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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

BOTSWANA - BOTSWANA NORTHERN ABATTOIR

690-22-150-027
690-T-008

AID-DLC/P-2090

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May 30, 1975

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Botswana - Botswana Northern Abattior

Attached for your review are the recommendations for authorization of a loan to the Government of Botswana ("Borrower") of not to exceed One Million United States Dollars ($1,000,000) to assist in financing the foreign exchange and local currency costs of architectural and engineering design work for the proposed Botswana Northern Abattoir. To accomplish the foregoing, loan funds are to be reloaned to the Botswana Meat Commission ("BMC").

No meeting is scheduled for this proposal. However, please advise us of your concurrence or objection as early as possible, but in no event later than Friday, June 6, 1975. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development
Program Review

Attachments:

Summary and Recommendations
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NOTE: One Rand (Republic of South Africa) = $1.45

Project Paper Prepared by:

Paul Guedet, Loan Officer
Eugene Swanson, Engineer

Botswana Northern Abattoir

(Phase I)

I. Summary and Recommendation

A. Project Development Team: Paul Guedet, Loan Officer
David Schaer, Livestock Advisor
Joseph Lieberson, Economist
Eugene Swanson, Engineer
William Jones, Lawyer

B. Borrower: The Government of Botswana (GOB); with the GOB arranging a sub-loan to Botswana Meat Commission (BMC)

C. Implementing Agency: GOB Ministry of Agriculture and Botswana Meat Commission (BMC)

D. Proposed Amount of Loan: $1.0 Million (two-step loan)

E. Terms: A.I.D. Standard Concessional terms to GOB. Sub-loan to BMC and recommending terms of 9 percent, with grace period through 1978 and 10 year repayment commencing in 1979.

F. Country Team Views: The Country Team strongly endorses this loan.

G. Project Cost: FY 1975 ($000)

	Foreign Exchange	Local Costs	Total
A.I.D. Loan:	$ 800	$ 200	$1,000
BMC Contribution:	-	335	335
TOTAL	$ 800	$ 535	$1,335

H. Purpose of the Loan: To finance all of the foreign exchange costs and a portion of the local costs of the project. Foreign exchange costs will include the engineering/architectural design. Local costs will include certain local labor costs and materials required for the design of the abattoir. Project loan should be fully disbursed within 18 months from date loan agreement is signed.

I. Description of Project:

The project (Phase I) will consist of architectural and engineering design services, including the preparation of plans, specifications, bidding and contract documents for the construction and equipping of an abattoir with 350 head per day balanced throughput capacity. The abattoir will be located in Dukwe, northern Botswana. After final design and plans are completed AID will consider a loan (Phase II) to finance the construction, construction supervision and procurement of meat processing equipment for the proposed abattoir.

The project will produce a viable financial and economic rate of return, increase foreign exchange earnings and provide a more equitable distribution of income to approximately 9,000 traditional cattle herders in northern Botswana. Assumptions are that the GOB will continue to support livestock development, Botswana maintains access to international beef markets, and the Botswana Meat Commission continues to operate the abattoir. See Annex C for the logical framework matrix.

J. Recommendation:

After reviewing Botswana's livestock sector and conducting economic and financial analyses, REDSO recommends that a loan for $1 million be authorized to finance architectural and engineering design services for a northern abattoir.

K. Export-Import Bank Clearance:

May 1975.

II. Project Background

Botswana is a 220,000 square mile land-locked country (about the size of France) with a population of approximately 650,000. Over 80 percent of the country's inhabitants live in the tribal areas of eastern Botswana. About 88 percent of the labor force is engaged in the agriculture sector, which is mainly livestock. The livestock industry plays an important role in the country's economy and social structure, dominating the agricultural economy and accounts for over half of Botswana's total export earnings ($55.1 million compared to $39.2 million for minerals) and provides the principal source of cash income (56.5 percent) in the rural sector.

A. History and Development

Botswana's national herd size has increased rapidly since the 1965 drought when the national herd was estimated at 1.3 million. In 1966 the GOB established a goal to build up the national herd to over two million head, enabling an annual export of 200,000 head by 1972. In 1972 the national herd was estimated at 2,211,000 but the quantity exported was 156,500 head, with export sales of livestock products increasing from $18.8 million in 1956 to approximately $32.7 million. It was not until 1973 that cattle exports met the GOB's goal, 209,443 animals were processed and exported representing sales of $52.4 million. The 209,443 cattle were processed by the Lobatse abattoir and approximately another 26,000 animals for domestic consumption were processed through four local municipal abattoirs for a total national herd offtake of 235,443 representing a 10.3 percent offtake. The national herd is projected to increase by a modest 3 percent per annum, eventually reaching three million cattle by the mid-1980s.

This growth of the national herd has occured and should continue because of improved range management practices, development of additional water supplies and the introduction of commercial livestock methods. Additionally, the expansion of livestock cooperatives, Government extension services and foreign donors providing assistance to livestock projects have also contributed to the development of a more knowledgeable traditional cattle producer.

Because of the rapid growth of cattle holdings coupled with improved animal health, a larger number of cattle are being sold to the Botswana Meat Commission (BMC) at Lobatse. Consequently this has placed considerable strain on an abattoir that was constructed twenty years ago and with only certain operations capable of handling 900 head per day throughput, but not to be sustained for an extended period. Despite this constraint, antiquated equipment and over-crowded conditions, Lobatse processed 209,443 head in 1973. This output, however, required additional employees, overtime work and operating machinery for long and extended periods without regular maintenance, resulting in equipment breakdowns and lost working days.

Although 1973 was a record year, it was also a less efficient operation incurring higher unit processing costs per animal than in previous years and management was required to turn away cattle from the abattoir.

Because of over-extending Lobatse's plant capacity the operational sanitary standards have been under great stress resulting in the British Government's veterinary officer imposing a 750 head per day throughput limitation until repairs are carried out and equipment replaced in order to process at least 900 cattle per day without jeopardizing the international standards required for export markets. Consequently plant renovations are now in process to correct these deficiencies. In March 1975 abattoir consultants inspected the plant and determined that after renovations are finished in mid-1975, the abattoir's operations would be balanced at a rated plant capacity of 1,080 head/day. This rated capacity, however, does not take into consideration equipment breakdowns and the seasonal nature of the livestock industry in Botswana. Meanwhile the abattoir has, at times, operated seven days a week in order to process cattle supplied by the estimated 40,000 cattle producers in Botswana. Under these limiting conditions throughput at Lobatse was 185,000 cattle in 1974.

The development and growth of Botswana's livestock industry was predicted in a Food and Agriculture Organization (FAO) study by Purnell and Clayton, 1962-63. One of the recommendations of the study was that investigations should be made regarding the feasibility of expanding the Lobatse abattoir or constructing another plant at a new location.

In March, 1971, the GOB clearly saw the need for additional abattoir capacity and requested AID's assistance. Subsequently the GOB prepared a detailed terms of reference for an abattoir feasibility study for AID's consideration. In December 1971, after protracted discussions between the GOB and AID, Experience Incorporated was selected and financed by AID to conduct a study to determine the technical and economic feasibility of establishing additional livestock meat processing facilities in Botswana.

Experience Incorporated's report recommended, among other things, that the Lobatse plant be improved and balanced in order to efficiently process at least 800 head daily and that a new abattoir be constructed in northern Botswana. These recommendations were based on a national herd size of 1,750,000, a figure now considered low compared to a recent GOB study using a more refined methodology which has determined national herd size was about 2,211,000 in 1972. Consequently, a greater and more urgent need exists for an additional abattoir than what Experience Incorporated recommended in their final report in early 1973. Accordingly, the GOB officially requested on December 24, 1973, AID's financial assistance to design and construct a second abattoir in northern Botswana.

B. Prior AID Experience

Over the past decade AID has maintained a special interest in assisting the lesser developed countries with their livestock development. AID's involvement in financing abattoir feasibility studies, design and construction has varied from providing assistance to finance an abattoir feasibility study for Ibadan, Nigeria in the early 1960s to recent studies for Botswana and Kenya, interspersed with several other abattoir projects over the past 10 years.

It is difficult to identify an African beef processing complex, other than Botswana's, which could be called satisfactory to both the producer and the firm. For example, Kenya's abattoir is faced with overcapacity which is probably caused by the pricing system. Uganda's plant at Soroti experienced problems attributable to lack of markets and unreliable supply of cattle. In the West African countries the problems were again supply, plus animal health and dependency on domestic markets. Both Somalia and Ethiopia have faced the same problems.

However, it is risky to extrapolate from the past and determine that meat processing plants are destined to be problematic projects. It is best to glean from past experiences the necessary components which are essential to a viable meat processing operation. Our lessons of experience have taught that a successful abattoir operation must have an adequate supply of disease-free livestock coupled with government supported livestock services and producers willing to sell their animals. Finally, and equally as important is access to dependable meat export markets. Clearly one or more of these vital ingredients were missing from projects previously mentioned. Fortunately, however, all of these necessary components are part and parcel of the Botswana livestock sector. Another invaluable asset is the already successfully developed and operated abattoir in Botswana. Consequently the proposed project will not have to develop a livestock industry but only provide inputs to ensure the continuation of a successfully operated industry.

C. Other Donors' Involvement

Several international donors are actively involved in providing both financial and technical assistance to Botswana's livestock sector. The International Bank for Reconstruction and Development (IBRD/IDA), Swedish International Development Authority (SIDA), and the U.S. Agency for International Development (USAID) are the primary donors providing capital assistance for livestock development projects. Other donors, such as Danish International Development Association, United Nations Food and Agriculture Organization and the Federal Republic of Germany supply a few personnel to various GOB livestock divisions.

Other than loans provided nearly ten years ago by the Botswana Government and the Commonwealth Development Corporation to the Botswana Meat Commission (BMC), USAID has been the only donor involved in actively considering capital assistance for the expansion of BMC.

The major donors consider a second abattoir as critical to the development of the livestock industry and particularly if livestock production and beef exports are to be increased. At one time the IBRD expressed interest in financing a second abattoir, but are now seeking livestock projects which will lead to a second phase of its existing livestock project.

III. Agricultural and Rural Development Policies and Objectives

The goal of the GOB's Agricultural and Rural Development Policy as described in the GOB's 1973-78 National Development Plan is: "The goal of rural development policy is to provide improved living standards for the rural population both through an increase in the production of the rural areas and the improvement of social facilities. The increase in agricultural production should not be at the expense of future productive capacity but should be sustained. Agricultural development plays a central role in that strategy, which must take into account the problems of social inequity, institutional change and the harsh climate of Botswana." Some of the broad objectives of the GOB's Agricultural and Rural Development policy are: "(1) to promote the development of the livestock industry on a sustained basis through improved range and animal management, a greater emphasis on range utilization research, changes in land tenure combined with endorsement of conservation principles, effective animal disease control and better marketing facilities; (2) to insure that the processing of the country's raw materials is done inside Botswana as far as possible, in order to increase the spread of benefits to Botswana; (3) to create new employment opportunities whenever feasible; in particular to promote industries, services and crafts in the rural areas."

The GOB is fully committed to actively pursuing rapid social and economic development to raise the living standards of Batswana.* Since the vast majority of people live in rural areas it is not surprising that the Government has emphasized agricultural and rural development. In 1972, the GOB published Government Paper No. 1, "Rural Development in Botswana" setting out basic principles to guide the formulation of programs and projects considered necessary to implement the Government's Rural Development policies. In May 1973 the GOB published Government Paper No. 2, "National Policy for Rural Development." This latter paper stressed the need to expand its current agricultural and livestock activities in the rural area and introduce new projects whenever appropriate. Included in the new projects list was the proposed northern abattoir.

* The people of Botswana are known as Batswana.

Botswana's women are involved in a wide range of agricultural activities. They are responsible for many of the crop operations, especially harvesting. They also maintain livestock, particularly small stock and to some extent cattle. In the absence of a husband many women make all decisions concerning managing of household and agricultural activities.

While crop production is mainly undertaken by women, livestock is primarily the responsibility and occupation of the men. Nevertheless about 10 percent of all livestock operations, such as herding, are handled by women and the women's influence regarding cattle sales is of even greater importance. A Government report indicated that of all the married couples owning livestock, an estimated 14 percent of these women are directly involved with cattle sales decisions. In the cases where husbands are employed outside Botswana (45,000 Botswana men are working in the Republic of South Africa) then women are fully responsible for the families' livestock. The proposed project will affect approximately 9,000 traditional families engaged in livestock production. Out of this number an estimated 1,300 women will be directly involved in making decisions relating to livestock operations.

When examining Botswana's impressive accomplishments in the livestock sector (Rural Development) since Independence, it is quite evident that the GOB is determined to improve the life-style of the rural traditional herder. Some examples of services to the rural inhabitant are the development of extension services, 12 livestock advisory centers including animal health services, livestock marketing societies, borehole drilling and maintenance services and demonstration ranches. These activities have produced a more enlightened traditional herder resulting in a rapid national herd growth followed by an increase in total offtake.

IV. The Livestock Sector

A. Background

The national cattle herd totaled approximately 2,211,000 animals in 1972 of which about 9 percent were in the Western State Lands, 9 percent in the Northwestern Tribal area, and 82 percent in the eastern part of the country. Around 87 percent of the cattle were on African holdings and 13 percent on European-owned freehold properties, mostly in the east along the borders of the Republic of South Africa and Southern Rhodesia and, to a lesser extent, in the Ghanzi District of the Western State Lands.

A 1970/71 Agricultural Sample Survey was conducted by the Government on the more accessible holdings in Tribal and State Lands and excluded all properties in the Freehold Blocks. It covered 52,000 agricultural holdings and indicated that cattle were kept on about 40,000 (77 percent). The average farm held 26 cattle and 27 head of small stock (sheep, goats). Data from the survey indicate that 61 percent of the cattle are in herds of over 60 head with the average herd size of about 138 animals.

Tswana cattle are the most prevalent breed in the country. This breed was developed in Botswana from Sanga and lateral-horned Zebu-type cattle and compares very favorably with other African breeds in size, conformation, fertility, growth rate, heat tolerance, grazing ability, and, particularly, hardiness to adverse and arid environmental conditions. Because of these qualities, the GOB is reluctant to allow indiscriminate importation of exotic breeds and is discouraging cross-breeding. Instead, the present policy is to upgrade the national herd through the selection of better quality Tswana bulls, and in the meantime, to conduct crossbreeding experiments with Tuli, Africander, Bahaman, and Charolais bulls over Tswana females to compare the performance of their offspring with pure-bred Tswana cattle. Most of these bulls are offspring of past introductions by European farmers, some of whom currently own large herds of either pure-bred Africander cattle or of crossbred and upgraded animals.

Beef cattle ranching in Botswana is restricted to areas with permanent sources of water, namely, around wells and boreholes, which presently number about 5,000. The estimated carrying capacity of native pastures ranges from about 15 to 25 acres/animal unit (AU) in the relatively fertile semi-arid eastern portions of the country to around 35 to 45 acres/AU in the infertile arid western areas; the semi-arid but infertile north-central region is somewhere in between with 25 to 35 acres/AU. GOB and IBRD experiences indicate that rangeland carry capacity averages 25 acres per animal. Botswana's potential grazing land is 92 million acres out of a total land area of 140 million acres, which is an overall carrying capacity of 3.6 million cattle. However, this average will improve with the development of new boreholes, fencing, and employing better range and livestock management practices. Two main types of cattle operations can be distinguished: the African holdings on Tribal and State Lands and the freehold properties owned and managed primarily by Europeans.

B. National Herd

In Botswana, the total national herd is made up of two parts: the traditional herd which is grazed largely on communal land by owners only starting to utilize improved animal husbandry practices, and the commercial herd which is basically a production operation using basic improved husbandry practices such as fencing, pasture rotation, and mineral supplements. (There were 351 such operations in 1972.)

Until 1969 traditional herd census figures were a by-product of veterinary campaigns where herders (especially in the tribal areas) were asked to bring their cattle to a crush (corral and chute) in October to be counted. By contrast, commercial farmers were contacted by mail and asked to fill in a questionnaire indicating the number of cattle they had.

The above methods inevitably led to under enumeration since non-response biased the results downward. For example, it was well known that, (1) young calves and their mothers could not walk the long distances to a cattle crush to be counted due to the severe stress on them; (2) some traditional herders have long been suspicious of the motives for counting their animals (taxes, etc.); and (3) because of grazing patterns some herders just were not in the area at counting time.

Due to the obvious problems in making such a census and the extreme importance of the livestock industry to Botswana, the GOB officials made a determined effort in 1971 to design the 1972 census to maximize accuracy.

To accomplish this the Division of Animal Health and the Central Statistics Office decided to follow the traditional 1972 census with a "Past Enumeration Check Survey" to assess the under enumeration. (This was accomplished in a "Technical Paper" by Park and Nteta - Estimation of National Cattle Population - February 1973, Gaborone, Botswana.)

The results of the study strongly indicate that in tribal areas the traditional herd has been understated by at least 35 percent.

1. 20 percent of the cattle were not brought to the crush by the holders enumerated;

2. cattle producers who did not visit the crush with their cattle during the time the cattle census have 13 percent of the cattle;

3. 1-2 percent stray cattle.

Thus the 1972 estimate of the traditional herd is 1,891,000 plus 40,000, totalling 1,931,000 with a standard error of 135,000. During the Park and Nteta study, 40,000 head of traditional cattle were being fattened with the commercial herd but were not included in the commercial herd census.

In 1972, the commercial herd survey was again done by mail. Experience indicated a 20 percent non-response. Since commercial farmers are registered it is known that in 1969 there were 260 farmers and in 1972 there were 351. Using the 1969 commercial herd total (which was considered an accurate commercial herd census) and increasing it by a factor of 351/260 or 35 percent. This brought the total commercial herd to 280,000, resulting in a conservative total national herd number of 2,211,000 in 1972. See Annex E.

In February 1974, the GOB Ministry of Agriculture was invited by AID to rationalize the herd projections in terms of a Biological Model and compare it to an earlier model (March 1973) prepared with AID assistance.

For the commercial herd, the herd projections to 1984, as agreed to by AID and GOB officials, were utilized with virtually no changes. For the traditional herd the mortality coefficients are the same or slightly more conservative than those previously used except that calf mortality of 10 percent is assumed. This coefficient is derived from work done by the GOB Animal Production Unit and published in "Beef Cattle and Range Research Programme in Botswana 1970-73," Botswana Ministry of Agriculture, 1974. This publication is the result of 4 years of research and indicates that in Botswana, traditional management has a 4.8 percent calf mortality (p 39, table 17), hence the 10 percent used in Annex E is a realistic compromise between the 15 percent used in the preliminary model and the lower research results.

Cows in the traditional herd first breed at 2½ years to 3 years. Some of these cows may not breed during the next breeding season or simply delay a second breeding by several months if rains and range grass are inadequate. Cows usually breed between January and March, dropping their calves at the end of the year. Respected livestock authorities from the IBRD and international animal production research personnel verify this breeding pattern. Additionally, a research study conducted by the University of Edinburgh Veterinary Department's expedition to Botswana and subsequent research paper titled "Productive Performance of Cattle in Botswana" that was published in the Tropical Animal Health Production Journal in 1974 substantiates the trend and further states that mean age at the first calf is usually 3 years and 10 months. The calving rate in the model is 40 percent and is extremely conservative. Both the GOB's veterinary department and animal production division, plus the IBRD, maintain that the average rate is closer to 50 percent, using the 40 percent calving rate as the absolute minimum. GOB research has shown that calving rate can range up to 71 percent under slightly improved range management practices which include adequate water supply, fencing and supplemental minerals provided at water sources. In the next several years it is predicted that more traditional herders will employ these inputs which should result in an increase in the average calving percentage. However to maintain a conservative national herd projection a 40 percent rate is used in this paper.

The 1973 drought in Botswana had no significant adverse affect on the traditional breeding herd. In 1973 BMC's cattle throughput was 209,443 compared to 185,000 animals in 1974 representing less than 10 percent difference between a drought year and one of adequate rains. In the years 1972 through 1974 the percentage of cows slaughtered represented 22, 21 and 19 percent respectively of BMC's total throughput. In fact in 1974, BMC's throughput would have probably been greater if a 750 head per day limit had not been imposed by United Kingdom veterinary authority until after plant renovations are completed.

In spite of a growing national herd, the number of draft oxen actually decrease slightly on the assumption that there will be a more efficient use of oxen as a result of research findings on dryland farming and agricultural cooperatives utilizing tractors for preparing land. The culling percentage for draft oxen is 15 percent. Offtake of non-draft oxen is increased over the period from 30 percent to 38 percent implying a reduction in average age of slaughter.

The percentage of cows culled is increased from 5 percent to 7 percent by 1979 and 1 percent of 2-3 year-old heifers and 3-4 year-old cows are being culled by 1982 as a result of a number of farmers taking up commercial farming in tribal areas. The figure for culled bulls is 20 percent.

