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Report No. 16
January 1970

A Review of Rice Drying and Storage Problems in Ecuador

A.I.D.
Reference Center
Room 1656 NS

FOOD & FEED GRAIN INSTITUTE
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MANHATTAN, KANSAS 66502

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Principal Investigator: Orlo Sorenson

SUMMARY STATEMENT

The purpose of my trip was to review rice marketing problems with AID Mission personnel and with officials of the Government of Ecuador and to make recommendations concerning technical assistance to be provided under Kansas State/AID contract csd-1588.

To gain some understanding of rice marketing problems, discussions of various aspects of the problem were held with Mr. Lee Winters, Food and Agricultural Officer, USAID/Ecuador and Mr. Ralph Van Dixhorn, USAID and Mr. Lewis Townsend, Director of CLUSA in Quito. Brief discussions were held with Mr. Robert Minges, AID Mission Director and with Mr. Arturo Ganpotena, Sub-secretary Ministry of Agriculture. Rice marketing problems were discussed also with Mr. Harold Kramer and Mr. Felix Kasamatu, both of whom were participating in a grain marketing study for FAO/BID.

During a six-day stay in Guayaquil, I consulted with Mr. George Salkeld of AID, Mr. Theodoro Landin of the National Rice Commission and Mr. Victor Zambrano, Executive Director, National Rice Commission. Mr. Carlos Zevallos assisted me in Guayaquil as interpreter and gave invaluable assistance in arranging field trips and other contacts. Mr. Gustavo Riofrio, CLUSA in Babahoyo also provided useful information and very useful observations.

The report contains three parts: (I) A recommendation that technical assistance under contract AID/csd-1588 not be undertaken at this time and that need for further study be reconsidered after the report of the current FAO/BID study is completed; (II) Discussion of rice marketing problems in Ecuador supported by available statistical and documentary evidence; (III) The authors observations on problems of changing the structure of rice marketing in Ecuador.

Date January, 1970

A REVIEW OF RICE DRYING AND STORAGE PROBLEMS IN ECUADOR

Prepared by

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Department of Economics
Kansas State University

Prepared for the

AGENCY FOR INTERNATIONAL DEVELOPMENT

AID/csd-1588
Technical Assistance in
Food Grain Drying, Storage, Handling and Transportation

at the
FOOD AND FEED GRAIN INSTITUTE
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Mr. Carlos Zevallos, USAID/Ecuador

Mr. Theodoro Landin, National Rice Commission, Ecuador

Mr. Harold Kramer, United Nations Food and Agriculture Organization and International Development Bank

Mr. Gustavo Riofrio, Project Director, Rice Project CLUSA/USAID/Ecuador Agricultural Cooperative Development Program

Mr. Lewis Townsend, Agricultural Cooperatives Advisor CLUSA/USAID/Ecuador

A REVIEW OF RICE DRYING AND
STORAGE PROBLEMS IN ECUADOR

TABLE OF CONTENTS

Summary..... i
Title Page.....ii
Acknowledgment.....iii
Table of Contents.....iv
List of Maps..... v
List of Tables..... v
Photographs..... v
Preface.....vii

Part I.
Rice Marketing Facility Feasibility Study in Ecuador by Kansas State University..... 1

Part II.
A Review of Rice Marketing Problems in Ecuador..... 2
A. Rice Production in Ecuador..... 2
B. Rice Marketing and Processing.....10
C. Rice Storage.....13
D. Cooperatives.....14

Part III.
Improvement in the Marketing System - Some Observations.....14

Appendices
A. Rice Commission Report (Translated in English).....A-1
B. Production of Rice 1965-1968.....B-1
C. Price Announcement of the Government of Ecuador (Translated in English).....C-1
D. Distribution of Population in the Guayas Basin with Accompanying Population Map.....D-1
E. Climatic Conditions in the Guayas Basin.....E-1
F. Photographs of Rice Production and Marketing Facilities in Ecuador.....F-1

Table of Contents cont.

List of Maps
Ecuador - Provinces and Principal Cities 3
Guayas Province 4
Los Rios Province 5
Cañar Province 6
Population Map.....D-2

Photographs F-1

List of Tables
Table 1 Ecuador: Rice Production 1964-1968 7
Table 2 Volume of Production by Type of Grain and Zone - Winter 1963 8
Table 3 Production of Rice by Month 1965-1968 9
Table 4 Capacity for Storage of Rice at Mills, in Ecuador, National, Selected Provincial and Cantonal Levels 1968 13

Appendix Tables
Appendix A
Table 1 Area and Production of Rice A-18
Table 2 Area Cultivated with Rice in the Country A-19
Table 3 System of Preparation of Land During the Winter, 1969 .....A-20
Table 4 Systems of Sowing Rice During the Winter 1969 .....A-21
Table 5 System of Land Holding of the Area Cultivated With Rice During the Winter, 1969 .....A-22
Table 6 Distribution of Rice Growers During the Winter, 1969 .....A-23
Table 7 Settlement: Distribution of the Farmers By Size of the Cultivated Land A-24
Table 8 Use of Fertilizer in Rice During the Winter, 1969...A-25
Table 9 Experimental Production of Rice in the Fields of Daule, 1968 .....A-26
Table 10 Hydraulic Resources in the Cultivation of Rice A-27
Table 11 Use of Varieties A-28
Table 12 Winter, 1969 .....A-29
Table 13 Cost of Production of Rice per Hectare Cultivate Without Irrigation and Without Machinery A-30
Table 14 Cost of Production of Rice per Hectare Using Machinery but Without Irrigation A-31
Table 15 Cost of Production of Rice per Hectare Sowing Directly with Irrigation A-32
Table 16 Cost of Rice per Hectare by the System of Transplant.....A-33

Plant for 5,400 Tons - 22 Units.....A-34
Analysis of Cost and Income of Operation and Profit.A-35
Plant for 3,000 Tons - 41 Units A-36
Analysis of Cost and Income of Operation and Profit.A-37
Plant for 11,000 Tons - 11 Plants A-38
Analysis of Cost and Income of Operation and Profit.A-39

Table of Contents cont.

List of Tables

Appendix B

Rice Production 1st Semester 1965 .....B-1
Rice Production 2nd Semester 1965 .....B-2
Rice Production 1st Semester 1966 .....B-3
Rice Production 2nd Semester 1966 .....B-4
Rice Production 1st Semester 1967 .....B-5
Rice Production 2nd Semester 1967 .....B-6
Rice Production 1st Semester 1968 .....B-7
Rice Production 2nd Semester 1968 .....B-8
Total Yearly Summary Page.....B-9

Appendix D

Population of the Provinces D-1

Appendix E

Average Rainfall for Babahoyo and Milagro E-1
Average Evaporation for Babahoyo and Milagro E-2

PREFACE

This is not a research report. This report contains a recommendation concerning a proposal for a study of the needs for rice drying and storage facilities in Ecuador to be carried out by Kansas State University at the request of USAID/Ecuador and the Government of Ecuador.

Secondly this report contains statistical and other documented evidence of rice marketing and production problems in Ecuador along with observations and impressions gained by the author in a very brief visit to Ecuador, January 12-24, 1970.

A REVIEW OF RICE DRYING AND STORAGE PROBLEMS IN ECUADOR

Part I. Rice Marketing Facility Feasibility Study in Ecuador by Kansas State University

The purpose of my trip to Ecuador was to review rice marketing problems for the purpose of recommending procedures for undertaking and carrying out a study of possible need for improved rice marketing facilities. A request for technical assistance under Kansas State University - AID contract csd 1588 (Airgram, reference: Quito 4677, State 175534) describes the scope of proposed work as consisting of:

1. Selection of site best suited for actual processing and storage installation, according to the areas of production, transportation, and road facilities, exports, etc.

2. Review proposals made by various companies and countries and give guidance on modifications if necessary for the most functional installation.

3. Size of desirable installation for present and future needs.

The National Rice Commission has been developing plans for rice drying facilities and silo storage of rice as indicated in their recent report (Dec. 3, 1969) "Analysis of the Rice Situation in Ecuador, Plans for Drying and Storage" contained in Appendix A of this report.

A study of grain storage requirements including rice, was underway in Ecuador at the time of my arrival by "Programo Cooperativo FAO/BID, 1701 Pennsylvania Ave., N.W. Washington, D.C. 20577. A series of discussions with Mr. Harold Kramer, leader of the 3-man team engaged in the study, indicated that the work currently under way in rice areas closely parallels a study proposed under Kansas State USAID contract csd-1588 as described above. The FAO/BID team indicated that their study would be

complete and the report filed in March, 1970. The desirability of deferring further study by Kansas State University was discussed with USAID/Ecuador officials. There was apparent agreement that further study should await the completion of current studies.

It is therefore recommended: (1) that no further work on rice storage and drying facility needs be undertaken by Kansas State University until the FAO/BID Team has completed its study and the report made available, and (2) that Kansas State University consider another request for services if, in the judgement of USAID/Ecuador, further services relating to grain marketing organization, management, processing or handling techniques, personnel training, or facility needs are required.

Part II. A Review of Rice Marketing Problems in Ecuador

A. Rice production in Ecuador.

Rice production in Ecuador is concentrated in the Guayas River basin, which is a relatively small area near the south coast. The National Rice Commission of Ecuador determined by interview survey in 1968-69 that, 89.5 percent of the total area seeded to rice was in the provinces of Guayas, Los Rios and Cañar, with 50 percent of the cultivated area in Guayas; 27.5 percent in Los Rios and 14 percent in Cañar.[1] The remaining 10.5 percent of the area was in the provinces of Manabi, El Oro, Pichincha (Santo Domingo), Esmeraldas, Bolivar, Morona Santiago, Imbabura, Cotopaxi, Napo, Pastaza, Zamora Chinchipe, and Chimborazo, in order of productive importance. (See maps of Ecuador and provinces of Guayas, Los Rios and Cañar).

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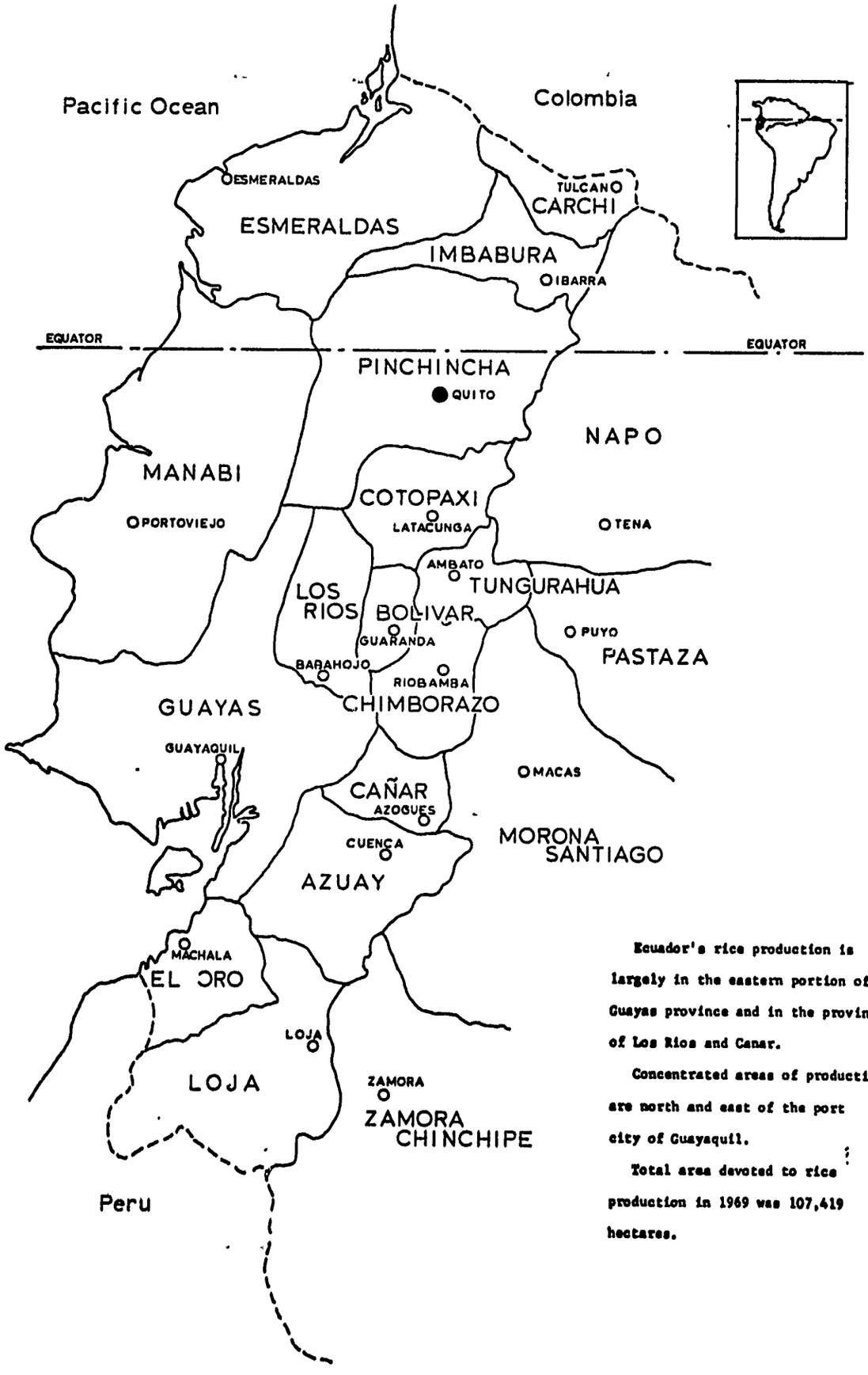
[1] For a copy of the report of The Rice Commission Study, See Appendix A, "Analysis of the Rice Situation in Ecuador: Drying and Storage".

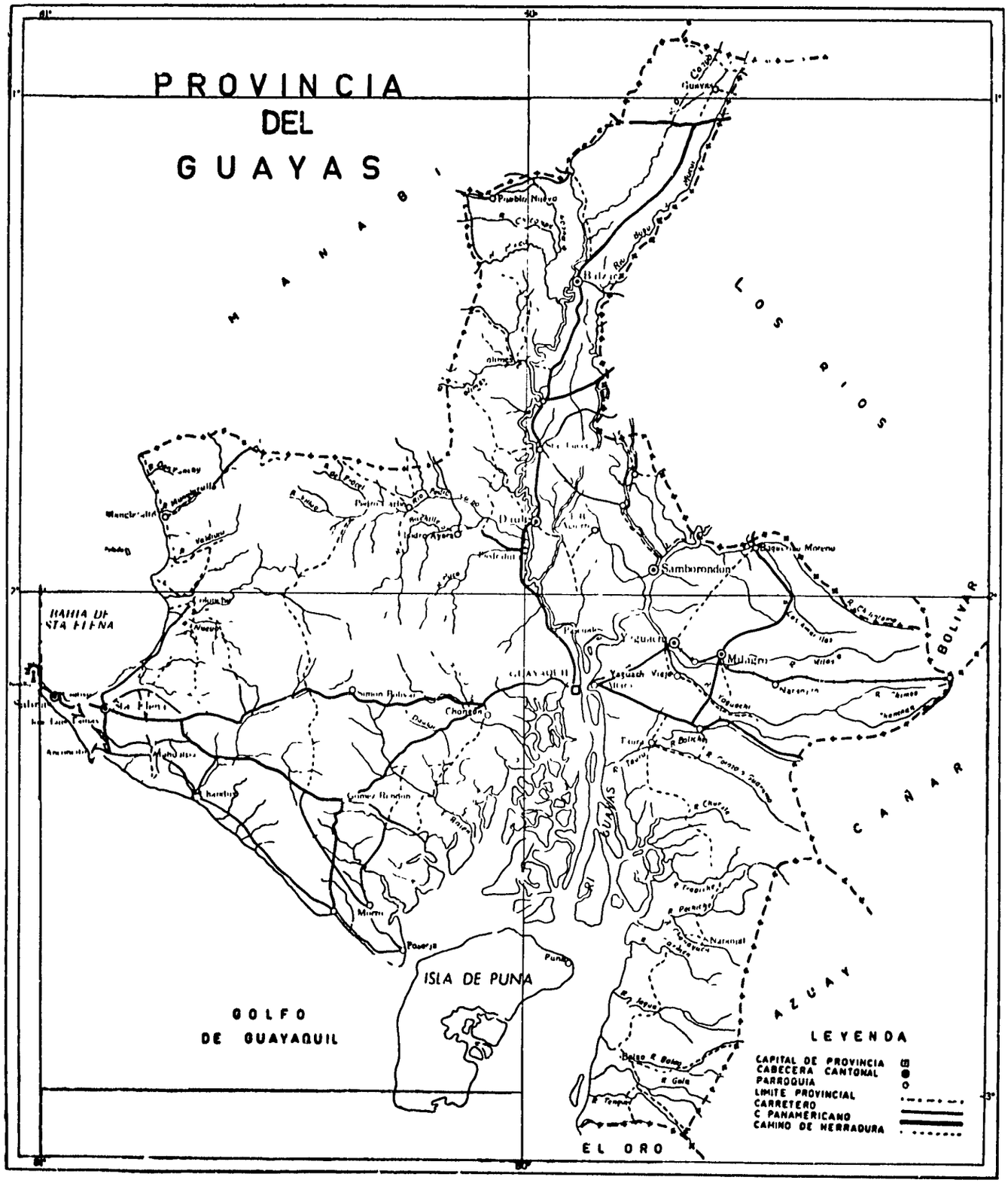
ECUADOR: Provinces and Principal Cities

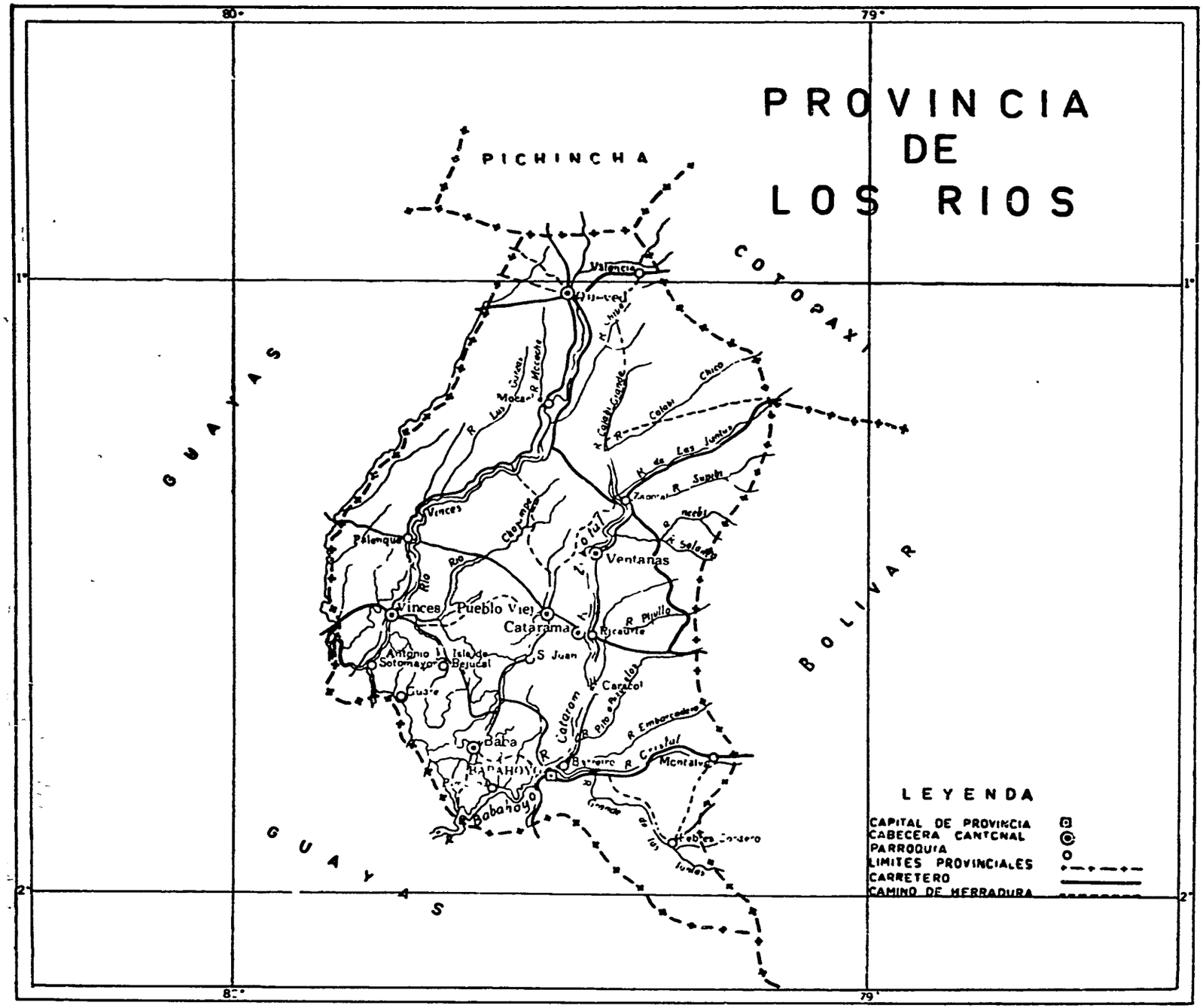


Ecuador's rice production is largely in the eastern portion of Guayas province and in the provinces of Los Rios and Canar.

Concentrated areas of production are north and east of the port city of Guayaquil.

Total area devoted to rice production in 1969 was 107,419 hectares.


PROVINCIA
DEL
GUAYAS
LOS RIOS
BOLIVAR
CAÑAR
AZUAY
EL ORO
BAHIA DE SANTA ELENA
GOLFO
DE GUAYAQUIL
ISLA DE PUNA
Samborondon
Milagro
Yaguachi
Chongon
Balzar
LEYENDA
CAPITAL DE PROVINCIA
CABECERA CANTONAL
PARROQUIA
LIMITE PROVINCIAL
CARRETERO
C PANAMERICANO
CAMINO DE HERRADURA



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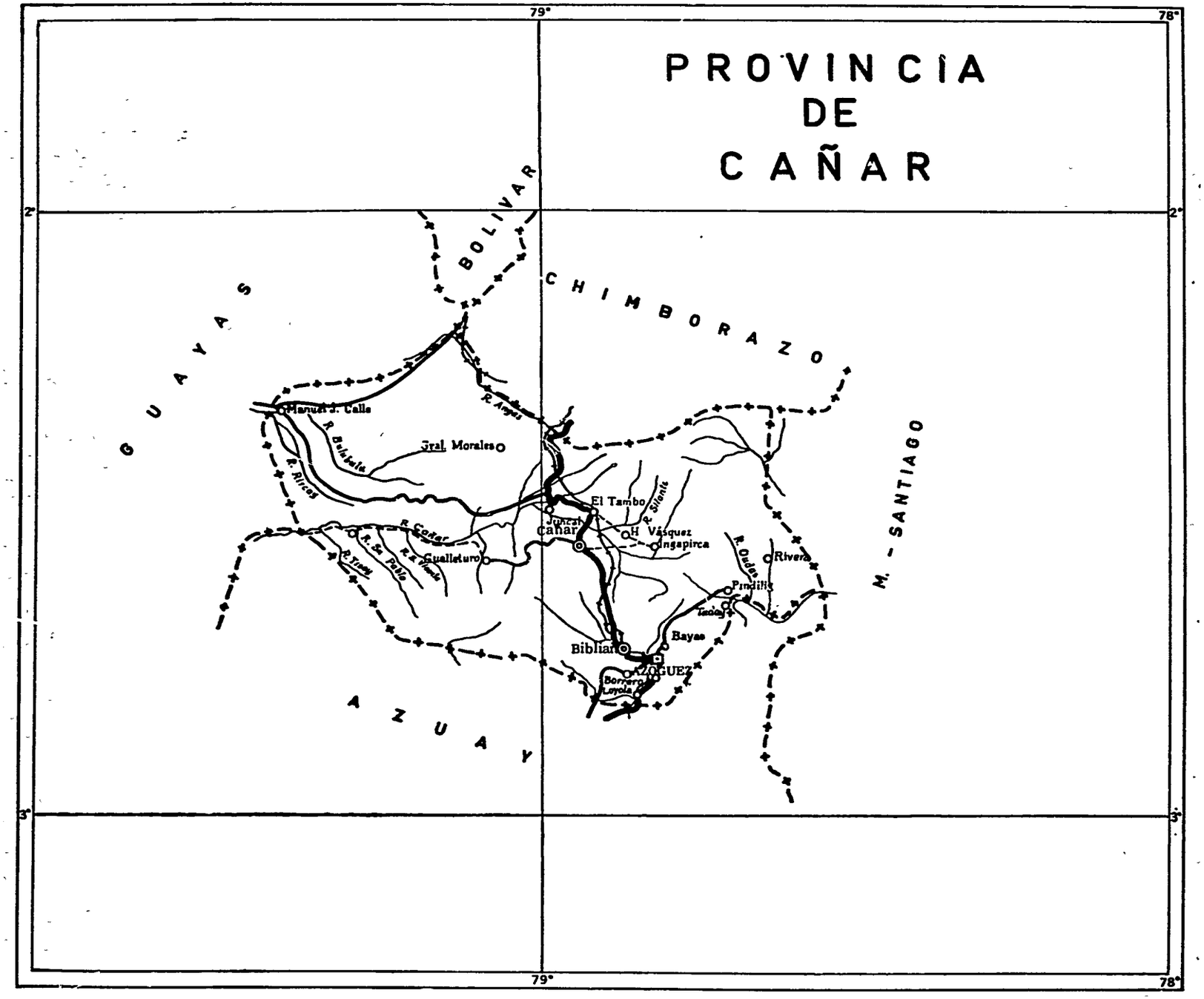
CAMINO DE HERRADURA


PROVINCIA
DE
CAÑAR
BOLIVAR
CHIMBORAZO
GUAYAS
M. - SANTIAGO
AZUAY
79°
78°
2°
3°
Manuel J. Calle
Gral. Morales
R. Balsabala
R. Rircas
R. Angas
R. Cañar
R. Silante
El Tambo
Juncal
Cañar
H. Vásquez
Ingapirca
R. Gualleturo
R. Tiraqui
R. de Pablo
R. de Vicente
R. Duda
Rivera
Pindilig
Taday
Bayas
Biblián
AZOGUEZ
Borrero
Loyola

Rice is produced largely on small farms by tenant farmers. In 1968-69, 50.6 percent of 7,931 farmers producing rice had less than five hectares of rice; 84.07 percent had less than 20 hectares and 94.04 percent had less than 50 hectares. The producers of winter rice in 1969 were 83.39 percent tenants and 16.61 percent owners. Relatively little mechanization of rice production prevails. Rice is largely seeded by hand, either by direct seeding or by transplanting from nursery beds. Little irrigated rice is grown and land leveling and building of dikes to retain water on the rice field has not been extensively carried out. Yields are low compared with yields in areas where irrigation and water control is practiced. Statistics on rice production from 1964 through 1969 are reported in Table 1.

