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9. ABSTRACT
The primary objective of the study was to give an overview of the livestock (cattle) marketing problems in Nicaragua. In this context it was more specifically understood that the author should (a) determine, in his opinion, the major obstacles barring the way for full development of a more efficient, competitive, and economically profitable method of marketing beef cattle which could be advantageous to the entire livestock industry; (b) make suggestions and recommendations that could, if activated, either alleviate the problem situations or remove various obstacles. From this understanding, the study was undertaken and the following report was written.
The report is written in an understandable manner, attempting to suggest practical recommendations and avoiding technical terms and lengthy theoretical explanations of problems. Some of the basic problem areas and factors impeding expansion of the cattle industry, export market, and foreign exchange are duscussed briefly.

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OVERVIEW OF
BEEF CATTLE MARKETS AND MARKETING
WITH RECOMMENDATIONS

Presented to

Vice-Minister Mayo Vega

and

United States Agency for International Development/Nicaragua

by

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November 5, 1973

Overview of

Beef Cattle Markets and Marketing

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Preface

It was the understanding of this author that the primary objective of the study was to give an overview of the livestock (cattle) marketing problems. In this context it was more specifically understood that he should (a) determine, in his opinion, the major obstacles barring the way for full development of a more efficient, competitive, and economically profitable method of marketing beef cattle which could be advantageous to the entire livestock industry; (b) make suggestions and recommendations that could, if activated, either alleviate the problem situations or remove various obstacles. From this understanding, the study was undertaken and the following report was written.

The report is written in an understandable manner, attempting to suggest practical recommendations and avoiding technical terms and lengthy theoretical explanations of problems. Some of the basic problem areas and factors impeding expansion of the cattle industry, export market, and foreign exchange are discussed briefly.

Several of the recommendations made in the separate discussion of problems found in the text of this report will be duplicated in other topics discussed. The author has attempted to place the recommendations following that particular section wherein he believed the greatest initial effects would occur.

The time period allocated for the study was approximately six weeks during May and June. The sector survey data was not sufficiently processed at that time to lend any substantial background for statistical support. The report was due July 1 and was submitted in its basic form July 4, 1973.

The author takes no responsibility for the accuracy of any statistical data included; however, he believes that information obtained was the best available under the circumstances that prevailed following the disastrous earthquake of December 1972.

November 5, 1973

General Conclusions

Nicaragua has favorable resource potentials for cattle raising and beef production. The resources exist for the industry to have an interesting and profitable future. Whether these potentials will be fully utilized in developing an outstanding cattle industry and marketing system depends upon various policy actions and institutional factors.

Nicaragua has done little to improve her position in the export market outlets in the Caribbean area for fresh, frozen, and processed beef. This market could be expanded advantageously for Nicaragua's economy.

Nicaragua, because of its small land area and the resources with which endowed, cannot develop a highly competitive economic system. Some authority needs to guide the direction of economic progress and social benefits in the beef industry.

Transportation facilities are extremely limited (highway and all weather roads) for efficient domestic supply and distribution. Since highway construction is extremely expensive the transportation problem will undoubtedly be difficult to overcome.

There is little evidence of competitive pricing. The price structure has strong monopolistic and monopsonistic elements governing prices.

The existing pricing structure for live animals and domestic meat supply is not inducive to quality improvement nor efficient growth and marketing improvement in the industry.

The number of organized markets in the country, where producers may sell or have alternatives in market types selection, are insufficient and inadequate.

Municipal slaughterhouses, which are inefficient, unsanitary, and perhaps illustrate maldistribution of capital investment, provide the primary supply of meat to the domestic market. The present domestic meat, merely the residual from the export market, is thus a lower quality meat.

The present practices of marketing livestock and meat, both domestic and export, discourages Nicaragua's attempts to raise the standard of living, improvement of the cattle industry, and expansion of international sales of meat.

There is nearly a void in marketing news and price information existing in the cattle industry in Nicaragua.

Holding back female cattle from export and slaughter is a commendable effort to increase animal meat production but it only accomplishes a part of the ultimate objective. If the pregnancy rate in cattle could be increased from the present 45 to 50 percent to 80 or 85 percent production would nearly be doubled. Also, improvement in the breed quality of the animal to a more rapid maturing and more efficient gainer and/or carcass yielder would perhaps show a 25-30 percent increase in production.

Summary Description of Cattle Markets

Marketing of agricultural products in general is a weakness of Nicaragua's agriculture industry. Beef cattle marketing in particular is perhaps in more need of study and improvement than other types of livestock and livestock products, i.e., dairying, swine, and poultry. The problems in beef cattle marketing primarily result from the fact that cattle production is spread throughout the country; production units range in size from very small units to ranches of thousands of head, while dairy, poultry and swine production is carried out by a few producers in highly concentrated units in areas located geographically around the principal cities in Nicaragua. Most cattle in Nicaragua are of the native Criollo breed. Characteristics of these cattle are slow maturity and low meat yield; however, upgrading the herds through imported bulls and artificial insemination improvement is noticeable.

