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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT  
INTERNATIONAL DEVELOPMENT ASSOCIATION

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BEEF CATTLE PROJECT

GUYANA

November 9, 1970

Agriculture Projects Department

CURRENCY

Guyanese dollars (G\$)

|              |   |             |
|--------------|---|-------------|
| US\$1        | = | G\$2.0      |
| G\$1         | = | US\$0.50    |
| G\$1,000,000 | = | US\$500,000 |

WEIGHTS AND MEASURES  
(British System)

|                         |   |  |
|-------------------------|---|--|
| 1 pound (lb)            | = | 0.453 kilogram                               |
| 1 long ton (ton)        | = | (2,240 pounds<br>1.016 metric ton)           |
| 1 short ton (sh ton)    | = | (2,000 pounds<br>0.907 metric ton)           |
| 1 mile (mi)             | = | 1.609 kilometers                             |
| 1 acre (ac)             | = | 0.405 hectare<br>(640 acres)                 |
| 1 square mile (sq mi)   | = | (2.590 square kilometers<br>258.99 hectares) |
| 1 Imperial gallon (IMg) | = | 4.7 liters                                   |

ABBREVIATIONS

|      |   |                                       |
|------|---|---------------------------------------|
| FMD  | - | Foot and Mouth Disease                |
| GDP  | - | Gross Domestic Product                |
| IDA  | - | International Development Association |
| LAC  | - | Livestock Advisory Committee          |
| LDCo | - | Livestock Development Company         |
| LDF  | - | Livestock Development Fund            |
| LPD  | - | Livestock Projects Division           |
| UK   | - | United Kingdom                        |

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This report is based on the findings of an IDA appraisal mission to Guyana in February/March 1970, composed of Messrs P.G. Nelson, R. Milford (IDA), C. Amorin (Consultant Economist) and H. Kelly (Cooperative and Marketing Consultant).



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## GUYANA

### BEEF CATTLE PROJECT

#### SUMMARY AND CONCLUSIONS

- i. This report is on the appraisal of a Project for a first stage in the planned development of Guyana's beef cattle industry. Guyana had a small beef export trade, but the industry has been declining, largely because of poor management and the slaughter of young stock, and Guyana now imports beef. It has been hampered also by absence of long term land title, shortage of long term credit, and lack of experience in modern ranching methods. Local cattle are available for ranch development, if they can be mobilized; and large areas are suitable for ranching. Some of these areas could be used for sugar or rice, the two principal agricultural products; but market prospects for these products are doubtful and large sums would need to be spent on drainage and irrigation to prepare the land for them. Ranch development is the more attractive immediate use.
- ii. About 70% of Guyana's 260,000 cattle are in the Coastal Savanna. A special and important feature of the Project is the mobilizing of coastal cattle owners and their stock into commercial ranching enterprises on new land under skilled management. At least 10 coastal groups, each comprising 10-50 cattle owners, say they would definitely participate and many others are interested. Without the Project, it is very unlikely that they would come together, and the cattle industry would not progress. A cautious approach is proposed, however, and only an estimated 25 private ranches, 15 coastal and 10 elsewhere, would be included in this first phase. They would be owned by individuals, partnerships, companies or cooperatives. In addition, two ranches owned by the newly formed Livestock Development Co Ltd (LDCo - Government and commercial partners) would be included.
- iii. The proposed IDA credit of US\$2.2 million would be about 50% of the estimated US\$4.4 million equivalent project cost. US\$1.8 million, or about 82% of the credit, would finance the foreign exchange component (40% of total cost). The balance of US\$0.4 million, 18% of the credit, would finance local currency expenditures. Government would contribute about 14%; ranches (and land clearing contractors) and commercial banks about 18% each. This would be the Bank Group's first direct lending for Guyana agriculture though a Bank loan was made to the Credit Corporation (which does some agricultural lending) in 1961 and repaid in 1969, and a US\$5 million loan was approved in 1968 for Sea Defense, which essentially protects agricultural production.

iv. The credit would be made to the Government of Guyana, which would bear the foreign exchange risk. Government would set up a Livestock Development Fund (LDF), to be administered by the Bank of Guyana as Trustee, and transfer to it the funds needed to rediscount commercial bank loans and run the project.

v. Commercial banks would lend to project ranches for 12 years, including 4 years' grace, at 9 1/2% per year, of which 1/2% would be passed on as service fee to the Bank of Guyana by way of contribution to the costs of its Livestock Projects Division (LPD). They would also lend to clearing contractors (for purchase of imported machinery) for 5 years, including 1 year's grace, at 9%. These rates compare with the 1969 average for all lending in Guyana, mostly short term, of 8 1/2%. Commercial banks would rediscount 75% of their project loans with LDF at 6%; and IDA would reimburse to LDF the amounts so rediscounted (82% of the proposed credit). IDA would also finance the foreign exchange cost of LPD (13% of the credit) and of studies for further development of the livestock industry (5%).

vi. Loans to project ranches would be used to finance fencing, water, pasture establishment, agricultural machinery, ranch buildings and other investment items, which would mostly be bought through existing commercial channels. International competitive bidding would not be appropriate because the scale of individual investment is too small, and the variety too great, for bulk procurement.

vii. The Project would lead to improvement and upgrading of Guyana's beef cattle industry and give it important stimulus, both by example and through the supply of surplus breeding and fattening stock. It would involve the commercial banks for the first time in long term lending for agriculture. It would increase net beef production after about three years, saving imports and possibly leading to exports.

viii. Returns on incremental investment would be satisfactory, both to ranching enterprises (13% to 21% depending on location and type) and to the economy of Guyana (21%). Subject to assurances, the Project is suitable for an IDA Credit of US\$2.2 million.



## GUYANA

### BEEF CATTLE PROJECT

#### I. INTRODUCTION

1.01 The Government of Guyana seeks IDA finance for a beef cattle project, a first stage in the planned development of the industry. Prospects for beef cattle development were recognized by a Bank economic mission in October/November 1966. <sup>1/</sup> An FAO livestock reconnaissance mission visited Guyana in June/July 1968. The Project was prepared in July/December 1969 by a Government Livestock Preparation Commission headed by Mr. C. Chisholm, an international consultant, assisted from time to time by Bank staff. This report is based on the findings of an IDA appraisal mission to Guyana in February/March 1970, composed of Messrs P.G. Nelson, R. Milford (IDA), C. Amorin (Consultant Economist) and H. Kelly (Cooperative and Marketing Consultant).

1.02 Government sought an IDA credit of US\$4 million to finance a project estimated to cost US\$7 million. The project submitted included investment in 24 coastal ranches averaging 10,000 ac, 3 Intermediate Savanna ranches, and a coastal ranch of 20,000 ac to be owned by a newly formed Livestock Development Company (LDCo), together with initial herds. It was agreed with Government that the equivalent of about 15 coastal ranches of 10,000 ac, of which 7,500 ac (average) would be developed initially, would be a more realistic first phase target and that, in general, the Intermediate Savanna is not yet ready for development. It was also agreed that 10 private ranches (average 64,000 ac) and one LDCo ranch of 200,000 ac in the Rupununi Savanna (see Map) be included. The revised project is estimated to cost US\$4.4 million.

#### II. BACKGROUND

##### A. General

##### Geography

2.01 Guyana is on the northeastern Atlantic coast of South America. Independent since 1966, it became a "Cooperative Republic" within the

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<sup>1/</sup> "An Appraisal of the Development Program of Guyana", WH-169, April 21, 1967; pp. 6 and 14.

British Commonwealth in February 1970. Bounded by Venezuela, Brazil and Surinam, its 83,000 sq mi (about the same as UK) divides into four natural regions:

- (a) Coastal Savanna: 270 mi of narrow fertile coastal plain, mostly below sea level and seasonally flooded. Soils range from heavy black clay in lower areas to sandy loam in islands of forest. About 95% of the population lives in this 2,500 sq mi (3% of the land area) producing 80% of Gross Domestic Product (GDP). The region has about 70% of the country's cattle;
- (b) Intermediate Savanna: a sandy clay belt, southwest of the coastal plain; of low fertility and sparsely populated;
- (c) The Guyana Mountains: a high range that runs NW/SE and extends into Surinam and French Guiana; and
- (d) Rupununi Savanna: in the southwest interior, with soils of generally low fertility and poor moisture retention. Ranching is the main industry in this region and it has about 25% of the country's cattle.

### Climate

2.02 Coastal rainfall averages 80 in per year, is heavy from May to mid-August and light from November to February; temperature ranges from 75° to 80° F. Rupununi Savanna rainfall averages from 50 to 60 in, almost all between May and August; temperature ranges from 70° to 80° F.

### Population

2.03 Guyana's English speaking multi-racial population of about 700,000 is growing at a rate of 2.8% per year. Approximately 35% of the 1968 labor force of about 245,000 was employed in agriculture, mostly rice production; 2% in mining; 43% in Government, commerce, industry and services. 20% were officially unemployed. 1/ Annual per capita rural income in 1969 was about US\$160.

### Foreign Trade

2.04 Guyana's trade balance showed an average annual surplus of US\$29 million from 1961-64, a small deficit between 1965-67, and small surpluses again in 1968 and 1969.

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1/ Economic Bulletin M3, Bank of Guyana, December 1969, and Bank economic mission early 1970.

2.05 Of total 1969 exports worth US\$130 million, 47% came from agriculture (sugar 35%; rice 7%; others 5%); 46% from mining, mainly bauxite and alumina; and 7% from the rest. Of total 1969 imports costing US\$120 million, agricultural products made up approximately 17%; vehicles, cigarettes, beverages and other consumer goods 16%; fuels, lubricants, chemicals and machinery 39%; and semi-manufactures 28%.<sup>1/</sup>

## B. The Agricultural Sector

### Contribution to the Economy

2.06 Guyana agriculture contributed about 21% of GDP in 1969. While GDP grew at 4% per year from 1955-69, agricultural product grew only 3% per year, with a marked slowing in the rate towards the end, mainly due to rice production problems. Of the total 1969 value of agricultural production, cane sugar contributed 47% and rice 12%. All crops together contributed 70%, livestock 14%, fishing and forestry 8% each.

### Agricultural Services

2.07 Agricultural Extension is organized into six districts with a staff of 65. Most work on sugar, rice, and general farming; none specifically on beef cattle.

2.08 Agricultural education is centered on Government's principal agricultural research station at Mon Repos, near Georgetown. Two-year diploma and certificate courses are offered together with regular 3 to 4 week courses for farmers. Advanced agricultural training is available at the Imperial College of Tropical Agriculture, Trinidad, where Guyana has a student quota.

2.09 Rice and coconut research is conducted at Mon Repos, with some attention to livestock, mainly dairy cattle, pigs and poultry. Beef cattle and pasture research is conducted mainly at Ebini in the Intermediate Savanna. Work here and at St. Ignatius in the Rupununi (now closed), though of long standing, has had little impact because it lacked an economic approach. Production-oriented research has begun at Ebini, and USAID has a program there for cattle cross-breeding and study of the nutritional value of pastures and supplements.

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<sup>1/</sup> Economic Bulletin M3, Bank of Guyana, December 1969, and Bank economic mission early 1970.

2.10 The Government Veterinary Service comprises a Senior Officer and six District Officers with supporting technical staff. District Officers have wide powers to control disease and also advise on animal husbandry and nutrition. They are now too few for a full service, though improvement is expected as graduates return from overseas.

### Credit

2.11 There are six commercial banks in Guyana. 1/ Five are branches of international banks and the sixth is the new National Cooperative Bank. About 80% of their loans to the private sector are for one year or less. They provide some long term credit, as do the Guyana Credit Corporation, life insurance companies, and a building (savings and loan) society. Most long term lending is for real estate. About 10% of total credit is devoted to agriculture, though between 1966 and 1969 the amount increased from G\$2.5 to 5 million (US\$1.3 to 2.5 million) in line with growth in other lending. Between 4% and 10% was for livestock.

2.12 The average interest rate in 1969 was about 8-1/2% per year; in 1968 it was just over 8%. Prime lending rate has been 7-1/2% since July 1966. The rate for agriculture is now generally 8-1/2% to 9-1/2%, with 10% for some personal loans. Banking and credit are discussed more fully in Annex 1.

2.13 Agricultural enterprises with good collateral are well supplied with short term credit, but very little long term credit has been available. Small farmers get limited short term credit from the Guyana Marketing Corporation, and the National Cooperative Bank is intended to help them further.

### Bank Group Lending for Agriculture

2.14 The Bank Group has made two loans related to Guyana agriculture. Loan 285 BG was made to the Credit Corporation in 1961 and repaid in 1969. US\$5 million loan 559 GUA for Sea Defense, which essentially protects agricultural production, was approved in September 1968 (US\$161,000 disbursed by August 31, 1970).

### C. The Beef Cattle Sub-Sector

2.15 The national beef herd of about 260,000 is almost entirely Creole and Creole-Zebu cross. About 180,000 are in the coastal strip and 60,000 in the Rupununi. The cattle population had risen between 1960 and

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1/ Barclays (DCO), Royal Bank of Canada, Bank of Baroda, Chase Manhattan Bank, Bank of Nova Scotia; Guyana National Cooperative Bank.

1965 to perhaps more than 300,000, though figures are not very reliable. The number is now dwindling because of poor management, reduction of grazing areas due to agricultural development, and premature slaughter of young stock and breeding cattle. Cattle generally run freely to graze where they can - often, in the coastal areas, on public domain or communal pastures (which are badly mismanaged). Output is consequently low and losses high. About 45,000 coastal families are in rice farming and half of them own cattle. Less than 1,000 owners have more than 25 cattle; about 200 have more than 50; very few more than 1,000.

2.16 There is little experience of modern cattle ranching. Average annual offtake is 10%; by comparison, an average of 15% is quite common in South America. Average carcass weight is low and has been declining; it was 320 lb in 1965 and 280 lb in 1969. On the few well managed ranches, steers reach a carcass weight of 400-420 lb in 3 to 4 years in the Coastal Savanna, and in 5 to 7 years in the Rupununi.

#### Animal Health

2.17 Calving percentages are low (about 40%) and calf mortalities sometimes as high as 35%. General causes are poor nutrition and parasitic infection. In the Coastal Savanna, a common cause is drowning, for most coastal pastures are low-lying, flood for 3 to 8 months every year, and rarely have high ground on which cows can calve. Adult cattle mortality is also high (6 to 7%), due partly to mineral deficiencies; stealing may be a contributory factor on the coast.

2.18 Foot and mouth disease (FMD) occurs spasmodically in the Rupununi but not on the coast, though it is a potential threat there. Paralytic rabies occurs countrywide. These and other diseases are controlled by the veterinary service through regular vaccination programs.

#### Problem of Increasing Beef Production from Coastal Area

2.19 The key to development of the Guyana beef industry is increased production from the coastal area. Most owners there realize their cattle would do better if properly handled in herds under controlled management, instead of wandering at will; but they are not very willing to give up individual ownership to form such herds. It would be technically feasible to increase production from small units, but it would be difficult, take a long time and be costly in relation to achievable benefit. Further details of the industry are in Annex 2.

#### Markets

2.20 Annual per capita beef consumption at 16 lb is one of the lowest in South America. <sup>1/</sup> To reverse the declining production trend,

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<sup>1/</sup> Bolivia 18, Argentina 190 lb; also cf Jamaica 21, USA 110, UK 50 lb.

without importing large numbers of breeding cattle (which are hard to find, and would be costly), immature stock and breeding cows must be retained. This would initially reduce beef production still further, requiring increased imports to maintain consumption at present levels.

2.21 Georgetown and New Amsterdam are the two principal markets (see Map) and cattle move there by boat, truck, train or on foot. Georgetown has one major municipal abattoir but this has no facilities for recovery of by-products and its cold storage is not used. Private cold stores in Georgetown, however, have sufficient capacity for immediate needs. Lethem, in the Rupununi, has a modern abattoir with spare capacity for near-term expansion.

2.22 Coastal cattle are generally sold through dealers, while those from the Rupununi are sold almost entirely through Meat Marketing Ltd (a company organized by 22 producers). The average retail price of beef in 1969 was G\$0.67 (US\$0.38) per lb. Average farmgate price is about 75% of retail. Guyana has exported small quantities of beef, but tight supply and uncertainties about FMD have now almost eliminated exports. During the last five years, beef imports varied between about 10% and 20% of consumption. Further details are in Annex 3.

### III. THE PROJECT

#### A. General Description

3.01 The Project is the development of selected beef cattle ranches in Guyana. It includes a 5-year program of long term loans for ranch development (12 years) and land clearing equipment (5 years) through commercial banks. These would finance the equivalent of 15 coastal ranches, (including one in the Intermediate Savanna and the cattle operations of some small coastal mixed farms), 10 commercial and Amerindian tribal ranches in the Rupununi, 1 LDCo coastal ranch (20,000 ac), and 1 LDCo Rupununi ranch (200,000 ac). Phasing of the entry of ranches into the Project, each borrowing by three annual instalments, would be approximately:

|                           | <u>Year</u>                    | <u>1</u>  | <u>2</u>  | <u>3</u> | <u>Total</u> |
|---------------------------|--------------------------------|-----------|-----------|----------|--------------|
|                           | <u>(Number of ranch units)</u> |           |           |          |              |
| Coastal                   |                                | 5         | 7         | 3        | 15           |
| Rupununi                  |                                | 4         | 4         | 2        | 10           |
| Livestock Development Co. |                                | 2         | -         | -        | 2            |
| <b>TOTAL</b>              |                                | <b>11</b> | <b>11</b> | <b>5</b> | <b>27</b>    |

3.02 Technical services would be provided through a Livestock Projects Division (LPD) which, together with a Livestock Development Fund (LDF), formed by Government for rediscout of loans under the program, would be administered by the Bank of Guyana as Trustee for Government (see Section D). The Project would also provide training of ranch managers and studies for further development of the livestock industry.

#### B. Project Areas and Land Tenure

##### Coastal Project Area

3.03 Fourteen of the fifteen coastal ranches, would be in the low lying flood plain within 30 miles of New Amsterdam (see Map). The fifteenth would be a partially developed private ranch in the Intermediate Savanna. Native pastures are generally good, though improvable, and high rainfall would make for relatively easy pasture establishment on cleared forest land. Commercial ranching is being successfully carried out at the Kabawer ranch (Bookers Sugar Estates Ltd). Unimproved pasture carries about 1 beast to 4 ac: minimal improvement raises this to 1 beast to 2 ac.

##### Rupununi Project Area

3.04 The ten Rupununi ranches would have Lethem as their natural outlet (see Map). Open range carries only 1 beast to 64 ac but careful management can improve this to 1 beast to 30 ac, or better. Extensive cattle ranching can be successful there, as the Rupununi Development Co Ltd and numbers of smaller private ranches demonstrate. Rainfall is good and so are prospects for pasture improvement.

##### Land Tenure

3.05 Few project ranches now have acceptable freehold or leasehold title. On the coast most of them would be newly established on State land with 25 year renewable, transferable leases. Large tracts of suitable land are available. Most Rupununi ranchers have long term title to their homesteads, but only annual grazing rights for their pasture. While these rights have been regularly renewed, they do not encourage long term investment and cannot be used as security for long term loans.

3.06 Government has promised prompt issue of leases to participating ranches on terms acceptable as security for commercial banks. To facilitate issue of leases within 60 days of application Government is amending its legislation to enable aerial survey to be used for defining lease areas. During negotiations, appropriate assurances were obtained from Government, and it will be a condition of effectiveness that at least 30,000 ac of coastal land had been surveyed for immediate lease as project ranches.

3.07 Amerindian (indigenous) villages have non-transferable tribal land, unsuitable as security for loans from commercial banks. Government has guaranteed repayment of principal and interest on commercial bank loans to participating Amerindian ranches (of which about four are expected in the Project) in a form acceptable to the commercial banks and it is a condition of effectiveness that the necessary legislation be passed.

### C. Detailed Features

#### Ranch Ownership and Type

3.08 Participating ranches would be owned by individuals, partnerships, companies or cooperatives. The form of ownership would depend on individual preference and circumstance but, unless a ranch was owned by only one person, cattle would be owned by the ranching enterprise and not by its members separately. Coastal and Amerindian ranches are expected to be owned by newly formed cooperatives whose members would have contributed cattle in exchange for share. The few coastal mixed farmers included, whose cattle operations would be developed under the Project, have mortgageable land and own up to 500 cattle each. They are equivalent in total to about one coastal ranch. All ranches (except Amerindian - see para 3.07) would have long term renewable leases or other acceptable land title. The average ranch and herd sizes would be:

| <u>Type of Ranch</u> | <u>Size (Acres)</u> | <u>Acres to be Developed</u> | <u>Initial Herd</u> | <u>Target herd</u> |
|----------------------|---------------------|------------------------------|---------------------|--------------------|
| Coastal              | 10,000              | 7,500                        | 2,750               | 5,000              |
| Rupununi             | 64,000              | 64,000                       | 1,200               | 2,250              |

#### Mobilization of Coastal Cattle Owners

3.09 A special and important feature of the Project is the grouping of small coastal cattle owners into commercial ranching enterprises. The Preparation Commission set up for this Project, together with Government staff, persuaded a number of small coastal cattle owners that it would be worth their while to combine, transfer most of their cattle to enterprises they would own collectively, on new land that Government would make available, and employ ranch managers under the central supervision of a Project Director. Those who rely on cattle for occasional cash income would keep a few for this purpose. They would also keep or dispose of elsewhere, those cattle not accepted into the Project. Enough cattle owners have expressed interest to form at least ten enterprises, and a few have already been formed as



ranching cooperatives; others await the outcome of Government's application to IDA and the granting of leases. All would need the stimulus the Project can provide. Government's offer of long term leases on new land at reasonable rental is a powerful incentive and 15 coastal ranches, of various types, is a reasonable initial objective.

#### Cooperative Ranching Enterprises

3.10 For primary agricultural cooperatives of the usual type, in Guyana as elsewhere, business transactions are simple and conducted on a relatively small scale. Such cooperatives can be managed by the elected officers and committee. For ranching enterprises, it is essential that the ranch manager be clearly responsible for the technical and financial operation of the ranch, without interference from elected officers and committee. For this, and other reasons the traditional form of cooperative rules is not entirely suitable for cooperative enterprises. A form of rules has been devised that would, with relatively minor amendments, be suitable, and acceptable to IDA. Certain exemptions would be required under the Guyana Cooperative Societies law and can be given by the Cabinet of Ministers. During negotiations, assurances were obtained that rules, acceptable to IDA, and in conformity with the Cooperative Societies Ordinance would be adopted and would not be changed so as to adversely affect commercial operation of project ranches. It would be a condition of effectiveness that any necessary exemptions be obtained.

3.11 Cattle owners forming ranching enterprises will need help with legal and administrative details. Only limited assistance can be expected from the overworked Cooperative Department and an early task of LPD (see paras 3.02, 3.22 and 3.23) would be to organize ranch formation. The LPD Deputy Director (Administrative) would be primarily responsible for this task. Details of the problems of cooperative group ranch organization and suggestions for their solution are outlined in Annex 4.

#### LDCo Ranches

3.12 LDCo, to be formed specially by Government and private investors, would be an important part of the Project. LDCo property would comprise:

- (a) a 20,000 ac ranch based on the Government owned Mara Rice Scheme (now dormant), which has housing, workshops and access roads. It would include an initial commercial herd of about 3,000 local cattle and a small stud herd of specially imported cattle to provide high grade breeding stock to the industry. Commercial production of pasture legume and grass seed would also be included; and
- (b) a 200,000 ac ranch based on the Government owned St. Ignatius station in the Rupununi with an initial herd of about 3,000.

3.13 These ranches would be run by a General Manager, internationally recruited by LDCo and satisfactory to IDA; he would be available part time for training ranch managers and 25% of his salary would be paid by LPD. At the time of appraisal, LDCo had not been formed. Government has since been discussing details with prospective shareholders, on the basis of Government holding 51% of the share capital, and has registered LDCo under Guyanese law. It would be a condition of effectiveness that LDCo had been established and shall have adopted articles of Agreement mutually satisfactory to Government and IDA and Government shall have secured confirmed agreement from other interested parties to subscribe to its equity. During negotiations, assurances were obtained from Government that LDCo general manager, satisfactory to IDA, would be appointed.

#### Ranch Development and Management

3.14 Four models illustrate the Project: one for ranches in the Coastal Savanna; one for ranches in the Rupununi; and one for each of the two LDCo ranches. Financial projections show the amount of new investment and how it would be financed—80% by long term loans from commercial banks and 20% by ranch contributions (in cash and kind). Coastal ranches would have surplus saleable steers, or equivalent cash, to help provide working capital and ranch contributions to investment. Rupununi ranches already have some improvements but would need funds for ranch contributions to new investment (para 3.15) and additional working capital. LDCo would have equity financing for ranch contribution to new investment and initial working capital. All ranches would need short term finance during the initial herd build-up period and, during negotiations, assurances were obtained from the Bank of Guyana that it would require participating banks to provide this finance to eligible ranches on the basis of development plans approved under the Project. Details of Investment, Herd Projections and Financial Projections are in Annexes 5 through 16.

3.15 Ranch output would markedly increase through management techniques applied under the guidance of the Project Director and through investment in fencing, stock handling facilities, dry season water supplies, land clearing and pasture establishment, and other improvements, including tractors and implements, 4-wheel drive vehicles, outboard canoes (water access is important in the Coastal Savanna) and adequate housing for the managers and labor.