The method of projection is derived by counting the herd in October at the end of the dry season, the traditional time for cattle census in Botswana. The majority of calves are born in the few months following this period. The main difference from other methods is that calves are calculated from the number of cows and in-calf heifers immediately following the census before any deduction has been made for mortality or culling. This implies a slightly different definition of calving percentage; the one used here is consistent with that used in "Beef Cattle and Range Research Programme in Botswana 1970-73."

Herd growth as projected in Annex E has several ramifications. Following are a number of grounds for believing that percentage offtake will increase: (1) farmers have demonstrated their willingness to respond to price incentives; for example, the increase in offtake over the past two years, particularly in 1974, a year of good rains. It is assumed that prices will remain bouyant over the period under consideration; (2) farmers are now more ready in a drought year to disease, has divided the country into four regions with cordon fences. Animals are allowed to move from one region to another only after they spend at least 14 days in a strategically sited quarantine station. By this method and with the aid of mobile inspection teams and preventive vaccination in the endemic areas, the Department has kept the disease under control.

D. Range and Management Practices

Historically, rural life of Tribal and State Lands has been governed largely by tradition and custom. As far as cattle are concerned, this has meant grazing on open, unfenced, communal pastures; uncontrolled breeding; unsophisticated technology and management; and accumulation of animals for draft, prestige and insurance purposes. Herds of mixed ages and sexes have been allowed to graze untended. This traditional technology has resulted in low calving rates (40 percent to 50 percent) higher than average mortality (9 percent to 12 percent), delayed marketing age (5 to 7 years) and fluctuating offtake (5 percent to 11 percent).

Traditional herders on Tribal and State Lands normally graze their stock during the seven-month dry period on communal pastures surrounding wells and boreholes and move their animals farther afield in the wet season to graze around natural catchments and ephemeral water holes. Most communal grazing grounds surrounding permanent sources of water are overstocked and deteriorating. Ad hoc drilling of new boreholes on the fringes of these communal pastures is leading to range devastation.

These antiquated livestock methods have alarmed Government officials and prompted the GOB to increase livestock services and request foreign donors to assist in the development of modern livestock practices. During the past few years the GOB has been providing livestock services ranging from research stations, extension services, cooperatives, animal health units, to fattening and demonstration ranches and services as varied as borehole development and arranging short-term credit facilities.

Present research efforts are concentrated in the fields of animal breeding, animal health and management. The Division of Animal Production is evaluating the performance of pure and crossbred Tswana and Africander cattle on 14 field stations with over 1,200 breeding cows. The Department of Animal Health is conducting studies on trace mineral deficiencies and on external and internal parasites at the central diagnosis laboratory in Gaborone. Range management research is being expanded at the Morale and Kalahari Stations.

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The extension services of the Division of Animal Production are concentrated in the Eastern Tribal Lands and are directed at the improvement of range management and animal husbandy techniques. This program includes eight demonstration ranches and fcur mobile teams, with a staff complement of about 10 expatriate professionals and 40 African technicians. Supplementary feeding demonstrations with bonemeal and salt will be started at three of these ranches.

The Division of Cooperatives is promoting the establishment of livestock marketing cooperatives in village communities to serve the small producer by reducing trekking costs and eliminating intermediate buyers. Currently, 22 such cooperatives are in existence. These have been marketing increasing numbers of cattle and accounted for about 7 percent (6,800 head) of BMC's total cattle purchases in 1969 and in 1974 accounted for 14 percent (25,000 head) of BMC's cattle throughput.

Foreign donor agencies such as AID, IDA and SIDA are assisting with livestock projects throughout Botswana. AID is providing assistance to the GOB's Range and Livestock Management Project which focuses on smallholders. This project is operating in northeastern Botswana, where the proposed abattoir will be located. The project includes a six-man team working in areas of livestock research, land and water development, animal health, livestock and extension services.

Concurrently, the IDA and SIDA are involved in a four-year project started in 1973 valued at $5.4 million which is part of the GOB's program to open up unoccupied land for ranching under proper management. The project's goals are to raise the incomes of traditional herders by increasing production and improving the quality of livestock. The project consists of (1) the establishment of 30 breeding and 5 fattening ranches of about 16,000 acres each in western Botswana; (2) the establishment of 9 fattening ranches of about 20,000 acres each in eastern Botswana and the 180,000 acre Makalamabedi fattening ranch in the north; (3) the establishment and operation of mobile borehole installation and maintenance units, and stock route development; (4) project management and land surveys; and (5) marketing and ecological studies.

E. <u>Land Tenure</u>

In Botswana, land may be conveniently considered in three legal ownership categories, i.e., Tribal, State and Freehold. Tribal Lands account for 48.9 percent of the surface area of the country with ownership of these lands vested in the various tribes as represented by their respective Tribal Land Boards.

Under the Tribal Land Act of 1968 these Land Boards have all the powers which were formerly vested in the chief as they relate to granting, variation and determination of rights under customary forms of land tenure. Under customary practice only arable lands are allocated for exclusive use. Rangeland is communal property. Actual allocations of arable land are based on land availability and family needs. In most areas there continues to be sufficient land to meet requirements. Normally, arable land is allocated to a family for an indefinite length of time which may in fact extend longer than the lifetime of any single family member. Change in allocated areas must be approved by the Land Board. Tribal law and custom permit individuals to fence their allocation of arable land but forbid any fencing on communcal pastures, which must be shared by all members of the community.

State land encompasses 46.7 percent of the land area. Most of these areas are outside eastern Botswana and suitable only for livestock production. Title is vested in the Central Government which also exercises direct control and may lease areas or make freehold grants.

There are seven freehold blocks covering some 4.4 percent of the country where freehold title has been granted. They are Xanagas, Ghanzi, Tati, Tuli, Gaborone, Lobatse and Molop. Most of the freehold outside the urban areas is held by immigrants to Botswana (now citizens) who arrived within the last century. Very little additional land has been transferred to freehold status in recent years.

The Government has recently enacted laws to ensure efficient utilization of range land and change antiquated land tenure practices. In 1972, the GOB passed the "Agricultural Resources Conservation Act" which empowers the Board to establish regulations to control over-grazing of rangeland and regulate range and water utilization. Additionally the GOB has passed the Tribal Land Act which permits the Tribal Land Boards to implement measures for land conservation.

Historically, land tenure for grazing in tribal areas has been a major obstacle to modern range management practices. Each tribesmen has been allowed to graze as many livestock as he wishes without any person directly responsible for the condition of the rangeland. One aspect of the land tenure reform act is the gradual introduction of leases of tribal land to individuals and groups in order to encourage good livestock management practices and to clearly identify the individual or groups responsible for a particular piece of land. This system will encourage fencing which is an important factor in land conservation and livestock management and production.

V. Botswana Meat Commission

A. Lobatse Abattoir

In 1954 as a result of increasing livestock production, the then Bechuanaland Government requested the Commonwealth Development Corporation to finance and construct an abattoir at Lobatse. The Protectorate Abattoir Limited was established in 1955 with 50 percent equity held by the Commonwealth Development Corporation who also served as the managing agent of the abattoir. The remaining shares were held by the Bechuanaland Government (25 percent) and the Livestock Producers Trust (25 percent). In 1963 the Government agreed to convert the company into a statutory corporation, changing its name to the Botswana Meat Commission (BMC) under GOB Law No. 22 of 1965. On February 1, 1966 the Botswana Meat Commission assumed the Commonwealth Development Corporation's share of the Bechuanaland Protectorate Abattoir through a ten year loan of Rand 640,000 ($928,000). The Government's share of the abattoir was transferred to BMC. The assets of the Producer's Trust (R150,000 /$217,500/ equity and R160,000 /$232,000/ loan) were accounted for and transferred to BMC, and the Trust was dissolved.

Since 1966 the BMC has operated as a Governmental parastatal organization and has been directed by GOB officials. (See Annex F organizational chart for GOB Ministry of Agriculture.) BMC has a statutory authorization for exporting meat, and live cattle from Botswana. BMC employs over 1,200 Batswana and less than 40 non-citizens serving in managerial and technical positions. Additionally, housing, recreational facilities and other services are provided for all employees, including on-the-job training for local staff. Over the years BMC has established export markets, increased production, expanded plant facilities and developed into an efficient and respected company.

During the first six years of operation BMC slaughtered an average of 122,000 head annually, reaching 167,000 in 1971, 156,510 in 1972, and 209,443 in 1973, although in 1973 the abattoir was overloaded and operated less efficiently. As previously mentioned, in June 1973, an English consulting firm, P-E Consulting Group S.A. Ltd., conducted a study which specifically mentioned the factors limiting meat processing operations and recommended changing certain operations of the plant to conform with the European Economic Community's (EEC) regulations. Furthermore, the study emphasized that due to operating at over capacity the abattoir's condition had deteriorated. Finally the consultants suggested balancing the operations of the Lobatse Abattoir at between 900-1,200 head daily throughput and building a second abattoir for 300-600 daily throughput. Renovations are underway and should be completed in mid-1975. Plant improvements will include refurbishing the deboning operation and replacing freezers and the by-products section. In March 1975, abattoir consultants reviewed on-going plant renovations and determined that after plant improvements are completed the maximum daily plant capacity would be rated at 1,080 head per day. Based on this determination, average cattle throughput is established at 181,440 head per year (1,080 cattle X 240 days X 70 percent plant utilization). This average operating percentage is considered reasonable because of the seasonal nature of the industry and to allow sufficient time for plant maintenance. During seven months of the year, when large numbers of cattle are offered, the plant should operate at approximately 85 percent capacity and the remaining five months operate at about 45 percent capacity. This is consistent with acceptable average operating standards of 250 working days and 70 percent plant utilization established by IBRD livestock officials and international abattoir consultants. Incidentally, this exceeds the plant utilization percentage of the Kenya abattoir which operates at less than 70 percent capacity.

The reason for using 240 working days instead of the standard 250 days is because BMC facilities are 20 years old and the remoteness of the plant from a metropolitan area containing adequate maintenance services. However 10 less working days has an insignificant effect, resulting in only 7,560 animals per year. To cope with major maintenance BMC closes the plant for two weeks a year during the slack period and contracts with an experienced abattoir maintenance company from outside Botswana to inspect and conduct a major servicing of the plant. Besides having the capacity to process 181,440 cattle per year the abattoir would continue processing small stock. This operation represents approximately one percent of the value of BMC's livestock purchases and in 1973 amounted to only 8,707 animals.

B. Management

Senior management and the technical staff have considerable experience in operating meat processing plants and have performed adequately. Senior management consists of a general manager, assistant manager, sales manager, works manager, chief accountant, livestock manager and chief engineer. The works manager is responsible for the production department and has three technical staff in that department. The financial and engineering departments have four accountants and from 15 to 20 technical personnel respectively. Because of the serious shortage of skilled manpower in Botswana most senior management and technical personnel are non-citizens recruited under short-term contracts.

Although the general assessment is that management has performed adequately, the marketing department could be strengthened.

Currently the sales manager's position is vacant and is presently being occupied by the works manager until a replacement is selected. In addition to a sales manager, BMC should consider employing an assistant marketing manager and a meat marketing analyst to keep abreast of trends in the international meat trade. World demand for meat has been strong, which has somewhat relieved meat exporting countries of aggressively seeking markets. Although there is no indication that world meat demand will soften, it is prudent to have a knowledgable marketing team in order to diversify sales and to be aware of alternative meat export markets. Furthermore, an increased number of export markets would lessen BMC's dependence on one or two primary markets and would also stabilize fluctuations in BMC's cash flow position experienced whenever the majority of sales are directed to the Republic of South Africa or the United Kingdom. The GOB is aware of these potential weaknesses and is presently recruiting an experienced international sales manager, and also intends to develop new export markets.

C. Financial Assessment

BMC's capital structure is extremely sound with the firm following conservative financial practices. Since 1966 plant expansion and renovations have been financed internally through a healthy cash flow, with retained earnings and provision for depreciation representing the main contributors. The current assets to current liabilities ratio has been consistently positive, ranging from 1.1 to 2.1. See Annex G Working capital has been adequate albeit excessive at times, and financed primarily from the firm's operations. A large cash position appears whenever the majority of sales are directed to the Republic of South Africa instead of being dispersed throughout other markets. Consequently a sizable cash position occurs because selling expenses are reduced, accounts receivable are collected within 10 days and inventories are modest. Excess cash is deposited in short-term interest bearing accounts. Conversely whenever United Kingdom markets account for over half of BMC's meat sales the cash position is adequate, but considerably smaller because goods are consigned to agents, resulting in inventory accumulation and accounts receivable are carried from 30 to 70 days. Average collection period is usually 29 days. See Annex H for graph depicting cash flow situation in 1973 when approximately 76 percent of meat was sold in United Kingdom and in 1974 when the majority of goods were sold to South African markets.

Long term debt is virtually non-existent with only two outstanding loans, Government of the Republic of Botswana for Rand 150,000 ($217,500) and the Commonwealth Development Corporation for Rand 576,000 ($835,200) incurred in 1966. The former is actually not a debt but equity participation by the GOB.

This amount represents shares previously held by the GOB in the Bechuanaland Protectorate Abattoir Ltd. According to an agreement between the parties the BMC is under no obligation to repay this amount, and the principal remains the same, but the BMC pays 8 percent per annum to the GOB. Therefore, for purposes of financial analysis it can be considered an interest bearing equity. The final payment for the debt to the Commonwealth Development Corporation of R90,000 ($130,000) will be made in December 1975.

Until now the BMC has not required assistance from financial markets. Accumulated retained earnings, earmarked as reserves, have accounted for all capital formation taking place since BMC began operations. See Annex I. Although this practice appears conservative, it has considerable merit since interest on long-term debt is a non-deductible tax expense. Therefore, some of the advantage of selecting long-term debt for plant expansion has been removed. Likewise this is probably the reason for BMC using the straight-line depreciation method instead of an accelerated depreciation method.

Corporation income tax is charged on gross sales less direct marketing expenses which include transportation, handling and storage, advertising, sales commissions and miscellaneous selling expenses. BMC's annual taxes have averaged 7 percent of gross sales.

D. Livestock Supply

BMC establishes and publishes at the beginning of each quarter a schedule of weekly buying prices by grades based on cold dressed weights (CDW) for slaughtered stock. Additionally BMC purchases condemned animals and an annual bonus is paid to producers from BMC's operating surplus after deductions for taxes, debt servicing and reserve funds. Producers can market their cattle through many methods; direct to BMC through livestock marketing cooperatives; utilize Botswana Livestock Development Corporation (BLDC) as a vehicle to finish and market cattle; auction sales; and lastly sell to traders and speculators.

In the past the internal marketing system which supplies cattle to BMC was less than equitable to the small cattle producer. Principally the problems were limited contract between producer and BMC due to only one abattoir located in the south-eastern corner of Botswana, inadequate marketing information, lack of finishing ranches, insufficient competitive outlets to purchase immature cattle and the BMC pricing policy. Consequently, traditional producers marketing their cattle, particularly immature animals, did not maximize benefits. Fortunately the Government has recognized the problem and has taken corrective action through institutional changes such as providing new and comprehensive marketing alternatives. See marketing chart on page 21..

Additionally, the GOB has initiated progressive livestock projects which already have lessened the influence of traders and speculators. For example, the construction of finishing ranches, particularly the Makalemabedi Ranch in northern Botswana, has allowed herders to direct an increasing number of immature and unfinished animals to Government operated finishing ranches instead of selling animals to traders and speculators. As a result traders are now offering higher prices for immature cattle and some of the traders are selling cattle to BLDC instead of to speculators.

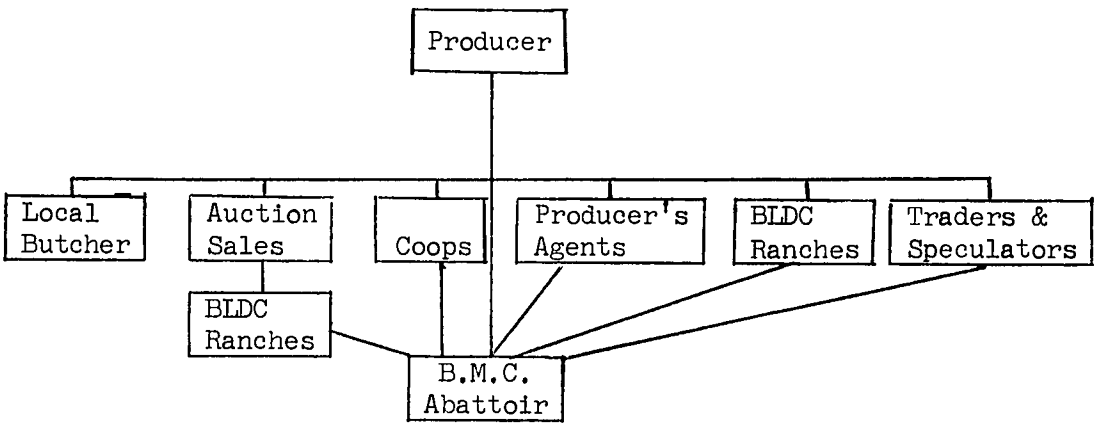
The Makalemabedi Ranch (approximately 210 kilometers /130 miles/ from the proposed northern abattoir) is finishing over 6,000 head of cattle annually supplied from traders and traditional herders. The herder has the option to sell cattle directly to the ranch or place his cattle there at a nominal daily fee and then forward finished animals to BMC. In either instance the herder is registered as the owner and eligible for any annual bonus from the BMC.

Another important change is BMC's recently introduced quarterly adjusted buying price which more closely reflects fluctuating world market prices than did the annual price arrangement. Consequently BMC's 1974 bonus to producers was 9 percent ($3.3 million) of the total value of purchases from producers compared to 32.4 percent ($9.4 million) in 1973 and 32 percent ($5.3 million) in 1972. As a result of this change a larger initial payment is being paid directly to small producers, with additional income accruing to the traditional herder. The International Monetary Fund's (IMF) September 18, 1974 report substantiates this assessment.

Because of the new pricing structure which reduces profit margins, the speculator, who is also a freehold rancher, is not as active. Introducing this instituional pricing change has lessened the speculator's influence on the market. Clearly, however, there continues a need for cattle traders and speculators, since they provide a ready market for cattle at times when there are no auction sales. They also benefit herders who decided not to assume the expense and responsibility of trekking their cattle to the abattoir. Therefore, no concerted effort should be pursued to entirely eliminate them, but obviously the speculators have lost their once dominant position.

Because of the GOB efforts, internal marketing of cattle is improving gradually. About 65 percent of BMC's annual cattle throughput is supplied directly by Batswana producers, compared to only 40 percent in 1962. Cooperatives alone accounted for 14 percent of total BMC throughput in 1974, compared to 7 percent in 1969. This reduction of sales through intermediate buyers is largely a result of Government's and BMC's efforts to provide traditional herders marketing information and improved sales outlets. The GOB's marketing policy is directed at persuading traditional herders to sell their mature animals directly to the abattoir or utilize cooperatives, auctions and finishing ranches rather than selling cattle to speculators. Additionally the GOB extension and cooperative departments prepare and disseminate cattle marketing information through printed documents, lectures and radio broadcasts.

Below is a chart depicting the GOB's cattle marketing alternatives available to all traditional herders, followed by an explanation of each marketing system.



Direct Sales to BMC require the producer to register with the abattoir and submit a letter requesting a cattle quota 30 days in advance of intended delivery to BMC. Additionally the producer must trek or provide transportation to deliver his cattle to BMC.

Cooperatives provide all the services such as credit advances, trekking, loading, submitting BMC quota application and checking cattle on arrival at BMC. The cooperative charges 3-5 percent commission for these services. BMC sends payment for cattle to the producer through the cooperative, as well as any end of year bonus.

Producer's agents will arrange trekking or transportation to BMC, check cattle on arrival at BMC and will collect payment and bonus on behalf of producer. Commissions are $2\frac{1}{2}$ percent not including trekking or transport costs.

BLDC finishing ranches provide fattening for producers' immature and unfinished cattle. The producer can either sell directly to BLDC or retain ownership of cattle and pay a fee for use of facilities. In either case, producer is entitled to any bonus at end of the year.

Auction sales provide competitive market for producer wishing to sell animals in his area and not assume trekking or transport responsiblity.

Traders/speculators offer a market virtually every day of the year but usually at a lower price than above outlets. Herders now resort to this facility when money is required immediately, or if other marketing facilities are not available.

Grazer scheme is primarily designed to assist cattle producers who have surplus grazing land but insufficient funds to purchase cattle to utilize these resources. Under this scheme BMC purchases cattle and places them on surplus grazing land for finishing. At the time of slaughtering the land owner receives payment for the value of weight that the cattle gained while grazing.