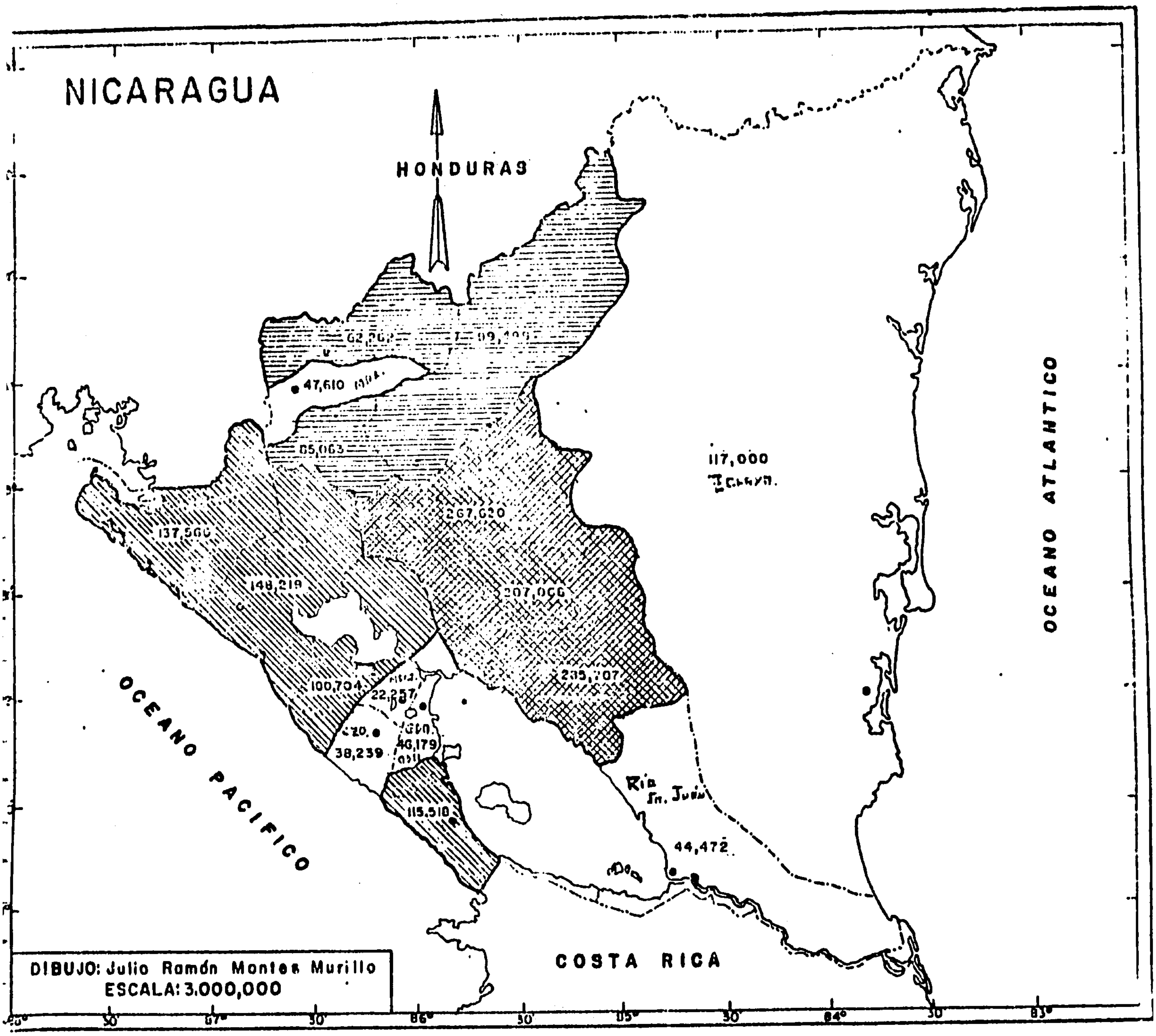
The heaviest concentration of cattle lies in the central part of Nicaragua, the area being of moderately fertile soils offers better year around grazing than the more drought prone low lands toward the Pacific coast.

Census data indicated nearly 2,000,000 head of cattle on farms and ranches in 1971, an increase of over one-half million head for the eight year period, 1963 to 1971, or a national increase of 46 percent. The regions with increases greater than the national average were Masaya, Rivas, Chontales, Jenotiga, Matagalpa, Granada, Madriz, and Zelaya, with Chontales having an absolute increase of 124,195 head followed by Matagalpa with over a 90,000 head increase. The eight year period indicates an annual average growth rate in the cattle population of approximately 4.8 percent. Figure 1.

There are five organized beef market facilities in Nicaragua. These are comprised of four packing plants, and one small auction. The auction is new and presently holds three sales per week. So far, the total head of cattle sold by this method is insignificant, averaging about 200-300 head per week for all classes of cattle; slaughter, feeder, calves and breeding stock. Three of the five market facilities are located in Managua, (the two largest slaughtering plants, IFAGAN and Carnic, and the auction market). The other two slaughtering plants are Empanicsa located at Condega, and Igosa at Rivas.

Besides the five organized beef market facilities, there are numerous municipal slaughter facilities. The municipal slaughtering facilities offer a system or type of marketing outlet for the smaller producer and the local dealer in live animals and meat. They furnish the larger part of meat for domestic consumption through vendors at the public markets and supply the small retail outlets. They are performing an important function and are relatively efficient in fulfilling a necessary objective. Municipal slaughtering houses are located in each of the major cities and operate under local

Figure 1. INVENTORY - 1971
NUMBER OF HEAD OF CATTLE BY DEPARTMENT



government control and inspection. The actual number of such markets, the aggregate annual kill on a per head basis, and the pounds of meat volume was not available for all such plants. However, information on the sixteen larger municipal slaughtering plants indicated that in 1971 they slaughtered approximately 100,000 head of cattle. This is about 11 percent less than in 1970, and over 16 percent less than in 1969. Part of the decrease in municipal slaughter for the domestic market can be accounted for by the intensive effort to increase exports. Tables 1 and 2.

There are a small number of dealers (Intermediatories) in the country with extremely limited facilities, or sometimes nothing more than a transporting vehicle. Data did not reveal the number of these livestock dealers nor who they are, their location, volume handled, type of cattle bought, where sold or prices paid and received.

The only other live animal market determined, (its significance is indeterminable from the lack of information), was the "feeder or finisher". Generally, the feeding of cattle was found to exist in conjunction with some other farm enterprise, such as ranching, dairying or general crop production. The importance of the "feeder-finisher" to the small producer in providing a market for his feeder cattle is unknown at this time.

From the best information obtained, there are no organized markets, neither buying point nor concentration point, where

Table 1

NICARAGUA: MUNICIPAL SLAUGHTERHOUSES, NUMBER OF HEAD, BY YEARS AND DEPARTMENTS

Departments	1971	1970	1969	1968	1967
CHINANDEGA	11,424	10,283	6,503	5,808	4,066
LEON	12,428	13,574	13,877	12,479	11,744
MANAGUA	36,700	45,371	50,328	44,937	37,615
MASAYA	4,351	5,093	7,754	6,924	6,833
GRANADA	5,653	6,928	7,143	6,378	6,116
CARAZO	3,674	3,817	4,843	4,324	3,914
RIVAS	1,908	2,460	3,676	3,282	3,159
NUEVA SEGOVIA	2,191	2,289	2,159	1,926	1,803
MADRIZ	1,679	1,803	1,695	1,515	1,156
ESTELI	2,620	2,226	2,245	2,004	1,610
JINOTEGA	1,926	1,994	2,004	1,786	1,691
MATAGALPA	5,014	5,210	6,414	5,729	5,549
BOACO	1,859	2,032	2,354	2,101	1,817
CHONTALES	2,743	2,560	2,725	2,433	2,337
RIO SAN JUAN	333	376	449	402	320
ZELAYA	3,034	2,308	2,543	2,270	1,382
TOTAL	97,537	108,324	116,712	104,298	91,112