3.16 Ranch managers would ensure disease control, particularly in the Rupununi where cattle would be vaccinated regularly against FMD. During negotiations, assurances were obtained from Government that: veterinary services would be provided for project ranches, comprising at least one veterinary officer for coastal ranches and one veterinary officer for the Rupununi, both of whom would be stationed permanently in their respective areas; adequate measures to protect cattle from FMD under the Project in the Rupununi would be taken including the use of appropriate vaccines fully in accordance with the Pan American FMD Prevention Program; and supplies of vaccine for project ranches would be readily available.

### Ranch Manager Training

3.17 Though some ranches would have managers or owner/managers who could operate successfully under the guidance of the Project Director, shortage of trained managers is a major constraint. About 24 potential managers are being trained at Tuskegee, Alabama, but most would need further experience in Guyana before assuming full responsibility. LDCo would set up a training scheme under its General Manager but, until this is ready, the Kabawer ranch (para 3.03) would provide facilities. The Project Director would arrange this training. It would be a condition of every sub-loan that a manager, approved by the Project Director, be employed.

### Land Clearing

3.18 An important element is land clearing on coastal ranches (about 10% of their area). Several contractors in Guyana have experience in clean clearing with heavy tractor and blade but few know how to clear by chaining i.e. pulling down trees with a heavy chain drawn between two tractors. To encourage interest in this type of clearing, the Project includes 5-year loans for two heavy duty (250 hp plus) tractors and a heavy (10 to 16 ton) chain. Funds are also included for visits by LPD and contractor staff to similar areas, e.g. Venezuela, where chaining is practiced. Project costs have been based on the higher known cost of blading (US\$15 per ac). The Project Executive Committee (para 3.21) would select a contractor after inviting proposals. During negotiations, assurances were obtained from Government that no loan for clearing equipment would be made unless the Committee was satisfied as to the prospective borrower's competence in chaining.

### Developmental Studies

3.19 The Project includes production-oriented technical, marketing, and processing studies for the future development of the industry, and the preparation of further livestock projects for possible Bank group lending. Technical studies, for which about US\$80,000 would be provided, would include pasture establishment with tropical legumes, animal production trials and use of urea/molasses supplements. They would be carried out in the Project Areas, Intermediate Savanna and the Northwest by staff of the Ministry of Agriculture and, if necessary, by consultants. The other studies would be carried out by consultants (8 to 12 man-months) and are estimated to cost about US\$40,000. Before each study was carried out, the Project Director, who would be responsible for study supervision, would be consulted and Government would submit for IDA approval, detailed terms of reference and the names of proposed consultants. During negotiations appropriate assurances to this effect were obtained.

## D. Organization and Management

3.20 The Project would be organized through its trustee, the Bank of Guyana (see Chart), the most suitable agency through which to channel funds

to the commercial banks. A Livestock Advisory Committee, set up by Ministerial Decree, composed of the Governor of the Bank of Guyana (Chairman) and one representative each from the Ministries of Agriculture and of Economic Development, the participating banks and one selected by the cattle producers, would be responsible for general policy. The Project Director would be Executive Secretary. It would be a condition of effectiveness that such a committee be set up.

3.21 A small Project Executive Committee, set up by the Bank of Guyana Board, would make LPD's recommendations to commercial banks. It would comprise one representative each from the Ministry of Agriculture (Chairman), Bank of Guayana, and the Ministry of Economic Development, and the Project Director.

3.22 LPD would be headed by the Project Director, a specialist in animal husbandry or related activity, responsible to the Governor of the Bank of Guyana for implementation of the project. He would be assisted by a Deputy Director (Technical), a Deputy Director (Administrative), approximately five Livestock Technicians, and supporting staff. It would be a condition of effectiveness that LDF and LPD had been established and that an internationally recruited Project Director, satisfactory to IDA, had been appointed on terms and conditions acceptable to IDA and, during negotiations, assurances were obtained from the Bank of Guyana that Deputy Directors (Technical) and (Administrative), acceptable to IDA, would be appointed. (See Annexes 17 and 18).

3.23 LPD would help ranches prepare loan applications, including detailed ranch development plans, and would make a technical, economic and financial appraisal of each ranch on behalf of the commercial bank through which an application had been submitted. Commercial banks would assess creditworthiness. LPD staff would supervise progress of ranch plans and assist and advise ranch managers. The Project Director would arrange for local and overseas training of technicians. During negotiations, assurances were obtained from the Bank of Guyana that sub-loans would be made on the basis of ranch plans approved by LPD and that loan agreements would contain suitable performance covenants.

#### E. Cost Estimates

3.24 Total project cost is estimated at G\$8.9 million (US\$4.4 million), including contingencies, of which about US\$1.8 million would be the foreign exchange component. Estimates are based on enquiries in the field during appraisal, and include approximately 10% for contingencies to cover possible omissions and increases in cost. Details are in Annex 19. The Livestock Development Fund cash flow is in Annex 21. Summarized cost estimates are:

| <u>Category</u>                | <u>G\$ (thousands)</u> |                |              | <u>US\$ (thousands)</u> |                |              | <u>Total</u>                   | <u>Foreign</u>                      |
|--------------------------------|------------------------|----------------|--------------|-------------------------|----------------|--------------|--------------------------------|-------------------------------------|
|                                | <u>Local</u>           | <u>Foreign</u> | <u>Total</u> | <u>Local</u>            | <u>Foreign</u> | <u>Total</u> | <u>Project-</u><br><u>Cost</u> | <u>Exchange</u><br><u>Component</u> |
| <u>On-ranch Investment</u>     |                        |                |              |                         |                |              |                                |                                     |
| Fencing                        | 530                    | 440            | 970          | 270                     | 220            | 490          |                                | 45                                  |
| Pasture                        | 390                    | 380            | 770          | 190                     | 190            | 380          |                                | 50                                  |
| Machinery                      | 130                    | 510            | 640          | 60                      | 260            | 320          |                                | 80                                  |
| Farm Buildings                 | 480                    | 230            | 710          | 240                     | 120            | 360          |                                | 33                                  |
| Other                          | 260                    | 210            | 470          | 130                     | 100            | 230          |                                | 45                                  |
| Sub-total                      | 1,790                  | 1,770          | 3,560        | 890                     | 890            | 1,780        |                                | 50                                  |
| Livestock                      | 1,190                  | 710            | 1,900        | 600                     | 350            | 950          |                                | 37                                  |
| Sub-total                      | 2,980                  | 2,480          | 5,460        | 1,490                   | 1,240          | 2,730        | 59                             | 45                                  |
| <u>LDCo Transferred Assets</u> |                        |                |              |                         |                |              |                                |                                     |
| Buildings and<br>installations | 240                    | -              | 240          | 120                     | -              | 120          |                                | -                                   |
| Local livestock                | 1,010                  | -              | 1,010        | 510                     | -              | 510          |                                | -                                   |
| Sub-total                      | 1,250                  | -              | 1,250        | 630                     | -              | 630          | 14                             | -                                   |
| Sub-total                      | 4,230                  | 2,480          | 6,710        | 2,120                   | 1,240          | 3,360        | 73                             |                                     |
| <u>Working Capital</u>         | 490                    | 50             | 540          | 240                     | 30             | 270          | 9                              | 10                                  |
| <u>Clearing Equipment</u>      | 70                     | 330            | 400          | 40                      | 160            | 200          | 4                              | 83                                  |
| <u>Technical Services</u>      | 410                    | 570            | 980          | 200                     | 290            | 490          | 11                             | 58                                  |
| <u>Developmental Studies</u>   | 40                     | 200            | 240          | 20                      | 100            | 120          | 3                              | 83                                  |
| Total                          | 5,240                  | 3,630          | 8,870        | 2,620                   | 1,820          | 4,440        | 100                            | 41                                  |
| Percent                        | 59                     | 41             | 100          |                         |                |              |                                |                                     |

F. Financing

3.25 Proposed financing is based on IDA covering 60% of new on-ranch investment and clearing equipment costs, with participants (including Government as LDCo shareholder) and commercial banks providing 20% each. IDA would also cover the foreign exchange costs of LPD and developmental studies. IDA would thus finance the total foreign exchange cost of US\$1.8 million and US\$0.4 million equivalent of local currency cost. Participants would contribute US\$0.8 million in cash or kind according to their means, and commercial banks US\$0.8 million. Government contribution includes assets and some cash for LDCo and the local cost of LPD and developmental studies, a total of US\$0.6 million. Ranches would also contribute by retaining stock, not included in project cost, valued at about US\$1 million during the first three years of herd development.

3.26 On the above basis, estimated project financing (including contingencies) would be:

| Category                  | US\$ (thousands)      |                   |                  |       |       |
|---------------------------|-----------------------|-------------------|------------------|-------|-------|
|                           | Private/ <sup>1</sup> | Banks             | Government       | IDA   | Total |
| On-ranch Investment       | 460                   | 550               | 80               | 1,640 | 2,730 |
| (Percent)                 | (17)                  | (20)              | (3)              | (60)  | (100) |
| Transferred Assets (LDCo) | 310                   | -                 | 320              | -     | 630   |
| Sub-total                 | 770                   | 550               | 400              | 1,640 | 3,360 |
| Working Capital           | -                     | 240/ <sup>2</sup> | 30/ <sup>3</sup> | -     | 270   |
| Clearing Equipment        | 40                    | 40                | -                | 120   | 200   |
| Technical Services        | -                     | -                 | 200              | 290   | 490   |
| Developmental Studies     | -                     | -                 | 20               | 100   | 120   |
| Total                     | 810                   | 830               | 650              | 2,150 | 4,440 |
| Rounded                   | 800                   | 800               | 600              | 2,200 | 4,400 |
| (Percent)                 | (18)                  | (18)              | (14)             | (50)  | (100) |

<sup>1</sup> Ranches, LDCo commercial investors and clearing contractors.

<sup>2</sup> Or private.

<sup>3</sup> Proportion of LDCo working capital attributable to Government.

G. Procurement

3.27 International competitive bidding would not be appropriate because the scale of individual investment is too small, and the variety of items too great, for bulk procurement. There is no restriction on imports and, except on vehicles (25%), duties are reasonable (6 to 11%,

subject to Commonwealth preference of 5%). Apart from breeding cattle, semen and pasture seed, items needed for the Project are readily available through existing commercial channels, including many international suppliers. Competition is keen and servicing adequate. Breeding cattle and semen would be purchased by LDCo from a country free of FMD; but the Project Director would be consulted and no imports under this category made without his prior approval. Pasture seed is subject to rigorous Government control. During negotiations, appropriate assurances as to procurement were obtained from Government and from the Bank of Guyana.

#### H. Disbursement

3.28 IDA would reimburse to Government the amount of commercial bank loans discounted by the Bank of Guyana from LDF (up to a maximum of 75% of the total of such loans) and 100% of the foreign exchange cost of LPD and developmental studies, against certified statements of disbursement.

3.29 IDA credit disbursement, allowing slippage (Annex 21), would be approximately:

| <u>Category</u>     | <u>US\$ (thousands)</u> |                |                |                |                | <u>Total</u> |
|---------------------|-------------------------|----------------|----------------|----------------|----------------|--------------|
|                     | <u>1970/71</u>          | <u>1971/72</u> | <u>1972/73</u> | <u>1973/74</u> | <u>1974/75</u> |              |
| On-ranch Investment | 120                     | 380            | 580            | 390            | 170            | 1,640        |
| Clearing Equipment  | -                       | 120            | -              | -              | -              | 120          |
| Technical Services  | 30                      | 90             | 60             | 60             | 50             | 290          |
| Development Studies | 20                      | 40             | 40             | -              | -              | 100          |
|                     | <u>170</u>              | <u>630</u>     | <u>680</u>     | <u>450</u>     | <u>220</u>     | <u>2,150</u> |

3.30 It is intended that amounts not used for the credit be canceled.

#### I. Accounts and Audit

3.31 Commercial banks would keep separate accounts of project lending and submit details to LPD. LPD would also keep accounts showing the total of approved ranch plans (on-ranch investment and working capital), sub-loans made, amounts discounted by LDF, and LPD expenses. The above accounts would be audited by the independent auditors of the Bank of Guyana (Pannel, Fitzpatrick & Co), who are acceptable to IDA. The Ministry of Agriculture would keep separate accounts of expenditure on developmental studies and these would be audited in a manner satisfactory to IDA. Appropriate assurances were obtained during negotiations. Assurances were also obtained that summaries of these accounts would be submitted quarterly to IDA, and that copies of audited project accounts would be submitted to IDA not more than three months from the end of the Bank of Guyana's and Government's fiscal years,

respectively, and that copies of the Bank of Guyana's audited annual accounts would be sent to IDA, when issued.

#### J. Lending Operations

3.32 Each loan application would be made to a commercial bank and, if the applicant's credit rating were satisfactory, would be passed to LPD for appraisal. After appraisal it would go to the Project Executive Committee for final recommendation and return to the commercial bank that submitted it. A favorable recommendation would not be made without the Project Director's approval which would also be needed before changes to the development plan could be made. Criteria for selection, in addition to creditworthiness, would be: ownership of an acceptable beef herd; management by a ranch manager approved by the Project Director; and tenure, on a 25 year renewable lease (or better), of an appropriate ranching area, including in the case of coastal ranches, at least 10% not susceptible to annual flooding. During negotiations, assurances were obtained that these procedures would be followed. Assurances were also obtained that LPD would submit details to IDA before submitting for approval, any sub-loan (or series of sub-loans to one applicant) of more than US\$150,000 equivalent and in the case of sub-loans to LDCo the LPD would satisfy IDA that LDCo has sufficient funds and is adequately staffed to carry out the Development Plan.

3.33 To enable cattle to be accepted as security for long term lending, Government has drafted a Livestock Loans Act, similar to the Guyana Agricultural Loans Act of 1966, which would enable lenders to take a fixed and floating charge over a borrower's assets and make it a criminal offence for a borrower to sell pledged property except as provided in a loan agreement between lender and borrower. During negotiations, assurances were obtained from Government that the Livestock Loans Act was acceptable to participating banks as the legal basis for long term lending, and it would be a condition of effectiveness that such an Act had been passed.

3.34 The commercial banks would make sub-loans for 12 years, with 4 years' grace, at 9 1/2% per year, including 1/2% service fee which would be credited to LDF. 75% of each loan would be rediscounted with LDF at 6%, (except Government guaranteed loans to Amerindian ranches, which would be rediscounted at 8%) giving commercial banks, which would carry the total loan risk, a reasonable margin of 3%. The rediscount rate would be keyed to prime rate (changing in the proportion of one point to every three points change in the prime rate) so as to maintain the margin on the banks' own 25% contributions. Commercial banks would also make short term loans for working capital at the current rate. During negotiations, appropriate assurances were obtained from Government and the Bank of Guyana including an assurance that a form of agreement acceptable to IDA, would be entered into between the Bank of Guyana and participating banks.



3.35 The IDA credit would be made to Government which would bear the foreign exchange risk. IDA funds for rediscounting commercial bank loans, and for operation of LPD, would be credited to LDF by Government which would need to provide initial resources (interest free) to LDF. Surpluses would be freely available to Government for any public investment purpose including further livestock development, as interest payments are made and sub-loans repaid over 14 years (Annex 20). During negotiations, conditions of the Trusteeship Agreement between Government and the Bank of Guyana were finalized and specific assurances were obtained from Government that it would provide the amounts needed for initial operation of LDF. It would be a condition of effectiveness that the Trusteeship agreement be signed.

#### IV. MARKETS, PRICES AND PRODUCER BENEFITS

##### Markets

4.01 In spite of a rising population, Guyana beef demand has remained fairly static over the last few years, due largely to tight supply (Annex 3). Existing slaughter facilities are satisfactory for the Project but improvements would be needed to make them suitable for later meat exports. Sales would be made through Meat Marketing Ltd or other channel acceptable to the banks. During negotiations, assurances were obtained that no price control would be imposed on beef unless mutually satisfactory to Government and IDA.

##### Prices

4.02 Between 1965 and early 1970 beef retail prices rose by 25% from G\$0.55 to 0.69/lb. Producer prices generally rose in parallel, though with a tendency to harden during late 1969/early 1970 because of the temporary ban on movement of Rupununi cattle due to FMD. While prices might continue to rise somewhat, a steady coastal producer price of G\$0.50/lb (Rupununi G\$0.43), the 1969 average, has been assumed for project estimates, compared with G\$0.55/56 during early 1970 and an average of G\$0.47 over the last four years.

##### Producer Benefits

4.03 It is difficult to quantify present benefits to coastal beef producers, who are numerous and whose practices vary. The Project would, however, increase net income before tax, as the following table shows:

|                              | Before<br>Development<br>(Guyanese Dollars) | At Full<br>Development /1 | Financial Rate<br>of Return<br>(%) | Sensitivity to 10%<br>Price Variation<br>(%) /2 |
|------------------------------|---|---------------------------|------------------------------------|---|
| Coastal                      | 24,800                                      | 158,000                   | 20                                 | 17-23   |
| Rupununi                     | 6,900                                       | 61,000                    | 21                                 | 18-25   |
| Livestock Development<br>Co. | -   | 730,000                   | 13                                 | 11-14   |

/1 Before debt service.

/2 Result of 10% decrease/increase from assumed output prices.

4.04 Rupununi returns would be lower because costs are higher and farmgate prices lower than on the coast; but no additional management costs would be incurred on owner-managed Rupununi ranches. In addition to the above increases in net income, herd values would increase substantially: coastal from G\$370,000 to 820,000; Rupununi G\$138,000 to 280,000; and LDCo G\$0.8 to 3.8 million.

#### Revenue Generation

4.05 Ranches would pay interest and repay loans from revenue over the first 12 years and their owners would be liable to income tax on total ranch and other income. Capital expenditure is deductible for tax purposes, and losses can be carried forward. At the forecast rate of investment, tax would not be payable until about the 7th or 8th year when, at present rates and under present tax law, it would be 45% if profits are retained, 60% if distributed. The following is an illustration:

| <u>Coastal Ranch</u>          | Before<br>Development /1 | After Development |           |
|-------------------------------|--------------------------|-------------------|-----------|
|                               | (Guyanese dollars)       | Year 6            | Year 13   |
| Total Net Income /2           | 25,000                   | 65,000            | 168,000   |
| Debt Service /3               | -                        | 28,000            | -         |
| Net Income after Debt Service | 25,000                   | 37,000            | 168,000   |
| Taxable Income                | 23,000                   | (90,000) /3       | 156,000   |
| Income Tax Liability          | 10,000                   | -                 | 70,000 /4 |
| Net Income after Taxes        | 13,000                   | 37,000            | 86,000    |
| Total Herd Value /5           | 370,000                  | 640,000           | 820,000   |

/1 Reflects low extraction rate and marketing of immature stock.

/2 See Annex 8

/3 Income tax loss brought forward.

/4 45% on undistributed profits.

/5 See para 4.04.

4.06 Beef cattle owners have not reinvested extensively in cattle raising, mainly because of lack of secure land title (para 3.05). Project ranches would have this security and would be encouraged to make further improvements. They would also reinvest through their increased herds, retaining stock that would otherwise have been sold (para 3.25).

4.07 The tax position of individual ranches would vary according to size, profitability and other income. At present, cooperatives are not taxed as corporations but members are liable for tax on dividends. Government tax revenue would depend on these variables, future tax policies, and the efficiency of tax collection (not high in rural Guyana). Based on the above table and on similar calculations for Rupununi and LDCo ranches, maximum incremental tax revenue from the project would be of the order of G\$2 million (US\$1 million) per year at full development.

## V. ECONOMIC BENEFITS AND JUSTIFICATION

5.01 The Project would increase Guyana's beef supply from about the 4th year. At full development in the 11th year, incremental annual production would reach 2,800 sh tons beef, valued at about G\$2.8 million (US\$1.4 million). This would be about 45% of present annual supply. At full production, annual foreign exchange earnings or savings would be about US\$1.0 million annually.

5.02 The estimated rate of return to the economy of Guyana, discounted over the assumed 20 year life of project ranches, would be 20%. A shadow wage rate has been used (G\$3 instead of G\$4) because of the high rate of unemployment, and the value of Rupununi production has been reduced by the amount of the air freight subsidy. Details of these and other adjustments are in Annex 22.

5.03 In addition to its direct benefits, the Project would be important for the stimulus it would give to the beef cattle industry, both by example and by the supply of surplus improved young breeding and fattening stock. It would involve the commercial banks for the first time in long term lending for agriculture and would lead to import savings and ultimately to export revenues.

## VI. RECOMMENDATIONS 1/

6.01 In addition to standard assurances agreement was reached with Government during negotiations that:

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1/ References in parenthesis to previous paragraph numbers.

- (a) 25 year (or better) renewable, transferable leases, on terms acceptable as security to the commercial banks, would be issued promptly to participating ranches (within 60 days of application) (3.06);
- (b) rules for cooperative ranches, acceptable to IDA, and in conformity with the Cooperative Societies Ordinance, would be adopted and would not be changed so as to adversely affect commercial operation of project ranches (3.10);
- (c) LDCo general manager satisfactory to IDA would be appointed (3.13);
- (d) essential veterinary services would be provided so as to ensure disease control, particularly FMD, on project ranches (3.16);
- (e) no price control would be imposed on beef unless mutually satisfactory to Government and IDA (4.01).

6.02 During negotiations, assurances were obtained from the Bank of Guyana as Trustee administering LDF that:

- (a) it would require participating banks to provide short term finance to eligible ranches on the basis of development plans approved under the Project (3.14);
- (b) sub-loans would be made on the basis of ranch plans approved by LPD and loan agreements would contain suitable performance covenants (3.23);
- (c) it would rediscount up to 75% of sub-loans by participating banks at 6% (guaranteed Amerindian sub-loans at 8%), adjusted to maintain the margin on the banks' own contributions (3.34);
- (d) a form of agreement, acceptable to IDA, would be entered into between the Bank of Guayana and participating banks (3.34).

6.03 In addition to the customary conditions the following have been agreed upon as conditions of effectiveness of the proposed credit:

- (a) at least 30,000 acres of coastal lands had been surveyed for immediate lease as project ranches (3.06);
- (b) The Livestock Loans Act and legislation to permit Government guarantee of loans for Amerindian ranches had been passed; (3.07 and 3.33);

- (c) necessary exemptions from the Cooperative Societies Law (for cooperative ranch rules) had been obtained (3.10);
- (d) LDCo had been established and adopted Articles of Agreement satisfactory to IDA and Government had secured confirmed agreement from interested parties to subscribe to its equity (3.13);
- (e) a Livestock Advisory Committee had been set up by Ministerial Decree (3.20);
- (f) LDF and LPD had been established and an internationally recruited Project Director, satisfactory to IDA, had been appointed on terms and conditions acceptable to IDA (3.22);
- (g) a Trusteeship Agreement, satisfactory to IDA, between the Government and the Bank of Guyana had been signed (3.35).

6.04 The Project is suitable for an IDA Credit of US\$2.2 million.



GUYANA

BEEF CATTLE PROJECT

Banking and Credit

A. General

The Banking System

1. The banking system in Guyana, on the traditional British pattern, comprises:

- a) the central bank, the Bank of Guyana, whose essential purpose is "to foster monetary stability and promote credit and exchange conditions conducive to the growth of the economy" (Bank of Guyana Ordinance 1965), and
- b) the commercial banks, five of which are branches of international banks with head offices overseas. A sixth bank, the Guyana National Co-operative Bank, was established on February 24, 1970, by Government as part of its program to foster cooperativism in the "Cooperative Republic of Guyana".

The Credit System

2. The commercial banks are the most important institutional source of short term credit. At the end of December 1969, about 8% of their lending was for agriculture, excluding processing. Long term credit is provided generally by the Guyana Credit Corporation, the life insurance companies, and the New Building Society (savings and loan society), and about 30% of commercial bank lending is for more than a year (see para 15). Most of this longer term lending is for real estate investment, though the Guyana Development Corporation also invests loan and equity capital in industry and commerce. The Guyana Marketing Corporation provides credit in kind to small farmers, eg livestock feed for pig producers and fertilizers for producers of some crops.

B. The Banks

3. The Bank of Guyana is the sole bank of currency issue; holds gold and foreign currency reserves; is banker for Government and other banks; and is primarily responsible for controlling credit and foreign exchange activities. It undertakes ancillary functions, such as the management of the internal public debt, and provides statistical and other services for the banks and Government. Exchange control is presently limited to non-sterling transactions.





4. The 4-man Board of Directors, under the chairmanship of its Governor, is the policy making organ of the Bank of Guyana. The other members are the Banking Manager (Deputy Governor) and two representatives nominated by the Minister of Finance. The Secretary to the Treasury attends Board meetings, but without a vote.

5. The commercial banks must maintain minimum balances with the central bank. These are 6% against demand liabilities and 4% against time liabilities, the level at which they were fixed when introduced in March 1966.

6. The banks must also maintain a prescribed level of liquid assets fixed, since December 1966, at 20% of demand liabilities and 15% of time liabilities (the central bank may change this level between 15% and 30% for demand liabilities, 10% and 20% for time liabilities). These liquid assets comprise mainly deposits with the central bank, cash balances and balances with banks abroad, foreign treasury bills, commercial bills eligible for rediscount with the central bank and local treasury bills.

