

PRELIMINARY DRAFT



MICROFILMADO

BRAZIL'S TRAVEL REPORT

December 3-23, 1972

By

Rafael Orlando Diaz

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[Faint stamp]
CENTRO DE INVESTIGACIONES

CENTRO INTERNACIONAL DE AGRICULTURA TROPICAL

Programa de Economía Agrícola

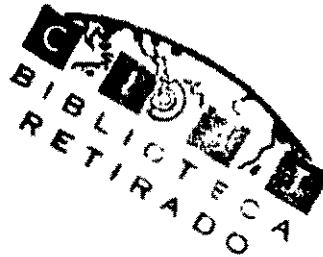
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1.1 PERSONNEL INTERVIEWED

1.1.1 RIO DE JANEIRO

1.1.1.1 Technicians

Dr. Eduardo Venezian
Ford Foundation
Praia do Flamengo, 100 - 12° And.
Rio de Janeiro, Brazil
Tel: 265-8252



He mentioned the study prepared by the University of Georgia in August, 1971 on Feasibility of manioc production in Northeast Brazil.

Dr. Walter Mors
Centro de Tecnologia Agrícola e Alimentos
Ministerio de Agricultura
Rua Jardin Botânico, 1024
20.000 Rio de Janeiro, ZC-20, Brazil
Tel: 247-3030

He is Director of Research Division in Agricultural Technology. Provided information on strengthening plans of cassava flour (farinha de mandioca) and employed flour in bread preparation. Provided a selected literature on cassava in 1972.

Sr. Jose Nogueira Coelho
Director Industrias Granfino S/A.
Rua Topazio, 259
Nova Iguacu, Brazil
Tel: 2067

Processing industry of corn soybean oils. They buy cassava meal directly from producers, and process it in the factory to produce torrada flour (thin purest grain).

Sr. Paulo Monteiro de Araujo
Av. Rio Branco, 65 s. 909
Carteira de Comercio Exterior
Divisão Estadística. CACEX
Rio de Janeiro
Tel: 223-8770

Chief of statistical section relative to exportation from Brazil in the agricultural sector.

Dr. George Patrick
Ford Foundation (Project Specialist)
IPEA
Rua Melvin Jones 5. 29º And.
Edif. Banco do Estado do Guanabara
Rio de Janeiro, Brazil
Tels: 242-8135 - 252-8912

Provided information on government program in Northeast Brazil.

1.1.1.2. Library

Sra. Maria Beatriz Pontes de Carvalho
Instituto Brasileiro de Bibliotecologia e
Documentação. IBBD
Av. General Justo, 171 - 4º Andar
Rio de Janeiro
Tel: 242-1467 (Centro Documentação 4º Andar)
Tel: 242-2915 (Biblioteca 1º Andar)

She is the person in charge of sending reprints and collecting information on experimental centers.

Sra. Nice Vilela
Fundação IBGE
Instituto Brasileiro de Estatística
Biblioteca
Av. Franklin Roosevelt 146 (sobre loja)
Rio de Janeiro

Library Director. Collected all tabulated published information from CACEX. Carteira de Comercio Exterior.

1.1.2 SÃO PAULO

1.1.2.1 Administration

Sr. Paschoal D'andréa
Maquinao D'andréa
Av. Senador Queiros, 279 - 11º And.-Conj. 115
São Paulo. Capt. Brazil
Tels: 227-3517 - 227-5313

Owner of D'andréa machines. Provided catalogues on the machinery employed to produce flour, chips and starch.

They have another office in Rio de Janeiro. Rua dos Andrados 29, 6º Andar. Sala 604. Tel: 221-0138.

He informed that the factory where this machine comes from is located in Limeira, 50 kms. from Campinas. All research for the elaboration of these machines is provided by Instituto Agronômico de Campinas. Dr. Edgard Normanha has all the information.

Dr. Edgar Normanha
Caixa Postal No. 28
Campinas. Estado São Paulo

Carlos de Lima Pessoa.
Refinações de Milhos Brasil
Praça da República 468. 1° Andar
C. P. 8151
São Paulo. Brasil
Tels: 36-9181 - 33-4141

Works in the industry products division. Prepared a study on the North and Northeast of Brazil on some aspects on production, marketing, consumption of cassava and cassava flour, in order to estimate the prospective demand in these products for 1980. "A mandioca no Norte e Nordeste do Brasil". January 1972. Animal feed.

Provided some tables of the study but did not facilitate the results as they are confidential work for the enterprise. Refinações de Milhos, Brazil, S.P.

Provided the annex "Estudo de mercado do productos agropecuarios do Nordeste", prepared by the "Departamento da Agricultura e Abastecimento, Ministerio do interior, SUDENE, Recife 1971, that contains cassava. Informed that the "Departamento da Agricultura" of the "Banco do Nordeste" in Fortaleza contracted a German expert to complete a study on cassava crop and industry of the northeast part. This study must be already completed.

Informed that Mr. Celso Peixota is a distributor in Fortaleza of all products of "Refinacoes de Milho Brasil, S. P."

General Bellarmino Jaime Mendoca
Delegado SUNAB
Av. 9 Julho, 695 - 2° Andar
São Paulo, Capt. Brasil
Tels: 37-2657 - 35-9215 - 36-9518

He is the representative in Sao Paulo, of the National Superintendence of supplies (provisions). SUNAB.

Provided two volums on "Essentials projects" that include cassava published by National Superintendence of Supplies (provisions), SUNAB, Departamento de Abastecimento, DEAB, of the "Ministerio da Agricultura", M. A.

Ing. Agr. Domingos Desgualdo Netto
Superintendencia Nacional do Abastecimento. SUNAB
Delegacia de Sao Paulo
Director da Divisao de Estudos e Pesquisas
Ave. 9 de Julho 695. 1° Andar
São Paulo. Capt. Brasil

Provided prices at the retailer level on three types of cassava flour.

1.1.2.2 Library

Sra. Maria Luíza de Queiroz
Fundação IBGE. Biblioteca
Rua Araujo, 124
São Paulo. Capt. Brasil

Chief librarian. Provided literature on statistics of production and prices of cassava and cassava flour.

The addresses of representatives in Sao Paulo of the main states in Brazil were taken.

1.1.3 CAMPINAS

1.1.3.1 Administration

Ing. Agr. Hilario S. Miranda Filho
Instituto Agronômico. S.R.T.
Sector Batatinha
Campinas. Brasil.

Works in the potatoes section. Informed that Dr. Edgard Normanha was in Paraguay.

There is another officer working in the tubers and roots section but was not there at the moment.

Ing. Agr. Araken Soares Pereira
Instituto Agronômico. S.R.T.
Sector Mandioca
Campinas. Brasil.

1.1.4 SALVADOR

1.1.4.1 Administration

Ing. Agr. Luis Gonzaga Mendes
Ministerio da Agricultura
Departamento Nac. de Pesquisa Agropecuaria, DNPEA/MA
Instituto de Pesquisas Agropecuarias do L'este
Cruz das Almas. Bahia. Brasil.

He is an Agricultural Engineer and M.S. in Agricultural Economics of the University of Viçosa, Brasil. He is working in the experimental statistics section and economic analysis of IPEAL.

Provided a study on "Economic Aspects of Cassava in Bahia", Research Serial No. 2, 1972.

1.1.5 BRASILLIA

1.1.5.1 Administration

Dr. Carlos Iván Vieira
Director Departamento Nac. de Servicios de Comunicação
Ministerio da Agricultura. Bloco 8. 6° Andar
Brasilia
Tel: 24-4879

Facilitated publications providing information on agricultural markets and prices of cassava flour.

Ing. Agr. Adilson Reinaldo Kososki
Sector de Classificação
Ministerio da Agricultura. Bloco 8. 6° Andar
Brasilia.

He stated that starting January 1973 he will begin a study on "patronization" of cassava flour to all Brazil.

He mentioned that there is a 'soruf' flour prepared by the indians in the Amazone region. He mentioned that in IPEAN there is a study on utilization of cassava root and flour in the northern region.

1.1.5.2 Library

Sra. Milcy Souza Ferreira
Bibliotecaria (Jefe encargada)
Ministerio da Agricultura
CIR. Biblioteca Central
Explanada dos Ministerios
Bloco 8. Terreo, Brasilia

There is too much agricultural information but they do not have qualified personnel. A data service operate on economic and finance especially on all material published by magazines and journals in Brazil. She stated that there is an agreement between the library and FAO to organize a national center of agricultural data. CENDAS.

1.1.6 MANAUS

1.1.6.1 Administration

Ing. Agr. M.S. Adolfo Solis
Caixa Postal 172
Fortaleza, Ceará, Brasil

Cetrede, OEA, officer. Collaborated in a project on "Obtention of cassava starch for the state of Piaui".

Provided information on José Serna, officer at Universidad del Valle", Cali, who knows the results of the project on "Obtention of cassava starch for the state of Piaui".

1.2 PERSONNEL NOT INTERVIEWED

1.2.0.1 Administration

Escritorio de Representação do Estado do R.S.
Estado do R.S. (Rio Grande do Sul)
Rua Xavier de Toledo, 87 - 8°s/801
São Paulo
Tel: 34-0522

Escritorio de Representação do Governo do Estado do Amazonas
Rua Sete do Abril, 127, 1° Andar, Conj. 11.
São Paulo
Tel: 33-1881

Escritorio de Representação de Mato Grosso
Rua Sete de Abril, 230
São Paulo

Escritorio de Representação do Governo do Estado da Paraíba
Praça Toao Mendes, 62. 6° And.
São Paulo
Tel: 36-2962

Representante: Dr. Paulo Bessar
Horario: 9:30 - 11:30 - 14:30 - 16:30 hr.

Escritorio de Representação do Governo de Pernambuco
Av. Brigadeiro Luis Antonio, 290. Conj. 14
São Paulo
Tel: 32-1393

Escritorio de Representação do Governo de Rondonia
Rua Maria Paula, 62. 1° And.
São Paulo

Escritorio de Representação do Governo de Alagoas
Rua Sete de Abril, 296 - 4° And., Conj. 41
São Paulo

Superintendente: Dr. Oswaldo Jameha Lins.

Ing. Hugo de Almeida
Diretor do Departamento de Industrialização
Superintendencia do Desenvolvimento do Nordeste. SUDEN E
Recife. Pernambuco, Brasil

Dr. José de Jesús Morais
Director do Departamento Agricultura e Abastecimiento.
SUDEN E
Recife. Pernambuco, Brasil.

1.2.0.2 Library

Sra. Maria Bueno Moretti
Jefe de Biblioteca
Escola Superior de Agricultura
Luís de Queiroz
Piracicaba, Est. São Paulo, Brasil

Sra. Joana Dobereiner
Biblioteca
Universidade Rural do Rio de Janeiro
Kmt. 47. Antiga Estrada Rio
São Paulo

Instituto de Experimentação Agropecuária
IPEACS

Sra. Helena Souza e Silva
Secretaria da Agricultura
Instituto de Economia Agrícola
Rua Anchieta, 41 - 10° Andar
São Paulo, S. P.
Tel: 35-4171

Chief Librarian

1.2. PUBLICATIONS COLLECTED

1.2.1. STATISTICS

Brasil. Instituto de Economia Agrícola. Desenvolvimento da Agricultura Paulista, Sao Paulo, Secretaria da Agricultura, 1971. 362 p.

Brasil. Ministerio da Agricultura. Productos essenciais. Brasil. Superintendencia Nacional do Abastecimento. Departamento de Abastecimento, 1972. 2V.

"Custos e Beneficios da cultura e da transformacao industrial da mandioca". En: Estudo da mercado da productos agropecuarios do nordeste. Pernambuco, SUDENE, 1971. (Anexo).

"Estatisticas Agricolas". Informações Economicas 2 (1-12), 1972.

Estudos para os preços mínimos da safra 1965/66. Agricultura em S. Paulo 12 (5-6): 1-30. 1965.

Ettori, Oscar José T. e Matteu Pellegrini, Luiz. "Aspectos econômicos da produção de mandioca industrial em S. Paulo". Agricultura em S. Paulo 12 (11-12): 1-22. 1965.

Exportações de derivados de mandioca. Rio de Janeiro, Banco do Brasil, 1972.

"Farinha de Mandioca". Anuario estatístico da divisao de informação de mercado agrícola. 1971.

"Farinha de Mandioca". Boletim mensal da divisao de informação de mercado agrícola, 1 (1-6), 1972

Farinha de mandioca e productos amiláceos. Brasil, Banco do Brasil, s.t.

Feasibility of manioc production in northeast Brasil. Brasil. University of Georgia, 1971.

"Generos alimenticios e artigos do vestuario - comercio atacadista e vajerista nas capitais". Inquerito Nacional de Preços. Agosto. Setembro, 1972.

"Generos Alimenticios comercio varejista das capitais. Inquerito Nacional de Preços". 1971 a Sept. 1972.

"Generos alimenticios, preços medios no comercio atacadista e no varejista". Inquerito Nacional de Preços. 9-30, Julio-Agosto, 1972.

Gonzalo Mendes, Luis. Aspectos econômicos da mandioca na Bahia. (See Table 10).

Instituto Brasileiro de Estatística (IBGE). Sinopse estadístico do Brasil. Rio Janeiro, 1972.

Junqueira, Antonio Augusto Botello, YAMAGUSHI, Caio Takagaki e OKAMOTO, Cyro. Custos agrícolas em S. Paulo - Safras 1964/65 e 1965/66. Algodão, amendoim, arroz, café, cana de açúcar, feijão, mamona, mandioca, milho, soja, trigo". Agricultura em S. Paulo 13 (5-6): 25-44. 1966.

Lima, H. G. Barômetro da agricultura paulista, mandioca Citro Gleba, 16 (176): 13, dez. 1959.

"Produção Brasileira de tapióca". Chácaras e Quintais 105 (3):283. 1962.

Rio de Janeiro, Banco do Brasil. Relatorio, Rio Janeiro, 1971. 229. p.

1.2.2. AGRONOMIC

Abramides, E. "Queda de produção de raízes de mandioca devida a um tipo de superbrotamento no Sul do México". Ciência e Culture (Sao Paulo) 16: 143. 1964.

"Acido cianídrico na mandioca". Chácaras e Quintais 111 (4):330. 1965.

"ADUBAÇÃO Do Mandioca". Chácaras e Quintais 108 (11):573-574. 1963.

Ainda: "A preciosa mandioca". Chácaras e Quintais 110 (3):253. 1964.

"Alguns estudos sobre a mandioca". Chácaras e Quintais 106 (2): 280. 1962.

"Atraso não da vez à mandioca". Coopercotis 22 (193):18-21. 1965.

Brandao, S. Starling. "Ensaio sobre sistemas de plantio da mandioca." Revista Ceres. 11 (61):1-8. 1959.

Bromelius. "Varias sobre a mandioca e o trigo". Chácaras e Quintais. 61 (1):73-75. 1940.

Camargo, A. Pais de. "Cultura da mandioquinha". Agronômico (S. Paulo) 4 (41-42): 6-7. 1952.

Cazes, Edmur Visna. "Combate a bacteriose da mandioca". Beletim Fluminense de Agricultura, 2 (21): 10-11. 1953.

Cruz, Neuza Diniz da. "Nova especie do género Manihot Adams do Estado de Minas Gerais". Bragantia. 26 (Unico): 317-327. 1967.

"Cultura da mandioca". Chácaras e Quintais. 105 (3): 283-284. 1962.

Dias, C.A. de C. "Mandioca também se aduba". Fir. 8 (9): 14-6, maio, 1966.

Fonseca, N.G. da - "Mandioca, uma fabulosa cultura". Sit. Faz., 32 (6) : 17-18, 1966.

Kitojima E. W. "Morfologia do vivus do mosaico comun da mandioca". Ciencia e cultura (S. Paulo) 15 : 305. 1963.

- Kitajima, E. W. e Costa, A. S. "Partículas esferoidais associadas ao vírus do mosaico das nervuras da mandioca". Bragantia, 25 (18): 211-221. 1966.
- "Mandarová" Ataca a mandioca". Seleções Agrícolas 19 (216) 91. 1964.
- Normanha, Edgard S. "Cultura da mandioca". Chácaras e Quintais 62 (1): 89-90. 1940.
- Normanha, Edgard S. "Plantando mandioca". Chácaras e Quintais 109 (3): 253-254. 1964.
- Normanha, Edgard S. e Espino, A. "Um tipo superbrotamento em mandioca no Sul do México". Ciencia e Cultura 16: 143-144. 1964.
- Normanha, Edgard S. e Rocha, José Luiz. Vasconcellos da. "Adubação do mandiocal e mamoneiras em terras fracas". Chácaras e Quintais 101 (2): 162. 1960.
- Pereira, A. Lima e Zagatto, A. G. "Etiologia da "Mancha angular" na folha da mandioca (*Manihot utilissima*)". Arquivos do Instituto Biológico (S. Paulo) 34 (4): 153-160. 1967.
- Silva, D. M. "etal". "Obtenção do vírus do mosaico comum da mandioca purificado". Ciencia e Cultura (S. Paulo) 15: 304. 1963.
- Silva, Jairo Ribeiro da. "Efeito de certos adubos químicos sobre o stand da mandioca". Ciencia e Cultura (S. Paulo) 17 (2): 193-194. 1965.
- Silva, Jairo Ribeiro da. "Mandioca e calcáreo". FIR 10 (4): 17-18. 1967.
- Toledo, A. Pia de. "Anatomia e desenvolvimento ontogenético da flor da mandioca". Bragantia 22 (37): 465-477. 1963.
- Toledo, Francisco F. de. "Estudo do aproveitamento integral da planta mandioca". Anais da Escola Superior de Agricultura "Luiz de Queiroz" 19: 151-175. 1962.
- Veiga Neto. "Mandioca com ferrugem". Chácaras e Quintais 116 (1): 30-31. 1967.

1.2.3. INDUSTRY

- "Atiquira - Aguardente de mandioca". Chácaras e Quintais 85 (6): 738-740. 1952.
- Burger, J. "A industrialização da mandioca". Boletim de Agricultura (Belo Horizonte) 1 (9): 72-76. 1952.
- "Como se fabrica a tapioca". Selecoes Agrícolas 15 (176): 90. 1960.

Conjunto para Amido de Mandioca (Máquina D'Andrea). Limeira, Est. de São Paulo. s.e. s.f.

Conjuntos para produção de farinha torrada de mandioca máquina d'Andrea.
Limeira, Est. de São Paulo. s.e. s.f.

Conjuntos para produção de raspa e fécula (Farinha Panificável) de Mandioca.
(Máquina D'Andrea). Limeira, Est. de São Paulo. s.e. s.f.

Fernández, S. Mandioca: secagem de raspas. Cha. Quin., 113 (2): 105-6, Fev. 1966.

"Industrialização da mandioca". Selecoes Agrícolas 18 (201): 66-68. 1963.

Moreira, Nicolino. Novos alimentos de mandioca e sua industrialização. Lavoura 71 (11-12): 35. 1968.

Normanã, Edgard S. "Farelo de rama de mandioca". Chácaras e Quintais 105 (3): 279-283. 1962.