SOURCE: Banco Central de Nicaragua

June 5, 1973

Table II

Nicaragua Beef Export by Private Slaughterhouses 1970-1972
(000 pounds)

Plant		1970*	1971*	1972*
IFAGAN				
Frozen	21,000	30,915	28,886	25,374
Fresh		1,627	1,521	1,336
CARNIC				
Frozen	9,800	13,812	13,881	12,964
Fresh		727	730	682
ENPANISCA				
Frozen	6,800	7,118	6,690	7,214
Fresh		374	352	380
IGOSA				
Frozen	———	———	2,675	9,454
Fresh			141	498
National Totals				
Frozen		51,845	52,132	55,006
Fresh		2,728	2,744	2,896
Aggregate		54,573	54,876	57,902

*Table submitted by G. A. Muñiz

cattle are bought and sold in the interior of the country. All cattle must be moved in small lots to the primary market outlets in the principal cities mentioned earlier. Estimates indicate that more than one-half of the cattle marketed in Nicaragua come from small farms with minimum facilities, deficient management, and no facilities for transporting cattle to market.

Pricing Policy

A competitive pricing structure for livestock does not really exist in Nicaragua. Practically all the export market for beef is the United States; buying prices of the live animal seemingly are based exclusively on the "yellow sheet". Over ninety percent of imported beef from Nicaragua enters the U. S. as 'cow beef'. It is believed that improvement could be made through negotiation in this situation over the long-run, whereby Nicaraguan export beef to the U. S. could be upgraded and command better prices, thus advantageous to both countries.

Under the present pricing structure in Nicaragua, price leadership in live animals is predominant. From information obtained, it appears this leadership position falls on one major packing firm, thus setting the price which prevails over the entire live animal market. Such a pricing mechanism generally offers little in the way of price incentive to producers to improve quality, or for intermediate dealers in the cattle trade to become competitive.

In general supply response is directly related to price, and incentive is forthcoming with price increase where realized net gains are expected to be positive. This would be particularly so in a subsistence level of agriculture where capital equipment investment by the producer is near zero.

Leadership pricing, imperfect competition, has its effect also on the municipal slaughter plant prices. Such imperfect competitive pricing in the market sets the stage to drive prices down when desired, this could be particularly so in flush seasons when livestock comes to market in excess of slaughtering capacity. A price reaction of this type by exporting plants would be felt immediately in the other markets by the seller, for he is left with little or no alternative but to sell at buyer prices (Buyer's Market). However, under this type of market pricing structure, profit margins to the processor may well remain at the same level. The problem could easily become more involved and inequitable to the live animal producer and the domestic consumer if these price leaders were to expand their export and domestic market outlet and initiate product differentiation in these new found markets.

It would be safe to view the livestock market as having some characteristics of both monopoly and monopsony. Such power, lodged in a few firms, is not a healthy situation for the cattle and meat industry nor for the country's agriculture as a whole. Some reasons for this opinion rests with the facts that: 1) Nicaraguan economy is, and in the foreseeable future will remain, agrarian. 2) Land capable of intensive crop production will be devoted more so to this type of production. 3) At present, the cattle industry is the third largest export industry in Nicaragua. 4) Large land areas suitable for cattle raising have not yet been used and should be exploited.

5) The cattle industry, with proper management and development, has the potential for becoming the number one export business. 6) Foreign exchange can be increased through the industry development and market expansion.

If the elementary facts are faced, the market (and therefore the price structure) for cattle exists with the export packers. The current situation is of little or no fault of the packer. Nicaragua needs foreign exchange; however, the packer is nevertheless placed in the position of monopsonist or oligopsonist domestically. On the other hand, with these oligopsonist powers he is also more or less forced into the position of a purely competitive seller of his product in the international market. (Pricing of the 'yellow sheet'; market almost entirely United States.) Thus, the packer is confronted with an average revenue curve of being almost perfectly elastic, allowing him to sell a small output at the same price as a large output. Also, if the packer could improve his position of being a monopolistic competitor (maybe by market expansion in the Caribbean) in selling his product, his average revenue curve would slope and he would be able to sell smaller amounts in some markets at higher prices. Thus, he would have a double incentive to restrict his production -- high prices and lower cost. The monopolistic power does not presently exist in foreign trade, but the packer's influence in the domestic market of both live animals and meat should not be overlooked. While the packer is faced with a nearly perfect elastic demand curve in his sales. he also has a nearly perfect elastic supply curve: there possibly exists some slope to this curve, but very little. In this position, he is able to set profit margins at will by control of supply price. There is no economic incentive for the packing plants to compete with one another in pricing. It would be irrational for any one firm to attempt to lower or increase prices under the present circumstances. The problem may be alleviated by introducing more plants or by producers having more control over his market outlet supply.

It is not the purpose of this paper to explore all the ramifications of the situation created by monopolistic and oligopolistic pricing but rather to point out problems in the market structure. It is evident that the present pricing structure of live cattle and beef is not entirely satisfactory and should be improved. The profit margin can vary considerably. Variations could occur in the price of live animals and red meat cut out, as well as in trim, tissue shrink, by-products and hides. Further, variations could occur in the presently practiced programs of receiving and kill, and packer financing.

The pricing policy at present does not encourage incentive as much as it should. It is also dangerous from the standpoint of the cattle industry in its development. Ties to one primary market, (United States) with international politics being nearly unpredictable, the whole pricing structure could change rapidly to the detriment of the Nicaraguan cattle industry; also, the foreign exchange could be substantially curtailed by unforeseen, unfavorable movements in the international market. A more competitive and flexible pricing system, it is believed, would be advantageous to the country, if the objective be economic. Free market prices permit both the slaughter industry and the producers to improve their economic position. From an unbiased point of view, a more flexible and competitive pricing structure should promote the incentive of the producer for a better quality meat animal, better management, to improve meat quality, better inline prices to the domestic consumer relative to quality of meat purchased, and encourage animal protein intake in the domestic consumer's diet.

Recommendations for improving the pricing situation are related and similar to recommendations offered elsewhere in this report.

Recommendations:

1. No drastic measures, (such as strict government controls,) are believed to be necessary for improvement. Moderate measures (through government if necessary) will accomplish improvement: such as, the initiation of some measure to control margins if they be excessive.
2. More new markets for the producer should be facilitated and encouraged.