7. Advances from the Bank of Guyana to Government are agreed from time to time but, under the Bank of Guyana Ordinance, are subject to a ceiling of 15% of the average annual ordinary revenues collected and accounted for by the Government during its last three preceding financial years, and to the constraint that such direct advances shall not, during any financial year, be outstanding for a total of more than 350 days.

8. Table 1 shows assets and liabilities of the Bank of Guyana at December 31, 1969.

The Commercial Banks

9. The Private Banks. The 5 private commercial banks operate main branches in Georgetown, the capital, and subsidiary branches in other parts of the country:

| Bank                     | Branches including<br>main branch |
|--------------------------|-----------------------------------|
| Barclays (DCO)           | 16                                |
| The Bank of Baroda       | 2                                 |
| The Royal Bank of Canada | 11*                               |
| Chase Manhattan          | 1                                 |
| The Bank of Nova Scotia  | 1                                 |

\*Including a mobile branch.

The oldest established in Guyana (more than 50 years) are Barclays (DCO) and The Royal Bank of Canada. The newest (1968) is the Bank of Nova Scotia.



10. The Guyana National Cooperative Bank. The Guyana National Cooperative Bank has no operational experience, as yet. Its authorized share capital is G\$10 million (US\$5 million). Eligible shareholders are Government, registered cooperative societies, registered trade unions, registered friendly societies, public corporations established under the Public Corporations Ordinance, 1962, and such other corporate bodies as may be recommended by the Minister of Finance.

11. The assets and liabilities of the branches of the private commercial banks operating in Guyana are not published separately, though they are reported confidentially to the Bank of Guyana. The total rose from G\$115 million (US\$58 million) at the end of 1968 to G\$130 million (US\$65 million) at end 1969, an increase of 13%.

#### The Commercial Banks as a Credit Source

12. The return to stability in the country since 1964 has been reflected in the increasing demand for money and this in turn has resulted in pressure on the commercial banking system for loans.

13. An analysis of lending between 1965 and 1969 is in Table 2. The total doubled during the period. The proportion of this total lent for agriculture remained at about 8%; and of the amount lent for agriculture, between 4% and 10% was for livestock. In 1969, loans to commerce and services were about 40% of the total, to manufacturing about 30% and for personal consumption (including direct loans for housing) about 20%.

#### Commercial Bank Interest Rates

14. Since July 26, 1966, when the Guyana bank rate rose to 6½% from 6%, the prime lending rate (usually 1% above bank rate) has remained at 7½%. In general, rates of interest range from the prime rate of 7½% for traditionally good business customers, to over 10% for some personal loans. The average annual rate of interest for all loans and advances was about 8½% in 1969, compared with a little over 8% in 1968.

#### Loan Term

15. Most loans by the commercial banks are for short term financing of business enterprise. At the end of 1969, "term" loans totaled G\$23.3 million, (about 30% of the value of all lending) of which G\$18.8 million were in the private sector, with 31% of these loans to individuals. Distributed by amount outstanding at the end of 1969, 50% of "term" loans were for less than 2 years; 43%, 2 to 7 years; and the remaining 7%, over 7 years. The weighted average term was about 3 years.



16. Long term lending in the agricultural sector is almost entirely to large corporations that can offer substantial collateral security. A recently passed Agricultural Loans Ordinance permits creditors to take a lien on crops as part security for a loan, but the commercial banks are uncertain of its validity and, so far, it has been rarely used.

#### Default Rate

17. Due to careful scrutiny of potential borrowers and very adequate collateral security, commercial bank loan defaults are rare. On the other hand, lending tends to be cautious and a large potential demand for development loans remains unfulfilled. This caution is understandable against the background of poor repayment records of other lending institutions in Guyana, even when direct collection from crop proceeds is attempted.

### C. Other Lending Institutions

#### The Guyana Credit Corporation

18. The Guyana Credit Corporation (established in 1954) is a Government lending agency providing medium and long term loans for agricultural improvement, industrial development, and housing; but it has tended to concentrate heavily on housing, light industry, purchase of agricultural machinery and equipment rather than on general farm improvement based on well drawn and carefully supervised plans. It has, nevertheless, been the principal source of the small amount of long term agricultural loan funds available to farmers other than the large corporations. Like the commercial banks, the Credit Corporation also requires collateral security, usually real estate, and small farmers lacking this kind of security have found it difficult to borrow. It has a poor repayment history.

#### Insurance Companies and the New Building Society

19. Insurance companies and the New Building Society lend long term mostly for housing or other real estate. During 1969 their rates of interest averaged around 8% and maximum maturities were 15 to 20 years. Loans are generally subject to a maximum of about 75% of the lender's valuation of the underlying security.

#### Other Sources of Credit

20. Other institutional sources of credit are not at present very important. The Guyana Marketing Corporation provides credit in kind to farmers with whom it contracts for purchase of farm produce. Most of the transactions were for pig production but other production has recently been included, especially crops for which the Marketing Corporation provides fertilizers.



21. Consumer credit, especially through hire-purchase, has helped many farmers to mechanize their operations. This credit is generally for only 1 or 2 years and the effective interest rate (since repayments are made monthly as a proportion of the original cash cost plus interest) is a good deal higher than the nominal amount charged on the original loan.

22. Cooperative credit societies provide small loans to members at 12%. The effective rate is somewhat lower, since borrowing members are usually paid dividends out of cooperative net income (including interest income). Thrift and Credit Societies in the rice industry have benefited from such short term loans.

#### Non-institutional Credit

23. Many persons, including farmers, have recourse to moneylenders who provide small loans at very exorbitant rates of interest. The borrower is usually unaware of the real rate of interest, eg 4% or 5% per month. He is usually either unable to convert this to an annual rate or thinks of it only as a payment for short term accommodation. The amount of such lending is not known, but it is likely to be substantial.

#### D. The Private Investment Fund

24. The Private Investment Fund (PIF) was established in 1966 with a loan of US\$2 million from USAID and G\$3 million from Government. The Bank of Guyana is trustee and administrator but PIF loans are made through the commercial banks who act as on-lenders and carry the credit risk but do not provide any long term funds. The Bank of Guyana decides the interest rate to be applied to PIF loans, and the commercial banks receive a margin of 3% for risk and administration.

25. The commercial banks are responsible for finding applicants. The Guyana Development Corporation plays a role in appraising the individual loan applications, in close cooperation with the banks, who are responsible for final assessment of creditworthiness. Once a loan is approved, the banks disburse promptly to the ultimate borrower, all funds or credits received from PIF. They help borrowers with complementary working capital. They pay the Bank of Guyana, as PIF Trustee, all amounts received from borrowers (repayments and interest), less their approved 3% spread. PIF lending is confined to US or local procurement.

May 8, 1970





GUYANA

BEEF CATTLE PROJECT

Assets and Liabilities of the Bank of Guyana  
as at 31st December, 1969

|                                     | G\$ (thousands) |   |
|-------------------------------------|-----------------|---|
|                                     | <u>ASSETS</u>   | <u>LIABILITIES</u>                          |
| Total Foreign Assets                | 40,842          | Government of Guyana Notes 38,918           |
| Government of Guyana Securities     | 3,190           | Government of Guyana Coins 1,524            |
| Government of Guyana Treasury Bills | 3,107           | Government Deposits -                       |
| Advances to Government of Guyana    | 11,089          | Deposits of International Organizations 340 |
| Advances to Commercial Banks        | -               | Bankers Deposits 9,835                      |
| Fixed Assets                        | 3,532           | Other Deposits 2,112                        |
| Other Assets                        | 857             | General Reserve Fund 2,739                  |
|                                     |                 | Capital Paid Up 4,287                       |
|                                     |                 | Other Liabilities 2,862                     |
|                                     | <u>62,617</u>   | <u>62,617</u>                               |

May 8, 1970



GUYANA

BEEF CATTLE PROJECT

Analysis of lending by purpose 1965-1969 (at December 31)

G\$ (thousands)

| <u>Purpose</u>          | <u>1966</u>   | <u>%</u>   | <u>1966</u>   | <u>%</u>   | <u>1967</u>   | <u>%</u>   | <u>1968</u>   | <u>%</u>   | <u>1969</u>   | <u>%</u>   |
|-------------------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|
| Commerce and Services   | 10,566        | 35         | 13,273        | 33         | 15,799        | 36         | 22,881        | 40         | 25,848        | 38         |
| Manufacturing           | 3,136         | 10         | 4,992         | 12         | 3,991         | 9          | 10,514        | 19         | 17,605        | 26         |
| Agricultural Processing | (8,642)       | 29         | (12,325)      | 30         | (10,277)      | 23         | (6,118)       | 11         | (3,448)       | 5          |
| Timber and Sawmilling   | 557           |            | 974           |            | 1,402         |            | 2,094         |            | 1,308         |            |
| Sugar and Molasses 1/   | 4,454         |            | 7,013         |            | 6,494         |            | 2,690         |            | 721           |            |
| Rice Milling            | 3,631         |            | 4,338         |            | 2,381         |            | 1,334         |            | 1,419         |            |
| Agriculture             | (2,458)       | 8          | (2,391)       | 6          | (3,901)       | 9          | (3,918)       | 7          | (5,090)       | 8          |
| Sugar Cane              | 13            |            | 44            |            | 50            |            | 32            |            | 29            |            |
| Paddy                   | 1,821         |            | 1,629         |            | 3,072         |            | 1,873         |            | 2,734         |            |
| Livestock               | 186           |            | 244           |            | 166           |            | 265           |            | 356           |            |
| Forestry                | 286           |            | 306           |            | 145           |            | 247           |            | 410           |            |
| Shrimp and Fish         | 39            |            | 47            |            | 294           |            | 1,393         |            | 1,386         |            |
| Other                   | 113           |            | 121           |            | 174           |            | 108           |            | 175           |            |
| Private Financial       |               |            |               |            |               |            |               |            |               |            |
| Institutions            | 1,252         | 4          | 2,140         | 5          | 2,685         | 6          | 3,362         | 6          | 2,606         | 4          |
| Personal Loans          | 4,044         | 14         | 5,878         | 14         | 7,494         | 17         | 9,675         | 17         | 12,798        | 19         |
| <b>Total</b>            | <b>30,098</b> | <b>100</b> | <b>40,999</b> | <b>100</b> | <b>44,147</b> | <b>100</b> | <b>56,468</b> | <b>100</b> | <b>67,395</b> | <b>100</b> |

1/ Subject to wide seasonal variations e.g. September 1969 G\$ 13,645,000, December G\$ 721,000.

Source: Bank of Guyana

May 8, 1970



GUYANA

BEEF CATTLE PROJECT

The Guyana Beef Cattle Industry

INTRODUCTION

1. The Guyana national herd is estimated at about 260,000, about 70% of which are in the coastal strip east of Georgetown and about 25% in the Rupununi Savanna. A few thousand are in the Intermediate Savanna, now only of minor importance, but with potential.
2. Meat production from the coastal region and the Rupununi was 3,350 and 1,150 short tons, respectively, in 1968, and the per capita consumption of meat fell from a peak of nearly 19 lb in 1966 to 16.3 in 1969. Meat quality is poor and the 280 lb average carcass weight in 1969 reflected the large percentage of lightweight animals being slaughtered from the coastal area. In the Rupununi, the offtake is mainly steers over 5 years old, with a dressed carcass weight of 400 to 450 lb, and cull cows of 300 to 350 lb.

COASTAL REGION

3. Most coastal cattle are owned by rice farmers and are generally of local Creole/Zebu breed, well adapted to surviving under adverse conditions. Average herd size is about 12 head per family. Less than 1,000 families own more than 25 head while only 200 own more than 50. These rice farmers keep cattle as a supplementary source of income, selling them off irrespective of age, sex, or as cash is needed. Farmers actually prefer to sell young animals because of the danger of theft from their free ranging herds (see para 5).
4. Because they do not own enough land on which to depasture their animals all the year, farmers must use communal grazing areas, usually within 3 miles of their farms. These areas, however, have about 6 in to 2 ft of water over them for 3 to 8 months of the year. About 30% of the area is above flood height but covered by forest and not used. These communal grazing areas are badly overstocked and have degenerated because no attempts are made to control either the numbers or movement of animals; and the high quality swamp grasses have largely disappeared from them.
5. The animals themselves receive very little attention although the owner may visit his cattle about once in a week. Mating is uncontrolled and breed improvement impossible; cow fertility is low because of disease (mainly brucellosis) and poor nutrition. The 30% calf mortality is due mainly to losses from drowning at birth. No attempts are made to control parasites or diseases and the percentage of calves weaned is a mere 30%. Losses from stealing from these communal areas are also high. Under these conditions, it is barely possible to maintain cattle numbers and impossible to increase production.



6. While communal grazing areas could be extended by using large areas of available State lands, it is doubtful that the problem would be solved without also providing management and control. It is also highly doubtful that many of the local farmers would be willing to place their animals in areas farther away from their farms than the existing communal grazing areas.
7. Making the necessary changes in management to increase meat production would be difficult because of the ownership pattern. The necessary basic changes are that (a) stocking rates be limited to ensure sufficient pasture to sustain an economic breeding/fattening operation; and (b) animals and land be managed to optimize weaning and extraction rates.
8. This can best be achieved with herds large enough to carry the cost of the skilled management needed. One successful commercial ranch in the coastal region, Kabawer, exemplifies the value of sound management and capital investment in fencing, sleeping mounds, forest clearing and pasture establishment and better quality breeding stock. This 16,000 ac ranch commenced its development less than 4 years ago with 3,000 cattle. It now has 8,000 head of improved stock, is continuing to develop and expand its herd and is on a sound profit-making basis.
9. The few rice farmers aware of the need for this type of management have previously lacked the land, know-how, cattle and capital to undertake such a venture. These farmers recognize also that, while there may be some difficulty in persuading others to put their animals into larger production units, first class management is the most important requirement.
10. One way to establish such units in Guyana would be on a co-operative basis. Rules and by-laws would be designed to allow small owners to place all or some of their cattle on a cooperative ranch where they could be managed as a single production unit without interference from individual cooperative members in day-to-day management. The cattle so contributed would form the nucleus herd for a ranch development program. Optimum size for such a ranch in the coastal area is between 5,000 and 10,000 ac, carrying between 2,500 and 5,000 animal units at full development. Ample State land is available for lease to interested cooperative or company groups on 25-year terms, with option of renewal and right of transfer. Enough rice farmer/cattle owners have shown interest to ensure the establishment of 15 ranch units of about 7,500 ac average each over a 3-year period. This involves the aggregation of about 40,000 head of cattle.
11. A key feature would be to ensure that sufficient high land grazing is available during the wet season, particularly for animals about to calve. All new ranches would have up to 30% of such land. On each, about 750 ac of the forest that covers this high ground (10% of the total area) would be cleared and sown to highly productive tropical legume/grass pastures.





12. Clearing these areas cheaply and quickly, would require use of techniques new to Guyana. The areas are well suited for chain clearing but local management personnel and operators would have to be trained. This could very likely be done in Venezuela where chain clearing is being done successfully. The use of improved tropical legumes and grasses would also be new to Guyana and it would be necessary to ensure that the best species were selected and that correct management was applied.

#### RUPUNUNI SAVANNA

13. The Rupununi Savanna covers about 25,000 sq mi in southeast Guyana (see Map) where cattle ranching is the main activity. Annual rainfall is about 50 in, most of which falls between May and October. Soils are infertile and are particularly low in phosphate. The pastures are generally burned annually and therefore consist of a fire-resistant low-quality grass with virtually no legumes. During the wet season, they grow and mature rapidly and lose feeding value unless the growth is controlled by grazing or cutting but this is not possible under the existing extensive management conditions. In the dry season, the pasture dies and becomes very dry, its feeding value declines further and, from January to March, it is so low in available energy and protein that it cannot meet even maintenance requirements of grazing animals. The quality of the pasture could be improved by stopping annual burning to allow the softer more nutritious grasses to regenerate. The dry season feed quality problem could also be alleviated by establishing improved pastures but this must be done economically. The most promising approach lies in using tropical legumes which will "hay off" and retain feeding value in the dry season.

14. Of the 55 to 60,000 head of Creole/Zebu cattle in the region, about 30,000 are owned by the Rupununi Development Company and run on its 24,000 sq mi ranch. The remainder are owned by about 12 individual ranchers (about 12,000 head), Amerindian villagers (about 11,000 head) and the Government (about 3,000 head). Most of the latter were confiscated from ranchers involved in the January 1969 rebellion. The privately operated ranches are in the north. Average size is about 50,000 acres and herds vary from a few hundred to over 2,000 head.

15. Insecurity of land tenure has discouraged these ranchers from investing in their properties and applying modern ranching technology. All land in the Rupununi is State owned and leased on a year-to-year basis, with no guarantee of renewal. Government policy now proposes, however, that 25-year leases be granted, as for the proposed coastal project ranches.

16. Fencing is inadequate on all ranches and communal reserves and the cattle are run on the open range, making control of grazing almost impossible. Carrying capacity is estimated at about 10 animal units per sq mi (1 AU/64 ac), weaning is about 40%, adult mortality is about 7% per annum, and steers are marketed at 4 to 5 years old at an average cold carcass weight of 400 lb or at 5 to 6 years old for a slightly higher carcass weight. The cull cows are slaughtered at 250 to 300 lb carcass weight. The annual extraction rate is about 10%.



17. Most of the region's cattle are slaughtered at a central abattoir at Lethem, with an annual throughput of about 6,000 head. The beef is air-freighted to the Georgetown market at a cost of 9¢ (G)/lb. A subsidy of 5¢/lb is paid by the Government market and the producer receives about 43 to 45¢ (G)/lb cold dressed weight. Almost all slaughtering and marketing from the area is done by Meat Marketing Ltd (Annex 3).
18. Many consumer goods and essential on-ranch investment items (fencing wire, troughing, tools and equipment) required to develop the area must be air-freighted from Georgetown, which increases their cost. This, plus the cost of air-freighting meat from the region would place the Rupununi at a disadvantage compared to the coastal areas if it were not for the lower production costs in the Rupununi - G\$3/head compared to G\$11/head on the coast.
19. Since shipment of boned-out meat is perhaps the best way of immediately reducing transport costs, the Government should be encouraged to provide facilities at Lethem. A small treatment plant to process bones could then be established and the bone produced flour could be fed to range cattle to provide badly needed supplementary phosphate. The potential bone flour production would meet about 35% of estimated requirements.
20. There is one Veterinary Officer on short term appointment from Georgetown in the area. He is responsible mainly for supervision of the Lethem abattoir and regional foot and mouth disease (FMD) control programs. FMD is not endemic but occurs sporadically (there have been two outbreaks in the last 9 years). An outbreak generally has serious repercussions since the entire area is placed under quarantine to prevent the disease spreading to the coast. Shipment of meat is stopped and not allowed to resume until all animals in the area have been vaccinated twice at 4-month intervals, and no outbreak has occurred for 3 months.
21. The fact that beef production can be increased considerably has been demonstrated in some of the better areas where carrying capacity has gone from 10 to 40 head/sq mi by using fencing to control grazing. Also, large tracts in the Rupununi appear to be suitable for the tropical legume Townsville stylo. This legume can be sown from the air with no seed bed preparation. In similar areas in Australia, it has increased animal production per ac 3 to 5 times. Townsville stylo is native to tropical South America and is found in those areas in the Rupununi that have been protected from annual burning.

#### INTERMEDIATE SAVANNA

22. This area covers 3,800 sq mi south of the coastal alluviums, 30 to 40 miles from the sea. Annual rainfall is 70 to 80 in during two wet seasons, December through January and May through July. The soils are infertile and consist of white and brown sands. They are freely drained and pasture growth is often seriously retarded during the dry seasons. The mature pastures are poor and cattle cannot be kept in good condition without management and mineral supplements.



23. The only cattle in the area are located at the Ebini research station (about 2,500 head) and at an adjacent private ranch (500 head). The Ebini station was founded in 1942 to determine whether beef could be produced in the area. Work has been concentrated on the establishment and management of sown pasture grass (mainly pangola) and study of a wide range of beef breeds. Although high levels of production have been obtained, results are of little practical value because of the large amounts and high cost of the fertilizer (mainly nitrogen) needed to maintain this type of pasture.

24. The area could probably be developed to produce beef economically as has been shown in similar areas in N. Queensland. Studies on the native pastures should be expanded and include (a) supplementary mineral and protein feeding, with molasses as a carrier; (b) tropical legume establishment and management and; (c) economic use of phosphate fertilizer, particularly with tropical legumes. This requires additional financing, particularly for stock handling facilities, scales, fencing, pasture seeds, fertilizer and overseas training of local technicians.

#### NORTHWEST ZONE

25. Only a few head of cattle are now in the Northwest but there is potential for establishing productive ranching in the extensive tracts of virgin forest. Excellent legume/grass pastures can undoubtedly be grown in the deep rich soils. First, however, information is needed on land clearing methods and costs, and the pastures best adapted to the region. The Government of Guyana has asked for finance to help study these problems.

May 8, 1970



GUYANABEEF CATTLE PROJECTBeef Cattle MarketingConsumption

1. Despite annual population growth of 3% from 1965 to 1969, Guyana's beef demand increased at a yearly rate of only 1.3%. World demand, on the other hand, is estimated to have increased 6% annually from 1965 to 1967.<sup>1/</sup> Guyana per capita consumption fell from nearly 19 lb in 1966 to 16.3 lb in 1969. This was due partly to the availability of beef substitutes (particularly poultry), partly to the rising beef price.

2. In 1965, Guyana's local beef supply was about 9.2 million lb from 29,000 cattle averaging 314 lb carcass weight. In 1969, the local supply was 10.3 million lb from 36,000 cattle averaging 287 lb. The lower average weight was due to lighter, immature, cattle being slaughtered.

3. About 70% of Guyana's domestic beef supply comes from the coast, 25% from Rupununi (see Map). Imports of fresh, pickled, smoked and canned beef, mainly from Argentina and Australia, have declined from about 2.3 million lb in 1965 to 1.2 million lb in 1969, or from 20% to 10% of total beef consumption, as domestic production has risen (see Table). Local production is expected to decline temporarily, during the next few years, and Government plans to increase imports to keep overall supply more or less in line with demand at current prices.

Commercialization

4. Cattle from the coastal areas are bought on-farm or in village centers by cattle dealers, bargaining individually with owners and estimating weights visually. There is no system of auction. The average farm-gate price for 1969 was G\$0.50/lb (US\$0.25); this had risen temporarily in February 1970 because of the Rupununi ban (see para 7) to G\$0.56/lb (US\$0.28). Purchased cattle can be moved by boat, truck or train, or can walk, to Georgetown and New Amsterdam for slaughter. Costs vary between G\$0.06 and 0.23 per head per mile according to distance and quantity.

5. Cattle are slaughtered in Georgetown municipal abattoirs under moderately hygienic conditions. Countryside and village slaughter facilities, however, are poor. There are four abattoirs in Georgetown and its suburbs and one each at New Amsterdam, McKenzie and Bartica. They are operated on two or three days a week, well below capacity. None has

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<sup>1/</sup> Survey of the World Beef and Veal Economy. IBRD Economics Department February 1970, page 9.





facilities for the recovery and processing of blood, bone or other by-products. The Georgetown municipal abattoir has cold storage which is not used; there is ample private cold storage in Georgetown, owned by four companies, Weting and Richer Co., Guyana Market Co., Williams and Son Co. and Frederiks Ltds. Total capacity is 260,000 lb.

6. Beef is retailed in supermarkets, municipal markets, and small shops. Eight supermarkets are estimated to absorb around 1.5 million lb beef per year; 4 million lb are sold through Georgetown municipal markets and small shops, and 6 million retailed in the rest of the country. Supermarkets are, therefore, still a minor category although demand for improved quality and prewrapped cuts is increasing. Stew beef has by far the greatest sales volume.

7. Rupununi supplied 2.7 million lb beef in 1969, or about 40% of the Georgetown demand. In November 1969, however, this supply was temporarily cut off by a ban on Rupununi movement, due to an outbreak of foot and mouth disease. Rupununi ranchers sell their beef through Meat Marketing Ltd, a company owned by cattle producers (see para 8). They notify the company the number of cattle they have for sale the following month and these are usually delivered at the due time. There is no penalty for late delivery, but an explanation is required. Rupununi cattle are slaughtered at the Government owned Lethem abattoir and the carcasses airfreighted the same day to Georgetown, where they are inspected and distributed. The rancher receives his proceeds 10 days after delivery. In 1969, MML paid G\$0.43 (US\$0.22) per lb to Rupununi ranchers, G\$0.07 less than the price paid to coastal ranchers. MML paid G\$0.04 for slaughtering, handling and inspecting and G\$0.05 per lb for air freight.

#### Meat Marketing Ltd (MML)

8. MML is a joint stock company limited to 50 members and registered under the Companies Ordinance in 1956. There are currently 22 members and, of the issued share capital of 536 G\$100 shares, Rupununi Development Co Ltd owns 250, Kabawa ranch 80, and Government the minimum of 5 shares. On a capital of G\$60,000 MML is currently turning over G\$1 million annually and operating on a gross margin of 4.5%.

9. MML has consistently paid above average prices to producers, making a large initial payment and a half-yearly patronage bonus based on deliveries. It has declared regular dividends of 10% to 12%, after taxes, (18% to 22% grossed up at the standard rate). MML would be a suitable channel for marketing project output, at least for the initial stages, preferably if other producers could be admitted as shareholders in proportion to their output.

