions is always highest on Friday when people of the mainland or the coastal region come to Santa Fé as they used to do before. The maintenance of a traditional pattern therefore confers certain variations on the conduct of commercial activities. The proximity of Friday always influences the prices paid for fish on the preceding days, and causes the fishermen to process their fish in different forms since people of the mainland, unlike local customers, generally buy salted fish.

To better understand the opportunities that the Santa Fesino fishermen have for selling their products, additional information must be provided about the spatial arrangement of the market. The study of the physical setting of the community (cf. Figure 22) showed that the area adjacent to the beach is linked to three "barrios" (Cochaima, El Centro, and La Boca), whose inhabitants practice different occupations. The interesting fact is that each section is frequented by a group of middlemen who have a different purchasing power and look for a particular species.¹ In El Centro,

¹The determination of the income of the middlemen was even more difficult than that of the fishermen. According to informants, local middlemen whose volume of transactions does not exceed 100 kilos a day, earn between 3000 and 3500 Bs a year. The middlemen from the exterior, however, earn a lot more if one looks at the information they provide to the fishery officers (cf. Appendix E).

where the market building is located, 18 local buyers operate; they sell most of their purchases to local inhabitants or to individuals visiting the market on Friday. In Cochaima, only two permanent local buyers are established but this site is also frequented daily by numerous buyers from the exterior, owners of refrigerated trucks who sell their fish in urban centers of Eastern Venezuela. Finally, in La Boca, a company from Caracas maintains four permanent agents and ships in its fish directly to the national capital. The existence, within the community, of three specialized groups of middlemen already confers on exchange activities a dynamism not present in the villages formerly studied. Fishermen can therefore benefit not only from good opportunities to sell out their production but can, in addition, create or enhance the competition between these buyers given their relatively large number.

When fishermen come ashore with their production, they are faced with several alternatives; but the decision to undertake transactions with a particular group of middlemen, though it always includes some risks, is not entirely based on guessing. There exist general guidelines, which dictate to the fishermen where they have the best chances of obtaining good prices. For instance, the middlemen operating in Cochaima are mainly interested in species of high commercial value such as the jurel, cabaña, pargo, cuna, etc., because they re-sell these fish in the major urban centers of the area. The fishermen whose catch consists of one or

several of these species will therefore go directly to Cochaima, knowing that it is the place where they can "generally" obtain the best prices. Similarly, the company established in La Boca specializes in the purchase of pelagic species of small size, such as the arrenque and the cachorretta. Since these species are usually caught in large quantities and their processing requires much time and effort, fishermen generally prefer to sell them fresh to the company which can afford to buy large stocks. By doing so, fishermen are sure to sell out all they have and spend less time in haggling and bargaining. On the other hand, since the middlemen of the Centro undertake transactions mainly with local inhabitants, they specialize in the purchase of species of regular size whose price is not too expensive, such as the tahali, corocoro, etc. So the nature of the production serves to orient the action of the fishermen wishing to undertake commercial transactions and provides them with a basis for evaluating the ways by which they can increase their profit. Nevertheless, the situation is at times more complicated. There are periods of the year in which each category of middlemen can buy enough fish belonging to the species that interest them the most. But at other times, some species are not available. The cyclical character of production then forces some middlemen to interfere with their fellows in buying species which, during a given period, are reserved to the latter. The inequality of supply of some species thus provokes strong competition between

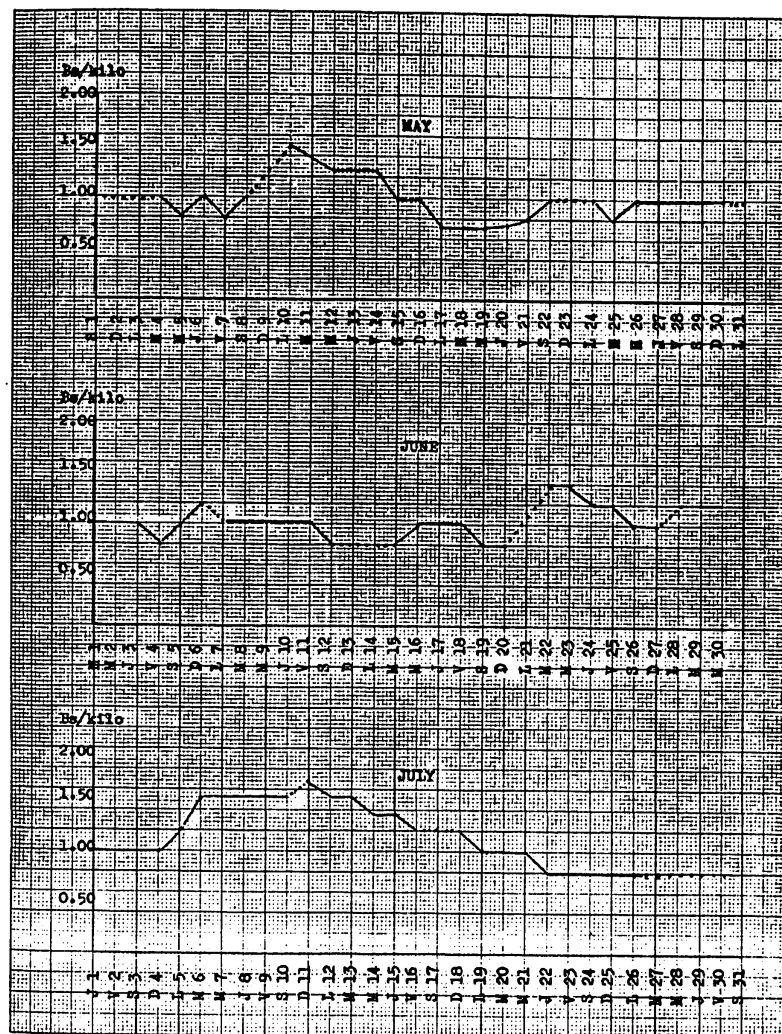
middlemen, and the fishermen adjust their activities to this changing context in order to increase their income.

A brief look at the price variations for some species will provide additional insight into the Santa Fesino fishermen's adaptation to market conditions and will illustrate how these conditions differ from those prevailing in Chiguana or Guacarapo.

Among the species selected for comparison--the tahali, jurel, and cabaña--only the first one is current; the other two are captured during restricted periods of the year. The interest of the comparison lies in the relation between supply and demand according to the commercial value of the species and the length of the period during which it can be caught.

The tahali is mainly bought by middlemen of the Centro, and is a basic food for several local families. The examination of the price paid for tahali during a three-month period reveals that variations are rather small, the price hovering between Bs 0.25 and Bs 1.75. Price fluctuations are first caused by changes in supply, itself conditioned by ecological factors of production. This species is caught at night and, as in the case of the lisa, its capture directly depends on the luminosity of the water. Changes in the lunar cycle therefore affect the quantity of fish available at given periods. But even if the tahali is a demersal species possessing "theoretically" commercial value similar to that of the lisa, the price paid for it is

Figure 25.--Daily variations in the price of tahali in Santa Fé between May and July, 1971.



not subject to variations or changes as drastic as in Chiguana or Guacarapo. In this way we see the influence or incidence of the specialized character of fishing in Santa Fé on fish marketing. Since fishermen catch several current species, a decrease in supply for a particular species will not necessarily cause an increase in price, since it can be replaced by another species. This forces the fishermen engaged in the capture of current species to adjust their efforts not so much with regard to price variations for a particular species, but rather to the overall quantity of fish caught by fellows practicing the same type of fishing, since different species can equally satisfy the local demand.

The situation is entirely different with the jurel. This species is mostly sold outside the village by middlemen possessing refrigerated trucks. Its capture, which lasts only about two months, is very casual and always gives rise to large catches. Given the importance of the catches, a slight variation in price might bring a substantial difference in the fishermen's income and confers on haggling and bargaining a more rigid character. The buying and selling of jurel, then, presents specific features and is not always influenced by a strict correspondence between supply and demand. Since the capture of this species is seasonal, time becomes an important factor in determining the limits within which fishermen and middlemen will come to an agreement. Figure 26 shows that prices are relatively high at

Figure 26.--Daily variations in the price of jurel in Santa Fé during the months of June and July, 1971.