1.2.4. ANIMAL FEED

Athanassof, Nicolau. "Engorda de porcos e raspa de mandioca". Chácaras e Quintais, 66 (6): 717-720. 1962.

Cardoso, R. M., et. al. "Efeito da substituição gradativa do milho pela raspa da mandioca, na produção do leite." Revista Ceres 14 (82):308-330. 1968.

"Mandioca ajuda vaca a dar mais leite". Coopercotia 23 (195):43. 1966.

"Mandioca e batata-doce aumentam leite na seca". Coopercotia 19 (149):52. 1962.

"A mandioca na produção leiteira". Gleba. 15 (173):29, set. 1969.

Mendes, T.T. "Milho, mandioca e melaço, boas fontes de gorduras". Coopercotia 20 (170): 32-34. 1963.

Peixoto, Renato Rodrigues. "Farelo de milho e de mandioca em suínos". FIR 9 (6): 40-47. 1967.

Rodrigues, A. J. "Mandioca na alimentação de porcos". Chácaras e Quintais 114 (6): 673-674. 1966.

Rovero, E. A., et. al. "Melaco, mandioca e cana de açúcar integral no arraçamento de bovinos da raça nelore". R. Med. Vet., 5 (1): 36-50, jul. 1969. Fir, m. 12 (3):41, Nov. 1969.

- Soares, P. R. "Mandioca e trigo na alimentação de pintos" Avicult. Gras., 3 (11):36-7, 1966, Bras. Oeste, 11 (119):23 - 4 Nov. dez - 1966; Sit.Faz., 32 (11):40-1, 1966.
- Velloso, Licio "Substituição parcial e total do milho pelo farelo de mandioca em rações de suínos em crescimento e engorda". Boletim de Industria Animal 23 (u) 129-137. 1965/66.
- Carvalho, J. P. B. Tec. Inst. pesq.-agron. Feijão Macaçar e raspa de mandioca em substituição ao farelo de trigo nas rações de frangos de corte 39:3-16 dez-1969.
- Pereira, A. S. Aipim (Mandioca) para vaca leiteira. Chácaras e Quintais 113 (1) 13-4. Jan. 1966.
- Silva, J. R. Mandioca, Plantio e cultivo. Chácaras e Quintais 113 (5) 474. Maio 1966.
- Silva, J. R. de. Farelo de ramas e fôlhas de mandioca na alimentação animal. Chácaras e Quintais 114 (6) 663-6 dez. 1966.
- Soares R. P. Mandioca e trigo una alimentacao dos pintos Avicult. Brass 3 (11) 36-37. 1966. Sit faz 32 (11) 40-41. 1965.
- Toledo, Francisco F. de. Aproveitamento Das Fôlhas e Das Ramas de Mandioca na alimentação 61 (1): 65-69. Junio 1969.

1.3 TABLES AND FIGURES FOUND IN THE COLLECTED

PUBLICATIONS

TABLES

1.3.1 Supply

1. States and Brazil manioc roots production, area and value of these crops during 10 years (1960-1970). Cultivated area (in hectares). Production in metric tons. Value 1.000 CR\$.
2. Index of Brazil manioc root cultivated area, production, yield. 1961-1970. Base: 1961 = 100.
3. Brazilian exports of manioc products by country of destination. 1964-1971.
4. Conversion factors. Mandioca.
5. Brazilian exports of manioc products. 1960-1971. Quantity (tons).
6. Index of Brazilian exports of manioc products. Base: 1960 = 100.
7. Value of Brazilian exports of manioc products. 1960-1971. Thousands of US\$ dollars.
- 7a. Index of Brazilian exports of manioc products. Base: 1960 = 100.

1.3.2 Consumption

8. Brazil's utilization of mandioca. 1964-1968. Human food. Animal feed.
9. Utilization of mandioca. Region N. and NE.

1.3.3 Production Costs

10. Production cost per hectare and income of manioc roots obtained by IPEAL, Cruz das Almas, Bahia, 1971-1972. CR\$.
11. Production cost per hectare of manioc roots, N.E. Brazil, 1971.
12. Manioc production per hectare and projected total cost and average cost per kilogram, N.E. Brazil, 1971.
13. Manioc chip production, processing, handling and transportation cost used to computed FOB price, N.E. Brazil. 1971.

14. Labor input in manioc production in three N.E. states in man days per hectare.
15. Labor input in manioc production in northeastern Brazil by zones (man days per hectare).
16. Increases in net income from fertilizer and lime applications at different prices for manioc roots, N.E. Brazil, 1971.

1.3.4. Prices

17. Average monthly prices at wholesale market. CR\$. 1971. Capital cities. Trade between regions.
18. Average monthly prices at wholesale market. CR\$. 1972. Capital cities. Trade between regions.
19. Average minimum liquid prices (real). Base: Nov. 1970 = 100 Farinha de Mandioca.
20. Real prices return to producer. Mandioca. CR\$/50 kgr. 1966-1970. Farinha de Mandioca.
21. Average monthly prices (real). Retailer market. CR\$/kg 1966-1967. Base: Nov. 1970 = 100. Farinha de Mandioca.
22. Average monthly prices at retailer market, 1972. CR\$/kg. Farinha de Mandioca (cassava flour).
23. Index of average monthly prices at retailer market, 1972. CR\$/kg. Farinha de Mandioca (cassava flour). January = 100.
24. Average selling prices and index at wholesaler market in Sao Paulo city. CR\$/kg. 1972. Base: January = 100.
25. Coefficients of variation of real prices of manioc root, corn and beans at the Recife market wholesale level and at the farm level in Pernambuco.
26. Implicit farm prices for selected commodities in Pernambuco in nominal terms.
27. Implicit real farm prices for selected commodities (1970 CR\$).
28. Real wholesale prices of selected commodities in the Recife market (1970 - Cruzeiros)
29. Mandioca participation rate on monthly prices index received by farmers. 1972.
30. Average monthly prices at retailer market. 1972. Farinha de Mandioca. CR\$/kg. São Paulo.

31. Average monthly prices at retailer market. 1972. CR\$/kg. AIPIM (Fresh root).
32. Index of average monthly prices at retailer market, 1972. CR\$/kg. AIPIM (Fresh root).

FIGURES

Average monthly prices (real) at wholesaler market. Farinha de mandioca. CR\$/kg. 1966/1970. Base: Nov. 1970 = 100.

1. Porto Alegre, Guanabara, São Paulo.
2. Curitiba, Belo Horizonte.
3. Salvador, Fortaleza.

Real farm prices of mandioca. CR\$/50 kg. 1966/1970. Base: Nov. 1970 = 100.

4. São Paulo, Rio Grande do Sul.
5. Santa Catarina, Paraná.
6. Pernambuco, Bahia.
7. Ceara, Maranhão.

Seasonal index of prices at retailer market. Farinha de mandioca. CR\$/kg. 1964/1970.

8. Belo Horizonte. São Paulo.
9. Porto Alegre, Guanabara.
10. Curitiba, Florianopolis.
11. Recife, Salvador.
12. São Luis, Fortaleza.
13. Goinia.

14. Brazil's demand projections of mandioca for N.E. and N.

Appendix - Tables and Figures.

TABLE 1. States and Brazil Manioc Roots Production, Area and Value of These Crops during 10 years (1960 - 1970). Cultivated Area (In Hectares)

<u>States</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Rondonia	433	487	491	503	666	641	635	645	731	735
Acre	4,040	4,097	3,844	3,849	3,853	3,885	3,889	4,276	4,546	4,669
Amazonas	5,017	8,823	7,529	8,502	8,406	9,894	13,776	17,551	14,797	14,834
Roraima	-	-	483	380	455	400	441	420	420	594
Pará	47,044	54,692	72,529	74,639	73,149	60,643	64,327	7,556	82,501	76,473
Amapá	4,005	3,122	3,102	2,388	2,129	1,811	1,488	1,422	1,369	1,314
Maranhão	95,691	98,223	107,581	114,881	126,836	160,202	197,621	192,647	221,596	227,263
Piaví	42,140	49,903	56,029	57,249	61,047	62,153	63,678	67,775	68,914	67,217
Ceará	53,854	60,370	65,161	71,448	60,090	72,426	84,993	122,693	137,612	137,895
Rio Grande do N.	38,366	39,872	38,406	38,923	47,857	60,037	88,963	86,755	59,123	53,806
Paraíba	51,205	56,557	58,691	61,273	55,799	63,122	64,532	62,137	53,404	52,511
Pernambuco	128,763	145,393	152,757	150,460	143,016	119,667	139,707	141,044	141,328	140,597
Alagoas	43,498	47,298	51,231	51,062	46,713	46,017	41,503	45,209	44,626	45,527
Seropé	42,356	41,259	49,741	48,663	47,854	46,395	49,896	49,575	46,305	44,807
Bahia	174,546	157,019	173,391	174,912	180,077	186,753	198,480	225,792	228,353	225,795
Minas Gerais	102,292	105,033	107,005	112,839	116,613	119,734	119,744	121,840	120,161	120,631
Espírito Santo	25,781	30,503	40,312	38,733	37,154	38,526	42,073	42,794	44,348	52,641
Rio de Janeiro	36,428	34,102	37,834	38,023	35,943	35,412	35,481	34,807	38,245	42,398
Guanabara	320	1,340	1,300	1,325	1,365	1,388	1,360	1,310	1,290	1,240
São Paulo	70,297	84,324	107,573	116,959	124,492	108,094	98,358	107,696	110,523	97,103
Paraná	30,076	38,416	48,626	89,683	51,827	81,382	110,646	88,977	84,472	88,243
Santa Catarina	113,726	121,235	124,113	131,253	138,398	129,822	119,730	130,686	138,674	142,816
Rio Grande do Sul	194,139	211,340	221,349	233,759	235,323	264,428	270,744	274,441	283,343	287,812
Matto Grosso	28,105	30,622	29,885	28,093	27,589	27,823	26,874	27,985	28,421	31,145
Goiás	49,189	51,836	58,802	65,676	73,543	75,351	74,510	73,172	70,279	66,391
Distrito Federal	20	40	45	382	766	800	990	992	992	100
BRAZIL	1,381,331	1,476,206	1,617,810	1,715,857	1,749,960	1,779,806	1,914,439	1,998,197	2,029,373	2,024,557

TABLE 1. (Continued)
PRODUCTION IN METRIC TONS.

<u>States</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Rondonia	3,045	8,905	8,964	9,284	11,764	11,927	11,137	11,250	12,582	12,670
Acre	74,934	86,321	79,589	81,674	79,839	78,779	82,874	84,604	90,544	97,984
Amazonas	99,167	226,815	169,640	209,890	223,672	264,766	372,426	496,957	434,328	423,823
Roraima	-	-	12,075	12,950	15,725	10,000	11,025	10,500	10,500	11,880
Pará	546,441	667,802	966,243	1,062,510	964,514	634,302	749,849	880,143	949,384	832,092
Amapá	38,854	34,087	30,557	24,770	22,143	19,036	17,004	16,144	15,916	15,186
Maranhão	891,777	1,084,297	1,290,721	1,224,240	1,380,604	1,588,506	1,776,046	1,743,798	2,112,673	2,075,162
Piauí	439,498	540,455	701,637	664,220	673,754	591,069	714,890	737,568	720,227	542,047
Ceará	910,406	939,647	1,059,401	1,074,764	1,076,583	1,120,182	1,368,799	1,707,722	2,163,508	1,866,606
Rio Grande do N.	217,207	235,240	215,574	198,066	236,847	326,080	555,557	656,375	399,345	348,481
Paraíba	562,388	632,962	625,166	616,808	597,058	577,985	695,474	623,471	535,449	545,206
Pernambuco	1,193,118	1,691,955	1,623,245	1,607,388	1,445,491	1,195,981	1,529,750	1,597,743	1,756,198	1,644,323
Alagoas	463,467	490,837	523,379	484,936	456,510	466,838	474,662	505,755	502,191	379,527
Sergipe	676,067	693,036	854,663	781,243	872,459	784,803	813,026	819,595	762,802	782,963
Bahia	2,355,751	2,082,145	2,318,597	2,668,324	2,819,758	2,961,691	3,374,166	3,898,567	4,056,688	4,013,920
Minas Gerais	1,636,406	1,705,027	1,690,366	1,806,927	1,864,498	1,917,883	2,045,146	2,086,562	2,023,257	2,004,119
Espirito Santo	427,990	436,100	538,400	528,380	493,300	534,440	572,070	606,190	693,100	877,710
Rio de Janeiro	422,521	426,234	423,094	446,737	439,794	459,754	460,130	446,951	475,596	536,042
Guanabara	3,740	15,520	15,120	15,400	15,920	16,184	16,320	15,720	15,480	14,880
Sao Paulo	1,310,010	1,477,829	2,104,347	2,145,585	2,445,007	2,026,951	1,883,629	2,032,384	2,020,247	1,827,383
Paraná	447,175	651,382	845,181	2,051,355	2,107,691	1,663,779	2,004,696	1,953,300	1,851,235	2,118,782
Santa Catarina	1,837,789	1,866,014	2,017,472	2,202,675	2,226,537	2,438,129	2,553,442	2,832,020	2,936,226	3,017,231
Rio Grande do Sul	2,228,032	2,522,524	2,658,072	2,887,448	2,767,332	3,200,478	3,351,689	3,426,436	3,622,176	3,607,767
Mato Grosso	465,848	583,098	562,016	448,306	478,408	492,175	504,648	607,402	676,889	711,466
Goiás	801,447	864,790	1,004,225	1,105,354	1,263,801	1,314,883	1,311,918	1,288,220	1,219,582	1,155,230
Distrito Federal	300	400	900	6,368	13,570	13,440	17,820	17,852	17,820	1,800
BRASIL	18,058,378	19,843,422	22,248,644	24,355,602	24,992,579	24,710,041	27,268,193	29,203,229	30,073,943	24,464,275

TABLE 1. (Continued)
VALUE 1,000 CR \$

States	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Rondonia	5,725	9,008	15,129	28,206	59,003	179,885	344,022	349,650	650,820	727,000
Acre	266,275	429,343	542,019	1,084,693	1,951,000	2,934,040	3,735,150	5,333,800	7,831,900	13,059,000
Amazonas	184,033	474,263	579,948	789,077	1,474,436	3,147,261	5,180,362	8,618,913	6,958,986	8,070,000
Roraima	-	-	237,975	457,500	863,750	725,000	1,051,250	1,170,000	1,387,500	1,745,000
Pará	681,562	1,562,537	3,007,536	4,338,727	7,838,157	8,026,441	11,136,205	15,607,483	25,132,838	29,024,000
Anapa	188,326	258,225	429,450	692,530	1,122,980	1,034,800	929,750	983,900	1,063,850	1,010,000
Maranhao	923,817	1,647,818	3,166,578	5,717,854	10,509,816	20,491,361	29,834,109	38,585,450	50,086,081	67,190,000
Piavi	498,861	1,030,169	1,842,864	2,619,290	4,225,840	9,117,085	15,137,037	21,422,075	21,364,819	22,994,000
Ceara	1,132,812	3,524,984	4,744,977	8,060,006	11,030,331	15,603,402	24,000,766	48,882,106	66,219,551	66,082,000
Rio Grande do N.	566,486	1,424,018	1,686,749	2,903,376	5,378,264	12,884,548	28,085,690	25,330,610	16,637,984	18,505,000
Paraiba	1,836,519	3,635,831	5,573,874	10,922,382	18,473,582	21,386,580	28,901,670	24,862,478	28,130,257	45,232,000
Pernambuco	4,702,814	11,274,029	10,575,058	13,793,545	26,513,473	34,545,823	55,168,318	62,215,676	84,139,177	112,166,000
Alagoas	1,447,403	2,814,489	3,532,540	5,219,328	7,838,348	10,885,938	14,702,539	19,260,923	25,255,472	31,435,000
Sergipe	1,433,650	5,873,071	7,386,081	7,216,217	15,975,508	18,439,056	29,763,630	37,855,772	36,231,246	41,223,000
Bahia	4,159,846	7,428,222	10,358,794	16,657,163	27,030,203	52,919,829	75,048,706	101,628,443	126,985,550	164,359,000
Minas Gerais	2,510,942	4,991,088	7,669,586	17,477,770	23,712,782	35,509,996	54,111,724	74,782,400	82,229,859	93,001,000
Espirito Santo	738,666	1,423,424	2,545,588	3,786,115	4,776,532	8,737,853	12,661,488	15,051,666	20,310,335	28,229,000
Rio de Janeiro	982,939	1,636,146	3,461,385	5,018,839	6,603,568	8,993,682	14,297,252	23,286,453	22,872,038	29,820,000
Guanabara	20,570	124,160	257,040	754,600	1,034,800	1,780,240	1,876,800	1,902,120	2,089,800	2,232,000
Sao Paulo	2,954,622	7,460,598	12,470,773	16,170,395	24,665,057	32,140,584	48,323,084	62,794,780	66,824,521	71,258,000
Paraná	1,093,255	2,465,396	4,802,742	16,115,632	27,316,929	26,732,608	46,267,481	76,779,534	82,229,154	105,705,000
Santa Catarina	2,702,235	7,020,200	9,261,635	12,848,931	20,250,760	29,417,579	48,549,972	61,203,641	74,319,112	101,055,000
Rio Grande do S.	5,980,170	10,128,755	14,524,297	29,109,079	47,133,605	81,232,187	109,229,951	137,317,385	188,563,439	208,366,000
Matto Grosso	1,620,424	4,578,838	5,496,889	6,426,244	8,895,169	13,806,464	18,954,592	32,518,305	42,506,854	48,332,000
Goiás	1,043,151	1,638,977	3,113,047	6,417,284	13,012,147	21,756,229	28,156,991	38,120,599	55,297,494	85,612,000
Distrito Federal	2,100	4,000	18,000	159,200	542,800	604,800	891,000	892,600	891,000	99,000
BRAZIL	37,677,233	82,857,609	117,178,318	194,783,983	309,228,840	473,033,271	706,339,539	936,756,762	1136,209,637	1397,138,000

Source: IBGE. Anuario Estadístico do Brasil. 1962/1971.

TABLE NO. 2. INDEX OF BRASIL MANIOC ROOT CULTIVATE AREA, PRODUCTION, YIELD 1961 - 1970.

BASE: 1961 = 100

	<u>1961</u>	<u>Ind</u>	<u>1962</u>	<u>Ind</u>	<u>1963</u>	<u>Ind</u>	<u>1964</u>	<u>Ind</u>	<u>1965</u>	<u>Ind</u>
Cultivated Area hectareas	1,381,331	100,00	1,476,206	106.28	1,617,810	116.48	1,715,857	123.54	1,749,960	125.99
Production Metric tons.	13,058,378	100.00	19,843,422	158.74	22,248,644	177.98	24,355,602	194.84	24,992,579	199.94
Yield Tons./Ha.	9,453	100.00	13,442	142.20	13,752	145.48	14,194	150.15	14,281	151.07
	<u>1966</u>	<u>Ind</u>	<u>1967</u>	<u>Ind</u>	<u>1968</u>	<u>Ind</u>	<u>1969</u>	<u>Ind</u>	<u>1970</u>	<u>Ind</u>
Cultivated Area hectareas	1,779,806	128.14	1,914,439	137.83	1,998,197	143.87	2,029,373	146.11	2,024,557	145.76
Production Metric tons.	24,710,041	197.68	27,268,193	218.14	29,203,239	233.62	30,073,943	240.59	29,464,275	235.71
Yield Tons./Ha.	13,883	146.86	14,243	150.67	14,614	154.60	14,819	156.77	14,553	153.95

Source: IBGE. Anuario Estadístico do Brasil. 1962/1971.