3. Market expansion for meat and meat products should be encouraged and developed.

4. A market news and information service should be planned and established.

5. A transportation system for live animals and meat should be expanded and improved.

6. The management and efficiency of slaughterhouse alternatives in meat products and by-product use should be encouraged. Somewhat related to the last point is the loss incurred in the hide market by the excessive branding of animals -- losses run into several million cordobas of which the producer is deprived.

A better pricing structure for live animals, it is felt, would lead to numerous improvements in the industry, i.e., more profitable to the producer, larger net returns to the packer, improvement in foreign exchange, and a favorable affect on the Nicaraguan consumer.

Transportation and Roads

From information obtainable there are approximately 1,283 kilometers of paved road surface in Nicaragua. These paved roads are primarily located in the Pacific one-third of the country. In addition to the paved roads, there are an estimated 5,000 kilometers of improved, all weather, roads.

Nicaragua's highway and road network is totally inadequate for a land area of this size to realize efficient growth in agricultural production and commerce. Some progress has been made in the programs that have been undertaken to expand the number of hard surface roads and improve the network; however, the advancement still appears to be very slow, both from observation and the information obtained. Nicaragua, if not already, should become more aware of the absolute necessity for a more effective road system that would assure an economic supply of agricultural products and market distribution for the advancement of commerce and national growth.

To estimate the dollar loss to the Nicaraguan economy from the poor transportation network is beyond the objective in this paper, but undoubtedly the loss totals in the millions of dollars per year. Losses result from maldistribution of resource wealth, market gluts of produce, spoilage, damage, vehicle repair and maintenance, and more particularly the shrinkage and bruise of livestock caused by in-transit to the distant markets, the latter being of special importance to one of Nicaragua's fastest growing industries -- livestock and meat exports.

Transportation cost data obtained was so heterogeneous that no reliance could be placed in the actual cost incurred in livestock or beef cattle transport from producer to packing plant. To illustrate: Cost of transport can be and is based on distance, size of truck, type of road, head of animals, weight, and various combinations of these factors.

The packer transport was the only one that would perhaps give any degree of reliable cost figures; however, time did not permit this to be fully analyzed. It is believed that a special study of transportation would be required to provide reliable information for analysis of this problem.

Recommendations:

1. It is recommended that the development of improved roads be given priority in future development.
2. In any future planning, (and any present hard surface highways under construction,) 'farm to market roads', or 'penetrating roads' from the main routes should be included in the plan and constructed as 'all weather' roads.
3. Priority should be given to those interior areas where natural resources have the potential for greatest economic production. To determine these areas of the country, more statistical information would

be necessary than was avilable at the time this study was undertaken. However, from the standpoint of beef cattle production the areas which appear to have the greatest potential, from limited information, are Chontales, Boaco, Matagalpa.

The above recommendations were prompted by the following inefficiencies and problems discovered in the present marketing system: 1) Inadequate supply routes to markets for agricultural products, 2) Additional transportation to the producer, 3) Distribution to processors and redistribution of final product to consumers is inadequate and too costly, 4) Quality of agricultural products is impaired, 5) Increased costs are created by market gluts and shortages, 6) Additional costs are incurred by spoilage, bruise and damage, and 7) Too much time is consumed in transit.

Producer Market Outlets

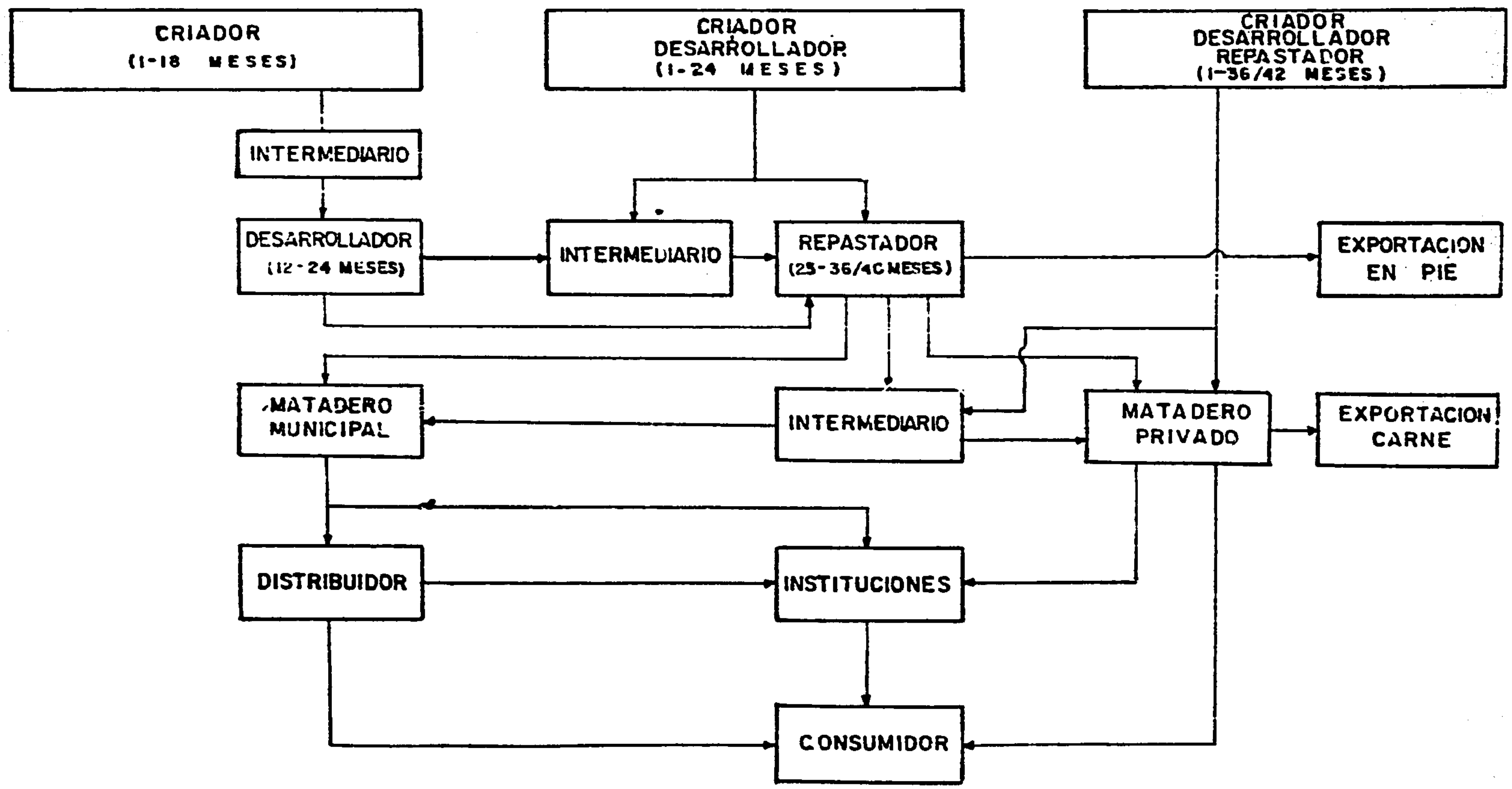
There are no organized markets in Nicaragua with the exception of the four privately owned slaughterhouses and the one newly established auction. Not all elements of the livestock industry of Nicaragua felt that more markets are necessary. Their claim is that any one individual with livestock for sale can find a buyer convenient to his location. Perhaps this is true, but the current market situation could very well be a monetary disadvantage to the producer who is placed in a position of selling at a price lower than that offered at some distant organized markets. It should be recognized that the price offered involves discounting for transportation cost. The seller, in transporting his cattle to market, bears an exceptionally high cost if he transports less than a full load. Therefore, the seller is placed at a disadvantage by paying high transportation costs, as well as withstanding a marginal profit to the buyer of his cattle.