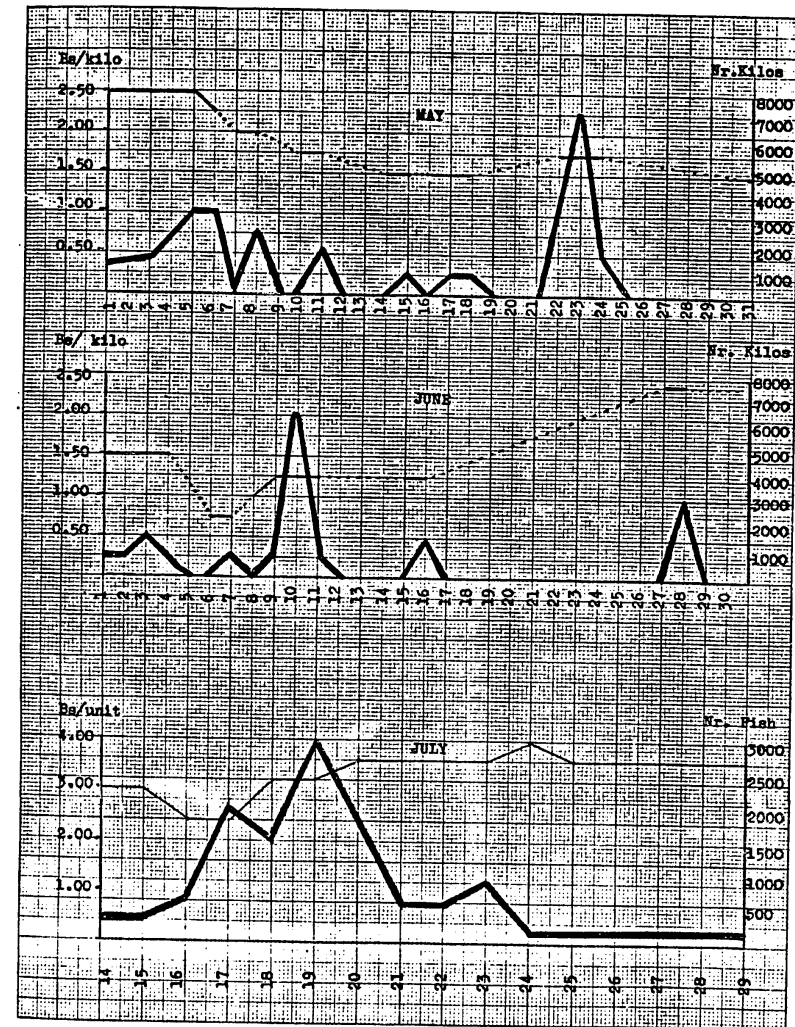


Figure 27.--Daily variations in the price of cabaña in Santa Fé between the fourteenth and twenty-ninth of July, 1971.

the beginning of May, independent of the volume of production. Demand is strong, and it takes a few days for middlemen to be able to fill the markets of the mainland. Nevertheless, from the second week on, prices decrease regularly in spite of a lowering in local production. This illustrates the advantage that outside middlemen have over local fishermen. The main argument used to reduce the price is that production is good in neighboring communities. Personal verification indicated that such was not always the case. The price reaches its lowest level during the first week of June because, at this particular time, local production is too high. Finally, it goes up again after a long period during which no fish are caught.

So the fishermen engaged in this type of fishing undertake commercial transactions on a basis very different from those oriented toward the capture of current species. Their action is conditioned not only by the quantity of fish belonging to a single species and caught by local fishermen, but also by the volume of the catches in other fishing communities. Since the elements pertaining to the latter factor are not always easily available, some fishermen are now trying to compensate this shortcoming by undertaking the construction of large fish preserves near the fishing stations. This way, they can keep their fish alive and make the middlemen raise their price. Although it is hard to predict the effects of this innovation on the future marketing of

jurel,¹ it at least indicates the sense of enterprise of some fishing crews.

The last species for which study of price variability was done is the cabaña. The interest here lies in the demonstration of the economic advantages that Santa Fesinos have over other fishermen because of the diversity of their production. Like the jurel, the cabaña is a species of high commercial value but for which the length of capture is even shorter--about two weeks. Figure 27 shows that, rather than being alternatively high and low, prices increase from the beginning of fishing until the end. In that case, fishermen largely succeed in forcing the middlemen to make them good offers, by refusing to sell out their production at the beginning. After a short while, a middleman raises his price for a group of fishermen, requiring, however, that they make transactions with him only. Once they come to an agreement, the other middlemen have no choice but to offer identical prices. The competition between the middlemen goes on as long as the cabaña fishing lasts.

The preceding analysis was intended to depict the complexity and the variability of the alternatives left to Santa Fesino fishermen in exchange activities. The major difference from the villages formerly studied lies in the

¹The construction of these fish preserves requires much work and equipment and some skippers are reluctant to invest in them, saying that their cost is not covered by additional income that one can possibly derive by obliging middlemen to raise their prices.

existence of a local personnel specialized in fish marketing. In addition, the Santa Fesinos can increase their returns by practicing various types of fishing which provide them with good opportunities vis-a-vis the middlemen. Although the latter are not always easy to deal with, they are strongly dependent upon the fishing production of Santa Fé for a living. This gives the Santa Fesino fishermen significant advantages over fishermen of neighboring communities.

Conclusion

Economic organization of fishing in Santa Fé is characterized by a specialization which gives rise to the fishing of a wide range of species by means of a diversified technology. Although externally presenting a greater occupational homogeneity because of their full-time involvement in a single sphere of activity, the Santa Fesino fishermen are internally characterized by their inclusion in different groups of skippers and different groups of sharemen. This more significant hierarchization is consecutive to the fishermen's differential participation in production and exchange.

Examination of the economic history of the community has revealed that the latter activity has always been of primordial importance to the village's economic life. So, at the very beginning, there existed in Santa Fé economic conditions and orientation very different from those encountered in Guacarapo and Chiguana. Production for

exchange was conducted on a larger scale than production for use. With the recent arrival of in-migrants, the community has increased considerably in size. This has given the community a new dynamism in which exchange, a sphere of activities already solidly established, gained importance. Not only is the volume of transactions increasing, but more and more it concerns the transfer of means of production. A group of skippers is now deriving a substantial income solely from investing in other crews.

All these facts show that Santa Fesinos are becoming strongly influenced by capitalistic values to a greater extent than their Guacarapanero or Chiguanero counterparts. For instance, although kinship still plays an integrative role in several crews, almost half the fishermen do not have fixed membership in a particular crew. Competition between neighboring skippers, because of increased incentives for production, is now causing a deterioration of the friendly atmosphere that before characterized most of their relations. Economic specialization is therefore conducive to a loosening of the articulations between the social and economic fields.

It is rather hard to predict what will happen in Santa Fé in the long run. In spite of an increased capitalization and investment, the fishermen remain dependent upon natural resources over which they have no control. An increased production might lead to an over-exploitation of their marine zone, a situation that would greatly compromise their economic future. The only immediate solutions would be

to enlarge their zone of production by acquiring better means of transport or to obtain a better bargaining power in exchange activities. For several Santa Fesinos, economic specialization is desirable, but is nevertheless a dilemma.

CHAPTER V

COASTAL FISHING AND ECONOMIC SPECIALIZATION IN EASTERN VENEZUELA: AN EXPLANATORY FRAMEWORK

Introduction

The preceding analysis described production and exchange processes in three Venezuelan rural communities in which fishing activities are characterized by various degrees of specialization. The purpose of this chapter is to compare their main similarities and differences and to draw some generalizations about features of economic specialization in that region. More specifically, the first part of the chapter attempts to define the major theoretical and methodological concerns deriving from the analysis of economic organization of Chiguana, Guacarapo, and Santa Fé, and proposes a model of comparison. Afterwards, I will examine their degree of economic specialization within the axes previously defined--one external, which emphasizes the influence of the larger society upon local economic organization, and one internal, which points out the articulations between the local ecosystem and work organization.