Table 1. Ecuador: Rice Production, 1964-1969

Year	Area	Production		Yield
		Paddy Rice	Milled Rice	
	(Hectares)			(100 kg per Hectare)
		(Metric Tons)		
1964	105,282	236,416	135,094	22.45
1965	99,729	260,397	148,798	26.11
1966	101,166	275,684	157,533	27.25
1967	110,561	249,639	142,650	22.57
1968	112,376	144,552	82,601	12.86
1969	107,419	288,016	164,580	26.81

Source: Excerpted from Ecuador National Rice Commission Report entitled "Analysis of the Rice Situation in Ecuador, Plans for Storage and Drying," Appendix .

Ecuador produces predominantly a long grain rice as indicated in Table 2. The National Rice Commission lists 29 rice varieties that are produced in significant amounts. Examination of commercial rice samples indicated considerable mixing of varieties and lack of uniformity in size and shape of grains within a single lot.

Table 2. Volume of Production by Type of Grain and Zone
Winter, 1963

Zone	Unit	Extra Large	Large	Medium	Short	Total
Baba Urvina Jado Samborondon	Metric Tons	4,719	15,475	6,539	418	27,151
Babahoyo PuebloViejo Urdaneta Ventanas	Metric Tons	29,082	17,014	11,672	1,638	59,406
Vinces Balzar Daule	Metric Tons	8,396	32,552	13,670	4,594	59,212
Milagro Yaguachi Naranjal	Metric Tons	11,401	44,081	12,918	12,123	80,523
Guayaquil	Metric Tons	337	1,674	1,112	954	4,077

Source: National Rice Commission Report, op. cit., pp 6 & 7.

Ecuador produces two crops of rice annually. It was reported also, that small areas in the Guayas basin produce three crops annually. The winter crop is larger than the summer crop. The National Rice Commission reports about 22,000 hectares of summer rice harvested in 1968 and 85,000 hectares of winter rice harvested in the spring of 1969. Data on rice production by Cantones by months for a four year period (See Appendix B of this report) indicate that slightly more than two-thirds of the rice crop is harvested in a 2 or 3 month period each year which may reach a peak in May and taper off through June and July or under other conditions may not reach major movement proportions until early June.

Table 3 Production of Rice by Month
1965 through 1968

PRODUCTION MILLED RICE

Month	1965	1966	1967	1968	4-Year Average	% of Annual
		(Hundred Kilograms)				
January	2,641	22,252	4,585	1,743	7,805	.55
February	553	10,206	728	2,137	3,406	.24
March	2,594	3,871	682	5,834	3,245	.23
April	1,904	36,861	22,761	2,878	16,101	1.14
May	169,437	591,406	726,989	97,024	396,198	28.10
June	461,945	505,894	381,683	245,761	460,261	32.65
July	160,675	129,448	65,714	103,770	113,901	8.08
August	44,845	168,035	88,745	29,080	83,676	5.94
September	122,151	218,215	97,347	33,743	135,864	9.64
October	152,840	110,088	58,985	41,261	90,793	6.44
November	174,420	51,846	22,711	8,808	64,446	4.57
December	100,273	24,150	11,897	4,174	34,123	2.42
Total	1,394,278	1,872,272	1,482,827	576,216	1,409,819	100.00

Source: Data from National Rice Commission, Ecuador (See Appendix A of this report)

One estimate of rice production for the years 1968 through 1973 is as follows:

Year	Total Production (Metric Tons of Milled Rice)*
1968	176,000
1969	189,750
1970	204,000
1971	225,000
1972	247,000
1973	283,000

*Conversion factor from paddy rice 0.63

Source: Junta Nacional de Planificacion as reported by the National Rice Commission

Realized production in 1968 and 1969 was below the projected figures. Figures on total production of rice from 1957 through 1969 do not indicate a sustained growth in production. Increased production in the near future would seem to be heavily dependent on planned development projects designed to increase rice production. An example is the Babahoyo irrigation project

for which feasibility analysis is currently being completed. Anticipated production increase of 64,000 metric tons from this project would be considerably less than the production increase projected in the above table.

B. Rice Marketing and Processing.

In contrast to production statistics, little statistical evidence relating to marketing of rice was available. Information about marketing was not developed beyond that of random observations, except in the case of some aspects of mill operation.

Marketing involves direct selling to numerous, relatively small, rice millers by producers in the area of the mill. The miller is reported to provide marketing and other services to the producer that tend to bind the producer, especially the small producer, economically to the miller. Such services include production credit and provision of sacks for delivery of the rice. Other paternalistic type benefits tend to develop producer dependence on the local miller. The small rice producer is frequently without means of transporting rice to competing millers. With few if any market alternatives, it is alleged that producers are not paid prices for rice that reflect its market value. The price level is alleged to be unduly low and relative quality of individual lots is not reflected in price relationships. Mills purchase paddy rice on the basis of 100 lbs. of milled rice equivalent. Paddy rice equivalent weights are reported to be used to the disadvantage of the producer-seller.

A Canadian firm, T. Ingledow and Associates Limited, describes rice marketing problems as follows:[2]

"The rice marketing system in the Babahoyo area constitutes a constraint to development. The small rice farmer is most affected by the defects of the system. His problems occur in financing and the purchase of paddy rice by the mills. The small farmer is frequently financed by the rice mill, as he cannot obtain credit elsewhere. The following types of agreements are found:

- A loan repayable at harvest with interest rates at 20 percent or more.
- A loan tied to an agreement with the mill to deliver the harvest at a fixed price or at about 10 sucres per quintal below the market rate.

Rice is bought on the standard quintal of white rice. The delivery to the mill is in the form of paddy rice. Mills usually lack the equipment to monitor the moisture content, quality or added material, so there is no measure of the quantity of paddy rice required to produce a quintal of white rice. As much as 240 pounds of paddy may be demanded with 180 to 200 pounds the general rule. By comparison, an internationally accepted milling percentage is 66 to 67 percent, which would require 150 to 152 pounds of paddy rice (at 13 percent moisture content) to produce one quintal. According to the Italconsult report, the percentage for Ecuadorian mills in 1963 averaged about 64 percent, probably due to obsolete and poorly managed milling equipment. This would require about 156 pounds of paddy rice to produce one quintal of white rice. Equipment

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[2] Babahoyo Irrigation Project Feasibility Report, June, 1969, T. Ingledow and Associates Limited.

to determine moisture content in rice, to check the presence of extraneous material, and to monitor quality is relatively simple and inexpensive. It should be possible for the Superintendencia de Piladores to insist that larger mills acquire and use monitoring devices so that the small farmer may be paid a fairer price."

Efforts to modify existing marketing conditions have been exerted by the government by attempting to establish official mill prices for paddy rice and by establishment of Piladora Model in Guayaquil as an alternative outlet for producers. Piladora Model was not buying rice in January, 1970 because it was filled and the mill was not operating, reportedly because it was unable to sell milled rice at a price that reflected the official rice price. Official prices, as illustrated in Appendix item C, are reported to be ineffective in bringing better prices to producers.

Marketing statistics, other than those maintained by the Superintendencia de Piladoras are very scarce. Available statistics relate to size and location of milling and mill storage capacity and stocks, and the movement of rice through mills. Price data series at any level from producer to consumer apparently are not in existence. Cost studies by market function are not available. Patterns of distribution or studies of market channels have not been done. Regional consumption data were not discovered. This being the case the effort to modify market structure, if it is to proceed, must proceed at this time on the basis of very limited information.

C. Rice Storage.

Observed mill storage for paddy rice is principally of two types, (1) open shelters constructed of bamboo with bamboo mats for floor or (2) concrete rectangular bins under a wood or thatched roof which provides protection from rain. In each type of storage severe insect infestations were noted. Conditions appeared conducive to entry of rodents and in some cases animal excreta was observed in rice. Storage loss in paddy rice is estimated by The National Rice Commission at 15 percent of rice stored. This estimate is consistent with estimates made in other countries where rice is stored under similiar conditions. (See Photos-Appendix F)

Table 4. Capacity for Storage of Rice at Mills, in Ecuador, National, Selected Provincial and Cantonal Levels, 1968

	Storage Capacity in Metric Tons	
I. National Totals		88,181.63
Number of Piladoras - 99		
Number of Molinos - 489		
II. Provincial and Cantonal Totals:		
A. Guayas Province:		71,419.39
1. Canton Guayaquil	18,134.34	
2. Canton Samborodon	10,827.04	
3. Canton Yaguachi	10,644.82	
4. Canton Milagro	17,743.40	
5. Canton Daule	7,859.31	
6. Canton Balzar	3,269.33	
7. Canton Urvina Jado	2,279.76	
8. Canton Noranjal	661.60	
B. Los Rios Province		14,588.93
1. Canton Babahoyo	8,335.59	
2. Canton Vinces	1,995.07	
3. Canton Puebloviejo	581.34	
4. Canton Baba	708.97	
5. Canton Quevedo	1,031.06	
6. Canton Urdaneta	838.63	
7. Canton Ventanas	1,098.28	
C. Manabi Province		788.50
D. El Oro Province		147.86
E. Bolivar Province		68.17
F. Cañar Province		53.71
G. Pichincha Province		95.75
H. Loja Province		19.32

Source: Data from "Estudio Preliminar Sobre Almacenamiento de Granos en el Ecuador" Secretaria General de Planeacion Economica de la Junta Nactional de Planification y Coordinacion, Documento No. 06-03, 16-IX-68

In addition to mill storage, 7,400 metric tons of silos storage is maintained by Piladora Modelo in Guayaquil. The Piladora Modelo is government owned and is operated under the direction of the national development bank (Banco Nacional de Fomento).

The National Rice Commission has proposed installation of rice drying and silo storage facilities (1) to facilitate marketing an increased volume of rice (2) to improve market structure by providing alternative sales outlets for producers; and (3) to reduce storage losses. New storage capacity of 125,000 metric tons is proposed.

Observation at several mills indicated that much of the mill storage for paddy rice was not very good and needs to be replaced or severely altered to reduce loss and contamination of rice. Improvement in storage conditions and any severe change in market structure will require that at least a part of existing storage be replaced. It would appear that very careful study of storage needs should precede a firm decision to provide a large volume of new storage capacity.

D. Cooperatives.

Producer cooperatives are developing in the rice area. The cooperative movement is being very actively assisted by the Cooperative League of the United States of America (CLUSA) and by AID/Ecuador. The cooperatives have not, as yet, organized marketing firms but are actively seeking to free producers of credit ties to the miller and to aid producers in price negotation with millers.

Part III. Improvement in the Marketing System for Rice - Some Observations

Current attention is being given to restructuring the market system for rice in Ecuador in a way that the following improvements may be achieved:

1. Provide the producer a market outlet that will guarantee him the market value of his product as reflected by market demand.
2. Provide storage and conditioning facilities for rice that will protect it from destruction by rodents, insects, and birds; avoid animal contamination; and, eliminate quality deterioration resulting from improper storage conditions.
3. Regulate the flow of rice to consumers so that consumers are assured of availability at all times; and,
4. Carry out public policies, for example, the guarantee of a government announced price or the undertaking of marketing operations that will substantially reduce year-to-year price variations for the purpose of encouraging larger production.

It is also desirable that the marketing system (1) minimize the cost of performing marketing functions by use of efficiently located facilities of proper size and design; (2) provide a system that is as self-adjusting as possible; and (3) provide a self-sustaining system, i.e. without need of public subsidy.

The several objectives indicated above probably will require several approaches and several types of facilities for their accomplishment. Restructuring of the marketing system cannot be accomplished with facility investment alone.

To guarantee the producer a price that reflects market demand, the marketing system must provide him alternatives for sale of his product. The producer must have realistic access to alternative buyers. For this to be the case, he must be able and willing to break existing ties with the community miller. In many cases the producer is apparently not in a position to break his dependence on the community miller without outside assistance in production credit and the provision of other services currently provided by the miller.

Once the direct economic ties with the miller have been (or can be) broken alternative sales outlets for producers may increase their bargaining power and increase the realized price for rice. One method of providing such an alternative is to provide drying and storage facilities at the community level that permit the producer to market at times other than at harvest and broaden the geographic range over which he can market, thus expanding sales alternatives.

Establishing merchandising firms through cooperative action is another possibility for increasing producer bargaining power. The merchandiser who buys grain from farmers to resell to processors is virtually non-existent in the rice marketing system in Ecuador.

A merchandising function could be performed by a responsible government agency if facilities were provided to do so. However, government agencies characteristically do not have the flexibility and the freedom to adjust operations necessary to do an effective job in a freely adjusting commercial system.

Functions of storage and merchandising of commercial stocks of rice should be distinguished from price stabilization and regulation of marketing activity. Private enterprise has demonstrated effectiveness in performing these functions in other countries under a stable system of rules and regulations that will facilitate easy trading and management of stocks. Changing the structure of rice marketing in Ecuador will require simultaneous development of procedures for warehousing, financing the holding of stocks and exchanging title, along with investment in facilities and training of personnel.

Providing an environment of price guarantees and price stabilization is a public policy function which is distinct from commercial marketing functions. If a single agency attempts to perform both functions the agency will likely find the profit goal of commercial activities and public policy objectives to be in conflict.

Public policy is the appropriate domain of public agencies. Price stabilization is normally the responsibility of a public agency. Stabilization requires an ability to manage or have an influence upon market supplies. Estimates of the size of facilities necessary to control sufficient quantity of stocks for price stabilization purposes varies among analysts and by type of program operated. Facility requirements for stabilization purposes is considered in the following statement:

"There are no precise criteria to indicate the percentage of commercial marketings IRA would need to control to acquire the desired price stability. Major reliance again was placed on judgement of IRA and other government personnel acquainted with local conditions. These estimates centered on 20 percent of commercial marketings. By way of comparison, a study by the Banco Centroamericano indicated an average of 18.6 percent with substantial variation among locations. Estimates of other studies have been as high as 33 percent..... It is not to be expected that complete stability would be obtained. A seasonal price increase equivalent to accumulated storage costs is to be expected in a competitive situation and unforeseen circumstance undoubtedly will, at times, affect the market to some extent."[3]

The current proposal for silo storage for paddy rice suggests a capacity of 125,000 metric tons, which is slightly more than 50 percent of average annual production over the past five years. The proposal is that these facilities be operated as commercial merchandising facilities and for purposes of price stabilization. If this is to be done, intensive study needs to be given to providing an organization and management structure that can accomplish both objectives. One such possibility would be to maintain control of facilities with a responsible public agency which could lease space or complete facilities to private merchandisers. In this way commercial storage and merchandising enterprises are independent of price stabilization operations and independent of the stabilization agency except for rental agreements for use of storage space or grain handling facilities.

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[3]Food and Feed Grain Institute, Kansas State University, "An Analysis of Grain Storage and Price Stabilization Problems in El Salvador" by Dr. John H. McCoy and Dr. Floyd F. Nierenberger, Report #14, August, 1969.

If the proposed facilities (125,000 metric tons) are to be used for stabilization purposes only, it may be desirable to give additional study to facility requirements or, alternatively, to start with a smaller capacity and increase over a period of time until a reasonable level of price stability is achieved.

There is obvious need for improvement of the rice marketing system in Ecuador to reduce the cost of performing the marketing function and to reduce losses associated with existing practices. Some of the benefits of an improved marketing system will accrue to producers, however, benefits to producers may not be as immediate or as dramatic as may be anticipated. Many individual producers are farming small acreages and selling small quantities of rice. Price benefits will have small effects on their incomes.

Many of the producers are leasors of land. Improved income from rice may increase demand for land to farm and result in a rise in rents so that benefits ultimately accrue to land owners through increased land charge, reducing benefits to producers. This may be especially true in cases where the community miller is also the land owner. Benefits to the small producer of improved marketing are likely to be severely diluted unless related conditions are improved at the same time.

APPENDIX A

Rice Commission Report - Analysis of the Rice Situation in Ecuador and Plans for Drying and Storage (Translated at Kansas State University from the Original in Spanish) A-1 through A-39

Rice Commission Report - Analysis de la Situacion Afrocera del Ecuador y Plan de Instalacion de Secamiento y Ensilado - (Copy of original report) A-40 through A-52

APPENDIX A

Rice Commission Report

Analysis of the Rice Situation in Ecuador
Plans for Drying and Storage

During the summer of 1968, the National Rice Commission carried out an evaluation of the cultivated areas that produce rice. In the winter months of the present year a survey was also carried out for the same purpose and also to gather statistical information required for rice production planning. The information obtained represents 89.5% of the total cultivated area in the country. This percentage corresponds to the provinces of Guayas, Los Rios, and Cañar. The remaining 10.5% is assigned to the provinces of Manabi, El Oro, Pichincha, (Sto. Domingo), Esmeraldas, Bolivar, Morona Santiago, Imbabura, Cotopaxi, Napo, Pastaza, Zamora Chinchipe, and Chimborazo, in order of productivity.

In order to compile this data, direct interviews with farmers in the field were carried out using the following set of questions:

Name of the farm, name of the farmer, ownership (own land or rented land), cultivated area, variety and quantity of seeds sown in unit of area, land preparation: completely mechanized, partially mechanized or not mechanized at all. Sowing system; by hand, mechanical or transplantation. Use of fertilizers. Available hydraulic resources: Irrigation channels, dams. The 10.5% (which in the table is called "other provinces") were determinated after sampling such areas. These figures are not reliable and are included to complete the statistical table.

Location of Cultivated Areas.

According to the data given, up to 1963, by the "Departamento de Estudios del Banco Nacional de Fomento" and the "Junta Nacional de Planificacion y Coordinacion Economica" the main rice producing areas are located in the

province of Guayas. This province had 50% of the rice producing area, the province of Los Rios had 27.5%, Cañar 14% and the remaining area was in several provinces.

The data obtained by the National Rice Commission indicated that the distribution of these areas in 1963 was 113,059 hectares and for the agricultural year of 1968-1969 (summer and winter crops) this area is reduced to 107,419 hectars. The province of Guayas now has 62.30%, the province of Los rios 25.80% and Cañar 1.40%. The decrease in cultivated area is due to the difficulty that the farmers had with the irrigation of the rice fields. Irrigation is easily available in the province of Guayas.

It's necessary to point out that the summer crop has increased due to the credit granted by the Banco Nacional de Descuento during the summer of 1968, which enabled the farmers to buy irrigation equipment. The data concerning this point are found in Tables 1 and 2.

Preparation of the Land.

The surveys carried out showed that 33.63% of the area was cultivated without machinery. 51.5% is semimechanized and only 14.87% of the area is completely cultivated by machines, even though leveling or grading is not done properly. Only 2000 hectares have been properly leveled. Of those 2000 hectares, 1000 of them belong to a project carried out by the Banco Nacional de Fomento in cooperation with our institution, which is investing S/.12,000 per hectare. This plan was warmly accepted by the rice growers. They use this plan to cultivate 70-100 hectares according to what was previously established. Rice sowing is carried out as follows: 65.35% is done by hand, 25.35% by machine and 9.30% is transplanted. Transplantation takes place in the summer in the following regions: Daule, Colimes, Juan B. Aguirre, Nobol, Sta. Lucia, Palestina, Samborondon, Tarifa, Vinces and Vernaza. Tables 3 and 4 give the figures concerning the preparation of the land and the type of planting or sowing used.

Ownership of the Land.

This is one factor responsible for the use of poor techniques and low yields in the production of rice. A high percentage of farmers do not own the land, they just rent it from the landlords. As a matter of fact, in the winter harvest of this year 77,533.5 cuadras, which was 64.25% of the cultivated area was on rented land. Only 43,137.70 cuadras (35.75%) were cultivated by the owners themselves. The distribution of owners and tenants can be seen in Table 5.

The largest number of farmers growing rice in the winter time are located in the province of Guayas with 45.54% of the total farmers. The second place is in Los Rios with 42.74%. Of this percentage, in Guayas 35.34% are tenants and 10.20% owners. In Los Rios 38.20% are tenants and 4.54% owners (See Table 6).

In Table 7, we can observe that rice fields larger than 50 hectares only account for 5.96%. Rice fields with an area up to 19.9 hectares represent 84.07%. These figures show that rice cultivation in Ecuador belongs to small farms. This condition is also responsible for the low yield because very few machines are used, and most of the work is done by hand.

Use of Fertilizer.

Research by the National Rice Commission has proven that fertilizer use produces an increase in the production of rice. In this country (Ecuador) we already have the information about the chemical fertilizer requirements of the different varieties of rice. A high yield was obtained with fertilizers. However, few rice growers use fertilizers and very few know how to use them properly. Out of 8,859 farmers interviewed during the 1969 winter, 7,789 (87.93%) did not use fertilizer and the remaining 1,070, representing 12.07%, did use it, (Table 8).

Another important factor preventing the use of fertilizer is the high cost, and the difficulty in obtaining adequate credit from the Banco Nacional de Fomento (except the 1,000 hectares which belong to a project mentioned previously).

It should also be mentioned that during the winter of 1969, when fertilizer was needed, it wasn't available.

Table 9 shows the results obtained in field-trials carried out by the National Rice Commission in the "Centro de Adaptacion y Multiplicacion de Semillas en el Colegio de Agricultura de Daule". The data belongs to a research project in which a yield of 165.40 sacks weighing 165 lbs. each were obtained with the variety IR/8. The variety Tapuripa (Selection of SML produced 153.33 sacks). This of course proves the yield increases when a good fertilizer is used.

Hydraulic Resources in Rice Farming.

The rice production in our country comes mainly from natural lands without irrigation nor drainage systems.