The establishment of new organized market facilities or a producer marketing association could work at a disadvantage to the larger interior dealer, rancher-feeder, or feeder-dealer. It would be doubtful, however, for such markets would be animal concentration points, thus giving the rancher-feeder a chance to buy on quality, while at the same time help educate the small producer to the value of selective breeding for quality animals. At present, the dealers in livestock are in an advantageous position resulting from transportation costs on small lots, and ignorance on the part of the seller relative to animal quality and price; in many cases the seller of a few head has no alternative except to sell at the price offered in his immediate locality. In the long-run, if corrective action is not taken, the total industry may suffer from lack of incentive (breed improvement, management and pasture establishment) on the part of the smaller producer. Smaller producers will continue to supply a substantial portion of the feeder animals; therefore, as the industry grows, he will become a more important supplier of this type of cattle. The present market channel for beef cattle is depicted in Figure 2.

Only one organized market is available to the producer besides the four private packers and that is the public auction located in Managua. The auction commenced operation in October of 1971 and is too new for an assessment of its success. For the auction market to succeed, it will need strong support from the industry and assistance in carrying out an extensive education program. The organizers and management of this single existing auction market are knowledgeable and capable men in cattle production and marketing.

Marketing by auction is a new innovation in the livestock industry in Central America. In order to overcome the many obstacles and establish successful cattle auction markets in Nicaragua, the support and encouragement of the cattle industry, credit, and finance, excellent management, and changes in the

Figure 2. CANALES DE MERCADEO, NICARAGUA 1972
CARNE VACUNA



existing pricing structure as discussed earlier will be needed.

Recommendations:

1. That more livestock market outlets be established in Nicaragua to the extent, if necessary, of being government subsidized but not government controlled.
2. That these markets be organized in such ways as to encourage competitive pricing; i.e., auction markets or stockyard facilities where several buyers are present to bid on the livestock. These facilities could be either cooperatively or privately owned.
3. That these additional market facilities for live animals be dispersed throughout the country in such a manner as to be of the most convenience to the supplier (producer) and reduce the aggregate transportation costs to final destination.
4. A news and information service be established so that both producers and buyers could be kept informed of current prices, supply, etc., while at the same time serve as an educational instrument for the entire cattle industry of Nicaragua.
5. That a grade and/or classification system be initiated that relates to a degree of quality of cattle, so that it be useable, understandable,

and specifically constructed so that pricing may have meaning relative to the live animal.

o. Municipal markets should be improved to the extent that they become effective in the price making mechanism (see the section on "Slaughter-houses").

Slaughterhouses

Privately Owned: Buying practices at private slaughtering plants are either by live or carcass weight. Most beef is bought by the carcass method. The producer seems to prefer this method since it was first introduced in the 1960's. Selling on carcass weight is an acceptable way of marketing cattle and perhaps has an advantage for the Nicaraguan producers. The 12-hour waiting period, as now practiced, may have a disadvantage in that some tissue shrinkage would most likely occur; thus, a loss of meat to the industry and a loss of income to the seller and packer. However, no research nor study was found to indicate the pros or cons of this argument. Such a study, it is believed, should be done, either by the private packing firms or some other qualified agency.

A special problem area exists in the programed 'flow' technique wherein the private slaughterhouses more or less determine the time of sale of producer owned cattle. It is more evident in those instances involving slaughterhouse financing where the loan is 'called' regardless of cattle condition, or renewed at compound interest. The programed technique of receiving appears to be overly harsh to the producer and very advantageous to the financier, particularly so when seldom do slaughtering plants in the long-run operate kill floors at full capacity. See Tables III and IV.

Each of the four private slaughtering plants has a retail outlet. These outlets distribute a substantial volume of meat to the domestic market. (See Table V.) Major dispensers of meat

TABLE III

NICARAGUA: PRIVATE SLAUGHTERHOUSES, SLAUGHTER CAPACITY, AVERAGE DAILY KILL, AND PERCENT OF ANNUAL USE

	Year	Slaughter Capacity	Average Daily Kill	Months Operated	Percent of Annual Capacity*
	1972	125	125	10.5	87.5
Igosa	1971	125	125	10.5	87.5
	1970	None	None	None	0.0
	1972	450	368	9.3	63.4
Ifagan	1971	450	352	9.3	60.6
	1970	450	360	9.3	62.0
	1972	300	240	10.0	66.7
Carnic	1971	300	161	10.0	44.7
	1970	300	140	10.0	38.9
	1972	150	100	9.0	50.0
Empanicsa	1971	150	87	9.0	43.5
	1970	150	81	9.0	40.5

* 360 day year.

SOURCE: The Slaughterhouses submitted by G. A. Muñiz. June 5, 1973.