A. Theoretical and Methodological Concerns

The communities included in this analysis are not self-sufficient, isolated entities; they participate in a regional and national economy and society. During recent decades, the progressive shift of interest in anthropological inquiry from tribal to peasant societies has made anthropologists aware of the necessity of finding new concepts and methods. Adams' (1970) recent analysis of Guatemalan history and Bennett's (1971) of Northern Canadian Plainsmen are very convincing on this point. These studies clearly show that anthropologists working within a complex society cannot use the classic analytical unit of "tribe" or "community" and present "the behavior of their members in terms of a series of interlocking institutions, structures, norms and behavior" to depict them correctly (Adams, 1970, p. 31). Terms like "tribal," "peasant," "post-peasant" now have little heuristic or operational value to characterize the cultural status of a particular community unless the reader is provided with a description of both internal and external factors influencing the behavior of the local population. At the beginning of this study, some mention was made of the influence of national and regional economy and society upon the economic life of the rural communities under investigation. The reader will have noted, however, that no particular effort was made to make explicit the theoretical implications of this influence. This procedure was intentional. In spite of a growing interest among anthropologists in the

study of complex societies, our discipline still lacks a consistent epistemology for analyzing and depicting the articulations between local socio-economic organizations and national institutions (a situation explained by the complexity of these articulations). My decision was to let the reader go through the description of the work organization in each community and inductively develop his own opinions. But now that we are in the final part of the analysis and possess information on the internal characteristics of each community, the comparison of their similarities and differences implies more systematic references to economic-politico-juridical and ideological dimensions that go far beyond the communal levels. The validity of the overall comparison lies in the more precise definition of the common interactional and institutional frameworks within which the economic organization of the communities under study has revolved or revolves.

This concern for the articulations between local communities and their larger society should not make us forget, however, that each community has a particular economic organization. The preceding analysis sought to present a dynamic image of each local ecosystem and to show how the human actors, as the ultimate link of the trophic chain, influence each other and interact with species of a lower order. The analysis emphasized production and exchange activities, but it also paid attention to the natural resources sustaining economic activities and to the social

characteristics of the individuals involved in the economic field. In other words, I have tried to depict as objectively as possible why each community was characterized by a specific degree of economic specialization and to show that the result was due to a combination of various factors. The final comparison must therefore emphasize the local features which confer, in a determinant way, similarities and differences on each community's economic organization.

The above delimitation of two analytical levels does not, however, entirely resolve the theoretical and methodological problems raised by the comparative study of economic specialization in the villages we are concerned with. Something more has to be said about "economics," since it is the field of activities on which the comparison focuses. The anthropologists' interest in economics is not recent; but as in other subdisciplines within social and cultural anthropology, economic anthropology has been characterized by several theoretical and methodological orientations which have not always been consistent and systematic. No explicit reference was made at the beginning of the study to a particular approach. The reader will have noted, however, that the analysis of production and exchange activities in each community was conducted with an exclusively "formalist" or "substantivist" approach. The analysis did not deal with decision-making models nor with the articulation between social or "noneconomic" and economic spheres without giving to the latter a legitimated analytical autonomy. On the

contrary, most of the discussion made numerous implicit references to a Marxist theory, centered around the concepts of forces, social relations, and modes of production. The adoption of this orientation, which will have a significant impact on the final comparison, was not only because of the greater theoretical consistency with which Marxism (with anthropologists such as Claude Meillassoux, Emmanuel Terray, and Maurice Godelier) has provided economic anthropology, but also because of emphasis that Marxists have put on the adaptive processes and structural changes generated by an increasing influence of capitalism upon rural-peasant communities and classes (e.g. C. Meillassoux, 1972; and G. Berthoud, 1972).

Therefore, the approach I advocate for the comparative analysis of the economic specialization of Chiguana, Guacarapo, and Santa Fé evolves around the examination of "mode of production" as defined in the Marxist literature.¹

By "mode of production," Marxists mean a system including three dimensions: an economic base, a politico-juridical superstructure, and an ideological superstructure.

¹There is still some disagreement among economic anthropologists as to the extension of this concept of "mode of production." For the present analysis, I will use Terray's definition because it is more adapted to anthropological analysis. Without denying the usefulness of this concept for describing the economic organization of large segments of population (as does Meillassoux with the Gouro (1960)), Terray assumes that the concept can be significantly applied to smaller groups and that the latter can be simultaneously characterized by different modes of production (Terray, 1972, pp. 96-97).

Among these three dimensions, it is the economic base which has a key role (priority but not exclusive causality). In turn, this economic base is made up of two essential components: (1) the forces or means of production which refer to the material conditions of production (resources, tools, and labor force); and (2) the social relations of production or the interpersonal and intergroup relationships that men must establish with one another as a consequence of their role in the production processes (type of ownership, structure of authority, and sharing rules). The notion of mode of production therefore refers to the technical and social efficiency of an economic system (Terray, 1972, pp. 96-101).¹

¹This approach is not entirely new. Two recent anthropological and sociological studies dealing with the dilemma facing peasant-rural dwellers involved in a market economy, those of Eric Wolf (1966) and Boguslaw Galeski (1972), have implicitly adopted it and, I believe, have proposed fruitful methods of analysis of economic specialization. Although both authors are to some extent concerned with different theoretical and factual aspects of economic specialization (Wolf proposing an ideal definitional model of peasants and relying on a wide range of comparative data; Galeski treating more specifically the contemporary Polish peasantry), they root their discussion in a Marxist theory which points out the dual nature of peasant economics. This feature is very relevant to the understanding of the economic organization in the fishing communities included in this study. "Yet, if it is correct to define the peasantry primarily in terms of its subordinate relationships to a group of controlling outsiders, it is also correct to assert as a corollary of this definition that a peasantry will be forced to maintain a balance between its own demands and the demands of the outsiders (Wolf, 1966, p. 13). "Since the peasant farm is at one and the same time both an enterprise and a domestic economy, its economic activity is based on two different and sometimes contradictory principles. The producer can treat the product either as exchange or as use values depending on their destinations" (Galeski, 1972, p. 11).

The emphasis I therefore intend to put on the examination of the "modes of production" in fishing in this final comparison is not only related to the fact that through the previous analysis I have implicitly adopted an analytical framework based on a Marxist theory; most important yet is that the concept of "mode of production" (if one accepts Terray's use of this concept) will permit us to distinguish and, at the same time, to integrate the analytical levels (external-internal) I have formerly identified as essential to the comparison.

The notion of "mode of production" implies on one hand a reference to local groups or production-units engaged in productive processes (acquiring and transforming resources into exchangeable and/or utilizable products). It refers on the other hand to production processes taking place at a larger level (i.e. regional or national) in which the politico-juridical and ideological superstructure can be best analyzed. It thus permits us to insert in the analysis explanatory elements which derive from the influence of the larger society upon local productive systems when the communities form a part of a complex society.

B. Regional Modes of Production and the Influence of the Larger Society on Economic Specialization

An examination of the economic changes that have occurred in fishing activities in Eastern Venezuela since 1800 reveals that these changes cannot simply be thought of

in terms of unilinear development, with distinctive phases characterized by a unique mode of production. We can ascertain that at the broad level of Venezuelan economy there has been a transition from a pre-capitalist to a capitalist economic system; but such a statement would have little operational value and could even be misleading to describe the economic processes that have taken place in a particular region and in a particular field of activities, i.e. fishing in the state of Sucre. It would only provide us with very general guidelines for the study of economic specialization without really stressing the numerous factors conducive to changes in this specific economic sphere.

The first chapter provided a description of the characteristics of fishing since the last century, as well as some references concerning the constant influence of the larger society upon regional and local modes of production in fishing. Since we now possess more information on the technical and social exigencies of productive and exchange activities in fishing, more attention has to be paid to the changes that have occurred in the larger politico-juridical framework and to the transformations they have entailed in the economic system.

One of the first salient features of economic specialization is that fishing, shortly after the arrival of Spaniards, has not been characterized by a single mode of production but rather by two concomitant and different modes of production: a peasant and a capitalist one. This is of

major importance not only in understanding the influence of the larger Venezuelan society upon the conduct of fishing in the eastern zone, but also in explaining the present degree of economic specialization in the communities with which we dealt.