Computed by: EA./CIAT/Colombia. 1973.

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TABLE 3. Brazilian Exports of Manioc Products by Country of Destination, 1964-1971.

PRODUCT	COUNTRY	TONS	US\$ 1000
		<u>1 9 6 4</u>	
Manioc Roots	Germany	3203	125
Flour	Germany	35036	1305
	U.S.A.	18	2
	Portugal	74	6
	Uruguay	<u>902</u>	<u>74</u>
		36030	1387
Chips	Germany	7605	298
	Belgium-Luxemburg	150	6
	Canada	54	1
	U.S.A.	<u>1678</u>	<u>74</u>
Starch	Germany	700	43
	Canada	496	32
	U.S.A.	15971	1043
	France	40	3
	Guatemala	20	1
	Italy	6	1
	Netherlands	179	12
	U.K.	<u>110</u>	<u>8</u>
Tapioca	Belgium-Luxemburg	15	2
	Canada	102	19
	Spain	135	23
	U.S.A.	918	153
	Portugal	5	1
	Switzerland	20	4
	Uruguay	<u>6</u>	<u>1</u>
		<u>1 9 6 5</u>	
Manioc	Germany	36670	1646
	Hungary	944	46
	Netherlands	2036	84
	Switzerland	<u>2150</u>	<u>101</u>
Flour	Germany	23088	953
	U.S.A.	40	4
	Italy	1	-
	Portugal	25	2
	Uruguay	<u>359</u>	<u>23</u>

TABLE 3. (Continued)

PRODUCT	COUNTRY	TONS	US\$ 1000
Chips	Germany	1954	86
	Canada	1941	89
	U.S.A.	15667	705
	Switzerland	<u>2000</u>	<u>94</u>
Starch	Germany	8300	332
	Canada	432	30
	Denmark	250	14
	U.S.A.	22287	1706
	Netherlands	142	11
	Peru	<u>500</u>	<u>29</u>
Tapioca	Belgium-Luxemburg	36	6
	Canada	65	12
	Spain	129	22
	U.S.A.	805	139
	Mexico	22	4
	Portugal	7	1
	Switzerland	<u>20</u>	<u>4</u>
<u>1 9 6 7</u>			
Manioc	Germany	267	15
	U.S.A.	167	10
	Netherlands	<u>287</u>	<u>16</u>
Flour	Germany	-	-
	Bolivia	-	-
	U.S.A.	22	3
	Portugal	29	3
	Uruguay	28	3
Chips	Belgium-Luxemburg	100	6
	Canada	1090	66
	U.S.A.	12531	753
	France	5	-
	Netherlands	200	12
	U.K.	<u>5</u>	<u>-</u>
Starch	Germany	200	20
	Canada	160	16
	U.S.A.	5108	513
	Netherlands	<u>90</u>	<u>9</u>

TABLE 3. (Continued)

PRODUCT	COUNTRY	TONS	US\$ 1000
Tapioca	Canada	107	22
	Spain	74	13
	U.S.A.	823	172
	Mexico	11	3
	Switzerland	<u>10</u>	<u>8</u>
<u>1 9 6 8</u>			
Flour	Germany	-	-
	U.S.A.	43	5
	Portugal	48	3
	Uruguay	<u>668</u>	<u>70</u>
Chips	Canada	2612	165
	U.S.A.	<u>5275</u>	<u>344</u>
Starch	Germany	200	19
	Canada	800	68
	U.S.A.	5818	523
	Netherlands	131	12
	Portugal	10	1
	U.K.	<u>213</u>	<u>24</u>
Sagu	Canada	23	3
	U.S.A.	18	3
	Portugal	<u>1</u>	<u>-</u>
Tapioca	Canada	155	31
	Spain	5	1
	U.S.A.	841	175
	Portugal	7	2
	Switzerland	<u>5</u>	<u>1</u>
<u>1 9 6 9</u>			
Manioc	Germany	33213	1417
	Belgium-Luxemburg	100	4
	U.S.A.	1000	46
	France	100	3
	Netherlands	3612	154
	Paraguay	<u>100</u>	<u>4</u>

TABLE 3. (Continued)

PRODUCT	COUNTRY	TONS	US\$ 1000
Flour	Germany	9530	397
	Belgium-Luxemburg	36518	1570
	U.S.A.	46	5
	Portugal	29	3
	Uruguay	<u>474</u>	<u>40</u>
Chips	Germany	549	23
	Belgium-Luxemburg	1000	50
	Canada	1919	94
	U.S.A.	6043	304
	Netherlands	<u>100</u>	<u>4</u>
Starch	Argentina	625	47
	Canada	2809	243
	U.S.A.	6792	562
	Netherlands	<u>128</u>	<u>10</u>
Sagu	Canada	60	9
	U.S.A.	32	4
	Mexico	<u>11</u>	<u>2</u>
Tapioca	Canada	134	27
	U.S.A.	685	144
	Mexico	13	2
	Switzerland	<u>5</u>	<u>1</u>
<u>1 9 7 0</u>			
Manioc	Germany	17631	918
	Belgium-Luxemburg	1525	79
	Netherlands	5516	258
Flour (farinha de raspa)	Germany	1467	87
	Canada	2675	160
	U.S.A.	<u>4547</u>	<u>272</u>
Flour (farinha de mandioca)	Belgium-Luxemburg	24922	1154
	U.S.A.	59	6
	Portugal	35	2
	Uruguay	<u>531</u>	<u>48</u>
Starch (amido e feculas)	Germany	99	8
	Belgium-Luxemburg	500	33
	Canada	835	70
	U.S.A.	11183	920
	Netherlands	<u>218</u>	<u>18</u>

TABLE 3. (Continued)

PRODUCT	COUNTRY	TONS	US\$ 1000
Tapioca	Canada	131	27
	Spain	9	1
	U.S.A.	839	182
	Portugal	5	1
	Switzerland	<u>6</u>	<u>1</u>
<u>1 9 7 1</u>			
Flour (farinha de raspa)	Belgium-Luxemburg	464	25
	Canada	485	34
	U.S.A.	<u>1218</u>	<u>91</u>
Flour (farinha de mandioca)	Belgium-Luxemburg	9189	481
	U.S.A.	1021	88
	France	1	-
	Netherlands	500	25
	Portugal	30	3
	Uruguay	<u>72</u>	<u>7</u>
Chips	Germany	5873	305
	Belgium-Luxemburg	2681	146
	Netherlands	<u>515</u>	<u>25</u>
Tapioca	U.S.A.	829	184
	Canada	137	30
	Switzerland	35	7
	Mexico	8	1
	Portugal	<u>5</u>	<u>1</u>

Source: IBGE, Anuario Comercio Exterior (various issues) collected data by: University of Georgia. Feasibility of Manioc Production in N.E. Brazil, August 1971 and EA/CIAT/COLOMBIA, 1973.

Note: The figures reported in this table are rounded to the nearest ton and thousands of dollars and hence should not be used to determine price per ton when the quantities involved are small. For example, 1.4 tons appears as 1 ton and 1.6 thousand dollars appears as 2 thousand dollars.

TABLE NO. 4. CONVERSION FACTORS. MANDIOCA.

1,000 kg.	mandioca root	250 kg.	flour
1,000 kg.	”	200 kg.	starch (fecula)
1,000 kg.	”	200 kg.	fine dust
1,000 kg.	”	200 kg.	starch (amido)
1,000 kg.	”	280 kg.	tapioca
1,000 kg.	”	280 kg.	sagu
1,000 kg.	tapioca	3,571 kg.	mandioca root
1,000 kg.	sagu	3,571 kg.	mandioca root

Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais.
1971. Vol. II.

TABLE NO. 5. BRAZILIAN EXPORTS OF MANIOC PRODUCTS. 1960 - 1971

QUANTITY (TONS).

<u>Years</u>	<u>Flour</u>	<u>Chips</u>	<u>Starch</u>	<u>Tapioca</u>	<u>Alpim</u>	<u>Total</u>
1960	28,333	2,508	35,258	846	-	66,945
1961	11,429	5,381	16,555	1,217	-	34,582
1962	527	1,692	8,507	1,197	-	11,923
1963	524	6,825	2,814	914	-	11,077
1964	36,030	9,487	17,522	1,200	3,203	64,239
1965	23,514	21,561	31,911	1,083	41,801	119,870
1966	24,270	19,583	16,088	1,084	27,052	88,077
1967	81	13,932	5,558	1,025	41	20,637
1968	754	7,887	7,172	1,013		16,826
1969	46,598	9,611	10,354	837	38,135	105,535
1970	34,236	... <u>1/</u>	12,835	990	24,672	72,733
1971	12,980	9,069	... <u>1/</u>	1,014		23,063

Source: Instituto Brasileiro de Geografia y Estadística.
Anuario Estadístico do Brasil (various issues)

1/ Lost date in the xerox's copy.

TABLE NO. 6. INDEX OF VALUE OF BRAZILIAN EXPORTS OF MANIOC PRODUCTS.

BASE: 1960 = 100

<u>Years</u>	<u>Flour</u>	<u>Chips</u>	<u>Starch</u>	<u>Tapioca</u>
1961	42.56	213.57	50.01	154.26
1962	5.57	67.14	29.19	151.93
1963	4.89	182.85	11.02	132.55
1964	117.14	271.42	42.95	158.13
1965	82.93	695.71	79.32	146.51
1966	97.88	735.00	52.07	-
1967	0.76	599.28	20.85	-
1968	6.67	364.28	24.22	-
1969	170.18	340.00	32.26	-
1970	146.02	...	39.21	164.34
1971	63.68	340.00	...	172.86

Source: Instituto Brasileiro de Geografia e Estadística.
Anuario Estadístico do Brasil. (Various issues)

Computed by: EA./CIAT/Colombia. 1973.

TABLE NO. 7. VALUE OF BRAZILIAN EXPORTS OF MANIOC PRODUCTS. 1960 - 1971
THOUSANDS OF US DOLLARS.

<u>Years</u>	<u>Flour</u>	<u>Chips</u>	<u>Starch</u>	<u>Tapioca</u>	<u>Aipi m</u>	<u>Total</u>
1960	1,184	140	2,675	129	-	4,128
1961	504	299	1,338	199	-	2,340
1962	66	94	781	196	-	1,137
1963	58	256	295	171	-	780
1964	1,387	380	1,149	204	125	3,243
1965	982	974	2,122	189	1,877	6,144
1966	1,159	1,029	1,393	-	1,318	4,899
1967	9	839	558	-	-	1,406
1968	79	510	648	-	-	1,237
1969	2,015	476	863	-	-	3,354
1970	1,729	...	1,049	212	...	2,999
1971	754	476	...	223	...	1,453

Source: Instituto Brasileiro de Geografia e Estadística.
Anuario Estadístico do Brasil (Various issues)

TABLE NO. 7a. INDEX OF BRAZILIAN EXPORTS OF MANIOC PRODUCTS.

BASE: 1960 = 100

<u>Years</u>	<u>Flour</u>	<u>Chips</u>	<u>Starch</u>	<u>Tapioca</u>
1961	40.33	214.55	46.94	143.85
1962	1.85	67.46	24.12	141.48
1963	1.84	272.12	7.98	108.03
1964	127.14	378.26	49.69	141.84
1965	82.98	859.68	90.49	128.01
1966	85.64	780.81	45.62	128.13
1967	0.28	555.49	15.76	121.15
1968	2.66	314.47	20.33	119.73
1969	104.44	383.20	29.56	98.93
1970	120.81	...	36.40	117.02
1971	45.80	361.59	...	119.85

Source: Instituto Brasileiro de Geografia e Estadística.
Anuario Estadístico do Brasil. (Various issues).

Computed by: EA./CIAT/Colombia. 1973.

TABLE NO. 8. BRASIL'S UTILIZATION OF MANDIOCA. 1964-1968

HUMAN FOOD.

<u>Commodities</u>	<u>Years</u>	<u>Production</u> <u>-t-</u>	<u>Human</u> <u>food</u> <u>-t-</u>	<u>Per-capita</u>	
				<u>Kg./yr.</u>	<u>Gr./day</u>
Mandioca Brava	1964	14,478,220	3,190,180	39.959	109.5
	1965	14,399,293	3,154,889	38.370	105.1
	1966	14,114,804	3,111,868	38.095	104.4
	1967	15,960,599	3,571,580	41.252	113.0
	1968	17,391,802	4,320,344	48.339	132.4
Sweet Mandioca	1964	9,877,382	4,935,487	61.819	169.4
	1965	10,593,286	5,254,556	63.907	175.1
	1966	10,595,237	5,270,565	67.827	172.1
	1967	11,307,594	5,653,086	65.293	178.9
	1968	11,811,427	5,905,713	66.077	181.0

ANIMAL FEED.

<u>Commodities</u>	<u>Years</u>	<u>Animal</u>	<u>Residue</u>	<u>Trans-</u> <u>formation</u>	<u>Total</u>
Sweet Mandioca	1964	3,950,953	987,738	-	4,938,697
	1965	4,237,314	1,059,329	-	5,926,643
	1966	4,238,095	1,059,524	-	5,297,619
	1967	4,523,038	1,130,759	-	5,653,797
	1968	4,724,571	1,181,143	-	5,905,714
Mandioca Brava	1964	-	1,474,822	9,570,542	11,018,369
	1965	-	1,439,929	9,464,668	10,904,597
	1966	-	1,411,480	9,335,604	10,747,084
	1967	-	1,596,060	10,714,740	12,310,800
	1968	-	1,739,180	11,261,854	13,001,034

Source: Brasil. Ministerio da Agricultura. Mandioca. Productos Esenciales. 1972. Vol. II.

TABLE NO. 9. UTILIZATION OF MANDIOCA

Region	Consumption of fresh root	Animal feed	Self consumption in the producing center and loss	Commercial consumption	
				Farinha de água	Farinha de mesa
NE	10%	30%	26%	2%	32%
E	5%	20%	35%	30%	10%

Source: Refinações de Milho, Brasil Ltda. 1972.

Consumption of fresh root

These are roots of cooked or fried sweet cassava used in human feed.

Animal feed

The harvest time for cassava is in the summer. Pastures are insufficient for cattle, thus, the farmers of N.E. are obliged to assign a large portion of roots to animal feed. This problem is not too serious in the northern region and they use a small amount for this purpose.

Self consumption and loss in the producing center

It is an amount of root kept for the farmer's own consumption or to pay the rent for the "house of flour" (casa de farinha), about 10%, generally owned by the landowners.

Transformation losses and benefits are included in this item.

Commercial consumption

Amount of roots assigned to flour production that are sent to the consumer centers.

TABLE NO. 10. PRODUCTION COST PER HECTARE AND INCOME OF MANIOC ROOTS
OBTAINED BY IPEAL, CRUZ DAS ALMAS, BAHIA, 1971-1972.

	<u>CR\$</u>	<u>%</u>
I. Total Income	3,889.60	
II. Total Cost	1,590.62	100.0
1. Variables cost	4,410.62	
a. Land preparation with machinery and equip- ments	243.36	15.3
b. Fertilization	479.56	29.8
c. Labor input	692.70	43.6
2. Fixed cost	180.00	11.3
a. Land rent, 12%	180.00	
III. Liquid Income	2,298.98	144.5
IV. Liquid monthly income	127.70	8.0

Source: Processos de cultivo em Mandioca, Manihot esculenta, Crantz. Comunicado Técnico No. 51. IPEAL. Collected by: Gonzalo Mendes Luis. Aspectos econômicos da mandioca na Bahia. Ministerio da Agricultura. Departamento Nacional de Pesquisa Agropecuária. Salvador, Bahia, 1972. p.p. 7.

TABLE 11. Production Costs Per Hectare of Manioc Roots, N.E. Brazil, 1971.

ITEM	MAN DAYS	COST - Cr\$
Land Preparation	28.9	101.1
Planting	16.3	57.1
Cultivation	51.3	179.6
Harvest	13.5	47.3
Land Rent or equivalent/hectare	-	45.0
Interest Charge ^a		58.6
TOTAL CHARGES	-	488.7
Cost per Ton (11.5 tons/ha) (Cr\$)		42.5
Cost per Kilogram (centavos)		4.25

^aLand preparation and planting charged for 18 months at 13%, cultivation cost computed for 12 months, land rent computed for an average of 9 months.

Source: Feasibility of manioc production in Northeast Brazil. Brasil. University of Georgia. 1971. pp. 46

TABLE 12. Manioc Production per Hectare and Projected Total Cost and Average Cost Per Kilogram, N.E. Brazil, 1971.

TONS	TOTAL COST ¹	COST PER UNIT	
		TON	KILOGRAM
6	466.0	77.7	7.77
8	474.2	59.3	5.93
10	482.4	48.2	4.82
12	490.6	40.9	4.09
14	498.8	35.6	3.56
16	507.0	31.7	3.17
18	515.2	28.6	2.86
20	523.4	26.2	2.62
22	531.6	24.2	2.42
24	539.8	22.5	2.25

¹Includes labor for land preparation, planting, cultivation, harvest at Cr\$ 3.50 per man/day, land rent or equivalent and interest costs on labor costs and rent.

Source: Feasibility of manioc production in Northeast Brazil. Brasil. University of Georgia. 1971. pp. 48

TABLE 13. Manioc Chip Production, Processing, Handling and Transportation Costs Used to Compute FOB Price, N.E. Brazil, 1971.

ITEM	COST US DOLLARS PER TON
Manioc Roots delivered to Chipping Plant	11.43
(a) 6 centavos/kg	
Cost of Chipping and Drying ¹	<u>300</u>
	\$14.43
Manioc Chip Yields 35% of root weight	X 2.86
Cost of Chips at the Mill	\$41.27
Transportation Cost from Mill to Port (80 km) ²	3.70
Port Costs, including taxes (500 ton lots) ³	2.20
FOB Cost Recife	\$47.17

¹ Obtained from Summary Report - Cultivation of Manioc in Brazil, ITA Project, Pernambuco, Barry Critides, July 28, 1966.

² Abstracted from Figure 6. (it is not here)

³ Obtained from Port authority, Recife, Brazil, July 14, 1971.

Collected by:

Feasibility of manioc production in Northeast Brazil. Brazil. University of Georgia, 1971. pp.67

TABLE 14. Labor Input in Manioc Production in Three N.E. States in Man Days Per Hectare.