The BMC's buying procedure is to purchase cattle based on an established floor price per 100 kilos cold dress weight (CDW) which is determined immediately after the animal is slaughtered and the hide, hoofs, and offal are removed. In the past BMC has published a floor price schedule at the beginning of each year. In setting prices BMC has tended to be conservative in order to avoid incurring a loss. At the end of each year a bonus, computed as a percentage of the floor price, is paid to producers in accordance with the Botswana Meat Commission Act to distribute any year-end surplus to cattle suppliers. Producers have experienced buoyant cattle prices over the past several years. In 1966 producers received an average price, including bonus of $77.13 per animal, increasing to $183.74 in 1973. See Annex J for the average yearly prices received by producers. Average price in 1974 is estimated at $196.

In comparing the BMC pricing system with the Kenya Meat Commission (KMC), which incidentally is reputed to pay an equitable price to producers, it was discovered that the BMC pays a higher price to producers. In 1973 BMC paid 30 percent more than KMC for choice cattle, 15 percent more for average cattle and about 33 percent more for lower grade cattle. Additionally BMC paid a bonus to producers in 1973. This price disparity continued in 1974, resulting in the Batswana producer enjoying a higher price for his cattle than the Kenyan producer.

BMC also purchases small stock (sheep and goats) from producers for processing, and then sells the finished product to the Republic of South Africa. Average prices paid to producers for sheep and goats were $8.78 and $8.35 respectively in 1973. Total purchases amounted to $74,527 and represented less than one percent of BMC's total livestock purchases for the year. See Annex K for yearly quantities of small stock purchased, average prices paid to producers, and average weights of stock.

E. Export Markets

Botswana's primary beef export markets are the Republic of South Africa and England, followed by other African countries (primarily Zambia and Zaire) and then a number of smaller sales to several other countries. South Africa has awarded BMC weekly quotas for 1,000 beef carcasses and 30 tons of frozen boneless beef at Johannesburg's Newtown market where a floor price is guaranteed by the South African Government. Besides these quotas BMC supplies South Africa with significant quantities of prime grade frozen cuts such as striploins, and rumps as well as offals and by-products.

An equally important market is England which imports sizeable quantities of boneless beef, offal and vacuum packed chilled boneless beef. Vacuum packed beef was introduced in 1973 and uses polyethylene air-tight packages which ensures minimum shrinkage and oxadation, but allows aging of the meat while enroute to markets. BMC operates in the English market through Allied Meat Importers of London in which BMC owns controlling interest.

Zambia is BMC's next most important African market and should be an even larger purchaser in the future since it is unlikely Zambia will be self-sufficient in beef. BMC has a beef sales contract with the Cold Storage Board in Zambia for meats, edible offal and rough offal. Hides and skins are sold to Zambian brokers. Sales contracts with other countries vary from direct sales with governmental agencies to a contract with Hong Kong Cold Storage and utilizing sales agents for markets in Zaire and Ghana. Following is a chart showing BMC's beef sales to various markets for the years 1966 through 1973 and estimates for 1974. Also see Annex L.

BMC's Marketing Distribution of Total Cattle Processed and Gross Sales

(000 carcasses)

	1966	1967	1968	1969	1970	1971	1971	1973	est. 1974
Beef Carcasses Sales:									
Republic of South Africa	18	38	51	40	40	41	39	29	84
Other African Countries (mainly Zambia)	14	15	19	27	15	19	13	3	15
Deboning of Carcasses (mainly for England)	97	35	32	25	71	106	103	174	85
Condemnations	3	1	2	1	1	1	1	3	1
Total Slaughtered	132	89	104	93	127	167	156	209	185
Gross Sales ($millions)	12.5	17.8	16.9	14.9	20.0	24.8	32.7	52.4	55.1

Future Prospects

World demand for livestock products is increasing more rapidly than supplies. The growth of meat consumption reflects a rising demand in line with increasing affluence of consumers. The demand for meat grows faster than for many other foodstuffs as incomes rise. The increased consumer expenditures on meat in 1972 were a reflection of this and probably the major factor sustaining the sharp increases. Owing to the substantial price increases, export earnings from meat rose much quicker than the volume of exports. According to the FAO Commodity Review and Outlook of 1972-73, the largest increase was in earnings from beef and veal which were about $900 million higher than in 1971.

Beef has been one of the most buoyant export commodities of the developing countries, and its rapid growth rate in past years is expected to continue into the 1980's. The value of beef exports from developing countries tripled during the last five years, rising to over $1 billion in 1973 and the IBRD predicts that export earnings will triple again in the next six years.

By 1980 the developed countries net import requirements will exceed four million metric tons, an increase of nearly 40 percent between 1974 and 1980. See Annex M. In addition to the increased demand in developed countries, there is an increasing demand in developing countries as well. For example, the IBRD reports indicate that Zambia's beef import requirements are expected to exceed 100,000 carcasses per annum before 1980. This estimate is already out of date and the import requirement was reached in 1974. In that year Zambia's beef consumption was estimated at 35,000 metric tons, but demand was probably closer to 40,000 metric tons. Domestic supply was 110,000 cattle at an average CDW of 177 kilos for a total of 19,470 metric tons. A large portion of the 15,530 metric ton deficit was covered by Botswana.

During 1973 and 1974 BMC attempted to regain and increase meat trade with Zambia, despite transport impediments imposed because of the Rhodesian-Zambian border problems. In 1969, before transport problems arose, over 15,000 carcasses plus significant quantities of boneless beef were shipped to Zambia. Meanwhile this market has continued to grow and BMC could develop sales in excess of 50,000 carcass equivalents if transport and access routes were available. With the completion of the Bot-Zam Road and a northern abattoir, BMC will be less than 300 kilometers (186 miles) from Zambian markets. BMC should then be in the most economical position to dominate the Zambian beef importing markets.

The market in the Republic of South Africa (RSA) should continue to be BMC's most dependable long-term and profitable market. BMC received an average of $1.30/kilo for carcass meat at the RSA Newtown market in 1973/74 and $1.63/kilo for boneless beef. South Africa is and will probably remain, a net importer of meat in the long run. Although domestic production will increase, it will not be sufficient to satisfy South Africa's ever increasing demand. World imports to RSA of frozen cuts and chilled carcasses increased from about 205,000 carcasses in 1973 to about 249,000 in 1974. Besides Botswana, the main suppliers of beef to the RSA are Rhodesia and Namibia.

In addition to maintaining Botswana's existing market, the BMC intends to diversify meat sales to the European Economic Community (EEC). With the conclusion of recent meetings in Brussels and signing a trade agreement in Lome, Togo between the African, Caribbean and Pacific (ACP) nations and EEC members, Botswana has been informed that an agreement was reached to allow Botswana to export meat duty/tariff free to EEC countries. Normal tariff for third countries is 20 percent. Many of the EEC countries are net importers of meat as is indicated in the following chart.

1975 Estimates
(In thousands of metric tons of carcasses)
(Source: FAO and IBRD)

	Production	Consumption	Balance
France	2,045	1,871	+174
Belgium and Luxembourg	270	289	- 19
West Germany	1,330	1,592	-262
Italy	685	1,170	-485
Netherlands	327	323	+ 4
Denmark	238	113	+125
Ireland	383	58	+325
U.K.	940	1,413	-473
Total	6,218	6,829	-611

Although European markets appear attractive because of tariff-free entry, Botswana's meat exports are still subject to an EEC levy that can vary from nil to $.90/kilo of meat, including incurring higher transport and selling expenses than exporting to African markets. Transport costs for prime cuts are $.25/kilo to England compared to $.03/kilo to Johannesburg. However, COPA, the Common Market farmers' organization has recently suggested that beef imports from other countries be allowed on an experimental basis for 1975. The plan would allow EEC exporters to sell their beef outside the community without claiming the normal restitution payments, providing they are also prepared to accept non-EEC beef without the normal levy being imposed.

Despite this action it would appear equally profitable for BMC to also concentrate in developing and expanding sales to neighboring African and Near East countries where demand is increasing, transportation charges are less and trade barriers are absent or minor. According to beef demand projections of the FAO, there is a growing gap between domestic production and consumption of beef in the Near East. The deficit of 34,000 metric tons in 1970 is expected to increase to 109,000 metric tons by 1980.

Although world markets have been favorable for Botswana's beef products in the past, periodic world market gluts are inevitable. Supply and demand rarely move upward at steady rates, and periods of unfavorable prices will arise in expanding markets. When gluts in markets appear such as in the EEC during late 1974, disruption in producing areas occur. Only producers, such as BMC, which have established a reputation as a reliable and efficient supplier and have diversified markets will continue to benefit and realize long-term growth.

VI. Project Analysis

A. Proposed Northern Abattoir

A number of feasibility studies have confirmed a long held GOB belief that a second abattoir is justified because of the rapid increase of the national herd and limited capacity of the Lobatse Abattoir. To obtain additional slaughtering capacity the options are either expand Lobatse or construct a new abattoir. Consultants have recommended, and the GOB agrees, that the Lobatse abattoir is not adaptable to plant expansion because of the multi-story design, age of the building and lack of land, all of which argue for a second abattoir. A second abattoir should be located within a high density cattle area accompanied by adequate access roads and rail facilities plus a source of water. Areas considered by consultants and the GOB for a second abattoir were Maun, Dukwe, Bushman Pits, Orapa, Makalamabedi, Motopi, Francistown and Shashe.

The GOB selected Dukwe, a small village approximately 25 miles south of Nata in northeastern Botswana as the location for the second abattoir. Dukwe is in an area surrounded by several important cattle regions and on the eastern edge by the Sua Pan, a large soda ash pan, which will be commercially developed by the GOB and foreign firms. Dukwe was selected for the abattoir site because of good roads, sufficient water, available labor and most important a large cattle catchment area which will not compete with Lobatse's natural cattle supply. See Annex N for an evaluation of abattoir sites considered by the GOB.

Dukwe's location is adjacent to an established livestock quarantine holding ground, several days trekking from the Makalamabedi finishing ranch, and positioned to service a livestock region, which includes Nagamiland, north-central and northeastern Botswana, with a cattle population totaling approximately 537,000 cattle in 1972, representing about 24 percent of the national herd. See Map Annex O.

Transport facilities are excellent with the Zambia-Gaborone road servicing the proposed plant. Rail services now terminate less that 160 kilometers (100 miles) to the south, at Francistown, and will be extended to Dukwe by 1978 for the abattoir and the Sua Pan soda ash project. Railway feasibility studies are presently being prepared. The Francistown-Nata road construction contract will be awarded during the next few months to pave and upgrade the road. This road project is financed by Denmark, NORAID and CIDA. The USAID-financed Bot-Zam Road starting at Nata and extending to the Botswana-Zambia border will be finished by mid-1976. Water requirements are satisfied with the development of boreholes in the area; one newly drilled borehole is producing 200,000 liters per hour (52,800 gallons per hour). Abattoir water requirements are estimated at 250,000 gallons per day.

In addition, there are significant equity and economic rationales for the Dukwe site; (1) Abattoir would establish an important internal marketing relationship with approximately 9,000 of the total 40,000 traditional herders; (2) increased income to herders resulting from cattle transport savings and shorter trekking distance which would reduce animal weight loss and maintain grade of animal; (3) bone and carcasses meal will be processed at the abattoir and sold to traditional herders; and (4) markets in Zambia and southern Zaire are conservatively estimated at 60,000 carcass equivalents per year, representing 71 percent of the rated plant capacity of the proposed abattoir. Transportation expenses for shipping finished goods to Zambia are less than half the cost of the shipping cost from Lobatse to Zambia. See the economic section for a further explanation of estimated savings and benefits to both Botswana's economy and traditional herders.

The timing and capacity of the proposed northern abattoir has been determined on the basis of:(1) when the total national herd offtake reaches a quantity sufficiently in excess of Lobatse's 181,400 head per year recommended throughput capacity to supply a second abattoir with an adequate number of cattle to operate profitably and at approximately 50 percent of designed throughput capacity in the start-up year; (2) the estimated annual offtake from the cattle catchment area where the abattoir will be located; and (3) sufficient excess capacity in order for the combined throughput capacities of both Lobatse and the proposed abattoir to process the projected national herd offtake through 1983.

The earliest a second abattoir could be designed and constructed would be mid-1978, at which time projected national herd offtake for export processing would total 219,000 less Lobatse's recommended throughput leaving a balance of 38,000 cattle in 1978. Meanwhile the number of cattle in the national catchment area of the northern abattoir will have increased to 589,200 in 1978 with a potential annual offtake of 60,000 animals and grow to an estimated 62,000 offtake in 1983.

To meet the financial, economic, and equity standards mentioned above, i.e., profitablity, initial plant utilization requirement and servicing traditional herders, it is recommended that an abattoir with a 350 head per day balanced throughput capacity operating eight hours a day, 240 days a year giving a rated plant capacity of 84,000 head per year be constructed to meet the economic and social needs of the GOB's livestock sector. The plant would open in mid-1978, process 20,000 cattle and in the following year process 50,000 animals (60 percent plant utilization), eventually reaching 67,000 throughput in 1983,while operating at 80 percent plant utilization. This slightly exceeds the average abattoir operating standard at 70 percent, but since the abattoir is a modern, recently constructed plant it is reasonable to expect this operating performance. This plant, when operating at 75 percent capacity, would also satisfy the estimated 62,000 cattle offtake available in 1983 from the cattle catchment area in the vicinity of the proposed abattoir.

The following is a chart indicating the national herd size, estimated export and domestic cattle offtake, and plant capacities for Lobatse and the proposed abattoir at Dukwe for the years 1974 through 1984. Although a plant is designed and capable of an established capacity, it is unlikely a plant would operate for extended periods at its rated output. Obvious situations such as machinery breakdowns, uneven quantities of cattle supplied to the abattoir and the need to have excess capacity available are some of the many reasons that an average abattoir will probably operate at below the rated plant capacity. As mentioned before, IBRD officials and international abattoir consultants have determined that 70 percent plant utilization is acceptable. Therefore the following chart presents figures showing the Lobatse abattoir operating at 70 percent rated plant capacity, and the proposed northern abattoir operating 75-80 percent rated capacity by 1982, just four years after opening the plant.

Year	National Herd (000)	Total Offtake (000)	Offtake %	Domestic Consumption (Municipal Abattoirs) (000)	Cattle Avail. for Export (000)	Lobatse Capacity @1,080 240 days @70% plant Utiliz. (000)	Cattle Available for Northern* Abattoir (000)
1974	2,277	213	9.4	28	185	181	
1975	2,328	227	9.7	29	198	181	
1976	2,380	234	9.8	30	204	181	
1977	2,426	238	9.8	32	206	181	
1978	2,471	252	10.2	33	219	181	38
1979	2,508	266	10.6	35	231	181	50
1980	2,537	275	10.8	37	238	181	57
1981	2,560	277	10.8	39	238	181	57
1982	2,587	289	11.1	41	248	181	67
1983	2,606	290	11.1	42	248	181	67
1984	2,628	292	11.1	43	249	181	68

* Designed for 84,000/year throughput

The second abattoir would be operated independently of the Lobatse plant, with management personnel located at Dukwe. Policy and coordination relating to buying, slaughtering and marketing would, however, be established through committees and a common marketing organization. Annual financial statements would be incorporated in a consolidated statement for both the Lobatse and proposed abattoir. The proposed abattoir would produce similar products as presently being produced in the Lobatse plant.

B. Engineering Appraisal

The northern abattoir project will require the design and construction of a complete abattoir with a balanced throughput of 350 head of beef cattle per day. The abattoir will be located in Dukwe, situated approximately 160 kilometers (100 miles) northwest of Francistown on the Francistown/Maun Road. The region is presently sparsely populated. The construction of necessary housing and supporting facilities is planned in conjunction with the abattoir project, and will be provided by the GOB. It will be necessary to carefully consider the residential area in the design and siting of the abattoir.

The proposed site is situated on high ground and the topography is level with a gradual slope toward the south-west to insure adequate drainage. Winds are predominantly out of the east (40 percent of the time) and out of the northeast (11 percent of the time) so that locating the abattoir west or southwest of the town would minimize odors in the populated area. The average annual rainfall in the area is 439 mm (18 inches) averaged over 30 years, and occurs mostly from October through April with peaks in December, January and February. The temperature varies from a mean maximum of 28.2°c (82F) to a mean minimum of 13.8°c (57F) with a possibility of frost for about seven days during June and July. It is a healthy location with very infrequent extremes in climatic conditions.

The proposed abattoir will be a completely modern meat processing plant and include all facilities necessary for the production of quality meat and meat products. The plant will be designed for efficiency of operation and maintenance with particular attention to sanitary and health conditions such that compliance with export requirements to EEC countries and other potential markets can be maintained. Sewage and disposal facilities will be designed to recover all useable material and minimize the quantity of effluent for final treatment and disposal. Site location and design shall provide for plant access of live animals with minimum interference with the populated areas of the new township. Holding pens for 4,000 to [illegible],000 beef cattle and actual plant access, shall be designed for efficiency of animal movement, humane treatment, ease in maintenance of sanitary conditions and the safety of plant personnel.

The abattoir will have a 350 head per day throughput, built on one floor with a flow-through design capability to slaughter, debone, process, package, chill, freeze cattle and also an area where small stock (goats, sheep) can be slaughtered. The chilling room would be able to handle 700 carcasses (two day kill) to enable storage of carcasses and a cold storage room with a capacity to handle five weeks' production. The proposed capacity would be capable of producing the required quantity and quality of various items of selected production mix as well as providing for an adequate balance throughput for all processing departments. Sufficient flexibility and versatility would be available to vary the product mix in line with changes in market taste or to obtain maximum profitability. An effluent disposal plant is required for primary treatment of waste products which, after processing, could be used for irrigation of crops in the area. Finally housing units will be required for about 300 laborers, 20 middle-level staff and 5 senior staff. See Annex P for the suggested scope of work for the design specifications of the proposed abattoir.

The planned abattoir will be located in an area that is presently covered with small trees and brush and where no utilities are available. The installation of an electric generating plant of sufficient size to serve the abattoir and the domestic consumption of the employees, estimated at 3MW capacity, will be required. The Lobatse plant has an installed capacity of 3.9 MW and plans to purchase an additional 1.5MW from the Lobatse Municipal Authority generating plant. The requirements of approximately 3MW installed capacity for the Dukwe plant is based on the quoted maximum load of 2.8MW at Lobatse and a comparison of the relative size, capacity and personnel requirements of the two plants.

Alternative plans for the installation of generating capacity of this magnitude will be carefully studied by the consultant A & E team. The possibility of installing thermo (steam) generating equipment must be considered, particularly since deposits of coal have been identified in close proximity of the proposed abattoir site. Discussions with personnel associated with electric generation facilities in Botswana indicated that there is very little difference in the cost of equipment and installation of diesel generators vs steam-powered generators, however, the operating and maintenance costs of a steam generating plant is about 40 percent less than that of a diesel generating plant. The consultant A & E team will prepare a careful comparison of the two methods, taking into consideration the present fuel situation and projected future possibilities and produce plans, specifications, etc., on the system thus selected.

The Lobatse abattoir is presently using 10 million gallons of water per month for the plant and domestic consumption of employees. They estimate that the plant is actually consuming seven to eight million gallons per month. Existing wells located close to the proposed site of the Dukwe plant are reported to produce 200,000 liters per hour (52,800 gallons per hour). With this quantity of water available it would only require pumping 8 hours per day for 23 days per month to furnish the 10 million gallons per month used by the Lobatse Plant. However, the wells have not been officially tested by recognized drawdown pumping tests nor has the quality of the water been accurately determined by laboratory tests. The hydrological service of the Government of Botswana has agreed to perform tests according to official test procedures and verify the actual quantity and quality of the water available from these wells. The results of these tests will be again verified by an independent hydrological testing company. At this time a determination will be made that there is, or is not, sufficient underground water of acceptable quality available to supply the abattoir and employees' domestic demands. If this source of water proves to be inadequate, an alternate plan has been proposed and preliminary plans have been prepared.

The alternate water supply would involve the construction of an earth dam across the Mosetse River to back up sufficient water for plant and domestic use. The dam site has been identified and some test boring has been conducted. The river does not flow throughout the year and a gauging station has been installed to determine the quantity of water to be expected so that the design criteria can be established for the dam, if construction is determined to be required. The utilization of the alternate plan will involve additional expense in that, in addition to the dam construction, it will be necessary to construct and operate a water treatment facility of sufficient size and sophistication to insure a clean and safe water supply for the abattoir and employees' domestic use. The final decision regarding the water supply will be determined by the consultant A&E team after examining the available test data and, if necessary, the performance of additional borehole tests and investigations.

Cost estimates presented for architectural and engineering services are based on costs for similar types of projects. A reasonable amount has been included for contingencies. The project, as proposed, appears to be technically sound and feasible, thus satisfying the requirements of Section 611(a) of the FAA of 1961.