71.28% of the area planted to rice in the winter of the present year was done on natural lands. The remaining 28.72% used irrigation. Lack of irrigation and drainage is another factor responsible for the low yields. The National Rice Commission suggests that rice farmers must increase the use of mechanized irrigation, and decrease farming in natural lands. It should also be pointed out that most of the rice production comes from small farms. The owners of those farms do not have the economical possibility to either prepare the land properly nor to purchase the irrigation outfits. In these cases it is advisable to group the samll farmers in cooperatives, which will improve the financial situation, (Table 10). On the other hand, it is necessary to find the proper areas with good soils for a high production. The CEDEGE (Commission de

Estudios de la Cuenca del Rio Guayas) has already located and studied 11,000 hectares which are highly feasibile for rice production. To work under this new set of conditions will allow a reduction of the cultivated area to only 40% of what we are cultivating today, and at the same time the crop will be twice as big.

Varieties of Rice Used

The use of selected high yield varieties of rice which respond favorably to fertilizers has been encouraged by the National Rice Commission. The data obtained during the summer of 1968 indicated that 77.35% of the rice growers use low yield varieties and only 22.65% use high yield seed. During the winter of 1969, the percentages changed to 31.81% using low yield varieties and 68.10% using the high yield seed.

In Tables 11 and 12, it can be observed that the use of high yield seed has increased substanially. However, it is still far away from being used by all the farmers. The fall of prices for the winter crop of this year has turned many farmers to cheap seed (low yield) for the summer planting. We believe that this change is going to reach a peak in the winter of 1970.

Costs of Cultivation:

In Tables 13, 14, 15, and 16 the costs are figured by the National Rice Commission when sowing is done without machines in natural lands, mechanized in natural lands with their own machines and some rented ones, direct sowing with irrigation, and sowing by transplanting. In the first case one quintal of rice costs S/.152.88 when the yield is 20 quintales per hectares. The cost goes down to S/.97.55 when the production per hectare is 70 quintales. The cost is S/.75.87 when the yield is 90 quintales per hectare and the transplanting system was used.

The cost per quintal of rice is high for most of the producers. Using the proper techniques, the cost could be reduced. The reduction in cost could be so significant that it would allow Ecuador to Export without subsidizing the producers.

It should not be forgotten that rice is the staple food of our people and it is an obligation of the State to supply it to our people at the lowest cost. The population of Ecuador by 1973 will need a rice production of 229,486.50 tons, equivalent to 5,048,703 quintales (of 100 lbs. each of dehulled rice), to feed 6,007,500 people. By that time the rice consumption per capita will be 38.20 kg. It should also be mentioned that the studies done by international organizations reported that the rate of increase of the world population in 10 years will be higher than the increased production of rice. The mentioned data allow us to conclude that with the appropriate development programs rice production in Ecuador should be very profitable and should enable us to compete for exports.

Defections in the Rice Business.

The inadequate legislation existing today obliges the farmer to sell 165 lbs. of paddy rice for the equivalent of 100 lbs. of dehulled rice and this regulation must be changed. The National Rice Commission has suggested that this system be changed, and a new regulation passed in which paddy rice is bought on the basis of 100 lbs. Before having this new regulation approved it is necessary to know the industrial characteristics of the different types of rice such as: yield of unbroken kernels, broken kernels, grade A rice, grade B rice, moisture etc. If these factors are known, a fixed price can be paid to the farmers for 100 lbs. of paddy rice under standard conditions. The differences for higher moisture levels and other factors could be arranged by setting up the proper tables. The adoption of this system would avoid the exploitation of the farmers by some owners of silos, mills and processing plants.

Storage Program.

One of the negative factors in dealing with rice is the lack of proper storage for the national production. This problem of course lowers the quality of the product.

The constant extreme fluctuations in production from one year to the other make it even harder to solve the rice storage problem in the country. According to "Preliminary Studies on Storage of Grain in Ecuador", Document No. 06-03, 16-X-68 published by "Junta Nacional de Planificacion", the country looses about 15% of the rice crop due to insufficient and inadequate facilities. This figure coincides with the one given by the National Rice Commission.

The storage capacity of existing processing plants and mills is 65,000 tons according to the "Superintendencia de Piladoras". Only Piladora Modelo which belongs to the Banco Nacional de Fomento, has an efficient machanized set up for processing and storage, but its capacity is only 6,400 tons.

Storage Necessities for White Rice*
(Metric Tons)

Year	Total Output	Commercial Output 50%	Actual Capacity	Deficit	Total Output 25%	Deficit
1968	176,000	88,000	5,500	82,000	44,000	38,500
1969	189,750	94,900	5,500	89,400	47,500	42,000
1970	204,000	102,000	5,500	96,500	51,000	45,500
1971	225,000	112,500	5,500	107,000	56,000	50,500
1972	247,000	123,500	5,500	118,000	61,800	56,300
1973	283,000	141,500	5,500	136,000	70,800	65,300

*Factor of conversion from paddy to white rice = 0.63
Source and Elaboration: Junta Nacional de Planificacion

With all this information the National Rice Commission carried out a preliminary study concerning the volume of production for each producing area, varieties and type of rice during the winter of 1969. This study also included the existence or non existence of roads and rivers in order to determine the

best site to build the silos and their capacity. The following Table presents the type of rice produced in different areas.

Volume of Production According to the Type of Grain and Area
In the Winter of 1969

Area	Unit	Extra Long	Long	Medium	Short	Total
Baba	Cuadras	2,186	7,168	3,029	194	12,577
Urbina Jado Samborondon	Tons	4,719	15,475	6,539	418	27,151
Babahoyo	Cuadras	13,470	7,880	5,406	578	27,516
Pueblo Viejo Urdaneta Ventana	Tons	29,082	17,014	11,672	1,638	59,406
Vinces	Cuadras	3,889	15,077	6,331	2,128	27,427
Balzar Daule	Tons	8,396	32,552	13,670	4,594	59,212
Milagro	Cuadras	5,281	20,417	5,983	5,615	37,297
Yaguachi Naranjal	Tons	11,401	44,081	12,918	12,123	80,523
Guayaquil	Cuadras	156	775	515	442	1,889
	Tons	337	1,674	1,112	954	4,077

Note: It is assumed a production average of 2,159 kg/cuadras of paddy rice
Source and Elaboration: Comision Nacional del Arroz

The next Table presents the different varieties of rice cultivated in the country, according to the size of the grain.

Varieties of Rice According to the Size of the Grain

Extra Long	Long	Medium	Short
SML	Blue Bonnet 50	Brasilero	Chileno
Nilo 3	Rexoro	Canilla	IR-8
Tapuripa	Fortuna	Comino	Piedra
	Dawn	Criollo	No hay taco
	Puyon	Corriente	3-15
	Lira	Morado	Chato
	Hawayano	Canelo	Ayora
	Texas Patna	Estrella	Grinto Pobre
	Zenith		
	Colorado		

Source and Elaboration: Comision Nacional del Arroz

The following percentages were calculated from total production of 230,378 tons of paddy rice in the previously named areas during the winter of 1969.

Extra Long	=	23.41% of the total
Long	=	48.09%
Medium	=	19.92%
Short	=	8.56%

This information may vary each year and it cannot be taken as definite.

In a meeting in May of this year the Banco Nacional de Fomento in Guayaquil suggested to the Nation Rice Commission "create storage facilities for grain by building silos in order to normalize the market". This suggestion was expressed according to the Amendment of Article 6, Decree No. 1341.

In accordance with the preceding statements, on June 4th of the present year, the National Rice Commission published ads in Guayaquils papers requesting information and bids for the construction of concrete or metalic silos to store 120,000 tons of paddy rice. Another ad appeared on July 7th setting a dead line of July 31st for those offers. An extension was later offered till September 30th. In several meetings, the board of the National Rice Commission discussed the offers. In the meeting of November 7th the recommendations were approved, later the technical department analyzed the offers, especially the cost, complexity and quality of the materials and requirements. The offers were sent by the following companies: Buhler Hermanos Talleres de Construccion y Maquinarias Uswill/Suiza; M. A. Plaza Cia. Ltda, representing Crittal Silos Limited Colchester Road, Withman, Essex. England, Luis Romero Garcia representing R & N Stathan Limited, South Australia, Norman S. Walker, International Representative, Agri-Productos Division, Galo Ocampo Pozo and Co., Instalaciones Agricolas del Ecuador Cia.

Incorp., Quito, Distribuidora Tip-top, Guayaquil represented by Mr. Alboran I. Dujmovic, Industria Avicola C. A. represented by Mr. Ernesto Nino. Agencias & Representaciones Cordovez S. A. represented by Mr. Jaime R. Sempertegui, Carlos Espindola & Cia., Industrias Metalicas Ecuatorianas Ltda. represented by Arcadio Arosemena G. and the last company was Pemar International W. H. Inc.

Due to the lack of information about the soils conditions in the selected construction site technical assistance was requested from USAID. Mr. Richard L. Winters, Head of Division Desarrollo Rural (Division for Rural Development), informed us that two technicians from Kansas State University would come to study the soil conditions. They will be in Ecuador for one month to study the soils, and with the Technical Dept. of the National Rice Commission they will select the final site for the construction of the plants (silos). A copy of the document concerning this matter is also included. The company offering the best deal was Pemar International and Constructora de Equipos e Industras (Condesi) . Tables concerning the equipment and characteristics of these offers are presented in the following pages.

The National Rice Commission also presented the following suggestions: There are two typical kinds of silos; those made out of concrete and those made with metalic sheets. The ones made with concrere last longer than the metalic type. This is the only advantage because they are much more expensive. In this type of silos, rice can be stored for long periods of time provided that the temperature is properly controlled. Concrete silos are very heavy. They're about 10 times as heavy as metalic silos of the same capacity. This of course requires stronger and more expensive bases especially when we are dealing with marshy (soft) ground. Sometimes the characteristics of the ground did not allow setting up concrete silos.

Metalic silos must be made of stainless material. They are cheaper and can be easily dismantled and moved to another area. Their capacity can also be increased.

Plants for drying and storage must have the following parts:

1. A lab to classify the incoming rice
2. Equipment to receive and transport grain to the cleaning house
3. Grain cleaner
4. Scale with printing outfit
5. Conveyor to the dryer
6. Column type dryer
7. Scale with card printing outfit
8. Conveyor from the dryer to the scale and distribution equipment to the silos
9. Stainless metalic silos (with the accepted capacity) upon concrete bases (foundation) and equipment to control the temperature.
10. Ventilation outfits
11. Unloading equipment and scale with sack filler and automatic counter
12. Equipment to clean the silos
13. An office to receive the rice with the required labs and facilities.
14. Pipe lines for drinkable water, sewages, air conditioners and electricity
15. Financing
16. Truck scale
17. Housing for staff and watchmen

Silos will be constructed to handle a total capacity of 126,500 tons of paddy rice. This production comes from the following zones: Daule - Balzar 15,000 hectares with 30,800 tons of paddy rice, El Triunfo 10,010 hectares with 20,020 tons, Babahoyo 17,710 hectares with 34,420 tons, Milagro-Yaguachi 8,620 hectares with 16,520 tons and Samborondon 11,900 hectares with 23,800 tons.

The directory of the National Rice Commission on November 27 suggested that these facilities should be located in the following areas. Guayaquil Milagro, Babahoyo, Daule-Balzar and Samborondon. The latter is an economically strategic point that covers the zone of Guare, Baba and the island of Bejucal.

The location of these plants will be determined by a study carried out with the help of technicians of USAID/Ecuador, which inturn requested assistance from Kansas State University. The need for these facilities cannot be put off any longer and they must be built in the shortest possible time. The required time will be established by negotiating with the company in charge of the construction. The amount of rice produced should be taken into consideration for the installation of the plants. The selected site of construction must be well located in relation to the existing markets. The studies carried out also show that the bigger the capacity of the plant the lower the storage cost per ton.

In order to have a successful system of silos it is necessary to do the following:

1) To change the marketing system in such a way that the farmer could deal on 100 lbs. bases of paddy rice.

2) The Banco Nacional de Fomento should get more involved buying the rice from the farmer at the officially fixed prices.

3) The commercial relations among organizations in charge of drying and silos facilities should enable the farmers to sell the crop directly to them at the established prices, or the producers can ultilize the facilities for dehulling by paying the established amount.

Hopefully, these regulations will insure the farmers payment of officially fixed prices and in so doing better control and stabilize the prices. This should also avoid exploitation. When the silos are available the "Regulation Controlling the Movement of Crops" set up by the Banco Nacional de Fomento could be modified in such a way that the true farmers could use the loans granted by that bank (Banco). With the information given by Permar International - CONDESI, the National Rice Commission figured the

cost of the plants, the income produced by their operation, monthly payments of capital (monthly installments) interest and amount recovered (which is actually lost today due to lack of facilities). Here we should include that 15% of the total production is lost due to mishandling of the grain before dehulling. The amount of unbroken grain could be increased 10% with proper drying, saving in sacks and recovery of cost values (money) due to the difference between official prices and those existing in reality due to the demand would result in additional benefits. These values (money) cannot be accounted as income, but they will greatly affect the different groups participating in the national rice production.

Study of the Silos and Drying Facilities
In Relation to Their Cost and Financing

Plant Capacity Metric Tons	Price Per Unit Dollars	Total Price Dollars	Value Per Stored Ton Dollars
2,940	169,197.00	6,937,077.00	57.80
5,400	238,763.00	5,252,786.00	43.77
11,000	408,470.00	4,493,170.00	37.44

According to the previous table, the lowest price of $37.44 per stored ton corresponds to the plant with a capacity of 11,000 tons.

To dry and store a production of 120,000 tons will require 11 of these plants costing $408,470 each, a total of $4,493,170.

The investment of $4,393,170 represents S/. 81,685,830.60 considering the dollar worth S/. 18.18.

The cost of an 11,000 ton plant is S/. 7,425,984.60. The interest on this investment at 9% for 10 years, with one year free, would be S/. 4,004,038.50 per plant.

The total cost of each 11,000 tons drying and storage plant considering it cost and interest is S/. 11,430,023.10. The total cost of the project for 11 plants of 11,000 tons each taking into account the main capital and the interest is S/. 125,730,254.10.

The total cost for 11 plants each year would be:

Years	Payment on Capital	Interest	Capital and Interest
1	Free	7,351,724.60	7,351,724.60
2	9,076,172.16	7,351,724.60	16,427,896.76
3	9,076,172.16	6,534,869.22	15,611,041.38
4	9,076,172.16	5,718,002.62	14,794,174.78
5	9,076,172.16	4,901,158.24	13,977,330.40
6	9,076,172.16	3,974,301.54	12,950,473.70
7	9,076,172.16	3,267,447.26	12,343,619.42
8	9,076,172.16	2,494,591.66	11,570,763.82
9	9,076,172.16	1,633,736.28	10,709,708.44
10	9,076,172.16	816,855.38	9,893,027.54

According to the previous table, the highest payment corresponds to the 2nd year with an amount of S/. 16,427,896.76.

Expenses on the Investment. - for this analysis, the amount corresponding to the 2nd year is taken because it is the highest and corresponds to:

Payment of yearly dividends on the capital plus the interest for 11 plants	S/. 16,427,896.76
Let's consider some fixed expenses as follows:	
Depreciation of the equipment in 10 years is considered to be S/. 742,598.46 per plant	S/. 8,168,583.06
Maintenance to keep plants in good functioning conditions costs S/. 58,000.00 each	S/. 638,000.00
Insurance to cover risks of the plants S/. 14,800.00 each	S/. 162,800.00
	S/. 25,397,279.82

Balance between Income and Expense in Relation to the Second Payment or Highest Dividend

Expenses	
The fixed cost of the investment considering the 2nd year as the most critical or highest	S/. 25,397,279.82
Cost of operation of the plant to dry rice, with a total of 2,420,000 quintales at S/. 6.41 per quintal	S/. 15,512,200.00
	S/. 40,909,479.82

Income	
Charges for one run through the drier, weighing and cleaning of 2,420,000 quintales of paddy rice at S/. 10.50 per quintal	S/. 25,410,000.00
Charges for the storage of 2,420,000.00 quintales of paddy rice considering 8 months the average storage time. In otherwords 240 days at S/. 0.03 per day per quintal	S/. 17,024,000.00
	S/. 42,434,000.00

Summary	
Income	S/. 42,434,000.00
Expense	S/. 40,909,479.82
Balance	S/. 1,524,520.18

Conclusions

1. The income and expenses are figured in such a way that the farmers would pay the following amounts:

For drying, weighing and cleaning, etc.	S/.	10.50
Storage up to 8 months for 1 quintal of paddy rice	S/.	7.20
	S/.	17.70

2. The payments on account have been c culated in such a way that in 10 years the capital, interest and the plants should be paid off. This means that after 10 years the value of the plants will be zero sucres* or they can be considered as profit.

3. The quality of the grain will be improved by a 10% decrease in the number of broken kernels. This could be considered as an imcome but for now we prefer to consider it as an additional profit. This is represented as follows:

S/. 299,200.00 per plant and for 11 plants we'll have	S/. 3,291,200.00

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* National currency

4. The role of the silos is to store rice and to stabilize the prices. If we determine the differences in price received at harvest and the prices between May-August, we will find an average difference of S/. 30.00 per quintal which means for 11 plants with 220,000 quintales each a total of 2,420,000 quintales and S/. 73,200,000.00.

5. It has been found through our studies that 15% of the rice stored in granaries or sacks without any spraying is destroyed by insects and rodents. This means that 15% of 2,420,000 quintales or 363,000 qq at S/. 50.00 per qq adds up to S/. 18,150,000.00 which is lost to rodents could be saved.

6. It is also necessary to take into account that when rice is stored in silos sacks are not needed and a substantial saving in labor and time is also going to be obtained by not having to purchase sacks. Handling, sewing and repairing of old sacks (25%) represents the following figures:

302,500 sacks at S/. 8.00 each; total S/. 2,420,000.00.

7. It's a very significant social project which will help protect the farmers against exploitation. The state can protect this project without investing any cash. This is a true governmental job in the economic and social sense.

8. There are organizations on the state or semi-state level that are financing the harvests regardless of the absence of storage facilities. As an example of this situation there are alarming publications in the papers concerning the handling of harvests by Piladora Modelo which belongs to the Banco de Fomento. It is predicted that S/. 40,000,000.00 will be lost in this operation.

9. On the other hand, the National Rice Commission, which is an organization specifically dedicated to increase the rice production, is highly disturbed becuase farmers with a high volume of production and without storage facilities lower the prices. This only favors a few privileged people that have some sort of storage, even though most of the time it is anti-economic.

Guayaquil, December 3, 1969

Table 1

National Rice Commission
Area and Production of Rice

	AREA SURFACE	PRODUCTION			YIELD	
		Paddy Rice	Dehulled Rice		Per Hectare	Per Cuadra***
Year	Hectares*	Tons**	Tons	Pounds	qq or 100 kg	qq or 100 kg
1954	51,300	146,157	83,518	1,839,600	28.49	20.10
1955	78,500	198,443	113,396	2,497,700	25.28	17.84
1956	92,920	206,292	117,881	2,596,500	22.20	15.66
1957	104,200	248,488	141,993	3,127,600	23.84	16.82
1958	108,800	258,947	147,600	3,253,104	23.80	16.79
1959	115,800	262,266	159,492	3,515,204	22.65	15.98
1960	91,100	307,128	175,063	3,858,388	33.71	23.78
1961	94,600	296,754	169,150	3,728,066	31.37	22.13
1962	111,700	300,780	171,445	3,771,790	26.92	18.99
1963	113,059	304,490	173,559	3,818,298	26.92	18.99
1964	105,282	236,416	135,094	2,972,068	22.45	15.84
1965	99,729	260,397	148,798	3,272,556	26.11	18.42
1966	101,166	275,684	157,533	3,465,726	27.25	19.13
1967	110,561	249,639	142,650	3,138,300	22.57	15.92
1968	112,376	144,552	82,601	1,817,222	12.86	9.07
1969	107,419	288,016	164,580	3,620,760	26.81	18.92

Source: Banco Central del Ecuador
Banco Nacional de Fomento
Ital-Consult
Comision Nacional del Arroz 1964-1969

Guayaquil, October 29, 1969

* - 10,000 Square meters
** - 1,000 Kg.
*** - 1 Cuadra = 0.7 Hectare

Table 2

National Rice Commission

Area Cultivated with Rice in the Country

Provinces	Summer 1968			Winter 1969			Total Agricultural Year		
	Cuadras**	Hectares*	%	Cuadras**	Hectares*	%	Cuadras**	Hectares*	%
National Total	31,566.00	22,272.98	100%	120,671.20	85,145.59	100%	152,237.20	107,418.57	100%
Guayas	23,864.00	16,838.44	75.60	71,011.50	50,105.70	58.85	94,875.50	66,944.15	62.30
Los Rios	3,639.00	2,567.68	11.50	35,696.00	25,187.10	29.60	39,335.00	27,754.78	25.80
Cañar	749.00	528.50	2.40	1,295.00	913.75	1.05	2,044.00	1,442.25	1.40
Others	3,314.00	2,338.36	10.50	12,668.70	8,939.04	10.50	15,982.70	11,277.39	10.50

Guayaquil, October 24, 1969

* - 10,000 Square meters
** - 1 Cuadra = 0.7 Hectare

Table 3

National Rice Commission
System of Preparation of Land During the Winter, 1969

Provinces	Sown Area		Mechanization in the Cultivation of Rice					
			Total Mechanized		Partially Mechanized		No Mechanized At All	
	Hectares*	%	Hectares*	%	Hectares*	%	Hectares	%
National Total	85,145.59	100%	12,666.61	14.87	43,841.00	51.50	28,637.98	33.63
Guayas	50,105.71	58.85	8,018.43	9.42	22,250.56	26.14	19,830.35	23.29
Los Rios	25,187.10	29.60	3,145.21	3.70	16,189.63	19.03	5,852.24	6.87
Cañar	913.75	1.05	225.79	0.25	286.47	0.33	401.48	0.47
Others	8,939.03	10.50	1,277.18	1.50	5,107.97	6.00	2,553.91	3.00

Guayaquil, November 6, 1969

* - 10,000 Square meters

Table 4

National Rice Commission
Systems of Sowing Rice During the Winter
1969

Provinces	Cultivated Area		By Hand		Machinary		Transplanting	
	Hectares*	%	Hectares*	%	Hectares*	%	Hectares*	%
National Total	85.145.59	100%	55,647.60	65.35	21,584.40	25.35	7,913.58	9.30
Guayas	50,105.71	58.85	38,204.88	44.87	6,133.97	7.20	5,767.75	6.78
Los Rios	25,187.10	29.60	12,392.27	14.55	12,615.60	14.83	179.22	0.22
Cañar	913.75	1.05	670.32	0.78	243.43	0.27	0	0
Others	8,939.03	10.50	4,380.11	5.15	2,592.30	3.05	1,966.61	2.30

Guayaquil, November 6, 1969

* - 10,000 Square Meters

Table 5

National Rice Commission
System of Land Holding of the Area Cultivated With Rice During the Winter 1969
(Land Tenure System)

Province	Cultivated Area		Per Owner		Per Tenant	
	Hectares*	%	Hectares*	%	Hectares*	%
National Total	85,145.59	100%	30,437.96	35.75	54,707.63	64.25
Guayas	50,105.71	58.85	19,409.46	22.80	30,696.24	36.05
Los Rios	25,187.10	29.60	7,430.85	8.75	17,756.24	20.85
Cañar	913.75	1.05	377.49	0.43	536.25	0.62
Others	8,939.03	10.50	3,220.14	3.77	5,718.88	6.73

Guayaquil, November 6, 1969

* - 10,000 Square meters

Table 6

National Rice Commission
Distribution of Rice Growers During the Winter of 1969

Provinces	Number of Farmers	%	Owner	%	Tenant	%
National Total	8,859	100%	1,473	16.61	7,386	83.39
Guayas	4,035	45.54	903	10.20	3,132	35.34
Los Rios	3,786	42.74	403	4.54	3,383	38.20
Cañar	108	1.22	12	0.12	96	1.10
Others	930	10.50	155	1.75	775	8.75

Guayaquil, October 24, 1969

Table 7

National Rice Commission
Settlement: Distribution of the Farmers by Size of the Cultivated Land

Size of the holding or unit	Province of Guayas		Province of Los Rios		Provinces of Canar		National Total	
	Farmers	%	Farmers	%	Farmers	%	Farmers	%
Total	4,035	50.88	3,788	47.76	108	1.36	7,931	100%
Up to 4.9	1,728	21.78	2,205	27.80	38	0.48	3,971	50.06
5 to 19.9	1,461	18.43	1,185	14.94	50	0.64	2,696	34.01
20 to 49.9	509	6.42	265	3.34	17	0.21	791	9.97
50 to 99.9	193	2.43	92	1.17	1	0.01	286	3.61
Over 100	144	1.82	41	0.51	2	0.02	187	2.35