#### Prices

10. If the proposed project is implemented, local supply may equal demand in about 4-5 years. It should then be possible to consider exporting surpluses (Table 1). By that time also Guyana should aim to have slaughtering and cold storage facilities adequate to meet the standards required by



CARIFTA countries, notably Trinidad, Barbados and Grenada, the principal potential market for Guyana beef exports.<sup>1/</sup>

11. Each year from 1960 to 1969, local beef retail prices increased 3.6%, the urban food price index increased 2.6%, and the national urban price index increased 2.8%. The indication is that beef prices are increasing faster than food prices by 1% and faster than the national urban index by 0.8% more or less following world beef price trends. This suggests that the use of current Guyanese beef prices in project estimates would be conservative; on the other hand expected production increases should restrain price rises after 1975. Average 1969 retail price in Guyana was G\$0.67 (US\$0.38) per lb as compared with US\$0.56 per lb in Central America for beef of probably higher average quality. Farmgate prices follow retail price trends (Table 1). Project estimates are based on 1969 farmgate prices; G\$0.50 for the coast and G\$0.43 for Rupununi.

September 11, 1970

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<sup>1/</sup> Economic Intelligence Unit, April, 1969, pages 28-61.



GUYANA  
BEEF CATTLE PROJECT

Beef Consumption, Imports, Exports and Prices

|                                | Unit <sup>1/</sup> | 1965  | 1966  | 1967  | 1968  | 1969  | Projected        |       |       |
|--------------------------------|--------------------|-------|-------|-------|-------|-------|------------------|-------|-------|
|                                |                    |       |       |       |       |       | 1970             | 1975  | 1980  |
| Cattle slaughtered             | '000               | 29    | 32    | 31    | 32    | 36    | 34               | 41    | 50    |
| Carcass weight                 | short tons         | 4,627 | 5,211 | 4,824 | 4,891 | 5,180 | 4,930            | 6,900 | 9,400 |
| Slaughtered average weight     | lb/head            | 314   | 325   | 311   | 305   | 287   | 290              | 300   | 320   |
| Imports                        | short tons         | 1,167 | 1,008 | 1,062 | 770   | 644   | 945              | -     | -     |
| Exports                        | lb '000            | 818   | 303   | -     | 57    | 153   | -                | 600   | 2,600 |
| Domestic consumption           | short tons         | 5,385 | 6,067 | 5,886 | 5,632 | 5,748 | 5,875            | 6,300 | 6,800 |
| Human population <sup>2/</sup> | '000               | 652   | 672   | 689   | 696   | 706   | 716              | 766   | 816   |
| Per capita consumption         | lb                 | 16.5  | 18.6  | 17.1  | 16.2  | 16.3  | 16.4             | 16.5  | 16.6  |
| Retail price                   | G/cents/lb         | 55    | 63    | 61    | 66    | 67    | 69 <sup>3/</sup> | 70    | 67    |
| Farmgate price:<br>(estimated) |                    |       |       |       |       |       |                  |       |       |
| Coast                          | G/cents/lb         | 40    | 46    | 44    | 49    | 50    | 54               | 53    | 50    |
| Rupununi                       | G/cents/lb         | 35    | 40    | 38    | 41    | 43    | 44               | 45    | 43    |

<sup>1/</sup> Figures derived from 1965/69 Guyana Ministry of Agriculture and "Economist Intelligence Unit" information.

<sup>2/</sup> 1965 Census; other estimated

<sup>3/</sup> Supply shortage since November 1969, due to temporary movement ban in Rupununi.

August 28, 1970



GUYANA

BEEF CATTLE PROJECT

Types of Enterprise and Cooperative Group Ranches

A. General

1. Guyana law relating to legal personality and control over business organizations and enterprises derives generally from British law.

Partnerships

2. As in Britain, a partnership is the relationship that subsists between persons carrying on a business with a view to profit. This definition thus embraces all persons who are engaged in a business venture that has no other separate legal identity. The law relating to partnerships is codified in the Partnerships Ordinance (Cap 325). Partnerships may not exceed 20 persons and the code and its related case law are specific as to the rights and liabilities of members. In general, partners are jointly and severally liable for the total debts of the partnership. There is no provision in Guyana law for partnerships with limited liability.

Companies

3. A limited liability company is a corporate body, for the debts of which the members are responsible only to the extent of their shareholding or of the guarantee they have given. Guyana companies are formed under the Companies Ordinance, which closely follows the British Companies Act of 1908. A company may be either public, with a minimum membership of seven, or private, with a minimum of two members and a maximum of twenty. Private companies need not make certain statutory returns that apply to public companies and need not publish accounts. All companies must be registered and each is subject to the Companies Ordinance and its own Memorandum and Articles of Association.

Cooperatives

4. A cooperative is a society that has as its object the promotion of the economic interests of its members in accordance with cooperative principals and that is formed in Guyana under the Cooperative Societies Ordinance (Cap 326) 1948. The main differences between a cooperative society and a company are:

- (a) societies are registered with the Registrar of Cooperative Societies and submit their accounts to him;
- (b) a society may require and bind its members to deal exclusively through it;





- (c) no member has more than one vote or may hold more than one-fifth of the share capital;
- (d) the payment of dividends, though not necessarily the distribution of cash surplus, is limited; and
- (e) societies may be (and are) exempted from the payment of income tax.

A cooperative may be registered with or without limited liability, although in the former case, it may, through its rules, extend the liability of its members beyond the amount of their shareholding.

### Statutory Boards

5. A statutory board or corporation may be formed as a corporate business enterprise in Guyana, e.g., the Guyana Marketing Corporation. Each needs special legislation. They are generally set up to satisfy needs that, because of the risks or capital involved, cannot be fulfilled by the normal form of business enterprise, and they are subject only to the provisions contained in the legislation that incorporates them.

### B. Cooperative Group Ranches

6. The usual form of primary agricultural cooperative society in Guyana is a village or community group, formed to obtain credit for goods and services or to lease a block of land that is then sublet to members. The Cooperative Ordinance and Regulations, and the standard form of cooperative rules are tailored to this form of enterprise. In these societies, business transactions are usually straightforward and they are managed by the elected officers and committee. Where cooperatives are few, and simple in operation, the Government cooperative staff have been able to cope with extension work. However, owing to the increase in the number of cooperative enterprises, which is a stated aim of the new Cooperative Republic of Guyana, field workers are now over-extended and a backlog of audit and supervision work is building up. For example, in the Upper Corantyne District, where a number of the proposed livestock cooperatives are to be located, a Cooperative Officer who has no staff and who is untrained in even simple bookkeeping methods is responsible for the supervision of 82 registered cooperative societies of all types; he is unable to offer the type of assistance and supervision provided for in the Cooperative Ordinance.

7. The object of the proposed group ranches is to assemble privately-owned cattle into ranch units and to run them as a commercial herd under competent management, supervised by project staff (Livestock Project Division of Bank of Guyana). Group ranches must be recognizable commercial entities and may be partnerships, companies or cooperatives. Neither the traditional form of the cooperative rules nor the current Guyana legislation is entirely suitable for cooperative group ranches and only limited assistance can be



expected from the Cooperative Department in their formation and supervision. Furthermore, farmers have seen a number of agricultural cooperatives fail, mainly because of inadequate management, and they are wary of pooling their cattle in an untried and unproven venture.

8. The problems that cooperatives pose for the project are thus both managerial and social and in order to cope with them the project must provide its own cooperative advisory service. This would be distinct from, but complementary to, project technical assistance and supervision.

9. A deputy project director (administrative) (DPDA) with wide cooperative experience would be employed on the project staff to help cattle owners form their group ranches and to supervise their business activities, which are defined as all matters such as financing, audit and marketing not directly related to animal production. Ranch managers would not handle these administrative matters but would concentrate on technical production, supported by the economic and financial data the (DPDA) would help to provide. The rules of the group ranch cooperatives and service contracts should provide that:

- (a) ranch managers are not to be employed as cooperative society secretary/managers;
- (b) arrangements are made for ranch operating expenses to be run on an imprest account controlled by the ranch manager, who would have responsibility for drawing up the operating budget, all recurrent expenditure, keeping of ranch records and accounts and employment of staff; and
- (c) all other financial matters, such as the purchase of capital items (as agreed upon in preparation of farm plans), and marketing should remain the responsibility of each cooperative's management committee, assisted by the DPDA

10. To give the farmers incentive to join a cooperative and in order to bind them to it once they have joined, the rules should also provide that:

- (a) cattle that members transfer to the cooperative should be evaluated in the manner prescribed in the rules, and shares of equivalent value issued for them;
- (b) such shares would be transferable but not withdrawable for at least 3 years; and
- (c) operating surpluses may be distributed as a patronage bonus.

11. These arrangements may be made under the Cooperative Ordinance although existing livestock cooperatives wishing to participate may need to change their rules. The bonus distribution referred to would require official interpretation under the Ordinance by the Chief Cooperative Officer, and rules to meet the above requirements would need Cabinet approval for certain exemptions, as provided under the Ordinance.



12. IDA would need to be satisfied that audit and supervision arrangements were acceptable. It would also require that rules for the cooperative ranches were acceptable and that any future changes in cooperative law would not affect their commercial viability.



GUYANA

BEEF CATTLE PROJECT

Coastal and LDCo Coastal Ranches - On-Ranch Investment  
(Guyanese Dollars)

|  | Unit Cost  | Year 1 |                  | Year 2 |         | Year 3 |         | Total Units | Total Cost |
|--|------------|--------|------------------|--------|---------|--------|---------|-------------|------------|
|  |            | Units  | Cost             | Units  | Cost    | Units  | Cost    |             |            |
| <u>Coastal Ranches (7,500 ac)</u>            |            |        |                  |        |         |        |         |             |            |
| Fencing                                      | G\$ 750 mi | 18     | 13,500           | 9      | 6,750   | 8      | 6,000   | 35          | 26,250     |
| Stock Handling (inc mounds)                  |            |        | 6,500            |        | 2,750   |        | 1,750   |             | 11,000     |
| Water  | G\$1,500   | 2      | 3,000            | 2      | 3,000   | 1      | 1,500   | 5           | 7,500      |
| Minor Drainage                               | G\$1/cu yd |        |                  | 2,000  | 2,000   | 2,000  | 2,000   | 4,000       | 4,000      |
| Buildings <u>1/</u>                          |            |        | 18,000           |        | 4,000   |        | 1,500   |             | 23,500     |
| Machinery <u>2/</u>                          |            |        | 19,100           |        | 4,200   |        |         |             | 23,300     |
| Pasture Establishment <u>3/</u>              | G\$50/ac   | 150 ac | 7,500            | 300 ac | 15,000  | 300 ac | 15,000  | 750 ac      | 37,500     |
| Miscellaneous <u>4/</u>                      |            |        | 2,100            |        | 1,800   |        | 2,200   |             | 6,100      |
| Sub-total                                    |            |        | 69,700           |        | 39,500  |        | 29,950  |             | 139,150    |
| Livestock <u>5/</u>                          |            |        | 15,200           |        | 11,500  |        | 8,600   |             | 35,300     |
| Sub-total                                    |            |        | 84,900           |        | 51,000  |        | 38,550  |             | 174,450    |
| <u>Total (with contingency and rounding)</u> |            |        | 93,400           |        | 56,100  |        | 42,400  |             | 191,900    |
| <u>LDCo Coastal Ranch (20,000 ac)</u>        |            |        |                  |        |         |        |         |             |            |
| Fencing                                      | G\$ 750/mi | 40     | 30,000           | 20     | 15,000  | 15     | 11,250  | 75          | 56,250     |
| Stock Handling                               |            |        | 11,500           |        | 8,250   |        | 3,250   |             | 23,000     |
| Water  | G\$1,500   | 4      | 6,000            | 4      | 6,000   | 4      | 6,000   | 12          | 18,000     |
| Minor Drainage                               | G\$1/cu yd |        |                  | 5,000  | 5,000   | 5,000  | 5,000   | 10,000      | 10,000     |
| Buildings <u>1/</u>                          |            |        | 24,000           |        | 8,000   |        | 1,500   |             | 33,500     |
| Machinery <u>2/</u>                          |            |        | 42,600           |        | 3,600   |        |         |             | 46,200     |
| Pasture Establishment <u>3/</u>              | G\$50/ac   | 600 ac | 34,500 <u>6/</u> | 700 ac | 35,000  | 700 ac | 35,000  | 2,000 ac    | 104,500    |
| Miscellaneous <u>4/</u>                      |            |        | 5,900            | 4      | 1,600   |        | 600     |             | 8,100      |
| Sub-total                                    |            |        | 154,500          |        | 82,450  |        | 62,600  |             | 299,550    |
| Livestock <u>7/</u>                          |            |        | 510,700          |        | 196,400 |        | 190,600 |             | 897,700    |
| Sub-total                                    |            |        | 665,200          |        | 278,850 |        | 253,200 |             | 1,197,250  |
| <u>Total (with contingency and rounding)</u> |            |        | 731,700          |        | 306,800 |        | 278,500 |             | 1,317,000  |

Notes:

- 1/ Ranch house G\$8,000 (LDCoG\$15,000); bunk house G\$6,000; barns, sheds, outstations.
- 2/ Tractor and implements G\$12,000; 4-wheel drive vehicle G\$7,500; pumps, engines, generator, outboard canoe.
- 3/ Clearing/burning G\$30/ac; seeding G\$20/ac; plus 100 ac seed production G\$4,500.
- 4/ Tools, veterinary equipment, saddlery, radio/telephone.
- 5/ Additional bulls first 3 years plus horses, semen. Bulls G\$370, horses G\$300. Semen G\$7 ampule standard.
- 6/ Includes 100 ac land preparation/seeding @ G\$45/ac.
- 7/ Additional bulls and heifers commercial herd, first 3 years; imported bulls, cows and heifers, stud herd; plus horses and semen. Herd bulls G\$300, heifers G\$100, stud bulls G\$4,000, stud cows G\$2,000, stud heifers G\$1,500; horses G\$300, semen G\$20, ampule stud G\$7 ampule standard.

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BEEF CATTLE PROJECT

Coastal Ranches (10,000 ac - 7,500 ac developed) Herd Projection

|                                | Opening Herd | End of Ranch Year |       |       |       |         |         |         |         |         |         |
|--------------------------------|--------------|-------------------|-------|-------|-------|---------|---------|---------|---------|---------|---------|
|                                |              | 1                 | 2     | 3     | 4     | 5       | 6       | 7       | 8       | 9       | 10-20   |
| <b>Herd Composition</b>        |              |                   |       |       |       |         |         |         |         |         |         |
| Breeding Cows                  | 1,400        | 1,419             | 1,454 | 1,505 | 1,573 | 1,716   | 1,760   | 1,760   | 1,760   | 1,760   | 1,760   |
| Bulls                          | 56           | 71                | 73    | 75    | 79    | 69      | 70      | 70      | 70      | 70      | 70      |
| Calves Weaned                  | (420)        | (490)             | (710) | (872) | (979) | (1,022) | (1,116) | (1,144) | (1,144) | (1,144) | (1,144) |
| Heifers - 12-24 months         | 210          | 210               | 245   | 355   | 436   | 490     | 511     | 558     | 572     | 572     | 572     |
| Heifers - 24-36 months         | 195          | 197               | 200   | 235   | 344   | 423     | 475     | 496     | 541     | 555     | 555     |
| Steers - 12-24 months          | 610          | 210               | 245   | 355   | 436   | 489     | 511     | 558     | 572     | 572     | 572     |
| Steers - 24-36 months          | 100          | 1/                | 200   | 235   | 344   | 423     | 474     | 496     | 541     | 555     | 555     |
| Steers - 36-48 months          | -            | -                 | 194   | 96    | 56    | -       | -       | -       | -       | -       | -       |
| Total AU                       | 2,571        | 2,559             | 2,611 | 2,856 | 3,268 | 3,610   | 3,801   | 3,938   | 4,056   | 4,084   | 4,084   |
| Total Animals                  | 2,991        | 3,049             | 3,321 | 3,728 | 4,247 | 4,632   | 4,917   | 5,082   | 5,200   | 5,228   | 5,228   |
| <b>Mortality</b>               |              |                   |       |       |       |         |         |         |         |         |         |
| Breeding Cows                  | 98           | 84                | 71    | 58    | 45    | 47      | 51      | 53      | 53      | 53      | 53      |
| Bulls                          | 4            | 3                 | 4     | 3     | 2     | 2       | 2       | 2       | 2       | 2       | 2       |
| Heifers - 12-24 months         | 15           | 13                | 10    | 10    | 11    | 13      | 15      | 15      | 17      | 17      | 17      |
| Heifers - 24-36 months         | 14           | 12                | 10    | 8     | 7     | 10      | 13      | 14      | 15      | 16      | 17      |
| Steers - 12-24 months          | 15           | 37                | 10    | 10    | 11    | 13      | 15      | 15      | 17      | 17      | 17      |
| Steers - 24-36 months          | 7            | 6                 | 23    | 8     | 7     | 10      | 13      | 14      | 15      | 16      | 17      |
| Steers - 36-48 months          | -            | -                 | -     | 8     | 3     | 2       | -       | -       | -       | -       | -       |
| Total                          | 153          | 155               | 128   | 105   | 86    | 97      | 109     | 113     | 119     | 121     | 123     |
| <b>Sales</b>                   |              |                   |       |       |       |         |         |         |         |         |         |
| Cull Cows                      | 70           | 70                | 71    | 73    | 105   | 110     | 206     | 211     | 211     | 211     | 211     |
| Cull Bulls                     | 6            | 8                 | 11    | 4     | 4     | 8       | 8       | 8       | 8       | 8       | 8       |
| Cull Heifers - 24-36 months    | 29           | 10                | 10    | 10    | 12    | 34      | 42      | 48      | 56      | 56      | 56      |
| Surplus Heifers - 24-36 months | -            | -                 | -     | -     | -     | -       | 67      | 149     | 161     | 205     | 218     |
| Fat Steers 2/                  | 195          | 215               | 235   | 282   | 263   | 388     | 410     | 460     | 481     | 525     | 538     |
| Total Sales                    | 300          | 303               | 327   | 369   | 384   | 540     | 733     | 876     | 917     | 1,005   | 1,031   |
| <b>Purchases</b>               |              |                   |       |       |       |         |         |         |         |         |         |
| Bulls                          | -            | 26                | 17    | 9     | 10    | -       | 11      | 10      | 10      | 10      | 10      |
| <b>Production Coefficients</b> |              |                   |       |       |       |         |         |         |         |         |         |
| Effective Calving              | %            | 30                | 35    | 50    | 60    | 65      | 65      | 65      | 65      | 65      | 65      |
| Mortality - Adult 4/           | %            | 7                 | 6     | 5     | 4     | 3       | 3       | 3       | 3       | 3       | 3       |
| Bulls/Cows Ratio               | %            | 4                 | 5     | 5     | 5     | 5       | 4       | 4       | 4       | 4       | 4       |
| Culling Rate - Cows            | %            | 5                 | 5     | 5     | 5     | 7       | 7       | 12      | 12      | 12      | 12      |
| - Bulls                        | %            | 10                | 15    | 15    | 5     | 5       | 10      | 12      | 12      | 12      | 12      |
| - Heifers                      | %            | 15                | 5     | 5     | 5     | 5       | 10      | 10      | 10      | 10      | 10      |
| Stocking Rate 5/               | Ac/AU        | 2.9               | 2.9   | 2.9   | 2.6   | 2.3     | 2.1     | 2.0     | 1.9     | 1.8     | 1.8     |
| Extraction Rate 6/             | %            | 12.0              | 5.2   | 9.4   | 9.8   | 9.0     | 11.7    | 14.9    | 17.2    | 17.6    | 19.7    |

1/ 500 immature steers extra collected in exchange for shares for sale in years 1 & 2 but not included in calculations of sales in predevelopment year.  
2/ Steers fat at 900 lb liveweight.  
3/ Steers 24-36 months sold immature in years 0, 1 and 2 at 750-800 lb liveweight.  
4/ Applied to categories and rounded.  
5/ Stocking rate calculated on basis of 7,500 ac although allowance made for some grazing of 2,500 ac undeveloped.  
6/ Sales as percentage of total herd excluding extra steers years 0, 1 and 2.



GUYANA  
BEEF CATTLE PROJECT

Coastal Ranches (10,000 ac - 7,500 ac developed)

Sales, Purchases, Expenses and Net Revenue  
(Guyanese dollars)

|                                | Unit Value |            | End of Ranch Year    |                      |                      |        |        |        |         |         |         |         |         |
|--------------------------------|------------|------------|----------------------|----------------------|----------------------|--------|--------|--------|---------|---------|---------|---------|---------|
|                                | Years 0-6  | Years 7-20 | 0                    | 1                    | 2                    | 3      | 4      | 5      | 6       | 7       | 8       | 9       | 10      |
| <u>Sales</u>                   |            |            |                      |                      |                      |        |        |        |         |         |         |         |         |
| Cull Cows                      | 110        | 145        | 7,400 <sup>1/</sup>  | 7,700                | 7,810                | 8,030  | 11,550 | 12,100 | 22,660  | 30,600  | 30,600  | 30,600  | 30,600  |
| Cull Bulls                     | 250        | 315        | 1,500                | 2,000                | 2,750                | 1,000  | 1,000  | 2,000  | 2,000   | 2,520   | 2,520   | 2,520   | 2,520   |
| Cull Heifers - 24-36 months    | 125        | 160        | 2,900 <sup>2/</sup>  | 1,250                | 1,250                | 1,250  | 1,500  | 4,250  | 5,250   | 7,680   | 8,960   | 8,960   | 8,960   |
| Surplus Heifers - 24-36 months | 140        | 180        | -                    | -                    | -                    | -      | -      | -      | 9,380   | 22,350  | 24,150  | 30,750  | 32,700  |
| Fat Steers                     | 200        | 250        | 33,150 <sup>3/</sup> | 36,550 <sup>3/</sup> | 39,950 <sup>3/</sup> | 56,400 | 52,600 | 77,600 | 82,000  | 115,000 | 120,250 | 131,250 | 134,500 |
| Total                          |            |            | 44,950               | 47,500               | 51,760               | 66,680 | 66,650 | 95,950 | 121,290 | 182,620 | 191,310 | 210,230 | 215,820 |
| <u>Purchases</u>               |            |            |                      |                      |                      |        |        |        |         |         |         |         |         |
| Bulls                          | 370        | 465        | -                    | 9,620                | 6,290                | 3,330  |        |        |         |         |         |         |         |
| <u>Expenses</u>                |            |            |                      |                      |                      |        |        |        |         |         |         |         |         |
| Fixed                          |            |            | 15,200               | 22,100               | 22,900               | 25,300 | 35,200 | 35,900 | 42,000  | 42,500  | 42,500  | 42,500  | 42,500  |
| Variable G\$2/head             |            |            | 4,980 <sup>4/</sup>  | 6,080                | 6,640                | 7,460  | 8,490  | 9,260  | 9,830   | 10,160  | 10,400  | 10,460  | 10,460  |
| Bull purchase                  |            |            | -                    | -                    | -                    | -      | 3,700  | -      | 4,070   | 4,700   | 4,700   | 4,700   | 4,700   |
| Total                          |            |            | 20,180               | 28,180               | 29,540               | 32,760 | 47,390 | 45,160 | 55,900  | 57,360  | 57,600  | 57,660  | 57,660  |
| <u>Net Revenue</u>             |            |            |                      |                      |                      |        |        |        |         |         |         |         |         |
|                                |            |            | 24,770               | 19,320               | 22,220               | 33,920 | 19,260 | 50,790 | 65,390  | 125,260 | 133,710 | 152,570 | 158,160 |

- 1/ Cull cows G\$105  
 2/ Cull heifers G\$100  
 3/ Immature steers G\$170 Years 0, 1 and 2  
 4/ Based on herd without extra steers for early sale

