Livestock Development Program

MALAWI - U.S.A.

JOINT VENTURE

PN-AAY-114

INTERNATIONAL AGRI-CONSORTIUM/ DANIEL RANCH COMPANY OF TEXAS, U.S.A.

SPEARHEAD ENTERPRISES LIMITED (IN RECEIVERSHIP) OF MALAWI

FEASIBILITY STUDY LIVESTOCK DEVELOPMENT IN MALAWI

MAIN REPORT

FEBRUARY 1984

DANIEL LAND & CATTLE CO.

REAL ESTATE CATTLE OIL & GAS GRAVEL

January 31, 1984

Mr. Bruce Bouchard
Bureau for Private Investment
U.S.A.I.D.
Washington, D.C. 20006

Dear Mr. Bouchard:

I would like to advise you that at the completion of the Livestock Feasibility Study of Spearhead Estates, Malawi, my conclusion is that the project is potentially successful.

There are, of course, outstanding issues of which the major one facing the project is that of raising immediate financing in order to maintain the existing operations.

Assuming these issues can be resolved to my satisfaction, and that a project development group or partnership, headed by myself, can be formed, I shall be willing to participate financially and technically in Spearhead as indicated in previous investment documentation.

When the remainder of the financial package involving Development Assistance Agencies has been put together, I intend to honor previously indicated commitments.

Between now and the time the funding package is completed, I shall provide extensive direct hands-on assistance in Malawi to improve the technical aspects of Spearhead Estates in order to help assure the success of the project.

My immediate technical assistance is obviously contingent upon the continuation of current Spearhead operations.

Sincerely,

Robert S. Daniel

Robert S. Daniel

RSD/jts

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I. SUMMARY AND CONCLUSIONS:-

The country:

Malawi has a sound historical track record in its economy, but has been particularly hard hit by recession as it is landlocked and access to the sea through Mocambique (Mozambique) has been disrupted. A resumption of growth trends under World Bank supervision is howver forecast.

Foreign and local private sector investments are clearly genuinely welcome in Malawi. Licensing restrictions are targeted towards fair trading, orderly growth and balance of payments management. The corporate taxation system is fair and contains strong incentives for agri-industrial development. Personal taxes, however, are comparatively high and inflate the payroll burden for expatriates. Work permit and exchange control commitments are desirable in advance of investing. Transportation difficulties exist, but are not insuperable or unsupportive of efficient operation. Overall, the investment climate is among the most favorable in Africa and there is a marked absence of corrupt practices.

Development in the agricultural sector has been dramatic, with the second highest absolute and per capita growth rates in Africa. Although little food is imported, there are still protein and calorie deficiencies. Limited land availability is clearly going to demand still further improved techniques and a continuing role for intensive estate farming. Price distortions emerge from time to time in crops grown for local consumption and flexibility is, therefore, required. Export, and hence ultimately internal price predictions are generally favorable, but they are neither uniform nor reliable. Crop diversification is thus essential. Similar considerations apply to livestock.

Per capita Gross Domestic Product figures appear to be perhaps misleadingly low, but there are clear and almost alarming, population pressures building creating medical and educational deficiencies. Past

priorities, however, have been given to creating a basic internal transport network to achieve the overall policy objective of improving the lot of the ordinary people of the country by creating the economic conditions required to that end. Although the urban migration has been modest, recession, despite moderate inflation rates has probably led to urban unemployment in recent years leading to a drop in the standard of living, particularly for middle-income groups. Food self-sufficiency and generation of foreign exchange through agricultural exports are seen as vital if economic conditions are to be improved.

Spearhead and the project:

Spearhead originated as the commercial wing of the National Youth League in Malawi and was converted to a limited liability company in 1978. Although it had no equity capital base, it expanded very rapidly on debenture-secured commercial bank finance, and became involved in many other activities besides tobacco farming. When it exceeded its available lines of credit, an independent Receiver and Manager was appointed, who effectively replaces the owners and the directors, and during whose tenure the general creditors are subject to compulsory moratorium. The Receiver is assisted by a high-powered advisory committee. During the period since 1980, peripheral activities have been sold off and joint venture discussions for participation in the six different types of farming have been pursued. Management has been reorganized, and an efficient operating and support structure created. However, this is subject to the dangers inherent in near mono-cropping and the jobs of the average present 3,600 work force on the tobacco estates are not secure. These estates have a well-developed, if aging, infrastructure and provide an extraordinarily advantageous jumping-off point for full exploitation under rotational cropping. The estates are spread widely through the country, but all in similar climatic and soil areas. This creates logistical problems, but also insures against disease and weather risks.

Small dairying and ranching operations are already carried on.

On the predominantly tobacco estates, out of 23,000 cleared acres, less than 4,000 acres are in use in any one season, and a further 19,000 virgin arable acres exist in addition to 10,000 acres suitable for rough grazing; another estate has 7,000 to 9,000 acres of rough grazing available in addition.

The debenture holders, who have financed the Receiver's operations to date, have expressed themselves as being unwilling to continue to do so on the present, temporary, basis. As expenditure on the 1984/5 crop season commences as early as March 1984, a scenario suitable for raising the amounts required ($4 - $7 million, depending on scope) must be created covering the period while longer term finance is being raised. To abandon estates in a tropical climate for even one season would have very serious effects. Ample collateral is available should it be required, or a stock conversion option into the project company in this regard.

Ignoring this immediate problem, the first phase of a development program would cover four years and involve two separate, but complementary, projects AFRAM-FARM and MALTEX. AFRAM-FARM's project involves the introduction of full rotational cropping on the present tobacco lands and leguminous rotations on the cleared land presently unused. This row-crop project will be introduced and managed by AFRAM-FARM (African-American Farming Corporation Limited) as described in a separate feasibility study. Grazing and crop residue rights on AFRAM-FARM and on the separate estate referred to will be let out to a complementary livestock company, MALTEX, and small second-hand cotton ginning and seed oil expression and refining plants will be installed by AFRAM-FARM in the northern and central regions of the country so as to add maximum value and reduce the internal transportation factor. The residue from this processing as well as other crop residue will be available to MALTEX. A second phase starting in 1987 or later could bring the virgin land areas into use and extend the trial irrigation

areas established in the first phase. In addition, plants to process livestock will be added as described below. While Phase I will concentrate primarily on the local market, Phase II will be export orientated.

The prime project objective of both the AFRAM-FARM and MALTEX projects is to achieve profitable development of Spearhead's estates and transfer technology and know-how so as to enhance Malawi's GDP and generate both export earnings and invisibles for the United States. There will be emphasis on training. Labor-intensive methods will be adopted where labor is readily available, except where optimized yields call for mechanized harvesting (e.g., large-scale cotton production). There are many subsidiary objectives beneficial to Malawi's economic and social development. Worthwhile political advantages for Malawi, the USA and the East African region are foreseen, and the two projects will be structured so that the benefits are not merely transitory.

SUMMARY OF THE AFRAM-FARM PROJECT:

The AFRAM-FARM project participants foreseen are:

(1) A successor company to the present Spearhead, which will introduce the relevant existing assets, unencumbered, in exchange for equity.

(2) A limited partnership headed by Richard Anderson & Sons, who are large successful row crop farmers in the San Joaquin Valley of California and including Mr. Leonard Lundgren's International Agri-Consortium and The Standard Commercial Tobacco Group of Wilson, North Carolina.

(3) The Investment and Development Bank of Malawi and international funding organizations including The Private Enterprise Bureau of the United States Agency for International Development.

(4) The complementary livestock company "Maltex."

(5) Private Malawi resident estate owners and others.

The project estates:

The 16 estates range up to 7,300 acres in size and total almost 60,000 acres; all but one are at 3,000 to 4,000 foot elevation and have similar sand/clay loam soils, some acidic. Mean annual temperatures range from 66°F to 74°F with recorded extremes above freezing and below 100°F. Average rainfall ranges from 27 to 45 inches. Communications require improvement by the installation of additional airstrips and two-way radios. While improved soil conservation measures are required, there are no irreversible soil erosion situations. Certain of the estates have substantial water resources, but these may be exploitable only where expensive pumping can be avoided.

The present economic base comprises the inherent value of the land itself, the sustained production supportable from the existing infrastructure and the status and quality of present management expertise. Existing line and support management is assessed as good to excellent, though lacking experience of rotational cropping. The majority of senior posts are held by white permanent residents or Zimbabweans. The valuation tentatively agreed upon is Kwacha 8,189,000 ($6,142,000 at December 1983 exchange rates),adjustable in the light of crop results achieved up to project commencment and also depreciation, asset replacements and inflation.