	ALAGOAS (10.7 tons)	MARANHAO (10 tons)	SERGIPE (13.9 tons)	AVERAGE (11.5 tons)
Land Preparation	39	22	25.6	28.9
Planting	10	15	24.3	16.3
Cultivation	34	20	100.0	51.3
Harvest	13	12	15.5	13.5
TOTAL:	96	69	165.4	110.0

Source: Convênio SUDENE/Estado de Alagoas, Secretaria da Agricultura, Indústria e Comércio, 1968/69.

Department of Secretary of Agricultural Economics,
Agricultural Department of Maranhão, 1967.

Convênio SUDENE/Estado de Sergipe, CONDESE, 1969.

Collected by:

Feasibility of manioc production in Northeast Brazil. Brazil.
University of Georgia. 1971. pp. 45

TABLE 15. Labor Input in Manioc Production in Northeastern Brazil by Zones (Man Days Per Hectare).

	ZONE 1		ZONE 2		ZONE 3	
	(More than 750mm Rainfall)		(500-750mm Rainfall)		(Less than 500mm Rainfall)	
	Mean	(Range)	Mean	(Range)	Mean	(Range)
Land Preparation	17	(9-25)	20	(12-28)	13	(7-19)
Planting	33	(20-47)	31	(17-45)	13	(7-20)
Cultivation	27	(17-37)	18	(11-25)	10	(5-15)
Harvest	16	(10-22)	21	(10-32)	14	(9-19)
TOTAL:	93		90		50	
Yield per hectare in tons	9.6	(5.1-14.1)	10.8	(7.6-14.1)	10.2	(7.3-13.2)

Source: Banco do Nordeste do Brasil, S.A., Departamento Rural, Informações Básicas para Elaboracao de Orcamentos Agrícolas no Nordeste, Fortaleza, Ceará (Junho, 1969), pp 117-118, 130-131, 139-140.

Collected by: "Feasibility of manioc production in Northeast Brazil." Brazil. University of Georgia. 1971. pp. 44

TABLE 16. Increases in Net Income from Fertilizer and Lime Applications at Different Prices for Manioc Roots, N.E. Brazil, 1971.

SALES PRICE PER KILOGRAM IN CENTAVOS	GAIN IN YIELDS (ton)	TOTAL VALUE ADDED	LESS FERTILIZER COST AND LIME ¹ Cr\$	Cr\$ GAIN PER TON
5	7.7	385	446	-61
6	7.7	462	446	16
7	7.7	539	446	93
8	7.7	616	446	170
9	7.7	693	446	247
10	7.7	770	446	324
11	7.7	847	446	401
12	7.7	924	446	478
13	7.7	1001	446	555
14	7.7	1078	446	632
15	7.7	1155	446	709
16	7.7	1232	446	786
17	7.7	1309	446	863
18	7.7	1386	446	940
19	7.7	1463	446	1017
20	7.7	1540	446	1094

¹Includes transportation cost for average distance of 200 kilometers

Source: "Feasibility of manioc production in Northeast Brazil." Brazil. University of Georgia. 1971. pp. 42

TABLE NO. 17. AVERAGE MONTHLY PRICES AT WHOLESALE MARKET, FARINHA DE MANDIOCA, 1971. CR\$

City	Especification	Origin	Unit	1970	Monthly Mean											
					Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Fortaleza	Primeira	CEeSP	Sc.50 Kg.	...	Absent	48.25	48.81	49.22	48.50	37.82	37.44	36.82	34.00	34.90	37.10	36.95
Recife	Crua extra	SPeRJ	"	...	Absent	Absent	Absent	57.50	39.12	34.82	34.84	Absent	Absent	Absent	Absent	Absent
"	Primeira	PE,RJeES	"	27.36	29.57	40.24	47.79	36.84	49.63	48.55	Absent	"	"	"	"	"
"	Torrada Especial	" " "	"	35.27	45.25	50.34	53.75	59.32	61.73	63.32	52.85	40.94	38.74	39.12	37.50	"
"	Torrada Extra	" " "	"	41.13	51.46	57.08	67.19	71.13	73.65	75.82	71.30	58.75	51.77	48.97	46.38	"
Salvador	Copioba	BA	Sc.60 Kg.	...	Absent	48.00	48.00	48.00	63.75	69.00	69.00	65.63	60.00	60.00	60.00	60.00
"	Especial	"	"	33.38	38.10	40.00	40.00	40.00	52.75	57.00	57.00	52.50	45.00	45.00	Absent	Absent
"	Extra	"	Sc.50 Kg.	40.00	40.15	43.00	43.00	43.00	55.75	60.00	60.00	56.25	50.00	50.00	50.00	50.00
"	Primeira	"	"	...	30.25	35.00	35.00	35.00	46.25	50.00	50.00	46.25	40.00	40.00	40.00	40.00
Belo Horizonte	Fina	MGeSP	"	17.69	21.50	24.92	27.36	26.88	31.50	33.96	33.18	32.27	32.42	32.50	34.23	37.65
"	Grossa	" "	"	17.69	21.50	24.92	27.36	26.88	31.50	33.96	33.18	32.27	32.42	32.50	34.23	37.65
Rio de Janeiro	Crua	GB	Kg.	...	Absent	0.68	0.72	0.73	0.75	0.76	0.76	0.76	0.76	0.76	Absent	Absent
"	Fina	RS	Sc.50 Kg.	18.74	19.25	19.25	25.81	28.00	29.48	31.50	30.30	28.50	28.50	28.70	31.60	38.29
"	Fina	SC	"	19.67	23.20	25.00	26.73	27.00	29.23	31.50	30.30	28.50	29.83	30.70	33.20	38.29
"	Fina	SP	"	17.26	22.81	23.00	25.10	28.00	29.94	31.50	30.30	28.50	28.50	28.70	31.30	37.15
"	Grossa	RS	"	17.69	18.25	18.25	24.92	28.00	29.94	31.50	30.30	28.50	28.50	28.70	31.00	34.93
"	Grossa	SC	"	18.53	25.42	26.00	27.40	27.00	29.69	31.50	30.30	28.50	28.50	28.70	31.00	34.93
"	Grossa	SP	"	16.90	24.65	25.00	26.60	28.00	30.59	31.50	30.30	28.50	28.50	28.70	31.00	34.93
"	Tapioca Clara	GB	Kg.	...	Absent	0.85	0.85	0.85	0.86	0.86	0.86	0.86	0.86	0.86	Absent	Absent
"	Torrada	"	"	...	Absent	0.72	0.76	0.77	0.79	0.80	0.80	0.80	0.80	0.80	Absent	Absent
São Paulo	Fina	SP	"	0.35	0.45	0.48	0.54	0.56	0.60	0.61	0.62	0.62	0.62	0.62	0.63	0.71
"	Grossa	"	"	0.36	0.45	0.48	0.54	0.56	0.60	0.61	0.62	0.62	0.62	0.62	0.65	0.71
"	Torrada	"	"	...	0.55	0.58	0.70	0.74	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.86
Pôrto Alegre	Fina	RSeSC	Sc.50 Kg.	17.79	19.63	20.61	20.60	21.40	23.90	25.00	24.42	24.50	24.86	25.50	26.78	31.90
"	Grossa	" "	"	16.73	18.25	18.72	19.50	20.00	22.55	24.00	23.00	23.50	23.71	24.00	26.80	32.58
Brasília	Fina	PRePA	"	...	...	...	...	...	...	...	31.08	34.19	36.25	36.56	34.89	38.21
"	Grossa	" "	"	...	...	...	...	...	...	...	31.07	38.10	38.16	37.00	32.84	37.33

Source: "Preços nos mercados atacadistas 1971". Anuário Estatístico da Divisão de Informação de Mercado Agrícola. Ministério da Agricultura, Brasil.

TABLE NO. 18. AVERAGE MONTHLY PRICES AT WHOLESALER MARKET. FARINHA DE

MANDIOCA. 1972. CR\$

City	Especification	Origin	Unit	June	July	Monthly Mean		Oct.	Nov.
						Aug.	Sept.		
Fortaleza	D'agua	CE-SP	Sc. 50 Kg.	35.19	39.00	37.65	39.92	37.80	37.40
"	Primeira	"	"	25.71	25.00	24.61	-	-	-
"	Grossa	"	"	-	-	-	21'66	22.82	23.05
Recife	Torrada Especial	PE	Sc. 60 Kg.	35.88	35.62	32.54	29.24	28.45	27.15
"	Torrada Extra	"	"	40.48	41.67	38.57	36.08	33.59	31.80
Salvador	Comum	BA	Sc. 50 Kg.	31.43	32.14	30.00			
"	Copioba	"	"	55.00	52.86	51.09	50.00	50.00	48.60
"	Extra	"	"	39.05	38.10	40.00	40.00	40.00	39.48
"	Grossa	"	"		Absent	25.00		Absent	22.50
"	Fina	"	"			30.00	30.00	30.00	30.00
Belo Horizonte	Fina	MG-SP	Sc. 50 Kg.	33.21	31.88	31.36	31.05	32.07	32.80
"	Grossa	"	"	33.21	31.88	31.36	31.05	32.07	32.80
Rio de Janeiro	Fina	RS	Sc. 50 Kg.	31.50	31.50	30.72	27.50	27.50	27.50
"	Fina	SC	"	30.50	30.50	28.93	25.68	25.00	25.00
"	Fina	SP	"	28.50	28.50	27.89	26.18	26.29	29.05
"	Grossa	RS	"	28.50	28.50	27.89	26.50	26.50	26.50
"	Grossa	SC	"	26.50	26.50	25.89	24.23	24.00	23.50
"	Grossa	SP	"	26.50	26.50	25.89	24.78	25.19	26.50
São Paulo	Fina	SP	Kg.	0.64	0.61	0.61	0.61	0.61	0.64
"	Grossa	"	"	0.64	0.61	0.61	0.61	0.61	0.64
"	Torrada	"	"	0.78	0.78	0.78	0.78	-	0.79
Curitiba	Comum	SC	Sc. 50 Kg.	36.10	36.61	31.04	31.89	32.14	34.25

TABLE NO. 18. (Cont.)

City	Especification	Origin	Unit	June	July	Monthly Mean		Oct.	Nov.
						Aug.	Sept.		
Florianopolis	Comum	SC	Fardo 20 Kg.	17.00	...				
"	Fina	"	Saco 45 Kg.	33.52	32.48	31.59	32.60	35.45	37.45
Porto Alegre	Fina	RS-SP	Sc. 50 Kg.	35.07	33.83	33.28			
"	Fina	RS-SC	"			33.28	29.97	31.89	31.05
"	Grossa	"	"	35.12	34.67	34.37	30.29	31.00	31.05
Goiania-GO	Fina	GO	Sc. 30 Kg.	30.00	...				
"	Fina	"	40	Absent	34.40	34.91	35.85	36.00	35.61
"	Grossa	"	30	30.00	...				
"	"	"	40	Absent	37.70	34.45	35.85	36.00	35.70
Brasilia	Fina	PR-PA	Sc. 50 Kg.	41.00	40.07	41.48	42.00	42.00	42.00
"	Grossa	"	"	34.00	34.00	34.00	34.00	34.00	34.00

Source: "Precos nos mercados atacadistas 1971". Anuario Estadistico da Divisao de Informacao de Mercado Agricola. Ministerio da Agricultura. Brasil.

TABLE 19. AVERAGE MINIMUM LIQUID PRICES (REAL).

BASE: Nov. 1970 = 100 .FARINHA DE MANDIOCA.

1. Região Norte - Nordeste (Gross Tipo 2)

<u>States</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	Mandioca - Cr \$/50 Kgr.	
				<u>Index of annual variations</u> <u>1969/1968</u>	<u>1970/1969</u>
Maranhão	8.24	7.83	7.89	95.02	100.76
Ceará	8.69	7.51	7.62	86.42	101.46
Pernambuco	8.31	7.47	7.60	89.89	101.74
Bahia	7.45	7.48	7.60	100.40	101.60

Minimum Liquid Prices Crop, 1971. Current Prices.

<u>States</u>	<u>Cr \$/50 Kgr.</u>
Maranhão	8.80
Ceará	8.74
Pernambuco	8.76
Bahia	8.35

2. Region Centro - Sul (Gross Tipo 1)

<u>States</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	Index of annual variations	
				<u>1969/1968</u>	<u>1970/1969</u>
Minas Gerais	4.74	5.36	6.33	113.08	118.09
São Paulo	4.91	5.51	6.44	112.21	116.87
Paraná	4.74	5.36	6.33	113.08	118.09
Santa Catarina	5.04	5.61	6.53	111.30	116.39
Rio G. do Sul	4.77	5.39	-	112.99	-
Goias	4.50	5.15	6.14	114.44	119.22

Minimum Liquid Prices Crop, 1971. Current prices.

<u>States</u>	<u>Cr \$/50 Kgr.</u>
Minas Gerais	6.79
São Paulo	7.12
Paraná	6.88
Santa Catarina	7.25
Rio G. do Sul	6.91
Goias	6.51

Source: Brasil. Ministerio da Agricultura. Mandioca. Productos esenciales 1971. Vol II.

TABLE NO. 20. REAL PRICES RETURN TO PRODUCER. MANDIOCA. (FLOUR)

CRU\$/50 KGR. 1966-1970

Month	<u>PARANA</u>					<u>SANTA CATARINA</u>				
	1966	1967	1968	1969	1970	1966	1967	1968	1969	1970
Jan.	2.87	4.76	3.52	2.86	3.44	2.44	2.01	2.84	2.24	2.04
Feb.	2.79	4.68	3.62	2.75	3.62	2.09	2.29	2.67	2.12	2.07
Mar.	2.85	3.55	3.46	2.46	3.50	2.57	2.54	2.88	2.20	2.14
Apr.	2.86	3.47	3.45	2.36	3.48	2.73	2.68	2.73	2.10	2.08
May	2.91	3.41	3.41	2.34	3.60	2.40	2.63	2.77	1.87	2.21
June	2.74	3.39	3.25	2.35	3.90	2.37	3.30	2.86	1.83	2.27
July	3.01	3.78	3.51	2.80	3.89	2.53	3.03	2.75	1.78	2.24
Aug.	2.96	3.75	3.31	3.20	3.55	2.60	3.38	2.64	1.70	2.24
Sept.	3.45	3.69	3.26	3.20	3.83	2.18	3.33	2.52	1.72	2.35
Oct.	2.71	3.64	3.18	2.88	3.31	2.60	3.20	2.53	1.80	2.31
Nov.	2.57	3.59	3.15	3.07	3.30	2.91	3.14	2.50	1.83	2.35
Dec.	2.66	3.56	3.13	3.42	3.37	2.88	3.03	2.56	2.18	2.38

SÃO PAULO

Month	<u>SÃO PAULO</u>					<u>RIO GRANDE DO SUL</u>				
	1966	1967	1968	1969	1970	1966	1967	1968	1969	1970
Jan.	2.14	-	-	2.72	2.44	-	-	3.35	3.14	4.07
Feb.	2.08	4.47	3.65	2.33	2.41	-	-	3.28	2.95	4.02
Mar.	2.43	3.96	3.79	2.32	2.48	-	-	3.21	2.86	3.72
Apr.	2.59	3.96	3.45	2.22	2.64	-	-	3.37	2.90	2.92
May	2.53	4.10	3.09	2.20	2.60	-	2.24	3.25	2.94	2.88
June	2.99	4.06	2.78	2.15	2.60	-	2.61	3.09	3.60	3.03
July	3.13	3.97	2.98	2.10	2.29	-	2.46	2.82	3.20	2.98
Aug.	3.19	4.31	2.94	2.07	2.24	-	2.44	2.86	3.63	2.82
Sept.	3.33	3.60	2.88	2.02	2.55	-	2.77	3.04	4.30	2.76
Oct.	3.38	-	2.67	1.80	2.76	-	2.73	2.89	3.42	2.61
Nov.	-	-	3.00	1.95	2.90	-	2.70	2.93	3.60	2.70
Dec.	-	-	2.91	1.95	2.88	-	2.67	2.91	3.13	2.68

MINAS GERAIS

Month	<u>MINAS GERAIS</u>					<u>BAHIA</u>				
	1966	1967	1968	1969	1970	1966	1967	1968	1969	1970
Jan.	2.00	4.24	5.16	4.88	6.99	2.86	2.86	3.27	2.94	3.03
Feb.	1.95	4.17	5.06	4.81	6.90	2.79	3.02	3.12	2.82	2.93
Mar.	2.17	4.06	4.95	5.46	6.77	2.71	3.15	2.64	2.94	3.44
Apr.	2.08	4.96	4.82	6.08	7.30	2.60	3.97	2.73	2.90	3.43
May	2.53	4.88	5.55	6.68	7.21	2.53	3.91	2.62	2.94	3.99
June	2.74	4.84	5.42	6.54	6.50	2.49	3.88	2.55	2.68	3.47
July	2.41	4.73	4.59	7.64	6.92	2.41	3.79	2.68	2.68	4.15
Aug.	2.84	4.69	5.28	6.27	6.78	2.36	3.75	2.64	2.64	4.07
Sept.	2.87	4.62	4.44	6.15	6.63	2.30	3.70	2.52	2.64	3.98
Oct.	3.16	4.55	4.34	6.00	6.53	2.26	3.64	3.46	3.36	4.37
Nov.	3.36	5.38	5.72	6.50	6.00	2.24	3.59	2.72	3.43	4.55
Dec.	2.77	4.46	5.69	5.91	6.94	2.22	3.56	2.70	3.60	4.51

TABLE NO. 20. (Cont.)

Month	<u>MARANHÃO</u>					<u>GOIÁS</u>				
	1966	1967	1968	1969	1970	1966	1967	1968	1969	1970
Jan.	4.58	-	2.58	3.22	5.01	2.29	3.28	2.92	3.49	3.55
Feb.	4.87	-	4.22	3.57	4.94	2.23	3.33	2.61	3.64	3.85
Mar.	4.74	-	3.30	2.80	4.91	2.17	3.55	2.97	3.82	3.89
Apr.	4.29	-	3.22	2.57	4.33	2.08	2.97	3.29	3.71	3.70
May	4.05	-	3.17	2.74	4.82	2.40	3.90	3.65	3.54	3.71
June	4.11	2.91	3.10	3.14	4.50	2.62	3.87	3.63	3.46	4.17
July	3.97	3.79	3.13	2.99	3.35	2.89	3.78	3.89	3.69	4.53
Aug.	4.73	3.75	3.32	2.82	3.54	2.95	3.75	3.84	3.70	4.28
Sept.	4.25	2.31	3.55	2.77	3.88	3.10	2.77	3.92	3.87	4.23
Oct.	3.95	2.73	3.47	2.82	4.87	3.04	3.64	3.47	4.32	4.37
Nov.	3.91	2.69	3.22	2.78	4.95	3.24	3.59	3.50	3.66	4.10
Dec.	3.88	2.67	3.20	3.48	4.91	3.32	3.56	3.55	3.60	4.51

Month	<u>PERNAMBUCO</u>					<u>CEARÁ</u>				
	1966	1967	1968	1969	1970	1966	1967	1968	1969	1970
Jan.	5.58	4.66	4.47	3.14	3.43	3.72	3.70	3.95	2.80	2.80
Feb.	5.43	4.58	4.30	3.36	4.59	3.48	3.75	3.96	2.74	3.33
Mar.	5.42	5.79	4.12	3.41	4.51	3.52	3.65	3.71	3.00	3.22
Apr.	5.71	5.95	3.77	3.44	4.88	3.50	3.67	3.69	2.90	3.48
May	5.57	5.85	3.49	4.07	4.15	3.67	3.71	3.73	2.80	3.54
June	5.48	5.81	3.17	3.92	4.76	3.49	3.58	3.48	2.68	4.33
July	5.30	4.73	5.19	3.94	3.83	3.49	3.40	3.67	2.61	4.26
Aug.	4.96	5.62	5.27	3.76	4.48	3.30	3.65	3.62	2.69	4.74
Sept.	4.94	5.54	4.81	3.44	4.85	3.56	3.60	3.63	2.52	5.10
Oct.	5.07	5.46	4.42	3.24	4.87	3.72	3.91	2.90	2.40	5.02
Nov.	5.03	4.48	4.43	3.25	4.80	4.25	3.94	3.14	2.60	5.55
Dec.	4.98	4.45	4.69	3.01	4.86	4.07	4.01	3.13	2.78	5.61

Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971. Vol. I.