C. Financial Plan

The GOB obtained preliminary cost estimates from three firms in the Republic of South Africa who have had experience in designing both a 300 and 600 cattle per day throughput facility equipped to accomplish the functions listed in the prior section. The lowest cost estimate for a 300 head/day abattoir was $8,613,000 and $10,860,500 for a 600 head/day abattoir. These costs were based on November 1973 construction cost. A 30 percent factor for inflation and contingencies is added representing $2,587,000 giving a total cost estimate of $11.2 million for a 350 head/day abattoir. Architectural and engineering design costs are estimated at $1,335,000 and included in the total cost estimate. Housing requirements for 300 laborers, 20 middle level staff and 5 senior staff are estimated to cost $2.3 million, and will be financed by the GOB as part of their contribution to the project. Another capital cost is an estimated $2.5 million necessary for power, water and external plant development including supporting facilities for the staff who will maintain the electric generating facility. This will be financed by the BMC, representing an equity participation in the northern abattoir. Following are the estimated financial requirements for the project:

	Foreign Exchange	Local Costs	Total Cost
A & E Design	$ 800,000	$ 535,000	$ 1,335,000
Construction, Equipment and Construction Supervision for Abattoir	5,919,000	3,946,000	9,865,000
Power, Water and Support Costs	2,000,000	500,000	2,500,000
Housing Units	1,300,000	1,000,000	2,300,000
	$10,019,000	$5,981,000	$16,000,000

The project will be financed in two phases. The first phase is the proposed loan for the architectural and engineering design for the northern abattoir. The second phase loan would finance the construction of the abattoir, meat processing equipment and construction supervision. AID will consider financing Phase II of the project after preliminary architectural design work is completed. The BMC will provide funds for the A & E design in Phase I and finance all of the power and water requirements in Phase II, plus pre-operating expenses.

The proposed financial plan for the Phase I loan to finance the architectural and engineering design of the northern abattoir is as follows:

	Foreign Exchange	Local Costs	Total Costs
AID Loan	$800,000	$200,000	$1,000,000
GOB Contribution	-	335,000	335,000
	$800,000	$535,000	$1,335,000

Since the proposed loan will be made indirectly to the Botswana Meat Commission (BMC), a revenue producing enterprise, following are recommended terms and conditions for the sub-loan between the GOB and BMC:

Interest Rate ranging between 8.5 percent and 9.5 percent, as agreed to between the GOB and the BMC.

Maturity would include a grace period through 1978, and principal repayments starting in 1979 and the loan fully repaid within ten years.

The interest rate is in the range of what the World Bank (IBRD) and commercial institutions use at this time. The IBRD interest rate is 8.5 percent and commercial banks in Botswana quote a prime rate of 11 percent. The loan maturity is greater than a commercial bank construction loan which would range from five to seven years, without a grace period. The recommended interest rate and repayment schedule should neither impair the ability of BMC to realize a reasonable return on invested capital nor strain BMC's financial structure. The northern abattoir's projected profits indicate that interest expense and repayment of principal can be met. The difference between the interest rate on the loan from AID to the GOB and the interest rate on the sub-loan from the GOB to the BMC will be used for development projects in Botswana.

It is doubtful if the BMC could obtain a commercial loan because of the dearth of capital in the commercial markets. However, even if commercial financing could be obtained, the higher interest rate and shorter maturity period would be onerous for BMC. Moreover the increase in fixed charges over a shorter period, probably 5 years, would penalize the small traditional herder because BMC would have to reduce cattle buying prices to cover a higher debt repayment. Additionally the GOB would be deprived of critically needed funds to finance development projects.

The GOB debt has grown by more than five times since 1971, reaching about $174 million in early 1974. As of mid-1974 the United Kingdom and the IBRD were the GOB's largest creditors. The GOB's expenditures to service the public debt have increased from $1.5 million in 1971 to about

$4.4 million in 1974. Public debt servicing accounts for about 7 percent of total recurrent expenditures and about 4 percent of the value of exports. The long-term debt and debt servicing is at an acceptable level, therefore, it is concluded that there are reasonable prospects for repayment of this loan.

D. Sales Projections

All boneless meat processed at the northern abattoir will be directed to Zambia and Zaire since both countries are net importers of large volumes of meat. Their combined annual meat deficit is in excess of 60,000 carcasses. In 1973 the BMC supplied Zambia with 30,714 carcass equivalents and Zaire is presently purchasing 11,885 carcass equivalents per year. Offal will be sold to Zambia, Zaire and the Republic of South Africa. Bonemeal will be sold to local cattle herders. Other by-products, such as carcass meal, fats, bloodmeal, hoof and hornmeal will be sold in South African markets. Zambia and South Africa are buyers of hides.

Selling prices for processed meat and by products are based on 1974 prices and utilized throughout the projected years 1978-1984. This method is employed in order to present a conservative revenue picture and avoid overstating profit projections. Following is a summary of projected meat and hide sales from the northern abattoir. The quantity and weight of the hides are not included in the following chart. See Annex Q for a definitive breakdown of projected sales.

($ and Kilos in 000)

	Zambia		Zaire		South Africa		Totals	
	Kgs.	$	Kgs.	$	Kgs.	$	Kgs.	$
1978	2,640	4,214	700	1,260	820	316	4,160	5,789
1979	6,600	10,807	1,750	2,744	2,050	921	10,400	14,472
1980	7,300	12,067	2,219	3,369	2,337	1,062	11,856	16,498
1981	7,300	12,067	2,219	3,369	2,337	1,062	11,856	16,498
1982	8,400	13,583	2,789	4,546	2,747	1,264	13,936	19,393
1983	8,400	13,583	2,789	4,546	2,747	1,264	13,936	19,393
1984	8,400	13,583	2,956	4,815	2,788	1,284	14,144	19,682

E. Financial Analysis

Estimated operating costs appear realistic although differing somewhat from what the Lobatse abattoir has experienced. Cattle purchasing is the most important single cost item and represents 66.8 percent of projected gross sales which compares with Lobatse's ratio of cattle purchases to gross sales of 66 percent in 1974. This increased percentage over prior years reflects BMC's policy of paying higher prices during the year and disbursing little or no bonus at the end of the year. The cattle buying price is set at $196 per animal, representing the average price paid to producers in 1974 and at the beginning of 1975. The cost estimates for labor, materials and utilities are based either on prevailing rates or are slightly higher, thereby making them conservative. Production and overhead costs (6.6 percent of sales) are comparable with Lobatse's, as are the estimated selling and transportation costs. Lobatse's selling expenses in 1974 were seven percent of sales. This lower than usual rate was realized because the majority of sales were within southern Africa. Since the northern abattoir's projected sales are assumed to take place in the same market it appears reasonable to use seven percent of sales for selling expenses. Net income to sales percentage is lower than Lobatse, albeit reasonable in view of the interest on debt and greater depreciation expense incurred because of a new plant and processing a smaller number of animals. Net income as percentage of sales is 5.5 percent in 1982 and grows to 6.5 percent by 1984. See Annex R for a pro forma income statement, and Annex T for production and overhead costs.

In the initial year the northern abattoir incurs a loss due primarily to pre-operating costs (prior years interest on debt), opening the plant in mid 1978 and operating at 24 percent of rated capacity. This two million dollar loss will be absorbed by the BMC and offset by later years retained earnings. After the initial year the northern abattoir maintains a positive cash flow position and in 1982 a positive profit position, covering both interest and principal payments. See Annex S for the long-term debt amortization schedule. The northern abattoir's income break-even point would be 63,138 cattle throughput or 75 percent rated capacity of the plant. In 1984 the abattoir should be financially viable, returning 9.5 percent on total invested capital. The pay back period for the abattoir (number of years it takes to recover original investment from net income before depreciation) will be nine years.

As mentioned previously the northern abattoir will operate independently, but will function as a second abattoir within the Botswana Meat Commission's corporate structure. Future income statements and balance sheets will be consolidated. Thus, BMC's sound capital structure will provide adequate assurance of repayment of the long-term debt incurred for the construction and equipping of the northern abattoir. See Annex U for projected funds flow statement for the northern abattoir and Annex V for the pro forma balance sheet for the proposed northern abattoir.

F. Economic Evaluation

Although endowed with adequate rangeland and a healthy livestock environment, Botswana is however faced with a dearth of capital resources and skilled manpower. Consequently, the GOB's progress in developing the livestock sector is limited. Therefore in order to maintain livestock production growth and to process the ever increasing cattle numbers being offered by cattle producers, a second abattoir is required.

Notwithstanding the need for a second abattoir to absorb the increasing national herd offtake that cannot be handled economically by the Lobatse plant, the proposed abattoir would also produce additional benefits to the national economy in general and the northern area of Botswana in particular. Some important benefits that would result from a second abattoir in northern Botswana are (1) increased offtake of older cattle not able to withstand the arduous walk or trucking to Lobatse; (2) animals that are normally walked to Lobatse will now be 2-3 times closer and arrive in better condition and with less weight loss; (3) for the producers in the north who normally truck or rail cattle to the abattoir a transport cost savings would be realized; (4) the proposed abattoir would be closer to markets in Zambia and Zaire; (5) the second abattoir would offer contact to many traditional herders who are now unaware of market information and therefore are depending on traders and speculators to buy their cattle; (6) the second abattoir would develop an industry in northern Botswana and offer employment for approximately 300-500 people. Finally the proposed abattoir would increase Botswana's foreign exchange earnings by processing greater quantities of meat for export markets.

Livestock is, and will continue to be, the main basis of rural development in Botswana. The long-term world marketing prospects for Botswana's meat products are excellent. Beef prices in export centers are rising along with the demand for beef. Because of this, expansion of livestock production should provide an increase in incomes and greater social benefits for the rural people of Botswana.

Financial and economic analyses indicate that the project should have an economic internal rate of return of 21.5 percent and in 1984 produce a 9.5 percent financial return on invested capital. See Annex W for the internal rate of return computation. The economic rate of return would remain acceptable even with unfavorable assumptions. Sensitivity analyses have been conducted to determine the rate of return if (1) sales revenues decreased by 5 percent; and (2) if construction costs increased by 25 percent. If these adverse assumptions take place then the economic rate of return would drop to 16 percent and 18.1 percent respectively. In all cases the rate of return would be greater than 12 percent, the opportunity cost of capital in Botswana.

Incidence of Other Benefits

The traditional herder will be the principal recipient of incremental benefits derived from constructing a second abattoir in northeastern Botswana. The estimated 537,000 cattle in the catchment area of the abattoir are owned by approximately 9,000 traditional herders. The placement of the abattoir in a densely populated cattle region will assure the traditional herder direct access to the plant. Consequently, the herder can establish a marketing link and not rely on traders or speculators to process his cattle. Equally important is a shorter trekking distance to the abattoir than to Lobatse.

Real benefits, but unfortunately unquantifiable, include an increase in cattle selling receipts for many of the 9,000 herders through the elimination of middle men. Transportation cost savings are predicted from avoiding having to ship the animals onward to Lobatse along with corresponding savings by preventing small weight and grade loss usually experienced during transporting by rail from Francistown to Lobatse. Additional, but also unquantifiable, benefits will result as a number of old cattle not able to stand the trek to Lobatse will probably be processed through the new abattoir and as herders increase herd offtake because of direct access to the abattoir. Following are projected and measurable yearly savings for 9,000 herders processing approximately 60,000 cattle (10 percent offtake of cattle in the area) per year through the proposed abattoir after 1978.

The Hukku Report of 1971 estimates that average weight and grade loss experienced by cattle during trekking for several weeks or being railed from northern Botswana to the Lobatse abattoir, a distance of over 400 miles, is 41.3 kilos, representing $26.10 per animal. The Experience Incorporated report of 1973 estimates a 13.6 kilos weight loss and half of a grade loss for a total value of $8.70 per animal. An additional cost savings, and one easily determined, is the transport savings resulting in eliminating the Francistown/Lobatse rail cost. The cost of transporting one animal to Lobatse averages $8. Therefore the combined conservative cost savings per animal would be $16.70 (Experience Incorporated's weight/grade loss of $8.70 and $8 transport savings). This gives a total value of $1,002,000 (60,000 cattle offtake X $16.70), or $111 yearly per traditional herder.

It would appear that the small herder and primarily the poorer element of Botswana's cattle owners, situated in the north, will benefit directly from the proposed abattoir. Furthermore, cattle production should be stimulated in northern Botswana and employment opportunities created for upwards of 500 Batswana. An active beef production area provides considerable secondary employment throughout the year in the more labor-intensive processes involved in taking cattle from the rangeland through the abattoir and involvement in important industries such as hides, skins and other by-products. Finally the establishment of an abattoir and town provides a further focal point for growth and should lead to building expertise in complementing industries and services, accruing additional benefits to the economy.

The estimated aggregate number of Batswana who would benefit from the project would be the 9,000 traditional herders and 500 people employed in the processing of livestock and the service sector, plus family members (average 6 people to a family), resulting in a total of 57,000 Batswana.

VII. Project Implementation

A. Implementation Plan

The phasing of the proposed northern abattoir should follow the implementation schedule listed below. REDSO staff will closely supervise and monitor the architectural and engineering design operations of the A & E firm and maintain contact with the appropriate GOB implementing agencies (GOB Ministry of Agriculture and the BMC) to ensure timely coordination of critical events for the project. See Annexes Y, P and X for the advertisement placed in the Commerce Business Daily (CBD), proposed A & E scope of work and a bar graph indicating the implementation schedule respectively.

CBD Advertisement for A&E firm	April 1975
Authorize Loan	May 1975
Negotiate and sign Loan Agreement	June 1975
Architect/Engineer Design Selection	August 1975
Prequalify Construction Contractors	Feb-Mar 1976
Complete Design Work	April 1976
Issue Bidding Documents and Plans	June 1976
Open Bids (60-day period)	August 1976
Award Construction Contract	August 1976
Start Construction	September 1976
Issue Bidding Documents for Plant Equipment	November 1976
Award Contracts for Plant Equipment	January 1977
Final Equipment Arrives	June 1978
Complete Construction	August 1978

B. Evaluation Plan

The Phase II Project Paper to finance construction and equipping the northern abattoir will include an evaluation plan recommending that a team, consisting of a sociologist, livestock expert and economist conduct an evaluation three years after the second abattoir is completed. The evaluation team would review national herd offtake, composition of national herd, traditional herders' incomes and herd size, livestock management practices which have been acquired and utilized by traditional herders and review the general operation of the abattoir.

In order to carry out an effective evaluation a review and appraisal should be made of the existing livestock data and information regarding the practices of traditional herders to ascertain if sufficient material is available to establish a base to use in evaluating the performance of the project. REDSO and OSARAC recommend: that grant funding be provided for an AID/W evaluation team to visit Botswana some time within FY 76 to review and determine if existing data is adequate to serve as baseline data for the proposed evaluation.

C. Environment

The proposed abattoir should, among other things, encourage the traditional herder to increase herd offtake thereby decreasing the number of animals that are taxing the water and range resources in certain areas of Botswana. Additionally, traditional herders should be prompted to acquire and practice modern range and livestock methods, which would result in preserving the rangeland. The A & E's scope of work under this Loan includes an environmental appraisal assessing the affects that the proposed project will have on the area. The Phase II Project Paper to finance the construction and equipping of the proposed abattoir will contain a definitive environmental analysis.

VIII. Conditions and Covenants

Conditions precedent to disbursement of the Loan and covenants follow the standard clauses normally used in A.I.D. Loan Agreements plus four special conditions precedent and one covenant.

Besides containing the normal conditions precedent clauses the Loan Agreement includes: (1) a reloan agreement between the GOB (Borrower) and the Botswana Meat Commission (BMC) in accordance with the terms of the A.I.D. and GOB Loan Agreement; (2) evidence of the source and availability of a water supply sufficient for contractors to construct the proposed abattoir and also for the operation of the abattoir at maximum plant capacity; (3) an opinion of legal counsel that BMC is a legal entity under the laws of Botswana, and that the BMC has the powers and ability to carry out its obligations under the terms of the reloan agreement between the GOB and the BMC; and (4) certified copies of the statutes, ordinances, regulations, charters, by-laws, licenses and other authorities or documents governing the operations of the BMC.

Additionally the A.I.D. Loan Agreement includes a special covenant requiring that the GOB/BMC provide qualified and experienced management for the project, and the GOB/BMC will train staff to carry out the maintenance and operation of the project. Also a covenant to be considered for the reloan agreement is a statement that the BMC will not, in any financial year, incur total debt in excess of $500,000 equivalent; or undertake any expansion program or acquire capital assets in excess of $300,000 equivalent, without the A.I.D.'s and the GOB's prior agreement. Furthermore, any debt incurred by BMC will be subordinate to the debt stated in the reloan (senior debt) between the GOB and the BMC.

ANNEX A

CHECKLIST OF STATUTORY CRITERIA

In the right-hand margin, for each item, write answer or, as appropriate, a summary of required discussion. As necessary, reference the section of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended

FAA, 1973 - Foreign Assistance Act of 1973

App. - Foreign Assistance and Related Programs Appropriation Act, 1974

MMA - Merchant Marine Act of 1936, as amended.

I. FULFILLMENT OF STATUTORY OBJECTIVES

A. Needs Which the Loan is Addressing

1. FAA Section 103. Discuss the extent to which the loan will alleviate starvation, hunger and malnutrition, and will provide basic services to poor people enhancing their capacity for self-help.	The project will assist in correcting these social imbalances by providing a facility to process meat and will increase incomes of traditional herders. See Section VI.F.
2. FAA Section 104. Discuss the extent to which the loan will increase the opportunities and motivation for family planning; will reduce the rate of population growth; will prevent and combat disease; and will help provide health services for the great majority of the population.	Not applicable.
3. FAA Section 105. Discuss the extent to which the loan will reduce illiteracy, extend basic education, and increase manpower training in skills related to development.	The project and related service industries will provide employment for approximately 500 local people.
4. FAA Section 106. Discuss the extent to which the loan will help solve economic and social development problems in fields such as transportation, power, industry, urban development, and export development.	Project will address all of these areas. See Sections III and VI.

5. FAA Section 107. Discuss the extent to which the loan will support the general economy of the recipient country: or will support development programs conducted by private or international organizations.

See Sections IV and VI.

B. Use of Loan Funds

1. FAA Section 110. What assurances have been or will be made that the recipient country will provide at least 25% of the costs of the entire program, project or activity with respect to which such assistance is to be furnished under Sections 103-107 of the FAA?

The GOB has assured AID that it will provide 25% of the project cost. See Section VI.C and Section 5.10 of loan agreement between AID and GOB.

2. FAA Section 111. Discuss the extent to which the loan will strengthen the participation of the urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people to help themselves toward a better life.

See Sections V.D. and VI. F.

3. FAA Section 112. Will any part of the loan be used to conduct any police training or related program (other than assistance rendered under Section 515(c) of the Omnibus Crime Control and Safe Streets Act of 1968 or with respect to any authroity of the Drug Enforcement Administration of the FBI) in a foreign country?

No.

4. FAA Section 113. Describe the extent to which the programs, projects or activities to be financed under the loan give particular attention to the integration of women into the national economy of the recipient country.

See Section III.

5. FAA Section 114. Will any part of the loan be used to pay for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

No.

II. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA §§201(b)(5), 201(b)(7), 201(b)(8), 208. Discuss the extent to which the country is:

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

Botswana has given appropriate emphasis to increasing food production and a second abattoir will indirectly contribute to this goal. See Section III.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment;

The proposed project is a business enterprise. Also, Botswana has established the National Development Bank and foreign mining firms are operating in Botswana.

(c) Increasing the people's role in the developmental process:

The Government's policy is to encourage traditional herders and farmers to participate in development of the country through livestock and marketing coops and extension services. See Sections III and V.D.

(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs:

Major budget allocations are directed to development and recurring non-defense budget items. Agriculture, industry, and communications accounted for over 25% of recurrent expenditures in 1973/74.

(e) Willing to contribute funds to the project or program:

The GOB will make a substantial contribution to this project and have made contributions to projects financed by IDA/IBRD and other donors.

(f) Making economic, social and political reforms such as tax collection improvements and changes in land tenure arrangement; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise;

Within the limits of the segment of its population in the money economy, a tax system was established in 1968. See Section IV.E for a discussion on Land Tenure in Botswana.

(g) Responding to the vital economic, political and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

The GOB has assumed responsibility for local costs of external assistance projects and the 1973-78 National Development Plan is directed to the needs of Botswana.

B. Relations with the United States

1. FAA Sec. 620(c). If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's or a predecessor's unconditional guarantee?

No such indebtedness exists.

2. FAA Sec. 620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprises annual production during the life of the loan?

Not applicable.

3. FAA Sec. 620(e)(1). If assistance is to a government, has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate, or nullify existing contracts or agreements with such citizens or entity, or (c) imposed or enforced discriminatory taxes or other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps, if any, has it taken to discharge its obligations?

Botswana has not taken such steps or actions.

4. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction?	There has been no such action against U.S. property in Botswana.
5. FAA Sec. 620(l). Has the government instituted an investment guaranty program under FAA Sec. 221(b)(1) 234(a)(1) for the specific risks of inconvertibility and expropriation or confiscation?	Yes, to our knowledge.
6. FAA §620(o). Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished.	Not applicable.
7. FAA Sec. 620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan?	No.
8. FAA Sec. 620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed?	No break in relations with the U.S.

C. Relations with Other Nations and the U.N.

1. FAA Sec. 620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?	Not to AID's knowledge.
2. FAA Secs. 620(a), 620(n). Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Vietnam, items of economic, military or other assistance?	Botswana has taken no such action.
3. FAA Sec. 620(u); App. Sec. 107. What is the status of the country's U.N. dues, assessments or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues or arrearages?	To our knowledge, Botswana is not in default of its international obligations. The Loan Agreement bars use of funds to pay U.N. assessments.

D. Military Situation

1. FAA Sec. 620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance	No.
2. FAA Sec. 620(s). What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment, and (c) has the country spent money for sophisticated weapons systems purchased since the statutory limitation became effective?	Answers are as follows (A) about 8% of GOB's 1973/74 budget allocated for internal security which was primarily for the police. (B) Negligible. (C) Botswana has not purchased sophisticated weapons.

2. (2) Is the country diverting U.S. development assistance or PL 480 sales to military expenditures?

No.

2. (3) Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant information.)

No.

III. CONDITION OF THE LOAN

A. General Soundness

Interest and Repayment

1. FAA §§201(d), 201(b)(2). Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest.

The rate of interest is not excessive or unreasonable. See Sections I, VI.C and loan authorization annex.

Financing

1. FAA §201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?

See Sections II.C and VI.C.

Economic and Technical Soundness

1. FAA §§201(b)(2), 201(e). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?

Yes, see Sections VI.B and VI.F.

2. FAA §611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonable firm estimate of the cost of assistance to the U.S., been completed?	This loan is to finance A&E design plans. See Sections VI.B and C.
3. FAA §611(b); App. §101. If the loan or grant is for a water or related land-resources construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?	Not applicable.
4. FAA §611(c). If this is a Capital Assistance Project with U.S. financing in excess of $1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?	Yes. See Annex D.

B. Relation to Achievement of Country and Regional Goals

Country Goals

1. FAA §§207, 281(a). What is this loan's relation to:

(a) Institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development?	Although this loan has no direct relation to this goal, constructing a meat processing plant is certainly a prerequisite to any serious efforts to increase the involvement of its people in the task of development.
(b) Enabling the country to meet its food needs both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity?	The project will assist agricultural development.
(c) Meeting increasing need for trained manpower?	No direct relation.
(d) Developing programs to meet public health needs?	Not applicable.

(c) Assisting other important economic, political, and social development activities, including industrial development, growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws?	This project will provide assistance in most of these areas.
2. FAA §201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to relizable long-range objectives.	See Sections III, IV, and VI.F.
3. FAA §201(b)(9). How will the activity to be financed contribute to the achievement of self-sustaining growth?	See Section VI.F.
4. FAA §201(f). If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.	See Sections III and VI.F.
5. FAA §201(b)(3). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?	See Sections III and VI.F.

6. FAA §281(b). How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.

See Sections III and VI.F. The project will encourage the participation in trade and social endeavors.

7. FAA §601(a). How will this loan encourage the country's efforts to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions?

Answers are as follows:
(a) See Section VI.F.
(b) See Section VI.F.
(c) See Section V.D.
(d) See Sections V.D. and VI.F.
(e) See Section VI.F.
(f) See Section VI.F.

8. FAA §202(a). Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.

The entire proceeds of the loan will finance A&E design from a private firm.

9. FAA §611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?

The GOB Parliament has to approve the loan. There are reasonable indications that the GOB will accomplish the necessary actions in a timely manner to implement the loan.

Regional Goals

1. FAA §619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?

See Section II.C. Other donors have financed projects in the livestock sector.

2. FAA §209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?

Not applicable.

C. Relation to U.S. Economy

Employment, Balance of Payments, Private Enterprise.

The loan will finance the A&E design which will be completed by a U.S. firm.

1. FAA §§201(b)(6); 102. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.

2. FAA §§612(b); 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign owned currencies are utilized in lieu of dollars?

Not applicable.

3. FAA §601(d); App. §108. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?

A U.S. A&E firm will be selected for the design work.

4. FAA §608(a). Provide information measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.	Not applicable.
5. FAA §602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?	The required A&E design work will be advertised in the CBD.
6. FAA §621. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs	A private A&E firm will be utilized.
7. FAA §611(c). If this loan involves a contract for construction that obligates in excess of $100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?	Not applicable.
8. FAA §601(b). Describe the efforts made in connection with this loan to encourage and facilitate participation of private enterprise in achieving the purposes of the Act.	A private A&E firm will be selected for the project.

Procurement

1. FAA §604(a). Will commodity procurement be restricted to U.S. except as otherwise determined by the President?	Yes.
2. FAA §604(b). Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?	No.

3. FAA §604(e). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity?

3 No.

4. FAA §604(f). Will the agency receive the necessary pre-payment certification from suppliers under a commodity import program agreement as to description and condition of commodoties, and on the basis of such, determine eligibility and suitability for financing?

Not applicable.

D. Other Requirements

1. FAA §201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?

Yes.

2. App. §105. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms?

Yes.

3. FAA §620(k). If the loan is for construction of a production enterprise, with respect to which the aggregate value of assistance to be furnished will exceed $100 million, what preparation has been made to obtain the express approval of the congress?

Not applicable.

4. FAA §620(b), 620(f); Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (includin but not limited to, the countries listed in FAA §620(f)) and the loan is intended for economic assistance, have the findings required by FAA §620(f) and App. §109(b) been made and reported to the Congress?

Botswana is not a Communist or Communist-dominated country.

5. FAA Section 620(h). What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?	**The project has no relationship to any Communist bloc project, and the Loan Agreement prohibits such use of loan funds.**
6. FAA Section 636(i). Will any part of this loan be used in financing non-U.S. manufactured automobiles? If so, has the required waiver been obtained?	**No.**
7. FAA Section 620(g). Will any part of this loan be used to compensate owners for expropriated or nationalized property? If any assistance has been used for such purpose in the past, has appropriate reimbursement been made to the U.S. for sums diverted?	**No.**
8. FAA Section 201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?	**The selected A&E firm will probably use Botswana's business community to provide supporting services.**
9. App. Section 103. Will any funds under the loan be used to pay pensions, etc., for persons who are serving or who have served in the recipient country's armed forces?	**No.**
10. MMA Section 901.b. Does the loan agreement provide for compliance with U.S. shipping requirements that at least 50% of the gross tonnage of all commodities financed with funds made available under this loan (computed separately by geographic area for dry bulk carriers, dry cargo liners, and tankers) be transported on privately-owned U.S. flag commercial vessles to the extent such vessels are available at fair and reasonable rates for U.S. flag vessels and that at least 50% of the gross freight revenue generated by all shipments financed with funds made available under this loan and transported on dry cargo liners be paid to or for the benefit of privately-owned U.S. flag commercial vessels?	**Yes.**

11. FAA Section 481. Has the President determined that the recipient country has failed to take adequate steps to prevent narcotic drugs produced or procured in, or transported through, such country from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents or from entering the United States unlawfully?	No.
12. App. Section 110. Is the loan being used to transfer funds to world lending institutions under FAA Sec. 209(d) and Sec. 251(h)?	No.
13 App. Section 601. Are any of these funds being used for publicity or propaganda within the United States?	No.
14. FAA Section 612(d) and Section 40 of PL 93 189 (FAA of 1973). Does the United States own host country excess foreign currency and, if so, what arrangements have been made for its release in compliance with Section 40 (FAA of 1973)?	No.
15. FAA Section 604(d). Will provisions be made for placing marine insurance in the U.S. if the recipient country discriminates against any marine insurance company authorized to do business in the U.S.?	Yes.
16. Section 29 of PL 93 - 189 (FAA of 1973). Is there a military base located in the recipient country which base was constructed or is being maintained or operated with funds furnished by the U.S., and in which U.S. personnel carry our military operations? If so, has a determination been made that the government of such recipient country has, consistent with security, authorized access to such military base on a regular basis to bona fide news media correspondents of the U.S.	No.
17. FAA Section 640(c). Will a grant be made to the recipient country to pay all or part of such shipping differential as is determined by the Secretary of Commerce to exist between U.S. foreign flag vessel charter or freight rates?	No.

18. App. Section 113. Will any of the loan funds be used to acquire currency of recipient country from non-U.S. Treasury sources when excess currency of that country is on deposit in U.S. Treasury?	No.
19. App. Section 114. Have the House and Senate Committees on Appropriations been notified five days in advance of the availability for obligation of funds for the purposes of this project?	Yes.

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FM SECSTATE WASHDC
TO RUEHPCG/AMEMBASSY GABORONE 6394
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RUVQC/AMEMBASSY NAIROBI 7579
INFO RUQMAB/AMEMBASSY ADDIS ABABA 4828
BT
UNCLAS STATE 244576

AIDAC

E.O. 11652: N/A
TAGS:
SUBJECT: BOTSWANA ABATTOIR
NAIROBI FOR REDSO

1. ECPR HELD OCT 24. GUEDET PRESENCE HELPFUL AND APPRECIATED. ON BASIS REVIEW, FOLLOWING GUIDANCE SUGGESTED FOR PP PREPARATION. ECPR MINUTES BEING POUCHED.

2. THREE MAJOR AREAS OF CONCERN DISCUSSED: PROJECT FEASIBILITY, EQUITY ISSUES, AND RELATIONSHIP OF PROJECT TO AID PROGRAM. WITH REGARD FEASIBILITY:

A. IT RECOGNIZED THAT DIFFERENT PRACTICES IN CURRENT USE FOR ESTIMATING FUTURE NUMBER CATTLE AVAILABLE FOR PROCESSING THROUGH ABATTOIR. FOR PURPOSES THIS PROJECT, ESTIMATES OF HERD COMPOSITION/ SIZE AND GROWTH/OFF-TAKE RATES SHOULD BE ARRIVED AT THROUGH CONSTRUCTION BIOLOGICAL MODEL. IT AGREED THAT FORMAT AS PROPOSED IRR ACCEPTABLE FOR PP IF IT TAKES ACCOUNT FOLLOWING SPECIFIC CONCERNS ARISING FROM DISCUSSION INTENSIVE REVIEW: VERIFICATION OF AGE AT WHICH COWS MATURE FOR BREEDING, MORE DETAILED TREATMENT OF OXEN, VERIFICATION OF EFFECTIVE CALVING RATES TO BE USED, IMPACT ON STRUCTURE OF HERD OF RECENT HIGH OFF-TAKE OCCASIONED BY DROUGHT, RECONCILIATION WITH BMC ESTIMATES FOR FY 1974 THROUGHPUT, AND ACCOMODATION OF HERD SIZE EXTRAPOLATIONS TO RANGELAND CARRYING CAPACITY.

B. IT AGREED PP WILL EXPAND ON MARKETING ANALYSIS (CATTLE SUPPLY AND MEAT DEMAND, PARTICULARLY EXTERNAL). IMPACT OF FACILITY LOCATION ON CATTLE SUPPLY FOR NEW AND EXISTING ABATTOIR ALSO WILL BE ADDRESSED.

C. ABATTOIR CAPACITY DISCUSSED AT LENGTH. IT AGREED IT PREMATURE FOR ANY DECISION. PP SHOULD SEEK TO DEFINE ORDER OF MAGNITUDE CAPACITY REQUIREMENTS BASED ON NET PRESENT VALUE CRITERIA AND SUCH OTHER ECONOMIC CRITERIA AS MAY BE RELEVANT TO PARTICULAR SITUATION. ACTUAL PLANT CAPACITY WOULD BE DETERMINED WITHIN CAPACITY RANGE JUSTIFIED IN PP DURING A&E DESIGN.

D. PP SHOULD ADDRESS APPROPRIATE ALLOCATION SUNK COSTS NEW TOWN DEVELOPMENT.

E. MORE COMPLETE JUSTIFICATION FOR PROPOSED LOAN TERMS TO BMC NEEDS BE INCLUDED IN PP. BELIEVE REFERENCE TO COMMERCIAL MARKET NECESSARY AND RATIONALE FOR DEVIATION PRESENTED. SEE M.O. 1052.1.

3. WITH REGARD EQUITY:

A. IF PROJECT BENEFITS WOULD REACH ONLY LIMITED PORTION POPULATION, AS SPECULATED DURING INTENSIVE REVIEW, ANALYSIS OF IMPEDIMENTS TO BROADER PARTICIPATION TRADITIONAL HERDSMEN NEEDS BE INCLUDED IN PP. TO THE EXTENT IDENTIFIED IMPEDIMENTS ARE STRUCTURAL WITHIN THE INDUSTRY (I.E., PATTERNS OF DISTRIBUTION OF CATTLE HOLDINGS), WILL CONSTRUCTION OF A NEW ABATTOIR AGGRAVATE OR AMELIORATE THE PROBLEM? EVEN ASSUMING IMPACT OF ABATTOIR ITSELF INSIGNIFICANT VIS-A-VIS STRUCTURAL PROBLEMS, PP NEEDS ALSO CRITICALLY ASSESS ACTIONS OF GOVERNMENT AND OTHER DONORS IN ADDRESSING STRUCTURAL PROBLEMS WHICH SIGNIFICANTLY IMPACT FULL PARTICIPATION TRADITIONAL HERDSMEN. IN SUM, COMMITTEE CONCERNED THAT PP FULLY EXPLAIN TARGET GROUP OF PROJECT AND DETAIL BENEFITS TO POOREST ELEMENT POPULATION.

B. BMC ANNUAL SURPLUS REVENUES DISTRIBUTION NOW LARGELY GOING TO BIG RANCHERS/MIDDLEMEN/SPECULATORS. QUESTION ASKED WHETHER THIS SITUATION IS A FUNCTION OF THE STRUCTURE OF THE INDUSTRY OR BMC. ANALYSIS BMC OPERATING PROCEDURES NEEDS BE INCLUDED IN PP TO VERIFY THAT BMC ITSELF DOES NOT, IN FACT, DISCRIMINATE AGAINST TRADITIONAL HERDSMEN.

4. WITH REGARD RELATIONSHIP OF PROJECT TO AID PROGRAM:

A. GIVEN SIZE OF PROJECT, PROBABLE TIMING REQUIREMENT FOR NEW PLANT CONSTRUCTION, UNCERTAIN AND RAPIDLY RISING CONSTRUCTION COSTS, AND PD 57, IT DETERMINED PROCEED WITH CONSIDERATION PROPOSED PROJECT ON BASIS SEPARATING A&E LOAN FINANCING FROM CONSTRUCTION.

B. WHILE OSARAC/REDSO AUTHORIZED PROCEED WITH PREPARATION PP FOR A&E, TIMING A&E LOAN WILL BE PREMISED ON PROGRESS WITH DUKWE TOWN DEVELOPMENT. PP SHOULD CAREFULLY ADDRESS THIS ISSUE.

C. OSARAC/REDSO MAY WISH CONSIDER UTILIZING TWO-STEP SPREAD FOR ALLOCATION TO LIVESTOCK DEVELOPMENT ACTIVITY IN REGION OF INFLUENCE PROPOSED NEW ABATTOIR. WHILE THIS NOT USUAL PRACTICE, IT MAY BE POSSIBLE THIS CASE AND RELEVANT IN ADDRESSING EQUITY ISSUE IN MORE COMPREHENSIVE FASHION THAN POSSIBLE WITH PROJECT ITSELF.

D. BASED ON ANALYSIS PARAS 3A and 4C ABOVE, OSARAC/REDSO MAY WISH ALSO EXPLORE POSSIBLE AREAS FOR ADDITIONAL AID LIVESTOCK INVOLVEMENT IN BOTSWANA RELATED TO EXPANDED OPPORTUNITIES FOR TRADITIONAL HERDSMEN AND WHICH MAY COMPLEMENT PROPOSED PROJECT.

E. FOR NUMBER OF REASONS IT DESIRABLE COORDINATE PROJECT PLANNING CLOSELY WITH IBRD. BOTH FIELD AND WASHINGTON SHOULD KEEP EACH OTHER CURRENTLY INFORMED CONSULTATIONS WITH BANK. INGERSOLL

Life of Project
From FY75 to FY77
Total U.S. Funding $1.0 million
Date Prepared: March 27, 1975

LOGICAL FRAMEWORK

Sector Goal	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
To assist the GOB to improve the living standards for the rural population both through an increase in the production of livestock in the rural areas and the improvement of social facilities and to increase foreign exchange earnings.	1. Improved equity of income distribution over the long term (20 years). 2. Increased foreign exchange earnings attributable to meat exports.	National Income Accounts. Annual Reports of the Botswana Meat Commission.	1. GOB financially and politically supports objectives of the Livestock and Rural Development sections in GOB National Development Plan 1973-78 . 2. Botswana's export meat has access to and acceptable in international markets.
Project Purpose	**End of Project Status**		
To improve the development of the livestock industry through the establishment of livestock marketing facilities; to ensure that the processing of raw materials is done within Botswana; and to create employment opportunities in the rural areas.	1. Traditional herders directly supply at least 90 percent of the abattoir's yearly cattle throughput by 1982. 2. Offtake of national herd increased to 11 percent by 1982. 3. Increase average Cold Dressed Weight to 210 kgs. per animal by 1982. 4. The employment of at least 300 people for operating the abattoir	Annual Reports of Botswana Meat Commission and GOB Ministry of Agriculture. Same as above. Same as above. Same as above and GOB National Income Accounts.	1. GOB fosters policies favorable to sustained livestock production 2. Botswana Meat Commission continues to operate as purchasing, processing and marketing institution.

Sector Goal	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Outputs A completed and operational abattoir capable of 350 cattle per day throughput and including staff housing for managers and laborers totaling approximately 300 people.	1 Operating at or near 75% throughput capacity by 1982. 2. Abattoir exporting processed meat to overseas and african markets. (63,000 carcasses by by 1984).	Botswana Meat Commission's Annual Reports. Same as above and GOB trade reports.	Botswana Meat Commission continues to operate as purchasing, processing and marketing institution.
Inputs AID provides a loan to finance all foreign exchange costs and a portion of the local costs to design an abattoir to process 350 cattle per day. The GOB will provide funds to cover a portion of the local costs.	Implementation Plan presented in Project Paper.	1. GOB Budget 2. AID Loan Authorization. 3. Loan Agreement signed. 4. A & E Design Contract.	The BMC/GOB are committed to developing the infrastructure for the project and the GOB provides housing units for the abattoir's staff.

ANNEX D

SECTION 611E CERTIFICATION

NORTHERN ABATTOIR-BOTSWANA

I, Charles D. Ward, the principal officer of the Agency for International Development in the Southern Africa Region (OSARAC), having taken into account, among other things, the maintenance and utilization of projects in Botswana previously financed or assisted by the United States (specifically the Shashe project and the Livestock and Range Management project), the performance of the Ministry of Agriculture which has responsibility for implementing and maintaining livestock projects in Botswana, and the previous assistance from other donors specifically directed to livestock development, do hereby certify that in my judgement the Government of Botswana has both the financial capability and the human resource capability to effectively maintain and utilize the capital assistance project to be carried out under this loan.