Almost all of the estates are held on 99-year State leases, running from July 1, 1983, although two run from July 1, 1975 and one estate is freehold. The ground rent payable to Government is K1 per acre. Mineral rights are not held. Rights to surface water are subject to license, but this is usually a routine matter. Lease covenants include reafforestation programs and sound land husbandry practices.

The present labor force averages 3,600 and will almost double with the implementation of the first phase of the project. Although most employees also cultivate smallholdings, 35,000 to 50,000 people including dependents will by then be receiving support from the project company with a much higher seasonal peak. Labor supply is not normally a problem, but where it is, mechanization has been allowed for. Agricultural graduates are available for recruitment as management trainees. Labor relations in Malawi are good, but there is no full social security system. Pension rights, housing, schooling and medical facilities will be extended to all permanent employees; ration supplements will be provided to all laborers. Improved cash incentive schemes will also be introduced.

Directors effectively control corporate affairs in Malawi, but both AFRAM-FARM and MALTEX intend to negotiate direct management contracts, with director control limited to matters of policy rather than matters of purely day-to-day importance. The intended board structure comprises three nominees each from Spearhead and the U.S. participants, plus up to two nominees from institutional funding agencies or local individual shareholders. The head office will function from Lilongwe, not Blantyre as at present.

There are few Government programs requiring obligatory participation in Malawi and they are mostly to fund crop research work.

Licenses are required for the growing or selling of various crops, and have already been negotiated for AFRAM-FARM, except for coffee, in a spirit of give and take on both sides. Industrial activity licensing has also been agreed to in principle. There are no export taxes. Price controls have at times in the past resulted in losses from the production of some annual crops. This difficulty is expected to lessen, and can be alleviated by the adoption of flexible crop programs.

Freight charges both internally and externally are high, and to a large extent negate the low cost of internally produced goods, services and labor costs. The transportation difficulties facing Malawi have been thoroughly examined, and also availability of crop and spares inputs. It appears that good forward planning and advance purchasing provides a satisfactory solution, although the additional finance requirement and interest charges resulting are another adverse cost factor.

Potential products of AFRAM-FARM:

Rotational cropping and adding value to farm products will benefit the economy and the environment in many ways. The crops selected for large scale production by AFRAM-FARM in the first phase are aimed primarily, but not exclusively, at the local market for import substitution purposes, and to meet suppressed demand. The export items are targeted mainly at neighboring countries where the transportation factor does not erode cost competitiveness. Seed production features prominently under arrangements agreed in principle with the National Seed Company of Malawi Limited. Each estate's cropping plan has been considered separately, taking soil, climatic and transportation cost factors into account. The principal rotational crops planned are:

Catambora Rhodes grass for seed or pasture
Cotton
Sunflower for bird seed for Europe or for edible oil production
Maize and beans for seed
Peanuts (manipinta variety)
Sorghum (milo-maize)
Coffee (arabica caturra or geisha type)
Irrigated winter wheat
Soybeans

Marketing plan:

Detailed market analysis substantiates the logic of this selection, but high transportation factors from the sparsely populated and low consumption Northern Region of Malawi remain a major feature. Many other crops were subjected to examination and rejected or postponed until Phase II. Reafforestation will also feature large.

The cropping plans of AFRAM-FARM are not final at this stage, despite the in-depth research into them. There are innumerable possible program variations and these are still being tested to make an optimal selection via a computerized linear program application.

Financial analysis of AFRAM-FARM:

Total incremental cash capital and base inventory establishment costs for implementation of the first phase amount to K18 million ($13.6 million), and there is also a peak seasonal financing requirement of K7.5 million ($5.7 million). Pro forma financial statement and internal rate of return projections have been calculated covering a 20-year period at constant end-1983 Kwacha prices and exchange rates. These are provided in the AFRAM-FARM feasibility study and the indicated internal rate of return at 20.56% is satisfactory. A crudely inflated model indicates a 32.60% rate, but does not allow for the adjustments then likely to be required in exchange conversion rates. Due to management constraints and the introduction of new cultivars, the full rotational copping plan will take time to implement and this results in fairly high leverage over the first three to four years of the project. The principal area of sensitivity is crop sale revenues, and the World Bank's projection estimates in fact indicate a trend line sale price increase factor which would almost double the indicated rate of return. However, it is not accepted methodology to work on the basis of price trend projections even though they may well be achieved as the world recovers from its present recession. The project sponsors are confident of achieving higher crop yields than forecast once U.S. technology and local management are integrated and the optimum crop mix has been decided upon.

The capital cost import requirements to develop AFRAM-FARM are of the order of K10 million ($7.6 million) but all factors in the Balance of Payments evaluation and the economic and socio-economic return calculations are strongly positive on the funding plan proposed.

A significant reason for this is the willingness of the U.S. participants to receive the greater part of their contract management fees not only related to bottom-line profits, but as stock options. This approach greatly strengthens the company's capital base and reduces its Income Statement gearing as well as assisting Malawi's Balance of Payments and providing equity funding for later expansion.

Financing requirements of AFRAM-FARM:

The capital structure assumes that only seasonal financing will be sought from commercial banking sources, that the maximum possible equity will be raised from U.S. private sources. The balance of the long-term capital requirement will come from institutional funding entities, with repayment over 10 years after a two-year period of interest servicing only.

Three classes of equity stock are proposed:

(1) Nonvoting preferred stock to be issued to the U.S. technical participants in recognition of the project development costs borne by them. This will total $1,237,500 (K1,650,000) and carry an entitlement to 10% of AFRAM-FARM's pretax profits by way of deferred stock dividends.

(2) Voting common stock which will be issued:

	(K 000's)
To Spearhead for assets introduced	8,157
To the Anderson limited partnership (including The Standard Commercial Tobacco Group)	3,000
To the complementary livestock company	1,500
To institutional lenders or Malawi residents	1,450
	14,107

Drawdown will be over the period up to early 1988.

(3) Nonvoting deferred stock, ranking equally with the voting common stock for dividends and issued to holders of stock who do not opt for cash payments of their dividend entitlements.

Divestiture formulas to Malawians are a normal feature of equity participation by financial institutions. The U.S. participants propose a formula whereby they may divest at fair market value down to a 10% residual holding between years 10 and 25, and whereby they also have the right to divest at any time after year 10 over a maximum period of three years. The preferred stock will convert to common stock on premature termination of the management agreement if not sold.

It is hoped that PRE and Indebank will take the lead in the provision of institutional finance. PRE does have a right to provide loan finance up to 25% of project capitalization in recognition of its assistance with feasibility study funding, but is not committed to this.

Legal requirements:

A comprehensive services agreement will be required between the U.S. participants and Spearhead, AFRAM-FARM and that company's other shareholders, and this will require high-level political clearance in Malawi. Until the whole financing package has been secured, an interim management agreement will be entered into with the Receiver of Spearhead. A number of specific Malawi Governmental consents are also required, as well as overall approval from the Exchange Control authorities. It is also most desirable that the Double Tax Treaty between the USA and Malawi be reinstated. OPIC investment insurance will naturally have to be arranged.

Conclusion:

It is the firm belief of the project sponsors in the United States of America and in Malawi that a viable and mutually beneficial row crop rotational program can be introduced on Spearhead's tobacco estates. To this end the United States technical participants have offered, and the Receiver and Manager of Spearhead has accepted, participation

initially on a technical assistance basis until drawdown by all required financial participants has been agreed to - subject only to resolution of the following outstanding issues:

(1) Formal declaration of support for all aspects of the project by a Minister of the government of Malawi with authority to do so.

(2) Promulgation of the definitive plan for the creation of a solvent Malawi joint venture equity sponsor in the project company.

(3) Procurement of the finance required to operate the Spearhead estates for the 1984/85 season.

(4) Prior to drawdown, approval of the complementary livestock project company, and its financing.

(5) Prior to drawdown, procurement of the balance of finance needed for the implementation of the first phase of the rotational row cropping project company.

Mr. Lundgren and the Receiver will work jointly to resolve these outstanding issues, particularly items (1) through (3), by the end of March 1984.