TABLE IV

Total Number of Head of Cattle Slaughtered by Private Plants by Class 1970 - 1972

Years	Steers	Cows	Bulls	Oxen	Total
1969					
1970*	124,093	29,294	10,290	8,690	172,367
1971*	137,482	33,279	9,833	5,684	186,278
1972*	148,084	36,780	9,937	8,200	203,001

*Table submitted by G. A. Muñiz

TABLE V

Estimated Domestic Meat and Viscera Distribution From Private Slaughterhouses 1970 - 72*

		Year (000 pounds)	
Slaughterhouse	1970	1971	1972
Ifagan	6,500	9,000	12,000
Carnic	3,188	3,533	3,333
Igosa	0	3,019	696
Empanicsa	0	0	0
Total	9,688	15,552	16,029

in the primary cities, (institutions, restaurants, hotels, supermarkets, etc.) buy directly from the packer. No delivery service is made by packers; all meat is picked up at the plants. This distribution system should be improved by establishing wholesalers of meat, so as to remove the packer competitive element more out of the retail trade and thus lessen their direct influence on domestic meat prices.

The reader is reminded that the author has attempted to avoid redundancy: The privately owned slaughterhouse is such an intricate part of the total marketing system segment that its predominant role in the marketing of cattle, much like the area of grades and standards, has appeared in most sections of this paper; therefore the reader should keep in mind factors and effects of the packer influence on marketing in each of the separate discussions.

Recommendations:

1. Extensive efforts should be exerted by the private exporting packers to expand market outlets in the Caribbean area, particularly for fresh chilled beef.
2. Private packers should explore more thoroughly the feasibility of expanding their product line, both export and domestic, by the manufacturing of processed meats and meat by-products.
3. Private packers should critically review their cattle financing program and redirect it primarily toward promotion of the cattle industry by encouraging

production, thus increasing their cattle supply and meat quality for profit maximization, and not attempt to obtain a primary source of profits from a banking function of money lending.

4. Export packers should establish and adhere to meat grades and cuts to differentiate quality meat in the new markets developed.
5. Private slaughterhouse management should consider developing an educational program for producers wherein the secondary objective is to educate the producers as to practices that reduce meat cut-out quality (i.e., cut-out on different breeds of animals, harsh animal treatment and bruise waste, loss from excessive branding, insects, etc.) while the primary objective is for the packer to supply better quality meat to the market. The educational program could consist of formal instruction and tours of the slaughtering plants.
6. More effective methods should be employed in retrieving and making use of packing house waste and animal by-products, such as the processing of hides, hair, concentrated animal feed, pharmaceuticals, fertilizers, etc.

Municipally Owned: Each major city in Nicaragua has municipal slaughtering facilities open to the public. Also, nearly every village throughout the country possesses similar facilities. This type of facility is performing a necessary function for the Nicaraguan people; however, the physical structures and services are very primitive and technically inefficient, having only the minimum facilities for slaughter, with very little sanitation existing. The system is inadequate in the market channel from the standpoint of domestic meat supply and consumer diet factors. It also reflects on the inadequacies of grades and standards, exposes misallocation of capital and labor, and adds little to the price mechanism operating in the domestic market.

Numerous animals are sold at these facilities to local buyers before slaughter. However, a larger portion is brought in for slaughter by the owner and he takes possession of the meat immediately. All of the products from such plants go into the domestic wholesale and retail trade.

It has been estimated by some that up to 70 percent of the domestic meat supply comes from these plants. Therefore improvement of the municipal slaughtering plants should be incorporated into any plans made in the meat and livestock industry, primarily based on the fact that they are the main suppliers of domestic meat. Current data was available on five municipal slaughtering plants for 1972 -- indicating slaughter (beef only) of 62,294 head. For earlier data on sixteen plants see Table 1. For costs of slaughter 1973 see Table VI.

A program to gradually phase out the old plants and supplant them with more modern and sanitary facilities could

TABLE VI

NICARAGUA COST OF SLAUGHTER FOR BOVINE CATTLE

	Total Cost	Patent	Taxes	Corral	Slaughter	Transport to Market
	-----------------	-----------------	-----------------	Cordoba	-----------------	-----------------
Steers	41.91[1/]	0.41	12	1.5	18.00	10.00

Source: Ministry of Agriculture (MAG)

Based on data obtained by Gustavo Hernandez,

Veterinary Doctor of the Municipal Slaughterhouse

[1/] Same for Oxen, Bulls & Cows

Date: July 2, 1973.

be accomplished with little disruption in the supply of consumable meat to the public.

Recommendations:

1. Municipal slaughtering houses as they are today should be discontinued. A redevelopment program should be initiated to gradually phase these plants out of existence over the next 10 years, replacing them with modern sanitary plants with refrigeration and storage.
2. During the phasing out period, reduce the number of such local or municipal slaughterhouses in Nicaragua.
3. New slaughtering houses, if the same tradition is followed, (that is offering this service to the public) should be strategically located taking into account the population densities and livestock producing areas.
4. More strict inspection and sanitary procedures should be enforced in the existing slaughterhouses, and in any new private plants that may be built. Licenses (or permits) should be required for such custom slaughterhouses operating in the domestic market to insure that they meet standardized requirements established by law.
5. If new slaughtering facilities are built with similar functions performed as the existing houses, then they could be privately owned or have some form of cooperative ownership to avoid governmental influence.

In any program undertaken to phase out these plants, the economic climate for incentive should be such that private capital would be encouraged to develop the small necessary slaughtering facilities. If small, modern type municipal plants were encouraged to develop, it is believed the move would be beneficial to the public and to the cattle and packing industry as a whole. Some, or all, of the following could be expected to develop over a period of time: 1) Improvement in the quality of meat offered on the domestic market. 2) Better sanitation through inspection. 3) Improvement in the competitive structure in market. 4) Upgrading quality of herd cattle on farms and ranches. 5) Positive effect on dress out percentage of animals slaughtered. 6) Efficient use of by-products.

An elementary example of how a new slaughtering facility program may be developed would be: 1) If the municipal ownership is desired, some agency of government underwrite the costs. 2) Or a percentage of present charges now made channeled into a building fund. 3) Debt on new facility be amortized over long enough period that payout is feasible. 4) Charges continue to be made for services at new facility, but forced to fluctuate up or down depending on market demand and supply situation. 5) A sinking fund be created for unforeseeable expenses, plant upkeep and possible expansion.