A number of fishermen were initially scattered at different points along the coast of the state of Sucre, who practiced fishing on a part-time basis. They employed a rudimentary, small-scale technology (that of demersal fishing), worked in production-units whose recruiting revolved around family relations, and produced a limited output mainly for their household needs. To these fishermen, fishing was, with other activities such as slash-and-burn agriculture, horticulture, cattle or sheep raising, and wood cutting, an additional way of making up a fund of subsistence. The products they obtained from these activities had more a use value than an exchange value.¹

However, the problem is to determine the extent to which this mode of production can be called peasant. This is important if we intend to grasp the influence of the larger society upon local communities (since a peasant group

¹I refer here to the Marxist distinction between use and exchange value, on which Galeski (1972, p. 11) heavily relies in order to characterize and differentiate a domestic and an enterprise economy. In a parallel way, Chayanov's theory of labor-consumer balance, in which he ideally defines the peasant as searching an equilibrium between his energy input and the degree of satisfaction of household needs, could be significantly applied here (1966), though Galeski is critical of Chayanov's emphasis on consumption (Galeski, 1972, p. 153).

maintains particular types of relations with the larger society) and to evaluate the development of their economic specialization. Following Wolf's and Galeski's definitional criteria, I believe that the term peasant is applicable to a large extent to the aforementioned groups of rural fishermen. And this was not because of the characterization we previously made of their factors of production (small-scale technology, family-based work groups producing for household needs mainly represent features applicable to both tribal and peasant economy) but because of the particular type of relations that these fishermen, as belonging to a particular segment of population, had with other occupational groups of the larger society. These fishermen were exploited by other groups whose status and privileges were legalized by the larger society's juridico-political framework.¹

¹Wolf defines peasants as "a group of rural cultivators whose surpluses are transferred to a group of dominant rulers who use the surpluses both to underwrite its own standard of living and to distribute the remainder to groups in society that do not farm but must be fed for their specific goods and services in turn" (1966, pp. 3-4). The important elements of this definition, which is an ideal definition as Dalton (1972) seems to have forgotten, are that peasants are integrated into a state nation and that they pay a fund of rent to bureaucratic representatives. Questions now arise as to the validity of such a definition for the communities we are concerned with. On one hand, integration into a nation state and the provisioning of fund of rent are definitional characteristics of peasants as well as of capitalist entrepreneurs. On the other hand, the above analysis deals with groups of fishermen and not agriculturalists. Concerning the first question, Wolf's definitional criteria are wholly acceptable and present great operational value if one does not give them an intrinsic definitional value. I mean that even if these criteria are useful to actually distinguish the peasant from the primitive, they cannot be considered in

Besides these small-scale producers, large groups of specialized fishermen were simultaneously engaged in the acquisition of marine species in the whole fishing zone of Eastern Venezuela. These fishermen worked under the direction

themselves as objective variables to differentiate the peasant from the industrial entrepreneur. But, if one accepts the Marxist notion of social classes upon which Wolf implicitly relies (a notion implying a particular mode of production, which emphasizes the exploited status of the peasants given their subordinate position in the society's occupational hierarchy) the integration into a state becomes an indispensable element of characterization of peasant groups and the fund of rent is also of great analytical importance since it permits one to measure their degree of exploitation. Wolf himself insists on this point when he assumes that a relative weakening of the fund of rent (which can be maintained or increased as is often the case in industrial society but which is effectively reduced by the redistributive process in which are engaged governments) will cause a peasant group to lose its characteristics (Wolf, p. 16). In a similar way, Galeski defines peasants with regard to their increased exploitation with the advent and strengthening of capitalism, the term "exploitation" signifying a situation in which the ownership of the means of production enables one man to appropriate the results of another's labor (1972, p. 189). Concerning the second question, i.e. the fact that we are dealing with fishermen and not with agriculturalists, what we previously said about the fund of rent is also very relevant. The direct provisioning of a fund of rent by a group of fishermen to a group of bureaucratic representatives is not as important as in the case of a group of agriculturalists. Specific features of production in fishing, however, explain this situation. In fishing communities, the fishing zones are rarely fractionalized in subzones with precise limits and permanent and exclusive ownership rights. In addition, fishermen's production is submitted to large daily and seasonal variations. This greater flexibility, both at the level of social and material appropriation of the product in fishing, prevented bureaucratic representatives from depending on a significant basis on a fund of rent provided by fishermen to maintain and organize their activities. They did not have, as with agriculture, precise ways of determining the part of the production fishermen should give away to legalize their activities. As a result, the only direct provisioning of a fund of rent by groups of fishermen usually consists in paying annual fees to the fishery officers; the sum thus paid generally represents a

of skippers (or their delegates) belonging to the elite class. They used a relatively advanced and elaborate technology (that of demersal fishing) and produced a large output sold out mainly on national and foreign markets. Having no control of their means of production and working within a highly diversified structure of authority, they were paid on a wage basis regardless of the amount of production. The term capitalist (though mercantile rather than industrial) can be used to depict the main features of their mode of production, since it shared several characteristics of an enterprise.

The interesting element for the problem that now concerns us, i.e. economic specialization, is that the second group of fishermen, those engaged in a capitalist mode of production, exploited, directly or indirectly, those engaged in a peasant mode of production. This situation derived from the particular relations that local groups maintain with the larger society.

Even if the "peasant" fishermen were not obliged to give away an important fund of rent, they could not increase their production because they were prevented from significant investment. Until the end of the Gomez regime (1928),

minimal part of their annual production. But even if the fund of rent is not actualized to a great extent in fishing communities, the term "peasant" can also be analytically applied to groups of fishermen when the latter are effectively as exploited as real peasant agriculturalists.

a handful of owners who maintained good social and political relations with the elite group were provided with privileges for fishing, to the detriment of small and independent owners. They were the only ones to be assigned exclusive fishing rights over large portions of the fishing zone and to be allowed to use net technology. Moreover, they could count on fishery officers or the army to punish the peasants who ventured to transgress the laws which guaranteed their privileges. This situation, then, clearly shows that because of a given juridical framework defined by the elites, a group of fishermen engaged in a capitalist mode of production exploited significantly another group of small-scale producers.

After the Gomez regime, major juridico-political changes in the larger society brought some transformations into the modes of production prevailing in fishing activities. The privileges of these important owners were abolished and "theoretically" all the fishermen, whatever their former participation in a peasant or capitalist mode of production, had the same rights and could invest equally. This phase is of crucial importance to understand the present degree of economic specialization in fishing in the three communities studied. As has often been demonstrated by anthropologists (particularly by Leach in his study of Highland Burma), changes at the ideal or politico-juridical levels do not necessarily imply a strict correspondence at the empirico-behavioral level. Even if the fishermen

"theoretically" had identical rights, the situation prevailing before the changes had occurred continued to influence the conduct of fishing.

The communities which now present a higher degree of specialization and larger production in fishing are those which not only possess better ecological conditions for fishing but mainly those which include the largest number of sons or close relatives of these former important owners.

Nobody in Chiguana practiced fishing on a large scale until the mid-thirties. On the contrary, Guacarapo has always been oriented toward fishing and most of its important present skippers owe their status or privileged economic position to the previous investment of their fathers. The situation is even more obvious in the case of Santa Fé, where the allocation of investment is characterized by larger variations. The present degree of economic specialization of the three communities studied is therefore explained by their former degree of involvement in a peasant or capitalist mode of production.

Given the articulations that now exist between local fishing communities and the larger Venezuelan society, peasant fishermen--such as described above--are slowly disappearing. Several fishermen still have a low income but they do not use their production in the same way they did

before.¹ They continue to pay a minimal direct fund of rent but now devote a greater part of their output to their subsistence and replacement fund to the detriment of their ceremonial funds. Independent from their level of production, they tend to participate more significantly in a market economy, the conversion of their output into cash permitting them to obtain more easily consumer goods not produced locally. Meanwhile, there has been a significant decrease in ceremonial expenditures. For instance, local fiestas do not exist any more in several communities; where they still are of some importance, they are largely supported by government agencies interested in developing tourism (such as on Margarita Island and Carupano). This greater involvement in exchange activities, caused by the development of regional and national markets and better ways of communication, means that few fishermen will produce for their own use only; the majority will also expand production for exchange.

¹I refer here to Wolf's use of four analytical categories to describe the utilization that peasants make of their production. There is first a fund of rent which consists in giving the government or its representatives a part of the production in order to legalize their activities; second, a fund of subsistence or the part of the production that is necessary to the peasants' caloric minima; third, a replacement fund linked to the maintenance or renewal of the means of production; and finally, a ceremonial fund which refers to the economic cost of social relations (in which according to Godelier (1968, p. 239) economy has an internal aspect). (Wolf, 1966, pp. 1-13).