Guayaquil, October 29, 1969

Table 8

National Rice Commission
Use of Fertilizer in Rice During the Winter 1969

Province	Number of Farmers	%	Use of Fertilizers			
			Used Fertilizers	%	No Fertilizer	%
National Total	8,859	100%	1,070	12.07	7,789	87.93
Guayas	4,035	45.54	472	5.32	3,563	40.22
Los Rios	3,786	42.74	500	5.64	3,286	37.10
Cañar	108	1.22	8	0.09	100	1.13
Others	930	10.50	90	1.02	840	9.48

Guayaquil, October 24, 1969

Table 9

National Rice Commission
Experimental Production of Rice in the Fields of Daule
1968

Variety	Output per Hectare qq. of 165 pounds	Fertilizers N.	P_2O_5	K_2O	Cycle in Days	Height in Meters
I R - 8	165.40	180 Kls.	120 Kls.	150 Kls.	141	1.06
Blue Bonnet - 50	71.81	84 Kls.	48 Kls.	66 Kls.	126	1.36
Dawn	93.33	84 Kls.	48 Kls.	66 Kls.	110	1.35
Blue Belle	70.33	84 Kls.	48 Kls.	66 Kls.	100	0.86
Tapuripa	153.33	84 Kls.	48 Kls.	66 Kls.	165	1.42
Balilla x Sollana	120.00	50 Kls.	35 Kls	40 Kls	90	0.91

Guayaquil, October 24, 1969

Table 10

National Rice Commission
Hydraulic Resources in the Cultivation of Rice

Province	Summer of 1968				Winter of 1969			
	Irrigation by Pump		Cultivated in Swamps		Irrigation by Pump		Cultivated Without Irrigation	
	Hectares*	%	Hectares*	%	Hectares*	%	Hectares*	%
National Total	15,031.74	67.48	7,241.14	32.52	24,460.15	28.72	60,685.44	71.28
Guayas	12,070.69	54.19	4,767.73	21.40	18,518.48	21.74	31,587.25	37.10
Los Rios	854.48	3.83	1,713.20	7.70	3,313.67	3.90	21,873.42	25.69
Cañar	528.50	2.37	0	0	59.97	0.07	853.77	1.00
Others	1,578.07	7.09	760.21	3.42	2,568,03	3.01	6,371.00	7.49

*Ha = 10,000 Square meters

Guayaquil, November 1969

Table 11

National Rice Commission
Use of Varieties

Province	Summer 1968				Winter 1969				Agricultural Year			
	Improved Varieties		Domestic Varieties		Improved Varieties		Domestic Varieties		Improved Varieties		Domestic Varieties	
	Hectares*	%	Hectares*	%	Hectares*	%	Hectares*	%	Hectares*	%	Hectares*	%
National Total	5,044.00	22.65	17,229.00	77.35	58,059.30	68.19	27,086.30	31.81	63,103.30	58.75	44,315.30	41.25
Guayas	2,645.30	11.88	14,193.10	63.72	33,191.40	38.98	16,914.30	19.87	35,836.70	33.36	31,107.40	28.96
Los Rios	1,340.60	6.02	1,227.10	5.51	18,032.30	21.18	7.154.80	8.40	19,372.90	18.04	8,381.90	7.80
Canar	523.50	2.37	0	0	740.20	0.87	173.60	0.20	1,268.70	1.18	173.60	0.16
Others	529.60	2.38	1,808.80	8.12	6,095.40	7.16	2,843.60	3.34	6,625.00	6.17	4,652.40	4.33
	22,273 = 100%				85,145.60 = 100%				107,418,60 = 100%			

Guayaquil, October 29, 1969

* 10,000 Square meters

Table 12

National Rice Commission
Winter 1969

Variety	Guayas Hectares	Guayas %	Los Rios Hectares	Los Rios %	Canar Hectares	Canar %	National Total Hectares	National Total %
Improved Varieties								
Blue Bonnet-50	18,167.10	23.83	6,086.50	8.00	516.50	0.67	24,770.10	32.50
G. M. L.	5,276.80	6.92	8,119.00	10.65	55.40	0.08	13,451.20	17.65
Rexoro	4,499.50	5.90	1,353.20	1.77	108.30	0.15	5,961.00	7.82
Nilo - 3	2,250.30	2.95	1,981.90	2.60	14.10	0.02	4,246.30	5.57
IR - 8	1,592.90	2.10	350.70	0.46	31.75	0.05	1,975.35	2.60
Dawn	1,404.90	1.85	141.10	0.18	14.10	0.02	1,560.10	2.05
Total	33,191.50		18,032.40		740.15		51,964.05	
Domestic Varieties								
Canilla	4,532.25	5.95	2,029.30	2.66	0	0	6,561.55	8.61
Brasilero	3,272.40	4.30	1,478.00	1.93	0	0	4,750.40	6.23
Chilero	3,590.10	4.71	185.20	0.25	48.00	0.06	3,823.30	5.02
Fortuna	600.50	0.78	884.45	1.16	12.70	0.02	1,497.65	1.96
Comino	329.50	0.43	831.00	1.10	0	0	1,160.50	1.53
Criollo	1,075.00	1.41	311.20	0.40	60.00	0.09	1,446.20	1.90
Others Varieties	3,514.00	4.61	1,435.50	1.88	53.00	0.07	5,003.10	6.56
Total	16,914.75		7,154.65		173.70		24,242.70	
Total Cultivated Area in the Country = 100%								

Guayaquil, October 31, 1969

Table 13

National Rice Commission
Cost of Production of Rice per Hectare

Cultivate Without Irrigation and Without Machinery

Cutting Bushes	S/.	200.00
Burning		20.00
To Dig Out Stumps		60.00
Sowing		200.00
Seeds		250.00
Fertilizer: 2 qq of ammonium sulfate		138.00
Application (2 days wages)		40.00
Weeding by Hand		600.00
Insecticides (2 treatments)		122.00
Application (4 days wages)		120.00
Person that scares away the the birds		90.00
Crop		400.00
Administration		120.00
Transportation		100.00
	S/.	2,460.00
Interest on Capital (1% per month - 6 months)	S/.	147.60
Rent of the land	S/.	450.00
	S/.	3,057.60

Alternative Production

Qunitals/Hectares	10	20	30
Cost/quintal	305.76	152.88	101.92

Guayaquil, October 24, 1969

Table 14

National Rice Commission

Cost of Production of Rice per Hectare Using Machinery but Without Irrigation

	Own Equipment	Rented Equipment
Cutting bushes with machinery	S/. 61.60	S/. 100.00
Plowing and harrowing (twice)	226.38	300.00
Preparing walls	129.36	180.00
Sowing and fertilizer	84.04	100.00
Seeds (2 quintals)	400.00	400.00
Fertilizers:		
2 qq of 10-30-10	226.00	226.00
2 qq of ammonium sulfate	264.00	264.00
Application of fertilizers (2 days wages)	40.00	40.00
Weed Control with chemical (2 gallons)	480.00	480.00
Application of herbicides (2 days wages)	60.00	60.00
Weed Control with hands (14 days wages)	280.00	280.00
Cleaning the walls (2 days wages)	40.00	40.00
Insecticides (2 treatments)	122.00	122.00
Application (4 days wages)	120.00	120.00
Scaring away birds after seeding and before harvest	90.00	90.00
Crop	592.56	800.00
Administration	240.00	240.00
To keep guards (15 days, 2 days wages/day)	12.00	12.00
Transportation	120.00	200.00
	S/. 3,587.94	S/. 4,054.00
Unexpected 10%	S/. 358.79	S/. 405.40
	S/. 3,946.73	S/. 4,459.40
Interest on capital (1% per month for 6 months)	S/. 236.80	S/. 267.56
10% annual cost of land (S/.2,000./Ha.)	S/. 100.00	S/. 100.00
	S/. 4,283.53	S/. 4,826.96

Alternative Production

	Own Equipment			Rented Equipment		
Quintals/Hectares	30	40	50	30	40	50
Cost per quintal	142.78	107.08	85.67	160.89	120.67	96.53

Table 15

National Rice Commission

Cost of Production of Rice per Hectare Sowing Directly with Irrigation

	Own Equipment	Rented Equipment
Cutting bushes with machinery	$/. 61.60	S/. 100.00
Plowing and harrowing (twice)	226.38	300.00
Preparing walls	129.36	180.00
Leveling	293.04	360.00
Sowing and fertilizer	84.04	100.00
N 8 qq at S/. 69.00	552.00	552.00
Fertilizers P. 2 qq at S/. 110.00	220.00	220.00
K. 1 qq at S/. 92.00	92.00	92.00
1st and 2nd Application of N	80.00	80.00
Initial irrigation	100.80	100.80
Irrigation of maintenance	406.00	406.00
Persons who irrigated the land	108.00	108.00
Weed control by chemicals (2 gallons)	480.00	480.00
Application of herbicides	60.00	60.00
Weed control by hands	200.00	200.00
Insecticide (2 treatments)	122.00	122.00
Application	120.00	120.00
Clean the wall and channels	60.00	60.00
Person that scares away the birds	90.00	90.00
Crop	884.84	1,200.00
Administration	120.00	120.00
To keep guard	12.00	12.00
Transportation	180.00	300.00
	S/.4,682.06	S/.5,362.80
Unexpected 10%	S/. 468.20	S/. 563.28
	S/.5,150.26	S/.5,899.08
Interest on capital (1% per month for 6 months)	S/. 309.01	S/. 353.95
10% annual cost of land (S/.10,000./Ha.)	S/. 500.00	S/. 500.00
	S/.5,959.27	S/.6,753.03

Alternative Production

	Own Equipment			Rented Equipment		
Quintals/Hectares	50	60	70	50	60	70
Cost per quintal	119.18	99.32	85.13	135.06	112.55	96.47

Table 16

National Rice Commission

Cost of Rice per Hectare by the System of Transplant

	Own Machinery	Rented Machinery
Plowing	S/. 131.19	S/. 300.00
Resetting the walls	50.00	80.00
Initial irrigation	100.80	100.80
Mud preparation (3 times)	104.94	180.00
Releveling	69.96	140.00
Fertilizer		
N. 11 qq at S/. 69.00	759.00	759.00
P. 3 qq at S/. 110.00	330.00	330.00
K. 2 qq at S/. 92.00	184.00	184.00
Application of P. and K with machinery	44.98	80.00
1st and 2nd Application of N.	80.00	80.00
Cost of seed/hectare	360.00	360.00
Transplant	750.00	750.00
Irrigation of maintenance	406.00	406.00
Person who made the irrigation	108.00	108.00
Weed control with hand	200.00	200.00
Clean the walls and channels	60.00	60.00
Insecticide (2 applications)	122.00	122.00
Application of insecticide	120.00	120.00
Person that scares away the birds	70.00	70.00
Crop	884.84	1,600.00
Administration	240.00	240.00
To keep guard	12.00	12.00
Transportation	240.00	400.00
	S/.5,427.68	S/.6,681.80
Unexpected 10%	S/. 542.76	S/. 668.18
	S/.5,970.44	7,349.98
Interest on capital (1% per month for 6 months)	358.22	440.99
10% annual cost of land (S/. 10,000 Ha.)	500.00	500.00
	S/.6,828.66	S/.8,290.97

Alternative Production

	Own Equipment			Rented Equipment		
qq per hectare	70	80	90	70	80	90
cost per quintal	97.55	85.35	75.87	118.44	103.63	92.12

Guayaquil, October 24, 1969

Plant for 5,400 Tons - 22 Units

Calculation Over the Operational Capital of $4,340,711.34. Which Would be Paid in 10 Dividends in the Following Way:

No.	Paid to Capital	Interest of Capital	Balance
1	Grace	$ 390,664.02	$ 4,340,711.34
2	$ 482,301.20	390,664.02	3,858,410.32
3	482,301.20	347,256.92	3,376,199.12
4	482,301.20	303,804.98	2,893,817.92
5	482,301.20	260,442.71	2,411,506.72
6	482,301.20	217,035.60	1,929,205.52
7	482,301.20	173,628.49	1,446,914.32
8	482,301.20	130,221.38	964,603.12
9	482,301.20	86,814.28	482,301.20
10	482,301.20	43,407.10	Paid
	$4,340,710.80	$2,343,939.50	

Fixed Cost Over Investment

a)	Insurance	$ 14,000.00	
b)	Maintenance	48,000.00	
c)	Depreciation	434,171.13	
d)	Paid of Capital Plus Interest	872,965.22	$1,369,136.35

Note: In a conservative sense the values taken are the highest of capital and interests, this is in the second dividend which is $482,301.20 plus $390,664.02.

Analysis of Cost and Income of Operation and Profits

Analysis	Income	Expense
Drying:		
Over 5,400 tons which represent 108,000 quintals costs $6.71 c/qq.		$ 724,680.00
Fixed cost over the investment:		
Estimated over the highest basis that is: second dividend, insurance, maintenance and depreciation		$1,369,136.35
Receipts of Operation:		
It is collected $10.50 per each quintal over 103,000 qq.	$1,134,000.00	
Cost of Storage:		
Cost of $0.03/qq. per day in 8 months equal $7.20 per quintal over 108,000 qq.	777,600.00	
Improvement in Quality:		
Over whole grain 10%	146,880.00	
Total	$2,058,480.00	$2,093,816.35
Difference:		
Loss in a year of highest cost of investment		35,336.35
	$2,058,480.00	$2,058,480.00

Additional Profits not Accounted

Note: It is possible to get additional profits according to the demand of the market between May - August.

This is $30.00 in each quintal over 108,000 qq.	$3,240,000.00
Loss in the Buy and Selling	
Over the 15% over 108,000 qq	810,000.00
Saving in sacks	
A 25% over 13,500 sacks $8.00 each one	108,000.00
	$4,158,000.00

Plant for 3,000 Tons - 41 Units

Calculation over Capital Operational of $3,076,001.46. Which would be paid in 10 dividends in the following way:

No.	Paid to Capital	Interest of Capital	Balance
1	Grace	$ 276,840.13	$ 3,076,001.46
2	$ 341,777.90	276,840.13	2,734,223.56
3	341,777.90	246,080.12	2,329,445.66
4	341,777.90	215,320.10	2,050,667.76
5	341,777.90	184,560.09	1,708,889.86
6	341,777.90	153,800.08	1,367,111.96
7	341,777.90	123,040.07	1,025,334.06
8	341,777.90	92,280.06	683,556.16
9	341,777.90	61,520.05	341,777.90
10	341,777.90	30,760.01	Paid
	$3,076,001.10	$1,661,640.84	

Fixed Cost Over Investment

a)	Insurance	7,400.00	
b)	Maintenance	30,000.00	
c)	Depreciation	307,600.00	
d)	Paid to Capital Plus Interest	618,618.02	963,618.03

Note: In a conservative sense, the values taken are the highest of capital and interest. This is second dividend, which is $341,777.02 plus $276,840.13.

Analysis of Cost and Income of Operation and Profits

Analysis	Income	Expense
Drying: Over 3,000 tons which represent 60,000 qq. cost $7.14 per cash qq.		$ 428,000.00
Fixed cost over investment: Calculating over the highest basis to pay, this is: second dividend, insurance, maintainence and depreciation		963,613.03
Receipt of Operation: It is collected $10.50 in each qq over 60,000 qq.	$ 630,000.00	
Cost of Storage: The cost of 0.03 per each qq. in 8 months equal $4.80 per quintal over the 60,000 qq.	432,000.00	
Improvement of Quality Over whole grain 10% of yield	81,600.00	
Total	$1,143,600.00	$1,392,018.03
Difference Loss in the highest year of cost and investment		- 248,418.03
	$$1,143,600.00	$1,143,600.00

Additional Profit not Counted:

Note: It's possible to get additional utility, according to the demand of the market between May - August, This is $3000 in each quintal over 60,000 qq will result a 1,800,000.00 plus.

Plant for 11,000 Tons - 11 Plants

Calculation Over the Capital Operational of $7,425,984.60. Which would be Paid in 10 dividends In the Following Way:

No.	Paid to Capital	Interest of Capital	Balance
1	Grace	$ 668,338.60	$ 7,425,984.60
2	$ 825,106.56	668,338.60	6,600,898.04
3	825,106.56	594,079.02	5,775,771.48
4	825,106.56	519,818.42	4,950,664.92
5	825,106.56	445,559.82	4,125,558.36
6	825,106.56	361,300.24	3,300,451.80
7	825,106.56	297,040.66	2,475,345.24
8	825,106.56	226,781.06	1,650,238.68
9	825,106.56	148,521.48	825,106.56
10	825,106.56	74,259.53	Paid
	$7,425,984.60	$4,004,038.50	

Fixed Cost Over Investment per Year

a)	Insurance	14,800.00	
b)	Maintenance	58,000.00	
c)	Depreciation	742,598.46	
d)	Paid of Capital and Interest	493,445.16	$ 2,308,843.62

Note: In a conservative sense, the values taken are the highest of capital and interest. This is on the second dividend which is $825,106.56 plus $668,338.60.

Analysis of Cost and Income of Operation and Profits

Analysis	Income	Expense
Drying		
Over 11,000 tons which represent 220,000 qq. to $6.41 c/u		$ 1,410,200.00
Cost over the investment		
Calculating over the highest basis the pay is: second dividend, insurance, maintenance and depreciation		2,308,843.62
Receipt of Operation		
It is collected $10.50 in each qq. over 220,000 qq.	$ 2,310,000.00	
Cost of Storage		
The cost of $0.03 per day in 8 months give $7.20 over 220,000 qq.	1,584,000.00	
Improvement of Quanity		
Over whole grain 10%	299,200.00	
Total	$ 4,193,200.00	$ 3,719,043.62
Difference		
Profit get in the highest year of cost of investment		474,156.38
	$ 4,193,200.00	$ 4,193,200.00

Additional Profit Not Counted

Note: It is possible to get additional profit according to the demand market between the months of May - August.

This is of $30.00 c/qq over 220,000 qq result	$ 6,600,000.00
Loss in buy and sell Over 15% in 220,000 qq	$ 1,650,000.00
Saving in sack or bulk 25% which is 27,500 sacks or bulk $8.00 c/u.	220,000.00
Total	$ 8,470,000.00

ANALISIS DE LA SITUACION ARROCERA DEL ECUADOR Y PLAN DE INSTALACION DE SECAMIENTO Y ENSILADO

Durante el verano del año I.968, la Comisión Nacional del Arroz realizó una evaluación de la superficie sembrada en las zonas arroceras. En los meses de invierno del presente año, se llevó a cabo otra encuesta con similar propósito y además lograr una serie de información estadística que se requiere para poder efectuar una planificación bien orientada del cultivo de arroz.

La información obtenida representa un muestreo del 89.5% del área total sembrada en el país y este porcentaje corresponde a las provincias del Guayas, Los Rios y Cañar. El I0.5% restante es asignado a las provincias de Manabí, El Oro, Pichincha, (Sto. Domingo), Esmeraldas, Bolívar, Morona, Santiago, Imbabura, Cotopaxi, Napo Pastaza, Zamora Chinchipe, y Chimborazo, en orden de importancia productiva.

Para conseguir estos datos se empleó el medio de investigación directa al agricultor en el campo, mediante un cuestionario de preguntas que se refieren al Nombre de la hacienda; Nombre del agricultor; Tenencia: propietario o arrendatario; Superficie sembrada; Nombre de la variedad y cantidad de semilla sembrada pot unidad de superficie; Preparación del terreno: mecanizado completo, mecanizado incompleto; no mecanizado; Sistema de siembra: espeque, máquina, trasplante; Uso de fertilizantes; Recursos hidráulicos disponibles: canales, muros. En cuanto al área que le corresponde el I0.5% (que en los cuadros consta bajo el rubro de "Otras Provincias"), esta cifra ha sido determinado luego de llevar a cabo muestreo en dichas zonas, de modo que en cuanto a los otros factores que no son aquel que se refiere al área total de cultivo, estas cantidades son arbitrarias y sólo se las mantiene con el propósito de completar los cuadros estadísticos.

Area de cultivo y localización.- De acuerdo a los datos proporcionados hasta el año I.963 por el Departamento de Estudios del Banco Nacional de Fomento y la Junta Nacional de Planificación y Coordinación Económica, el área de cultivo de arroz principalmente se encontraba localizada en la provincia del Guayas que le correspondía el 50% de la superficie total, la provincia de Los Rios con el 27.5%, la provincia del Cañar con el I4% y el resto a otras provincias. Los datos logrados por la Comisión Nacional del Arroz señalan que la distribución de esta área para el año I.963 fué de II3.059 hac. y para el año agrícola 68-69 (siembra de verano y siembra de invierno respectivamente), esta superficie se reduce a I07.4I9 hac. de las cuales, a la provincia del Guayas le corresponde el 62.30%, a la provincia de Los Rios el 25.80% y al Cañar I.40%. La disminución del área de siembra en la provincia del Cañar y menos intensamente en la provincia de Los Rios se debe a las dificultades que los agricultores de estas zonas tuvieron en cuanto al logro de riego para sus plantaciones. lo que se tiene con mayor facilidad en las zonas arreceras de la provincia del Guayas.

Es necesario hacer constar, que el área de siembra veranera ha aumentado por efecto de los créditos que el Banco Nacional de Fomento durante el verano de I.968 concedió a los arroceros para la adquisición de equipo de riego.

En el cuadro No. I y 2 se encuetran los datos resumidos en cuanto a este punto.

Forma de Preparación del suelo.- Las encuestas efectuadas concluyeron que el 33.63% del área total corresponde a cultivos no mecanizados y el 5I.5% a zonas donde se efectúa en forma incompleta los trabajos de preparación de suelos mecanizados. Solamente en el I4.87% se lleva a cabo en forma mecanizada completa, debiéndose aclarar que esto se refiere a terrenos en los cuales se lleva a cabo esta operación con labor de arada, pase de rastras, mureada y nivelación, aunque esta última labor no es efectuada en forma debida en todas las superficies asignadas y solamente se calculan 2.000 hac. en las cuales los trabajos se realizan en forma correcta. Dentro de estas 2.000 hac. se encuentran las I.000 hac. correspondientes al plan piloto que viene realizando el Banco Nacional de Fomento en colaboración con nuestra Institución que cubre una inversión de S/. I2.000,oo por hac. para satisfacer todos los rubros indispensables en un cultivo completamente tecnificado. Este plan ha tenido favorable acogida de parte de los arroceros, los mismos que lo utilizan para siembras con fluctuaciones entre 70 y I00 hac., de acuerdo a lo previamente ' establecido.

La siembra de arroz se lleva a cabo de la siguiente forma: el 65.25% se lo realiza a espeque, es decir a mano; el 25.35% se efectúa empleando maquinaria y el 9.30% mediante el sistema de trapplante. La siembra mediante trasplante es empleada preferantemente durante la temporada de verano en las zonas de Daule, Colimes, Juan B. Aguirre, Nobol, Sta. Lucía Palestina, Samborondón, Tarifa, Vinces y Vernaza.

Los cuadros No. 3 y 4 indican las cifras logradas en cuanto a la forma de preparación de tierra y los sistemas de siembras empleados.

Tenencia de la Tierra.- Es un factor que incide notablemente tanto en la forma rudimentaria de trabajos en las zonas arroceras, como en los bajos rendimientos promedios. Un alto porcentaje de agricultores trabajan la tierra en este cultivo en calidad de arrendatario. Efectivamente, en la siembra de invierno del presente año, 77.533,5 cuadras que corresponden al 64.25% del área total de siembra efectuada en esta temporada fueron realizadas por arrendatarios y solamente 43.I37,70 cuadras equivalentes al 35.75% fueron trabajadas por propietarios. La distribución de propietarios y arrendatarios puede verse en el cuadro No. 5.

La mayor concentración de agricultores dedicados al cultivo de arroz se la tiene en las siembras de invierno y corresponden a la Provincia del Guayas el mayor número de estos con el 45.54%, siguiendo la provincia de Los Rios con el 42. 74%. De estos porcentajes, en las provincias del Guayas el 35.34% son arrendatarios y el I0.20% propietarios. En la provincia de Los Rios se distribuye asi: 38.20% arrendatarios y 4.54% propietarios. (Cuadro No. 6).