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BEEF CATTLE PROJECT

Coastal Ranches (10,000 ac with 7,500 ac developed) Financial Projection  
(Guyanese dollars)

| Without<br>Development                         | Ranch Year    |                         |                 |                 |                 |               |               |                |                |                |                |                |                |                             |
|--|---------------|-------------------------|-----------------|-----------------|-----------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------------------|
|  | 1             | 2                       | 3               | 4               | 5               | 6             | 7             | 8              | 9              | 10             | 11             | 12             | 13-20          |                             |
| <b>SOURCE AND USE OF FUNDS</b>                 |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                |                             |
| <b>SOURCE</b>                                  |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                |                             |
| Net income (before debt service) <sup>1/</sup> | 24,800        | 19,300                  | 22,200          | 33,900          | 19,300          | 50,800        | 65,400        | 125,300        | 133,700        | 152,600        | 158,200        | 158,200        | 158,200        | 158,200                     |
| Short term loan (or equity) <sup>2/</sup>      | -             | 17,300                  | 17,400          | 8,100           | 11,400          |               |               |                |                |                |                |                |                |                             |
| Long term loan                                 | -             | 74,700                  | 44,900          | 33,900          | -               |               |               |                |                |                |                |                |                |                             |
| <b>TOTAL SOURCE</b>                            | <b>24,800</b> | <b>111,300</b>          | <b>84,500</b>   | <b>75,900</b>   | <b>30,700</b>   |               |               |                |                |                |                |                |                |                             |
| <b>USE</b>                                     |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                |                             |
| Ranch contribution                             | -             | 18,700                  | 11,200          | 8,500           |                 |               |               |                |                |                |                |                |                |                             |
| Investment of loan funds                       | -             | 74,700                  | 44,900          | 33,900          |                 |               |               |                |                |                |                |                |                |                             |
| <b>Total Investment</b>                        | <b>-</b>      | <b>93,400</b>           | <b>56,100</b>   | <b>42,400</b>   |                 |               |               |                |                |                |                |                |                |                             |
| Working Capital addition                       | -             | 14,400                  | 400             | 1,600           | 7,300           | (2,100)       | 6,400         | 700            | 100            |                |                |                |                |                             |
| <b>Debt service</b>                            |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                |                             |
| Short term interest (8%)                       | -             | -                       | 1,500           | 1,500           | 700             | 1,000         |               |                |                |                |                |                |                |                             |
| Short term loan repayment                      | -             | -                       | 17,300          | 17,400          | 8,100           | 11,400        |               |                |                |                |                |                |                |                             |
| Long term interest (9%) <sup>3/</sup>          | -             | 3,500                   | 9,200           | 13,000          | 14,600          |               |               |                |                |                |                |                |                |                             |
| Long term loan repayment                       | -             | -                       | -               | -               | -               | 28,300        | 28,300        | 28,300         | 28,300         | 28,300         | 28,300         | 28,300         | 28,300         | 28,300                      |
| <b>Total Debt Service</b>                      | <b>-</b>      | <b>3,500</b>            | <b>28,000</b>   | <b>31,900</b>   | <b>23,100</b>   | <b>40,700</b> |               |                |                |                |                |                |                |                             |
| <b>CASH BALANCE (after debt service)</b>       | <b>24,800</b> | <b>-</b>                | <b>-</b>        | <b>-</b>        | <b>12,200</b>   | <b>30,700</b> | <b>96,300</b> | <b>105,300</b> | <b>124,300</b> | <b>129,900</b> | <b>129,900</b> | <b>129,900</b> | <b>129,900</b> | <b>158,200</b>              |
| <b>TOTAL USE</b>                               | <b>24,800</b> | <b>111,300</b>          | <b>84,500</b>   | <b>75,900</b>   | <b>30,700</b>   | <b>50,800</b> | <b>65,400</b> | <b>125,300</b> | <b>133,700</b> | <b>152,600</b> | <b>158,200</b> | <b>158,200</b> | <b>158,200</b> | <b>158,200</b>              |
| Working capital <sup>4/</sup>                  | -             | 14,400                  | 14,800          | 16,400          | 23,700          | 21,600        | 28,000        | 28,700         | 28,800         | 28,800         | 28,800         | 28,800         | 28,800         | 28,800                      |
| Herd value (nearest G\$ 10,000)                | 370,000       | 460,000                 | 470,000         | 500,000         | 560,000         | 610,000       | 640,000       | 790,000        | 810,000        | 820,000        | 820,000        | 820,000        | 820,000        | 820,000                     |
| <b>INCREMENTAL NET CASH FLOW</b>               |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                |                             |
| Net income (before debt service)               | 24,800        | 19,300                  | 22,200          | 33,900          | 19,300          | 50,800        | 65,400        | 125,300        | 133,700        | 152,600        | 158,200        | 158,200        | 158,200        | 158,200                     |
| Net income (without development)               | 24,800        | 24,800                  | 24,800          | 24,800          | 24,800          | 24,800        | 24,800        | 24,800         | 24,800         | 24,800         | 24,800         | 24,800         | 24,800         | 24,800                      |
| Incremental net income                         | -             | (5,500)                 | (2,600)         | 9,100           | (5,500)         | 26,000        | 40,600        | 100,500        | 108,900        | 127,800        | 133,400        | 133,400        | 133,400        | 133,400                     |
| Incremental working capital                    | -             | (14,400)                | (400)           | (1,600)         | (7,300)         | 2,100         | (6,400)       | (700)          | (100)          |                |                |                |                |                             |
| Investment                                     | -             | (168,400) <sup>5/</sup> | (56,100)        | (42,400)        | -               | -             | -             | -              | -              |                |                |                |                |                             |
| <b>NET CASH FLOW</b>                           | <b>-</b>      | <b>(188,300)</b>        | <b>(59,100)</b> | <b>(34,900)</b> | <b>(12,800)</b> | <b>28,100</b> | <b>34,200</b> | <b>99,800</b>  | <b>108,800</b> |                |                |                |                |                             |
|  |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                | Incremental herd value      |
|  |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                | 28,800                      |
|  |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                | Incremental working capital |
|  |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                | 611,100                     |
|  |               |                         |                 |                 |                 |               |               |                |                |                |                |                |                | (Year 20)                   |

Estimated Financial Rate of Return 20%

NOTES:

- 1/ Total sales, less operating expenses, to nearest hundred, excluding depreciation, including replacement.
- 2/ Balance of funds required annually; to be provided from short term borrowing (assumed in table) or ranch owners' equity contribution.
- 3/ On average loan drawn.
- 4/ 50% of expenses; financed by short term borrowing or ranch owners' equity contribution.
- 5/ Includes G\$ 75,000 value of additional 500 immature steers contributed @ G\$150.



GUYANA

BEEF CATTLE PROJECT

Rupununi Commercial, Amerindian and LDCo Ranches - On-Ranch Investment  
(Guyanese Dollars)

| <u>Commercial and Amerindian Ranches</u><br>(64,000 ac) | <u>Unit Cost</u> | <u>Year 1</u> |             | <u>Year 2</u> |             | <u>Year 3</u> |             | <u>Total Units</u> | <u>Total Cost</u> |
|---|------------------|---------------|-------------|---------------|-------------|---------------|-------------|--------------------|-------------------|
|   |                  | <u>Units</u>  | <u>Cost</u> | <u>Units</u>  | <u>Cost</u> | <u>Units</u>  | <u>Cost</u> |                    |                   |
| Fencing   | 850/mi           | 20            | 17,000      | 15            | 12,750      | 5             | 4,250       | 40                 | 34,000            |
| Stock Handling <u>1/</u>                                |                  |               | 3,000       |               | 1,500       |               | 1,500       | 3                  | 6,000             |
| Water <u>2/</u>   | 2,600            | 2             | 5,200       | 2             | 5,200       |               | -           | 4                  | 10,400            |
| Tractor and Implements                                  | 8,000            | 1             | 8,000       |               | -           |               | -           | 1                  | 8,000             |
| Engine, Pumps, etc.                                     | 2,400            | $\frac{1}{2}$ | 1,200       |               | -           | $\frac{1}{2}$ | 1,200       | 1                  | 2,400             |
| Pasture Improvement                                     | 12/ac            |               | -           | 200           | 2,400       |               | -           | 200                | 2,400             |
| Miscellaneous <u>3/</u>                                 |                  |               | 1,600       |               | 1,300       |               | 300         |                    | 3,200             |
| Sub-total   |                  |               | 36,000      |               | 23,150      |               | 7,250       |                    | 66,400            |
| Livestock <u>4/</u>                                     |                  |               | 7,900       |               | 4,600       |               | 5,800       |                    | 18,300            |
| Sub-total   |                  |               | 43,900      |               | 27,750      |               | 13,050      |                    | 84,700            |
| <u>Total (with contingency and rounding)</u>            |                  |               | 48,300      |               | 30,500      |               | 14,400      |                    | 93,200            |
| <u>LDCo Ranch (200,000 ac)</u>                          |                  |               |             |               |             |               |             |                    |                   |
| Fencing   | 850/mi           | 51            | 43,500      | 25            | 21,250      | 30            | 25,500      | 106                | 90,250            |
| Stock Handling  |                  |               | 6,000       |               | 6,000       |               | 6,000       |                    | 18,000            |
| Water <u>2/</u>   | 2,600            | 4             | 10,400      | 3             | 7,800       | 3             | 7,800       | 10                 | 26,000            |
| Tractor and Implements                                  | 10,000           | 2             | 20,000      |               | -           |               | -           | 2                  | 20,000            |
| Vehicles  | 8,000            |               | -           | 2             | 16,000      |               | -           | 2                  | 16,000            |
| Engine, pumps, etc.                                     | 2,400            | 1             | 2,400       | 1             | 2,400       |               | -           |                    | 4,800             |
| Pasture Improvement                                     | 12/ac            |               | -           | 250           | 3,000       | 250           | 3,000       | 500                | 6,000             |
| Miscellaneous <u>3/</u>                                 |                  |               | 3,500       |               | -           |               | 1,500       |                    | 5,000             |
| Sub-total   |                  |               | 85,800      |               | 56,450      |               | 43,800      |                    | 186,050           |
| Livestock <u>4/</u>                                     |                  |               | 45,700      |               | 32,300      |               | 37,000      |                    | 115,000           |
| Sub-total   |                  |               | 131,500     |               | 88,750      |               | 80,800      |                    | 301,050           |
| <u>Total (with contingency and rounding)</u>            |                  |               | 144,700     |               | 97,600      |               | 88,900      |                    | 331,200           |

- 1/ Corral crushes G\$3,000; handling yards G\$1,500.  
2/ Well G\$1,800; tank and trough G\$800.  
3/ Tools, veterinary equipment, saddlery.  
4/ Additional breeding stock (bulls and heifers) first 3 years; plus horses and semen.  
Heifers G\$95, horses G\$300, semen G\$7 ampule standard.

August 28, 1970





GUYANA  
BEEF CATTLE PROJECT

Rupununi Commercial and Amerindian Ranches (64,000 ac) - Herd Projection

|                                | Without<br>Development | End of Ranch Year |       |       |       |       |       |       |       |       |       |
|--------------------------------|------------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                |                        | 1                 | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10-20 |
| <u>Herd Composition</u>        |                        |                   |       |       |       |       |       |       |       |       |       |
| Breeding Cows                  | 490                    | 514               | 577   | 614   | 668   | 695   | 720   | 720   | 720   | 720   | 720   |
| Bulls (5%)                     | 25                     | 26                | 30    | 31    | 33    | 35    | 36    | 36    | 36    | 36    | 36    |
| Calves Weaned                  | (186)                  | (220)             | (257) | (316) | (368) | (434) | (452) | (468) | (468) | (468) | (468) |
| Heifers - 12-24 months         | 93                     | 93                | 110   | 129   | 158   | 184   | 217   | 226   | 234   | 234   | 234   |
| Heifers - 24-36 months         | 87                     | 127               | 118   | 134   | 124   | 153   | 178   | 210   | 219   | 227   | 227   |
| Steers - 12-24 months          | 93                     | 93                | 110   | 128   | 158   | 184   | 217   | 226   | 234   | 234   | 234   |
| Steers - 24-36 months          | 87                     | 87                | 88    | 104   | 123   | 153   | 178   | 210   | 219   | 227   | 227   |
| Steers - 36-48 months          | 81                     | 82                | 83    | 84    | 100   | 90    | 74    | 86    | 103   | 104   | 110   |
| Steers - 48+ months            | 56                     | 57                | 41    | 19    | -     | -     | -     | -     | -     | -     | -     |
| Cull Cows                      | -                      | 25                | 26    | 20    | 10    | -     | -     | -     | -     | -     | -     |
| Total AU                       | 1,012                  | 1,104             | 1,183 | 1,263 | 1,374 | 1,494 | 1,620 | 1,711 | 1,765 | 1,782 | 1,788 |
| Purchased Steers               | -                      | 100               | 100   | 100   | 100   | 100   | 100   | 50    | 50    | -     | -     |
| Total AU                       | 1,012                  | 1,204             | 1,283 | 1,363 | 1,474 | 1,594 | 1,720 | 1,811 | 1,815 | 1,782 | 1,788 |
| Total Animals                  | 1,198                  | 1,424             | 1,540 | 1,679 | 1,842 | 2,028 | 2,172 | 2,282 | 2,283 | 2,250 | 2,256 |
| <u>Mortality</u>               |                        |                   |       |       |       |       |       |       |       |       |       |
| Breeding Cows                  | 34                     | 29                | 26    | 29    | 25    | 20    | 21    | 22    | 22    | 22    | 22    |
| Bulls                          | 2                      | 2                 | 1     | 2     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| Heifers - 12-24 months         | 6                      | 6                 | 5     | 6     | 5     | 5     | 6     | 7     | 7     | 7     | 7     |
| Heifers - 24-36 months         | 6                      | 5                 | 6     | 6     | 5     | 4     | 5     | 5     | 6     | 6     | 7     |
| Steers - 12-24 months          | 6                      | 6                 | 5     | 6     | 5     | 5     | 6     | 7     | 7     | 7     | 7     |
| Steers - 24-36 months          | 6                      | 5                 | 4     | 4     | 4     | 4     | 5     | 5     | 6     | 6     | 7     |
| Steers - 36-48 months          | 6                      | 5                 | 4     | 4     | 3     | 3     | 3     | 2     | 3     | 3     | 3     |
| Steers - 48+ months            | 3                      | 3                 | 2     | 1     | -     | -     | -     | -     | -     | -     | -     |
| Cull Cows                      | -                      | -                 | 1     | 1     | 1     | -     | -     | -     | -     | -     | -     |
| Purchased Steers               | -                      | -                 | 5     | 5     | 4     | 3     | 3     | 3     | 3     | 2     | -     |
| Total                          | 69                     | 61                | 60    | 65    | 54    | 45    | 50    | 52    | 55    | 54    | 54    |
| <u>Sales</u>                   |                        |                   |       |       |       |       |       |       |       |       |       |
| Cull Cows                      | 25                     | -                 | 24    | 45    | 52    | 77    | 70    | 72    | 72    | 72    | 72    |
| Cull Bulls                     | 1                      | 1                 | 1     | 2     | 2     | 3     | 4     | 4     | 4     | 4     | 4     |
| Cull Heifers - 24-36 months    | 4                      | 4                 | 6     | 6     | 7     | 6     | 8     | 9     | 11    | 11    | 11    |
| Surplus Heifers - 24-36 months | -                      | -                 | -     | -     | -     | -     | 24    | 70    | 99    | 108   | 115   |
| Fat Steers                     | 72                     | 72                | 91    | 99    | 99    | 126   | 161   | 159   | 184   | 209   | 211   |
| Purchased Steers               | -                      | -                 | 95    | 95    | 96    | 97    | 97    | 97    | 97    | 48    | -     |
| Total                          | 102                    | 77                | 217   | 247   | 256   | 309   | 364   | 411   | 467   | 452   | 473   |
| <u>Purchases</u>               |                        |                   |       |       |       |       |       |       |       |       |       |
| Bulls                          | -                      | 4                 | 6     | 5     | 5     | 6     | 6     | 5     | 5     | 5     | 5     |
| Heifers - 24-36 months         | -                      | 40                | 30    | 30    | -     | -     | -     | -     | -     | -     | -     |
| Steers                         | -                      | 100               | 100   | 100   | 100   | 100   | 100   | 100   | 50    | -     | -     |
| Total                          | -                      | 144               | 136   | 135   | 105   | 106   | 106   | 105   | 55    | 5     | 5     |
| <u>Production Coefficients</u> |                        |                   |       |       |       |       |       |       |       |       |       |
| Effective Calving              | %                      | 38                | 45    | 50    | 55    | 60    | 65    | 65    | 65    | 65    | 65    |
| Mortality - Adult              | %                      | 7                 | 6     | 5     | 5     | 4     | 3     | 3     | 3     | 3     | 3     |
| Culling Rate - Cows            | %                      | 5                 | 5     | 5     | 7     | 7     | 10    | 10    | 10    | 10    | 10    |
| - Bulls                        | %                      | 5                 | 10    | 5     | 7     | 7     | 10    | 10    | 10    | 10    | 10    |
| - Heifers                      | %                      | 5                 | 5     | 5     | 5     | 5     | 5     | 5     | 5     | 5     | 5     |
| Stocking Rate                  | ac/AU                  | 63                | 53    | 50    | 47    | 43    | 40    | 37    | 35    | 35    | 36    |
| Extraction Rate                | %                      | 10.0              | 6.9   | 10.3  | 12.0  | 11.6  | 14.2  | 16.5  | 18.3  | 21.0  | 22.7  |

1/ Steers fat at 900 lb  
 2/ Applied to categories and rounded  
 3/ Sales as percentage of total herd, excluding purchased steers



GUYANA  
BEEF CATTLE PROJECT  
Rupununi Commercial & Amerindian Ranches (64,000 ac)

Sales, Purchases, Expenses and Net Revenue  
(Guyanese Dollars)

|                      | Unit Value |      | Without Development | Ranch Year |        |                              |        |        |        |        |        |        |        |        |
|----------------------|------------|------|---------------------|------------|--------|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                      | 0-6 Years  | 7-20 |                     | 1          | 2      | 3                            | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11-20  |
| <b>Sales</b>         |            |      |                     |            |        |                              |        |        |        |        |        |        |        |        |
| Cull Cows            | 110        | 130  | 2,500 1/            | -          | 2,640  | 4,950                        | 5,720  | 8,470  | 7,700  | 9,360  | 9,360  | 9,360  | 9,360  | 9,360  |
| Cull Bulls           | 225        | 280  | 230                 | 230        | 230    | 450                          | 450    | 680    | 900    | 1,120  | 1,120  | 1,120  | 1,120  | 1,120  |
| Cull Heifers         | 100        | 120  | 400                 | 400        | 600    | 600                          | 700    | 600    | 800    | 1,080  | 1,320  | 1,320  | 1,320  | 1,320  |
| Surplus Heifers      | 130        | 160  | -                   | -          | -      | -                            | -      | -      | 3,120  | 11,200 | 15,840 | 17,280 | 18,400 | 18,400 |
| Fat Steers           | 195        | 245  | 13,650              | 13,650     | 17,750 | 19,310                       | 19,310 | 24,570 | 31,400 | 39,000 | 45,080 | 51,210 | 51,700 | 51,700 |
| Sub Total            |            |      | 16,780              | 14,280     | 21,220 | 25,310                       | 26,180 | 34,320 | 43,920 | 61,710 | 72,720 | 80,290 | 81,900 | 81,900 |
| Purchased Steers     | 170        | 200  | -                   | -          | 16,150 | 16,150                       | 16,320 | 16,490 | 16,490 | 19,400 | 19,400 | 9,600  | 9,600  | 9,600  |
| Total                |            |      | 16,780              | 14,280     | 37,370 | 41,460                       | 42,500 | 50,810 | 60,410 | 81,110 | 92,120 | 89,890 | 91,500 | 91,500 |
| <b>Purchases</b>     |            |      |                     |            |        |                              |        |        |        |        |        |        |        |        |
| Bulls                | 290        | 350  | -                   | 1,160      | 1,740  | 1,450                        | 1,450  | 1,740  | 1,740  | 1,750  | 1,750  | 1,750  | 1,750  | 1,750  |
| Heifers 24-36 months | 95         |      | -                   | 3,800      | 2,850  | 2,850                        |        |        |        |        |        |        |        |        |
| Sub Total            |            |      |                     | 4,960      | 4,590  | 4,300                        |        |        |        |        |        |        |        |        |
| Steers               | 130        | 150  | -                   | 13,000     | 13,000 | 13,000                       | 13,000 | 13,000 | 13,000 | 15,000 | 7,500  | 7,500  | 7,500  | 7,500  |
| Total                |            |      |                     | 17,960     | 17,590 | 17,300                       | 14,450 | 14,740 | 14,740 | 16,750 | 9,250  | 9,250  | 9,250  | 9,250  |
| <b>Expenses</b>      |            |      |                     |            |        |                              |        |        |        |        |        |        |        |        |
| Fixed                |            |      | 6,900               | 7,400      | 7,600  | 8,800                        | 13,700 | 14,900 | 15,000 | 15,300 | 15,300 | 15,300 | 15,300 | 15,300 |
| Breeding stock       |            |      | -                   | -          | -      | ---Included in Investment--- | 1,450  | 1,740  | 1,740  | 1,750  | 1,750  | 1,750  | 1,750  | 1,750  |
| Steer Purchase 2/    |            |      | -                   | 13,000     | 13,000 | 13,000                       | 13,000 | 13,000 | 13,000 | 15,000 | 7,500  | 7,500  | 7,500  | 7,500  |
| Variable 3/          |            |      | 3,000               | 3,560      | 3,850  | 4,200                        | 4,605  | 5,070  | 5,430  | 5,710  | 5,710  | 5,750  | 5,770  | 5,770  |
| Total                |            |      | 9,900               | 23,960     | 24,450 | 26,000                       | 32,755 | 34,710 | 35,170 | 37,760 | 30,260 | 30,300 | 30,320 | 30,320 |
| <b>Net Revenue</b>   |            |      | 6,880               | (9,680)    | 12,920 | 15,460                       | 9,745  | 16,100 | 25,240 | 43,355 | 61,860 | 59,590 | 61,180 | 61,180 |

1/ Cull cows before development G\$ 100/head.

2/ Financed from Steer Purchase Fund.

3/ Supplements G\$ 1.50; vaccines and veterinary G\$ 1.00/head/year.

August 25, 1970.



GUYANA  
BEEF CATTLE PROJECT

Rupununi Commercial & Amerindian Ranches (64,000 ac) - Financial Projection  
(Guyanese dollars)

|   | Without<br>Development | Ranch Year      |                 |                |               |               |               |               |               |               |               |               |               |                             |
|---|------------------------|-----------------|-----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------------|
|   |                        | 1               | 2               | 3              | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12            | 13-20                       |
| <b>SOURCE AND USE OF FUNDS</b>  |                        |                 |                 |                |               |               |               |               |               |               |               |               |               |                             |
| <b>SOURCE</b>   |                        |                 |                 |                |               |               |               |               |               |               |               |               |               |                             |
| Net income (before debt service) <sup>1/</sup>                              | 6,900                  | (9,700)         | 12,900          | 15,500         | 9,800         | 16,100        | 25,200        | 43,400        | 61,900        | 59,600        | 61,200        | 61,200        | 61,200        | 61,200                      |
| Short term loan (or equity) <sup>2/</sup>                                   | -                      | 17,700          | 12,900          | 7,400          | 10,200        | 12,300        | 4,700         | -             | -             | -             | -             | -             | -             | -                           |
| Ranch contribution  | -                      | 9,700           | 6,100           | 2,900          | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| Long term loan  | -                      | 38,600          | 24,000          | 11,500         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| <b>TOTAL SOURCE</b>   | <b>6,900</b>           | <b>56,300</b>   | <b>56,300</b>   | <b>37,300</b>  | <b>20,000</b> | <b>28,400</b> | <b>29,900</b> | <b>43,400</b> | <b>61,900</b> | <b>59,600</b> | <b>61,200</b> | <b>61,200</b> | <b>61,200</b> | <b>61,200</b>               |
| <b>USE</b>  |                        |                 |                 |                |               |               |               |               |               |               |               |               |               |                             |
| Ranch contribution  | -                      | 9,700           | 6,100           | 2,900          | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| Investment of loan funds  | -                      | 38,600          | 24,400          | 11,500         | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| <b>Total Investment</b>   | <b>-</b>               | <b>48,300</b>   | <b>30,500</b>   | <b>14,400</b>  | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b>                    |
| Working capital addition (permanent)  | -                      | 5,500           | 200             | 800            | 3,400         | 1,000         | 200           | 300           | -             | -             | -             | -             | -             | -                           |
| Debt service  | -                      | -               | -               | -              | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| Short term interest (8%) <sup>3/</sup><br>(inc. bridging finance)           | -                      | -               | 1,800           | 1,400          | 900           | 1,100         | 1,300         | 700           | 600           | -             | -             | -             | -             | -                           |
| Short term repayment  | -                      | -               | 17,700          | 12,900         | 7,400         | 10,200        | 12,300        | 4,700         | 7,300         | -             | -             | -             | -             | -                           |
| Long term interest (9%) <sup>4/</sup>                                       | -                      | 2,500           | 6,100           | 7,800          | 8,300         | 16,100        | 16,100        | 16,100        | 16,100        | 16,100        | 16,100        | 16,100        | 16,100        | -                           |
| Long term loan repayment  | -                      | -               | -               | -              | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| <b>Total Debt Service</b>   | <b>-</b>               | <b>2,500</b>    | <b>25,600</b>   | <b>22,100</b>  | <b>16,600</b> | <b>27,400</b> | <b>29,700</b> | <b>21,500</b> | <b>24,000</b> | <b>16,100</b> | <b>16,100</b> | <b>16,100</b> | <b>16,100</b> | <b>16,100</b>               |
| <b>CASH BALANCE (after debt service)</b>                                    | <b>6,900</b>           | <b>-</b>        | <b>-</b>        | <b>-</b>       | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>21,600</b> | <b>45,400</b> | <b>43,500</b> | <b>45,100</b> | <b>45,100</b> | <b>45,100</b> | <b>45,100</b>               |
| <b>TOTAL USE</b>  | <b>6,900</b>           | <b>56,300</b>   | <b>56,300</b>   | <b>37,300</b>  | <b>20,000</b> | <b>28,400</b> | <b>29,900</b> | <b>43,400</b> | <b>61,900</b> | <b>59,600</b> | <b>61,200</b> | <b>61,200</b> | <b>61,200</b> | <b>61,200</b>               |
| Working Capital - Permanent <sup>5/</sup><br>- Steer Purchase<br>(3 months) | -                      | 5,500           | 5,700           | 6,500          | 9,900         | 10,900        | 11,100        | 11,400        | 11,400        | 11,400        | 11,400        | 11,400        | 11,400        | 11,400                      |
| Herd Value (nearest G\$10,000)  | 140,000                | 150,000         | 160,000         | 170,000        | 180,000       | 190,000       | 210,000       | 270,000       | 280,000       | 280,000       | 280,000       | 280,000       | 280,000       | 280,000                     |
| <b>INCREMENTAL NET CASH FLOW</b>  |                        |                 |                 |                |               |               |               |               |               |               |               |               |               |                             |
| Net income (before debt service)  | 6,900                  | (9,700)         | 12,900          | 15,500         | 9,800         | 16,100        | 25,200        | 43,400        | 61,900        | 59,600        | 61,200        | 61,200        | 61,200        | 61,200                      |
| Net income (without development)  | 6,900                  | 6,900           | 6,900           | 6,900          | 6,900         | 6,900         | 6,900         | 6,900         | 6,900         | 6,900         | 6,900         | 6,900         | 6,900         | 6,900                       |
| Incremental net income  | -                      | (16,600)        | 6,000           | 8,600          | 2,900         | 9,200         | 18,300        | 36,500        | 55,000        | 52,700        | 54,300        | 54,300        | 54,300        | 54,300                      |
| Incremental working capital <sup>7/</sup>                                   | -                      | (8,700)         | (300)           | (800)          | (3,400)       | (1,000)       | (200)         | (800)         | 1,900         | -             | -             | -             | -             | -                           |
| Investment  | -                      | (48,300)        | (30,500)        | (14,400)       | -             | -             | -             | -             | -             | -             | -             | -             | -             | -                           |
| <b>NET CASH FLOW</b>  | <b>-</b>               | <b>(73,600)</b> | <b>(24,800)</b> | <b>(6,600)</b> | <b>(500)</b>  | <b>8,200</b>  | <b>18,100</b> | <b>35,700</b> | <b>56,900</b> | <b>52,700</b> | <b>54,300</b> | <b>54,300</b> | <b>54,300</b> | <b>214,600</b><br>(Year 20) |

Estimated Financial Rate of Return: 21%

- 1/ Total sales, less operating expenses, to nearest hundred, excluding depreciation, including replacements.
- 2/ Balance of funds required annually if no cash drawings made (all profits reinvested); to be provided from short term borrowing (assumed in table) or ranch owners' equity contribution; excluding bridging finance for steer purchase.
- 3/ Including interest on 3 month steer purchase bridging finance.
- 4/ On cumulative average loan drawn.
- 5/ Subject to renegotiation if balancing finance (short term loan or equity) not available.
- 6/ 50% of annual expenses, excluding steer purchase (see Annex 11).
- 7/ Permanent working capital plus 25% of steer purchase cost, for rate of return purposes.