If private ownership and development alternative is desirable, then: 1) Encourage private capital and incentive input. 2) Government or agency make sufficient long term loan capital available, say up to 90%, to responsible individual, association or cooperative groups for development. 3) That such a loan be secured by the property and facility. 4) That charges be made, or continue, on a costs plus basis including a fund for loan cost and loan retirement.

A program of sequential development for slaughterhouses would advance only as interest and management incentives were encouraged.

Market Expansion

Market expansion will necessarily be a compelling force in Nicaragua's cattle industry growth and development. Nicaragua has the resource potentials to greatly expand its annual production of beef and to upgrade the quality of the beef animal, and thus the final product, meat -- the possibilities and rewards of the export market serves as an impetus for these developmental programs to continue efforts at maintaining the improvement of beef production, as well as slaughterhouses expanding their production to greater varieties of meat and meat products.

Since the late 1950's, Nicaragua has made remarkable progress in entering and continuing to develop its export markets for beef; parallel to the export market development, a substantial increase in beef production has been made. The same opportunities for export expansion exist today, and even more abundantly so, perhaps under more favorable circumstances than fifteen years ago. As a result of a world wide shortage of beef, Nicaragua has an excellent opportunity of further developing her livestock industry and securing international markets for the future. The opportunity to expand markets and increase sales would increase revenue and improve Nicaragua's position in the international trade markets.

The growth in exports to the United States indicates that the beef market can be further increased. Exports to the U. S.

increased over 19 percent in 1970, 5 percent in 1971. A comparable figure for 1972 was not obtainable. On a per pound basis, an increase of approximately 8,000,000 pounds was exported to the U. S. in 1970, 2,000,000 pounds increase in 1971. Tables VII and VIII.

Currently Nicaragua probably markets all the beef it wishes to export; however, an increase in export sales can be implemented only through one or two methods -- through an increase in beef production, or by reduced domestic consumption. The latter is certainly not advisable inasmuch as domestic consumption is almost minimal now. Estimates were found to vary widely on this figure, however it is assumed to be something less than 20 lbs. per capita. Therefore, higher prices, or a more equitable share of animal values, appears to be the best incentive to expand production. Prices, as now in use, based on weight yield, is a forward innovation and offers encouragement to the cattle producer for breed improvement for higher cut out yield, but is not necessarily an incentive to produce a better quality meat animal. With an improved production program, expansion of the export market is assured in the United States, the Caribbean area, and to a lesser extent, through specialty meats, in Central America.

Although export growth would seem limited only by production at this point, the cattle industry should consider the possibility of restrictions on beef imports into the United States and commerce exerting more effort and directing

TABLE VII

NICARAGUAN BEEF EXPORTS*
(pounds)

Packinghouse	1969	1970	1971	1972	Total
			(1,000 pounds)		
Ifagan	21,450	32,542	30,406	27,701	112,101
Carnic	11,946	14,538	14,611	21,262	62,357
Empanicsa	7,078	7,492	7,042	7,428	29,041
Igosa			2,816	9,561	12,378
	40,475	54,572	54,876	65,954	215,951

*Source: Ministry of Agriculture

TABLE VIII

Total Slaughter, by Class and Meat Export by

Year (Cattle)

Year	Total Slaughter (000) head	(000) Steers	(000) Other	Total Export Pound
1972	203,001*	124,093*	48,274*	57,902
1971	283,535	176,804	96,731	54,872
1970	277,181	195,612	81,569	41,000
1969	269,979	189,169		37,100
1968	233,742	130,169		20,328
1967	199,533	120,643		30,342
1966	162,131	141,691		

*Export Plants only, submitted by G. A. Muñiz.

incentive toward exploration and development of alternative markets.

The export of beef could probably be enhanced by the establishment of public relations and sales offices in the United States and the Caribbean area. While the public relations office would set the climate for marketing, the direct sales offices would help establish a greater demand for Nicaraguan beef in the export markets which should reflect an increase to the producer for his product. In this way, incentive is developed for more and better production from which all elements of the cattle industry would profit.

The lack of quality is a major handicap in Nicaragua's export market expansion effort. By location alone Nicaragua should be a very effective competitor to New Zealand and Australian beef in the Caribbean market. However, there seems to be a preference for beef from New Zealand and Australia, which is also grass fed beef. This preference may exist from a lack of sales effort and not entirely from meat quality. If so, a sales promotion effort needs to be made.

There are extenuating circumstances adverse to increasing livestock and beef production and thus limiting international market expansion. Besides the present pricing structure and conditions of production, another restrictive factor is the limited grazing areas in the production of lean beef animals, that is, animals which are not fattened or finished before slaughter. The concentration of cash crops and animal production in the Pacific region where the dry season exists six months out of the year is yet another limitation. Penetrating roads need to be extended inland where not only are grazing conditions much better the year around, but accessibility is gained to larger areas of land suitable for cattle production and would be in less competition with cash crop production.

Foregoing any strict controls on import beef to the United States with its almost insatiable demand for beef, and contemplating steady improvement in Nicaragua's beef and meat industry, the future for expanding markets is very encouraging.

Recommendations:

1. That the Government and export packers cooperate in their efforts to establish a sales office in their primary foreign market areas.
2. Exporters of beef should increase their efforts to establish markets in locations other than solely the United States.
3. That the Caribbean market be fully exploited before exploring markets at greater distances.
4. Nicaraguan exporters of beef broaden their exports to include more fresh meat cuts and introduce processed meat to their trade markets.
5. Efforts to improve and increase the domestic market should be intensified.

Marketing Information & Price Reporting

Market information is a fundamental element of the entire market chain. It strengthens the competitive price making mechanism, promotes product quality, predicts and assists in seasonal movement of animals, provides motive for equitable distribution of income to the producers, and is instrumental in the operation of adequate and efficient marketing.

Market news information and price reporting is currently very inadequate for a prosperous growth in the cattle industry and market development in Nicaragua. It is almost non-existent with one exception; slaughter plant prices being paid are published irregularly. Changes in prices being paid for animals change exclusively with the fluctuation of meat prices in the United States. There are no prices quoted on a regular basis by radio, television or local newspapers. With this deficiency in market news, it is unlikely that a competitive market price could be established even if it were desired. There appears to be no insurmountable difficulty to overcome this deficiency in reporting marketing news for cattle. Data needs to be acquired and disseminated on a national scope so producers, buyers, and consumers may be an informed 'public', thus assisting in pricing, grading, etc. If a workable system of price reporting were planned and activated, a more equitable distribution of returns to the producers and feeders of cattle, and increased profit to packers and slaughterers could perhaps be accomplished.