En el cuadro No. 7 se observa que los cultivos que tienen más de 50 hac. apenas alcanzan a 5.96% mientras que los cultivos con superficies hasta de I9.9 hac. suman el 84.07%. Estas cifras comprueban que el cultivo de arroz en el Ecuador en un porcentaje extraordinario pertenece a pequeños cultivadores. Esta condición también es influyente en los bajos promedios de cosecha pues, es conocido que en pequeñas superficies no es rentable el empleo de la maquinaria agrícola, subsistiendo en estos casos el cultivo de secano.

Empleo de Fertilizantes en el cultivo.- Se tiene igualmente comprobados que el adecuados empleo de fertilizantes provoca encrementos notables en las cosechas de arroz. En el país se cuenta ya con información acerca de los requerimientos que las diversas variedades de arroz que se cultivan tienen sobre los abonos químicos. Trabajos efectuados por la Comisión Nacional del Arroz comprueban lo aseverado concluyéndose con la alta renta producida por la aolicación de estos productos. Sin embargo, es pequeño el número de arroceros que recurren a los fertilizantes y más pequeño aún quienes trabajan en forma adecuada con ellos. De un toal de 8.859 agricultores empadronados durante el invierno del año 69, 7.789 equivalentes al 87.93% no emplean fertilizantes y los I.070 restantes que lo corresponde el I2.07% si lo usan. (Cuadro No. 8).

Factor importante que también impide el uso de los fertilizantes en el cultivo de arroz es el alto costo que estos tienen, así como el crédito insuficiente que concede el sistema del Banco Nacional de Fomento a los arroceros (excluyéndose el Plan I .000 Hac.), que impide su adquisición.

Debe anotarse igualmente, que durante el invierno del año 69, en época en que los cultivos de arroz necesitaban el fertilizante, las Casas expendedoras de este producto no lo tuvieron disponibles a los agricultores.

En el Cuadro No. 9 se aprecia los resultados logrados en ensayos de campo llevados a cabo por la Comisión Nacional del Arroz en el Centro de Adaptación y Multiplicación de Semillas en el Colegio de Agricultura de Daule. Los datos consignados corresponden a trabajos de investigación en los que se logran rendimientos de I65.40 sacos de I65 libras por hac. para la variedad IR/8, I53.33 sacos de igual peso para la variedad Tapuripa (selección de SML), etc., que comprueban el gran aumento que tienen las cosechas cuando se lleva a cabo un buen programa de fertilización.

Recursos Hidráulicos en el cultivo.- La producción arrocera de nuestro país proviene principalmente de los cultivos de secano en los uales no existe ningún control del riego y drenaje.

El 7I.28% de la superficie arrocera sembrada en invierno del presente año se efectuó mediante siembra de secano y el restante 28.72% proviene de plantaciones en las cuales se dispuso de equipo de riego por bombeo.

La falta de un adecuado manejo del riego y drenaje es otro factor que provoca los bajos rendimientos promedios. La Comisión Nacional del Arroz recomienda que el desarrollo arrocero debe orientarse de tal manera que en forma progresiva se reduzcan las siembras de secano y se incrementen los cultivos con riego mecanizado. Hay que anotar igualmente, que debido a que la mayor parte de la producción proviene de pequeños desmontadores, y estos no cuentan con disponilidad económica suficiente para efectuar una buena preparación del terreno para contar con un buen manejo de agua, en estos casos se recomienda agrupar a los pequeños agricultores en cooperativas, lo que les permitirá cambiar su capacidad de financiación. (Cuadro No. I0).

Por otro lado, hace falta localizar las áreas de cultivo solamente en aquellos suelos propiamente aptos. La CEDEGE (Comisión de Estudios de la Cuenca del Río Guayas), cuenta ya con un estudio de factibilidad que localiza una superficie de II.000 hac. que reúne magnificas condiciones para el cultivo del arroz. Trabajar en esta forma permitirá reducir el área total del cultivo

de arroz a sólo un 40% de la que actualmente se tiene y obtener una cosecha equivalente al doble de la actual.

Variedades de Arroz empleadas.- El empleo de variedades de arroz seleccionadas, de altos rendimientos, de respuesta favorable a aplicaciones se altas dosis de fertilizantes viene introduciendo la Comisión Nacional del Arroz. Los datos obtenidos en el verano del año 68 indican que el 77.35% de los arroceros utilizan variedades criollas y solamente el 22.65% recurre a variedades mejoradas. En el invierno de I.969, las caracteristicas cambian un tanto y se tiene que un 3I.8I% de las plantaciones se efectúan con variedades criollas y el 68.I0% a las variedades mejoradas.

Se aprecia en los cuadros No. II y I2 con respecto a estas 2 campañas que ha aumentado el empleo de semilla mejorada. Sin embargo, aún dista mucho para lograr que todos los arroceros recurran al empleo de ella. Más aún, la caida de precios presentada a la cosecha del invierno del presente año ha ocasionado que los agricultores empleen semilla de menor calidad para la siembra veranera y creemos que esto se acentuará más en los cultivos de invierno del año I.970.

Costos del Cultivo.- En las cuadros No. I3-I4-I5 y I6 se incluye los costos por la Comisión Nacional del Arroz cuando se efectúa la siembra mediante el sistema de secano no mecanizado; siembras de secano mecanizado con equipo propio y alquilado; siembras directas con riego; y siembra por trasplante. En el primer caso el costo de un quintal de arroz es de S/. I52,88 al lograrse una cosecha de 20 quintales por hac. Estos costos por quintal se reducen desde S/97,55 cuando la producción por hac. es de 70 hasta S/75,87 cuando un rendimiento es de 90 quintales por hac. al recurrirse al sistema de siembra por trasplante.

El costo de un quintal de arroz es elevado en el mayor porcentaje de nuestra producción u ésto sólo puede reducirse, cuando se efectúan todos los trabajos que recomienda la técnica. Puede conseguirse esta reducción en forma tan notable que permitiría participar al Ecuador dentro del mercado de exportación, aún sin necesidad de subsicio.

Así mismo no debe pasar por alto, que el arroz es un producto que constituye la base de la dieta de nuestro pueblo, condtituyendo una obligación del Estado proporcionarlo al menor precio posible. La población del Ecuador para el año I.973 exigirá una producción arrocera de 229.486,50 toneladas métricas equivalentes a 5'048.703 quintlaes de I00 libras de arroz pilado que servirá para atender una población de 6'007,500 habitantes con un cosumo per capita de 38.20 Kg. Igualmente, debe mencionarse que los estudios efectuados por los Organismos Internacioanles concluyeron que el incremento poblacional en el mundo con plazo a I0 años es mayor al incremento de producción arrocera que se tendrá durante este período. Los datos mencionados, permiten conluir que un adecuado programa de desarrollo arrocero en el Ecuador garantiza una alta rentabilidad al lograrse menores costos y que permiten competir en el mercado de exportación.

Programa de Silos.- Uno de los factores negativos en la comercialización del arroz en el paí se tiene precisamente por la falta de medios apropiados y suficientes de almacenamiento de la produccion nacional del arroz, factor decisivo en la buena conservación del grano y por ende en la calidad del mismo.

Las fluctuaciones frecuentes extremas de producción que de un año a otro se suceden y siempre con tendencia creciente del problema como la ocurrida recientemente con la cosecha de invierno del presente año, comprometen' seriamente la preocupación de los organismos competentes a dar urgente solución al problema del almacenamiento del arroz en el país.

Según el "Estudio preliminar sobre Almacenamiento de grano en el Ecuador", Documento No.06-03; I6-X-68, publicado por la Junta Nacional de Planificación. El país pierde alrededor del I5% de la producción de arroz debido a las instalaciones insuficientes e inadecuadas para almanecer los volumenes de producción comerciables, con lo que coincide la Comisión Nacional del Arroz.

La capacidad de almadenamiento de piladoras y molinos registradas en el país es de 65.000 toneladas métricas, según estimaciones de la Superintendencia de Piladoras. Solamente la Piladora Modelo de propiedad del Banco Nacional de Fomento, tiene un sistema relativamente adecuado y mecanizado para el procesamiento y almacenaje, pero cuya capacidad sólo llega a 6.400 toneladas.

NECESIDADES DE ALMACENAMIENTO DE ARROZ PILADO*
(Toneladas Métricas)

AÑOS	PRODUCCION TOTAL	PRODUCCION COMERCIABLE 50%)	CAPACIDAD ACTUAL	DEFICIT	PRODUCCCION TOTAL 25%	DEFICIT
I.968	I76.000	88.000	5.500	82.000	44.000	38.500
I.969	I89.750	94.900	5.500	89.400	47.500	42.000
I.970	204.000	I02.000	5.500	96.500	5I.000	45.500
I.97I	225.000	II2.500	5.500	I07.000	56.000	50.500
I.972	247.000	I23.500	5.500	II8.000	6I.800	56.300
I.973	283.000	I4I.500	5.500	I36.000	70.800	65.300

*: Factor de conversión de cáscara a pilado - 0,63.

FUENTE Y ELABORACION: Junta Nacional de Planificación.

Con estos antecedentes la Comisión Nacional del Arroz ha realizado un estudio preliminar referente al volumen de producción por zonas arroceras, variedades y tipo de arroz durante el invierno de I.969, incluyendo las facilidades que presentan las vías de comunicación existentes tanto fluviales como carrozables y aquellas otras más en proyecto de construcción, para determinar en principio la ubicación económico-e stratégico de los nucleos de silos, capacidad de almacenaje, según variedades y tipos de arroz de las diferentes zonas, se presentan en el cuadro siguiente:

VOLUMEN DE PRODUCCION SEGUN TIPO DE GRANO Y ZONA

EN INVIERNO DE I.969.-

ZONA	UNIDAD	EXTRA LARGO	LARGO	MEDIO	CORTO	TOTAL
Baba	Cds.	2.I86	7.I68	3.029	I94	I2.577
Urbina Jado						
Samborondón	Tons.	4.7I9	I5.475	6.539	4I8	27.I5I

Babahoyo	Cds.	I3.470	7,880	5.406	578	27.5I6
Pueblo Viejo Urdaneta Ventana	Tons.	29,082	I7.0I4	II.672	I.638	59.406
Vinces	Cds.	3.889	I5.077	0.33I	2.I28	27.427
Balzar Daule	Tons.	8.396	32.552	I3.670	4.594	59.2I2
Milagro	Cds.	5.28I	20.4I7	5.983	5.6I5	37.297
Yaguachi Naranjal	Tons.	II.40I	44.08I	I2.9I8	I2.I23	80.523
	Cds.	I56	775	5I5	442	I.889
Guayaquil	Tons.	337	I.674	I.II2	954	4.077

NOTA: Se asume una producción promedia de 2.I59 kg./cd. de arroz en cáscara.

De igual manera se presenta la clasificación de las diferentes variedades de arroz que se cultivan en el país, según el tamaño del grano, en el cuadro siguiente:

VARIEDADES DE ARROZ SEGUN TAMAÑO DEL GRANO

EXTRA LARGO	LARGO	MEDIO	CORTO
SML	Blue Bonnet 50	Brasilero	Chileno
Nilo 3	Rexoro	Canilla	IR-8
Tapuripa	Fortuna	Comino	Piedra
	Dawn	Criollo	No hay taco
	Puyón	Corriente	3-I5
	Lira	Morado	Chato
	Hawayano	Canelo	Ayora
	Texas Patna	Estrella	Grinto Pobre
	Zenith		
	Colorado.		

FUENTE Y ELABORACION: Comisión Nacional del Arroz.

Del volúmen total de producción que asciende a 23o.378 toneladas métricas de arroz en cáscara, investigadas en las zonas anotadas anteriormente durante el invierno de I.969, se deduce los porcentajes correspondientes a las variedades según el tamaño del grano. Así para las variedades Extra-Largo, corresponde el 23.4I% del total, para variedades de grano largo corresponde el 48.09%, para las variedades de grano medio, el I9.92% y para las variedades de grano corto el 8.56%. Sin embargo, estos datos pueden variar de un año a otro, pot lo que no pueden tomarse como definitivos.

Durante el mes de Mayo del present año, mientras desarrollaba su ciclo de sesiones el Banco Nacional de Fomento en la cuidad de Guayaquil se trató este

importante tema y se recomendó a la Comisión Nacional del Arroz que formulase sus recomendaciones en virtud de lo que establece para este efecto el literal o) del Artículo 6to. del Decreto No. I34I, promulgado el I9 de Octubre de I.966 mediante el cual se crea la Comisión Nacional del Arroz y que al referirse a las funciones especiales de esta Institución dice: "Establecer facilidades de almacenamiento y acondicionamiento del grano mediante la construcción de silos a fín de regular el mercadeo del cereal".

Con los antecedentes expuestos en fecha Junio 4 del año en curso la Comisión Nacional del Arroz publicó en los diarios de Guayaquil, un aviso en el que manifestaba que deseaba relacionarse con fabricantes o constructores de silos metálicos o de cemento para la elaboración de un plan de ensilado con una capacidad de I20.000 toneladas de arroz cáscara. En Julio 7 otro aviso hacía conocer que las ofertas se recibirían hasta el 3I de Julio. Luego a pedido de algunos interesados, se concedió prorroga para las entregas de las ofertas. La prórroga se establece a Septiembre 30. En varias sesiones de Directorio de la Comisión Nacional del Arroz se consideraron las propuestas recibidas y en la Sesión realizada en Noviembre 7 se aprobaron las recomendaciones al plan de silos, luego que el Departamento Técnico examinó las ofertas presentadas, especialmente en aquellas que se refieren a costo, complejo y calidad de equipos que deberá adquirirse para este programa.

Las empresas que se sirvieron enviar a la Comisión Nacioanl del Arroz sus ofertas fueron las siguientes: Buhler Hermanos Talleres de Construcción y Maquinarias Uswill/Suiza; M.A. Plaza Cia. Ltda, representan Crittal Silos Limited Colchester Road, Withman, Essex Inglaterra; Luis Romero García, representan, R& N. Stathan Limited South Australia; Norman S. Walker International Representative Agri-products División, Representante Galo Ocampo Pozo; Instalaciones Agrícolas del Ecuador Cia. Incorp. Quito: Distribuidora Tip-Top. Guayaquil, representante: Sr. Alboran I; Dujmovic; Industria Avícola C.A. Representante: Sr. Ernesto Niño; Agencias & Representaciones Cordovez S.A.: representante Sr. Jaime R. Sempértegui; Carlos Espindola & Cia. Industrias Metálicas Ecuatorianas Ltda. representante Arcadio Arosemena G., Pemar International W.H. Inc.

Por no contar con los estudios referentes a las caracteristicas de suelos en los que se instalarán las plantas, hemos solicitado a USAID asistencia técnica para que lleven a cabo estos trabajos. El Sr. Richard L. Winters, Jefe División Desarrollo Rural, nos ha comunicado que ha sido aprobada la venida de 2 técnicos de la Universidad de Kansas*para realizar estos estudios. Vendrán al Ecuador 2 asesores por el lapso de un mes para hacer los estudios de suelos y de acuerdo con el Departamento Técnico de la Comisión Nacional del Arroz establecer definitivamente la localización de las plantas. Copia de la aprobación a esta solicitud adjuntamos.

La empresa ofertante que mejores condiciones presentan para este plan corresponde a la de Pemar International y Constructores de Equipos e Industrias (CONDESI). Cuadro resúmen que refiere el equipo y caracteristicas de estas ofertas adjuntamos.

Ponemos en conocimiento igualmente que la Comisión Nacional del Arroz hace las siguientes recomendaciones:

* Debe leerse la Universidad del Estado de Kansas (KSU)

Existen dos tipos de silos clásicos de concreto y metálicos. Los Silos de concreto tienen mayor duración que el tipo metálico. Esto constituye la única ventaja. Los silos de hormigón armado tienen un costo muy superior. En este tipo de silos se conserva el arroz incluso por largos períodos de almacenamiento, siempre que éqte se efectúe bajo constante control de la temperatura. El mayor peso que tienen los silos de hormigón armado, el mismo que se estima en aproximadamente I0 veces al correspondiente a Silos metálicos de igual capacidad demanda la construcción de bases mayores. El costo de las bases, cimientos, construcción de silos propiamente, sobre terreno de naturaleza lacustre eleva notablemente el valor della instlación; en algunos casos, la ca lidad de terrneo sobre el que se piensa efectuar esta instalación no permite su recomendación.

Los silos metálicos deben ser de un material no oxidable. Además de presentar un menor costo, tienen otras ventajas como el de poder ser desarmable en cualquier momento para transportarlo a otras zonas o ampliar su capacidad.

Las plantas o baterias de secamiento y ensilado deben constar de las siguientes partes:

I.. Un laboratorio para calificar el arroz al momento de ser recibido.
2. Tolva receptora y transportadora a la limpiadora.
3. Limpiadora de impurezas del grano.
4. Báscula con impresora del peso.
5. Transportadora a la secadora.
6. Secadora de tipo columnar.
7. Báscula con impresora de tarjetas.
8. Transportador de la secadora a una báscula y su distribución a los silos.
9. Silos metálicos de material no oxidable (con la capacidad y número que se establezca) sobre bases de concreto y equipo de control de temperatura.
I0. Sistema de aireación en los silos.
II. Equipos de descarga de los silos y báscula con equipo ensacador y contador automático.
I2. Equipo limpiador de los silos.
I3. Adecuamiento de un lugar cerrado para la recepción de arroz y oficinas con sus respectivos cerramientos para su funcionabilidad.
I4. Abestamiento a estas instalaciones de agua potable, aguas negras, ventilac ión regulador de ambiente en los laboratorios y luz eléctrica.
I5. Financiamiento.
I6. Báscula para pesar camión.
I7. Alojamiento para administración y guardián.

Las instalaciones de los silos se hará con el propósito de atender una capacidad total de I26.500 toneladas de arroz cáscara. Esta producción total proviene de las siguientes zonas: Daule-Balzar I5.400 hac. y 30.800 toneladas de arroz cáscara; El Triunfo I0.0I0 hac. con 20.020 toneladas; Babahoyo con I7.7I0 hac. y 35.420 toneladas; Milagro-Yaguachi 8.620 hac. y I6. 520 toneladas; Samborondón con II.900 hac. y 23.800 toneladas.

El Directorio de la Comisión Nacional del Arroz en la Sesión del 27 de Noviembre recomienda que la ubicación de estas palntas sean: Guayaquil, Milagro, Babahoyo, Daule-Balzar y Samborondón; esta última en un punto estratégico-económico que cubre las zonas de Guare, Baba y la isla de Bujucal.

La ubicación de estas plantas estará dada por el estudio que para este objeto se llevará a cabo con la asesoria de los ténicos que brinda USAID/Ecuador, quien los ha solicitado a la Universidad de Kansas.* La necesidad de efectuar estas instalaciones se juzga impostergable y debe ser efectuada en el menor tiempo posible. El tiempo estará sujeto al plazo que calcule la compañia constructora en hacer las obras, lo cual debe ser fijado en los términos de la negociación. Además de la producción del área arrocera deberá considerarse para la instalación de las plantas, sitios estratégicos que favorecen las relaciones de mercadeo. Los estudios efectlados señalan también que en las instalaciones de mayor capacidad se tiene un menor costo por tonelada de arroz ensilado.

Para que el plan de instalación de silos tenga éxito que se espera, es imprescindible:

I) Cambiar el sistema de comercialización, de modo que el agricultor comercie por IOO libras de arroz cáscara.

2) Que el Banco Nacional de Fomento participe más ampliamente en las relaciones de compra de arroz al productor, de acuerdo con los precios que oficialmente se establezcan para el efecto.

3) Que las relaciones comerciales entre el Organismo encargado del manejo de las plantas de secamiento y ensilado con respecto al productor sean de tal forma que este pueda vender su cosecha directamente, de acuerdo al sistema de mercadeo que se establezca y en caso de no desearlo así, el productor puede utilizar las instalaciones de las plantas para los labores previos a la descascarada sólo con el pago de la respectiva tasa.

Se confía que la adopción de esta medida permitirá al agricultor se lo garantice el pago de los precios oficialmente fijados y evitar la caída de precios y la consiguiente explotación. Igualmente al contarse con los silos, el Reglamento de Movilización de Cosecha que tienen actualmente el Banco Nacional de Fomento podrá ser modificado de tal modo, que el genuino agricultor pueda hacer uso de estos préstamos.

Con los datos proporcionados mediante la oferta de Pemar International-CONDESI, la Comisión Nacional del Arroz ha efectuado cálculos relacionados con el costo de las plantas y los ingresos que genera su operación, pagos anuales que deben hacerse por amortización al capital e intereses así como la recuperación de valores que actualmente se pierden por falta de estas plantas, como es el caso de las pérdidas del I5% de la producción total por mal manejo del grano antes de la descascarada, aumento del IO% de granos enteros a la pilada por efectos de adecuado secamiento previo, ahorro de sacos que no se requieren en el almacenaje del arroz en los silos y recuperación de valores perdidos por la diferencia entre los precios oficiales y aquellos que se manifiesten realmente por efecto de la demanda. Estos valores si bien no pueden ser considerados como ingresos contables dentro de este plán, no es menos cierto, que hasta ahora afecta los diversos sectores que participan en la producción arrocera nacional.

* Debe leerse la Universidad del Estado de Kansas (KSU)

ESTUDIO DE LAS PLANTAS DE SECADO Y ENSILAJE EN RELACION CON SU COSTO Y FINANCIAMIENTO.-

PLANTAS Toneladas Métricas	PRECIO UNITARIO (dólares)	PRECIO TOTAL (dólares)	VALOR POR TONELADA ENSILADA (dólares)
2.940	I69.I97,oo	6'937.077,oo	57,80
5.400	238.763,oo	5'252.786,oo	43.77
II.000	408.470,oo	4'493.I70,oo	37.44

Según el cuadro anterior, le corresponde a la planta de II.000 toneladas el costo más bajo por tonelada ensilada: $ 37.44.

Para cubrir las I20.000 toneladas de secamiento y ensilado se requieren II de estas plantas, que a $408.470,oo cada una son $ 4'493.I70,oo.

La inversión de $ 4'493.I70,oo representan S/. 8I'685.830,60 considerando el dólar a S/. I8,I8.

El costo unitario de una planta de II.000 toneladas es S/. 7'426.984,60. Los intereses de este capital al 9% en I0 años, considerando un año de gracia son de S/. 4'004.038,50 por planta.

El costo total de cada batería de II.ooo toneladas de secado y ensilado, considerando su costo y los intereses es de S/. II'430.023,I0. El costo total del proyecto de II baterías de II.000 toneladas, considerando el capital es de S/. I25'730.254,I0.

El monto por las II plantas a pagar cada año sería:

AÑOS	DIVIDENDOS DEL CAPITAL	INTERESES	CAPITAL E INTERES
I	De gracia	7'35I.724,60	7'35I.724,60
2	9'076.I72,I6	7'35I.724,60	I6'427.896,76
3	9'076.I72,I6	6'534.869,22	I5'6II.04I,38
4	9'076.I72,I6	5'7I8.002,62	I4'794.I74,78
5	9'076.I72,I6	4'90I.I58,24	I3'977.330,40
6	9'076.I72,I6	3'974.30I,54	I2'950.473.70
7	9'076.I72,I6	3'267.447,26	I2'343.6I9,42
8	9'076.I72,I6	2'494.59I,66	II'570.763,82
9	9'076.I72,I6	I'633.736,28	I0'709.708,44
I0	9'076.I72,I6	8i6.855,38	9'893.027,54

Según el cuadro anterior el pago anual más fuerte corresponde al año #2 que es de S/. I6'427.896,76.