GUYANA  
BEEF CATTLE PROJECT

LDGo Coastal Ranch (20,000 ac) - Commercial Herd Projection

(See Annex 13 Page 2 for Stud Herd Projection - Same Ranch)

|                                   | ----- End of Ranch Year ----- |       |       |         |         |         |         |         |         |         |         |
|-----------------------------------|-------------------------------|-------|-------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                   | Opening Herd <sup>1/</sup>    | 1     | 2     | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10-20   |
| <b>Herd Composition</b>           |                               |       |       |         |         |         |         |         |         |         |         |
| Breeding Cows                     | 1,300                         | 1,824 | 2,904 | 3,485   | 3,643   | 3,664   | 3,800   | 3,800   | 3,800   | 3,800   | 3,800   |
| Bulls                             | 65                            | 91    | 145   | 174     | 182     | 146     | 152     | 152     | 152     | 152     | 152     |
| Calves Weaned                     | (390)                         | (520) | (912) | (1,742) | (2,440) | (2,550) | (2,565) | (2,660) | (2,660) | (2,660) | (2,660) |
| Heifers - 12-24 months            | 700                           | 195   | 260   | 456     | 871     | 1,220   | 1,275   | 1,282   | 1,330   | 1,330   | 1,330   |
| Heifers - 24-36 months            | 300                           | 958   | 485   | 550     | 442     | 845     | 1,183   | 1,237   | 1,244   | 1,290   | 1,290   |
| Steers - 12-24 months             | 700                           | 195   | 260   | 456     | 871     | 1,220   | 1,275   | 1,283   | 1,330   | 1,330   | 1,330   |
| Steers - 24-36 months             | 0                             | 658   | 185   | 250     | 442     | 845     | 1,183   | 1,237   | 1,245   | 1,290   | 1,290   |
| Steers - 36-48 months             | 0                             | -     | 625   | 178     | 121     | -       | -       | -       | -       | -       | -       |
| Sub-Total AU                      | 3,065                         | 3,921 | 4,864 | 5,549   | 6,572   | 7,940   | 8,868   | 8,991   | 9,101   | 9,192   | 9,192   |
| Purchased Steers                  |                               | 500   | 500   | 500     | 500     | 500     | 332     | 209     | 99      | 8       | 8       |
| Total AU                          | 3,065                         | 4,421 | 5,364 | 6,049   | 7,072   | 8,440   | 9,200   | 9,200   | 9,200   | 9,200   | 9,200   |
| Total Animals                     | 3,455                         | 4,941 | 6,276 | 7,791   | 9,512   | 10,990  | 11,765  | 11,860  | 11,860  | 11,860  | 11,860  |
| <b>Mortality</b>                  |                               |       |       |         |         |         |         |         |         |         |         |
| Breeding Cows                     |                               | 78    | 91    | 116     | 104     | 109     | 110     | 114     | 114     | 114     | 114     |
| Bulls                             |                               | 4     | 4     | 6       | 5       | 5       | 4       | 4       | 4       | 4       | 4       |
| Heifers - 12-24 months            |                               | 42    | 10    | 10      | 14      | 26      | 37      | 38      | 38      | 40      | 40      |
| Heifers - 24-36 months            |                               | 18    | 48    | 19      | 16      | 13      | 25      | 35      | 37      | 37      | 39      |
| Steers - 12-24 months             |                               | 42    | 10    | 10      | 14      | 26      | 37      | 38      | 38      | 40      | 40      |
| Steers - 24-36 months             |                               | -     | 33    | 7       | 8       | 13      | 25      | 35      | 37      | 37      | 39      |
| Steers - 36-48 months             |                               | -     | -     | 25      | 4       | -       | -       | -       | -       | -       | -       |
| Purchased Steers                  |                               | -     | 25    | 20      | 15      | 15      | 15      | 10      | 6       | 3       | -       |
| Total                             |                               | 184   | 221   | 213     | 181     | 211     | 253     | 274     | 274     | 275     | 276     |
| <b>Sales</b>                      |                               |       |       |         |         |         |         |         |         |         |         |
| Cull Cows                         |                               | 65    | 91    | 145     | 244     | 255     | 366     | 570     | 570     | 570     | 570     |
| Cull Bulls                        |                               | 3     | 4     | 7       | 17      | 31      | 22      | 23      | 23      | 23      | 23      |
| Cull Heifers - 24-36 months       |                               | 15    | 48    | 24      | 28      | 44      | 84      | 118     | 124     | 124     | 129     |
| Surplus Heifers - 24-36 months    |                               | -     | -     | -       | -       | -       | 124     | 346     | 392     | 399     | 438     |
| Fat Steers <sup>2/</sup>          |                               | -     | -     | 600     | 294     | 546     | 820     | 1,148   | 1,200   | 1,208   | 1,251   |
| Purchased Steers                  |                               | -     | 475   | 480     | 485     | 485     | 485     | 322     | 203     | 96      | 8       |
| Total                             |                               | 83    | 618   | 1,256   | 1,068   | 1,361   | 1,901   | 2,527   | 2,512   | 2,420   | 2,419   |
| <b>Purchases</b>                  |                               |       |       |         |         |         |         |         |         |         |         |
| Bulls                             |                               | 33    | 63    | 42      | 30      | -       | 32      | 27      | 27      | 27      | 27      |
| Heifers - 24-36 months            |                               | 300   | 300   | 300     | -       | -       | -       | -       | -       | -       | -       |
| Breeding Cows                     |                               | 400   | 400   | 400     | -       | -       | -       | -       | -       | -       | -       |
| Steers - 12-24 months             |                               | 500   | 500   | 500     | 500     | 500     | 332     | 209     | 99      | 8       | 8       |
| Total                             |                               | 1,233 | 1,263 | 1,242   | 530     | 500     | 364     | 236     | 126     | 35      | 35      |
| <b>Production Coefficients</b>    |                               |       |       |         |         |         |         |         |         |         |         |
| Effective Calving %               |                               | 40    | 50    | 60      | 70      | 70      | 70      | 70      | 70      | 70      | 70      |
| Mortality - Adult %               |                               | 6     | 5     | 4       | 3       | 3       | 3       | 3       | 3       | 3       | 3       |
| Bull/Cows %                       |                               | 5     | 5     | 5       | 5       | 4       | 4       | 4       | 4       | 4       | 4       |
| Culling Rate - Cows %             |                               | 5     | 5     | 5       | 7       | 7       | 10      | 15      | 15      | 15      | 15      |
| - Bulls %                         |                               | 5     | 5     | 5       | 10      | 15      | 15      | 15      | 15      | 15      | 15      |
| - Heifers - 24-36 months %        |                               | 5     | 5     | 5       | 5       | 10      | 10      | 10      | 10      | 10      | 10      |
| Stocking Rate <sup>2/</sup> ac/AU |                               | 4.3   | 3.5   | 3.1     | 2.7     | 2.2     | 2.0     | 2.0     | 2.0     | 2.0     | 2.0     |
| Extraction Rate <sup>4/</sup> %   |                               | 1.9   | 2.5   | 6.5     | 6.5     | 8.4     | 12.4    | 18.9    | 19.6    | 19.6    | 20.3    |

1/ Opening herd represents cattle from Government farm and immature steers and heifers purchased on the market.  
2/ Steer fat at 900 lb liveweight.  
3/ Calculated on total for commercial and stud herd; stocking to capacity.  
4/ Sales as percentage of total herd excluding purchased steers.





GUYANA  
BEEF CATTLE PROJECT

LDCo Coastal Ranch (20,000 ac) Stud Herd Projection  
(See Annex 13 Page 1 for Commercial Herd Projection - Same Ranch)

| Opening/<br>Herd                  | End of Ranch Year |      |       |       |       |       |       |       |       |       |       |       |       |
|-----------------------------------|-------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                   | 1                 | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12-20 |       |
| <b>Herd Composition</b>           |                   |      |       |       |       |       |       |       |       |       |       |       |       |
| Stud Cows                         | 26                | 135  | 144   | 182   | 219   | 279   | 308   | 348   | 350   | 350   | 350   | 350   | 350   |
| Bulls 2/                          | 2                 | 4    | 5     | 6     | 6     | 9     | 10    | 11    | 11    | 11    | 11    | 11    | 11    |
| Calves Weaned                     | (20)              | (23) | (119) | (127) | (160) | (193) | (246) | (271) | (306) | (308) | (308) | (308) | (308) |
| Heifers - 12-24 months            | 10                | 40   | 42    | 90    | 64    | 80    | 97    | 123   | 136   | 153   | 154   | 154   | 154   |
| Heifers - 24-36 months            | -                 | 10   | 39    | 41    | 89    | 63    | 79    | 96    | 122   | 134   | 151   | 152   | 152   |
| Bulls - 12-24 months              | 10                | 10   | 11    | 59    | 63    | 80    | 93    | 118   | 130   | 148   | 149   | 149   | 149   |
| Steers - 12-24 months             | -                 | -    | -     | -     | -     | -     | 3     | 5     | 5     | 5     | 5     | 5     | 5     |
| Steers - 24-36 months             | -                 | -    | -     | -     | -     | -     | 3     | 5     | 5     | 5     | 5     | 5     | 5     |
| Total AU                          | 48                | 199  | 211   | 378   | 441   | 511   | 590   | 704   | 759   | 806   | 825   | 826   | 826   |
| Total Animals                     | 68                | 222  | 360   | 505   | 601   | 704   | 836   | 975   | 1,065 | 1,114 | 1,133 | 1,134 | 1,134 |
| <b>Mortality</b>                  |                   |      |       |       |       |       |       |       |       |       |       |       |       |
| Stud Cows                         | -                 | 1    | 1     | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 4     | 4     | 4     |
| Bulls                             | -                 | -    | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Heifers - 12-24 months            | -                 | -    | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 2     | 2     | 2     | 2     |
| Heifers - 24-36 months            | -                 | -    | -     | -     | -     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| Bulls - 12-24 months              | -                 | 1    | -     | -     | 1     | -     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| Steers - 12-24 months             | -                 | -    | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Steers - 24-36 months             | -                 | -    | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Total                             | -                 | 2    | 2     | 2     | 4     | 4     | 5     | 6     | 7     | 8     | 8     | 8     | 8     |
| <b>Sales</b>                      |                   |      |       |       |       |       |       |       |       |       |       |       |       |
| Heifers - 24-36 months            | -                 | -    | -     | -     | -     | -     | -     | -     | 49    | 76    | 87    | 103   | 104   |
| Bulls - 12-24 months              | -                 | 9    | 10    | 11    | 56    | 56    | 74    | 85    | 110   | 122   | 139   | 140   | 140   |
| Steers - 24-36 months             | -                 | -    | -     | -     | -     | -     | -     | -     | 3     | 5     | 5     | 5     | 5     |
| Cull Bulls                        | -                 | -    | -     | -     | -     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| Cull Cows                         | -                 | -    | -     | -     | -     | 22    | 27    | 31    | 35    | 35    | 35    | 35    | 35    |
| Cull Heifers - 24-36 months       | -                 | -    | -     | -     | 2     | 4     | 3     | 4     | 5     | 6     | 7     | 8     | 8     |
| Cull Bulls - 12-24 months         | -                 | -    | -     | -     | 2     | 3     | 4     | 5     | 6     | 6     | 7     | 7     | 7     |
| Total                             | -                 | 9    | 10    | 11    | 60    | 86    | 109   | 126   | 209   | 251   | 281   | 299   | 300   |
| <b>Import Purchases</b>           |                   |      |       |       |       |       |       |       |       |       |       |       |       |
| Bulls                             | -                 | 2    | 1     | 1     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Cows                              | -                 | 110  | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Heifers - 12-24 months            | -                 | 30   | 30    | 30    | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Total                             | -                 | 142  | 31    | 31    | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| <b>Production Coefficients 3/</b> |                   |      |       |       |       |       |       |       |       |       |       |       |       |
| Effective Calving %               |                   | 88   | 88    | 88    | 88    | 88    | 88    | 88    | 88    | 88    | 88    | 88    | 88    |
| Mortality - Adult 4/ %            |                   | 4    | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| Bull/Cow Ratio %                  |                   | 3    | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     |
| Culling Rate - Cows %             |                   | -    | -     | -     | -     | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 10    |
| - Bulls (Adult) %                 |                   | -    | -     | -     | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 10    | 10    |
| - Bulls (12-24 months) %          |                   | -    | -     | -     | -     | 5     | 5     | 5     | 5     | 5     | 5     | 5     | 5     |
| - Heifers - 24-36 months %        |                   | 3    | 3     | 3     | 3     | 5     | 5     | 5     | 5     | 5     | 5     | 5     | 5     |
| Extraction Rate %                 |                   | 4.1  | 2.8   | 2.2   | 10.0  | 12.2  | 13.0  | 12.9  | 19.6  | 22.5  | 24.8  | 26.4  | 26.5  |

1/ Opening herd existing Government Brahman stud herd.  
2/ Bull ratio to next highest whole number.  
3/ Stocking rate calculated in conjunction with commercial herd on same ranch.  
4/ Total mortality; individual mortalities adjusted to whole numbers.



GUYANA  
BEEF CATTLE PROJECT

LDCo Rupununi Ranch (200,000 ac) - Herd Projection

| Opening Herd <sup>1/</sup>     | End of Ranch Year |       |       |         |         |         |         |         |         |         |         |       |
|--------------------------------|-------------------|-------|-------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
|                                | 1                 | 2     | 3     | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11-20   |       |
| <b>Herd Composition</b>        |                   |       |       |         |         |         |         |         |         |         |         |       |
| Breeding cows                  | 1,500             | 1,624 | 1,874 | 2,121   | 2,248   | 2,318   | 2,500   | 2,500   | 2,500   | 2,500   | 2,500   | 2,500 |
| Bulls                          | 30                | 81    | 94    | 106     | 112     | 116     | 125     | 125     | 125     | 125     | 125     | 125   |
| Calves Weaned                  | (530)             | (600) | (812) | (1,218) | (1,379) | (1,574) | (1,623) | (1,750) | (1,750) | (1,750) | (1,750) | 1,750 |
| Heifers - 12-24 months         | 265               | 265   | 300   | 406     | 609     | 689     | 787     | 811     | 875     | 875     | 875     | 875   |
| Heifers - 24-36 months         | 248               | 402   | 402   | 438     | 394     | 391     | 668     | 763     | 787     | 849     | 849     | 849   |
| Steers - 12-24 months          | 265               | 265   | 300   | 406     | 609     | 690     | 787     | 812     | 875     | 875     | 875     | 875   |
| Steers - 24-36 months          | 248               | 252   | 252   | 288     | 394     | 391     | 669     | 763     | 788     | 849     | 849     | 849   |
| Steers - 36-48 months          | 230               | 236   | 239   | 242     | 279     | 382     | 573     | 649     | 740     | 764     | 824     | 824   |
| Steers - 48 months plus        | 214               | 218   | 112   | 57      | -       | -       | -       | -       | -       | -       | -       | -     |
| Jull Cows                      | -                 | 75    | 81    | 47      | -       | -       | -       | -       | -       | -       | -       | -     |
| Sub-Total AU                   | 3,000             | 3,418 | 3,654 | 4,111   | 4,645   | 5,377   | 6,109   | 6,423   | 6,690   | 6,837   | 6,897   | 6,897 |
| Purchased Steers               | -                 | 350   | 350   | 350     | 500     | 500     | 400     | 200     | -       | -       | -       | -     |
| Total AU                       | 3,000             | 3,768 | 4,004 | 4,461   | 5,145   | 5,877   | 6,509   | 6,623   | 6,690   | 6,837   | 6,897   | 6,897 |
| Total Animals                  | 3,530             | 4,368 | 4,816 | 5,679   | 6,524   | 7,451   | 8,132   | 8,373   | 8,440   | 8,587   | 8,647   | 8,647 |
| <b>Mortality</b>               |                   |       |       |         |         |         |         |         |         |         |         |       |
| Breeding cows                  | -                 | 75    | 81    | 75      | 64      | 67      | 70      | 75      | 75      | 75      | 75      | 75    |
| Bulls                          | -                 | 2     | 4     | 4       | 3       | 3       | 3       | 4       | 4       | 4       | 4       | 4     |
| Heifers - 12-24 months         | -                 | 13    | 13    | 12      | 12      | 18      | 21      | 24      | 24      | 26      | 26      | 26    |
| Heifers - 24-36 months         | -                 | 12    | 20    | 16      | 13      | 12      | 18      | 20      | 23      | 24      | 25      | 25    |
| Steers - 12-24 months          | -                 | 13    | 13    | 12      | 12      | 18      | 21      | 24      | 24      | 26      | 26      | 26    |
| Steers - 24-36 months          | -                 | 12    | 13    | 10      | 9       | 12      | 18      | 20      | 23      | 24      | 25      | 25    |
| Steers - 36-48 months          | -                 | 12    | 12    | 10      | 7       | 8       | 11      | 17      | 19      | 22      | 23      | 25    |
| Steers - 48 months plus        | -                 | 11    | 11    | 4       | 2       | -       | -       | -       | -       | -       | -       | -     |
| Jull Cows                      | -                 | -     | 4     | 3       | 1       | -       | -       | -       | -       | -       | -       | -     |
| Purchased Steers               | -                 | -     | 18    | 14      | 10      | 15      | 15      | 12      | 6       | -       | -       | -     |
| Total                          | -                 | 150   | 189   | 160     | 133     | 153     | 177     | 196     | 198     | 201     | 204     | 206   |
| <b>Sales</b>                   |                   |       |       |         |         |         |         |         |         |         |         |       |
| Jull Cows                      | -                 | -     | 71    | 124     | 258     | 225     | 232     | 250     | 250     | 250     | 250     | 250   |
| Jull Bulls                     | -                 | 1     | 4     | 5       | 11      | 11      | 12      | 12      | 12      | 12      | 12      | 12    |
| Jull Heifers - 24-36 months    | -                 | 12    | 20    | 20      | 22      | 20      | 30      | 33      | 38      | 39      | 42      | 42    |
| Surplus Heifers - 24-36 months | -                 | -     | -     | -       | -       | -       | 59      | 290     | 377     | 399     | 457     | 457   |
| Fat Steers <sup>2/</sup>       | -                 | 203   | 319   | 281     | 290     | 271     | 371     | 556     | 630     | 718     | 741     | 799   |
| Sub-Total                      | -                 | 216   | 414   | 430     | 581     | 527     | 704     | 1,141   | 1,307   | 1,418   | 1,502   | 1,560 |
| Purchased steers               | -                 | -     | 332   | 336     | 340     | 485     | 485     | 388     | 194     | -       | -       | -     |
| Total                          | -                 | 216   | 746   | 766     | 921     | 1,012   | 1,189   | 1,529   | 1,501   | 1,418   | 1,502   | 1,560 |
| <b>Purchases</b>               |                   |       |       |         |         |         |         |         |         |         |         |       |
| Bulls                          | -                 | 54    | 21    | 21      | 20      | 18      | 24      | 16      | 16      | 16      | 16      | 16    |
| Breeding Cows                  | -                 | 50    | 50    | 50      | -       | -       | -       | -       | -       | -       | -       | -     |
| Heifers - 24-36 months         | -                 | 150   | 150   | 150     | -       | -       | -       | -       | -       | -       | -       | -     |
| Steers                         | -                 | 350   | 350   | 350     | 500     | 500     | 400     | 200     | -       | -       | -       | -     |
| Total                          | -                 | 604   | 571   | 571     | 520     | 518     | 424     | 216     | 16      | 16      | 16      | 16    |
| <b>Production Coefficients</b> |                   |       |       |         |         |         |         |         |         |         |         |       |
| Effective Calving              | %                 | 40    | 50    | 65      | 65      | 70      | 70      | 70      | 70      | 70      | 70      | 70    |
| Mortality - Adult              | %                 | 5     | 5     | 4       | 3       | 3       | 3       | 3       | 3       | 3       | 3       | 3     |
| Extraction Rate <sup>2/</sup>  | %                 | 5.3   | 7.0   | 8.1     | 9.6     | 7.6     | 7.1     | 14.0    | 15.5    | 16.5    | 17.4    | 18.0  |
| Bull/Cow Ratio                 | %                 | 5     | 5     | 5       | 5       | 5       | 5       | 5       | 5       | 5       | 5       | 5     |
| Culling Rate - Cows            | %                 | 5     | 5     | 5       | 10      | 10      | 10      | 10      | 10      | 10      | 10      | 10    |
| - Bulls                        | %                 | 3     | 5     | 5       | 10      | 10      | 10      | 10      | 10      | 10      | 10      | 10    |
| - Heifers - 24-36 mos.         | %                 | 5     | 5     | 5       | 5       | 5       | 5       | 5       | 5       | 5       | 5       | 5     |
| Stocking Rate                  | AU/ac             | 1/53  | 1/50  | 1/45    | 1/39    | 1/34    | 1/31    | 1/30    | 1/30    | 1/29    | 1/29    | 1/29  |

<sup>1/</sup> Opening herd comprises cattle from Government farms and those confiscated during 1968 rebellion.

<sup>2/</sup> Steer fat at 900 lb liveweight.

<sup>3/</sup> Sales as percentage of total herd including purchased cows and excluding purchased steers.