In spite of these transformations, fishing groups that possess the main characteristics of a capitalist enterprise are not as numerous as before. If we exclude the relatively small number of fishermen working for the companies established at the mouth of the Gulf of Cariaco, most fishing crews still have noncapitalist features: recruiting remains influenced by kinship, the size of the crews rarely exceeds 15 men, and in spite of differential sharing rules, distribution is still dependent upon the amount of production. To talk about economic specialization therefore implies relative statements.

The above discussion thus points out the basic dilemma of economic specialization in fishing in Eastern Venezuela. It has been shown that changes in the larger economico-politico-juridical level of Venezuelan society have generated changes in fishing activities. The progressive emergence of a more democratic ideology has reduced to some extent the exploitation of rural fishermen engaged in a peasant mode of production and has promoted a greater uniformity in modes of production in fishing. But in spite of this willingness of government agencies to bring about a greater uniformity and equality among fishermen, the former existence of strong cleavages between two categories of owners still influences the present economics of fishing. As a result, some fishermen are in a better economic position than others.

If the trend toward economic specialization is maintained (this is almost inevitable and government officials often insist on their willingness to do so), it seems that the present characteristics of fishing groups (as not being truly peasant nor capitalist) will face away. Although it remains hard to predict how and when this process will be achieved, one fact is certain: changes in local modes of production in fishing are conditioned, more than ever, by changes that will take place in the larger Venezuelan society. This means that a bettering of fishing production by the adoption of more modern techniques will present great uncertainty if there are not correspondent changes in the market. In this regard, the government has strong responsibilities. It must prevent groups of professional buyers from reproducing, at the level of exchange, the relations of exploitation that formerly characterized two groups of fishermen at the level of production.

C. Local Modes of Production and Economic Specialization

I now intend to examine the main structural and organizational features of fishing activities in Chiguana, Guacarapo, and Santa Fé to explain internally their degree of economic specialization. Obviously, the relations that exist between the social and economic spheres at a local level are of a different order than those discussed above. Nevertheless, what has been said about the utility of the concept of mode of production for coping with economic

specialization remains valid. In insisting on two different but at the same time mutually inclusive processes--material and social appropriation of products-- , this concept helps us to categorize the links existing between the economy and its related spheres. It gives us the opportunity to look at the dynamic processes of each local ecosystem, emphasizing, on one hand, the relations between men and their natural environment and, on the other hand, the relations among men themselves, both approaches permitting us to evaluate the efficiency of the system and to underline the components of its rationality.

Material Appropriation

Chapter I, which gave a description of the regional ecological processes, and the first part of the following chapters indicated how the degree of economic specialization of the communities is first explained by the natural resources existing near them. We have seen that Chiguaneros practice a generalized economy because they are located near a fishing zone surrounded by a land area permitting agriculture, horticulture, cattle raising, and wood cutting. On the other hand, Santa Fesinos dedicate most of their time to fishing because the majority inhabit a coastal region where fishing is the only viable economic activity. However, though such correlations are useful to evaluate and understand the communities' degree of economic specialization, something more has to be said about the quality of the

resources and the changes produced by men's continuous interaction with their natural environment.

The analysis of the processes of material appropriation in Chiguana provides several illustrative elements to the above. The community was founded by agriculturalists who practiced slash-and-burn cultivation. This led to a partial deforestation of the land surrounding the village. A few decades later, Chiguaneros engaged in wood cutting on a large scale and developed commercial relations with most of the coastal villages in the area for the sale of this product. This produced an increased deforestation which in turn has been conducive to the adoption of cattle raising-- now the activity in which Chiguaneros invest the most. In a similar way, after the abolition of restrictive and limiting work conditions in the fishing zone (cf. preceding section), Chiguaneros began to invest more in fishing. But shortly after, an increased number of fishermen and the establishment of companies specialized in sardine fishing at the mouth of the Gulf of Cariaco (sardine being an important food supply for bigger species) greatly reduced the productivity of their fishing zone. The majority therefore maintained investment in traditional economic activities when they saw that fishing presented uncertainty. As a result, only a few of them have concentrated their capital assets in this particular sphere.

Identical reasons can be invoked to explain the semi-specialized character of the Guacarapaneros' economy. Their

greater specialization has to be linked first with their proximity to a larger and more productive fishing zone. But changes that have affected the level of production in Chiguana (after the establishment of sardine fishermen at the mouth of the Gulf of Cariaco) were also felt in Guacarapo. It therefore seems that Guacarapaneros, whose involvement in fishing was remarkable since the founding of the community, have understood that an over-exploitation of their marine resources would have led to the loss of their principal source of income. They then showed a great sense of initiative and economic rationality by investing in a sector offering good returns (cattle raising) rather than increasing their capital assets in fishing. The important point here is that the social and technical exigencies of these two processes of material appropriation (fishing and cattle raising) do not conflict. Work requirements for cattle raising are casual and minimal, do not require a permanent labor force, and do not prevent a fisherman from fishing on a full-time basis. The semi-specialized character of Guacarapaneros' economy is therefore explained by something more than their location near specific resources. These resources are constantly changing or modified, and it is the fishermen's evaluation of these processes that dictates their degree of economic specialization.

Similar remarks could be made concerning the more specialized character of the Santa Fesinos' economy. But

it suffices to indicate that these fishermen practice fishing on a larger scale not only because they are provided with a richer fishing zone (the establishment of companies at the mouth of the Gulf of Cariaco did not substantially affect the volume of their production), but also because other occupational groups in the community possess the area who would permit them to engage in different activities.

The above, then, demonstrates that processes of material appropriation whose number and interrelations make the community's degree of economic specialization must not be analyzed within a framework presupposing a one-to-one relationship between man and his natural resources. Economic specialization is explained not only by the availability of given resources but also by men's utilization and alteration of their natural resources. By continuously interacting with their environment, men can produce drastic changes in the quantity and quality of its components. At least, in the villages we are concerned with, the degree of specialization in fishing cannot be understood without a reference to these processes.

Table 58, which summarizes some features of the forces of production in the three communities studied, shows that there exist great discrepancies at the level of resources, technology, and labor force in fishing activities. But in spite of being characterized by differential features, the processes of material appropriation in each community present an interesting relative uniformity. The proportion of

Table 58.--A comparison of the factors and levels of production in fishing: Chiguana, Guacarapo, and Santa Fé, 1971.

Factors of Production	Chiguana	Guacarapo	Santa Fé
<u>Resources:</u>			
- Size of marine zone	15 sq. Ks	90 sq. Ks	400 sq. Ks
- No. of species exploited	2 - 3	5 - 6	10 - 15

<u>Capital:</u>			
- Value of equipment	67,340 Bs	185,925 Bs	690,590 Bs
- Ave. Ind. investment per owner	1,980 Bs	6,754 Bs	10,790 Bs

<u>Labor Force:</u>			
- Total number of fishermen	48	98	440

<u>Levels of Production:</u>			
1970-1971	68,970 Ks	147,000 Ks	1,173,121 Ks

capital and labor force seems to follow similar patterns. For instance, the amount of capital invested in fishing technology in Guacarapo (Bs 185,925) represents twice the amount possessed by Chiguaneros (Bs 67,340). This amount is ten times higher in Santa Fé (Bs 690,590). Identical proportions (1-2-10) apply to the labor force. There are 48 fishermen in Chiguana, 98 in Guacarapo, and 440 in Santa Fé. The above figures therefore suggest that, independent of the community's degree of economic specialization, the

combination of forces of production in coastal fishing requires identical adjustments from part of the producers.

In each community, each factor of production presents specific aspects, but there exists among them a common model of articulation that shows that economic specialization in fishing is a process conditioned not only by the existence of certain resources but also by men's evaluation of these resources.

The above-mentioned relative uniformity is further confirmed by the examination of the levels of production. The division of the communities' total annual output by their number of fishermen reveals that average production hovers around 1400-1600 kilos a year per fisherman. Although this average remains an estimate (cf. their methods of calculation in the preceding chapters), it indicates that a better understanding of the effects or consequences of economic specialization must be found at another level, that of social appropriation.