Costos fijos sobre la Inversión.- Se toma para este análisis la cifra que corresponde al segundo año y que es la más fuerte de S/. I6'427.896,76 y que corresponde:

Al pago del dividendo anual del capital más los intereses de las II plantas.	S/.I6'427.896,76
Consideramos además como gastos fijos lo siguiente:	
Depreciación de estos equipos en Ic años considerando la suma de S/.742.598,46 para cada planta.	S/. 8'I68.583,06
Mantenimiento de estas plantas en buen funcionamiento a razón de S/.58.000,oo por cada planta.	S/. 638.000,oo
Seguro para cubrir riesgos de las plantas a razón de S/.I4.800,oo para cada planta.	S/. I62.800,oo
	S/.25'397.279,82

BALANCE DE INGRESOS, EN RELACION AL SEGUNDO PAGO O DIVIDENDO MAS ALTO CONSIDERADO.-

EGRESOS.-

Los costos fijos sobre la inversión, considerando al segundo año como más critico o más alto.	S/.25'397.279,82
Gastos de operación de la planta para secar arroz en la cantidad de 2'420.000 quintales a un costo de S/.6,4I cada quintal.	S/.I5'5I2.200,oo
	S/.40'909.479,82

INGRESOS.-

Cobro por una sola vez por secado, pesado, limpiado de 2'420.000 quintales a S/.I0,50 cada quintal de arroz en cáscara.	S/.25'4I0.000,oo
Cobro por el ensilado de 2'420.000 quintales de arroz en cáscara, considerando solamente 8 meses como tiempo promedio, o sean 240 días a razón de S/.0,03 por quintal por día.	S/.I7'024.000,oo
	S/.42'434.000,oo

RESUMEN.-

Ingresos	S/.42'434.000,oo
Egresos.	S/.40'909.479,82
BALANCE	S/. I'524.520,I8

C O N C L U S I O N E S

I. Los Ingresos están balanceados con los Egresos a un costo para el agricultor de:

Por secado, pesado, limpieza, etc.	S/ I8,50
Por almacenamiento hasta 8 meses de un quintal de arroz en cáscara.	7,20
	S/ I7,70

2. Se ha calculado la amortización de manera que a I0 años, este pagado, no solamente el capital y los intereses sinó también las plantas, lo que significa, que es a ese plazo el valor de las plantas es cero sucres o que considere a las plantas como una utlidad a I0 años.

3. El mejoramiento de la capital obtenida por la disminución de granos quebrados, con el manejo eficiente se considera como un I0% de granos enteros, lo que se puede condiderar contablemente como un ingreso real que por ahora preferimos considerarlo como un beneficio adicional. Esto representa:

S/.299.200,oo por cada planta con II plantas S/.3'29I.200,oo

4. Siendo la función de los silos almacenar el arroz, romper la ley de la oferta en la salida de las cosechas, calculando la diferencia de los precios entre la salida de la cosecha y los precios a los meses de Mayo-Agosto se puede calcular una diferencia promedio de S/ 30,oo por cada quintal,, lo que significa en las II plantas a 220.000 quintales por plantas 2'420.000 quintales a S/.30,oo por S/ 73'200.000,oo.

5. En los estudios realizados y consultados encontramos que, almacenado el arroz en graneros o en sacos, sin desinfección para insectos y expuestos a los roedores hay una pérdida del I5% lo que significa:

El I5% de 2'420.000 quintales son 363.000 qq. a S/ 50,oo representa S/ I8'I50.000,oo.

6. Hay que considerar otro rubro importante cuando se guarda el arroz en silos. Es el ahorro de las pérdidas por sacos deteriorados en el manejo o manipuleo, cosido y recosido de sacos, que representa un 25% de estos sacos, porcentaje que para este caso representan:

302.500 sacos que a razón de S/ 8,oo son S/ 2'420.000,oo.

7. Es por demás significativo que un paln social de esta naturaleza encaminado a proteger un sector de agricultores, actualmente bastante desfavorecido por la especulación y que lo pueda proteger el Estado sin ningún desembolso de su parte, hace de esta obra una verdadera obra de Gobierno en el sentido económico y social.

8. Existen organismos estatales o semi-estatales, que actualmente tienen por ley que financiar estas cosechas sin ningún amparo a su inversión por la carencia de centros técnicos de almacenaje. Es un ejemplo de este caso especifico, las publicaciones alarmantes de los Diarios con relación al manejo de la cosecha que acaba de absorver la Piladora Modelo de propiedad del sistema del Banco de Fomento, en los que se prevee una pérdida de S./ 40'000.000,oo.

9. Por otro lado, la Comisión Nacional del Arroz, organismo destinado especificamente al fomento de la producción arrocera ve con verdadero desconcierto que se esfuerzo de aumentar los rendimientos por hectárea, no puede evitar el desconcierto de los agricultores con cosechas voluminosas que sin lugares de almacenamiento favorecen la baja de los precios por una excesiva oferta, favoreciéndose solamente a unos pocos privilegiados que disponen de algún medio aunque antieconómico, con pocas excepciones para almacenar esta graminea.

Guayaquil, Diciembre 3 de I.969.

APPENDIX B

Rice Production Data 1965-1968
Supplied by the Comision Nacional del Arroz

B-1 through B-9

APPENDIX B

Rice Production in the Year 1965
1st Semester

Counties	January	February	March	April	May	June	Total
			quintales				
Guayaquil	662	0	0	0	11,692	33,777	46,131
Samborondon	60	9	6	40	25,044	56,721	81,880
Yaguachi	80	150	0	0	16,494	47,990	64,714
Milagro	0	0	2,000	160	48,299	195,661	246,120
Daule	741	248	310	955	15,125	20,549	37,927
Balzar	173	18	0	292	16,141	20,689	37,312
Urvina Jado	132	20	10	204	13,603	11,125	25,094
Naranjal	1	0	0	0	1,635	5,878	7,514
Babahoyo	7	3	0	31	11,907	41,184	53,132
Vinces	136	0	0	90	1,523	7,285	9,035
Puebloviejo	21	0	0	10	575	5,224	5,830
Baba	100	15	0	15	1,763	2,063	3,956
Quevedo	116	0	0	40	1,397	3,362	4,915
Urdaneta	3	2	0	20	1,734	3,767	5,526
Ventanas	39	0	0	0	935	1,962	2,936
Portoviejo	0	0	0	0	42	0	42
Manta	0	0	0	0	890	2,558	3,448
Bolivar	10	0	0	0	155	575	740
Chone	53	54	19	4	73	14	217
Pajan	0	0	10	4	19	281	314
Rocafuerte	0	0	0	0	0	0	0
Sucre	0	0	0	0	0	0	0
Santa Ana	0	0	0	0	0	519	519
24 de Mayo	34	4	240	0	0	10	288
Montecristi	0	0	0	0	0	0	0
Arenillas	0	0	0	0	0	0	0
Pinas	120	0	0	0	40	170	330
Zaruma	150	31	0	0	0	0	181
Santa Rosa	0	0	0	0	0	0	0
Guaranda	5	0	0	0	20	20	45
Chimbo	0	0	0	0	80	100	180
Cañar	0	0	0	0	10	40	50
Quito	0	0	0	40	240	420	700
Macara	0	0	0	0	0	0	0
	2,642	554	2,594	1,904	169,438	461,945	630,077

APPENDIX B

Rice Production in the Year 1965
2nd Semester

Counties	July	August	September	October	November	December	Total
			quintales				
Guayaquil	26,431	10,611	26,399	13,140	23,652	40,917	141,151
Samborondon	11,251	1,198	35,941	47,157	44,675	14,233	154,455
Yaguachi	21,082	6,734	12,032	20,124	17,402	7,803	85,178
Milagro	49,788	7,368	2,648	1,915	3,868	2,661	68,250
Daule	8,065	4,444	17,506	29,614	28,614	16,755	104,998
Balzar	7,136	1,264	4,084	4,202	5,590	1,302	23,580
Urvina Jado	1,018	695	4,049	16,740	19,657	4,771	46,930
Naranjal	2,252	602	304	1,656	1,748	637	7,198
Babahoyo	10,531	1,542	10,537	8,147	21,636	2,548	54,942
Vinces	6,385	4,144	1,817	957	2,101	3,518	18,922
Puebloviejo	546	392	178	84	172	199	1,571
Baba	793	216	89	864	2,014	2,027	6,003
Quevedo	2,723	932	480	1,122	38	399	5,695
Urdaneta	1,620	286	186	213	492	401	3,198
Ventanas	2,489	517	492	3,378	169	203	7,228
Portoviejo	74	105	0	0	0	0	179
Manta	2,707	909	870	98	164	75	4,822
Bolivar	430	185	503	0	9	0	1,127
Chone	45	97	80	95	30	205	552
Jipijapa	0	0	0	0	0	0	0
Pajan	274	221	496	502	279	98	1,870
Rocafuerte	310	260	358	12	59	20	1,018
Sucre	621	589	417	170	196	60	2,058
Santa Ana	754	844	856	885	1,196	1,048	5,582
24 de Mayo	10	20	250	200	18	0	498
Montecristi	1,676	0	0	1,338	0	0	3,014
Arenillas	50	20	0	0	0	0	90
Pinas	420	300	170	90	150	50	1,180
Zaruma	869	280	379	115	201	96	1,940
Santa Rosa	0	0	0	0	10	31	41
Guaranda	75	30	10	2	75	10	202
Chimbo	0	40	30	20	0	5	95
Cañar	20	0	0	0	0	0	20
Quito	230	0	991	0	116	138	1,475
Macara	0	0	0	0	90	40	130
	160,676	44.845	122.151	152.840	174,421	100,274	755,208

APPENDIX B

Rice Production in the Year 1966
1st Semester

Counties	January	February	March	April	May	June	Total
			quintales				
Guayaquil	4,697	2,374	847	8,898	165,984	160,852	343,652
Samborondon	8,189	4	1,188	7,240	12,708	17,516	46,846
Yaguachi	368	555	101	1,230	60,757	43,554	106,570
Milagro	383	72	0	10,015	229,292	143,471	383,233
Daule	3,596	3,317	227	5,149	27,048	18,237	57,575
Balzar	357	82	75	8	16,248	20,352	37,123
Urvina Jado	1,147	724	70	1,112	13,246	5,270	21,568
Naranjal	385	16	14	436	7,546	1,615	10,012
Babahoyo	218	202	43	357	36,424	37,669	74,913
Vinces	557	85	15	604	5,097	5,654	12,012
Puebloviejo	64	8	5	241	2,156	5,912	8,385
Baba	1,038	43	30	31	3,652	732	5,507
Quevedo	66	0	0	102	3,894	3,470	7,532
Urdaneta	0	17	0	59	2,556	1,144	3,776
Ventanas	103	9	25	74	1,338	3,094	4,643
Portoviejo	10	0	0	10	35	30	85
Manta	0	1,536	695	288	1,148	2,546	6,214
Bolivar	132	121	0	0	180	400	833
Chone	10	40	40	12	160	470	731
Jipijapa	0	0	0	0	0	0	0
Pajan	46	21	4	19	363	541	994
Rocafuerte	30	26	22	10	42	252	302
Sucre	105	0	0	0	147	89	341
Santa Ana	110	0	0	0	150	907	1,168
24 de Mayo	0	10	20	100	110	172	412
Montecristi	0	0	0	0	0	0	0
Arenillas	0	30	0	0	0	0	30
Pinas	110	240	67	125	120	280	942
Zaruma	115	68	52	16	0	299	549
Santa Rosa	92	557	169	95	168	186	1,267
Guaranda	0	0	0	10	39	59	108
Chimbo	8	0	0	0	120	20	148
Cañar	0	0	0	0	20	20	40
Quito	196	9	122	344	599	1,055	2,326
Macara	120	40	40	275	80	27	582
	22,253	10,207	3,872	36,862	591,407	505,895	1,140,494

APPENDIX B

Rice Production in the Year 1966
2nd Semester

Counties	July	August	September	October	November	December	Total
			quintales				
Guayaquil	21,025	47,767	63,676	28,521	8,446	1,258	170,693
Samborondon	15,942	44,413	63,271	29,589	12,814	9,711	175,741
Yaguachi	10,840	7,839	16,059	10,314	4,887	72	50,001
Milagro	30,409	7,021	551	130	422	199	38,733
Daule	12,077	22,666	29,579	21,311	10,392	5,968	101,988
Balzar	3,900	2,010	1,020	981	1,312	2,362	11,585
Urvina Jado	1,433	8,336	11,422	8,043	8,983	2,184	40,452
Naranjal	176	30	84	140	0	0	430
Babahoyo	22,268	7,134	20,882	2,470	601	73	53,428
Vinces	3,753	2,584	1,670	2,994	1,142	904	13,046
Baba	299	574	1,555	1,088	1,117	499	3,589
Puerloviejo	699	1,144	1,665	66	11	34	5,132
Quevedo	971	1,694	884	20	4	24	3,596
Urdaneta	288	461	487	367	640	75	2,318
Ventanas	878	673	1,546	684	130	167	4,078
Portoviejo	10	50	50	0	0	0	110
Manta	861	9,680	1,331	1,590	8	0	13,471
Bolivar	100	0	0	0	20	0	120
Chone	180	173	101	84	30	15	571
Jipijapa	0	0	0	0	0	0	0
Pajan	394	479	217	463	177	51	1,781
Rocafuerte	365	241	318	85	2	105	1,116
Sucre	277	381	335	250	172	90	1,505
Santa Ana	715	1,179	918	275	32	40	3,160
24 de Mayo	220	62	40	140	15	60	538
Montecristi	0	0	0	0	0	0	0
Arenillas	0	8	12	10	9	0	39
Pinas	145	285	88	123	47	75	763
Zaruma	221	423	172	131	91	49	1,087
Santa Rosa	67	74	5	28	23	39	237
Guaranda	150	22	4	17	0	0	192
Chimbo	60	18	18	0	12	12	120
Quito	710	376	149	77	39	26	1,376
Macara	38	197	106	101	267	28	737
Cañar	20	0	0	0	0	0	20
	129,443	168,036	218,216	110,089	51,847	24,150	701,752

APPENDIX B

Rice Production in the Year 1967
1st Semester

Counties	January	February	March	April	May	June	Total
			quintales				
Guayaquil	429	15	0	2,193	145,123	82,960	230,721
Samborondon	2,000	0	0	420	74,166	17,391	93,977
Yaguachi	1,057	20	0	5,915	104,602	51,497	163,093
Milagro	0	0	0	4,413	217,196	111,872	333,481
Daule	262	122	73	3,836	30,351	16,814	51,558
Balzar	166	0	0	1,016	33,612	12,572	47,365
Jrvina Jado	5	95	26	1,794	27,853	[illegible],576	32,348
Naranjal	0	25	0	320	1,945	1,079	3,369
Babahoyo	17	6	0	670	63,323	51,894	115,920
Vinces	199	96	80	240	5,896	10,874	17,385
Puebloviejo	7	8	6	38	2,234	2,897	5,190
Baba	29	33	55	552	3,068	764	4,500
Quevedo	0	0	0	292	6,089	2,172	8,553
Urdaneta	0	0	0	0	2,656	1,456	4,112
Ventanas	84	60	0	91	1,556	2,942	4,733
Portoviejo	0	0	40	15	162	100	317
Manta	0	0	14	208	3,914	7,021	11,157
Jipijapa	0	0	0	0	0	0	582
Bolivar	0	0	0	15	162	405	0
Pajan	24	0	8	27	176	283	518
Rocafuerte	0	70	40	44	85	320	559
Sucre	62	0	0	0	0	0	62
Santa Ana	0	0	7	0	1,200	1,020	2,227
24 de Mayo	0	10	0	0	150	375	535
Chone	0	0	9	0	140	451	600
Montechristi	0	0	0	0	0	0	0
Arenillas	0	0	0	0	0	0	0
Pinas	55	70	75	35	0	85	320
Zaruma	71	86	58	21	0	271	507
Santa Rosa	56	30	0	0	0	214	269
Guaranda	0	0	0	0	0	17	17
Chimbo	0	12	0	0	30	70	112
Cañar	0	0	0	0	0	0	0
Quito	2	0	0	477	1,135	1,153	2,765
Macara	62	0	192	120	0	62	436
Esmeraldas	0	0	0	0	65	75	140
	4,586	729	683	22,762	726,989	381,683	1,137,432

APPENDIX B

Rice Production in the Year 1967
2nd Semester

Counties	July	August	September	October	November	December	Total
			quintales				
Guayaquil	9,817	17,858	31,042	24,294	12,328	1,992	97,332
Samborondon	12,147	34,826	38,376	13,183	2,556	60	101,149
Yaguachi	2,347	13,623	3,853	2,560	380	0	22,762
Milagro	20,931	2,141	6,123	2,678	5,519	4	37,396
Daule	6,113	6,820	4,281	7,083	335	8,294	32,926
Balzar	2,238	34	129	270	0	0	2,672
Urvina Jado	556	8,943	9,318	7,530	1,584	384	28,315
Naranjal	9	5	107	0	0	0	121
Babahoyo	2,171	2,279	3,439	1,014	0	1,158	10,061
Vinces	1,350	997	0	0	0	0	2,347
Pueblovieio	878	0	0	0	0	0	0
Baba	767	50	200	220	0	0	1,237
Quevedo	2,126	85	109	43	3	4	2,290
Urdaneta	98	82	0	0	6	0	187
Ventanas	848	0	0	0	0	0	848
Portoviejo	70	0	0	0	0	0	70
Manta	763	676	0	110	0	0	1,548
Bolivar	120	0	0	0	0	0	120
Chone	183	0	0	0	0	0	183
Jipijapa	0	0	0	0	0	0	0
Pajan	62	200	250	0	0	0	512
Rocafuerte	221	0	0	0	0	0	221
Sucre	122	0	0	0	0	0	122
Santa Ana	765	205	120	0	0	0	1,090
24 de Mayo	10	0	0	0	0	0	10
Montecristi	0	0	0	0	0	0	0
Arenillas	0	0	0	0	0	0	0
Pinas	128	0	0	0	0	0	128
Zaruma	374	0	0	0	0	0	374
Santa Rosa	0	0	0	0	0	0	0
Guaranda	20	0	0	0	0	0	20
Chimbo	15	0	0	0	0	0	15
Cañar	0	0	0	0	0	0	0
Quito	302	0	0	0	0	0	302
Macara	70	0	0	0	0	0	70
Esmeraldas	95	0	0	0	0	0	95
	65,714	88,745	97,348	58,985	22,712	11,897	345,402

APPENDIX B

Rice Production in the Year 1968
1st Semester

Counties	January	February	March	April	May	June	Total
			quintales				
Guayaquil	1,243	118	0	0	6,784	49,062	66,650
Samborondon	0	0	0	0	10,601	31,248	41,949
Yaguachi	0	0	1,139	1,190	9,674	20,481	31,884
Milagro	0	0	0	0	20,651	49,587	70,238
Daule	200	1,000	355	950	4,513	11,201	18,219
Balzar	0	1,016	840	0	17,915	18,569	38,340
Urvina Jado	0	3	1,162	0	5,540	4,485	11,190
Naranjal	300	0	178	0	6	0	484
Babahoyo	0	0	0	500	18,390	50,846	69,736
Vinces	0	0	899	70	618	5,351	6,939
Baba	0	0	0	0	820	700	1,520
Quevedo	0	0	661	122	931	2,151	1,714
Urdaneta	0	0	100	2	660	1,655	2,418
Ventanas	0	0	0	0	0	0	0
Puebloviejo	0	0	400	0	100	200	700
Pajan	0	0	0	0	200	224	424
Santa Ana	0	0	0	0	221	0	221
Manta	0	0	0	43	0	0	43
	1,743	2,137	5,834	2,878	97,024	245,762	355,378

APPENDIX B

Rice Production in the Year 1968
2nd Semester

Counties	July	August	September	October	November	December	Total
			quintales				
Guayaquil	15,728	6,339	10,792	498	161	72	33,590
Samborondon	12,517	8,042	11,013	12,403	4,810	49	48,834
Yaguachi	18,968	644	1,176	12,582	884	457	34,711
Milagro	9,429	372	153	134	448	1,235	11,770
Daule	7,795	3,051	6,534	8,793	928	255	22,356
Balzar	2,710	64	640	2,176	73	84	15,748
Urvina Jado	705	3,306	2,281	3,529	524	113	10,460
Naranjal	120	34	0	0	0	0	154
Babahoyo	20,530	6,336	570	533	30	1,190	29,188
Vinces	1,254	568	224	361	140	172	2,719
Baba	200	80	100	180	220	240	1,020
Quevedo	581	28	54	0	6	122	669
Urdaneta	119	134	204	70	183	0	833
Ventanas	0	0	0	0	0	186	186
Puebloviejo	0	0	2	0	0	0	2
Pajan	106	0	0	2	0	0	108
Santa Ana	0	0	0	0	0	0	0
Manta	8,006	84	0	0	400	0	8,490
	103,770	29,081	33,743	41,262	8,809	4,175	220,838

Summary of Rice Production
1965, 1966, 1967 and 1968
quintales

1965		1966	
639,077	1st Semester	1,140,494	1st Semester
755,208	2nd Semester	701,752	2nd Semester
1,394,285	Annual Production	1,842,246	Annual Production

1967		1968	
1,137,432	1st Semester	355,378	1st Semester
345,402	2nd Semester	220,838	2nd Semester
1,482,834	Annual Production	576,216	Annual Production

NOTE: Data in Tables B-1 - B-8 have been rounded to the nearest whole number. The tables have been transcribed as they were supplied by Comision Nacional del Arroz and contain discrepancies present in the original data.

APPENDIX C

Price Announcements of the
Government of Ecuador

Ministry of Industries and Commerce,
Decree No. 866 - May 17, 1968
(Translated at Kansas State University
From the Original in Spanish) C-1 through C-10

Ministerio de Industrias y Comercio
Decreta No. 866
(Copy of Original Decree) C-11 through C-20

Superintendency of Processing Plants
(Polished Rice Price List, January 26, 1968 Guayaquil)

APPENDIX C

Ecuador has been and will
be an amazonic country

Republic of Ecuador
Ministry of Industries & Commerce
No. 866

Otto Arosemena Gomez
President Elected of the Republic

Considering:

THAT on February 20, 1968, The Executive Decree No. 284 was officially issued and published in the Official Registration No. 320 of February 21, 1968, through which the selling prices of polished rice per quintal are established.

THAT such decree did not produce the desired effect due to the drought in some coastal areas, and as a consequence there was scarcity of rice and exploitation was a common feature by some processing plants, mills and businessmen. This of course led to abnormal marketing conditions of polished rice.

THAT it is a duty of the State to protect and defend the consumers from high and unreasonable prices for staple foods;

Decree:

Article 1 To order the Superintendent of the Processing Plants to take possession of twenty percent (20%) of the existing rice in processing plants. The rice will be sold to the Direccion General de Subsistencias (general management of subsistance), through the corresponding agreement at the price fixed by the Acuerdo Interministerial (Interministerial agreement) No. 4020 of February 23, 1968.

Article 2 For the fulfillment of the previous article, the corresponding authoritie will cooperate with the superintendent of the processing plants.

Article 3 The executive decree No. 284 is abolished.

Article 4 The Ministers of Industries and Commerce, Agriculture and Livestock will enforce the execution of the present decree.

National Palace of Quito, May 17, 1968

Dr. Galo Pico Mantilla
Minister of Industries & Commerce

Jaime Mantilla Mata
Minister of Agriculture & Livestock

SUPERINTENDENCY OF PROCESSING PLANTS

According to Article 3 Amendment H of the constituent law of superintendency of processing plants, it is decided to fix the following prices for polished rice according to the qualities and percentages of broken kernels.

From the processing plant to the dealer in Guayaquil, delivered to the loading dock without sacks

Chilenito, with 20-25% broken kernels	$114.00
Canilla, with 20-25% broken kernels	$118.00
Fortuna, with 20-25% broken kernels	$125.00
Other varieties of long grain (Rexoro, Nira, SML 81 and 180, Texas Patna, Century Patna, Toro, etc. with 20-25% broken kernels	$135.00
Canilla, with 10-15% broken kernels	$130.00
Fortuna, with 10-15% broken kernels	$135.00
Other varieties of long grain with 10-15% broken kernels	$140.00
Cream rice, special sierra type with 20-25% broken kernels	
Canilla	$125.00
Fortuna	$130.00
Other varieties	$135.00

From the dealer to the public, in warehouse per quintal, without sack

Chilenito, with 20-25% broken kernels	$118.00
Canilla, with 20-25% broken kernels	$122.00
Fortuna, with 20-25% broken kernels	$129.00
Other varieties of long grain with 20-25% broken kernels Rexoro, Nira, SML 81 and 180, Texas Patna, Toro, etc.	$139.00
Canilla, with 10-15% broken kernels	$134.00
Fortuna, with 10-15% broken kernels	$139.00
Varieties of long grain with 10-15% broken kernels	$144.00
Cream rice, special sierra type with 20-25% broken kernels	
Canilla	$129.00
Fortuna	$134.00
Other varieties of long grain	$139.00

From the grocer to the consumer per pound

Chilenito, with 20-25% broken kernels	$ 1.25
Canilla, with 20-25% broken kernels	$ 1.30
Fortuna, with 20-25% broken kernels	$ 1.35
Rexoro, Nira, SML 81 and 180, Texas Patna, Century, Patna, Toro, etc. with 20-25% broken kernels	$ 1.45
Canilla, with 10-15% broken kernels	$ 1.40
Fortuna, with 10-15% broken kernels	$ 1.45
Other varieties of long grains 10-15% broken kernels	$ 1.50

Guayaquil, January 26, 1968
Antonio Bejarano Ycaza
Superintendent of Processing Plants

Decree Canceling Seizing of Rice

#584 - A

Jose Maria Velasco Ibarra
President Elected of the Republic

Considering:

THAT by the Executive Decree #455 of March 17, 1969, the Ministry of Industries and Commerce was authorized to sieze all the available rice (100%) in processing plants, mills and stores until the need for production and demand would be satisfied.