GUYANA  
BEEF CATTLE PROJECT

LDCo Sales, Purchases, Expenses and Net Revenue  
(Guyanese dollars)

I. Coastal Commercial Herd - Sales and Purchases

|                                  | Unit Value |            | Ranch Year |         |         |         |         |         |         |         |         |         |         |
|----------------------------------|------------|------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                  | Years 1-5  | Years 6-20 | 1          | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11-20   |
| <b>Sales</b>                     |            |            |            |         |         |         |         |         |         |         |         |         |         |
| Cull Cows                        | 110        | 145        | 7,150      | 10,010  | 15,950  | 26,810  | 28,050  | 53,070  | 82,650  | 82,650  | 82,650  | 82,650  | 82,650  |
| Cull Bulls                       | 250        | 315        | 750        | 1,000   | 1,750   | 4,250   | 7,750   | 6,930   | 7,250   | 7,250   | 7,250   | 7,250   | 7,250   |
| Cull Heifers                     | 135        | 170        | 2,030      | 6,480   | 3,240   | 3,780   | 5,940   | 14,280  | 18,530  | 20,060  | 21,080  | 21,080  | 21,930  |
| Surplus Heifers                  | -          | 170        | -          | -       | -       | -       | -       | 21,080  | 58,820  | 66,640  | 67,830  | 74,460  | 74,460  |
| Fat Steers                       | 200        | 250        | -          | -       | 120,000 | 58,800  | 109,200 | 205,000 | 287,000 | 300,000 | 302,000 | 312,750 | 312,750 |
| Purchased Steers                 | 170        | 220        | -          | 80,750  | 81,600  | 82,450  | 82,450  | 106,700 | 70,840  | 44,660  | 21,120  | 1,760   | 1,760   |
| Total                            |            |            | 9,930      | 98,240  | 222,540 | 176,120 | 233,390 | 407,060 | 525,090 | 521,260 | 501,930 | 499,950 | 500,800 |
| <b>Purchases (nearest \$100)</b> |            |            |            |         |         |         |         |         |         |         |         |         |         |
| Bulls                            | 250        | 700        | 8,300      | 15,800  | 10,500  | 7,500   | -       | 22,400  | 18,900  | 18,900  | 18,900  | 18,900  | 18,900  |
| Breeding Cows                    | 225        | -          | 90,000     | 90,000  | 90,000  | -       | -       | -       | -       | -       | -       | -       | -       |
| Heifers - 24-36 months           | 100        | -          | 30,000     | 30,000  | 30,000  | -       | -       | -       | -       | -       | -       | -       | -       |
| Sub-total                        |            |            | 128,300    | 135,800 | 130,500 | -       | -       | -       | -       | -       | -       | -       | -       |
| Steers - 12-24 months            | 135        | 170        | 67,500     | 67,500  | 67,500  | 67,500  | 67,500  | 56,400  | 35,500  | 16,800  | 1,400   | 1,400   | 1,400   |
| Total                            |            |            | 195,800    | 203,300 | 198,000 | 75,000  | 67,500  | 78,800  | 54,400  | 35,700  | 20,300  | 20,300  | 20,300  |

II. Coastal Stud Herd - Sales and Purchases

|                             |       |     |         |        |        |        |        |        |        |         |         |         |         |
|-----------------------------|-------|-----|---------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| <b>Sales</b>                |       |     |         |        |        |        |        |        |        |         |         |         |         |
| Heifers - 24-36 months      | -     | 500 | -       | -      | -      | -      | -      | -      | -      | 24,500  | 38,000  | 43,500  | 51,500  |
| Bulls - 12-24 months        | 700   | 700 | 6,300   | 7,000  | 7,700  | 39,200 | 39,200 | 51,800 | 59,500 | 77,000  | 85,400  | 97,300  | 98,000  |
| Steers - 24-36 months       | 250   | 250 | -       | -      | -      | -      | -      | -      | -      | 750     | 1,250   | 1,250   | 1,250   |
| Cull Bulls                  | 300   | 300 | -       | -      | -      | -      | 300    | 300    | 300    | 300     | 300     | 300     | 300     |
| Cull Cows                   | 225   | 225 | -       | -      | -      | 4,950  | 6,080  | 6,980  | 7,880  | 7,880   | 7,880   | 7,880   | 7,880   |
| Cull Heifers - 24-36 months | 200   | 200 | -       | -      | -      | 400    | 800    | 600    | 800    | 1,000   | 1,200   | 1,400   | 1,600   |
| Cull Bulls - 24-36 months   | 400   | 400 | -       | -      | -      | 800    | 1,200  | 1,600  | 2,000  | 2,400   | 2,400   | 2,800   | 2,800   |
| Total                       |       |     | 6,300   | 7,000  | 7,700  | 40,100 | 46,450 | 60,380 | 69,580 | 113,830 | 136,430 | 154,430 | 163,330 |
| <b>Purchases</b>            |       |     |         |        |        |        |        |        |        |         |         |         |         |
| Bulls                       | 4,000 | -   | 8,000   | 4,000  | 4,000  | -      | -      | -      | -      | -       | -       | -       | -       |
| Cows                        | 2,000 | -   | 220,000 | -      | -      | -      | -      | -      | -      | -       | -       | -       | -       |
| Heifers - 12-24 months      | 1,500 | -   | 45,000  | 45,000 | 45,000 | -      | -      | -      | -      | -       | -       | -       | -       |
| Total                       |       |     | 373,000 | 49,000 | 49,000 | -      | -      | -      | -      | -       | -       | -       | -       |

III. Rupununi Herd - Sales and Purchases

|                                |     |     |        |         |         |         |         |         |         |         |         |         |         |
|--------------------------------|-----|-----|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Sales</b>                   |     |     |        |         |         |         |         |         |         |         |         |         |         |
| Cull Cows                      | 110 | 130 | -      | 7,810   | 13,640  | 28,380  | 24,750  | 30,160  | 32,500  | 32,500  | 32,500  | 32,500  | 32,500  |
| Cull Bulls                     | 225 | 280 | 230    | 900     | 1,130   | 2,250   | 2,480   | 3,360   | 3,360   | 3,360   | 3,360   | 3,360   | 3,360   |
| Cull Heifers - 24-36 months    | 100 | 120 | 1,200  | 2,000   | 2,000   | 2,200   | 2,000   | 3,600   | 3,960   | 4,560   | 4,680   | 5,040   | 5,040   |
| Surplus Heifers - 24-36 months | -   | 160 | -      | -       | -       | -       | -       | 9,440   | 16,400  | 60,320  | 63,840  | 73,120  | 73,120  |
| Fat Steers                     | 195 | 245 | 39,590 | 62,200  | 54,800  | 55,550  | 52,800  | 90,900  | 136,220 | 154,350 | 175,210 | 181,550 | 195,760 |
| Sub-total                      |     |     | 41,020 | 72,910  | 71,570  | 88,380  | 82,030  | 137,460 | 222,440 | 255,090 | 280,290 | 295,570 | 309,780 |
| Purchased Steers               | 170 | 200 | -      | 56,440  | 57,120  | 57,800  | 82,450  | 97,000  | 77,600  | 38,800  | -       | -       | -       |
| Total                          |     |     | 41,020 | 129,350 | 128,690 | 146,180 | 164,480 | 234,460 | 300,040 | 293,890 | 280,290 | 295,570 | 309,780 |
| <b>Purchases</b>               |     |     |        |         |         |         |         |         |         |         |         |         |         |
| Bulls                          | 290 | 350 | 15,660 | 6,090   | 6,090   | 5,800   | 5,220   | 8,400   | 5,600   | 5,600   | 5,600   | 5,600   | 5,600   |
| Breeding Cows                  | 200 | -   | 10,000 | 10,000  | 10,000  | -       | -       | -       | -       | -       | -       | -       | -       |
| Heifers - 24-36 months         | 95  | -   | 14,250 | 14,250  | 14,250  | -       | -       | -       | -       | -       | -       | -       | -       |
| Sub-total                      |     |     | 39,910 | 30,340  | 30,340  | -       | -       | -       | -       | -       | -       | -       | -       |
| Steers                         | 130 | 150 | 45,500 | 45,500  | 45,500  | 65,000  | 65,000  | 60,000  | 30,000  | -       | -       | -       | -       |
| Total                          |     |     | 85,410 | 75,840  | 75,840  | 70,800  | 70,220  | 68,400  | 35,600  | 5,600   | 5,600   | 5,600   | 5,600   |



LDCo Sales, Purchases, Expenses and Net Revenue (Cont'd)  
(Guyanese dollars)

IV Expenses

|                                     | <u>Unit Value</u> |              | -----Ranch Year-----           |         |         |         |         |         |         |         |         |         |         |
|-------------------------------------|-------------------|--------------|--------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                     | <u>Years</u>      | <u>Years</u> | 1                              | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11-20   |
| <b>A. Coastal Commercial Herd</b>   |                   |              |                                |         |         |         |         |         |         |         |         |         |         |
| Fixed <sup>1/</sup>                 |                   |              | 62,750                         | 66,700  | 70,850  | 82,840  | 67,340  | 67,340  | 67,340  | 67,340  | 67,340  | 67,340  | 67,340  |
| Breeding stock                      |                   |              | --- Included in Investment --- |         |         | 7,500   | -       | 22,400  | 18,900  | 18,900  | 18,900  | 18,900  | 18,900  |
| Steer purchase                      |                   |              | 67,500                         | 67,500  | 67,500  | 67,500  | 67,500  | 56,400  | 35,500  | 16,800  | 1,400   | 1,400   | 1,400   |
| Variable G\$2/head <sup>2/</sup>    |                   |              | 9,880                          | 12,550  | 15,580  | 19,020  | 21,980  | 23,530  | 23,720  | 23,720  | 23,720  | 23,720  | 23,720  |
| Sub-total                           |                   |              | 140,130                        | 146,750 | 153,930 | 176,860 | 156,820 | 169,670 | 145,460 | 126,760 | 111,360 | 111,360 | 111,360 |
| <b>B. Coastal Stud Herd</b>         |                   |              |                                |         |         |         |         |         |         |         |         |         |         |
| Stud Master                         |                   |              | 5,000                          | 5,000   | 5,000   | 5,000   | 6,000   | 6,000   | 6,000   | 6,000   | 6,000   | 6,000   | 6,000   |
| Variable G\$20/head                 |                   |              | 4,440                          | 7,200   | 10,100  | 12,020  | 14,080  | 16,720  | 19,500  | 21,300  | 22,280  | 22,660  | 22,680  |
| Sub-total                           |                   |              | 9,440                          | 12,200  | 15,100  | 17,020  | 20,080  | 22,720  | 25,500  | 27,300  | 28,280  | 28,660  | 28,680  |
| <b>C. Rupununi Herd</b>             |                   |              |                                |         |         |         |         |         |         |         |         |         |         |
| Fixed <sup>1/</sup>                 |                   |              | 58,000                         | 64,900  | 65,500  | 76,500  | 77,300  | 77,300  | 77,300  | 77,300  | 77,300  | 77,300  | 77,300  |
| Breeding stock                      |                   |              | --- Included in Investment --- |         |         | 5,800   | 5,220   | 8,400   | 5,600   | 5,600   | 5,600   | 5,600   | 5,600   |
| Steer purchase                      |                   |              | 45,500                         | 45,500  | 45,500  | 65,000  | 65,000  | 60,000  | 30,000  | -       | -       | -       | -       |
| Variable G\$2.50/head <sup>3/</sup> |                   |              | 10,920                         | 12,030  | 14,200  | 16,310  | 18,630  | 20,330  | 20,930  | 21,100  | 21,470  | 21,620  | 21,620  |
| Sub-total                           |                   |              | 114,420                        | 122,430 | 125,200 | 163,610 | 166,150 | 166,030 | 133,830 | 104,000 | 104,370 | 104,520 | 104,520 |

V Net Revenue

| <u>SALES</u>       |  |  |           |          |         |         |         |         |         |         |         |         |         |
|--------------------|--|--|-----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Table I            |  |  | 9,930     | 98,240   | 222,540 | 176,120 | 233,390 | 407,060 | 525,090 | 521,260 | 501,930 | 499,950 | 500,800 |
| Table II           |  |  | 6,300     | 7,000    | 7,700   | 40,400  | 46,450  | 60,380  | 69,580  | 113,830 | 136,430 | 154,430 | 163,330 |
| Table III          |  |  | 41,020    | 129,350  | 128,690 | 146,180 | 164,480 | 234,460 | 300,040 | 293,890 | 280,290 | 295,570 | 309,780 |
| Total Sales        |  |  | 57,250    | 234,590  | 358,930 | 362,700 | 444,320 | 701,900 | 894,770 | 928,980 | 918,650 | 949,950 | 973,910 |
| <u>EXPENSES</u>    |  |  |           |          |         |         |         |         |         |         |         |         |         |
| Table IV A         |  |  | 140,130   | 146,750  | 153,930 | 176,860 | 156,820 | 169,670 | 145,460 | 126,760 | 111,360 | 111,360 | 111,360 |
| B                  |  |  | 9,440     | 12,220   | 15,100  | 17,020  | 20,080  | 22,720  | 25,500  | 27,300  | 28,280  | 28,660  | 28,680  |
| C                  |  |  | 114,420   | 122,430  | 125,200 | 163,610 | 166,150 | 166,030 | 133,830 | 104,000 | 104,370 | 104,520 | 104,520 |
| Total Expenses     |  |  | 263,990   | 281,400  | 294,230 | 357,490 | 343,050 | 358,420 | 304,790 | 258,060 | 244,010 | 244,540 | 244,560 |
| <u>NET REVENUE</u> |  |  | (206,740) | (46,810) | 64,700  | 5,210   | 101,270 | 343,700 | 589,920 | 670,920 | 674,640 | 705,410 | 729,350 |

<sup>1/</sup> Includes General Manager: Total cost G\$50,000 per year, of which G\$12,500 charged to project technical services.  
<sup>2/</sup> Dipping G\$0.50; supplements G\$0.50; vaccines and veterinary G\$1.00/head/year  
<sup>3/</sup> Supplements G\$1.50; vaccines and veterinary G\$1.00/head/year





GUYANA  
BEEF CATTLE PROJECT  
LDCo - Financial Projection  
(Guyanese dollars)

| SOURCE AND USE OF FUNDS   | Ranch Year         |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  |                  |
|---|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|------------------|
|   | 1                  | 2                 | 3                 | 4                  | 5                  | 6                  | 7                 | 8                 | 9                | 10               | 11               | 12               | 13-20            |
| <b>SOURCE</b>   |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  |                  |
| Net income (before debt service) 1/   | (206,700)          | (46,800)          | 64,700            | 5,200              | 101,300            | 343,700            | 589,900           | 670,900           | 674,600          | 705,400          | 729,400          | 729,400          | 729,400          |
| Share subscriptions   | 1,750,000          | 250,000           | -                 | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| Short term loans (or equity) 2/   | -                  | -                 | 129,300           | 285,100            | 446,000            | 400,000            | 85,800            | -                 | -                | -                | -                | -                | -                |
| Long term loans   | 701,200            | 323,500           | 293,900           | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| <b>TOTAL SOURCE</b>   | <b>2,244,500</b>   | <b>526,700</b>    | <b>487,900</b>    | <b>290,300</b>     | <b>547,300</b>     | <b>743,700</b>     | <b>675,700</b>    | <b>670,900</b>    | <b>674,600</b>   | <b>705,400</b>   | <b>729,400</b>   | <b>729,400</b>   | <b>729,400</b>   |
| <b>USE</b>  |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  |                  |
| Assets purchased or transferred   | 1,250,000          | -                 | -                 | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| New investments   |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  |                  |
| LDCo contribution   | 175,200            | 80,900            | 73,500            | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| Investment of loan funds  | 701,200            | 323,500           | 293,900           | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| <b>TOTAL NEW INVESTMENT</b>   | <b>876,400</b>     | <b>404,400</b>    | <b>367,400</b>    | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| Working capital addition (permanent)  | 75,500             | 8,700             | 6,400             | 21,900             | (7,200)            | 15,700             | (1,400)           | 1,000             | 700              | 300              | -                | -                | -                |
| Debt service  |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  |                  |
| Short term loan interest (8½%)<br>(including interest on bridging finance) 3/ | -                  | 2,400             | 2,800             | 13,800             | 26,700             | 39,300             | 31,400            | 7,300             | -                | -                | -                | -                | -                |
| Short term loan repayment   | -                  | -                 | -                 | 129,300            | 285,100            | 446,000            | 400,000           | 85,800            | -                | -                | -                | -                | -                |
| Long term loan interest (9½%) 4/  | 33,300             | 82,000            | 111,300           | 125,300            | 242,700            | 242,700            | 242,700           | 242,700           | 242,700          | 242,700          | 242,700          | 242,700          | -                |
| Long term loan repayment  | -                  | -                 | -                 | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| <b>Total Debt Service</b>   | <b>33,300</b>      | <b>84,400</b>     | <b>114,100</b>    | <b>255,100</b>     | <b>514,500</b>     | <b>728,000</b>     | <b>677,100</b>    | <b>335,800</b>    | <b>331,100</b>   | <b>431,200</b>   | <b>462,400</b>   | <b>486,700</b>   | <b>486,700</b>   |
| CASH BALANCE (after debt service)   | 9,300              | 29,200            | -                 | -                  | -                  | -                  | -                 | 431,200           | 462,400          | 486,700          | 486,700          | 486,700          | 729,400          |
| <b>TOTAL USE</b>  | <b>2,244,500</b>   | <b>526,700</b>    | <b>487,900</b>    | <b>290,300</b>     | <b>547,300</b>     | <b>743,700</b>     | <b>675,700</b>    | <b>670,900</b>    | <b>674,600</b>   | <b>705,400</b>   | <b>729,400</b>   | <b>729,400</b>   | <b>729,400</b>   |
| Working Capital - Permanent 6/<br>- Steer purchase (3 months)                 | 75,500<br>113,000  | 84,200<br>113,000 | 90,600<br>113,000 | 112,500<br>132,500 | 105,300<br>132,500 | 121,000<br>116,400 | 119,600<br>65,500 | 120,600<br>16,800 | 121,300<br>1,400 | 121,600<br>1,400 | 121,600<br>1,400 | 121,600<br>1,400 | 121,600<br>1,400 |
| Herd Value G\$ (thousands - rounded)  | 780                | 1,400             | 1,740             | 2,010              | 2,270              | 2,610              | 3,460             | 3,610             | 3,690            | 3,750            | 3,780            | 3,780            | 3,780            |
| <b>INCREMENTAL NET CASH FLOW</b>  |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  |                  |
| Net income (before debt service) 1/   | (206,700)          | (46,800)          | 66,100            | 5,200              | 101,300            | 343,700            | 589,900           | 670,900           | 674,600          | 705,400          | 729,400          | 729,400          | 729,400          |
| Incremental working capital 7/  | (103,700)          | (8,800)           | (11,200)          | (23,000)           | 12,300             | (3,000)            | 13,600            | 2,800             | (700)            | (200)            | (200)            | -                | -                |
| Assets transferred or purchased   | (1,250,000)        | -                 | -                 | (17,800)           | 113,600            | 340,700            | 603,500           | 673,700           | 673,900          | 705,200          | 729,200          | 729,400          | 729,400          |
| New investment  | (876,400)          | (404,400)         | (367,400)         | -                  | -                  | -                  | -                 | -                 | -                | -                | -                | -                | -                |
| <b>NET CASH FLOW</b>  | <b>(2,436,800)</b> | <b>(460,000)</b>  | <b>(312,500)</b>  | <b>(17,800)</b>    | <b>113,600</b>     | <b>340,700</b>     | <b>603,500</b>    | <b>673,700</b>    | <b>673,900</b>   | <b>705,200</b>   | <b>729,200</b>   | <b>729,400</b>   | <b>729,400</b>   |
|   |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  | Working Capital  | 121,900          |                  |
|   |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  | Herd Value       | 3,780,000        |                  |
|   |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  | 4,631,300        |                  |
|   |                    |                   |                   |                    |                    |                    |                   |                   |                  |                  |                  |                  | (Year 20)        |

Estimated financial rate of return 13%

NOTES:

- 1/ Total sales, less operating expenses, to nearest hundred, excluding depreciation, including replacements.
- 2/ Balance of funds required annually; excluding bridging finance for steer purchase.
- 3/ Including interest on 3 month steer purchase bridging finance.
- 4/ On cumulative average loan drawn.
- 5/ Subject to renegotiation if balancing finance (short term loan or equity) not available.
- 6/ 50% of annual expenses, excluding steer purchase.
- 7/ Permanent working capital plus 25% of steer purchase cost, for rate of return purposes.

September 2, 1970



GUYANABEEF CATTLE PROJECTCost of Technical Services  
(Guyanese dollars)

| Expenditure Items                       | Project Year |         |         |         |         | Total<br>Cost | %<br>Foreign<br>Exchange<br>Component |
|---|--------------|---------|---------|---------|---------|---------------|---------------------------------------|
|   | 1            | 2       | 3       | 4       | 5       |               |                                       |
| <u>Operating Expenses</u>               |              |         |         |         |         |               |                                       |
| Project Director <u>1/</u>              | 80,000       | 80,000  | 80,000  | 80,000  | 80,000  | 400,000       | 100                                   |
| Ranch Manager LDCo <u>2/</u>            | 12,500       | 12,500  | 12,500  | --      | --      | 37,500        | 100                                   |
| Deputy (Technical)                      | 12,000       | 12,500  | 13,000  | 13,500  | 14,000  | 65,000        | --                                    |
| Deputy (Administrative)                 | 10,000       | 10,400  | 10,800  | 11,200  | 11,600  | 54,000        | --                                    |
| Project Loan Techni-<br>cians <u>3/</u> | 21,000       | 22,250  | 23,500  | 24,750  | 26,000  | 117,500       | --                                    |
| Travel <u>4/</u>                        | 7,000        | 7,000   | 7,000   | 7,000   | 7,000   | 35,000        | --                                    |
| Transportation <u>5/</u>                | 7,000        | 7,000   | 7,000   | 7,000   | 7,000   | 35,000        | 20                                    |
| International Travel <u>6/</u>          | 6,000        | 6,000   | 6,000   | 6,000   | 6,000   | 30,000        | 100                                   |
| Other <u>7/</u>                         | 13,000       | 13,000  | 13,000  | 13,000  | 13,000  | 65,000        | --                                    |
| Contingencies                           | 14,500       | 13,350  | 12,200  | 10,550  | 9,400   | 60,000        | 57                                    |
| Subtotal                                | 183,000      | 184,000 | 185,000 | 173,000 | 174,000 | 899,000       | 57                                    |
| <u>Capital Expenditures</u>             |              |         |         |         |         |               |                                       |
| Vehicles <u>8/</u>                      | 33,000       | --      | --      | 15,000  | 15,000  | 63,000        | 80                                    |
| Office Equipment                        | 15,000       | --      | --      | --      | --      | 15,000        | 50                                    |
| Contingencies                           | 4,800        | --      | --      | 1,500   | 1,500   | 7,800         | 67                                    |
| Subtotal                                | 52,800       | --      | --      | 16,500  | 16,500  | 85,800        | 67                                    |
| Total                                   | 235,800      | 184,000 | 185,000 | 189,500 | 190,500 | 984,800       | 58                                    |

1/ Includes salary, dependency allowance, staff benefits, education, storage, car shipments and furniture, air-freight, home leave, resettlement transportation, briefing in Washington, housing utilities, resettlement duty station and contingency.

2/ 25% of LDCo ranch managers salary paid by Project for 3 years for his services in on-ranch training of local managers and cowboys.

3/ Includes 5 technicians.

4/ Estimated 350 man-days/year at G\$20/day.

5/ Operating costs, 4 project vehicles, local air travel and limited light aircraft charter.

6/ Project Director approximately 3 months; other staff approximately 6 months each.

7/ Includes secretarial help G\$8,000/year; driver/messenger G\$1,500/year, administration, rent and services G\$3,500/year.

8/ Four four-wheel drive vehicles, 2 replaced in year 4 and 2 in year 5; and lightweight canoe outboard motor.

August 27, 1970



GUYANA

BEEF CATTLE PROJECT

Draft Terms of Reference for Project Director,

Deputy Project Director (Technical)

and Deputy Project Director (Administrative)

Project Director

The Project Director will:

- a) be a diploma or degree graduate, preferably specializing in animal husbandry or related activity;
- b) have at least 5 years practical experience in beef cattle production, preferably associated with pasture development in an environment ecologically similar to the Guyana Coastal and Rupununi Savannas;
- c) be responsible to the Governor of the Bank of Guyana for implementation of the project in accordance with policies laid down by the Livestock Advisory Committee (LAC) in consultation with Government and International Development Association (IDA);
- d) advise LAC on major policy decisions required for the project;
- e) cooperate with the Bank of Guyana and the participating banks in carrying out the project;
- f) recommend to the Governor of the Bank of Guyana, terms and conditions of employment to attract well qualified staff;
- g) recommend employment of such project staff for the Livestock Projects Department (LPD) of the Bank of Guyana as he considers necessary to carry out the project, the intention being that he will head a staff initially comprising a Deputy Project Director (Technical) a Deputy Project Director (Administrative), approximately 5 Livestock Credit Technicians and supporting staff;
- h) prescribe the duties and responsibilities of the Livestock Credit Technicians, train them and supervise their work;
- i) assist the Governor of the Bank of Guyana in selection of project staff for overseas training and arrange such training in consultation with the Livestock Division of IDA;



- j) with the assistance of the Deputy Project Directors, help in the formation of group ranches and advise participating ranches in modern ranching and ranch management techniques;
- k) recommend to the Project Loan Committee, approval or rejection of loan applications, including ranch development plans, on technical and economic grounds but without responsibility for advising on the creditworthiness of applicants which would be the prerogative of participating banks;
- l) ensure that no changes are made in ranch development plans without his approval;
- m) supervise and assist the managers of participating ranches in the execution of their duties;
- n) ensure the frequent supervision of participating ranches by project staff and advise a participating bank to suspend disbursement of, or to call in, a loan if ranch development is not being carried out to his satisfaction;
- o) recommend to the employer of a ranch manager of any participating ranch, the termination or suspension of their manager, if he is inefficient or fails to comply with the agreed ranch plans; and
- p) train a successor of Guyanese nationality, to take over on termination of the Project Director's contract

Deputy Project Director (Technical)

The Deputy Project Director (Technical) will:

- a) be a locally appointed technician experienced in the Guyanese livestock industry;
- b) be responsible directly to the Project Director and assist him with his duties;
- c) assume responsibility for project management during the absence of the Project Director; and
- d) work closely with the project technicians and ranch managers to ensure that the technical and managerial guidelines laid down by the Project Director are carried out;





Deputy Project Director (Administrative)

The Deputy Project Director (Administrative) will:

- a) be a local appointee with experience in cooperative organization;
- b) be responsible to the Project Director primarily for assisting - him in setting up group ranches (including companies and partnerships) as detailed in Annex 4;
- c) make frequent supervision visits to all group ranches after they have been established and advise group ranch management committees and their ranch managers on administrative matters; and
- d) ensure, and assist in the establishment of a suitable accounting system for each group ranch and supervise group ranch accounts.