TABLE NO. 21. AVERAGE MONTHLY PRICES (REAL). RETAILER MARKET. CR\$/KG.
1966-1967. BASE: NOV. 1970 = 100

BELO HORIZONTE

<u>Years</u>	<u>J</u>	<u>F</u>	<u>M</u>	<u>A</u>	<u>M</u>	<u>J</u>	<u>J</u>	<u>A</u>	<u>S</u>	<u>C</u>	<u>N</u>	<u>D</u>
1966	0.49	0.47	0.46	0.51	0.51	0.50	0.49	0.49	0.49	0.51	0.55	0.62
1967	0.72	0.71	0.71	0.63	0.61	0.62	0.63	0.60	0.59	0.50	0.59	0.62
1968	0.57	0.61	0.61	0.58	0.59	0.56	0.55	0.53	0.53	0.52	0.53	0.51
1969	0.48	0.48	0.51	0.47	0.49	0.50	0.47	0.49	0.47	0.46	0.48	0.50
1970	0.51	0.54	0.52	0.52	0.51	0.52	0.51	0.50	0.49	0.50	0.54	0.54

SÃO PAULO

1966	0.47	0.45	0.48	0.53	0.52	0.52	0.51	0.48	0.46	0.50	0.53	0.63
1967	0.68	0.71	0.73	0.71	0.72	0.74	0.72	0.69	0.68	0.71	0.70	0.70
1968	0.69	0.73	0.71	0.71	0.70	0.67	0.66	0.65	0.65	0.61	0.62	0.69
1969	0.60	0.60	0.60	0.59	0.59	0.58	0.55	0.54	0.53	0.53	0.52	0.61
1970	0.62	0.63	0.62	0.60	0.59	0.61	0.62	0.62	0.57	0.61	0.62	0.63

CURITIBA

1966	0.71	0.76	0.71	0.74	0.71	0.69	0.68	0.63	0.62	0.66	0.69	0.57
1967	0.58	0.62	0.65	0.67	0.68	0.70	0.68	0.71	0.72	0.66	0.66	0.68
1968	0.71	0.66	0.63	0.66	0.65	0.62	0.58	0.59	0.55	0.58	0.62	0.55
1969	0.53	0.54	0.57	0.54	0.52	0.54	0.52	0.53	0.53	0.52	0.53	0.56
1970	0.55	0.54	0.58	0.57	0.64	0.63	0.62	0.64	0.61	0.63	0.64	0.64

FLORIANOPOLIS

1966	0.48	0.45	0.44	0.46	0.46	0.44	0.44	0.42	0.46	0.48	0.49	0.56
1967	0.74	0.77	0.61	0.73	0.73	0.74	0.70	0.73	0.74	0.75	0.74	0.73
1968	0.72	0.71	0.73	0.72	0.73	0.74	0.73	0.69	0.59	0.56	0.54	0.57
1969	0.57	0.56	0.58	0.58	0.47	0.55	0.58	0.58	0.49	0.53	0.54	0.46
1970	0.51	0.52	0.52	0.52	0.51	0.51	0.51	0.50	0.49	0.47	0.47	0.48

PORTO ALEGRE

1966	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.39	0.37	0.37	0.38	0.58
1967	0.57	0.60	0.59	0.60	0.59	0.58	0.59	0.60	0.59	0.58	0.54	0.61
1968	0.59	0.59	0.61	0.58	0.59	0.57	0.55	0.53	0.52	0.52	0.49	0.50
1969	0.49	0.45	0.49	0.46	0.47	0.45	0.45	0.44	0.43	0.43	0.46	0.52
1970	0.55	0.56	0.56	0.57	0.55	0.56	0.55	0.54	0.53	0.53	0.53	0.56

GOIÂNIA

1966	0.57	0.56	0.56	0.69	0.57	0.55	0.58	0.60	0.56	0.53	0.58	0.63
1967	0.65	0.76	0.83	0.85	0.82	0.97	1.00	0.86	0.89	0.86	0.86	0.86
1968	0.79	0.76	0.81	0.77	1.03	-	0.76	0.95	0.70	0.87	0.79	0.73
1969	0.77	0.82	0.82	0.74	0.83	0.77	0.64	0.63	-	-	0.70	0.95
1970	0.89	0.82	0.71	0.72	0.71	0.70	0.70	0.71	0.69	0.73	-	0.60

TABLE NO. 21 (Cont.)

Years	<u>GUANABARA</u>											
	<u>J</u>	<u>F</u>	<u>M</u>	<u>A</u>	<u>M</u>	<u>J</u>	<u>J</u>	<u>A</u>	<u>S</u>	<u>O</u>	<u>N</u>	<u>D</u>
1966	0.46	0.48	0.52	0.45	0.50	0.47	0.44	0.41	0.41	0.43	0.43	0.51
1967	0.54	0.55	0.53	0.54	0.57	0.58	0.57	0.49	0.50	0.47	0.50	0.53
1968	0.59	0.56	0.51	0.50	0.48	0.45	0.46	0.45	0.50	0.46	0.43	0.38
1969	0.38	0.37	0.44	0.45	0.41	0.43	0.39	0.35	0.34	0.41	0.44	0.44
1970	0.45	0.48	0.51	0.46	0.47	0.52	0.62	0.55	0.54	0.52	0.50	0.55
<u>SÃO LUIS</u>												
1966	0.94	0.93	1.06	1.03	1.07	1.05	0.94	0.91	0.89	0.88	0.86	0.96
1967	0.97	0.99	0.96	0.97	1.00	0.85	0.89	0.88	0.85	0.77	0.77	0.84
1968	0.78	0.91	1.03	1.01	0.95	0.88	0.92	1.01	0.90	0.85	0.82	0.85
1969	0.94	0.91	0.96	0.92	0.88	0.82	0.84	0.80	0.82	0.83	0.78	0.83
1970	0.83	0.95	1.04	1.10	1.12	1.07	1.18	1.31	1.16	1.17	1.15	1.12
<u>FORTALEZA</u>												
1966	0.50	0.51	0.54	0.66	0.70	0.71	0.68	0.68	0.61	0.63	0.63	0.69
1967	0.71	0.71	0.67	0.69	0.66	0.60	0.55	0.54	0.50	0.53	0.54	0.63
1968	0.55	0.54	0.51	0.50	0.48	0.46	0.44	0.44	0.41	0.42	0.44	0.41
1969	0.43	0.43	0.42	0.42	0.41	0.46	0.39	0.39	0.39	0.38	0.41	0.43
1970	0.42	0.44	0.45	0.52	0.64	0.70	0.72	0.74	0.77	0.77	0.73	0.80
<u>RECIFE</u>												
1966	1.15	0.97	1.03	0.91	0.85	0.84	0.81	0.79	0.83	0.88	0.83	0.96
1967	1.03	1.05	1.20	1.29	1.21	1.07	1.00	0.88	0.87	0.84	0.84	0.86
1968	0.86	0.84	0.84	0.84	0.81	0.77	0.73	0.71	0.64	0.62	0.63	0.64
1969	0.64	0.65	0.67	0.78	0.79	0.77	0.74	0.69	0.77	0.78	0.76	0.83
1970	0.92	0.95	0.97	1.02	1.08	1.06	1.03	1.03	0.97	0.95	0.98	0.98
<u>SALVADOR</u>												
1966	0.72	0.85	-	0.89	0.80	0.80	0.77	0.73	0.74	0.76	0.75	0.92
1967	0.83	0.81	0.85	0.79	0.84	0.78	0.74	0.75	0.72	0.77	0.68	0.70
1968	0.67	0.66	0.64	0.63	0.63	0.60	0.58	0.63	0.58	0.58	0.62	0.74
1969	0.73	0.65	0.67	0.67	0.75	0.76	0.74	0.70	0.70	0.68	0.73	0.78
1970	0.89	0.82	0.91	0.83	0.95	0.89	0.86	0.91	0.90	0.90	0.92	0.95

Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971. Vol. II.

TABLE NO. 22. AVERAGE MONTHLY PRICES AT RETAILER MARKET, 1972.

CR \$/KGR. "FARINHA DE MANDIOCA" (CASSAVA FLOUR)

<u>Cities</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May.</u>	<u>Jun.</u>	<u>Jul.</u>	<u>Aug.</u>	<u>Sep.</u>
Pôrto Velho	1.11	1.10	1.00	1.21	1.24	-	1.40	1.46	1.47
Rio Branco	0.97	0.98	1.00	1.16	0.97	0.96	0.96	1.00	1.00
Manaus	1.95	1.95	1.59	1.58	1.58	1.93	1.70	2.33	1.35
Boa Vista	1.49	1.49	1.47	1.47	1.47	1.49	1.47	1.47	1.49
Belém	0.76	0.76	0.73	0.72	0.77	0.85	0.96	0.99	0.90
Macapá	0.90	0.92	0.90	0.91	0.92	0.92	0.93	0.99	0.99
Sao Luís	1.15	1.17	1.19	1.18	1.17	1.24	1.24	1.28	1.14
Teresina	0.86	0.88	0.89	0.79	0.79	0.73	0.71	0.68	0.70
Fortaleza	0.87	0.87	0.83	0.82	0.81	0.78	0.77	0.75	0.81
Natal	0.88	0.91	0.97	0.91	0.98	0.98	0.97	0.94	0.93
Joao Pessoa	0.97	1.00	0.91	0.86	0.85	0.86	0.86	0.87	0.81
Recife	1.10	0.97	1.05	0.97	0.95	0.91	0.90	0.89	0.88
Maceió	1.38	1.39	1.38	1.40	1.40	1.40	1.40	1.40	1.40
Aracaju	1.23	1.20	1.23	1.18	1.23	1.12	1.06	1.01	1.07
Salvador	1.41	1.45	1.47	1.38	1.38	1.31	1.28	1.26	1.26
Belo Horizonte	0.91	0.93	0.93	0.92	0.89	0.92	0.88	0.90	0.95
Vitória	0.87	0.90	0.90	0.87	0.83	0.77	0.78	0.75	0.78
Niterói	1.24	1.21	1.39	1.38	1.39	1.31	1.29	1.26	1.27
Rio de Janeiro	0.91	1.01	1.10	1.01	0.98	1.00	1.04	1.00	0.90
São Paulo	1.12	1.09	1.13	1.19	1.06	1.18	1.07	1.23	1.20
Curitiba	1.04	1.09	1.20	1.24	1.24	1.24	1.21	1.21	1.22
Florianópolis	1.29	1.56	1.57	1.67	1.49	1.49	1.44	1.44	1.51
Porto Alegre	0.91	1.01	1.03	1.09	1.10	1.11	1.12	1.11	1.10
Cuiaba	1.66	1.64	1.51	1.33	1.51	1.56	1.61	1.54	1.56
Goiania	1.29	1.45	1.48	1.43	1.42	1.40	1.39	1.47	1.48
Brasilia	1.19	1.07	1.07	1.09	1.16	1.17	1.13	1.12	1.27

Source: "Generos alimenticios Comercio Varejista dos Capitais"
Inquerito Nacional de Preços. 1971 - 1972

TABLE NO. 23. INDEX OF AVERAGE MONTHLY PRICES AT RETAILER MARKET,
 1972. CR \$/KGR. "FARINHA DE MANDIOCA" (CASSAVA
 FLOUR). JANUARY = 100

<u>Cities</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May.</u>	<u>Jun.</u>	<u>Jul.</u>	<u>Aug.</u>	<u>Sep.</u>
Pôrto Velho	99	90	109	112	-	126	132	132
Rio Branco	101	103	120	100	99	99	103	103
Manaus	100	82	81	81	99	87	119	69
Boa Vista	100	99	99	99	100	99	99	100
Belem	100	96	95	101	112	126	130	118
Macapá	102	100	101	102	102	103	110	110
Sao Luís	102	103	103	102	108	108	111	99
Teresina	102	103	92	92	85	83	79	81
Fortaleza	100	95	94	93	90	89	86	93
Natal	103	110	103	111	111	110	107	106
João Pessoa	103	94	89	88	89	89	90	84
Recife	88	95	88	86	83	82	81	80
Maceió	101	100	101	101	101	101	101	101
Aracaju	98	100	96	100	91	86	82	87
Salvador	103	104	98	98	93	91	89	89
Belo Horizonte	102	102	101	98	101	97	99	104
Vitória	103	103	100	95	89	90	86	90
Niterói	98	112	111	112	106	104	102	102
Rio de Janeiro	111	121	111	108	110	114	110	99
São Paulo	97	101	106	95	105	96	110	107
Curitiba	105	115	119	119	119	116	116	117
Florianópolis	121	122	129	116	116	112	112	117
Porto Alegre	111	113	120	121	122	123	122	121
Cuiabá	99	91	80	91	94	97	93	94
Goiania	112	115	111	110	109	108	114	115
Brasília	90	90	92	97	98	95	94	107

Source: "Generos Alimenticios Comercio Varejista dos Capitais"
 Inquerito Nacional de Preços. 1971 - 1972

TABLE NO. 24. AVERAGE SELLING PRICES AND INDEX AT WHOLESALE MARKET IN SÃO PAULO CITY. CR \$/KGR. 1972

BASE: JANUARY = 100

<u>By Products</u>	<u>Jan.</u>	<u>Ind.</u>	<u>Feb.</u>	<u>Ind.</u>	<u>Mar.</u>	<u>Ind.</u>	<u>Apr.</u>	<u>Ind.</u>	<u>May.</u>	<u>Ind.</u>	<u>Jun.</u>	<u>Ind.</u>	<u>Jul.</u>	<u>Ind.</u>	<u>Aug.</u>	<u>Ind.</u>	<u>Sept.</u>	<u>Ind.</u>	<u>Oct.</u>	<u>Ind.</u>
Anido de Mandioca	1.22	100.00	1.26	103.28	1.27	104.10	1.16	95.09	1.12	91.81	1.12	91.81	1.10	90.17	1.06	86.89	1.07	87.71	1.08	88.53
Farelo de Raspa de Mandioca	0.31	100.00	0.37	119.35	0.30	96.77	0.31	100.00	0.31	100.00	0.30	96.77	0.30	96.77	0.27	87.10	0.30	96.77	0.31	100.00
Farinha de Mandioca Crua Grossa	0.72	100.00	0.72	100.00	0.69	95.83	0.66	91.67	0.65	90.28	0.63	87.50	0.61	84.72	0.61	84.72	0.61	84.72	0.61	84.72
Farinha de Mandioca Crua Fina	0.72	100.00	0.72	100.00	0.69	95.83	0.66	91.67	0.65	90.28	0.63	87.50	0.61	84.72	0.61	84.72	0.61	84.72	0.61	84.72
Farinha de Mandioca Torrada	0.87	100.00	0.87	100.00	0.84	96.55	0.81	93.10	0.80	91.95	0.78	89.65	0.77	88.50	0.77	88.50	0.77	88.50	0.77	88.50
Farinha de Raspa de Mandioca	0.68	100.00	0.68	100.00	0.70	102.94	0.69	101.47	0.69	101.47	0.68	100.00	0.64	94.12	0.64	94.12	0.64	94.12	0.63	94.12

Source: Instituto de Economia Agrícola, IED.
Brasil, 1972.

TABLE 25. Coefficients of Variation of Real Prices of Manioc Root, Corn and Beans at the Recife Market Wholesale Level and at the Farm Level in Pernambuco.

	WHOLESALE ²	FARM ¹
Manioc	37.5%	20 %
Corn	34.4%	24 %
Beans	24.6%	24.8%

¹ Farm level price refers to the implicit price obtained by dividing the estimated value of production by the estimated production as reported in the Anuário Estatístico de Pernambuco. Nominal prices were deflated by the General Wholesale Price Index to obtain real prices.

² Calculated from values in Table 28.

Collected by:

Feasibility of manioc production in Northeast Brazil. Brazil.
University of Georgia, 1971. pp. 69

TABLE 26. Implicit Farm Prices for Selected Commodities in Pernambuco in Nominal Terms.

	MANTIOC (per ton roots)	CORN (per 60 kg/bag)	BEANS (per 60 kg/bag)
1960	1.29	.35	1.21
1961	2.73	.61	1.73
1962	5.21	1.40	3.97
1963	5.96	1.63	4.21
1964	8.92	3.07	7.18
1965	17.2	4.33	14.4
1966	29.9	6.38	18.6
1967	36.0	5.99	15.4
1968	38.9	7.12	19.6
1969	47.9	11.06	40.8

Source: Banco do Nordeste do Brasil, S.A. Departamento Rural, Informações Básicas para Elaboração de Orcamentos Agrícolas no Nordeste, Fortaleza, Ceará (Junho, 1969).

Collected by:

Feasibility of manioc production in Northeast Brazil. Brazil.
University of Georgia, 1971. pp. 55

TABLE 27. Implicit Real Farm Prices for Selected Commodities (1970 Cr\$).

	MANIOC (per ton roots)	CORN (per 60 kg/bag)	BEANS (per 60 kg/bag)
1960	46.1	12.5	43.2
1961	70.0	15.6	44.3
1962	88.3	23.7	67.3
1963	57.3	15.7	40.5
1964	44.8	15.4	36.1
1965	55.1	13.9	46.1
1966	69.7	14.9	43.4
1967	65.2	10.8	27.9
1968	56.8	10.4	28.6
1969	57.8	13.4	49.3
Average	61.1	14.4	42.7

Source: Banco do Nordeste do Brasil, S.A. Departamento Rural, Informações Básicas para Elaboração de Orcamentos Agrícolas no Nordeste, Fortaleza, Ceará (Junho, 1969).

Collected by:

Feasibility of manioc production in Northeast Brazil. Brasil. University of Georgia, 1971. pp. 56

TABLE 28. Real Wholesale Prices of Selected Commodities in the Recife Market (1970 - Cruzeiros)

YEAR	MANIOC FLOUR (50 kg)	CORN (60 kg)	BEANS (60 kg)
1960	12.6	12.7	68.6
1961	18.1	14.4	52.3
1962	51.2	28.3	92.8
1963	45.1	18.4	59.8
1964	24.4	15.4	50.5
1965	36.0	22.0	68.9
1966	42.9	16.8	79.0
1967	35.1	32.2	43.6
1968	24.4	12.3	41.6
1969	26.1	14.5	70.4
Average	31.6	18.7	62.8
Per Kilogram	63 cents	31 cents	1.05 cents

Source: Departamento Estadual de Estatística, Anuário Estatístico de Pernambuco.