Charles D. Ward

~~Charles D.~~ Ward
Regional Development Officer

Date: March 19, 1975

APPENDIX

TRADITIONAL HERD	MORTALITY RATE	1972	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1973	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1974	CARRY POP. TO YEAR END	DEATHS	OFFTAKE
FEMALES													
CALVES	10%	160	152	15	-	137	164	16	-	149	179	17	-
HEIFERS 1-2 yrs.	6%	110	101	10	-	158	137	4	-	175	148	9	-
HEIFERS 2-3 yrs.	5%	150	160	8	-	152	156	2	-	150	129	6	-
COWS 3-4 yrs	5%	150	150	7	-	143	152	3	-	144	150	8	-
COWS over 4 yrs	6%	600	758	45	30	675	818	49	41	768	872	52	44
MALES													
CALVES	10%	163	152	15	-	137	164	16	-	149	179	17	-
YOUNG BULLS 1-2 yrs	6%	131	109	10	-	159	137	4	-	169	148	9	-
OXEN	5%	150	143	8	34	166	165	1	57	121	150	9	56
DRAFT OXEN	4%	250	309	14	45	290	309	11	46	249	301	14	45
BULLS	5%	35	54	3	11	50	57	1	11	43	55	3	11
TOTAL TRADITIONAL POP.		1,531				1,?7?				1,991			
TRADITIONAL OFFTAKE					143				195				156
COMMERCIAL HERD		290				203				296			
COMMERCIAL OFFTAKE					4?				57				57
NATIONAL TOTAL		[illegible]				[illegible]				2,477			
TOTAL OFFTAKE					1?9				212				213
OFFTAKE PERCENTAGE					9.0				6.9				9.4

TRADITIONAL HERD	1975	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1976	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1977	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1978	CARRY POP. TO YEAR END	DEATHS	OFFTAKE
FEMALES																
CALVES	157	184	18	-	166	185	18	-	167	188	19	-	169	192	19	-
HEIFERS 1-2 yrs.	139	157	9	-	148	166	10	-	156	167	10	-	157	169	10	-
HEIFERS 2-3 yrs.	123	130	7	-	132	148	7	-	141	156	8	-	148	157	8	-
COWS 3-4 yrs	142	123	6	-	117	132	7	-	125	141	7	-	134	148	7	-
COWS over 4 yrs	776	918	55	55	808	965	55	56	814	930	56	56	827	961	57	58
MALES																
CALVES	157	184	18	-	166	185	18	-	167	188	19	-	169	192	19	-
YOUNG BULLS 1-2 yrs	139	157	9	-	148	166	10	-	156	167	10	-	157	169	10	-
OXEN	123	193	10	58	125	199	10	64	125	211	10	68	133	243	12	83
DRAFT OXEN	242	297	13	45	239	258	13	45	240	255	13	44	238	273	12	41
BULLS	41	55	3	11	41	56	3	11	42	57	3	11	43	55	3	11
TOTAL TRADITIONAL POP.	2,039				2,050				2,133				2,175			
TRADITIONAL OFFTAKE				169				176				179				193
COMMERCIAL HERD	269				290				293				296			
COMMERCIAL OFFTAKE				53				58				59				59
NATIONAL TOTAL	2,329				2,380				2,426				2,471			
TOTAL OFFTAKE				227				234				238				252
OFFTAKE PERCENTAGE				9.7				9.8				9.8				10.2

TRADITIONAL HERD	1979	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1980	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1981	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1982	CARRY POP. TO YEAR END	DEATHS	OFFTAKE
FEMALES																
CALVES	173	197	20	-	177	200	20	--	180	203	20	-	183	206	21	-
HEIFERS 1-2 yrs.	159	173	10	-	163	177	11	-	166	180	11	-	169	183	11	-
HEIFERS 2-3 yrs.	149	159	8	-	151	163	8	-	155	166	8	-	158	164	8	2
COWS 3-4 yrs	141	149	7	-	142	151	7	-	144	155	8	-	147	158	8	2
COWS over 4 yrs	846	907	59	69	859	1,001	60	70	871	1,015	61	71	883	1,030	62	72
MALES																
CALVES	173	197	20	-	177	200	20	-	180	203	20	-	183	206	21	-
YOUNG BULLS 1-2 yrs	159	173	10	-	183	177	11	-	166	180	11	-	169	183	11	-
OXEN	148	259	13	88	158	272	14	98	160	276	14	99	163	281	14	107
DRAFT OXEN	220	255	12	38	205	238	11	36	191	224	10	34	180	214	13	32
BULLS	41	54	3	11	40	56	3	11	42	59	43	12	44	61	3	12
TOTAL TRADITIONAL POP.	2,209				2,235				2,255				2,279			
TRADITIONAL OFFTAKE				206				215				216				227
COMMERCIAL HERD	299				302				305				308			
COMMERCIAL OFFTAKE				60				60				62				64
NATIONAL TOTAL	2,508				2,537				2,560				2,587			
TOTAL OFFTAKE				266				275				277				291
OFFTAKE PERCENTAGE				10.6				10.8				10.8				11.1

TRADITIONAL HERD	1983	CARRY POP. TO YEAR END	DEATHS	OFFTAKE	1984	CARRY POP. TO YEAR END	OFFTAKE
FEMALES							
CALVES	185	209	11	-	188		
HEIFERS 1-2 yrs.	178	185	11	-	179		
HEIFERS 2-3 yrs.	159	172	9	2	161	179	2
COWS 3-4 yrs	148	159	8	2	149	161	2
COWS over 4 yrs	896	1,044	63	73	908	1,257	79
MALES							
CALVES	185	209	21	-	188		
YOUNG BULLS 1-2 yrs	178	185	11	-	179		
OXEN	140	284	14	108	15?	286	109
DRAFT OXEN	172	206	10	31	165	200	30
BULLS	46	60	3	12	45	60	12
TOTAL TRADITIONAL POP.	2,295				2,314		
TRADITIONAL OFFTAKE				228			239
COMMERCIAL HERD	311				314		
COMMERCIAL OFFTAKE				62			63
NATIONAL TOTAL	2,606				2,629		
TOTAL OFFTAKE				290			302
OFFTAKE PERCENTAGE				11.1			11.1

OFFTAKE PERCENTAGES

Heifers 2-3 yrs - 1% from 1982; same 3-4 yrs. - 1% from 1982
Cows 5% to 1975; 6% from 1975 to 1978 and 7% from 1979
Oxen 30% to 1975; 32% for 1976 and 1977; 34% 1978 and 1979; 3?% 1980 and 1981 and 3?% from 1982.
Draft Oxen 15%
Bulls 20%
Bull/Cow Ratio 1/40
Calving Percentage 60%

ANNEX E1

APPENDIX

TRADITIONAL HERD

TRADITIONAL HERD	MORTALITY RATE	1972	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1973	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1974	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1975	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE
FEMALES																	
CALVES	[illegible]	160	192	15	-	137	164	16	-	142	174	17	-	157	164	18	-
HEIFERS 1-2 yrs.	[illegible]	166	164	10	-	158	137	[illegible]	-	129	148	9	-	139	157	9	-
HEIFERS 2-3 yrs.	[illegible]	150	160	8	-	152	158	[illegible]	-	150	149	6	-	123	139	7	-
COWS 3-4 yrs	[illegible]	150	150	7	-	143	152	3	-	144	150	8	-	142	123	6	-
COWS over 4 yrs	[illegible]	608	758	45	30	675	818	49	41	748	872	52	44	776	918	55	55
MALES																	
CALVES	[illegible]	163	192	15	-	137	164	16	-	148	174	17	-	157	184	18	-
YOUNG BULLS 1-2 yrs	[illegible]	131	149	10	-	159	137	[illegible]	-	149	148	9	-	139	157	9	-
OXEN	[illegible]	131	173	0	94	106	165	[illegible]	57	123	180	9	56	123	173	10	58
DRAFT OXEN	[illegible]	250	303	14	45	252	309	14	46	245	303	14	45	242	297	13	45
BULLS	[illegible]	39	54	3	11	40	57	3	11	41	55	3	11	41	55	3	11
TOTAL TRADITIONAL HERD		1,931				1,947				1,954				2,039			
TOTAL TRADITIONAL OFFTAKE					143				155				156				169
COMMERCIAL HERD		280				283				296				269			
COMMERCIAL OFFTAKE					[illegible]				57				57				58
TOTAL HERD		2,211				2,230				2,2[illegible]				2,329			
TOTAL OFFTAKE					149				212				213				227
OFFTAKE PERCENTAGE					9.0				9.4				9.4				9.7

TRADITIONAL HERD	1976	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1977	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1978	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1979	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE
FEMALES																
CALVES	166	165	18	-	167	188	19	-	169	192	19	-	173	197	20	-
HEIFERS 1-2 yrs.	148	166	10	-	156	167	10	-	157	169	10	-	159	173	10	-
HEIFERS 2-3 yrs.	132	148	7	-	141	156	8	-	148	157	8	-	149	159	8	-
COWS 3-4 yrs	117	132	7	-	125	141	7	-	134	148	7	-	141	149	7	-
COWS over 4 yrs	808	965	55	56	814	939	56	56	827	961	57	58	846	987	58	69
MALES																
CALVES	166	165	18	-	167	188	19	-	169	192	19	-	173	197	20	-
YOUNG BULLS 1-2 yrs	148	166	10	-	156	167	10	-	157	163	10	-	159	173	10	-
OXEN	125	199	10	64	125	211	10	68	133	243	12	83	148	259	13	88
DRAFT OXEN	239	298	13	45	240	295	13	44	230	273	12	41	220	255	12	38
BULLS	41	56	3	11	42	57	3	11	43	55	3	11	41	54	3	11
TOTAL TRADITIONAL HERD	2,090				2,111				2,175				2,209			
TOTAL TRADITIONAL OFFTAKE				176				179				193				206
COMMERCIAL HERD	290				293				296				299			
COMMERCIAL OFFTAKE				58				59				59				60
TOTAL HERD	2,380				2,404				2,471				2,508			
TOTAL OFFTAKE				234				238				252				266
OFFTAKE PERCENTAGE				9.8				9.8				10.2				10.6

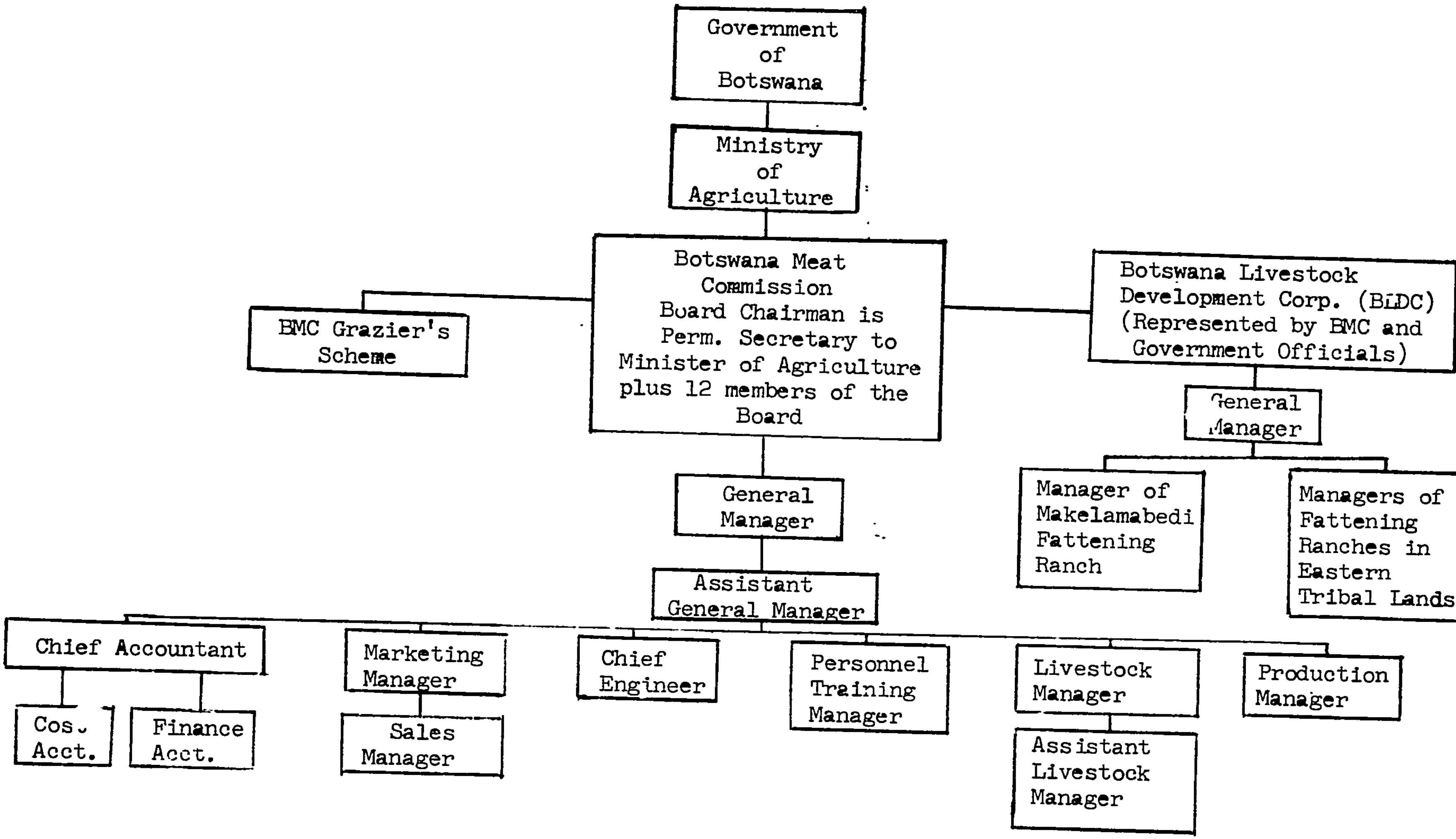
TRADITIONAL HERD	1980	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1981	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1982	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1983	CARRY FORWARD TO YEAR END	DEATHS	OFFTAKE	1984	CARRY FORWARD TO YEAR END	OFFTAKE
FEMALES																			
CALVES	177	200	20	-	180	203	20	-	183	206	21	-	185	208	21	-	188		
HEIFERS 1-2 yrs.	163	177	11	-	166	180	11	-	169	163	11	-	178	185	11	-	174		
HEIFERS 2-3 yrs.	151	161	8	-	155	166	8	-	158	169	8	2	159	172	9	2	161	170	2
COWS 3-4 yrs	143	151	7	-	144	155	8	-	147	158	8	2	148	159	8	4	149	161	2
COWS over 4 yrs	859	1,001	60	70	871	1,015	61	71	883	1,030	62	72	896	1,044	63	73	938	1,257	74
MALES																			
CALVES	177	200	20	-	180	203	20	-	183	206	21	-	185	209	21	-	188		
YOUNG BULLS 1-2 yrs	163	177	11	-	166	180	11	-	169	183	11	-	172	185	11	-	174		
OXEN	153	272	14	98	160	276	14	99	163	281	14	107	160	284	14	108	162	286	169
DRAFT OXEN	205	238	11	36	191	224	10	34	180	219	16	32	173	206	10	31	165	200	30
BULLS	40	56	3	11	42	59	43	12	44	61	3	12	46	60	3	12	45	60	12
TOTAL TRADITIONAL HERD	2,235				2,255				2,279				2,295				2,314		
TOTAL TRADITIONAL OFFTAKE				215				216				227				228			239
COMMERCIAL HERD	302				305				308				311				314		
COMMERCIAL OFFTAKE				60				61				62				62			63
TOTAL HERD	2,537				2,560				2,587				2,606				2,629		
TOTAL OFFTAKE				275				277				289				290			302
OFFTAKE PERCENTAGE				10.8				10.8				11.1				11.1			11.1

OFFTAKE PERCENTAGES

Heifers 2-3 yrs - 1% from 1982; cows 3-4 yrs. - 1% from 1982
Cows 5% to 1974; 6% from 1975 to 1978 and 7% from 1979
Oxen 30% to 1975; 32% for 1976 and 1977; 34% 1978 and 1979; 3[illegible]% 1980 and 1981; and 35% from 1982.
Draft Oxen 15%
Bulls 20%
Bull/Cow Ratio 1/20
Calving Percentage 63%

ANNEX E

Organizational Chart for Botswana Meat Commission



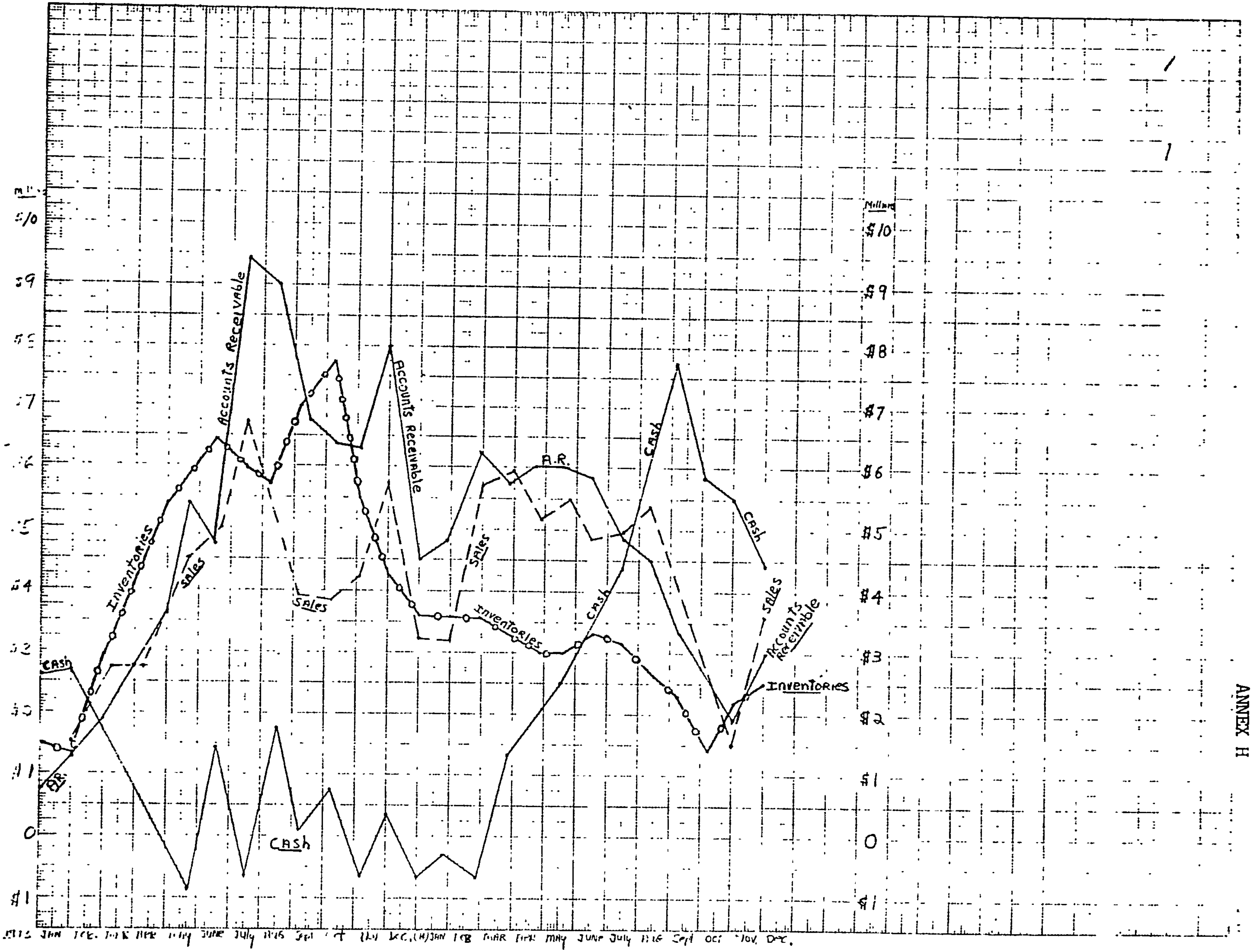
Annex F

ANNEX G

Balance Sheet
($000)

	1966	1967	1968	1969	1970	1971	1972	1973
Current Assets:								
Cash	2	1,683	2,002	1,487	2,200	1,584	3,121	2
Accounts Receivable	1,497	1,048	958	795	1,291	1,698	644	4,166
Inventories	3,580	432	150	332	335	1,616	1,495	3,546
Supplies	319	297	302	394	560	646	733	662
Livestock (Grazier Scheme)				119	454	476	1,394	1,277
Other Assets						1	1	150
Total Current Assets:	5,398	3,460	3,412	3,127	4,840	6,021	7,358	9,803
Fixed Assets:								
Land	27	27	31	74	75	76	76	76
Buildings	2,327	2,657	2,760	2,959	3,300	3,385	3,654	3,742
Machinery [illegible]ipment	2,796	3,193	3,283	3,560	3,666	3,740	4,332	4,606
Capital [illegible]in Progress	300	90	111	294	53	587	84	689
Gross Fixe[illegible]ssets	5,450	5,967	6,185	6,887	7,094	7,788	8,146	9,113
Less Accumulated Depreciation	1,907	2,126	2,491	2,885	3,322	3,793	4,330	4,950
Net Fixed Assets	3,543	3,841	3,694	4,002	3,772	3,995	3,816	4,163
Total Assets:	8,941	7,301	7,106	7,129	8,612	10,016	11,174	13,966
Liability & Equity:								
Current Liabilities								
Short-Term Debt	3,014				897	917	479	499
Accounts Payable	1,117	823	365	366	320	605	666	898
Estimated Income Taxes Payable	609	1,088	1,033	855	1,252	1,695	2,369	4,024
Other Current Liabilities	53	123	188	207	153	190	159	102
Total Current Liabilities	4,793	2,034	1,586	1,428	2,622	3,407	3,673	5,523
Long-Term Debt	1,053	1,405	1,258	1,110	962	897	697	481
Total Liabilities:	5,846	3,439	2,844	2,538	3,584	4.304	4,370	6,004
Equity:								
Paid-in Capital	2,299	2,303	2,303	2,303	2,303	2,303	2,303	2,303
Cattle Stabilization Fund	215	363	363	363	363	544	906	1,269
Unrealized Surplus on Devaluation		200	175	150	125	18	45	88
Retained Earnings:								
Appropriated for:								
Development Reserve	216	355	504	640	826	1,068	1,295	1,599
Loan Redemption Reserve	93	241	388	536	684	831	1,011	1,145
Asset Renewal Reserve	272	388	512	599	710	935	1,189	1,479
Unappropriated Earnings:		12	17		17	13	55	79
Total Equity	3,095	3,862	4,262	4,591	5,028	5,712	6,804	7,962
Total Liabilities & Equity	8,941	7,301	7,106	7,129	8,612	10,016	11,174	13,966
Liquidity Ratio:								
Current Assets/Current Liabilities	1.13	1.70	2.15	2.19	1.85	1.77	2.0	1.78

SOURCE: BMC's Reports and Accounts


Accounts Receivable
Accounts Receivable
A.R.
Cash
Cash
Cash
Cash
Inventories
Inventories
Inventories
Sales
Sales
Sales
Sales
Accounts Receivable
$10
$9
$8
$7
$6
$5
$4
$3
$2
$1
0
$1
Jan
Apr
June
July
Sept
Dec.
Jan
Mar
May
June
July
Sept
Oct
Nov.
Dec.