SUMMARY OF MALTEX LIVESTOCK DEVELOPMENT PROGRAM

The MALTEX Livestock Development Program will also consist of two phases. The first phase will be initiated immediately and will consist of three types of projects:

- Three dairy farms
- Eight beef cattle herds
- Ten fish farms

The second phase of the program will be initiated at the end of 1987. This phase is expected to include several additional livestock projects for pigs, sheep and poultry. It will also include projects for processing the various livestock such as:

- slaughterhouses
- milk processing plants
- meat freezing, canning and specialty items
- tanneries
- fish processing, packaging and freezing
- broiler processing, freezing and packaging.

This report is concerned with the Phase One development program only. The feasibility analysis required for subsequent Phase Two projects will be initiated in 1986 after the MALTEX staff has completed the start-up of Phase One projects.

The three types of Phase One projects were selected on the basis of the following criteria:

- Short start-up time
- Relatively low capital investment
- High and rapid cash flow
- Low foreign exchange requirements
- Established markets and marketing infrastructure
- Efficient utilization of participants' management and technological know-how
- Ability to assist the traditiional smallholder sector
- Close integration with the AFRAM-FARM Crop Development Program

In order to keep overhead costs to a minimum, Central administration of the MALTEX projects will be handled through AFRAM-FARM who will receive a share of the gross revenue of MALTEX projects for the services provided by way of sharecropping. In addition, MALTEX will take an equity position in AFRAM-FARM in the amount of K 1.5 million.

One or more of the MALTEX projects will be located on thirteen existing Spearhead estates in the northern, central and southern regions of Malawi as shown below:

Northern Region	Projects
Maji	Cattle grazing
South Rukuru, I, II and III	Fish farms, cattle grazing
Mubangwe	Dairy farm, cattle grazing
Central Region	
Khola	Fish farm, cattle grazing
Nyaza	Fish farm, cattle grazing
Mbwabwa	Cattle grazing
Namitete	Dairy farm, fish farms
Ngombe	Fish farm, cattle grazing
Mchinji	Fish farm, cattle grazing
Southern Region	
Bwanje	Cattle grazing
Mapanga	Dairy farm, fish farm

In addition to these projects there will be a centralized embryo transplant laboratory at Lingadzi, Lilongwe.

Dairy farms:

Commencing in 1984, three dairy farms will be established on the estates.

The operational concept is to commence milk production utilizing existing and purchased milking cows. This will be followed by a rapid build-up of high-grade milking cows through modern embryo transplant procedures. Within eight years, three dairy farms will have 3,500 high-grade, extremely productive milking cows producing 29 million liters of milk annually.

Fifty high-grade donor milk cows will be imported to Malawi to provide embryos. Malawian and Zambian cows will be used as hosts for

the embryos. An Embryo Transplant Laboratory will be established, and Malawian staff will be trained in embryo transplant procedures. After the dairy herds have been fully built up, additional one-year old heifers will be sold to the traditional sector on favorable terms.

Cattle grazing:

A total of ten beef cattle projects will be initiated commencing in 1984. Cattle will be grazed on the estates in accordance with land use and crop rotational schedules of AFRAM-FARM. In addition, cattle will receive supplemental feeds of crop residues and by-products of crop processing from AFRAM-FARM.

Approximately 22,000 acres of estate lands will be used to graze the cattle. In the Northern Region, 1,500 Zebu cattle will be fattened annually during the period from April to November, and sold for slaughter. At Bwanje, in the south, a herd of 300 high-quality Zebu breeders will be used to obtain approximately 250 beef cattle annually. And in the Central Region some 6,000 offsprings from the dairy farms will be raised for slaughter or for sale to local smallholders to upgrade national herds.

The total stock, including calves, will number close to 8,000 head when the projects are fully developed. At that time, approximately 6,000 head will be sold annually for slaughter to produce approximately 1,200 metric tons of high-grade beef annually.

Fish farms:

A total of 450 acres of fish farms will be established on the estates during the period 1984 through 1986. These fish farms will specialize in growing tilapia and mullet from fish fingerlets.

Ponds will be filled and emptied by gravity. Construction cost of the fish ponds is expected to average about K 2,000 per acre.

When fully operational, each acre of pond is expected to produce 4,000 pounds of fish annually, or a project total of 1.8 million pounds per year.

Total investment in the fish projects, including ponds, will be approximately K 1 million. Gross revenue will be about K 360,000 annually, and annual contribution to cash flow will be about K 173,000.

Slaughter facilities:

Present slaughter facilities require enhancement before the export programs planned for a second phase development. This issue will be reviewed during the first two years with a view to offering technical expertise and mobilizing financial assistance which will be required.

Financial summary:

In total, the MALTEX projects will achieve an annual gross revenue of about K 10.3 million annually at steady state in 1997, and will contribute approximately K 4 million to cash flow annually after the fairly lengthy build-up period characteristic of livestock programs.

Total tangible capital investment required during the period to 1990 is estimated to be K 6.4 million, including structures, equipment, training, purchase of livestock and equity participation in the AFRAM-FARM Crop Development Program.

After deducting payments to AFRAM-FARM for its administrative and other services and including its equity investment in AFRAM-FARM, MALTEX will achieve an estimated 27.48 percent internal rate of return calculated over the first 20 years of the program.

In addition to being an excellent business investment, MALTEX will provide a variety of social benefits, principally to the traditional sector. Genetically high quality beef and milk cattle will be sold to the traditional sector at a price and on terms favorable to small farmers. Also, MALTEX will provide husbandry know-how to small farmers so as to improve genetic, nutritional and veterinary practices on a widespread basis.

The International Agri-Consortium
Daniel Land and Cattle Co.
R. H. Martin, Receiver and Manager,
Spearhead Enterprises Limited

San Antonio, Texas
Fallbrook, California
Lilongwe, Malawi
February 24, 1984

I N D E X

ABBREVIATIONS AND ACRONYMS USED

Spearhead	- Spearhead Enterprises Limited (in receivership) except where the context otherwise requires
IAC	- International Agri-Consortium of California
AID	- The United States of America Agency for International Development
PRE	- The Private Enterprise Bureau of USAID
ADMARC	- Agricultural Development and Marketing Corporation of Malawi
Indebank	- The Investment and Development Bank of Malawi Limited
OPIC	- The Overseas Private Investment Corporation
OECD	- Organisation of Economic Corporation and Development
FAO	- Food and Agriculture Organisation of the United Nations Organisation
GDP	- Gross Domestic Product
SHL	- The proposed Spearhead Holdings Limited
SEL	- Specifically, the existing Spearhead Enterprises Limited
MALTEX	- The proposed Malawi-Texas Livestock Corporation Limited
CDC	- Commonwealth Development Corporation
IFC	- International Finance Corporation
DEG	- Deutsche Entwicklungsgesellschaft
FMO	- Financierings Maatschappii Voor Ontwikkelingslanden
Africa	- Africa excluding South Africa except where the context otherwise requires
AFRAM	- The proposed implementation company "The African - American Farming Corporation Limited"

SETAMS - Sprearhead Enterprises Transport and Mechanical Services support division

EEC - European Economic Community

DAAH - Malawi Government Department of Animal Health and Husbandry

MMM - Malawi Milk Marketing, a milk collection, processing and distribution organization controlled by the Malawi Government

BAI - Booker Agriculture International Limited, of England

II. INTRODUCTION:

Having notified the U.S. Agency for International Development of its interest in coordinating development projects in Third World countries, Mr. Leonard Lundgren's International Agri-Consortium of San Diego, California had its name included in a circularization list drawn up for the Receiver and Manager of an insolvent agricultural conglomerate company in Malawi, Africa. The Receiver had contacted the United States Embassy in Malawi for assistance in identifying private sector financial and technical partners to assist in the rehabilition of the company (Spearhead Enterprises Limited).

The International Agri-Consortium responded positively to this approach, and discussions were held initially in California in January 1983. Potential project participants were quickly identified and, seeing the opportunity presented, a privately funded reconnaisance mission followed in May, 1983 after further discussions in Washington, D.C. between the Receiver, Mr. Lundgren and various U.S. governmental agencies. The following joined in this visit:

Mr. Leonard Lundgren
Mr. Richard Anderson of Richard Anderson & Sons, row-crop farmers of Tulare, California
Mr. Richard Thurburn of the Standard Commercial Tobacco Group of Wilson, North Carolina
Mr. Robert Daniel of Daniel Ranch Company of San Antonio, Texas
Mr. J.A. Fowler, a project development consultant from California
Mr. M. Maresca, prospective investment participant, from California

The majority of Spearhead's estates were visited and meetings were held with the top level of the Malawi Government Executive, the Central Bank, commercial bankers, development agency and diplomatic representatives, crop research authorities and others. Great assistance was given by the U.S. Ambassador and Embassy and AID staff.