THAT the harvest of 1969 has started and the reasons for issuing the previous decree have disappeared and,

THAT it is the right of such Ministry (Ministry of Industries and Commerce) the orient the commercialization of rice throughout the Republic and, according to the report emitted by the National Commission of Rice, the following is ordered:

Article 1 To abolish the Executive Decree #455 of March 17, 1969.

Article 2 To fix the following prices for processing plants and/or mills for the winter harvest of 1969.

a) Paddy rice, in terms of polished rice:

Chato, Chilenito, Canario and other short grain	at	S/. 140.00 qq
Canilla	at	S/. 150.00 qq
Fortuna	at	S/. 155.00 qq
Nira, Rexoro, Blue Bonnet, SML and other long grain	at	S/. 160.00 qq

b) For polished rice the following prices are fixed

Chato, Chilenito, Canario and other short grains with a maximum of 25% broken kernels	at	S/. 155.00 qq
Canilla, with a miximum of 25% broken kernels	at	S/. 170.00 qq
Fortuna, with a maximum of 20% broken kernels	at	S/. 180.00 qq
Nita, Rexoro, Blue Bonnet, SML and other long grain with a maximum of 20% of broken kernels	at	S/. 185.00 qq

Article 3 Processing plants and mills will receive the grain (rice) according to the officially issued tables of moisture and impurities which will be sent by the Ministry of Industries and Commerce.

Article 4 The present agreement will take effect from the date of dispatch. The Ministers of Industries and Commerce and, Agriculture and Livestock are incharge of the fulfillment of the present decree.

National Palance, Quito, April 14, 1969

signed — Jose Maria Velasco Ibarra
President elected of the Republic

signed — Lcdo. Galo Martinez Merchan
Minister of Industries and Commerce

signed — Dr. Angel Duarte Valverde
Minister of Agriculture and Livestock

Paddy Rice 1967

Letter No. 672336
Quito, April 7, 1967

The Superintendent of Processing Plants
Guayaquil

No. 2682

The Ministers of Industries and Commerce and, Agriculture & Livestock

Considering

THAT the National Commission of Rice has requested fixed prices for paddy rice according to Article 6, Amendment 1 of the Decree No. 1341 of October 19, 1966:

THAT such Commission has emitted its reports favoring the same prices as in 1966, and using the altributions given by the law,

Agree

To fix the following minimum prices which will be paid to the producers during 1967.

Chato	S/. 80.00 per quintal
Chilenito, Piedra and Magnolia	S/. 95.00 per quintal
Canilla	S/. 100.00 per quintal
Fortuna	S/. 100.00 per quintal
Rexoro and Nira	S/. 110.00 per quintal
Other long grains	S/. 110.00 per quintal

Those prices refer to paddy rice

Quito, April 7, 1967

signed: Dr. Galo Pico Mantilla
Minister of Industries and Commerce

signed: Hernan Orellana J.
Acting Minister of Agriculture & Livestock

Sincerely,
God, Fatherland and Freedom

Lcdo. Gerardo Canelos Silva
Director of the Administrative Department

Attention: To the Superintendency of Processing Plants

Letter No. 680462-SP

Superintendency of Processing Plants

NOTIFICATION

Dr. Julian Vela Cobos, Superintendent of processing plants, using the authority given to him by Article 30, Leter F of the Constitutent law of the Superintendency of Processing Plants and taking into account the emergency facing the rice producers due to the drought in the Ecuadorian agricultural areas, decides to establish the following prices for the purchase of paddy rice. These prices are going to be in effect starting with the present date.

Varieties:	Chato, Piedra, Chilenito Magnolia, Fortuna and Canilla and other varieties, except long grain	S/. 150.00 qq
Varieties:	Rexoro, Blue Bonnet, Nira, Nilo, Texas Patna, S.M.L. 81, S.M.L. 140, Toro and other varieties of long grain	S/. 160.00 qq

Guayaquil, May 28, 1968

Dr. Julian Vela Cobos
Superintendent

The present notification should be published on May 28, 1968 in the following newspapers: El Universo, El Telegrafo, La Razon and La Prensa in columns of 5 X 20 cms. in the inner pages. The bills (4 copies) should be sent to the cashier in order to be paid.

Guayaquil, May 28, 1968

Dr. Julian Vela Cobos
Superintendent

PRICES OF PADDY RICE FROM 1963 to 1966

Quito, April 4, 1963	Year 1963	
Chato and Chilenito		S/. 60.00
Magnolia and Piedra		75.00
Canilla		80.00
Fortuna		85.00
Nira, Rexoro and other long grains		90.00
Quito, May 20, 1963	**Year 1963**	
Chato		60.00
Magnolia, Piedra and Chilenito		70.00
Canilla		80.00
Fortuna		85.00
Nira, Rexoro and other long grains		90.00
	Year 1964	
Chato		60.00
Chilenito, Piedra and Magnolia		75.00
Canilla		80.00
Fortuna		85.00
Rexoro and Nira		90.00
SML 81, SML 140, Blue Bonnet, Texas Patna and other long grains		95.00
Guayaquil, December 10, 1964	**Year 1965**	
Chato		70.00
Chilenito, Piedra and Magnolia		85.00
Canilla		90.00
Fortuna		95.00
Rexoro and Nira		100.00
SML 81, SML 140, Blue Bonnet, Texas Patna and other long grains		100.00
	Year 1965	
Chato		80.00
Chilenito, Piedra and Magnolia		95.00
Canilla and Fortuna		100.00
Rexoro, Nira, SML 81, SML 140, Blue Bonnet, Texas Patna and other long grains		110.00
	Year 1966	
Chato		80.00
Chilenito, Piedra and Magnolia		95.00
Canilla and Fortuna		100.00
Texas Patna, SML 81, SML 140, Blue Bonnet, Rexoro, Nira and other long grains		110.00

Sincerely

The Superintendent

REPORT

Quito, December 26, 1969

Mr.
President of the National Commission of Agriculture Marketing.

In conformance with the resolution of the National Commission of Agricultural Marketing of December 16 of the present year, I like to submit for your consideration and the consideration of the members of such Commission the following report, which contains the immediate measures that could be adopted in view of the problems of rice marketing.

1. Antecedents.

The National Commission of Agricultural Marketing created by Executive Decree No. 2014 on November 11, 1969, in the three meetings held up to now has studied the situation of the actual rice marketing. It has also heard the President and Executive Director of the National Rice Commission. The latter attended a meeting on Tuesday 23rd of the present month held by the Working Group in charge of preparing this report.

From all the suggestions, it is concluded that the problem of rice marketing must be tackled with immediate and mediate governmental measures.

In the present report, the mediate measures will not be discussed because they have already been considered by the National Rice Commission in a Project of Storage and Conservation which was presented to the National Commission of Agricultural Marketing on December 16, 1969. Based on this project, the National Rice Commission invited bids for the construction of silos. The final decision will be taken by the president of the commission and the marketing mission FAO/BID working in the country. The decision will then be presented to the National Government sometime during the first three months of next year

With these antecedents, we can now go on to detail the immediate measures that will allow the government to partially solve the conflictive situation of the rice producers. It should be pointed out that the present report is based only on the criteria of the subscriber because the Commission could not get together.

2. Immediate measures.

These measures are directly related to three main aspects: a) fixing a reasonable minimum price, b) urgent marketing of the existing rice kept by Piladora Modelo of the Banco Nacional de Fomento, and c) control of the so called "rice mills" that must be carried out by the Superintendency of the Processing Plant.

a) Fixing minimum prices - According to the Executive Decree 584-A of April 14, 1969, the prices were fixed for paddy rice for processing plants and/or mills for the 1969 winter harvest in this way:

Prices of paddy rice in terms of quintals of polished rice

Chato, Chilenito, Canario and other short grains	140.00
Canilla	150.00
Fortuna	155.00
Nira, Rexoro, Blue Bonnet, SML and other long grains	160.00

In the same Decree the prices for polished rice are also fixed in this way:

Prices per quintal of polished rice

Chato, Chilenito and other short grains with a maximum of 25% broken kernels	155.00
Canilla, with a maximum of 25% broken kernels	170.00
Fortuna, with a maximum of 20% broken kernels	180.00
Nira, Rexoro, Blue Bonnet, SML and other long grains, with a maximum of 20% broken kernels	185.00

The listed prices for processing plants and/or mills have practically been applied for the summer harvest that started in September.

For the winter, rice crop of the next year, the prices paid to the producers by processing plants should be fixed in this way:

Prices of paddy rice in terms of quintals of polished rice

Short grain	110.00
Canilla	115.00
Fortuna	120.00
Long grain	135.00

These prices can be transformed to their equivalent for 100 lbs. of paddy rice. For this purpose the National Rice Commission should put out tables of minimum basic prices or supported prices for the producers delivering the product to the processing plant. If this is going to be done it is necessary for the National Rice Commission to buy indispensable equipment for a total value of S/. 100,000.00. This money, according to the Executive Director of the National Rice Commission can be obtained from the budget surplus that the treasure department owes to this organization.

The proposed prices will also be related to the international prices of 1969, which fluctuated between $120 per ton/CIF for short grain rice and $180 per ton/CIF for long grain rice. Those values converted to our currency at an exchange of $1 = S/. 17.82, and further converted to quintals will amount to S/. 97.20 and S/. 153.30 respectively.

To further clarify this matter, the mean prices of rice marketed in the cereal stock exchange of Buenos Aires during the months of July and August 1969 are presented.

Mean prices of rice marketed in the Cereal Stock Exchange of Buenos Aires

July - August 1969

	Pesos/Ton	Dollars/Ton 1/	Sucres/Ton 2/	Sucres/qq
Japanese rice	17,500	87.50	1,559.25	70.90
Carolina normal rice	21,750	108.75	1,937.93	88.10
Carolina doble rice	36,000	180.00	3,207.60	145.80

1/ Type of Exchange 1 US $ = 200 pesos*

2/ 1 US $ = 17.82 sucres

* This item has been corrected.

b) Outlet of the existing rice in the Piladora Modelo. It is known that the operation of the Piladora Modelo by the Banco Nacional de Fomento produced substantial losses. In the last report of the bank for the year 1968 there was a loss of S/. 5,121,699.87 for the operation of the Piladora from May 1, 1968, to April 30, 1969. The actual situation of the Piladora Modelo, buying rice from the winter harvest at the prices fixed in the Decree 584-A is publicly know. The Piladora has in storage a large quantity of rice which has not been marketed. Therefore, the Piladora has not even been able to use its facilities in order to pay the expenses of operations. Under this circumstance it seems that a governmental measure through an Executive Decree would help to progressively sell the existing rice in the Piladora Modelo and in doing so the facilities will be available to store the 1970 harvest. The existing rice would be sold to all public offices, Army, Navy, Air Force, Police,Hospitals, etc.

c) Control of "rice mills". A legal procedure must be studied by which the so-called "rice mills" are going to be controlled again by the Superintendency of Processing Plants. If this is not done any measure taken by the government to protect the rice producers, fixing prices etc. will not do any good because the rice mills can control almost all the production using legal loopholes which cannot be stopped by the existing system established by the Superintendency of Processing Planrs.

The judicial departments of the Ministeries of Agriculture and Livestock and, Industries and Commerce should study immediately the possibilities of applying the suggestions described in b) and c) of the present report.

To the Minister

Sincerely

Ing. Cristobal Vela
Assistant in Charge of Programing

"El Ecuador ha sido,
es y sera pais Amazonico"

REPUBLICA DEL ECUADOR
MINISTERI O DE INDUSTRIAS Y COMERCIO

No. 866

OTTO AROSEMENA GOMEZ

PRESIDENTE CONSTITUCIONAL DE LA REPUBLICA

C O N S I D E R A N D O:

QUE con fecha 20 de Febrero de I968 se expidio el Decreto Ejecutivo No. 284, publicando en el Registro Oficial No. 320 de 2I de Febrero de I968, mediante el cual se establece los precios de venta de cada quintal de arroz pilado;

QUE dicho Decreto no surtio los efectos deseados debido a la sequia presentada en algunas zonas del Literal, ocasiando la escasez de la gramínea y dando lugar a la especulación por parte de algunas Piladoras, Molinos y comerciantes, impidiendo la normal comercialización del producto;

QUE es deber del Estado precautelar y defender al pueblo consumidor de la elevación inmoderada de los precios de los artículos de primera necesidad;

D E C R E T A:

ARTICULO PRIMERO.-Dispónese que la Superintendencia de Piladoras preceda a la incautación del veinte porciento (20%) de las existencias de arroz en piladoras, para que sea vendido por estas a la Dirección General de Subsistencias, mediante los respectivos contratos y las precios fijados en el Acuerdo Interministerial No.4020 de 23 de febrero de I968.

ARTICULO SEGUNDO.- Para el cumplimento de lo dispuesto en el Artículo anterior, las autoridades respectivas prestarán a la Superintendencia de Piladoras la colaboracion requerida.

ARTICULO TERCERO.- Derógase el Decreto Ejecutivo No. 284, sin perjuicio de que se le dé pleno cumplimiento a lo ordenado en los Artículos anteriores.

ARTICULO CUARTO.- De la ejecución del presente Decreto, que regirá desde su expedicion, encárguense los señores Ministros de Industrias y Comercio y de Agricultura y Canadería.

DADO, en el Palacio Nacional, en Quito, a I7 de Mayo del I968

Dr. Salo Pico Mantilla,
Ministro de Industrias y Comercio

Jaime Mantilla Mata
Ministro de Agricultura y Ganadería

DECRETO DE LA DESINCAUTACION DEL ARROZ

#584-A
JOSE MARIA VELASCO IBARRA
PRESIDENTE CONSTITUCIONAL DE LA REPUBLICA

CONSIDERANDO:

Que por Decreto Ejecutivo #455 del I7 de Marzo de I.969, se autorizó al Ministerio de Industrias y Comercio para que proceda a incautar el cien por ciento (I00 por I00) de las disponibilidades del arroz en piladoras, molinos y bodegas de comerciantes, hasta cuando las necesidades de producción y consumo así lo exigan;

Que se ha iniciado la cosecha da la graminea correspondiente al año I.969 y se han superado las circunstancias que motivaron la expedición del citado Decreto; y

Que es atribución de dicha Secretaria de Estado orientar la comercialización del arroz en toda la Republica, y, visto el informe emitido por la Comisión Nacional del Arroz, Decreta:

Art. 1.- Derógase el Decreto Ejecutivo #455 del I7 de Marzo de I.969;

Art. 2.- Fíjanse los siguientes precios a nivel de piladoras y/o molinos, para la cosecha de invierno de I.969:

a) En cáscara, en términos de quintal de arroz pilado:

Chato, Chilenito, Canario y otros de grano corto.....	a S/	I40.-qq.
Canilla.....	" "	I50.-qq.
Fortuna.....	" "	I55.- "
Nira, Rexoro, Blue Sonnet, SML, y otros de grano largo.....	" "	I60.- "

b) Para el arroz pilado regirán los siguientes precios:

Chato, Chilenito, Canario y otros de grano corto, con el máximo del 25% de granos quebrados.....	a S/	I55.-qq.
Canilla con el máximo de 25% granos quebrados.....	" "	I70.oo qq.
Fortuna con el máximo de 20% de granos quebrados.....	" "	I80.oo qq.

Nira, Rexoro, Blue Bonnet, SML
y otros de granos largo con el
máximo de 20% de granos quebrados..... a S/ I85.oo qq.

Art. 3.- La Piladoras y Molinos de arroz procederán a recibir la gramínea en cáscara de conformidad con la tabla de calificaciones de humedad e imperezas que expedirá mediante Acuerdo el Ministro de Industrias y Comercio.

Art. 4.- De la ejecución del presente Decreto que entrará en sigencia a partir de la fecha de su expedición, encárguense los señores Ministros de Industrias y Comercio y de Agricultura y Ganadería.

DADO, en el Palacio Nacional, en Quito, a I4 de abril de I.969

f.) José Maria Velasco Ibarra
PRESIDENTE CONSTITUCIONAL DE LA REPUBLICA

f.) Lodo, Galo Martínez Merchan
MINISTRO DE INDUSTRIAS Y COMERCIO

f.) Dr. Angel Duarte Valverde
MINISTRO DE AGRICULTURA Y GANADERIA

Circular No. 672336
Quito, a 7 de Abril de I967

Señor
SUPERINTENDENTE DE PILADORAS
Guayaquil.

No. 2682
LOS MINISTROS DE INDUSTRIAS Y COMERCIO

Y DE AGRICULTURA Y GANADERIA

C o n s i d e r a n d o:

QUE la Comisión Nacional del Arroz ha solicitado la fijación de los precios del arroz en cáscara, en conformidad con lo establecido en el Artículo 6, literal I) del Decreto No. I34I del I9 de Octubre de I966;

QUE la citada Comisión ha emitido su informe en el arutido de que para el año de I967 sigan vigentes los mismos precios determinados en I966; y,

EN uso de las atribuciones concedidas por la ley,

A c u e r d a n :

Fijar los siguientes precios mínimos que se pagarán a los productores de arroz, durante el año I967:

Chato..... S/ 80.oo el quintal
Chilenito, Piedra,y Magnolia ..... S/ 95,oo el quintal
Canilla..... S/I00,oo el quintal
Fortuna..... S/I00,oo el quintal
Rexoro y Nira..... S/II0,oo el quintal
Otros de grano largo..... S/II0,oo el quintal

Los precios indicados se refieren a arroz en cáscara.

C o m u n í q u e s e:
DADO en Quito, a 7 de abril de I967

f.) Dr. Galo Pico Mantilla, MINISTRO DE INDUSTRIAS Y COMERCIO. f.) Hernán Orellana J., MINISTRO INTERINO DE AGRICULTURA Y GANADERIA.

Atentamento,
DIOS, PATRIA Y LIBERTAD

Lodo. Gerardo Canelos Silva,
DIRECTOR DEL DEPARTAMENTO ADMINISTRATIVO

Oficio No. 680462-SP

SUPERINTENDENCIA DE PILADORES

N O T I F I C A C I O N

DR. JULIAN VELA COBOS, Superintendente de Piladores, en uso de la facultad que le cinfiere la disposición contenida en la letra F del Art. 30. de la ley Constitutiva de la Superintendencia de Piladores, teniendo en cuenta el actual estado de emergencia por el que atraviesa la producción arrocera en razón de la sequía sufrida por el acro Equatoriano, RESUELVE establecer los siguientes precios para la compra de arroz en cáscara, precios que regirán a partir de la presente fecha.

- Variedades: CHATO, PIEDRA, CHILENITO, MAGNOLIA, FORTUNA Y CANILLA y otras variedades que no sean grano largo.....S/ I50,oo qq.

-Variedades: REXORO, BLUE BONNET, NIRA, NILO, TEXAS PATNA, S.M.L. 8I, S.M.L. 140, TORO y otras variedades de grano largo.....S/ I60,oo qq.

Guayaquil, Mayo 28 de I.968

Dr. Julián Vela Cobos
SUPERINTENDENTE

PUBLIQUESE, en el diario EL UNIVERSO
EL TELEGRAFO
LA RAZON
LA PRENSA, durante los días Mayo 28/68 a 5 col.x 20 ctms, en página interior. La planilla por cuadruplicados se servirán enviarla a la Tesorería para su cancelación, Guayaquil, Mayo 28 de I.968.

SUPERINTENDENCIA DE PILADORAS

Dr. Julián Vela Cobos
SUPERINTENDENTE

PRECIOS DE ARROZ EN CASCARA EN LOS AÑOS I.963 AL I.966

QUITO ABRIL 4 DE I.963 AÑO I.963

Chato y Chilenito	S/ 60.00
Magnolia y Piedra	75.00
Canilla	80.00
Fortuna	85.00
Nira, Rexoro, y otros de grano largo	90.00

QUITO MAYO 20 DE I.963 AÑO I.963

Chato	S/ 60.00
Magnolia, Piedra y Chilenito	70.00
Canilla	80.00
Fortuna	85.00
Nira, Rexoro, y otros de grano largo	90.00

AÑO I.964

Chato	S/ 60.00
Chilenito, Piedra y Magnolia	75.00
Canilla	80.00
Fortuna	85.00
Rexoro y Nira	90.00
S.M.L. 8I, S.M.L. I40, Blue Bonnet, Texas Patna, y otros granos largos	95.00

QUAYAQUIL DICIEMBRE IO I.964 · PARA EL AÑO I.965

Chato	S/ 70.00
Chilenito, Piedra y Magnolia	85.00
Canilla	90.00
Fortuna	95.00
Rexoro y Nira	I00.00
S.M.L. 8I, S.M.L. I40, Blue Bonnet, Texas Patna, y otros granos largos	I00.00

AÑO I.965

Chato	S/ 80.00
Chilenito, Piedra y Magnolia	95.00
Canilla y Fortuna	I00.00
Rexoro, Nira, S.M.L. 8I, S.M.L. I40, Blue Bonnet, Texas Patna y otros granos largos	II0.00

AÑO I.966

Chato	S/ 80.00
Chilenito, Piedra y Magnolia	95.00
Canilla y Fortuna	I00.00
Rexoro, Nira, S.M.L. 8I, S.M.L. I40, Blue Bonnet, Texas Patna y otros granos largos	II0.00

Del señor Superintendente muy atentamente

MINISTERIO DE AGRICULTURA
Y GANADERIA
Quito Ecuador

I N F O R M E

Quito, diciembre 26 de 1969

Señor Presidente de la Comisión Nacional de
Mercadeo Agropecuario.

De conformidad con la resolución de la Comisión Nacional de Mercadeo Agropecuario, tomada en sesión extraordinaria del día 16 de Diciembre del presente año, me permito poner a su consideración y por su digno intermedio a la de todos los miembros de la mencionada Comisión, el siguient Informe que contiene las medidas inmediatas que podrían adoptarse frente a los problemas por los que atraviesa la comercialización del arroz.

I.- Antecedentes.-

La Comisión Nacional de Mercadeo Agropecuario, creada por Decreto Ejecutivo No. 2014 de 11 de noviembre de 1969, en las tres sesiones que ha efectuado hasta esta fecha, ha tratado sobre la situación actual de mercadeo del arroz, escuchando inclusive al Presidente y al Director Ejecutivo de la Comisión Nacional del Arroz; este último se sirvió asistir, el día martes 23 de los corrientes, a la reunión que sostuvo el Grupo de Trabajo disignado por Ud. para la elaboración de este Informe.

De todos los planteamientos vertidos se concluye que los aspectos de la comercialización del arroz tienen que afrontarse con medidas gubernamentales de carácter inmediato unas y de carácter mediato otras.

Las segundas medidas no son objeto de que se las trate en el presente Informe, por cuanto ya han sido consideradas por la Comisión Nacional del Arroz en un Proyecto de Almacenamiento y Conservación que fue puesto a consideracion de la Comisión Nacional de Mercadeo Agropecuario el día 16 de diciembre del presente año, Proyecto en base al cual la Comisión Nacional del Arroz convocó a un concurso de ofertas para la construcción de silos cuya resolución final deberá adoptar el Comité de su presidencia, así como también porque a esta fecha la Misión de Mercadeo FAO/BID que está trabajando en el país, las considerará en el estudio de factibilidad que presentará al Gobierno Nacional en el transcurso del primer trimestre del próximo año.

Con estos antecedentes se detallan entonces a continuación las medidas de acción inmediatas que permitirán al Gobierno resolver, en parte, la conflictiva situación por la que atraviesan principalmente los productores de arroz, aclarando en todo caso que el presente Informe responde sólo a criterios del suscrito por cuanto la Comisión que fuera designada no ha podido reunirse.