Social Appropriation

The previous examination of the system of distribution in fishing demonstrated that in the villages studied, the sharing processes depended upon ownership of the means of production and responsibilities in the productive processes. Such rules are conducive (and here again, independent of the community's level of economic specialization) to the existence of two groups or categories of fishermen:

(1) those who derive an income from their participation in investment and labor; and (2) those who derive an income from their labor only. Knowing that half the amount of production is reserved to investment, one's participation in this sector is highly profitable, especially if the number of investors is small.

Keeping the above in mind, the comparative analysis of investment in the three communities studied provides us with a better insight into the understanding of the effects of economic specialization. In Chiguana, 28 fishermen or a total of 48 have capital assets in fishing (59 percent). In Guacarapo, 28 of the 98 fishermen participate in investment (29 percent), while in Santa Fé about 80 fishermen of a total of 440 possess equipment of some kind (18 percent). Therefore, it seems that economic specialization, even if it has produced only slight changes in the proportion of factors of production, is generating strong modifications at the level of social relations of production. A greater dedication to fishing entails substantial differences in the allocation of investment, a process which in turn modifies the relations between the producers. Since, in fishing, technology directly influences the size of the groups, changes in the allocation of investment will entail changes in the size and structure of authority of the production-units. Important owners need larger crews, characterized by a more fluid division of labor. Economic changes are therefore conducive to alterations of social relations, which

in turn modify the basis of interaction between economic actors. We have seen that in Santa Fé some owners now possess so much equipment that they cannot participate in all the production processes in which it serves. They are becoming "primary claimants," deriving an income solely from their participation in investment, without providing labor. If this process continues, and this is highly probable unless the government substantially modifies its credit system, the majority of fishermen will become waged laborers with no control over their means of production. This might have strong consequences on these fishermen's economic future since in fishing, unlike agriculture, investment is concentrated in one sector, that of technology, and must be supported or maintained by levels of production subject to strong and unpredictable variations.

The previous analysis therefore suggests that:

1. Economic specialization in coastal fishing is now undergoing a crucial phase. So far, it does not seem to have produced strong modifications in the proportion of the factors of production but has begun to transform significantly the social relations of production.
2. Since the social appropriation of products confers a certain specificity to a mode of production, changes in the social relations of production will entail a new mode of production in fishing.
3. This new mode of production--a capitalist one--will not be completely achieved, however, without a

significant bettering of the main factor of production: technology.

4. Since social scientists now agree that development is not occurring unless there is a significant broadening in distribution of income (obtained by higher productivity), the positive effects of economic specialization will depend not only on technical improvements in fishing but on how the government representatives will prevent capitalist entrepreneurs from exploiting proletarianized fishermen.

Conclusion

Fishing is a primary occupation for large groups of people in many countries. Nevertheless, in contrast to the study of socio-economic changes entailed by industrialization in agriculture, little has been done to understand the implications and consequences of modernization in the fishing economy.

The preceding analysis sought to point out that anthropologists dealing with the study of economic specialization in rural fishing communities can, to a large extent, use methodological frameworks developed in the analysis of communities engaged in different economic activities. Economic specialization must be analyzed, in communities involved either in an agrarian, artisan, or fishing economy, with reference to the following:

1. The "internal" aspects of local economic system (or in Godelier's terms (1968) the relations that economy has with other subfields of activity).
2. The diachronic dimension of economic changes or the economic history of the community.
3. The articulations that exist between the community and regional economy and society.

However, the analysis of economic organization in three fishing communities suggests that fishing presents some specific features. Not only does fishing involve much short-term planning, entailing work groups based on contractual relations, but its output is subject to strong and unpredictable variations. In addition, in fishing, capital related to technology is the main factor of production and the structure of investment (or the ownership system as expressing a social relation of production) is as important as the division of labor or the structure of authority in determining the rules of sharing.

Modernization in fishing therefore appeals to particular problems that are not as prevalent in other economic fields. Recent studies demonstrate that modernization can take place rapidly in fishing communities. One reason for this is that exploitative sites (whose scarcity is a major shortcoming in agrarian industrialization, at least in Latin America) are generally easily available in fishing. But betterment of fishing technology does not always reduce uncertainty in production (Andersen and Wadel, 1972, p. 201)

and does not necessarily improve the living conditions of the fishermen. This finding is important because several fishing specialists think about modernization only in terms of increased investment and productivity, basing their assumptions on statistical averages. They should be more aware of the relations that exist between social and economic fields and take into account that the distribution processes in fishing can lead to a rapid socio-economic differentiation between groups of fishermen. If the model of modernization (a capitalist one) they want to impose is adopted without modifications, in the long run only a few individuals will be in a good economic position, the rest becoming proletarianized fishermen with no incentives for investment.

In addition, the above analysis suggests that a greater economic specialization might not, in a given economic period of a community, be as profitable as ideally assumed by economists advocating capitalist models of development. It has been demonstrated, in the second community studied, that fishermen showed a great sense of economic rationality in adopting cattle raising rather than increasing their capital assets in fishing after the establishment of fishing companies lowered the productivity of their fishing zone.

It is undeniable that large-scale specialization leads to an increase in national productivity; Venezuela is no exception to this rule. Nevertheless, such a trend is not necessarily the optimal adaptive strategy for each

community within such a system, and increased productivity should not be the only socially desirable objective.

BIBLIOGRAPHY

- Adams, R. Crucifixion by Power. Austin: The University of Texas Press, 1970.
- Andersen, R., and Wadel, C., eds. North Atlantic Fishermen: Anthropological Essays on Modern Fishing. Newfoundland Social and Economic Papers No. 5. Newfoundland: Memorial University of Newfoundland, 1972.
- Bastide, R. Les Ameriques Noires. Paris: Payot, 1967.
- Bennett, J. W. Northern Plainsmen. Chicago: Aldine-Atherton, 1969.
- Benoist, J. "Individualisme et Traditions Techniques chez les Pêcheurs Martiniquais," Les Cahiers d'Outre-Mer XII (1959), 265-285.
- Berthoud, G. "From Peasantry to Capitalism," Anthropological Quarterly, XLV, 3, pp. 177-195.
- Cervigon, J. Los Peces Marinos de Venezuela, Tome I-II. Caracas: Fundacion La Salle de Ciencias Naturales, 1966.
- Chayanov, A. V. The Theory of Peasant Economy. Homewood, Illinois: Richard D. Irwin, Inc., 1966.
- Comitas, L. "Fishermen and Cooperation in Rural Jamaica." Ph.D. thesis, Columbia University. Ann Arbor: University Microfilm, Inc., 1962.
- Dalton, G. "Peasantries in Anthropology and History." Current Anthropology, June-October, 1972, pp. 385-417.
- Davenport, W. "A Comparative Study of Two Jamaican Fishing Communities." Unpublished Ph. D. thesis, Yale University, 1956.

- Faris, J. Cat Harbour: A Newfoundland Fishing Settlement. Memorial University of Newfoundland, St. Johns Institute of Social and Economic Research, 1966.
- Figueroa, F. B. Historia Economica y Social de Venezuela. Tome I-II. Caracas: Universidad Central de Venezuela, 1966.
- Firestone, M. Brothers and Rivals Patrilocality in Savage Cove. St. Johns: Memorial University of Newfoundland, Institute of Social and Economic Research, 1967.
- Firth, R. Malay Fishermen: Their Peasant Economy. Hainden, Conn.: Archon Books, 1968. (1st ed. 1946).
- Forde, D. Habitat, Economy and Society. New York: E. P. Dutton, Com. Inc., 1963.
- Forman, S. "Cognition and the Catch: The Location of Fishing Spots in a Coastal Brazilian Village." Ethnology, VI, 4 (1967), 417-426.
- Galeski, B. Basic Concepts of Rural Sociology. Manchester University Press, 1972.
- Gladwin, H. C. "Estimating Market Conditions and Profit Expectations of Fish Sellers at Cape Coast Ghana." Studies in Economic Anthropology. Edited by G. Dalton. Washington: A.A.A., 1971.
- Godelier, M. "Objet et Méthodes de l'Anthropologie Economique." Rationalité et Irrationalité en Economie. Paris: F. Maspero, 1968, pp. 232-293.
- Griffiths, R., and Simpson, J. G. Temperature Structure of the Gulf of Cariaco, Venezuela, from August 1959 till August 1961. Vol I, no. 4. Caracas: Ministerio de Agricultura y Cria, 1967.
- Herskovits, J. M. Trinidad Village. New York: Knopf, 1947.
- Kottack, C. "The Structure of Equality in a Brazilian Fishing Community." Unpublished Ph.D. thesis, Columbia University, 1966.
- LeClair, E. E., Jr. "A Minimal Frame of Reference for Economic Anthropology (revised) Tray. N.N. Rensselaer Polytechnic Institute, 1959. (Mimeographed.)