Recommendations:

1. A market reporting and information service should be established. The telephone system is adequate; this would permit a daily call to some central point, by all major buyers of cattle, relative to prices paid. This would then permit a radio broadcast at a set time giving prices paid that day. A follow-up on weekly prices paid could be published in local newspapers.

    Reporting would require nominal time and cost, in that there is only a small number of markets where the producer sells the majority of cattle (consisting of four slaughtering plants, one auction market, a limited number of large dealers, and rancher-feeder buyers).

2. A price-reporting and market-news system or collecting points for information, could be established in the office of the Ministry of Agriculture, or perhaps implemented in some other government office where proper supervision and record keeping could be maintained. This could be accomplished with minimum costs and labor.

3. For a market news system to work effectively, it would be necessary that some type of a grading system for live cattle be initiated. It could be no more than describing the animal by weight class as to fat finish,

minimum fat or finish, no fat, or poor condition. Whatever the classification, it must be easily understood with only a minimum chance of misunderstanding. Refinement of the system would come later as producers and buyers accepted the idea.

4. The reporting should also be done by class of cattle, coinciding with the established grading system, such as slaughter, feeder, etc., and also by sex and weight. Market reports should contain information relative to supply conditions in different regions of country, domestic and export market demands, and supplies, etc.

If a reporting service on actions of major buyers and sellers of cattle were established, the entire cattle industry would benefit. This would, 1) Permit more accurate estimates on volume of cattle by class and weight sold, 2) Better seasonal and annual price data and information, 3) Better estimates of production by class and location, 4) Improve estimated supply potentials, 5) Help to stabilize or decrease price fluctuations and even-out supply flows within and between regions, 6) Educational benefits in upgrading the industry, and 7) Information and data obtained would give a base for further study and research to be developed beneficial to the producers, financial institutions, packers, and the general economy.

Domestic Retail Trade

Time, and sufficient transportation to other cities throughout the country, did not permit the author to exert sufficient endeavors in this problem area. However, enough familiarity of the domestic market was obtained through a number of visits to public markets, retail stores, slaughtering plants and interviews to suggest that the retail meat trade should be viewed as a serious weakness in the domestic market chain.

With the exception of a minor number of retail grocery outlets, the supply of domestic meat comes from the open public markets, vendors, or the retail outlets established at the four major private packing plants.

There is no inter-regional delivery or distribution system of meat from the acceptable slaughtering plants to the populated centers. If the phasing out of the numerous municipal slaughterhouses is undertaken and sanitary wholesale outlets are organized, inter-regional transport service must be developed to supply meat from the slaughter to these wholesale outlets. The deficiency in a transport system is partly a result of the inadequacy of a suitable road network and capital investment funds for equipment. However, the expected profits from a venture into transport service under the present marketing system is not encouraging for private risk capital to be committed.

Standards and grades of meat may exist but they do not depict quality. There are a number of domestic cuts of meat, however, to a sizeable part of the consumer market they are meaningless or have no value. Lack of meat quality and quality control is very evident. Without improvement in grade standards relative to quality and the development of adequate refrigeration the problem will continue in its present state.

The author feels that for any meaningful study concerning itself with domestic consumer prices of beef, grade standards reflecting quality and corresponding price schedules would need to exist in more reliable form than discovered during the course of this study. The author is aware of some of the work done in this area. However, he feels that income and price elasticities that can be illustrated would be very general in nature and little better than a well based opinion estimate. In light of the above he is confident in making the following recommendations.

Recommendations are:

1. Establishment of a grading system which depicts the quality of the animal.
2. Development of refrigeration facilities is essential for establishing an adequate domestic market.
3. Encourage small and conveniently located local meat shops, and upgrade meat counters in local supermarkets and grocery stores.

4. Phase out the presently existing type of municipal slaughterhouses in major cities and replace with more modern plants.

General Recommendations

The suggested recommendations are placed in a relative order of priority. However, the reader should keep in mind that marketing problems are inter-related; therefore, ranking the recommendations as to specific priority relative to the problems is difficult and at best temporal. The action initiated and developments arising from the suggested recommendations will have greater or lesser effects on other problem areas depending on their specific nature.

The pricing structure should be changed to lessen monopolistic tendencies. Changes could be initiated by legislative action either by controlling price margins or development of market facility improvement directed toward this specific problem.

Primary transportation routes should be developed with all reasonable speed into the interior. In conjunction with primary routes, a program for building penetrating all weather roads to form a network should be included.

Encourage the development of interior markets for cattle. These could take the form of privately owned auction or producer owned association and cooperatives.

Establish a program to phase out the existing municipal slaughterhouses. Strategically relocate and build modern sanitary facilities under private, association or cooperative ownership.

Develop more exterior markets for fresh, frozen, and processed Nicaraguan beef, particularly in the Caribbean area. Reliance on one primary market is economically unhealthy.

A market expansion program should consider more than mere addition of physical market outlets: it should view product differentiation possibilities as well as fresh and processed meats in addition to frozen cuts.

If possible, the government might establish sales offices for Nicaraguan beef in its market areas and circumvent the brokerage route.

Establish a market news service for the purpose of relating price and general market conditions to the livestock and meat industry.

More credit and capital financing should be made available to the cattle industry, including production, slaughtering and market facility aspects.

The packer financing program should be made more flexible, taking into account the weather and condition of animals at the end of agreed on loan period.

Improve domestic meat quality and distribution by initiating more adequate, serviceable, as well as enforceable meat grades and standards.

Nicaragua should establish a system of grades and standards in the livestock and meat industry.

The fact that several organizations and agencies in Nicaragua collect agriculture information and statistics independently suggests a real need for coordination in the area. Therefore, it is recommended that a single agency, perhaps a newly created agency, coordinate and provide the leadership necessary for effective collection and dissemination of agricultural information.

Future research and research monies should be directed toward solving existing problems in the cattle and meat industry from a practical point of view and not from some unobtainable solution depicted by mathematical models.

Nicaraguan packers should strongly consider directing some attention to the processed meat market.

Excessive branding should be eliminated. Perhaps this calls for the industry to devise and initiate some new system. Hides are approximately 6 to 7 percent of the weight of the animal. Current prices range from 22¢ to 38¢ per pound. Hides from Nicaraguan cattle are of poor quality and do not demand high prices, partly from excessive branding and partly from insects.

November 5, 1973