Estado de Pernambuco, Secretaria da Agricultura, Indústria e Comércio, 1965 and 1969.

Note: Nominal prices deflated by the General Wholesale Price Index - 1970 = 100.0

Collected by:

Feasibility of manioc production in Northeast Brazil. Brasil. University of Georgia. 1971. pp. 70

TABLE NO.29. MANDIOCA PARTICIPATION RATE ON MONTHLY PRICE

INDEX RECEIVED BY FARMERS. 1972 */

<u>Month</u>	<u>Percentage</u>	<u>Variation</u>
January	2.78	
February	3.00	0.22
March	3.04	0.04
April	2.83	-0.21
May	3.44	0.61
June	3.33	-0.11
July	2.69	-0.64
August	2.43	-0.26
September	2.42	-0.01
October	2.34	-0.08

Source: Instituto de Economía Agrícola . IEA. Sao Paulo City, 1972.

*/ The market basket is compound by the following products = 100 per 100.

Amendoin em casca, Arroz em casca, Banana, Batata, Cafe beneficiado, cebola, chá, feijão, laranja, mamona, mandioca, milho, saja, tomate, Aves, Bovinos, leite, ovos, suínos.

TABLE NO. 30. AVERAGE MONTHLY PRICES AT RETAILER MARKET. 1972.

FARINHA DE MANDIOCA. CR\$/KILO. SAO PAULO

<u>Months</u>	<u>Crua Fina</u>	<u>Crua Grossa</u>	<u>Torrada</u>
January	1.20	1.59	1.16
February	1.29	1.62	1.24
March	1.22	1.68	1.18
April	1.21	1.77	1.21
May	1.25	1.85	1.11
June	1.23	1.78	1.26
July	1.28	1.73	1.16
August	1.29	1.73	1.21
September	1.28	1.73	1.18
October	1.21	1.68	1.23
November	1.15	1.62	1.22
December	1.40	1.67	1.25

Source: Superintendencia Nacional do Abastecimento. SUNAB. Delegacia de Sao Paulo.

Explanation of the average monthly prices at retailer market in Sao Paulo.

Wholesale market

The cereal stock market in this city quotes cassava flour classifying the product in the following types:

- Crua (extra e comum)
- Torrada

Retailer market

The I.E.A. in this city quotes cassava flour classifying the product in the following types:

- Crua (grossa e fina)
- Torrada

TABLE NO. 31. AVERAGE MONTHLY PRICES AT RETAILER MARKET, 1972

CR \$/KGR. "AIPIM" (FRESH ROOT)

<u>Cities</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May.</u>	<u>Jun.</u>	<u>Jul.</u>	<u>Aug.</u>	<u>Sep.</u>
Pôrto Velho	0.70	0.78	0.78	0.70	0.70	-	-	-	-
Rio Branco	0.25	0.25	0.25	-	0.25	0.25	0.25	0.25	0.25
Manaus	1.00	1.00	1.00	1.50	1.50	1.50	1.50	1.50	2.00
Boa Vista	0.50	0.50	1.00	1.00	1.40	1.00	1.00	1.00	1.00
Belém	-	-	-	-	-	-	-	-	-
Macapá	-	-	-	-	-	0.50	0.50	0.50	0.50
Sao Luís	-	1.00	1.00	1.00	1.00	1.00	0.88	0.85	0.80
Teresina	-	-	-	-	-	-	-	-	-
Fortaleza	0.60	0.70	0.60	0.57	0.70	0.57	0.53	0.53	0.50
Natal	1.00	-	-	1.00	-	-	-	-	-
Joao Pessoa	0.50	0.50	0.50	0.50	0.50	0.50	0.40	0.40	0.40
Recife	0.80	0.80	-	0.80	0.80	0.80	0.75	0.75	0.75
Maceió	0.72	0.72	0.72	0.72	0.72	0.53	0.52	0.53	0.50
Aracaju	-	-	-	-	-	-	-	0.40	0.50
Salvador	0.60	0.90	1.05	1.00	0.99	1.13	1.00	1.00	1.00
Belo Horizonte	0.50	0.60	0.70	0.65	0.70	0.70	0.60	0.70	0.60
Vitória	0.65	0.70	1.03	0.80	0.73	0.73	0.73	0.63	0.67
Niterói	0.69	0.66	0.75	0.73	0.70	0.72	0.72	0.76	0.81
Rio de Janeiro	0.81	0.83	0.84	0.83	0.85	0.86	0.82	0.85	0.93
São Paulo	0.60	0.87	0.92	0.88	0.84	0.88	0.76	0.79	0.97
Curitiba	0.65	0.65	0.70	0.75	0.70	0.70	0.55	0.70	0.80
Florianópolis	0.50	0.58	0.79	0.77	0.86	0.80	0.79	0.79	0.83
Porto Alegre	-	0.80	0.71	0.71	0.64	0.62	0.60	0.62	0.65
Cuibá	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.80
Goiania	0.50	0.60	0.60	0.45	0.45	0.55	0.45	0.45	0.65
Brasília	0.48	0.54	0.53	0.56	0.54	0.55	0.60	0.61	0.56

Source: "Generos Alimenticios Comercio Varejista dos capitais"
Inquerito Nacional de Preços. 1971-1972

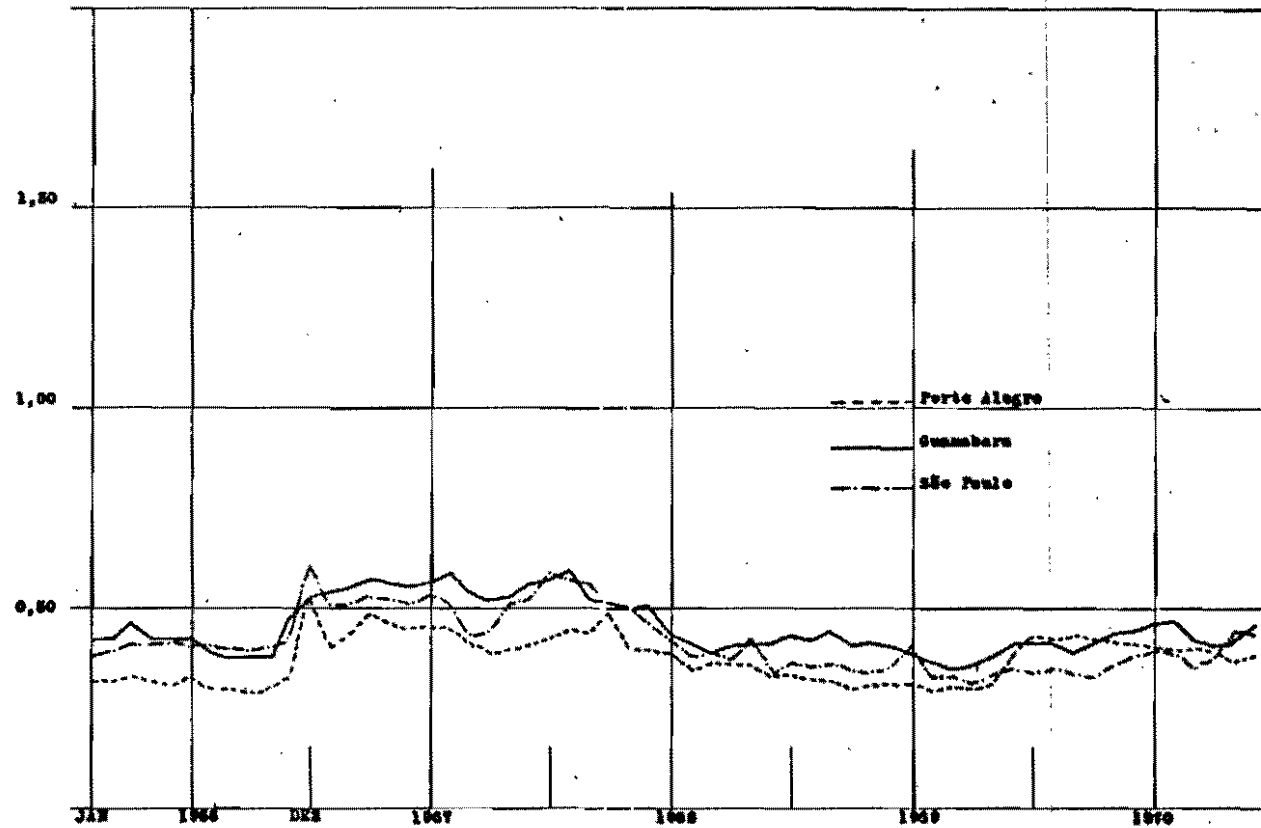
TABLE NO. 32. INDEX OF AVERAGE MONTHLY PRICES AT RETAILER MARKET, 1972

CR\$ KGR. "AIPIM" (FRESH ROOT). JANUARY = 100

<u>Cities</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>
Porto Velho	111	111	100	100	-	-	-	-
Rio Branco	100	100	-	100	100	100	100	100
Manaus	100	100	150	150	150	150	150	200
Boa Vista	100	200	200	280	200	200	200	200
Belém	-	-	-	-	-	-	-	-
Macapá	-	-	-	-	-	-	-	-
São Luís	-	-	-	-	-	-	-	-
Teresina	-	-	-	-	-	-	-	-
Fortaleza	117	100	95	117	95	88	88	83
Natal	-	-	100	-	-	-	-	-
Jão Pessoa	100	100	100	100	100	80	80	80
Recife	100	-	100	100	100	94	94	94
Maceió	100	100	100	100	74	72	74	69
Aracaju	-	-	-	-	-	-	-	-
Salvador	150	175	167	165	188	167	167	167
Belo Horizonte	120	140	130	140	140	120	140	120
Vitória	108	158	123	112	112	112	97	103
Niterói	96	109	106	101	104	104	110	117
Rio de Janeiro	102	104	102	105	106	101	105	115
São Paulo	145	153	147	140	147	127	132	162
Curitiba	100	108	115	108	108	85	108	123
Florianópolis	116	158	154	172	160	158	158	166
Porto Alegre	-	-	-	-	-	-	-	-
Cuiabá	100	100	100	100	100	100	100	100
Goiania	120	120	90	90	110	90	90	130
Brasília	113	110	117	113	115	125	127	117

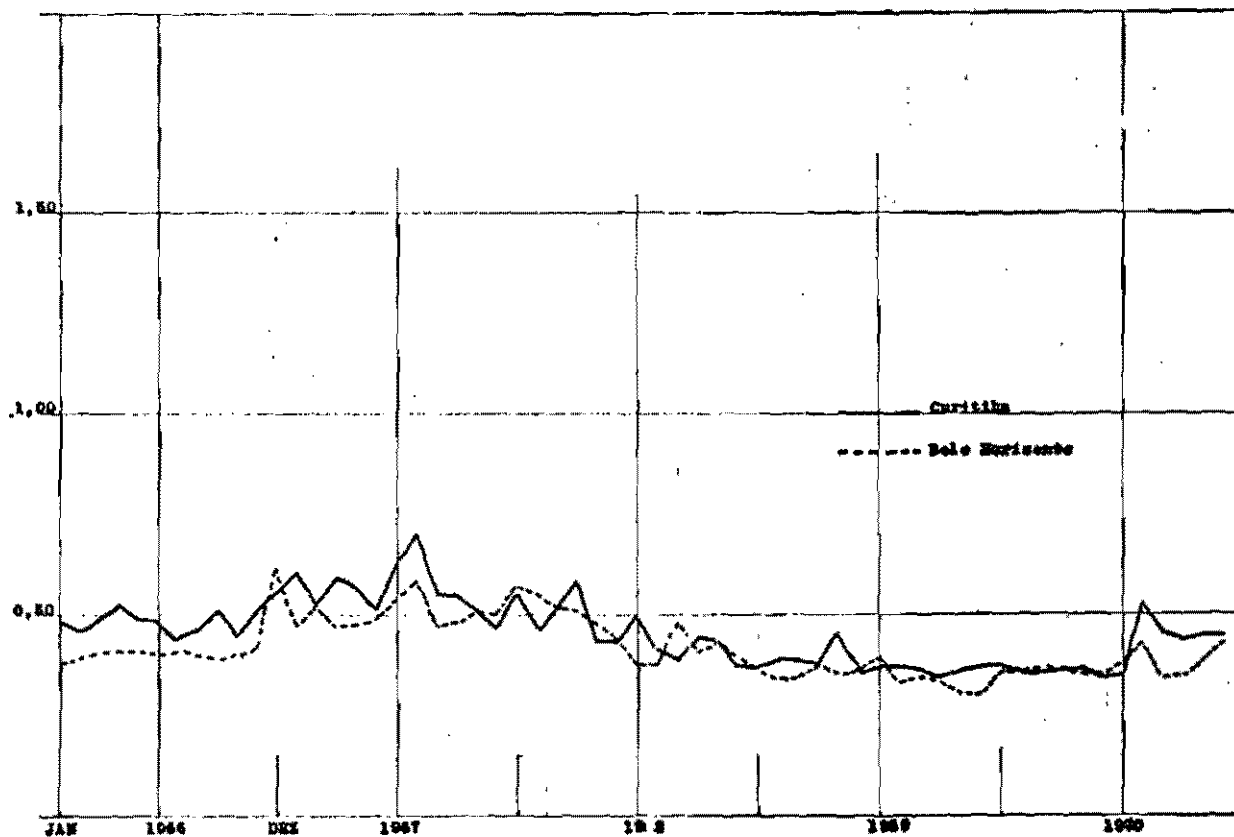
Source: "Generos Alimenticios Comercio Varejista dos capitais". Inquerito Nacional de Precos. 1971-1972.

FIG.1. AVERAGE MONTHLY PRICES (REAL) AT WHOLESALE MARKET, FARINHA DE MANDIOCA.
CR \$/KG. 1966/1970. BASE: NOV. 1970 = 100



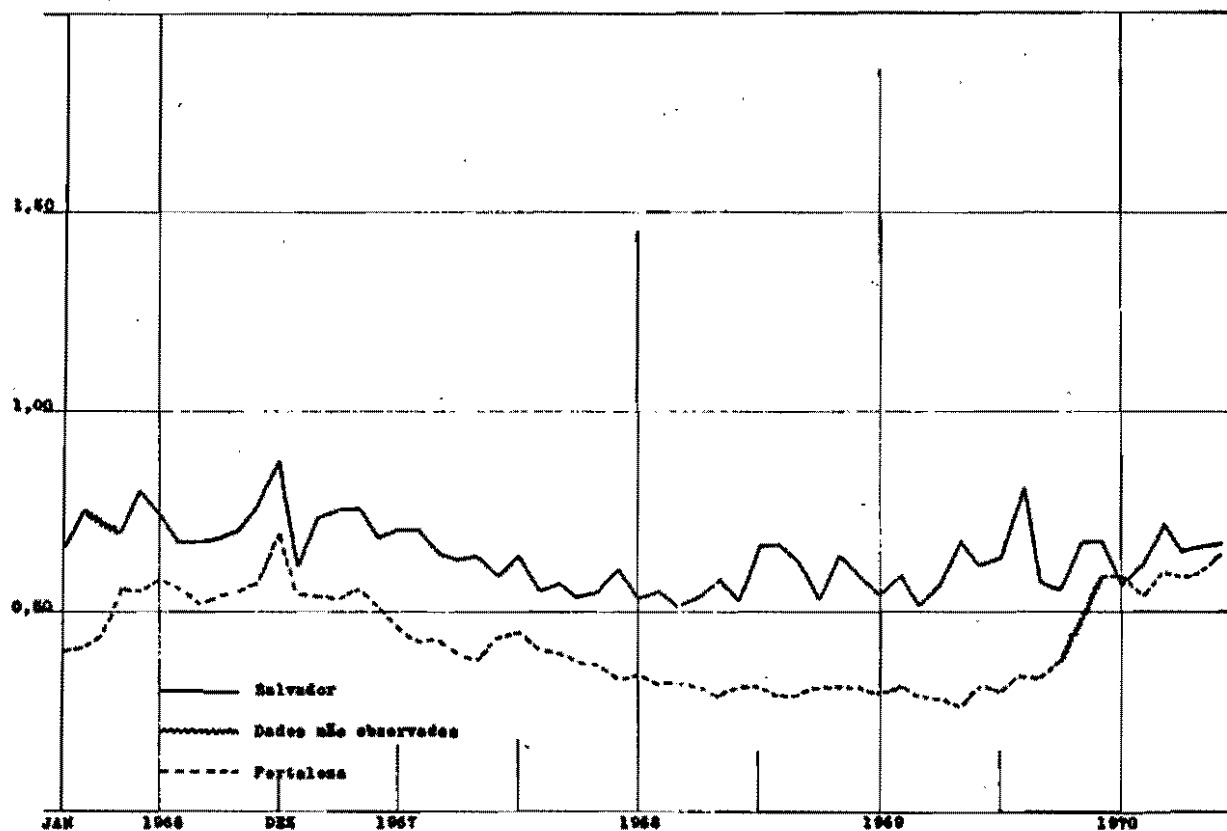
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971.
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FIG. 2. AVERAGE MONTHLY PRICES (REAL) AT WHOLESALE MARKET, FARINHA DE MANDIOCA.
CR \$/KG. 1966/1970. BASE: NOV: 1970 = 100