Agreement was reached in principle:

- That all of Spearhead's estates sited on the Central African plateau lands at 3,000 to 4,000 feet elevation should be included in integrated agricultural development and crop processing projects, but not Spearhead's other estates, except to the extent available for cattle grazing.

- That two distinct, but complementary, areas of activity were involved - annual row-cropping and a longer term livestock program - and that these should be separately handled and financed.

- That technical assistance necessary for the implementation of a successful crop diversification and adding value program was available through the U.S. participants to permit profitable development of the estates, given the favorable climatic, ecological and political environment in Malawi, and the low internal operating costs.

- That the projects should be largely equity-funded with participation in the range up to 49% by the U.S. participants initially, with a divestiture program operative between years 10 and 25 of any project.

- That the tobacco acreage, although generally highly profitable, should not be extended beyond its present level.

It was also clear, however, that further data was required in a number of areas before investment commitments could be given, particularly as regards:

- The legal and regulatory framework applicable, including issues of currency conversion.

- The restructuring of Spearhead itself into a solvent and acceptable joint venture partner.

- The known transportation difficulties facing Malawi and likely to affect both crop inputs and exports of produce.

- Detailed study of the soils, topography and climate of each estate and the national and corporate infrastructure.

- Detailed financial evaluation.

- Identification of sources of funding to complement the U.S. participants' planned infusion of equity in circumstances where Spearhead could introduce only assets but no cash, and where the commerical banking sector in Malawi appeared to be limited in the amount of seasonal financing it could speak for.

In short, an in-depth feasibility study was required. For the livestock project only, this was costed at over $150,000, excluding time charges for Spearhead input. The relevant participants were willing to put up at least $50,000 themselves but assistance was required beyond that level.

Accordingly, funding assistance applications were submitted to the Private Enterprise Bureau of USAID, and to the U.S. Government's Trade and Development Program. Supplementary data was provided to these entities following a further visit to Washington and California by the Receiver in September, and PRE agreed to provide support shortly thereafter up to $50,000. Although the financial situation facing Spearhead had by then become critical, a delay occurred in obtaining TDP approval required for the larger row-crop studies. On the basis of verbal assurances that this would be forthcoming (still not evidenced in writing to this date), a feasibility team visited Malawi in December 1983, after carrying out a great deal of preparatory groundwork and research. The team comprised:

Mr. Leonard Lundgren
Mr. Craig Anderson, son of Mr. Richard Anderson
Mr. Glen Cannell, a highly qualified soil and enviornmental specialist from the University of California and head of its Department of Agronomy at Riverside.

The data obtained was collated and cross-checked after return. Experts in nutrition, world trade and transportation were consulted, as well as economists, accountants and legal counsel. The receiver joined this team in drafting the study write-up in California in the latter part of January, 1984, in conjunction and cooperation with the contemperaneous and complementary livestock feasibility study.

The outcome has been strongly positive except in the following aspects:

- Binding written (as distinct from verbal) confirmation from the Government of Malawi approving the project and the way in which a solvent joint venture partner company will be structured quickly in such a way that it will not be permanently State-controlled.

- Procurement of the funds necessary for the continuation of Spearhead's present limited-scale activities during the period of project financing. While this is primarily the Receiver's problem, a very early solution is in the interest of all concerned, and Mr. Lundgren will therefore assist the Receiver in this matter.

Subject only to these points, all of which are believed capable of resolution during March 1984, Mr. Lundgren and Mr. Daniel have formally renewed their commitment to the project via the medium of a limited partnership to channel their investment and technical infusions, and those of consultants and others. Technical assistance, on a below-market-fee basis initially, can commence immediately, and equity drawdown and a switch to a profit-related basis of remuneration as soon as the total funding for the first phase of the project is in place.

This first phase will involve putting in place cattle grazing, dairy farms and fish farms on thirteen of the sixteen estates to be managed by AFRAM-FARM plus one other estate. A second phase development involving pigs, sheep and poultry as well as a group of livestock processing facilities has been identified for implementation at the earliest practicable date - probably 1987 or 1988.

Arrangements for mutual land usage with the complementary row-cropping company have also been reached and the U.S. sponsor of that company has given similar undertakings to the Daniel partnership's, including its acceptance of the financial participation in the row-crop farming company.

III. BACKGROUND OF HOST COUNTRY - MALAWI:-

A. General economic situation of Malawi:

1. Historical data and attainment of planned economic objectives -

Malawi was granted Independence from the British Central African Federation of Rhodesia and Nyasaland on January 1, 1964, and no comprehensive or reliable economic data for the country exists for earlier periods. At the time of Independence the country was impoverished and almost without infrastructure. GDP per capita was K 36 (equivalent to $98 at 1983 prices).

Notwithstanding a population growth rate in the region of 2.6% per annum, the economy developed very rapidly from 1964 until just before the second oil price crisis of 1979. The annual compound increase in GDP per capita over that period was around 6.5% in real terms, despite a disastrous agricultural season in 1967 and the first oil price crisis. Government's economic priorities were the development of a transport and communications network, education and the provision of public buildings - in other words, the creation of an environment favorable to business expansion. Taxation increases were moderate, and the country was classified as a "low taxes" country. As a result, all forms of economic activity mushroomed, developing and extending the agricultural base and local manufacture of items previously imported from the Federal "workshop" of Southern Rhodesia. Terms of trade were favorable and exchange rates generally stable. The opportunity to extend virginia tobacco production to fill the void created by sanctions against Rhodesia was seized, and this rapidly overtook tea production (which itself doubled) as the country's biggest single export item.

A pragmatic foreign policy retained good commercial relationships with Rhodesia and South Africa, which in turn contributed substantially to the favorable terms of trade, at a time when most neighboring countries diversified their sources of imports and transport links at enormous unproductive cost.

The country's financial management was conducted prudently and foreign aid was accounted for strictly, and projects generally completed on schedule. A ten-year planning exercise was carried out to cover the decade of the seventies. However, it very quickly became apparent that rigid, centralized planning was unresponsive to external or uncontrolable factors and would inhibit rather than accelerate development. A switch was therefore made to a three-year rolling program approach to development spending and annual revenue budgeting - all within a broadly defined framework of objectives. Given this approach, the first oil price crisis of 1973 caused no more than a temporary pause.

Good contingency planning also initially alleviated the effects of the 1974 Portuguese Revolution. The dissolution of Portugal's African empire in 1975 radically changed the strategic and economic balance of the whole of Southern Africa. The emergence of a Marxist-oriented government in Mocambique, through whi h all of Malawi's trade links ran at the time, was not in itself a factor of particular importance - at working level, relationships between Malawi and Mocambique have remained very much as they were previously. However, the rapid deterioration in the administration and technical maintenance of the whole Mocambiquan transport and port infrastructure, coupled with increasing subversive activity there, rapidly created complications for Malawi. The effect was largely disguised by the commodity price boom of 1977/78 - which in retrospect can be seen as having had disastrous effects on the Malawi economy because of a failure to recognize it for the cyclical temporary phenomenon which it was. It concealed for too long the deterioration in terms of trade, particularly through escalating freight charges and the interest factor attributable to transit delays, which had set in as early as 1976.

The post-boom collapse in commodity prices coincided with the second oil price shock and increased real prices for OECD country exports. World recession and the fight against inflation accentuated

these trends, and the emergence of independent Zimbabwe did little to compensate, as it was no longer the ready market for exports or the cheap source of quality imports that it had been.

As a result, the level to which government spending had been allowed to rise with buoyant tax revenues, and the counterpart financing requirements of cost-inflated development aid programs, rapidly led to high internal government borrowing. The result of capital-oriented lending policies by the banking sector during the boom years also very quickly came home to roost, and full-fledged recession has stricken the economy from 1979 through 1983. Like an economic boom, economic recession tends to be self-fueling. The tap of government expenditure cannot simply be turned off when there are counterpart financing obligations, enormously increased foreign debt service liabilities through a combination of vastly increased interest rates, hardening of the principal loan currency, a sudden need to subvent a number of previously profitable state enterprizes, and a simultaneous sharp reduction in the inflow of foreign aid. Taxes increase sharply and credit to government escalates; import control and strict management of foreign exchange reserves becomes necessary.