- McCorkle, T. Fijardo's People: Cultural Adjustment in Venezuela: and The Little Community in Latin American and North American Contexts. Los Angeles: L.A.S.C. University of California, 1965.
- Meillassoux, C. "From Reproduction to Production." Economy and Society, I, 1 (1972), 93-105.
- Meillaussaud, C. "Essai d'Interpretation du Phenomène Economique dans les Sociétés Traditionnelles d'Auto-Subsistance." Cahiers d'Etudes Africaines, no. 4 (December, 1960).
- Mendez-Arocha. La Pesca en la Isla Margarita. Caracas: Fundacion Lasalle de Ciencias Naturales, 1963.
- Nascimento, U. F., and Cardona, B. R. Produccion Pesquera en Venezuela. Informe Tecnico no. 16. Caracas: M.A.C.-PNUD-FAO, 1970.
- Nascimento, U. F., y Hernandez, O. Poblacion y Mano de Obra Pesquera en Venezuela. Informe Tecnico no. 15. Caracas: M.A.C.-PNUD-FAO, 1970.
- Orona, A. "The Social Organization of the Margaritino Fishermen." Ph.D. Thesis, U.C.L.A. Ann Arbor: University Microfilm, 1969, 1970.
- Price. "Caribbean Fishing and Fishermen: A Historical Sketch." Am. Anthr., LXVIII (1966), 1363-84.
- Schwerin, K. H. Oil and Steal: Processes of Karinya Culture Change in Response to Industrial Development. Los Angeles, L.A.S. University of California, 1966.
- Smith, M. G. West Indian Family Structure. University of Washington Press, 1962.
- Smith, R. T. The Negro Family in British Guiana. London: Routledge and Kegan Pual, 1956.
- Terray, E. Le Marxisme devant les Sociétés Primitives. Paris: F. Maspero, 1972.
- Wolf, E. Peasants. Englewood Cliffs, N.J.: Prentice-Hall, 1966.

APPENDIX A

NOMENCLATURE OF COMMERCIAL FISH SPECIES IN
EASTERN VENEZUELA

APPENDIX I.--Nomenclature of commercial fish species in eastern Venezuela.

Species	Local Categories	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Aver. Depth of Capture	Technique
Lisa	Grande	*****											*****	5	E+F
	Lisona	*****											*****		
	Ojecandela	*****											*****		
*Jurel	Criolla	*****											*****	20	F+G
	Grande	*****											*****		
*Carit�	Jureleta				*****								*****	20	F
	Sierra				*****								*****		
	Rayado				*****								*****		
Bagre	Quinche	*****											*****	5	F+G
	De piedra	*****											*****		
Robalo	Blanco	*****											*****	5	F+G
	Amarillo	*****											*****		
	Carapachon	*****											*****		
Lamparosa	Caracaballo				*****								*****	20	H
Cagalona	Grande	*****											*****	5	F+G
	San Pedro	*****											*****		
Arenque	Rabo Amar.	*****											*****	7	E+G
	Camiguana	*****											*****		
*Pargo	Machuelo	*****											*****		
	Caballo												*****	30	B+D
	Mero												*****		
Lebranche	Grande					*****							*****	10	F
	Lambusino					*****							*****		
Carapanera	Mojarra	*****											*****	10	B+F+G
	Caitipa	*****											*****		
	Blanca	*****											*****		
Anchoa	Mamureta				*****								*****	10	F+G
	Yamara				*****								*****		
Cataco	Ojo Gordo							*****					*****	10	B+G
	Chuparape							*****					*****		
*Cuna	Raya	*****											*****	10	B+C
	Vieja	*****											*****		
*Caba�a	Negro							*****					*****	15	B+C+D
	De Diente							*****					*****		
Tahali		*****											*****	20	B+G
*Cojinua		*****						*****					*****	15	F+G
Cachoretta		*****						*****					*****	10	F+G
Raya	Chucho	*****											*****	5	A+B+C
	Manta	*****											*****		
*Calamar		*****											*****	10	B

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APPENDIX I.--Continued.

Species	Local Categories	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Aver. Depth of Capture	Technique
*Atun	Palometa					*****							*****	15	B+D
Pampano	Mono												*****	10	F+M
	Coruna	*****											*****	20	A+B+C
Cazon	Maguiro	*****											*****		
	Cuchipano	*****											*****		
	Jabon	*****											*****		
	Chola	*****											*****		
Tibur�n	Carite												*****	10	C+P
	Macan												*****		
Lenguado		*****											*****	3	G
Chicharra					*****								*****	20	H
Tonquiche					*****								*****	10	G+H
Catalana					*****								*****	25	B
Bolo		*****											*****	5	B
Loro		*****											*****	8	B+D
Guasa		*****											*****	10	F
Sabalo		*****											*****	5	A+F
Dolmilona		*****											*****	15	B+G
Curbinata		*****											*****	10	G+H
Picua		*****											*****	20	B+G
Dorado		*****											*****	10	B
Morado		*****											*****	10	B
Tiravira		*****											*****	15	G
Robatalon		*****											*****	10	B
Paguara		*****											*****	15	G
Papita		*****											*****	10	B
Corocoro		*****											*****	5	B+D

* = Fish of high commercial value.

Techniques: A = Harpoon
B = Handline
C = Trawl
D = Fish Pot
E = Cast Net
F = Gill-net
G = Seine
H = Purse seine

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WOOD SPECIES AND THEIR UTILIZATION

Species (Local Name)	Utilization	
	Boat	House
Guayacan		x (floor)
Pardillo	x	x (table)
Cantaro	x	x (chair)
Guatacare	x (keel)	
Aco Amarillo	x (top border)	
Moreche	x (hull)	x (door)
Cedro	x	
Araguaney	x	x
Palosano	x (keel)	x
Yaque	x	x (beam)
Durote	x	x
Mora	x	x
Angelino		x
Tacarigua	x (float)	
Dibidibi		x
Taque		x (beam)
Roble		x
Parapara		x
Taparra		x (beam)
Apamato	x (stern post)	
Guatamare	x	x
Ceiba	x (hull)	
Pui	x	x
Puiclavo		x
Lucio	x	x
Jabillo		x
Pecche Paloma	x	x
Barvasco	x	x
Guariare	x	x
Cereza		x
Morado		x
Bruquillo		x
Gallito		x
Paculero		x
Guichere		x
Manzanillo		x
Guatan		x
Camille de venado		x
Cadillo de perro		x
Cruzeto		x
Indio Desnudo		x
Hobo		x
Cordon		x
Lechero		x

APPENDIX B

WOOD SPECIES AND THEIR UTILIZATION

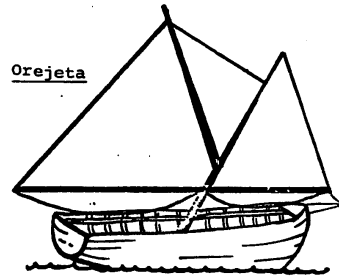
Species (Local Name)	Utilization	
	Boat	House
Mulato		x
Matapalo		x
Siete Capas		x
Limonsillo		x
Fruta de Guacharaca		x
Brazil		x (ferment rhum)

APPENDIX C

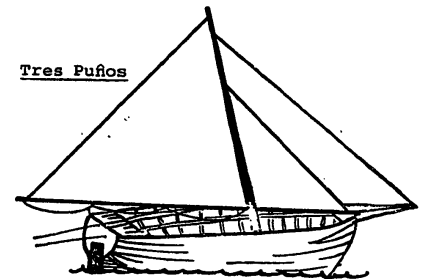
TECHNOLOGY OF TRADITIONAL MARITIME TRANSPORT

Appendix C.--Technology of traditional maritime transport.