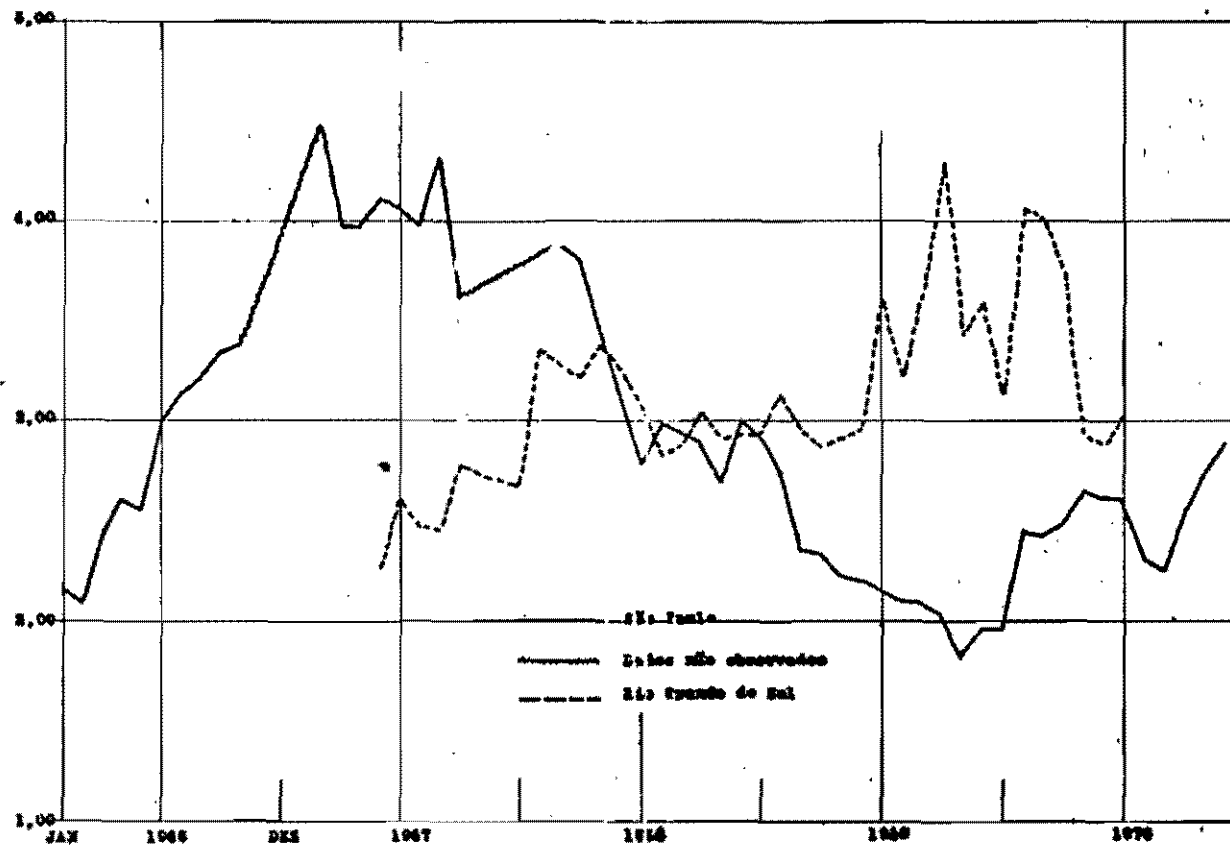
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971.
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FIG.3. AVERAGE MONTHLY PRICES (REAL) AT WHOLESALE MARKET, FARINHA DE MANDIOCA.
CR \$/KG. 1966/1970. BASE: NOV. 1970 = 100



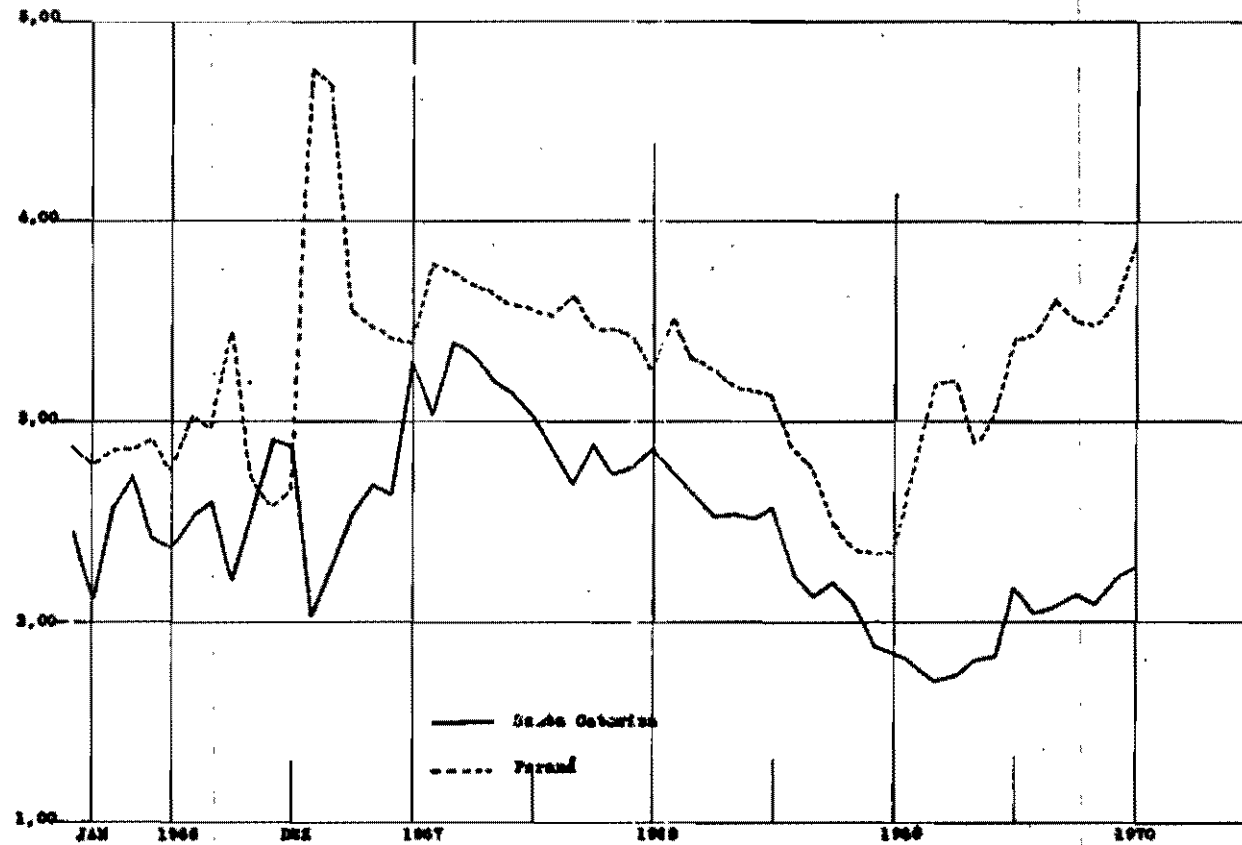
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971.
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FIG 4. REAL FARM PRICES OF MANDIOCA. CR \$/50 KGS. 1966/1970.
 BASE: NOV. 1970 = 100



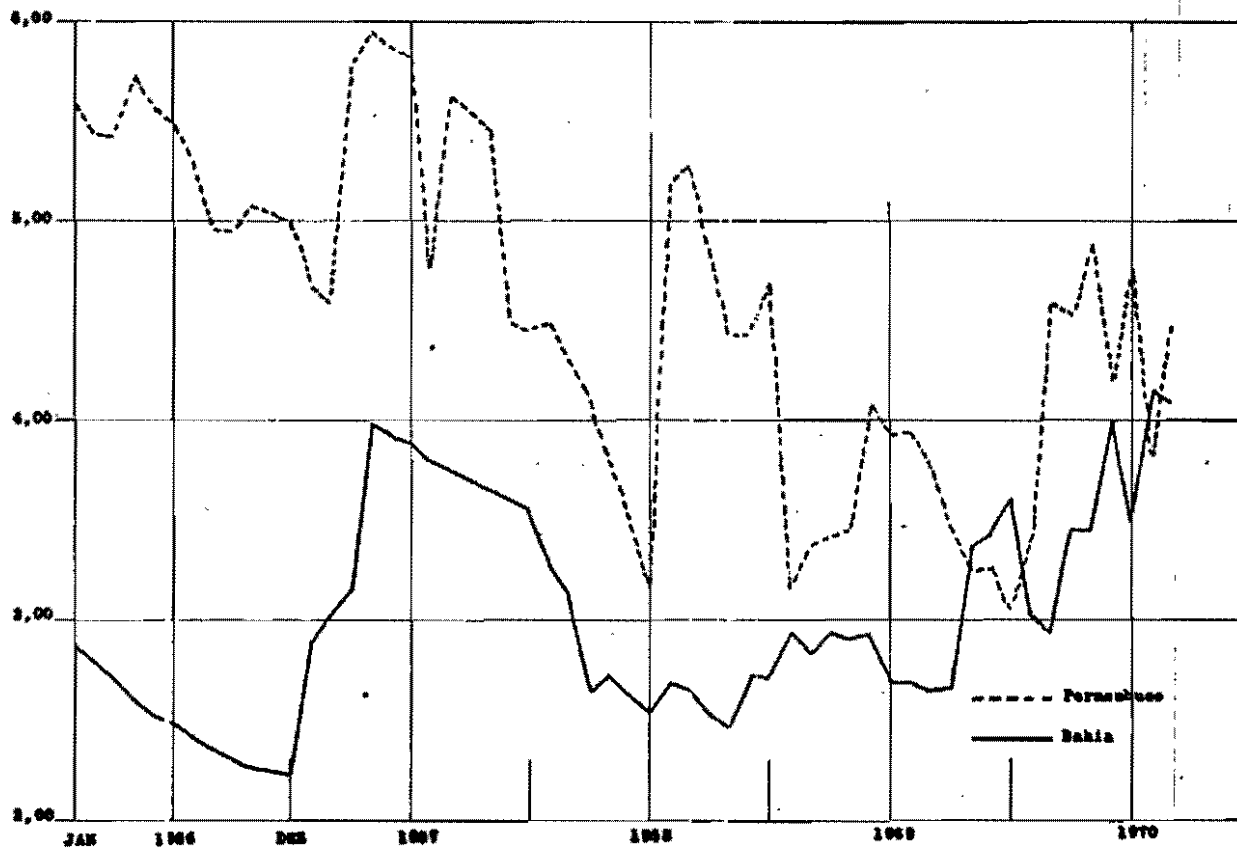
Source: BRASIL. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971.
 Vol. II.

FIG 5. REAL FARM PRICES OF MANDIOCA. CR \$/50 KGS. 1966/1970.
 BASE: NOV. 1970 = 100



Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971
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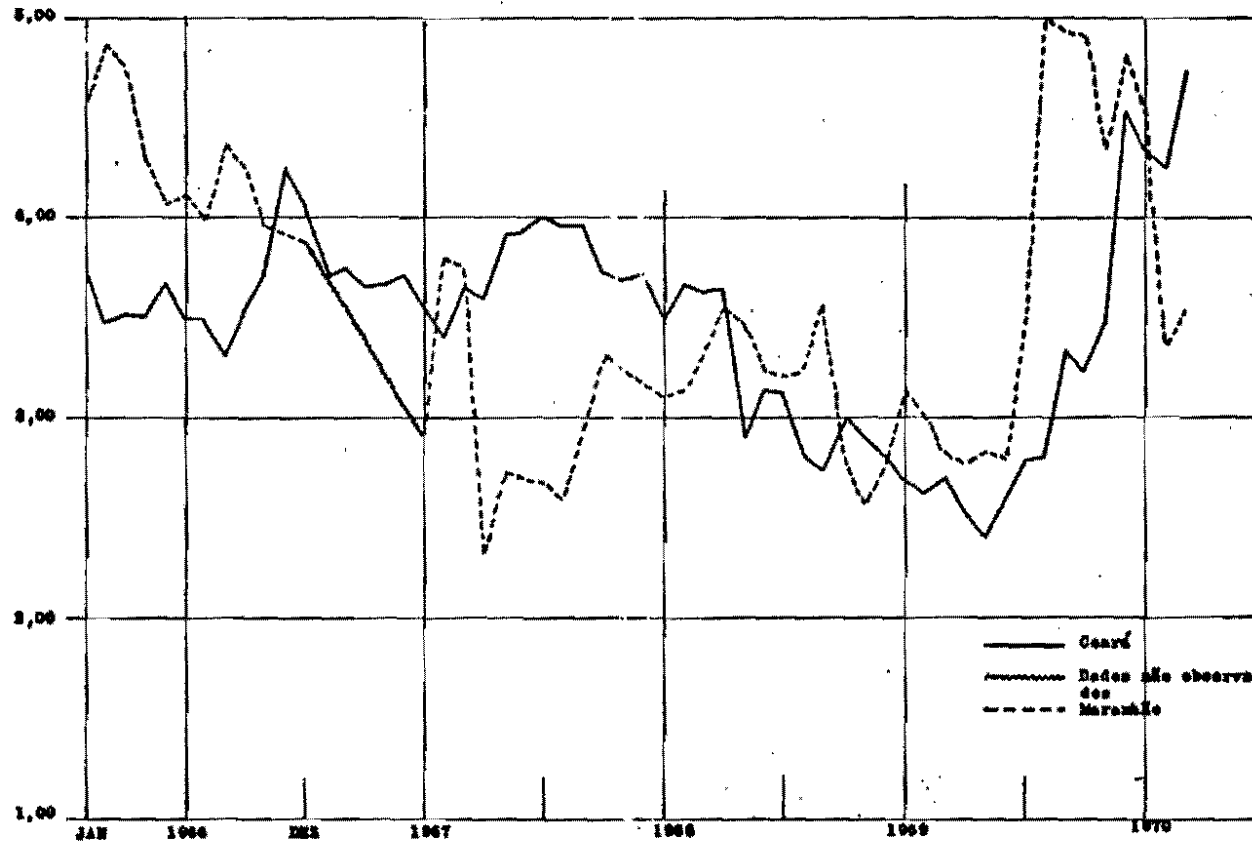
FIG 6. REAL FARM PRICES OF MANDIOCA. CR \$/50 KGS. 1966/1970.
BASE: NOV. 1970 = 100



Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971.
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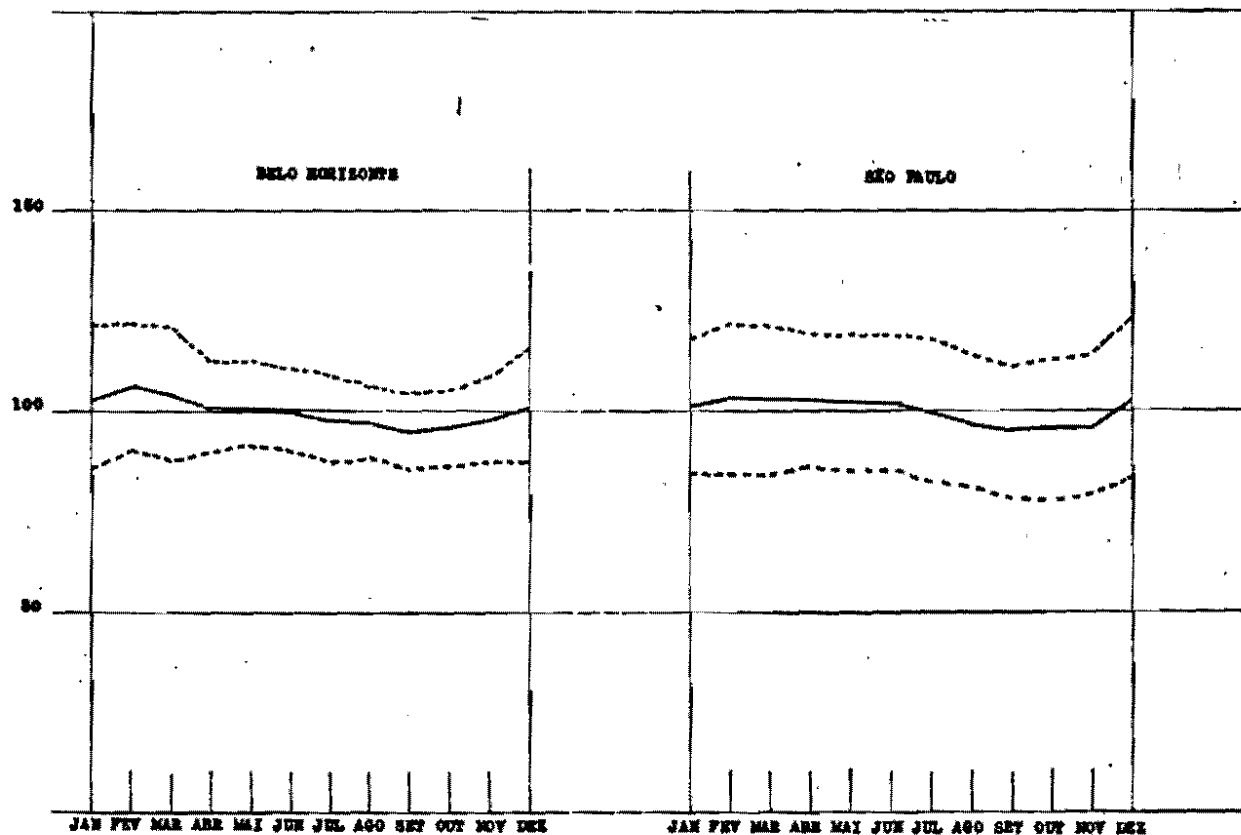
FIG 7. REAL FARM PRICES OF MANDIOCA. CR \$/50 KGS. 1966/1970.

BASE: NOV. 1970 = 100



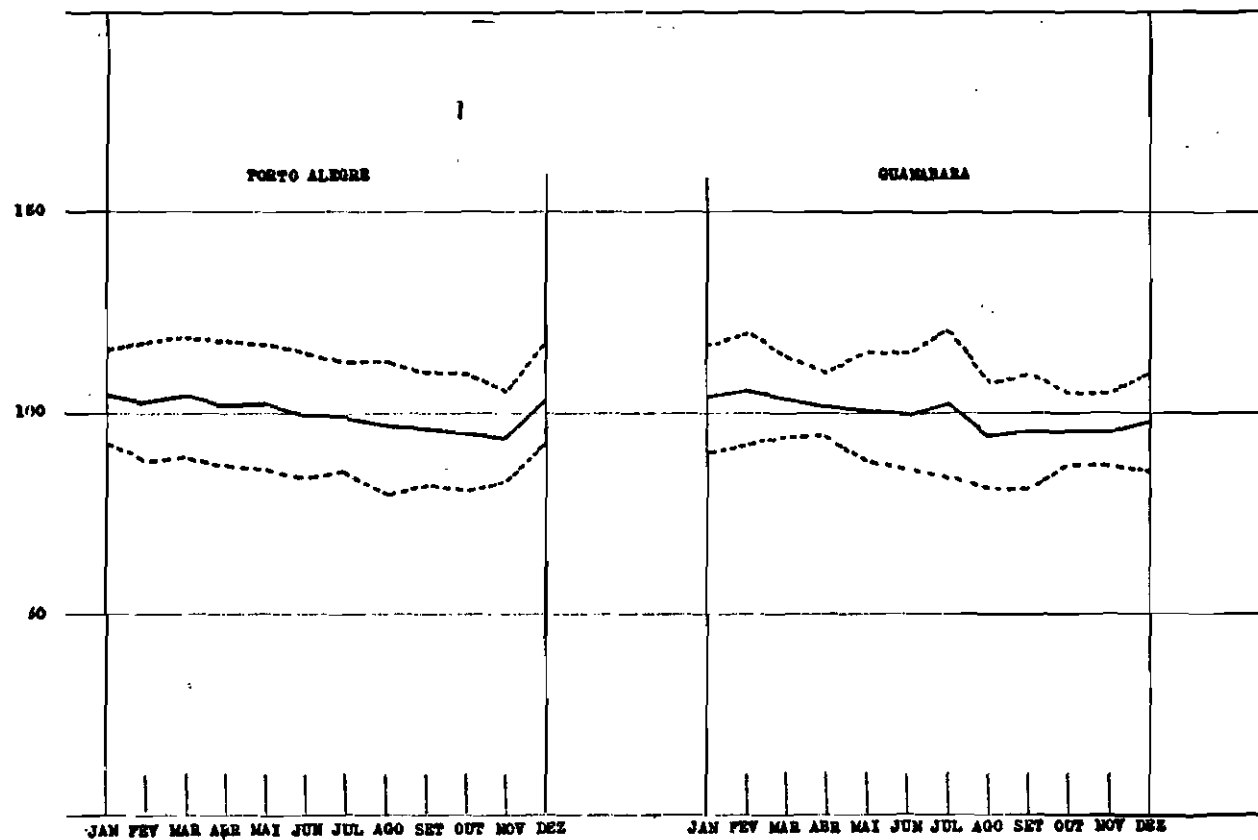
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971. Vol. II.