Aided by its high level of internal discipline, Malawi appears in fact to have responded in a constructive and courageous manner to the economic vicissitudes facing it. But the corrective measures need time, and the impact of favorable exogenous circumstances, to work fully in just the same manner as the problems which crept up on the economy from 1975 onwards took time and a combination of adverse circumstances before becoming manifestly apparent.

In the meantime, recourse has been had to the various facilities available from the International Monetary Fund, Structural Adjustment Programs have been entered into with World Bank support, unpalatable political decisions have been implemented, state corporations are being thoroughly shaken up, external debt has been rescheduled (twice), remittances of profits and to meet trade and other commitments have been

honored with very little delay, and creative exchange rate management policies have been adopted to encourage exports and inhibit imports. After allowing for uncontrollable items (largely interest payments) government spending has been slashed.

The first signs of favorable external factors are now apparent in increased tropical beverage prices. As the world emerges from recession, and particularly if dollar interest rates drop, this can be expected to extend to tobacco and other agricultural products. Great innovation has been shown in overcoming the acute transportation problems and the opening of the international-standard airport at Lilongwe should enhance this. Money has to be attracted for diversification and other purposes from foreign private as well as official sources at the same time as the internal reorganizational efforts under way. And this seems to be well-recognized.

The initial program of transport and communications infrastructure is now approaching completion, and increased emphasis on health, education, agriculture and water resources, and institutional strengthening appear to be taking over as public sector development priorities.

2. Current economic data -

Published historical financial statistics are comprehensive and are believed to be reasonably accurate but, apart from certain readily accessible data, tend to be collated and published some time after the event.

Available data, on which this study is based, include the following:

(a) Gross Domestic Product - calendar 1982 (approximately equivalent to $1,210 million)	K1,287 million
GDP per capita	K 224 ($211)
Growth rate over 1981 - nominal	+ 22.6%
- real	+ 2.9%
- real per capita	- 1.4%

(b) Composition of GDP in 1982:

Agriculture	40%
Industry	11%
Construction	5%
Services	44%
	100%

(c) Inflation in 1982:

GDP implicit price deflator	19.7%
Retail price index movement	9.5%

(d) Employment and earnings in second quarter 1982:

	Number (000's)	Average monthly earnings (Kwacha)
Agriculture	175	24
Industry	32	87
Construction	25	46
Services	110	92
Total/average	342	53
Whereof, government	75	60
Private sector	267	51

(e) Foreign trade - year to September 1982:-

Imports (cif) by end-use (K000's):

Consumer goods	41,340	13.0%
Plant, machinery and equipment	38,322	12.0%
Transport means	29,696	9.3%
Materials for building and construction	23,737	7.5%
Basic auxillary materials for industry	126,168	39.7%
Commodities for intermediate and final consumption	58,053	18.3%
Miscellaneous	745	0.2%
	318,061	100.0%
Volume (1970 = 100)	108.5	

Exports (fob) by main commodities (K000's):

Tobacco	121,865	50.3%
Tea	39,309	16.2%
Sugar	43,430	17.9%
Peanuts	5,759	2.4%
Cotton and cotton products	10,170	4.2%
Other agriculture	7,790	3.2%
Nonagricultural	14,071	5.8%
	242,394	100.0%
Volume (1970 = 100)	171.1	

Major trading partners (K000's):

	Imports	Exports	Percentage of trade
South Africa	111,381	14,172	22.4%
Great Britain	46,168	63,032	19.5%
United States of America	13,643	32,912	8.3%
West Germany	22,737	21,292	7.8%
Zimbabwe	15,628	17,244	5.9%
EEC excluding Britain and Germany	27,621	37,849	11.7%
Commonwealth excluding Britain and Zimbabwe	35,469	16,466	9.3%
Japan	18,914	9,333	5.0%
Other	26,500	30,094	10.1%
	318,061	242,394	100.0%

(f) Balance of payments - calendar 1982:	K millions
Merchandise - exports (fob)	257
- imports (fob)	(239)
	18
Nonfactor services (mainly carriage)	(114)
Factor services	(31)
Transfers - private sector	(9)
- public sector	34
	(102)
Long-term capital - private sector	(5)
- public sector	63*
Short-term capital, errors and ommissions	(3)
Drawdown on foreign reserves	(47)

*After debt rescheduling relief of K19 million.

(g) Government revenue (fiscal to March 1983):	K millions	
Taxation - direct	74	
- indirect	128	
- miscellaneous	1	
	203	50%
Service user charges	42	10%
Local borrowing (net)	31	8%
Foreign borrowing	88	22%
Foreign grants	41	10%
As estimated in March 1983	405	100%

(h) Government expenditure (fiscal to March 1983):-		
Recurrent expenditure:		
Statutory (interest and pensions)	70	17%
Voted - consumption	143	36%
- other, including grants and subsidies K24m.	37	9%
	250	62%
Development expenditure	138	34%
Foreign loan repayments	17	4%
As estimated in March 1983	405	100%

All of the above data has been taken from publications of the Malawi Government and the Reserve Bank of Malawi.

3. Forecasts and projections of general economic indicators -

The Government's 1983 Economic Report, issued in March 1983, projects GDP through 1988 on the basis (p. 72):

" (i) that government recurrent expenditure will be restrained, increasing at a rate of 2% a year in real terms throughout;

(ii) that government investment spending will increase at a considerably faster rate, up to 5% a year in real terms;

(iii) that crop production will recover to peak values under the stimulus of favorable policies and thereafter continuing in a trend like manner;

(iv) that the private sector will recover its confidence in the future growth of the economy, and will invest accordingly.

The picture presented is one in which the growth of GDP accelerates to a fairly rapid rate by the mid-1980's, but thereafter stabilizes. The stabilization occurs because crop production has in most cases reached its previous peak, and further growth is forecast to occur in a relatively restrained manner."

This may be open to query as a simplistic scenario, taking no express account of external facors, or of the present inadequate resources of the banking system. However, the average rate of growth projected (4.1%) is moderate for a period of economic recovery, supported by improving terms of trade and gradual easing of transportation bottlenecks and financial constraints.

The current prices model assumes an internal inflation rate of 10% annually. This would seem low given the continued deficit financing during 1983, and it is hard to see how this situation will change in 1984, although credit to the private sector may well drop. A higher rate, however, would tend to favor an agricultural diversification project with restricted recourse to offshore loan funding.

Strong growth in foreign trade, investment, savings and nongovernment consumption is anticipated. At 29% and 13% of Gross Domestic Product respectively in 1979 domestic investment and savings were much higher than average in Africa and a return to this pattern seems to be expected.

The key appears to be restrained government spending, increased capital inflows and diversification investment in a stable regional environment. Real increases in GDP of 3% in 1982 and 3.6% (projected) in 1983, in difficult circumstances, are hopeful pointers. The high proportion of smallholders to wage-earners in the economy seems unlikely to change given sustained population growth over a long period, and hence ample reserves of reasonably priced labor are likely to be maintained to cover the needs of new labor-intensive projects.

Detailed recurrent account transactions by government have not been projected forward officially beyond 1983/84. With economic recovery, reduced recourse to local borrowing and then reduced import duties and personal taxes may perhaps be foreseen as the decade progresses. Significant changes in corporate taxation seem unlikely.

The overall budgetary position for 1983/84 may be summarized as follows:

	K millions	Increase over 1982/83
Taxes - direct	82.9	12.6%
- indirect	143.7	12.2%
- miscellaneous	1.6	9.8%
	228.2	12.3%
User charges	51.2	22.6%
	279.4	14.1%
Local borrowing (net)	13.8	(55.8%)
Foreign borrowing	88.4	0.8%
Foreign grants	49.1	19.2%
	430.7	6.3%
Recurrent expenditure:		
Statutory (interest and pensions)	64.6	(7.6%)
Voted - consumption	158.2	10.5%
- other, including grants and subsidies K27m.	43.2	18.0%
	266.0	6.4%
Development expenditure	152.5	10.1%
Foreign loan repayments	12.2	(26.5%)
	430.7	6.3%
Anticipated GDP deflator		9.7%
Anticipated GDP	1,636.0	

Although the foreign debt service costs seem likely to overshoot following the September 1983 currency realignment, a strong effort is clearly under way to restore domestic financial stability, with ratios to GDP returning to something close to the pattern of the successful 1964 to 1977 period.