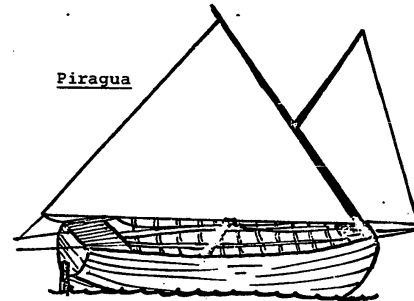
Orejeta



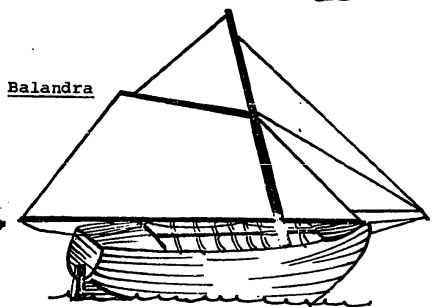
Tres Puños



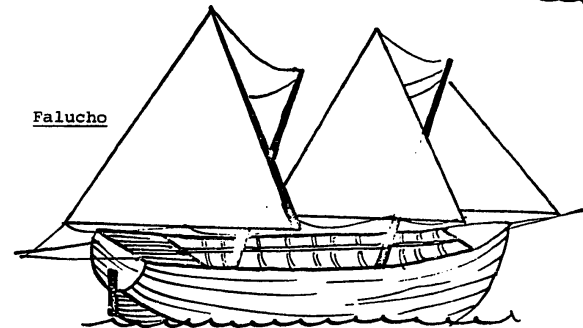
Piragua

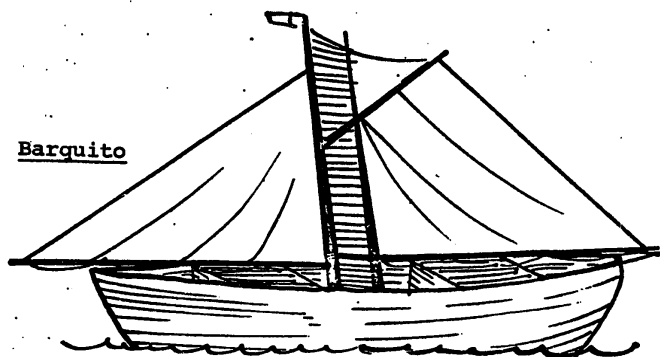
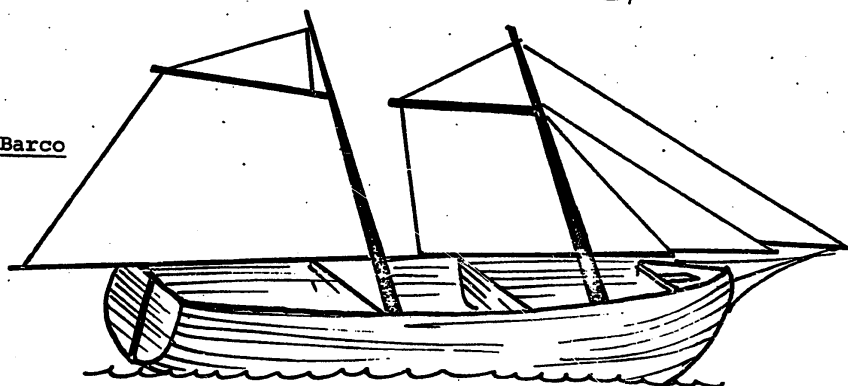


Balandra



Falucho



BarquitoBarco

<u>Name</u>	<u>Size in Meters</u>	<u>No. of Sails</u>
Orejeta	6 x 1	2
Tres Puños	8 x 3	3
Piragua	8 x 3	2
Balandra	10 x 4	5
Falucho	12 x 4	3
Barquito	30 x 7	2
Barco	40 x 10	5

N.B. The above was originally drawn by Srs. Matilde Garcia and Jesus Diaz from Chiguana, Edo Sucre.

APPENDIX D

VOLUME OF PRODUCTION AND PRICE OBTAINED ACCORDING
TO SPECIES OF FISH DURING THE MONTHS OF APRIL
AND MAY, 1971: SANTA FE

VOLUME OF PRODUCTION AND PRICE OBTAINED ACCORDING TO SPECIES
OF FISH DURING THE MONTHS OF APRIL AND MAY, 1971: SANTA FE.

Species	April		
	Nr. Kilos	Price in Bs	Ind. Price/kilo
Corocoro	100	100	1.00
Anchoa	60	60	1.00
Cataco Negro	4895	4156	0.84
Jurel	19650	34450	1.75
Arrenque	79000	10000	0.12
Cabaña blanca	283	433	1.53
Tahali	200	200	1.00
Cazon	100	125	1.25
Camaron blanco	500	1500	3.00
Calamar	750	1650	2.20
Others	155	285	1.83
Total	105693	54089	0.51

Species	May		
	Nr. Kilos	Price in Bs	Ind. Price/kilo
Corocoro	860	1240	1.44
Cunas	22	66	3.00
Curbinata	50	50	1.00
Mero	300	750	2.50
Pargo cebal	125	305	2.44
Pargo dienton	150	450	3.00
Rabirubbio	400	750	1.87
Cataco negro	8550	5380	0.62
Cojinua	1950	2900	0.46
Jurel	19900	24875	1.25
Lamparosa	2800	2550	0.91
Lisa	800	600	0.75
Picua	50	50	1.00
Sardina	141500	14150	0.10
Cabaña negra	450	400	0.88
Cabaña blanca	300	450	1.50
Cachoretta	7050	3525	0.50
Carite pintado	1150	2600	2.25
Carite rey	200	800	4.00
Peto	60	240	4.00
Tahali	500	450	0.90
Rayas	235	335	1.42
Botutos	200	600	3.00
Total	187602	63516	0.34

APPENDIX E

SAMPLES OF TRANSACTIONS DONE BY OUTSIDE MIDDLEMEN

IN SANTA FE DURING THE SUMMER OF 1971

SAMPLES OF TRANSACTIONS DONE BY OUTSIDE MIDDLEMEN IN SANTA FE
DURING THE SUMMER OF 1971

Case A: May, 1971:

Species	Purchases		Sales
	Nr. Kilos	Price in Bs	Price in Bs
Cabaña	112	285	342
Bagres	115	260	345
Lisa	115	320	396
Cataco	57	45	76
Bagres va.	2300	4800	5300
Agujas	1150	3200	3480
Total	3849	8910	9939
Gross Profit: Bs 1029			

Case B: May, 1971:

Species	Purchases		Sales
	Nr. Kilos	Price in Bs	Price in Bs
Cataco	575	790	880
Tahali	126	231	292
Cazon	195	595	685
Lisa	402	1011	1206
Total	1298	2627	3062
Gross Profit: Bs 1036			

Case C: June, 1971

Species	Purchases		Sales
	Nr. Kilos	Price in Bs	Price in Bs
Cataco	9400	5450	7500
Lisa	1950	1950	2250
Calamar	250	850	1000
Fondo	2950	2825	3125
Cachoretta	2900	2250	2600
Corocoro	300	450	500
Total	17750	13775	16975
Gross Profit: Bs 3020			

Case D: June, 1971

Species	Purchases		Sales
	Nr. Kilos	Price in Bs	Price in Bs
Cataco	2500	1500	2500
Cachoretta	200	160	300
Calamares	25	50	100
Fondo	70	96	140
Atun	4000	11000	16000
Agujas	800	1000	1600
Total	7595	13806	20640
Gross Profit: Bs 6834			

Case E: June, 1971

Species	Purchases		Sales
	Nr. Kilos	Price in Bs	Price in Bs
Cataco	1800	950	1142
Lisa	200	200	326
Corocoro	4000	4000	4400
Roncador	400	400	550
Cazon	500	500	675
Anchoa	500	500	700
Bagres	200	100	180
Fondo	500	350	475
Total	8100	7000	8448
Gross Profit: Bs 1148			

Case F: July, 1971

Species	Purchases		Sales
	Nr. Kilos	Price in Bs	Price in Bs
Corocoro	3840	3908	5760
Lamparosa	1890	1922	2835
Cazon	400	400	600
Tonquinche	100	100	200
Anchoa	500	1000	1500
Carite	500	1000	1500
Robalo	100	100	150
Jurel	330	495	960
Pampano	50	50	100
Cataco	1500	750	1500
Total	9210	9725	15105
Gross Profit: Bs 5380			