ANNEX H

Income Statement
($000)

	1966	1967	1968	1969	1970	1971	1972	1973
Gross Sales:	12,451	17,827	16,878	14,856	20,001	24,797	32,742	52,392
Less selling & transport expenses	2,583	1,704	1,518	1,322	2,724	3,102	4,400	7,011
Net Sales	9,868	16,123	15,360	13,534	17,277	21,695	28,342	45,381
Less Income Taxes	542	1,112	1,028	855	1,255	1,693	2,366	4,019
	9,326	15,011	14,332	12,679	16,022	20,002	25,976	41,362
Cost of Sales:								
Purchasing of livestock	9,315	8,359	10,061	9,634	11,960	14,853	16,587	29,006
Production, processing & overhead	1,390	1,567	1,606	1,392	1,741	2,528	2,568	3,578
Depreciation	255	342	381	395	451	476	540	631
Inventory Adjustment	(3,564)	3,148	282	(182)	(2)	(1,282)	151	(2,080)
Total Cost of Sales:	7,396	13,416	12,330	11,239	14,150	16,575	19,846	31,135
Operating Income	1,930	1,595	2,002	1,440	1,872	3,427	6,130	10,227
Other Income	71	98	168	176	169	216	310	402
Interest Expense	187	155	120	102	129	96	73	101
Other Expenses	608	97		27				
Net Income	1,206	1,441	2,050	1,487	1,912	3,547	6,367	10,528
Paid to producers as bonuses	712	878	1,625	1,133	1,450	2,755	5,302	9,414
Retained earnings appropriated to:								
Cattle stabilization fund	99	148				181	362	362
Development Reserve	215	139	150	135	186	242	227	304
Loan Redemption Reserve	93	148	148	148	148	148	180	134
Asset Renewal Reserve	87	116	123	87	111	225	254	290
Unappropriated earnings carried forward to next year		12	16		17	13	55	79
Operating ratios:								
Net income/sales	9.7%	8.1%	12.1%	10%	9.6%	14.3%	19.4%	20.1%
Production & overhead cost/sales	11.2%	8.8%	9.5%	9.4%	8.7%	10.2%	7.8%	6.8%
Cost of livestock/sales	74.8%	46.9%	59.6%	64.8%	59.8%	59.9%	50.7%	55.4%
Selling & transport cost/sales	20.7%	9.6%	9%	8.9%	13.6%	12.5%	13.4%	13.4%

SOURCE: BMC's Reports and Accounts.

ANNEX J

AVERAGE PRICE PAID TO PRODUCERS FOR CATTLE

	Average Floor Price Including Condemned Animals (Per 100 Kgs CDW)	Year End Bonus (Per 100 Kgs CDW)	Bonus as % of Floor Price	Total Average Price Per 100 Kgs CDW	Average Kgs. Per Animal	Approximate Average Price Received Per Animal
	$	$	$	$		$
1966	39.00	2.92	7.5	41.92	184	77.13
1967	41.82	4.41	10.5	46.23	213	98.47
1968	42.20	7.00	16.5	49.20	226	111.19
1969	44.79	5.40	12.0	50.19	227	113.93
1970	44.79	5.40	12.0	50.19	208	104.40
1971	44.66	8.29	18.5	52.95	197	104.31
1972	50.97	16.23	32.0	67.20	207	139.10
1973	71.51	23.20	32.4	94.71	194	183.74
1974 Est.	98.00	9.00	9.0	107.00	200	214.00

SOURCE: BMC's Reports and Accounts.

AVERAGE PRICE PAID TO PRODUCERS FOR SMALL STOCK

	Sheep	Average CDW/Kgs	Average Price per Animal	Total Prices Paid	Goats	Average CDW/Kgs	Average Price per Animal	Total Price Paid	Total Paid Producers : All Small :
1966	2,812	17.6	$8.00	$22,496	538	23.1	$8.70	$ 4,681	$ 27,177
1967	3,993	18.6	7.84	31,305	3,323	20.9	7.80	25,919	57,224
1968	12,548	19.0	7.70	96,619	19,888	20.4	7.65	152,143	248,762
1969	17,387	18.6	7.51	130,576	17,573	20.0	6.38	112,116	242,692
1970	7,427	15.4	6.10	45,305	26,359	17.7	4.58	120,724	166,029
1971	16,625	16.0	6.38	106,068	25,244	18.0	4.75	119,909	225,977
1972	8,096	16.0	6.27	50,762	14,838	15.0	4.88	72,409	123,171
1973	4,240	15.0	8.78	37,227	4,467	16.0	8.35	37,300	74,527

SOURCE: BMC's Reports and Accounts

ANNEX K

MARKETING DISTRIBUTION OF PROCESSED MEAT

Sales of Boneless Beef (000 Kilos)	1966	1967	1968	1969	1970	1971	1972	1973
England	6,820	7,458	2,901	2,201	8,046	7,113	10,640	17,710
Republic of South Africa	219	453	1,001	539	948	2,172	724	588
Other African Countries	1	81	1,266	1,018	743	950	2,245	3,167
Other Markets	-	108	203	146	646	2,602	1,861	1,569
Total Boneless Beef Sales	7,040	8,100	5,371	3,904	10,383	12,837	15,470	23,034

SALES OF OFFAL

Red Offal Sales (000 Kilos)								
England	182	601	220	139	550	522	1,000	1,488
Republic of South Africa	408	226	434	430	258	268	69	93
Zambia	272	64	234	203	226	362	339	1
Other African Countries	45	25	101	81	78	35	85	13
Other Markets	-	7	2	11	11	79	116	103
Total Red Offal Sales	907	923	991	864	1,123	1,266	1,609	1,698
Total Rough Offal Sales	1,238	1,322	2,585	1,678	1,633	1,833	1,198	2,465
Total Offal Sales	2,145	2,245	3,576	2,542	2,756	3,099	2,807	4,163

SOURCE: BMC's Reports and Accounts

Sales of By - Products

Metric Tons

	1966	1967	1968	1969	1970	1971	1972	1973
Bonemeal	215.2	706.2	683.7	675.3	1,433.1	1,007.6	2,122.3	2,118.8
Carcassemeal	1,918.6	1,159.6	1,405.3	1,057.7	1,750.3	2,602.3	2,476.8	3,197.1
Bloodmeal	230.6	284.1	346.0	286.7	343.2	359.7	499.4	301.7
Hoof & Hornmeal	-	-	-	-	70.1	100.0	59.9	84.9
Tallow & Dripping	980.2	1,149.4	1,327.6	1,171.3	1,870.0	2,269.5	2,153.3	2,964.1
Horns	70.0	74.9	51.5	82.2	78.5	70.4	84.9	34.9
Hides	2,550.0	1,826.8	2,744.3	2,336.7	2,835.3	3,073.4	3,114.4	3,567.6
Hides trimmings	500.7	407.6	495.9	427.8	530.6	924.4	1,020.5	1,194.0
Total	6,465.3	5,608.6	7,054.3	6,037.7	8,911.1	10,407.3	11,531.5	13,463.0
Skins (quantity)	-	7,905	33,266	28,610	22,743	25,527	12,744	10,170

SOURCE: BMC's Reports and Accounts

DESIRED IMPORTS (-), AVAILABLE EXPORTS (+),
TRADE BALANCES AND PRICE CHANGES 1972 THROUGH 1980
(Thousand metric tons carcass equivalent weight)

	1974	1975	1976	1977	1978	1979	1980
Importers							
Total	-3,222	-3,464	-3,484	-3,504	-3,832	-4,135	-4,382
U.S.	-1,249	-1,489	-1,444	-1,422	-1,702	-1,979	-2,004
EEC - 6	-1,044	-1,038	-1,031	-1,023	-1,014	-1,004	-1,011
U.K.	-504	-473	-441	-406	-369	-329	-292
Spain	-75	-62	-88	-83	-96	-121	-119
Greece	-66	-69	-72	-77	-90	-85	-90
Israel	-17	-17	-17	-17	-17	-17	-17
Japan	-162	-168	-199	-235	-250	-249	-261
U.S.S.R.	-105	-148	-192	-241	-294	-351	-588
Exporters							
Total	+3,001	+3,104	+3,191	+3,326	+3,554	+3,580	+3,700
Argentina	+847	+956	+1,072	+1,195	+1,325	+1,463	+1,608
Brazil	+43	-73	-189	-268	-239	-429	-592
Uruguay	+202	+245	+252	+223	+191	+194	+226
Mexico	+146	+116	+101	+117	+114	+78	+57
Canada	-20	-34	-48	-63	-80	-97	-109
Australia	+957	1,014	+1,072	+1,135	+1,199	+1,266	+1,344
New Zealand	+316	+327	+338	+350	+362	+374	+388
Ireland	+300	+325	+351	+378	+407	+439	+470
Denmark	+112	+125	+138	+151	+164	+178	+191
Yugoslavia	+98	+101	+104	+108	+111	+114	+117
Trade Balance	-221	-360	-293	-178	-278	-555	-682
Trade Balance	-121	-260	-193	-78	-178	-455	-582

(Assuming 100 thousand metric tons is available annually from rest of world)

	1974	1975	1976	1977	1978	1979	1980
Price Change Over 1973	+3%	+6%	+4%	+2%	+5%	+9%	+11%
Annual Price Change	+3%	+3%	-2%	-2%	+3%	+4%	+2%

(import price elasticity of demand = -1.25%)

Source: IBRD

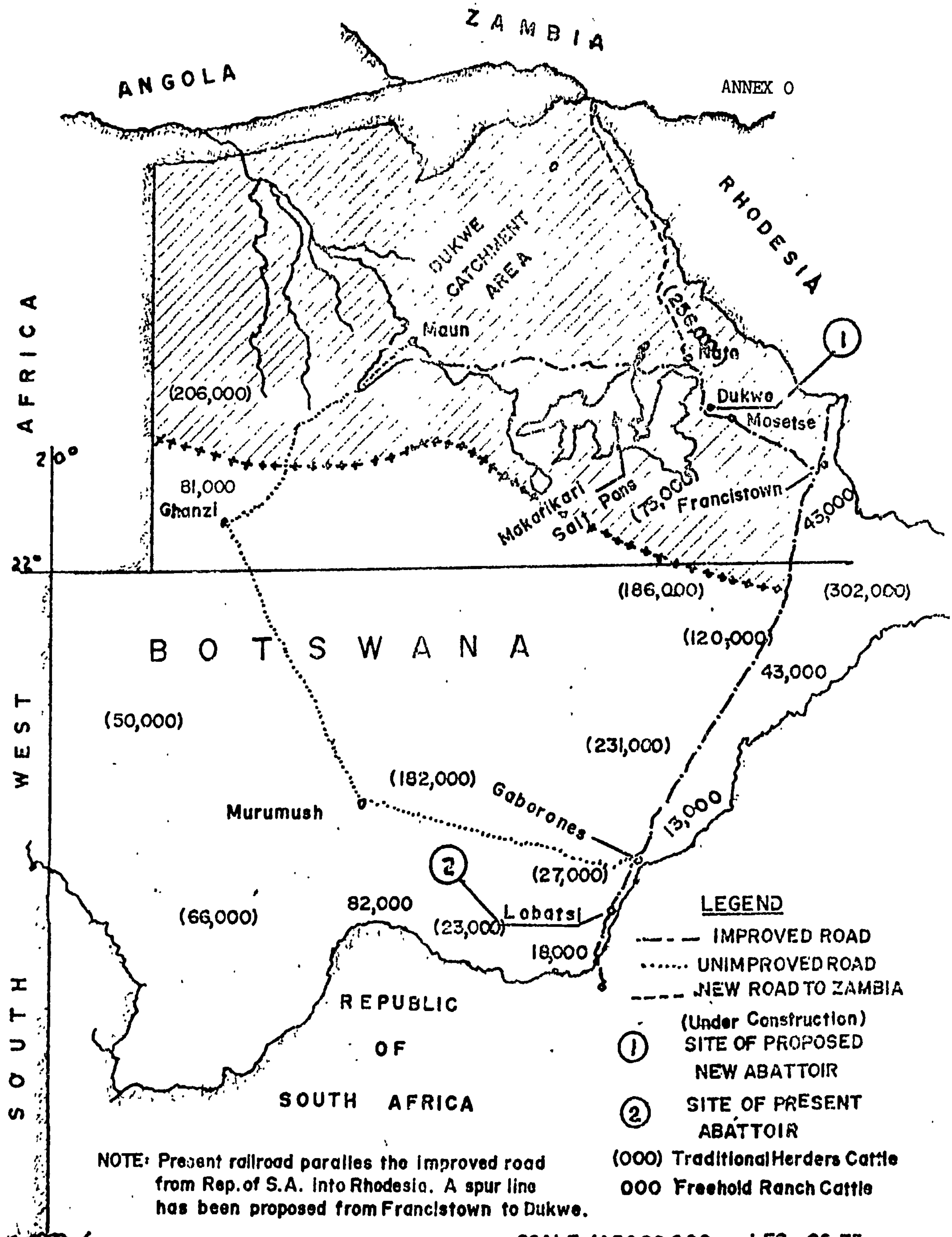
SITE COMPARISON AND EVALUATION

	Water Supply	Livestock	Transportation Suppliers	Transportation Finished Product	Power	Sewage	Recreation & Social Life	Management Personnel	Labor Availability
Maun	Fair	Good	Good (truck only)	Good (truck only)	None	None surface	Fair	Fair	Good
Dukwe	Good	Good	Good (truck only) Rail in 1978	Good (truck only) Rail in 1978	None	None surface	None to be developed	Fair	Good
Bushman Pits	Fair	Fair	Good (truck only)	Good (truck only)	None	None surface	Fair	N.A *	Good
Orapa	NA*	Not Good	Good (truck only)	Good (truck only)	None	None	Fair	No Information	No info
Makalamabedi	Good	Good	No Road	No Road	None	None surface	Good to be developed	Not attractive	Good
Motopi	Good	Good	Good (truck only)	Good (truck only)	None	None surface	Good to be developed	Fair to be developed	Good
Francistown	Question-able	Detrimental to Lobatse	Good (rail & truck)	Good (rail & truck)	None	None expensive	Fair	Good	Good
Shashi	Question-able	Detrimental to Lobatse	Good (rail & truck)	Good (rail & truck)	None	None expensive	Fair	Good	Good

* NA - Not Available

ANNEX N

ANNEX O



NOTE: Present railroad parallels the improved road from Rep. of S.A. into Rhodesia. A spur line has been proposed from Francistown to Dukwe.

SCALE 1:5000 000 LES 02-75

ANNEX P

SCOPE OF WORK FOR ARCHITECTURAL AND ENGINEERING SERVICES FOR ABATTOIR DESIGN - NORTHERN BOTSWANA

Scope of Work

The Project

A consultant firm will be contracted to conduct an architectural and engineering study and produce complete drawings (structural and architectural), plans and specifications for the erection and equipping of an abbatoir facility with a balanced throughput for 350 head of beef cattle per day and facilities for processing approximately 200 small animals per day (sheep and goats). The design will meet European Economic Community's (EEC) abattoir health and sanitary standards in order to insure that beef processed in the proposed abattoir can be exported to EEC countries.

Task of the Consultant

The consultant, in accordance with normal A & E procedures, will conduct studies and investigations necessary to produce:

Phase I

a. Alternative schematics, preliminary drawings, outline specifications, site plans, drainage system, floor plans, elevations, sections and display drawings;

b. Preliminary estimates of construction costs, material and necessary plant equipment;

c. Projected construction schedule with approximate time phase for each operation of activity.

Phase II

a. Complete working drawings and specifications including all drainage sections, plans and specifications;

b. Complete schedule of material, quantities and special requirements;

c. Complete schedule of cost estimates, projected to estimated time construction start;

d. Final contract documents for Invitation for Bid (IFB) to include general conditions for construction, supplementary conditions specific to this project and proposed contract form specifying: kind, type and method of construction and installation of materials, structures, finish, mechanical systems and special service equipment.

e. In addition to preparing design and equipment specifications for a 350 head per day abattoir, the GOB requires construction cost estimates and equipment cost for a 400 head per day abattoir in order to evaluate the incremental cost and establish the economies of scale for an abattoir with 50 head per day increase. Finally, the 350 head per day plant will be designed to permit future plant expansion.

f. Environmental requirements to include an analysis covering the following:

1. the environmental impact of the proposed project;
2. any adverse environmental effects which cannot be avoided and steps to minimize their effect;
3. the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity;
4. alternatives to the proposed action, and
5. any irreversible and irretrievable commitments of resources which would be involved in the proposed action.

Phase III

a. Prepare notices and undertake prequalification of contractors for construction services with submission of a list of recommended firms to the GOB;

b. Prepare notices and advertise for construction services;

c. Conduct pre-bid conference;

e. Analyze bids and recommend award for construction and/or assist in negotiation for construction services;

f. Issue notice of construction award.

The following factors will be utilized in the preparation of documents required under PhasesI and II of requested services.

A. Site

1. Assessment of the availability of a suitable water supply in both quality and quantity sufficient for the plant and employee requirements, including future demands, both industrial and domestic;

2. Location with respect to population and prevailing winds so that offensive odors from the plant are minimized;

3. Access to roads and railroad;

4. Topography, for drainage;

5. Soil bearing capacity.

B. Structures

1. Building and function layout shall be so designed that the separation of edible and inedible products can be maintained;

2. Walls of those areas requiring impervious construction materials shall be identified and so constructed;

3. A flow diagram designed for efficient operation and insuring the compliance to sanitary regulations sufficient to meet export requirements to EEC markets shall be prepared. In addition, the diagram shall consider actual time and motion operations of men and equipment and shall be the criteria for the plant layout and machinery installation;

4. Buildings shall be designed for economy of materials and construction; but, to the extent possible they shall be attractive and so situated to reduce obnoxious sights, ordors and visible sewage;

5. Dressing rooms and showers for employees shall be designed so that work clothing and street clothing can be kept separately and sanitary conditions can prevail;

6. Facilities for an employee's lunch room;

7. Provision for first-aid facilities;

8. Final design should provide sufficient flexibility so that the abattoir can be expanded to accomodate a larger cattle throughput in latter years.

C. Equipment

Electric Generating - Requirements shall be examined in the light of projected plant use, domestic use of employees and projected future demand. Possible industrial and domestic expansion in the area will be considered and the relative merits and economy of thermo generation (steam) vs diesel units will be examined. The utilization for lives steam for abattoir use in conjunction with thermo generation will also be considered.

Sewage Disposal - Effluent handling and treatment will require special consideration. Plant and equipment design must take into consideration the economic use of water. Sewers and discharges will be designed to provide for the recovery of usable products, i.e., floor salvage and skimming. Individual sources of sewage will be identified and the system so designed to recover usable portions and reduce the load on the final disposal facility. The possibility of re-using the water (after treatment) for irrigation and the recovery of its saleable elements will be considered in the system's design.

Other - The capacity and design of the machinery and equipment, including location, i.e., refrigeration vs. heat generating, will require special consideration, such that the efficiency and economy of the operation is maintained.

D. Exterior Works

1. Holding pens for 4,000 cattle shall be located to be readily accessible to trail and/or transport and shall be designed for the efficient movement of cattle into the plant with minimum labor requirement and conjestion and maximum safety for the personnel involved;

2. Yard paving and drains shall be sufficient to maintain the area in a reasonable sanitary condition and minimize odors. Drain discharge shall be incorporated into a sewer system to avoid polution of the area;

3. Entire plant shall be enclosed by fencing of sufficient strength and design to insure reasonable security from intrusion of man and stray animals.

E. General Comments

1. Alternate preliminary plans, specifications, etc. must be presented for approval to the Chief Architect, Ministry of Public Works and the Ministry of Agriculture prior to the preparation of the selected final design;

2. The consultant will maintain close coordination and contact with the following agencies whose responsibilities and activities are closely related to the abattoir project:

a. Ministry of Agriculture
b. Botswana Meat Commission
c. Botswant Power Corporation

3. Background reports available:

a. Experience Incorporated - "The Technical/Economic Feasibility of Establishing Additional Meat Processing Facilities in Botswana", May 1973;

b. Swedish Consulting Group (SWECO), "Sua Pan Project, Location and Transportation Study", April 1974.