4. Energy -

An Energy Unit monitors and forecasts energy usage and availability in Malawi. Conventional commerical fuels represent a small proportion of total energy consumption and their continued supply is not expected to pose particular problems. Supplies of the predominant fuelwood are predicted to be depleted over the period to the end of the century, however, even assuming efficiencies resulting in offtake well below population growth rate. The problem is being tackled through compulsory planting programs for certain commercial farmers (especially tobacco farmers) and by making available seed to smallholders at very low cost. It is clear that any agricultural enterprise must provide for self-sufficiency for its needs, including the domestic requirements of its labor force, where electricity is not tapped.

Official projections indicate usage proportions of:

	1980	1985	1990	1995	2000
Wood fuel	91	90	89	88	87
Crop and industrial residues	3	4	4	4	5
Hydro-electricity	1	1	2	2	2
Oil (imported)	4	4	4	5	5
Coal (imported)	1	1	1	1	1
Total usage	n.a.	+14%	+11%	+7%	+5%

These figures may well prove to be underestimates.

B. Business climate for foreign investment:

1. Introduction -

There is no formal "investment code" in Malawi, the economy being based on free enterprise and there being few special regulations applicable to foreign source investment or preferences for local source investment. The oft-repeated objective of government in this field is to create a favorable investment climate, and thereafter to step in directly only where this is necessary to fill a vacuum.

The basic legislation of relevance to investment was virtually all introduced at, or shortly after, Independence.

2. Licensing and controls -

Most forms of business activity are controlled by licensing. In some cases this is restrictive in nature; in others it is largely informative in function. Retailing generally is confined to citizens except in major centers or to provide a service to rural estate employees.

Industrial licensing procedures involve advertisement and hearing of objections. Following this process, renewable five-year exclusive licenses may be granted, and also tariff protection in the case of infant industries.

Most agricultural production is controlled by the Special Crops Act and other legislation, perishables being the notable exception. Long-term tropical plantation crop development, and also tobacco growing, is generally subject to licensing administered by joint government/growers associations but sales are generally not restricted except in the case of tobacco which must be sold over the open auction floor. The growing of annual grain and seed oil crops is not generally restricted, but seed varieties used and purchasing and selling procedures are strictly controlled by licensing. Without special permission

only the state enterprise ADMARC (Agricultural Development and Marketing Corporation) can purchase at farm-gate or market, and at controlled prices, and direct exports are also licensed in the case of most food and seed oil crops. Special permission can, however, be sought by the private estate sector to market its own crops or to process them.

Livestock sales are generally subject to price control at point of sale for consumption, and exports require licensing. A formal monopoly situation exists in this sector only so far as hides and skins are concerned.

3. Import duties -

Imports of capital goods for projects approved by the Ministry of Finance as of national importance are exempted from import duties (but not from the present 4% levy on their c.i.f. value), and preferential rates of duty can be applied to import of materials for local manufacture where the Ministries of Finance and of Trade and Industry are satisfied that this will be in the interests of the economy as a whole.

There is a comprehensive duty draw-back system to assist exporters of locally manufactured goods; also a bond store system to permit delayed payment of duty until imports are required for use. Assembly operations can be carried out in bonded premises.

When combined with surtax and applied to c.i.f. values, import duties at present are high, particularly on consumables and luxury items.

4. Infrastructural services -

Necessary infrastructural services will normally be provided by government or its agencies, except in remote areas. Capital or annualized contributions are required for such items as electricity and site servicing, however, although these are sometimes offset by tariff rebates over the early years of operation.

5. Worker training -

Financial assistance with certain worker training is available through a government board, and attendance at agricultural, academic and technical training colleges within Malawi is free.

6. Carriage costs -

While air and rail freight tariffs are high, they generally favor exporters and private air charter is permitted under license.

7. Services to exporters -

The Malawi Export Promotion Council, funded by government, handles national export promotion and collates data and can make grants towards the cost of export market research.

Commercial invoice and certification of origin services to exporters are provided by the Chamber of Commerce and Industry of Malawi, except for tobacco and certain food crops where this function is handled by the appropriate trade organizations.

8. Corporate taxation -

The corporate taxation system is relatively straightforward and has changed little over the period since Independence. Without granting any outright "tax holiday" it provides substantial incentives and deferments for investment, particularly in agriculture and industry. All noncapital expenditure incurred wholly and exclusively for business purposes or in the production of income is deductible. Capital expenditure on land development, soil erosion and water conservation work, irrigation infrastructure and the development of long-term crops and timber is deductible when incurred. Other agricultural improvements, industrial and farm buildings and machinery, and most equipment, are the subject of a 10% "bonus" deduction when incurred and to accelerated depreciation allowances. Tax losses built up in years of development can be carried forward indefinitely and offset against

the first taxable profits arising from any source in the hands of the taxpayer. There are no withholding taxes on distributions. The rate of corporate taxation seems unlikely to rise above the present 50% level in the foreseeable future, and the 5% surcharge which can apply when foreign distributions are made is unlikely to arise in practice provided the investment is structured appropriately.

Lease premiums can be deducted like other capital expenditure, but on a straight-line calculation over a period not exceeding 25 years.

Depreciation allowances on buildings which are not industrial buildings or agricultural improvements (e.g., a head office) are only granted where the situation of the building is declared by the Minister of Finance to be such as to make an important contribution to national development.

Particularly favorable tax deferment rules apply to livestock and the treatment of unharvested crop costs.

9. Double taxation -

Following revocation by the United States of its double tax treaty with Malawi, all interest and the profit element in fees for technical services rendered to Malawi companies by U.S. citizens or entities are now subject to Malawi tax, a factor which will reduce the overall investment return slightly, but not substantially.

10. Personal taxation -

The personal taxation burden, unlike the corporate tax burden, is high by international standards, particularly as there are very few deductibles. Although the maximum marginal rate is only 50%, this rate is reached on earnings of $17,000 (and a 45% rate on earnings of $10,000). These limits may be extended by up to one fifth for expatriates working on inflexible standard-form contracts willing to defer that portion of their earnings until the end of a 30-month contract of

service, but even this relief has to be set against the practice of taxing the value of "mid-contract" leave and children's education passages. This discriminates somewhat harshly, as those domiciled farthest away from Malawi pay more income tax than recruits from, say, South Africa, and is presumably a major reason why none of the present United States investors in Malawi appears to employ any U.S. citizens locally.

The personal tax burden is to some extent alleviated by the extremely low standard scales applied in respect of provision of free employee housing. All-in-all, a U.S. citizen is unlikely to be able to utilize the whole of his Malawi tax credit for U.S. Federal Tax purposes. Even employing nationals of nearby countries the gross payroll cost of expatriate employees is likely to be comparatively high.

The position of nonexecutive, U.S. resident directors is likely to prove less troublesome in view of their likely lower earnings for part-time involvement, and the nontaxability of air fares to and from Malawi in their cases.

The taxation system appears to be fairly and efficiently administered.

11. Exchange control -

There is a comprehensive system of exchange control restricting foreign remittances and repatriation of funds. Again this is apparently administered fairly by the Reserve Bank of Malawi as controlling agent, and it is in fact considerably less restrictive, and less uncertain in its operation, than in most other English-speaking African countries.

The fundamental Bretton-Woods concept, endorsed by the International Monetary Fund, of merely restricting capital transfers has not been entirely lost sight of, but has been greatly extended over the

past four years of balance of payments pressures. A key factor is clearly to seek expert professional guidance before structuring or entering into transactions with offshore ramifications.

Incoming equity and loan capital must be registered. Provided this is done remittance of loan interest and capital in the curency of origin will be permitted in terms of the loan agreement; also remittances of dividends up to the amount of after-tax profits for the most recent fiscal year will be permitted after audit. Should the Malawi company be foreign controlled, recourse to short-term local borrowing is not permitted at this time, the tax due on the profits must have been paid or guaranteed and a few months delay is likely to occur. However, it is stated that at no time have foreign profit remittances within these parameters been prevented. If cash is not available to a company to support its dividend remittance the payment due may instead be reinvested in the company and recognized, on registration, as additional foreign source capital.

Repatriation of equity capital (which must be in kwacha) is always subject to negotiation and is frequently phased over 3 to 5 years, but is apparently never refused. All transfers of equity involving a non-resident require exchange control clearance.

All loan agreements and agreements covering provision of technical and managerial services, royalties, etc., must be approved before they are entered into, and suggestions for amendments may be proposed at this stage. Evidence of settlement of any Malawi tax payable is likely to be called for at the time of remittance, a point of importance following revocation of the double tax treaty.