FIG.8. SEASONAL INDEX OF PRICES AT RETAILER MARKET. FARINHA DE MANDIOCA. CR \$/KGR. 1964/1970



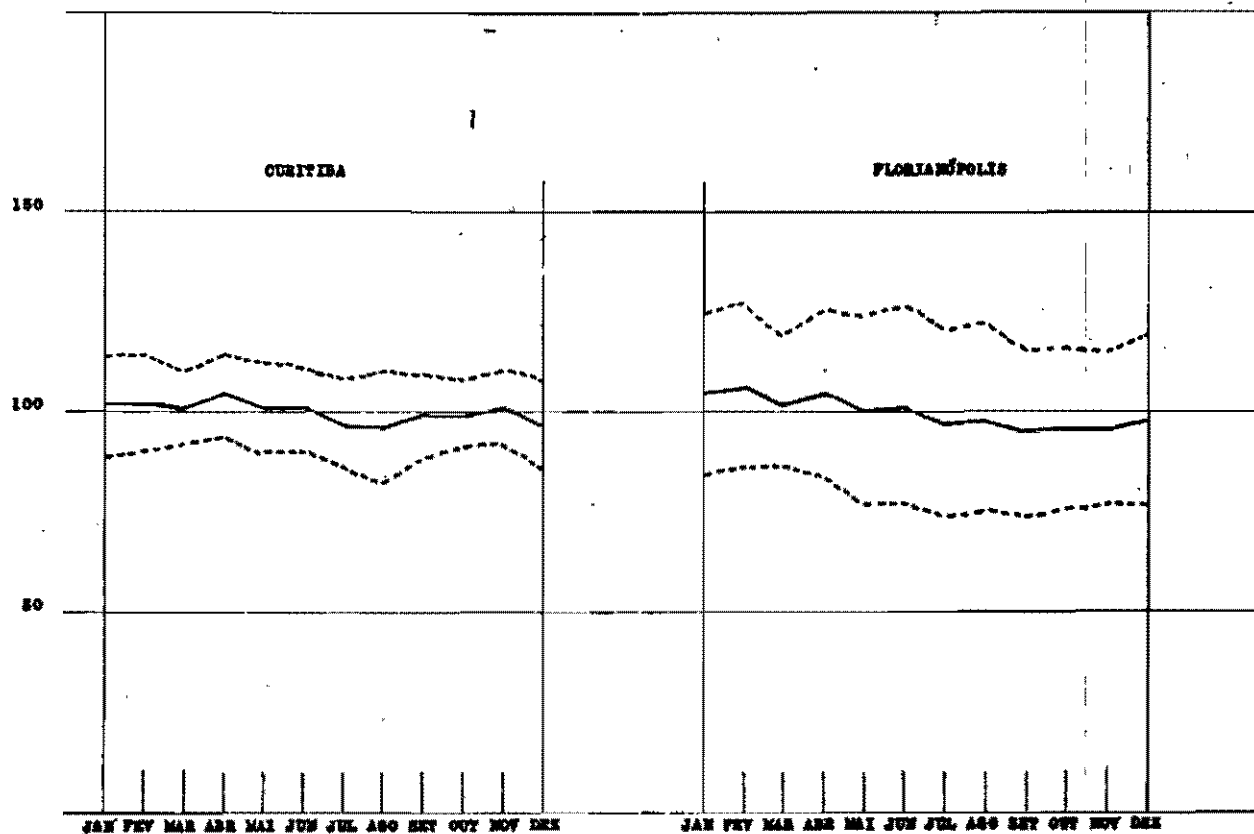
Source: BRasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971. Vol. II.

FIG. 9. SEASONAL INDEX OF PRICES AT RETAILER MARKET, FARINHA DE MANDIOCA. CR \$/KGR. 1964/1970



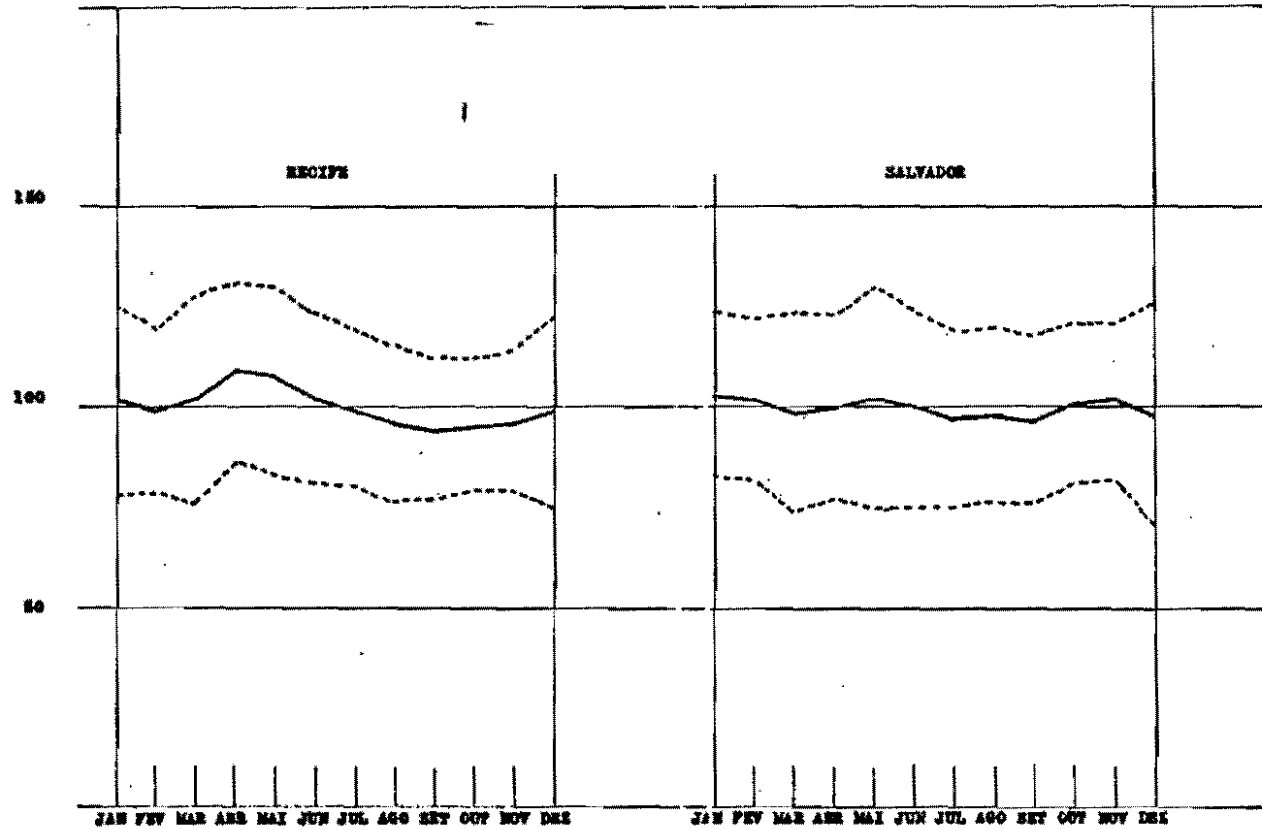
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971. Vol. II.

FIG 10. SEASONAL INDEX OF PRICES AT RETAILER MARKET. FARINHA DE MANDIOCA. CR \$/KGR. 1964/1970



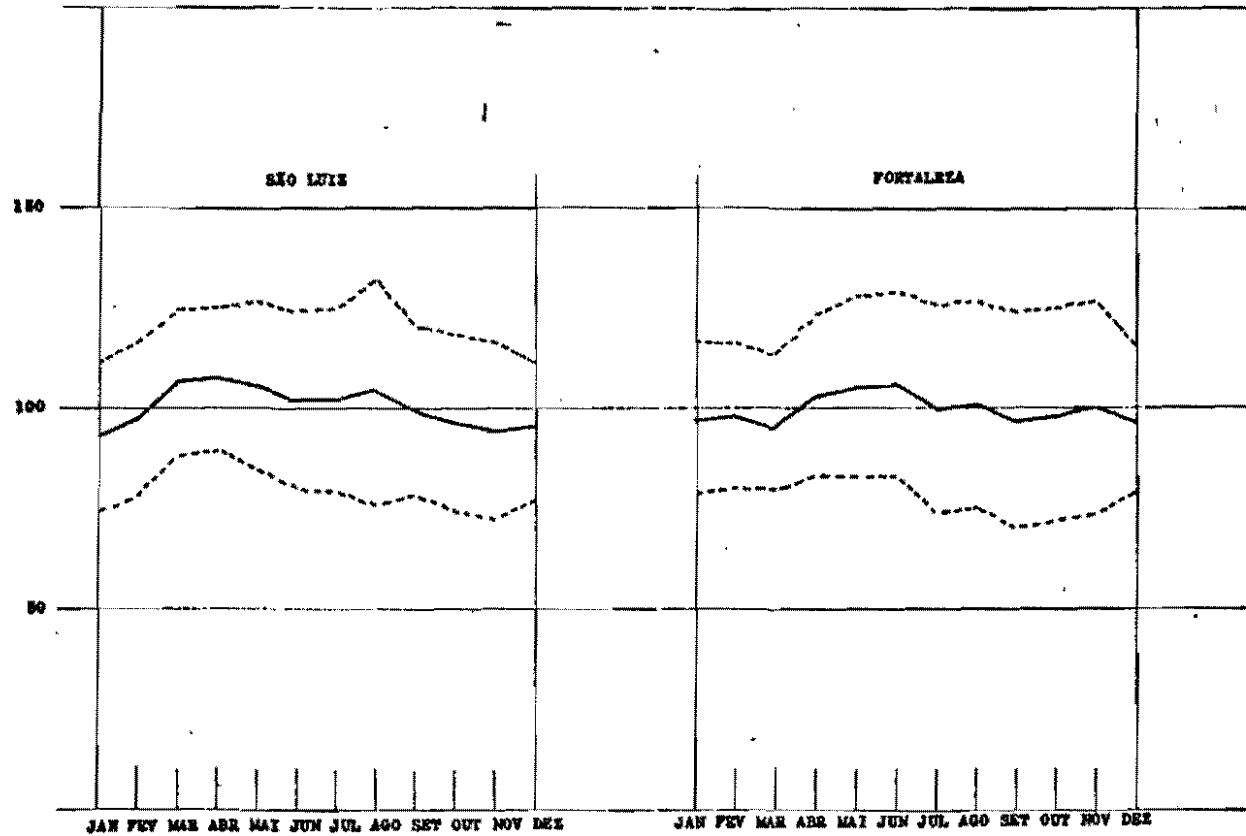
Source: Brasil. Ministério da Agricultura. Mandioca. Productos essenciais. 1971
Vol. II.

FIG 11. SEASONAL INDEX OF PRICES AT RETAILER MARKET. FARINHA DE MANDIOCA. CR \$/KGR. 1964/1970



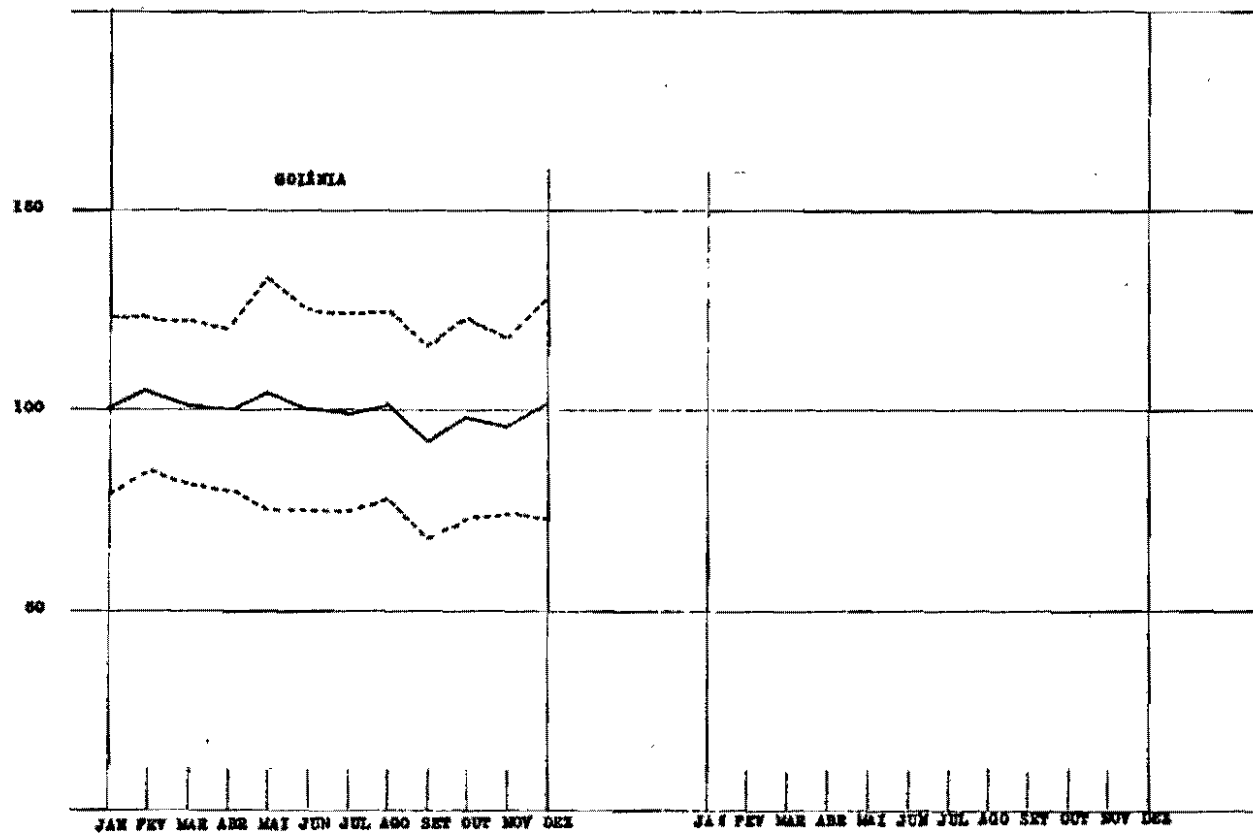
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971 Vol. II.

FIG 12. SEASONAL INDEX OF PRICES AT RETAILER MARKET.FARINHA DE
 MANDIOCA. CR \$/KGR. 1964/1970



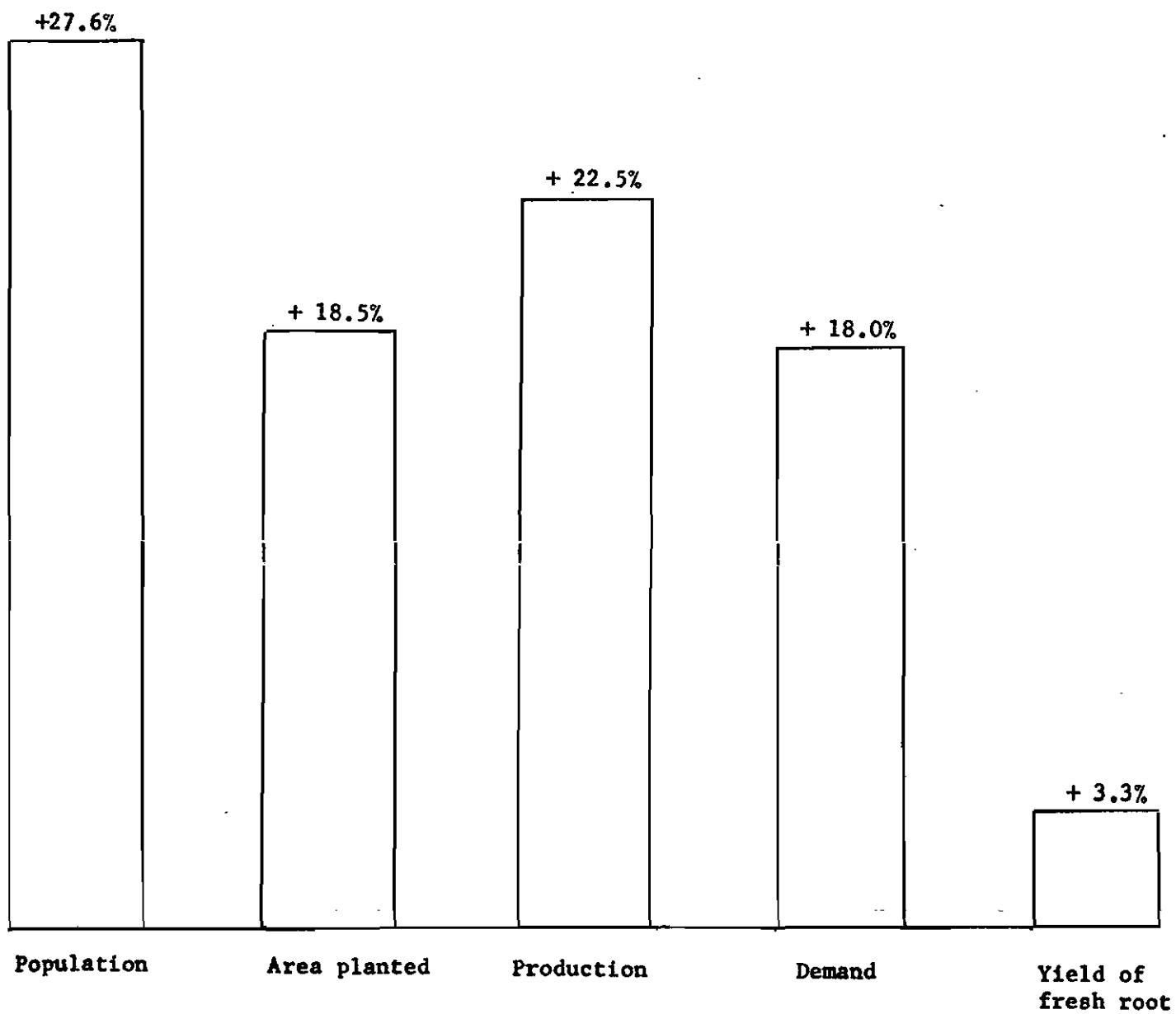
Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971
 Vol.II.

FIG 13. SEASONAL INDEX OF PRICES AT RETAILER MARKET, FARINHA DE MANDIOCA. CR \$/KGR. 1964/1970



Source: Brasil. Ministerio da Agricultura. Mandioca. Productos essenciais. 1971
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FIGURE 14. BRAZIL'S DEMAND PROJECTIONS OF MANDIOCA FOR N.E. AND N.



Source: Refinações de Milho, Brasil, Ltda. 1971.