F. Composition of the Architectural and Engineering Team

In addition to the skills normally required in the preparation of an A & E report, the background and experience of personnel included in this team should also include the following:

1. Knowledge and experience in abattoir construction and operations;

2. Industrial engineering with emphasis on plant layout and design for the production efficiency (man and machine);

3. Knowledge of soils and geology - including ground water;

4. Thermo electric generation (steam) and distribution;

5. Refrigeration equipment and systems;

6. An experienced abattoir production manager available for periodic short-term consulting field trips to the site and home office of the A&E team during the design of the project.

G. Reporting Requirements

1. Inception report, showing the proposed schedule of completing the A & E work be submitted to the Ministry of Agriculture within one month after site mobilization;

2. Monthly status reports due within ten (10) days after the end of each report;

3. The final report will be delivered within ten months from the date the contract is signed.

H. Schedule of Work

The proposed work is expected to be completed within the following time schedule:

		Estimated Months Required from Date of Signing Contract
1.	Signing of Contract	0
2.	Mobilization	1
3.	Inception Report	1
4.	Completion and Submission of Preliminary Schematics, Construction and Cost Estimates	4
5.	Selection of final design development by GOB	5
6.	Development of final plans and IFB documents	8
7.	Final Report	8
8.	Prequalification of contractors	6
9.	Advertise construction	9
10.	Bid opening	11
11.	Award of construction	12

I. Proposal

The consultant will submit a proposal for the carrying out of the above studies, activities and preparation of documents included under Phases I, II and III of this Scope of Work.

The consultant will prepare his proposed schedule of work listing personnel, positions and man-month requirements for completion of the listed services, under each separate phase.

J. Proposal Submission

Proposals shall be received at the following address within forty-five (45) days from the date of this letter.

Three (3) copies to:	The Permanent Secretary Ministry of Agriculture Private Bag 3 Gaborone, Botswana
One (1) copy to:	The Regional Economic Development Services Office Nairobi (ID) Department of State Washington, D. C. 20520
One (1) copy to:	The Director AFR/ESA C&RSC No. 2 Agency for International Development Washington, D. C. 20523

Projected Production

	1978	1979	1980	1981	1982	1983	1984
Cattle Throughput	20,000	50,000	57,000	57,000	67,000	67,000	68,000
Hides (less 5% loss)	19,000	47,500	54,150	54,150	63,650	63,650	64,600
		Processed Meat and By-Products (000 kilos)					
Boneless Meat	2,800	7,000	7,980	7,980	9,380	9,380	9,520
Offal	540	1,350	1,539	1,539	1,809	1,809	1,836
Bone meal	260	650	741	741	871	871	884
Carcass meal	320	800	912	912	1,072	1,072	1,088
Fats	420	1,050	1,197	1,197	1,407	1,407	1,428
Other by-products (hornmeal, blood-meal, horns, etc)	80	200	228	228	268	268	272
Total	4,420	11,050	12,597	12,597	14,807	14,807	15,028

Average Animal Breakdown

	Kilos	Percentage	Estimated 1975 price per kilo	Gross Return
Liveweight	400			
Cold Dress Weight (CDW)	200	*50 of Liveweight		
Boneless	140	70 of CDW	$1.80	$252.00
Bone meal	13	6.5 of CDW	.29	3.77
Carcass meal	16	8.0 of CDW	.29	4.64
Fats	21	10.5 of CDW	.29	6.09
Moisture & Waste	10	5.0 of CDW	-	-
Offal	27		.64	17.28
Other by products (horns, bloodmeal, hoof & hornmeal)	4		.29	1.16
Hides	20		.435	8.70
				$293.64

*The 50 percent of liveweight representing CDW is conservative. BMC realizes a CDW of approximately 55 percent of liveweight.

Projected Sales

($ and kilos 000)

	1978 kilos	1978 $	1979 kilos	1979 $	1980 kilos	1980 $	1981 kilos	1981 $	1982 kilos	1982 $	1983 kilos	1983 $	1984 kilos	1984 $
Zambia														
Boneless meat @$1.80/kilo	2,100	3,780	5,600	10,080	6,300	11,340	6,300	11,340	7,000	12,600	7,000	12,600	7,000	12,600
Offal @$.64/kilo	540	346	1,000	640	1,000	640	1,000	640	1,400	896	1,400	896	1,400	896
Hides @$8.70 each (quantity)	10	87	10	87	10	87	10	87	10	87	10	87	10	87
Botswana														
Bonemeal @$.29/kilo	260	75	650	189	741	215	741	215	871	253	871	253	884	256
Zaire														
Boneless meat @$1.80/kilo	700	1,260	1,400	2,520	1,680	3,024	1,680	3,024	2,380	4,284	2,380	4,284	2,520	4,536
Offal @$.64/kilo			350	224	539	345	539	345	409	262	409	262	436	279
Rep. of S. Africa														
Fats @$.29/kilo	420	122	1,050	305	1,197	347	1,197	347	1,407	408	1,407	408	1,428	414
Carcass meal @$.29/kilo	320	93	800	232	912	265	912	265	1,072	311	1,072	311	1,088	316
Horns, bloodmeal, hoofs, hornmeal @$.29/kilo	80	23	200	58	228	66	228	66	268	78	268	78	272	79
Hides @$8.70 each (quantity)	9	78	37.5	326	44.2	384	44.2	384	53.6	467	53.6	467	54.6	475
TOTAL	-	$5,864	-	$14,661	-	$16,713	-	$16,713	-	$19,646	-	$19,646	-	$19,938

ANNEX I.

Pro Forma Income Statement
($000)

	1978	1979	1980	1981	1982	1983	1984
Cattle Throughput	20,000	50,000	57,000	57,000	67,000	67,000	68,000
Gross Sales	5,864	14,661	16,713	16,713	19,646	19,646	19,938
Less Selling & Transport Expenses	411	1,026	1,170	1,170	1,375	1,375	1,396
Net Sales	5,453	13,635	15,543	15,543	18,271	18,271	18,542
Less Income Taxes	197	842	1,032	1,032	1,305	1,305	1,332
	5,256	12,793	14,511	14,511	16,966	16,966	17,210
Cost of Sales:							
Purchase of Livestock	3,920	9,800	11,172	11,172	13,132	13,132	13,328
Production, processing and overhead	500	1,130	1,193	1,193	1,310	1,310	1,310
Depreciation	343	685	685	685	685	685	685
Total Cost of Sales	4,763	11,615	13,050	13,050	15,127	15,127	15,323
Operating Income	493	1,178	1,461	1,461	1,839	1,839	1,887
Interest Expense	978	978	913	843	767	684	593
Pre-operating costs, interest prior years	1,557						
Net income	(2,042)	200	548	618	1,072	1,155	1,294
Bonus paid to producers	-	100	448	518	872	955	994
Retained earnings	-	100	100	100	200	200	300
Operating Ratios:							
Net Income/Sales	(8.2%)	1.4%	3.3%	3.7%	5.5%	5.9%	6.5%
Production & overhead/ sales	8.5%	7.7%	7.1%	7.1%	6.7%	6.7%	6.6%
Cost of Livestock/sales	66.8%	66.8%	66.8%	66.8%	66.8%	66.8%	66.8%
Selling & transport cost/sales	7%	7%	7%	7%	7%	7%	7%
Times Interest Earned	-	1.2	1.6	1.7	2.4	2.7	3.2

Annex S

Amortization Schedule

End of Year	Annual Payment	Interest Payment	Principal Payment	Remaining Balance
1975	-	$45,000	-	$1,000,000
1976	-	533,925	-	10,865,000
1977	-	977,850	-	10,865,000
1978	-	977,850	-	10,865,000
1979	$1,692,980	977,850	$715,130	10,149,870
1980	1,692,980	913,488	779,492	9,370,378
1981	1,692,980	843,334	849,646	8,520,732
1982	1,692,980	766,866	926,114	7,594,618
1983	1,692,980	683,516	1,009,464	6,585,154
1984	1,692,980	592,664	1,100,316	5,484,838
1985	1,692,980	493,635	1,199,345	4,285,493
1986	1,692,980	385,694	1,307,286	2,978,207
1987	1,692,980	268,039	1,424,941	1,553,266
1988	1,693,060	139,794	1,553,266	-

Phase I loan made at mid-1975 for $1,000,000.
Phase II loan for $9,865,000 made mid-1976. Grace period will run until end of 1978 for both loans.

ANNEX T

Detailed Production and Overhead Costs for Northern Abattoir
(350 head/day throughput)

Cattle purchases @$196 per head (average 1974 price)

Wages and Salaries:

Main slaughter hall	$152,000
Small stock slaughter hall	15,000
Deboning operations & packers	100,000
Offal operation	37,000
Hides	64,000
By-products	48,000
Production services and materials	435,000
Repairs and maintenance (including personnel)	73,000
Packing costs	240,000
Freezing operations	145,000
Administration	174,000
Depreciation of Fixed Assets (20 years; $13.7 million)	685,000
TOTAL	$2,168,000

Estimated Annual Production Costs ($000)

	1978	1979	1980	1981	1982	1983	1984
Depreciation	343	685	685	685	685	685	685
Labor & Administration	300	590	590	590	590	590	590
Materials and Services	200	540	603	603	720	720	720
	843	1815	1878	1878	1995	1995	1995

SOURCE: BMC Accounting/Finance Department

Pro Forma Funds Flow Statement
($000)

	Pre-Operating Period	1978	1979	1980	1981	1982	1983	1984
Sources of Funds:								
Net Income		(2,042)	200	548	618	1,072	1,155	1,294
Depreciation		343	685	685	685	685	685	685
Funds from Operations		(1,699)	885	1,233	1,303	1,757	1,840	1,979
Equity	5,435							
Loans	10,865							
Increases in Current Liabilities		297	1,410	255	70	349	83	118
Total Sources	16,300	(1,402)	2,295	1,488	1,373	2,106	1,923	2,097
Application of Funds:								
Land	100							
Buildings and Equipment	13,700							
Repayment of Loan			715	780	850	926	1,009	1,100
Increase in Current Assets (excluding cash)		293	853	374		255		21
Increase in Cash	2,500	(1,695)	627	(114)	5	53	(41)	(18)
Bonus Payments to Producers			100	448	518	872	955	994
Total Applications	16,300	(1,402)	2,295	1,488	1,373	2,106	1,923	2,097

Pro Forma Balance Sheet
as of year end
($000)

ANNEX V

	Pre Operating Period	1978	1979	1980	1981	1982	1983	1984
Current Assets:								
Cash	2,200	505	1,132	1,018	1,023	1,076	1,035	1,017
Accounts Receivable	-	293	836	1,170	1,170	1,375	1,375	1,396
Other Current Assets	300	300	610	650	650	700	700	700
Total Current Assets:	2,500	1,098	2,578	2,838	2,843	3,151	3,110	3,113
Fixed Assets:								
Land	100	100	100	100	100	100	100	100
Building & Equipment	13,700	13,700	13,700	13,700	13,700	13,700	13,700	13,700
Gross Fixed Assets	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800
Less Accumulated Depreciation	-	343	1,028	1,713	2,398	3,083	3,768	4,453
Net Fixed Assets:	13,800	13,457	12,772	12,087	11,402	10,717	10,032	9,347
Total Assets:	16,300	14,555	15,350	14,925	14,245	13,868	13,142	12,460
Liability & Equity:								
Estimated Income Taxes Payable	-	197	842	1,032	1,032	1,305	1,305	1,332
Current Portion of Long-Term Debt	-	-	715	780	850	926	1,009	1,100
Accounts Payable	-	100	150	150	150	150	150	150
Total Current Liabilities:		297	1,707	1,962	2,032	2,381	2,464	2,582
Long-Term Debt	10,865	10,865	10,150	9,370	8,520	7,594	6,585	5,485
Total Liabilities:	10,865	11,162	11,857	11,332	10,552	9,975	9,049	8,067
Equity:								
Paid-in Capital	5,435	5,435	5,435	5,435	5,435	5,435	5,435	5,435
Retained Earnings (deficit)	-	(2,042)	(1,942)	(1,842)	(1,742)	(1,542)	(1,342)	(1,042)
Total Liabilities & Equity	16,300	14,555	15,350	14,925	14,245	13,868	13,142	12,460
Liquidity Ratio:								
Current assets/Current Liabilities		3.70	1.51	1.45	1.40	1.32	1.26	1.21
Leverage Ratios:								
Total Assets/Long-term Debt		1.34	1.51	1.59	1.67	1.83	2.00	2.27
Net Long-term Debt/Equity		3.20	2.91	2.61	2.31	1.95	1.61	1.25

CALCULATION OF INTERNAL RATE OF RETURN FOR THE BOTSWANA NORTHERN ABATTOIR

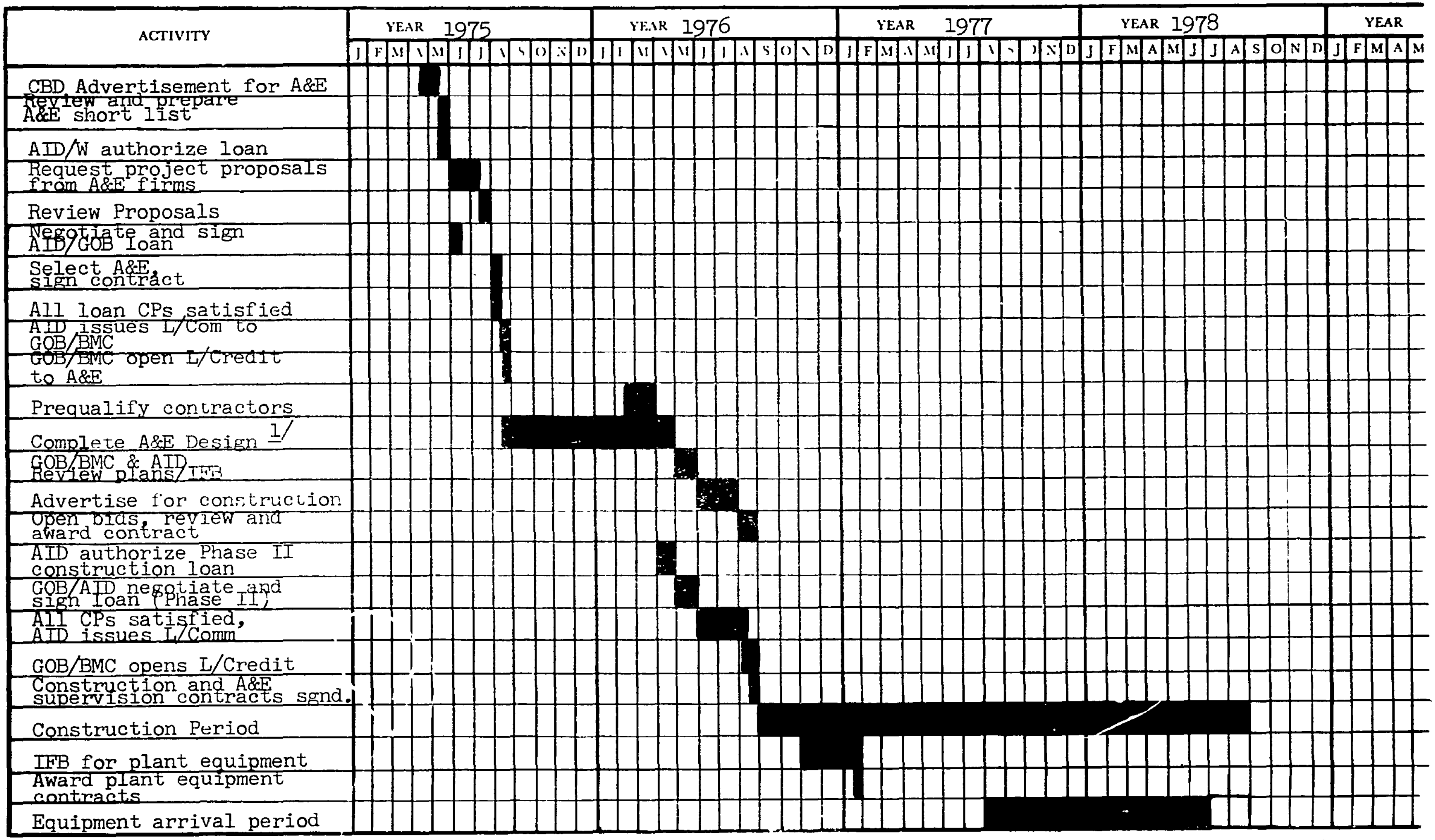
BENEFITS AND COSTS, 1975-1994
(Figures in thousand dollars)

		BENEFITS AND COSTS				
End of Calendar Year	End of Evaluation Year	Difference Between Benefits and Costs	Discount Factor at 20%	Discounted Value at 20%	Discount Factor at 25%	Discounted Value at 25%
1975	1	$ - 800	.833	$ - 666	.800	$ - 640
1976	2	-2,500	.694	-1,735	.640	-1,600
1977	3	-5,500	.579	-3,185	.512	-2,816
1978	4	-3,580	.482	-1,726	.410	-1,468
1979	5	2,705	.402	1,087	.328	887
1980	6	3,178	.335	1,065	.262	833
1981	7	3,178	.279	887	.210	667
1982	8	3,829	.233	892	.168	643
1983	9	3,829	.194	743	.134	513
1984	10	3,904	.162	632	.107	418
1985	11	3,904	.135	527	.086	336
1986	12	3,904	.112	437	.069	269
1987	13	3,904	.093	363	.055	215
1988	14	1,904	.078	149	.044	84
1989	15	3,904	.065	254	.035	137
1990	16	3,904	.054	211	.028	109
1991	17	3,904	.045	176	.023	90
1992	18	3,904	.038	148	.018	70
1993	19	3,904	.031	121	.014	55
1994	20	3,904	.026	102	.012	47
				482		-1,151

NOTE: The internal rate of return (by interpolation) is 21.5%
In 1988, ten years after opening the abattoir, the sharp decrease in benefits is due to $2 million allocated for the replacement of meat processing equipment.

ANNEX W

PROJECT Botswana Northern Abattoir



1/ See Annex "P" for suggested scope of work and time schedule.

ANNEX X

Commerce Business Daily (CBD) Advertisement

for the Northern Abattoir, Botswana

The Government of Botswana (GOB) invites letters of interest and qualifying information from architectural/engineering consulting firms for final design, plans, specifications and a meat processing equipment list for the construction and equipping of an abattoir to be located in northern Botswana. Design will include determination of water and electrical power requirements, distribution systems, abattoir equipment layout, sewage treatment and disposal and bidding and contract documents for abattoir construction and equipment. The design contract will be a lump-sum contract. The GOB has requested the Agency for International Development (A.I.D.) to consider this project for A.I.D. loan financing.

Interested firms should use A.I.D. Architect Engineer Questionnaire Form 1420-5 to provide a statement of qualifications, including financial condition, applicable experience, job capacity and personnel available for such undertaking (including personnel bio-data). In addition, a description of similar work performed over the last five years should be provided. Copies of Form 1420-5 may be obtained from SER/ENG, Room SA-11, Agency for International Development, Washington, D. C. 20523.

Only A.I.D. Geographic Code 941 (U.S. and lower income countries) firms may qualify. In the event a joint venture seeks prequalification, qualification information must be supplied with respect to all firms in the joint venture. Firms considered most qualified by the GOB will be requested to submit detailed proposals. These proposals will be reviewed by the GOB which will determine the order of selection and invite the first selected firm to negotiate a contract.

Three copies of the prequalification form should be sent to the Permanent Secretary, Ministry of Agriculture, Private Bag 003, Gaborone, Botswana and one copy each to Director, REDSO/EA, Nairobi (ID), Department of State, Washington, D. C. 20520; Director, AFR/ESA, A.I.D., Department of State, Washington, D. C. 20523; and OSARAC Representative, Gaborone (ID), Department of State, Washington, D. C. 20520.

Responses to this invitation must be postmarked no later than thirty (30) days from the date of publication of this notice.

thereafter on the outstanding disbursed balance of the Loan and on any due and unpaid interest borrowed thereon.

(b) BMC shall, in Rand or such other currency as is legal tender of Botswana:

(i) repay to the Borrower the amount of the re-loan within a period not to exceed ten (10) years, including a grace period through 1978.

(ii) pay to Borrower interest at a rate of not less than eight and one-half percent (8-1/2%) per annum on the outstanding disbursed balance of the re-loan and on any due and unpaid interest accrued thereon.

II. Other Terms and Conditions:

(a) Goods and services financed under the Loan shall have their source and origin in Botswana and countries included in A.I.D. Geographic Code 941.

(b) The Loan shall be subject to such other terms and conditions as AID may deem advisable.

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