All imports require advance clearance (based on pro forma orders) from the Reserve Bank of Malawi. For agricultural and industrial inputs, and for foreign financed capital goods, this appears to be a formality, but doubtless involves price reasonableness checking. Quick approval routines exist to cover emergency situations. Imports cannot

be paid for in convertible currency until the goods or services arrive in or are performed in the country. Rather expensive confirming facilities are therefore likely to be necessary to satisfy ExIm Bank requirements, or the requirements of similar agencies in other countries.

Political risk investment insurance premiums have to be met out of technical fee or dividend remittances.

Foreign controlled companies require special permission for most forms of local borrowing, although not for discounting or leasing. A factor taken into consideration is said to be the ratio between foreign and local total capital, and this varies between industries. The exact ratios have not been provided but the concept that purely seasonal borrowings connected with locally procured inputs be financed locally has not been queried.

Export sale proceeds have to be remitted virtually intact to Malawi, and Malawi companies are not normally permitted to hold funds in foreign bank accounts or locally designated in foreign currency. In view of the comparative ease of making remittances, this is not considered to be unduly unreasonable.

Personal remittance levels for expatriate employees and directors appear to be generous, although again the regulations must be adhered to exactly. Two thirds of an employee's net monthly earnings, and the whole of special payments can be repatriated. Directors' fees can be repatriated provided they are in line with services rendered and/or with the fees paid to locally resident directors. Foreign directors' airfares to and from Malawi can be paid for locally.

The predominantly British expatriate sector of the economy appears to find the system of exchange control an administrative inconvenience, but not a hurdle to efficient and profitable operations.

12. Banking -

The commercial banking system seems to be emerging from a difficult period, during which it had to bear such problems as Spearhead's $20 m. receivership from a small capital and deposit base. In the process the only United States bank with a local presence, Bank of America, has sold its local investment to the Government. The British-based Standard Chartered Bank remains involved with the National Bank of Malawi, and both banks in the country have ability to provide substantial amounts of seasonal finance. The local banking sector can also provide discounting, confirming and leasing services. Lending is generally by fluctuating overdraft rather than conventional term loans, and interest rates at present are in the 12-1/2% to 15% range (compounded monthly, i.e., 13-1/4% to 16% annualized). Very strong collateral over assets is generally required, or an equally strongly backed or Triple A rated foreign guarantee. The banking community is anxiously seeking the implementaton of projects of the kind proposed in the hope they will establish financial initiatives which help set the framework for a sound private sector program.

13. Long-term finance -

Availability of longer-term finance in Malawi at the present time appears to be very limited. While a number of institutions operate in this market, only Indebank (the Investment and Development bank of Malawi Limited) appears actually to have funds available, and these are normally restricted to $1 million per project and denominated in dollars or deutschmarks. Debenture security over project assets is required, but around 20% to 25% of the $1m. may be provided as equity, not loan.

14. Local participation -

Local participation in new projects is extremely strongly encouraged, and preferably local control, especially in projects involving ownership of large areas of land. This is not absolutely mandatory, however, and can be subordinated to the goal of economic

development. Unlike many other countries, this participation is paid for in full, either in cash or through the value of tangible assets introduced. When adequate local resources cannot be located, a long-term share option agreement is often acceptable as an alternative. Sale options exercisable by the foreign investors in projects are also a fairly common feature. In the case of Spearhead, these are the clear routes to follow, although attempts to procure local capital will be maintained and expressions of interest in principle have been given by certain individuals.

15. Legal and accounting practices -

Company law is straightforward, although old-fashioned and more akin to British law than to U.S. law. A corporate entity is a legal person in its own right and, in the absence of fraud, equity holders' liability is restricted to the amount they put up. The public company is similar to a U.S. corporation, and is not common in the absence of a stock exchange on which stocks can be freely traded. Private companies restrict equity holders to parties approved of by the directors and existing shareholders have a fair market value preemption right should anybody wish to sell - quite apart from any specific option arrangements that may be entered into.

There are few specialist corporate lawyers, but an adequate service does appear to be available. As foreign counsel are rarely permitted to appear in Court, other than as a witness, international arbitration arrangements are frequently written into project agreements.

The public accountancy profession appears to be well developed for the size of the economy. Generally accepted accounting principles are similar, although not identical to, U.S. practice, and auditing standards are essentially the same. Independent audit is legally obligatory for all corporate entities.

Financial and corporate advisory services are available from a number of sources.

16. Work permits -

All expatriate personnel apart from visiting nonresident directors require work permits. Although no quota system as such operates, difficulties and delays seem frequently to arise in obtaining them. A great deal of often extraneous information has to be supplied, and renewal at the end of the two year period of validity is by no means a matter of routine. Evidence of high academic or other specialist qualifications is called for, and local advertising is required to establish that no suitably qualified nationals are available. On the other hand, the fees are purely nominal, and there is the advantage that an expensively recruited individual cannot change his employer without very good reason being demonstrated.

While employment of large numbers of additional expatriates is not considered necessary for Maltex, three specialist expatriate-held posts while counterpart training progresses will be necessary for a considerable number of years, and the 3 to 12 month processing period customarily required for permits will not be compatible with the efficiencies of operation required. Specific assurances therefore seem to be required.

17. General restrictions -

There are a number of laws in Malawi whereby forfeiture of assets without compensation, or seizure for the purposes of liquidation, can be ordered without recourse to the Courts and on grounds which are capable of subjective application. From enquiries made, however, it does not appear that these have ever been applied to bona fide foreign owned investments. Presumably these laws are known of to OPIC (the Overseas Private Investment Corporation) and, in the unlikely event of their application, any resultant loss to U.S. insured investors would be covered under its political risk insurance scheme.

Provision also exists for compulsory acquisition of shares in a company, and of land or other assets, but this is subject to compensation and/or recourse to the Courts in a normal manner.

Laws passed in recent years have restricted the trading activities of the local Asian community and where its members may live, and have also restricted most road haulage commercial operations to local citizens. These appear to have been in response to historical situations, and not to be the forerunners of restrictions on foreign investment generally. Any such event would appear to be in the "political risk" category.

All land tranfers and land leasing operations for periods in excess of three years are subject to purchase intervention (with fair market value compensation) by government. As the Spearhead investment involves rehabilitation and development of land at present owned by a government controlled corporation, this apparently little used power appears of only marginal importance in the circumstances.

18. Price control -

Price control has in the past been a contentious area, and a source of problems for some businesses, in Malawi. Only a small number of items are subject to specific price control, but these include corn, beef, swine and poultry products, all of which have to be sold in the local market until its needs have been satisfied before export is likely to be permitted. In addition, a manufacturer must give an eight week period of notice during which objections can be raised by the Ministry of Trade and Industry, before increasing prices in the local market. Whilst there are strong indications that a more liberal attitude is being adopted in this area as part of the national structural adjustment process, a versatile approach to crop rotations and the livestock program may have to be considered from time to time in the light of this.

A specific problem exists in the procurement of spare parts for vehicles and agricultural equipment, where franchise holders are unwilling to hold adequate stocks as a result of a price control formula they have to adhere to. This can be overcome by direct importation, although the extra inventory increases financing required.

Due to the small size of the economy many de facto monopoly or near monopoly situations exist (which is no doubt the principal reason for price control), including the markets for cotton lint, wheat and vegetable oils. Flexibility, and suitable long-term contract arrangements, will be required in this situation.

19. Research activities -

Government or growers' association funded research stations exist and render extensive services to agriculture in Malawi. Grower finance is provided where appropriate through modest levies ("cesses") on production. Basic soil and water sampling services are also available at low rates. Seed and cultivar research goes on continuously, and standards certification services are available. The combined effects of these services assists the agricultural sector considerably in keeping in the forefront of development in Africa. The Government Veterinary Department provides a primarily disease-control oriented assistance program for livestock, and has made available a great amount of technical study data gathered in Malawi and Zimbabwe.

20. Transportation of imports and exports -

Malawi faces acute transportation problems on its traditional export and import rail/sea routes to the Mocambique ports of Beira and Nacala. The rail route to Beira is for all practical purposes inoperable due to a combination of subversive activities and lack of maintenance in Mocambique. Rehabilitation of this route and port improvements required at Beira itself will take several years, at best, to accomplish. The rail link to Nacala, while not subject to sabotage,

is in extremely poor condition. There is a shortage of locomotive power and few handling facilities at the port itself. While a major internationally funded rehabilitation program is under way it will not be completed for another three years at least. Roads to these ports are unusable or entirely unsuited to heavy traffic.