September 11, 1970



GUYANA  
BEEF CATTLE PROJECT

Project Cost

|  | Number of<br>Units   | Unit Cost<br>G\$    | -----G\$ (thousands)----- |         |       | % Foreign<br>Exchange |
|--|----------------------|---------------------|---------------------------|---------|-------|-----------------------|
|  |                      |                     | Local                     | Foreign | Total |                       |
| <u>On-ranch Investment</u>                               |                      |                     |                           |         |       |                       |
| <u>Fencing</u>   |                      |                     |                           |         |       |                       |
| Coastal  | 400 mi               | 750                 | 247                       | 203     | 450   | 45                    |
| Rupununi   | 506 mi               | 850                 | 236                       | 194     | 430   | 45                    |
| Sub-total  |                      |                     | 483                       | 397     | 880   | 45                    |
| <u>Pasture</u>   |                      |                     |                           |         |       |                       |
| Clearing   | 13,250               | 30/ac               | 314                       | 84      | 398   | 21                    |
| Sowing   | 13,250               | 20/ac               | 26                        | 239     | 265   | 90                    |
| Seed   | 2,500                | 12/ac               | 3                         | 27      | 30    | 90                    |
| Seed Production  | 100                  | 45/ac               | 3                         | 2       | 5     | 45                    |
| Sub-total  |                      |                     | 346                       | 352     | 698   |                       |
| <u>Machinery</u>   |                      |                     |                           |         |       |                       |
| Tractors and implements 65 hp                            | 17                   | 12,000              | 41                        | 163     | 204   | 80                    |
| Tractors and implements 35 hp                            | 12                   | 8,000 <sup>1/</sup> | 20                        | 80      | 100   | 80                    |
| 4 wheel drive vehicles                                   | 19                   | 7,500               | 29                        | 114     | 143   | 80                    |
| Engines, pumps, tools, etc.                              | -                    | -                   | 27                        | 110     | 137   | 80                    |
| Sub-total  |                      |                     | 117                       | 467     | 584   | 80                    |
| <u>Ranch Buildings</u>                                   |                      |                     |                           |         |       |                       |
| Ranch houses   | 16                   | 8,000 <sup>2/</sup> | 81                        | 54      | 135   | 40                    |
| Bunk houses  | 16                   | 6,000               | 62                        | 34      | 96    | 35                    |
| Barns and sheds  | 16                   | 5,000               | 60                        | 20      | 80    | 25                    |
| Outstations  | 50                   | 1,500               | 56                        | 19      | 75    | 25                    |
| Corrals, yards, etc.                                     | -                    | -                   | 186                       | 80      | 266   | 30                    |
| Sub-total  |                      |                     | 445                       | 207     | 652   | 32                    |
| <u>Other</u>   |                      |                     |                           |         |       |                       |
| Wells, drainage, saddlery, vet<br>equipment, R/telephone | -                    | -                   | 233                       | 190     | 423   | 45                    |
| Sub-total  |                      |                     | 1,624                     | 1,613   | 3,237 | 48                    |
| <u>Livestock</u>   |                      |                     |                           |         |       |                       |
| Horses   | 480                  | 300                 | 108                       | 36      | 144   | 25                    |
| Semen  | 26,450 <sup>3/</sup> | 7/ampule            | 19                        | 169     | 188   | 90                    |
| Imported breeding stock                                  |                      |                     | 47                        | 424     | 471   | 90                    |
| Local breeding stock                                     |                      |                     | 922                       | -       | 922   | 0                     |
| Sub-total  |                      |                     | 1,096                     | 629     | 1,725 | 36                    |
| Total New On-ranch Investment                            |                      |                     | 2,720                     | 2,242   | 4,962 | 44                    |
| <u>LDCo Transferred Assets<sup>4/</sup></u>              |                      |                     |                           |         |       |                       |
| Buildings and installation                               |                      |                     | 240                       | -       | 240   | -                     |
| Livestock  |                      |                     | 1,010                     | -       | 1,010 | -                     |
| Sub-total  |                      |                     | 1,250                     | -       | 1,250 | -                     |
| <u>Working Capital<sup>4/</sup></u>                      |                      |                     |                           |         |       |                       |
|  |                      |                     | 490                       | 50      | 540   | 9                     |
| <u>Clearing Equipment</u>                                |                      |                     |                           |         |       |                       |
|  | 2                    | 160,000             | 70                        | 250     | 320   | 78                    |
| <u>Technical Services</u>                                |                      |                     |                           |         |       |                       |
| (See Annex 17)   |                      |                     | 385                       | 532     | 917   | 58                    |
| <u>Developmental Studies<sup>4/</sup></u>                |                      |                     |                           |         |       |                       |
|  |                      |                     | 40                        | 200     | 240   | 83                    |
| Sub-total  |                      |                     | 4,955                     | 3,274   | 8,229 | 40                    |
| <u>Contingency/Rounding<sup>5/</sup></u>                 |                      |                     |                           |         |       |                       |
|  |                      |                     | 285                       | 356     | 641   | 48                    |
| TOTAL  |                      |                     | 5,240                     | 3,630   | 8,870 | 39                    |

NOTES: <sup>1/</sup> LDCo Rupununi ranch G\$10,000.  
<sup>2/</sup> LDCo Coastal Ranch Manager's house G\$15,000.  
<sup>3/</sup> G\$20/ampule for 120 units stud semen on LDCo stud herd.  
<sup>4/</sup> Nil contingency.  
<sup>5/</sup> Approximately 10%, except Clearing Equipment 25%.

August 27, 1970.



GUYANA  
BEEF CATTLE PROJECT

Livestock Development Fund - Cash Flow  
G\$ (thousands)

|  | Year          |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
|--|---------------|-------------------|-------|-----|-----|------------------|-------------------|-----|-----|-----|-----|-----|-----|-----|-------|
|  | 1             | 2                 | 3     | 4   | 5   | 6                | 7                 | 8   | 9   | 10  | 11  | 12  | 13  | 14  |       |
| <b>BASIC DATA</b>                          | <b>Totals</b> |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| 1. Total on-ranch investment               | 1,537         | 1,654             | 1,528 | 584 | 156 |                  |                   |     |     |     |     |     |     |     | 5,459 |
| 2. Clearing equipment                      | -             | 400               | -     | -   | -   |                  |                   |     |     |     |     |     |     |     | 400   |
| 3. Sub-total                               | 1,537         | 2,054             | 1,528 | 584 | 156 |                  |                   |     |     |     |     |     |     |     | 5,859 |
| 4. Commercial bank loans (80% of 3)        | 1,229         | 1,643             | 1,223 | 467 | 125 |                  |                   |     |     |     |     |     |     |     | 4,687 |
| 5. IDA credit/rediscounts (75% of 4)       | 922           | 1,232             | 917   | 350 | 94  |                  |                   |     |     |     |     |     |     |     | 3,515 |
| 6. Commercial bank contribution (25% of 4) | 307           | 411               | 306   | 117 | 31  |                  |                   |     |     |     |     |     |     |     | 1,172 |
| <b>SOURCE AND USE OF FUNDS</b>             |               |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| <b>SOURCE</b>                              |               |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| IDA credit for:                            |               |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| Commercial bank loan rediscount            | 922           | 1,232             | 917   | 350 | 94  |                  |                   |     |     |     |     |     |     |     | 3,515 |
| LFD operation <sup>2/</sup>                | 145           | 107               | 107   | 106 | 106 |                  |                   |     |     |     |     |     |     |     | 571   |
| Sub-total                                  | 1,067         | 1,339             | 1,024 | 456 | 200 |                  |                   |     |     |     |     |     |     |     | 4,086 |
| Service fee <sup>3/</sup>                  | 3             | 9                 | 16    | 20  | 20  | 19               | 17                | 16  | 13  | 11  | 7   | 4   | 1   | -   |       |
| Interest received <sup>4/</sup>            | 28            | 101 <sup>5/</sup> | 145   | 185 | 91  | 27               | 152 <sup>6/</sup> | -   | -   | -   | -   | 15  | -   | -   |       |
| Repayment annuities (commercial banks):    |               |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| On-ranch development loans                 | -             | -                 | -     | -   | 288 | 457              | 530               | 530 | 530 | 530 | 530 | 530 | 242 | 73  |       |
| Clearing equipment loans                   | -             | -                 | 69    | 69  | 69  | 69               | -                 | 69  | 69  | 69  | 69  | -   | 69  | 69  |       |
| <b>TOTAL SOURCE</b>                        | 1,098         | 1,449             | 1,254 | 730 | 668 | 572              | 562               | 615 | 612 | 610 | 606 | 549 | 312 | 142 |       |
| <b>USE</b>                                 |               |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| Loans rediscounted                         | 922           | 1,232             | 917   | 350 | 94  | -                | 240               | -   | -   | -   | -   | 240 | -   | -   |       |
| Cost of LFD (Annex 17)                     |               |                   |       |     |     |                  |                   |     |     |     |     |     |     |     |       |
| Chargeable to lending program              | 214           | 162               | 163   | 98  | 64  |                  |                   |     |     |     |     |     |     |     |       |
| Not chargeable <sup>7/</sup>               | 22            | 22                | 22    | 92  | 126 | 63 <sup>8/</sup> | 63                | 63  | 63  | 63  | 63  | 63  | 63  | 63  |       |
| Sub-total                                  | 236           | 184               | 185   | 190 | 190 |                  |                   |     |     |     |     |     |     |     |       |
| BALANCE <sup>8/</sup>                      | (60)          | 33                | 152   | 190 | 384 | 509              | 259               | 552 | 549 | 547 | 543 | 246 | 249 | 79  |       |
| <b>TOTAL USE</b>                           | 1,098         | 1,449             | 1,254 | 730 | 668 | 572              | 562               | 615 | 612 | 610 | 606 | 549 | 312 | 142 |       |
| <b>COST OF SERVICING IDA CREDIT</b>        | 5             | 14                | 21    | 25  | 26  | 26               | 26                | 26  | 26  | 26  | 44  | 44  | 43  | 43  |       |

1/ Excluding G\$1.25 million transferred assets financed by LDCo share capital

2/ Foreign exchange component

3/ On average on-ranch investment loans outstanding (excluding clearing equipment loans)

4/ 6% on loans rediscounted except 8% on Amerindian loans (Government guaranteed).

5/ Includes first year's interest on clearing equipment loans.

6/ Cost chargeable to supervision of lending program

7/ Amount chargeable to future lending program

8/ (Contributed by) or available to Government. Accumulated total G\$4.2 million (G\$3.7 million after servicing IDA credit to Year 14).



ANNEX 21

BEEF CATTLE PROJECT

Estimated Quarterly Disbursement of IDA Credit  
US\$ (thousands)

| Year        | Quarter |       |       |       | Total |
|-------------|---------|-------|-------|-------|-------|
|             | 1       | 2     | 3     | 4     |       |
| 1970/71     |         |       |       |       |       |
| Disbursed   | -       | 10    | 80    | 80    | 170   |
| Undisbursed | 2,200   | 2,190 | 2,110 | 2,030 |       |
| 1971/72     |         |       |       |       |       |
| Disbursed   | 150     | 160   | 160   | 160   | 630   |
| Undisbursed | 1,830   | 1,720 | 1,560 | 1,400 |       |
| 1972/73     |         |       |       |       |       |
| Disbursed   | 170     | 170   | 170   | 170   | 680   |
| Undisbursed | 1,230   | 1,060 | 890   | 720   |       |
| 1973/74     |         |       |       |       |       |
| Disbursed   | 120     | 110   | 110   | 110   | 450   |
| Undisbursed | 600     | 490   | 380   | 270   |       |
| 1974/75     |         |       |       |       |       |
| Disbursed   | 100     | 90    | 80    | -     | 270   |
| Undisbursed | 170     | 80    | -     | -     |       |
|             |         |       |       |       |       |
|             |         |       |       |       | Total |
|             |         |       |       |       | 2,200 |

September 9, 1970





BEEF CATTLE PROJECT

Rate of Return to the Economy

Rate of Return to the Economy

1. The estimated rate of return of the Project to the economy of Guyana is 20% as calculated from the attached table. The following paragraphs explain the rationale by which the component values were determined.

Incremental Net Income

2. Incremental net income is taken from the models projected in Annexes 8, 12 and 16 multiplied by the number of units of model size expected to enter the Project in each of the first three years. Annual net income without development is deducted from annual net income with development, to arrive at incremental net income attributable to the Project. Since expenses are higher with the Project than without, and income is slow to build up, the increment is negative for the first few years.

Shadow Wage Rate

3. There is 20% unemployment and underemployment in agriculture, and the current official wage rates overstate the cost of labor to the Guyana economy. However, if this wage cost in ranch expenses is reduced by 25% (G\$3 per day instead of G\$4) the effect on the rate of return would be less than one percent.

Adjustment for Transport

4. Air freighted beef from Rupununi is subsidized at a rate of G\$0.05 per pound. The cost to the economy is therefore increased by the annual weight transported multiplied by G\$0.05.

Investment

5. On-ranch investment cost is taken from the models in Annexes 5 and 9, multiplied by the number of units of model size, as in para 2 above.

Adjustment for Taxes

6. Since import duties and taxes are transfer payments and not true costs to the economy, the amounts paid by the farmer and included in the farm financial projections are added back.



Technical Services

7. Technical services include training and staffing for post-project phases of beef cattle production and not all the cost of these services should be charged against the economic cost of the project. The cost of the project director, plus approximately half the cost of supporting staff, is included during the first three years, and this is gradually reduced as the need for on-farm appraisal and supervision declines and staff is transferred to other duties.

Discount Period

8. Ranches are considered to have an economic life of 20 years, the assumed life of buildings and installations which form a significant part of project cost, and the net balances are discounted over that period. If they are discounted over 15 years or 12 years, the effect would be negligible (less than one percentage point, after rounding).

October 20, 1970.



GUYANA  
BEEF CATTLE PROJECT

Rate of Return to the Economy  
G\$ (thousands)

| Year | B E N E F I T S        |                   |                | C O S T S                |                 |            |                    |                    |             |         | Net Benefit |
|------|------------------------|-------------------|----------------|--------------------------|-----------------|------------|--------------------|--------------------|-------------|---------|-------------|
|      | Incremental Net Income | Herd 1/<br>Values | Total Benefits | Adjustment for Transport | Working Capital | Investment | Adjustment for tax | Technical Services | Total Costs |         |             |
| 1    | (301)                  |                   | (301)          | (3)                      | 211             | 1,537      | (25)               | 214                | 1,934       | (2,235) |             |
| 2    | (141)                  |                   | (141)          | 26                       | 148             | 1,654 2/   | (35)               | 162                | 1,955       | (2,096) |             |
| 3    | 102                    |                   | 102            | 32                       | 87              | 1,528      | (31)               | 163                | 1,779       | (1,677) |             |
| 4    | 91                     |                   | 91             | 40                       | 89              | 584        | (13)               | 98                 | 798         | (707)   |             |
| 5    | 285                    |                   | 285            | 49                       | 52              | 156        | (3)                | 64                 | 318         | (33)    |             |
| 6    | 826                    |                   | 826            | 65                       | 54              |            |                    | 63                 | 182         | 644     |             |
| 7    | 1,694                  |                   | 1,694          | 80                       | 31              |            |                    | 63                 | 174         | 1,520   |             |
| 8    | 2,443                  |                   | 2,443          | 82                       | 18              |            |                    | 63                 | 163         | 2,280   |             |
| 9    | 2,881                  |                   | 2,881          | 82                       | (3)             |            |                    | 63                 | 142         | 2,739   |             |
| 10   | 3,132                  |                   | 3,132          | 82                       | (3)             |            |                    | 63                 | 142         | 2,990   |             |
| 11   | 3,255                  |                   | 3,255          | 82                       |                 |            |                    | 63                 | 145         | 3,110   |             |
| 12   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 13   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 14   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 15   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 16   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 17   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 18   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 19   | 3,273                  |                   | 3,273          | 82                       |                 |            |                    | 63                 | 145         | 3,128   |             |
| 20   | 3,273                  | 6,610             | 9,893          | 82                       | (319)           |            |                    | 63                 | (174)       | 10,057  |             |
| 21   | 2,389                  | 3,730             | 6,119          | 25                       | (255)           |            |                    | 40                 | (190)       | 6,309   |             |
| 22   | 1,238                  | 1,640             | 2,878          | 12                       | (110)           |            |                    | 20                 | (78)        | 2,956   |             |

The estimated rate of return to the economy is 20%

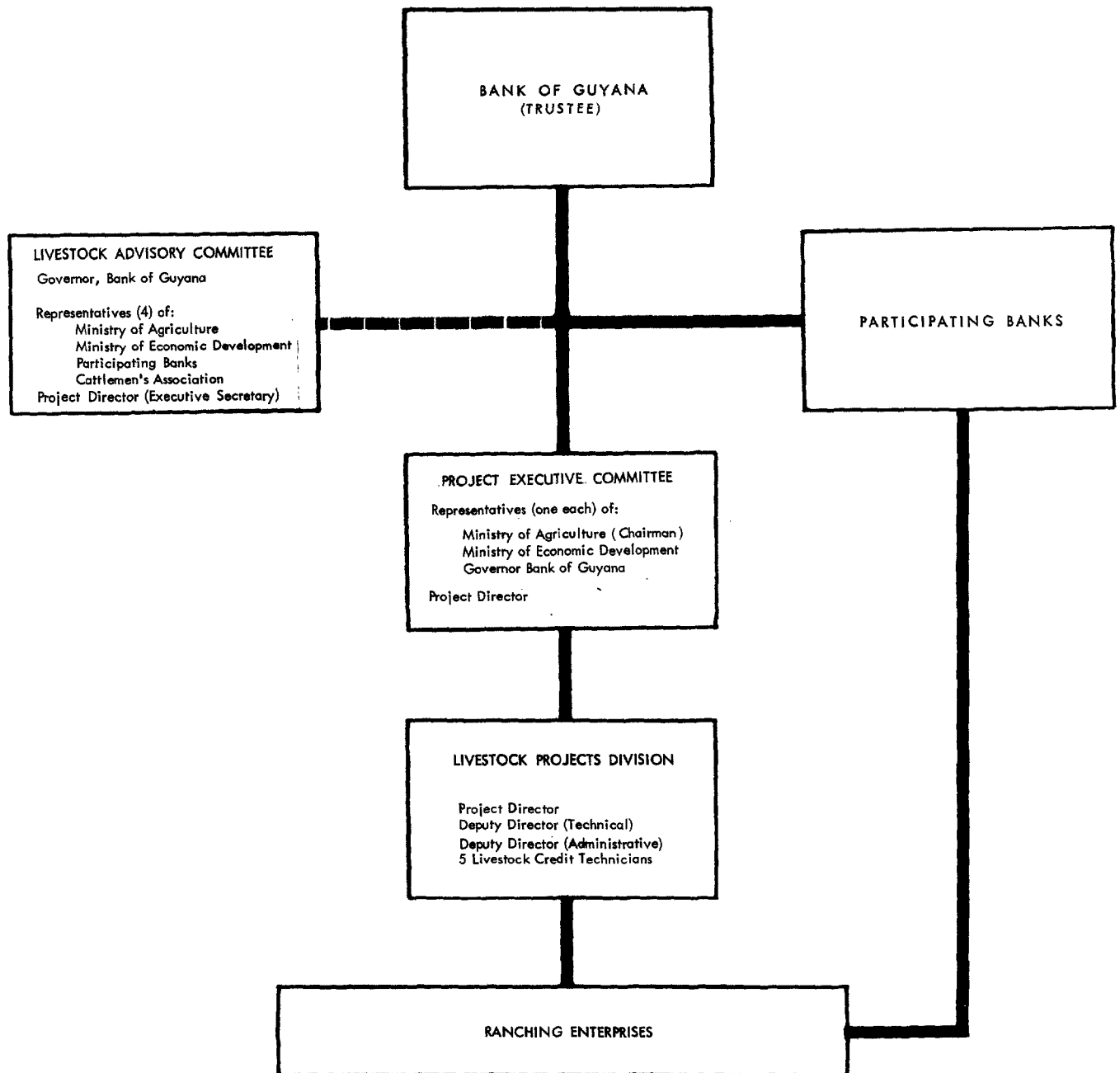
1/ Residual herd values (Incremental)

|          | Year 20      | Year 21      | Year 22      |
|----------|--------------|--------------|--------------|
| Coastal  | 449 x 5      | 3,143 x 3    | 1,347        |
| Rupunini | 147 x 4      | 588 x 2      | 294          |
| LDCo     | 3,780 x 1    |              |              |
|          | <u>6,613</u> | <u>3,731</u> | <u>1,641</u> |

2/ Excluding clearing equipment (clearing costs included in on-ranch investment).



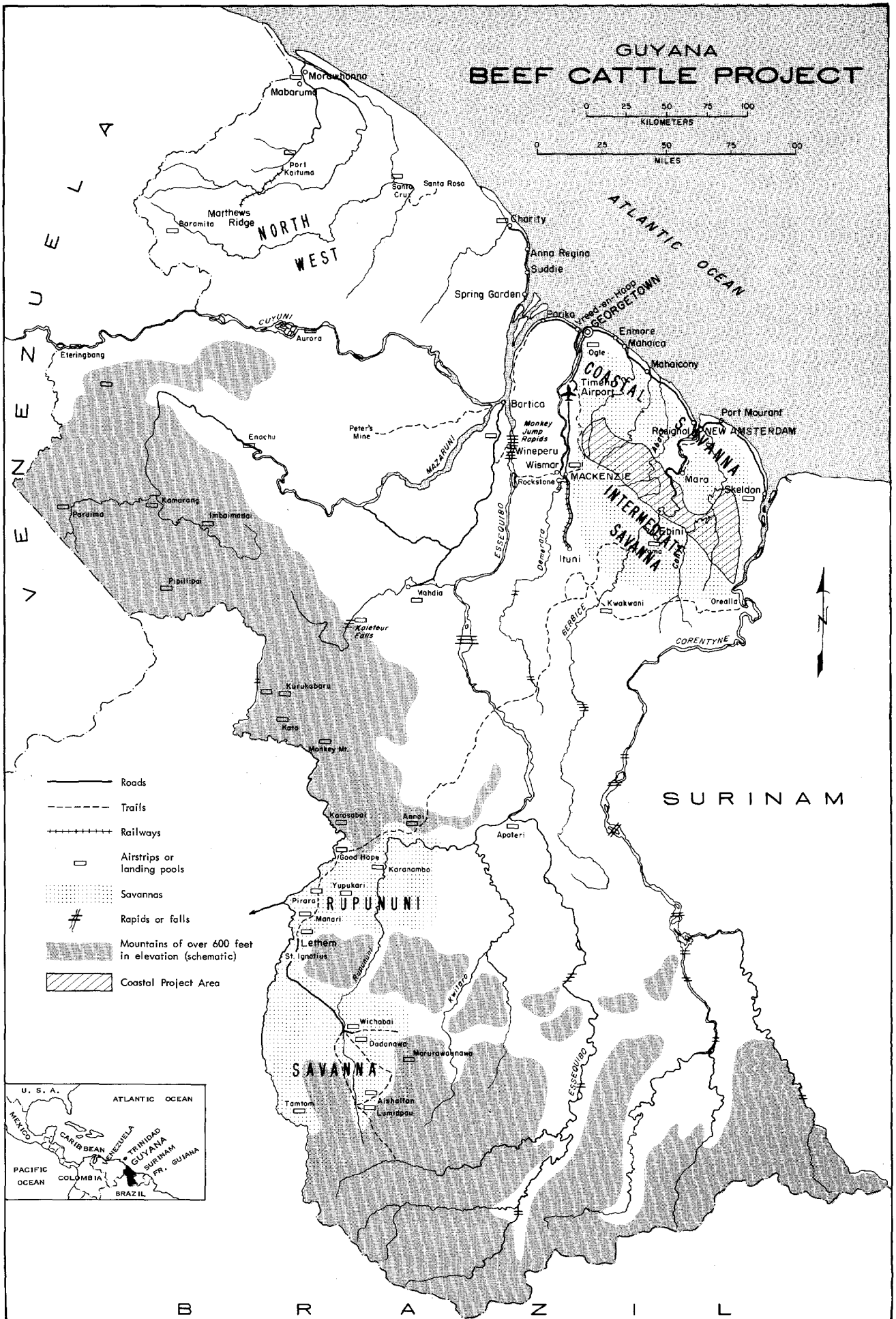
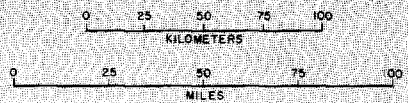
# GUYANA BEEF CATTLE PROJECT PROJECT ORGANIZATION







# GUYANA BEEF CATTLE PROJECT



- Roads
- - - Trails
- + + + Railways
- Airstrips or landing pools
- ▨ Savannas
- # Rapids or falls
- ▩ Mountains of over 600 feet in elevation (schematic)
- ▨ Coastal Project Area