2.- Medidas de acción inmediatas.-

Estas tienen relación directa con tres aspectos fundamentales: a.) fijación de precios mínimos razonables; b) salida urgente de las existencias de arroz que mantiene la Piladora Modelo del Banco Nacional de Fomento; y, c) control que tiene que efectuar la Superintendencia de Piladoras a los denominados "molinos de arroz".

a) Fijación de precios mínimos.- Mediante Decreto Ejecutivo 584-A, de I4 de abril de I969, se fijaron los precios del arroz en cáscara, a nivel de piladora y/o molino, para la cosecha de invierno de I969, en la siguiente forma:

Precios en cáscara, en terminos de quintal de arroz pilado

Chato, Chilenito, Canario y otros de grano corto	I40.oo
Canilla	I50.oo
Fortuna	I55.oo
Nira, Rexoro, Blue Bonnet, SML y otros de grano largo	I60.oo

En el mismo Decreto se fijan los precios que regirán para el arroz pilado, de acuerdo a la siguiente tabla:

Precios por quintal de arroz pilado

Chato, Chilenito y otros de grano corto, con el máximo del 25% de granos quebrados	I55.oo
Canilla, con el máximo del 25% de granos quebrados	I70.oo
Fortuna, con el máximo del 20% de granos quebrados	I80.oo
Nira, Rexoro, Blue Bonnet, SML y otros de grano largo con el máximo del 20% de granos quebrados	I85.00

Los indicados precios a nivel de piladora y/o molino practicamente han seguido rigiendo para la cosecha de verano que se inició en el mes de septiembre.

Para la cosecha de arroz de invierno del próximo año, los precios de compra a los productores, a nivel de piladora, deberían fijarse así:

Precios en cáscara en términos de quintal de arroz pilado

Granos cortos	II0.oo
Canilla	II5.oo
Fortuna	I20.oo
Granos largos	I35.oo

Estos precios pueden transformarse a su equivalente por cada I00 libras de arroz en cáscara, para lo cual la Comisión Nacional del Arroz debería elaborar una tabla básica de precios mínimos o de sustentación para los productores a nivel de la piladora; para que esto pueda efectuarse es necesario a su vez que la Comisión Nacional de Arroz se provea de los equipos indispensables que tienen un valor de cien mil sucres (S/. I00.000.00); tal valor, según indicación del Director Ejecutivo de la Comisión Nacional

del Arroz, se puede obtener de los remenantes presupuestarios que el Fisco adeuda a esa Entidad por el presente año.

Los precios que se propone estarían de alguna manera ajustados a los precios internacionales que han regido durante el año I969, los mismos que en términos generales fluctuaron entre I20 dólares Ton./CIF par arroces de granos cortos y I80o dólares Ton./CIF para arroces de granos largos; dichos valores calculados a un tipo de cambio de S/. I7.82 por dólar, significarían valores por quintal de S/. 97.20 y S/. I53.90, respectivamente.

Como un dato aclaratorio, se hace constar a continuación los precios medios del arroz que se comercializó a través de la Bolsa de Cerales de Buenos Aires en los meses de julio y agosto de I969.

Precios medios del arroz comercializado en la Bolsa de Cerales de Buenos Aires
Julio-Agosto I969

	Pesos/ton. I/	Dólares/ton.	Sucres/ton. 2/	Sucres/qq.
Arroz japonés	I7.500	87.50	I.559.25	70.90
Arroz Carolina Normal	2I.750	I08.75	I.937.93	88.I0
Arroz Carolina Doble	38.000	I80.00	3.207.60	I45.80

I/ Tipo de cambio I US $= 0.02 centavos de dólar
2/ Tipo de cambio I US $ =I7.82 sucres

b) Salida de las existencias de arroz de la Piladora Modelo.- Como se conoce el manejo de la Piladora Modelo por parte del Banco Nacional de Fomento, le ha dejado a esta Entidad considerables pérdidas; en el último Informe del Banco correspondiente al año I968 se anota una pérdida de S/.5'I2I.699.87 durante el ejercicio económico de la Piladora comprendido entre el 10 de mayo de I968 y el 30 de abril de I969. La situación actual de la Piladora Modelo, con las adquisiciones de arroz de la cosecha de invierno del presente año a los precios fijados en el Decreto 584-A, son de dominio público; la Piladora tiene almacenada una gran cantidad de arroz que no ha podido comercializar y que por esta circunstancia no ha podido tampoco dar a sus instalaciones el giro adecuado que el permita por lo menos financiar sus operaciones. En estas circunstancias parece que una medida gubernamental probablemente a través de un Decreto Ejecutivo- obligando al consumo del arroz a todas las dependencias públicas y de asistencia social (Ejército, Marina, Aviación, Policía Civil, almacenes de Servicio Social, hospitales, Subsistencias, etc.), posibilitaría la venta progresiva de las existencias de la Piladora Modelo y la disponibilidad de capacidades de almacenamiento para la cosecha de I970.

c) Control de los "molinos de arroz".- Tiene que estudiarse el procedimientos legal por medio del cual lossllamados molinos de arroz deben entrar nuevamente al régimen de control por parte de la Superintendencia de Piladoras, ya que si esto no se logra, cualquier otra medida Gubernamental de defensa a los productores de arroz, como el de la

fijación de los precios, no tiene sino una débil efectividad, puesto que los molinos de arroz, en conjunto, pueden llegar a controlar casi la totalidad de la producción arrocera valiéndose de artificios comerciales que escapan al sistema establecido por la Superintendencia de Piladoras.

Los Departamentos Jurídicos de los Ministerios de Agricultura y Ganaderia e Industria y Comercio, tendrían que estudiar de inmediato la factibilidad de poner en ejecución la sugerencias planteadas en los literales b) y c) del presente Informe.

Del señor Ministro, muy atentamente,

Ing. Cristobal Vela,
ASESOR - PROGRAMADOR

APPENDIX D

Population

APPENDIX D

Distribution of Population in the Guayas Basin, 1964*

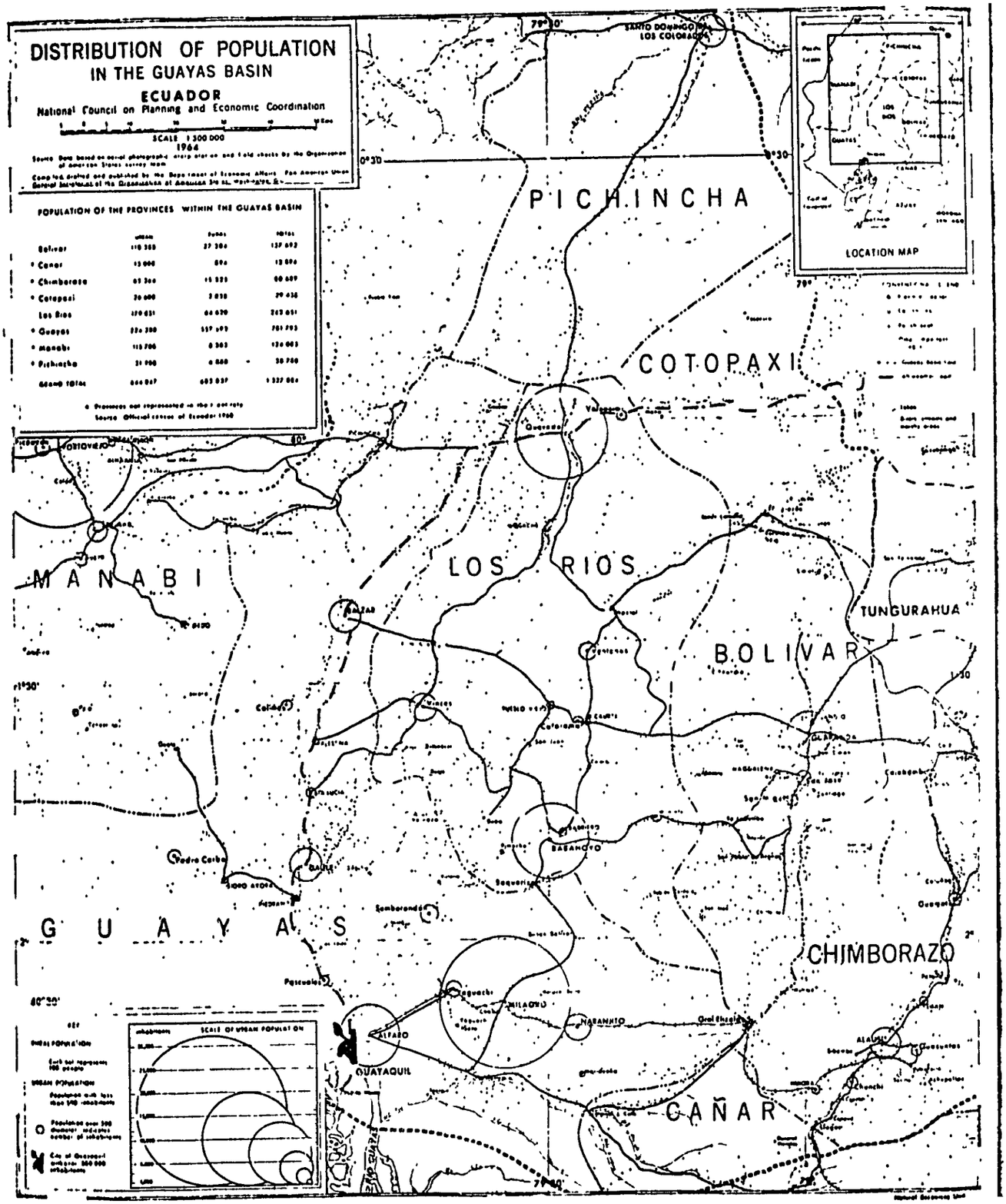
Population of the Provinces

Provinces	Urban	Rural	Total
Bolivar	110,388	27,304	137,692
Cañar	13,000	894	13,894
Chimborazo	65,364	15,325	80,689
Cotopaxi	26,600	2,838	29,438
Los Rios	179,031	64,620	243,651
Guayas	224,200	557,593	781,793
Manabi	115,700	8,383	124,083
Pichincha	31,900	6,880	38,780
Grand Total	766,183	683,837	1,450,020

City of Guayaquil has over 500,000

The Guayas Basin of Ecuador is located in the coastal region of the country, between 0°15' and 2°25' south latitude, and 78°40' and 80°30' west longitude.

* From: Survey of the Guayas Basin of Ecuador by Department of Economic Affairs, Pan American Union, Washington, D.C.


DISTRIBUTION OF POPULATION
IN THE GUAYAS BASIN
ECUADOR
National Council on Planning and Economic Coordination
SCALE 1:500 000
1964
POPULATION OF THE PROVINCES WITHIN THE GUAYAS BASIN
PICHINCHA
COTOPAXI
LOS RIOS
MANABI
BOLIVAR
TUNGURAHUA
GUAYAS
CHIMBORAZO
CAÑAR
GUAYAQUIL
LOCATION MAP
SCALE OF URBAN POPULATION

APPENDIX E

Climate

APPENDIX E

CLIMATIC CONDITIONS IN THE GUAYAS BASIN

"Most of the following data on the climate in Zone I, Babahoyo, is included in the pre-feasibility report on that zone .....

Generally in this area, heavy rainfall occurs during four to five months of each year and potential evapotranspiration exceeds rainfall for about six to eight months. Irrigation is required for most crops and with irrigation, crops can be grown throughout the year.

The average monthly rainfalls at Babahoyo, on the eastern edge of the area, and at Milagro, 30 Kilometers (18.6 miles) south of the area, are tabulated below. The Babahoyo figures are for 36 years of records and the Milagro figures from 47 years of records.

RAINFALL

Month	Babahoyo		Milagro	
	Millimeters	Inches	Millimeters	Inches
January	372	14.65	356	14.01
February	469	18.46	410	16.14
March	443	17.44	384	15.12
April	338	13.31	252	9.92
May	97	3.82	73	2.87
June	22	.87	10	.40
July	7	.28	4	.16
August	1	.04	1	.04
September	2	.08	2	.08
October	7	.28	4	.16
November	6	.24	6	.24
December	67	2.64	50	1.97
Annual Total	1831	72.11	1552	61.11

(Map showing average rainfall over the Guayas Basin 1964-67 is in the prefeasibility study)

The average of the monthly evaporation figures for Isabel Maria (Babahoyo) over the five year period 1964 to 1968 and for Milagro over the seven year period 1962 to 1968 are:

Evaporation

Month	Babahoyo		Milagro	
	Millimeters	Inches	Millimeters	Inches
January	72	2.83	56	2.20
February	67	2.64	45	1.77
March	76	2.99	54	2.13
April	79	3.11	68	2.68
May	81	3.19	65	2.56
June	68	2.68	55	2.17
July	73	2.87	57	2.24
August	83	3.27	65	2.56
September	96	3.78	73	2.87
October	100	3.94	75	2.95
November	107	4.21	73	2.87
December	126	4.96	90	3.54
	1,028	40.47	776	30.54

Mean daily and monthly air temperatures in the Babahoyo area and in the entire Guayas Basin are almost the same throughout the year. At Isabel Maria, near Babahoyo, the coolest month is July, with a mean monthly temperature of 23° C. (73.4° F.) and the warmest month is April, with a mean monthly temperature of 27° C. (80.6° F.). The average annual air temperature is 25° C. (77° F.). Daily air temperature variations are greater than average monthly or annual variations with the difference between the daily maxima and minima being in the order of seven to ten degrees. The warmest and coolest temperatures recorded in the Guayas Basin were 35° C. (95° F.) at Guayaquil and 15° C. (59° F.) at Pichilingue near Quevedo.

The annual average relative humidity near Babahoyo is 82 percent and the variation throughout the year is from 77 percent in December to 85 percent in February and July. Daily variations are larger than monthly variations.

The average annual cloud cover in the lowlands of the Guayas Basin is seven-eights. At Isabel Maria, near Babahoyo, there are about 12 hours of daylight each day of the year and, in general, two to three hours per day

are with sunshine. The yearly average sunshine is about 20 percent of the total daylight hours and varies from about 13 percent in June and July to 33 percent in April."

The above is from, "Babahoyo Irrigation Feasibility Report," June 1969, by T. Ingledow and Associates, Limited.

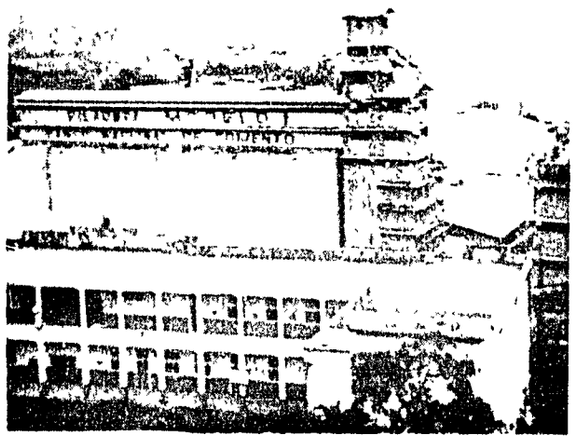
APPENDIX F

Photographs of Rice Production

And Marketing Facilities in Ecaudor

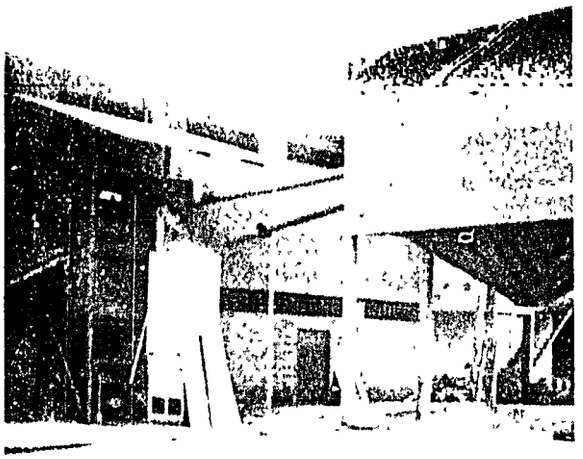
Rice Seeding Near Guayaquil

Rice Mill Between Daule and Balzar

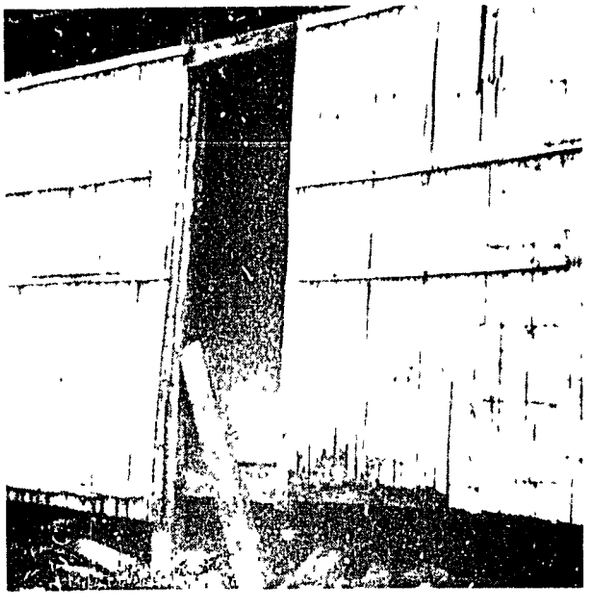


Government Mill at Guayaquil

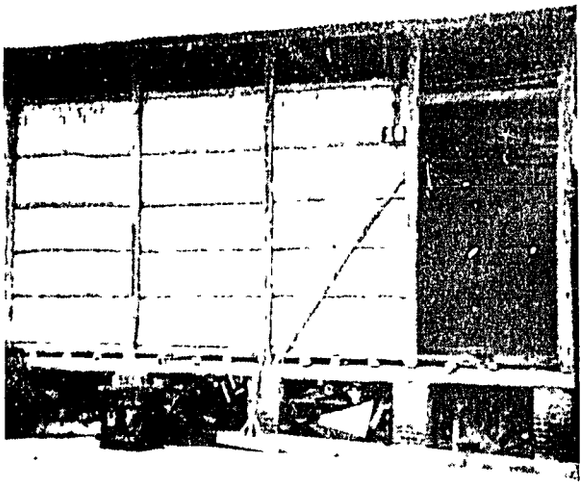
Piladora La Fuerza, Milagro



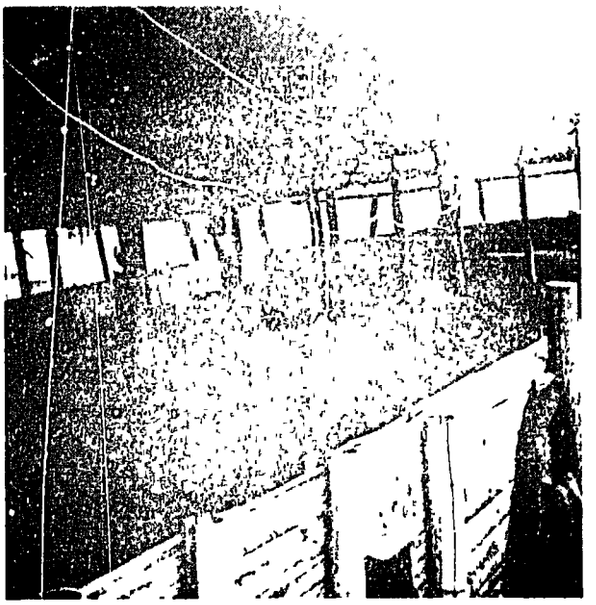
Piladora La Fuerza, Milagro



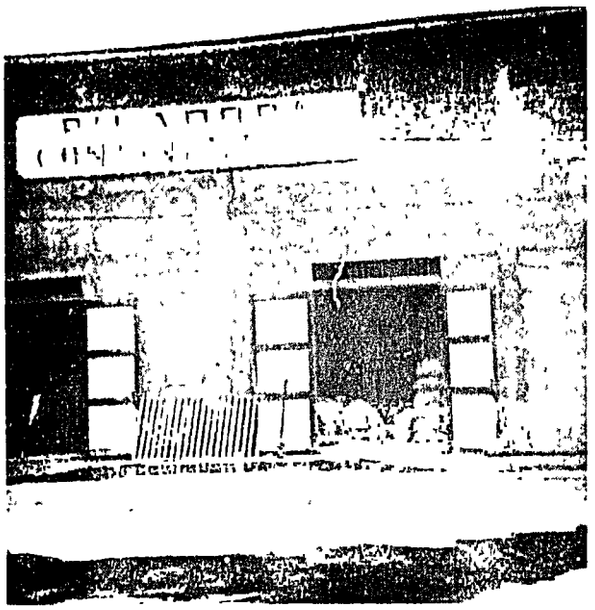
Rice Storage
Piladora La Fuerza, Milagro



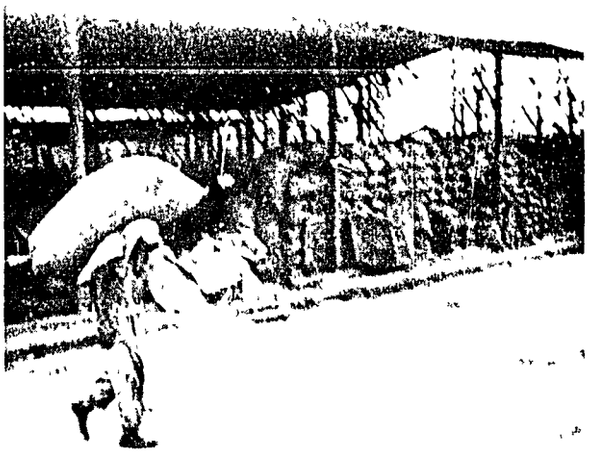
Rice Storage
Piladora La Fuerza, Milagro



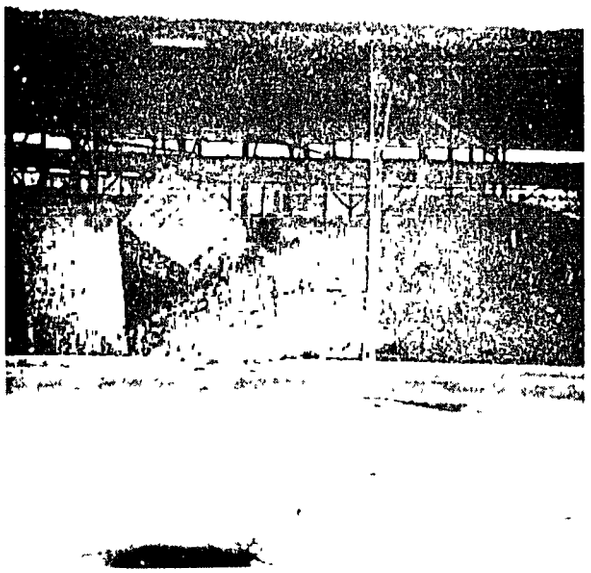
Rice Storage
Piladora La Fuerza, Milagro



Piladora Continertal, Balzar



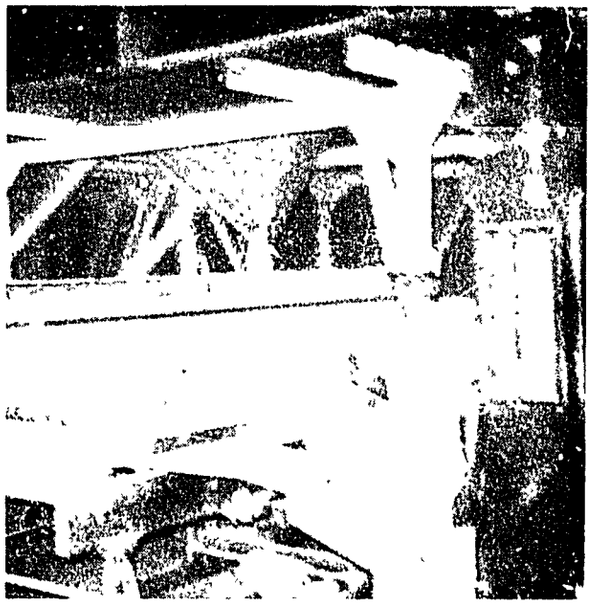
Rice Storage
Piladora Continental, Balzar



Rice Storage
Piladora Continental, Balzar

Rice Storage
Piladora Continental, Balzar

Blower for Aeration
Piladora Continental, Balzar



Milling Equipment
Piladora Continental, Balzar

Milling Equipment
Piladora Continental, Balzar

Rice Hulls
Piladora Continental, Balzar

Rice for Sale at Milagro

A City Street in Milagro

Produce Market at Babahoyo

Bananas Ready for Loading on
River Boats at Babahoyo