Nonetheless, Nacala is used effectively for most bulk import and export traffic. In the case of imports this involves ordering and purchasing very far in advance of usage, and for exports involves an interest deduction from the f.o.b. Nacala sale price.

An alternative, circuitous, road route has been established through Zambia, Zimbabwe or Botswana, and South Africa to the port of Durban. It is inevitably expensive due to the 2,000 mile haul involved but it does operate efficiently and political risk of abrupt closure seems low as the sensitive Zimbabwe/South Africa frontier can be bypassed. The majority of high value items use this route, and even some with high bulk factors.

Agreement has recently been reached to construct a paved road link between Malawi and Tanzania providing a 650 to 1,000 mile haul to Dar-es-Salaam port. However, this port does not operate satisfactorily as it is subject to congestion and pilferage. The road on to Mombasa in Kenya has deteriorated very badly and Tanzania has a history of objection to acting as a mere transit corridor from inland countries to that port.

While enquiries have revealed that given good planning the transportation problems affecting Malawi can be, and are, successfully overcome, the acquisition of an airfreighter to ply the Lilongwe-Mombasa, Kenya route is probably desirable, and a cheaper alternative to scheduled or chartered air freight services for bulky items.

With only two direct flights to Europe each week, Malawi is not yet suitable for the production of exotic or out-of-season perishables or livestock products in unprocessed form for OECD markets.

21. Conclusion -

Both foreign and local private sector investment is quite clearly genuinely welcome in Malawi, and always has been. There are restrictions, but most of these are directed towards fair trading, orderly growth and balance of payments management. There are also strong incentives in the taxation system, duties and exclusive licensing, free higher education facilities and assistance with industrial training, remittability of profits, and, above all, stability and an absence of corrupt practices.

Work permit restrictions can probably be discounted to a large extent given clear foreign exchange benefits to the economy and implementation of realistic training programs. The high gross cost of necessary expatriate services in the interim period does not appear to inhibit overall profitability unduly.

Transportation difficulties should gradually be alleviated and in the meantime can be, and are being, overcome by good planning and innovation.

Overall, the investment climate is amongst the most favorable in Africa, and is capable of producing attractive rates of return to foreign investors, particularly given the mainly tariff-free entry to European Economic Community countries and the U.S.A. for most produce and products of Malawi origin.

C. The agricultural sector:

1. Historical data -

In a country in which almost 90% of the population is in the smallholder subsistence sector, data on crop production as such are not available, given that most smallholder food crops and livestock are personally consumed and never reach a market. Malnutrition would appear to be a significant factor in the high infant and child mortality pattern, but this may be due as much to ignorance as to actual protein and food supply deficiencies. FAO (Food and Agriculture Organization) estimates put the per capita calorie deficiency in Malawi in the range of 5 to 10 percent, although this will vary from year to year along with crop yields. The average per capita daily calorie intake was estimated a few years ago at 2,066.

The last detailed rural land use and crop yield statistical survey took place in 1968-1969; since then, population has increased by about 47% and smallholder fertilizer purchases by 300%. It is therefore of doubtful relevance fifteen years later, but the estimated per capita consumption figures are of interest still:

Grain (over 90% maize corn)	app. 550 lbs.
Peanuts, pulses and vegetables	app. 200 lbs.

as is the population distribution by age group established by the 1977 national census:

under 1 year (unweaned)	4.5%
1 to 14 years	40.2%
over 14 years (adult)	55.3%

The maize corn yield per acre has probably increased somewhat from the 1968-1969 average of 910 lbs. due to the intervening expansion of agricultural development areas and in use of fertilizer. If it is now 1,100 lbs., and if other food crop yields have moved similarly, then

the acreage under cultivation for crops for consumption (excluding livestock) is now likely to be in the region of 4,650,000 acres out of a total theoretically possible for cultivation of 13 million acres, a substantial proportion of which is already spoken for by shifting cultivation practices, grazing and by estate, urban and other uses, including afforestation and water resource conservation.

The livestock population was estimated in 1981 by the Department of Animal Health and Husbandry to be:

	Head	10-year compound growth rate
Cattle	871,000	4.8%
Goats	718,000	1.3%
Sheep	85,000	0.6%
Swine	206,000	1.8%
Poultry	app. 9,000,000	2.0%

indicating a grazing area requirement of at least 5 million acres under traditional management. Estimated annual consumption offtake of meat (cold dressed weight) and fish production in 1981 was:

	Short tons	Per capita (lbs.)
Cattle	12,500	4
Goats and sheep	3,600	1
Swine	4,500	2
Poultry	3,000	1
Fish (unusually low in 1981)	52,000	17
	75,600	25

Although the figures for all except poultry could be underestimated by up to 60% as they are based on veterinary records rather than the 1969 statistical survey, in the absence of exports the conclusions seem clear -- that intensive production of grain, oilseed, livestock and fish are going to be required to meet internal demand, and that the estate sector will have to play a role in this for a considerable period into the future, quite apart from assisting in the production of

export crops. This is despite the FAO estimate that Malawi's agricultural production growth was second in Africa in two control periods (1969-1971 and 1977-1979) and also in per capita terms.

Statistics are available for sales in the market of those crops for which ADMARC is the purchasing agent, or where growers' associations collect statistics on a regular basis. In the case of food crops, these represent only the surplus after consumption and seed requirement in the neighborhood of each of the 700 or so ADMARC markets have been satisfied. These markets do not handle livestock, which are sold by informal auction at District Centers. In short tons:

Food and oilseed crops	Shelled peanuts	Cotton	Rice	Shelled maize	Pulses	Other
1974	29,390	21,829	21,310	66,779	8,082	14,599
1975	33,463	18,133	14,956	29,830	6,048	6,973
1976	33,204	18,315	25,008	66,142	18,979	8,250
1977	18,867	23,088	24,381	91,718	8,944	8,763
1978	11,353	24,702	31,432	123,029	10,645	8,639
1979	24,782	22,859	20,897	83,814	6,840	4,952
1980	32,046	23,576	17,848	93,726	10,808	7,246
1981	19,884	22,174	14,976	139,380	7,346	3,398
1982	10,641	15,096	12,794	250,983	5,907	4,111
1983 (to Sept.)	10,354	13,480	8,072	245,187	3,182	755
Price per ton:						
- 1974 MK	155	156	74	43	77	51
$	185	186	88	51	92	61
- 1983 MK	474	357	122	109	146	n.a.
$	401	302	103	92	123	n.a.

The vast majority of these purchases are used to satisfy domestic market requirements for food for urban dwellers, cotton lint for the textile trade and oilseeds for vegetable oils. After a very tight supply/demand situation for maize (the staple foodstuff for most of the population) in 1979 and 1980, the market price for this was increased dramatically. As a result, it has been possible in 1982 and 1983 to set aside a one-year's consumption stockpile, and there has been no difficulty in exporting the balance of the surplus profitably to neighboring countries.

If judged by an export parity price yardstick, the smallholder prices for maize are heavily subsidized, and those for fire-cured tobacco, peanuts and cotton are heavily "taxed."

The stagnant or declining production of peanuts and cotton is in part a reflection of the increased price attractiveness of maize growing and has resulted in the following import requirements:

	1982	1983	
Cotton lint	1,836	2,570	short tons
Seed oil	600	250	short tons

The other principal foodstuff imported is wheat, demand for which is increasing rapidly, and is estimated to amount to 30,000 short tons in 1983, having been only 16,500 tons ten years earlier. Food imports in relation to total imports are the lowest in Africa after Zimbabwe according to United Nations estimates, but there is substantial suppressed demand.

Rice has traditionally been exported, mainly to Zimbabwe, which has recently switched its source of supply to the communist bloc.

Tobacco, beverages, etc.

Production in short tons:

	Tea	Coffee	Sugar	Estate tobacco	Smallholder tobacco	
1974	23,868	n.a.	49,941	16,212	11,578	(9,417)
1975	26,724	n.a.	50,358	23,354	12,242	(10,335)
1976	28,866	n.a.	66,178	23,223	14,491	(12,392)
1977	32,232	n.a.	85,916	30,221	23,169	(18,968)
1978	32,334	155	93,371	32,063	23,742	(16,730)
1979	33,252	379	95,346	40,867	19,541	(12,533)
1980	30,499	253	109,781	43,847	11,341	(10,136)
1981	32,640	504	150,056	39,288	12,755	(11,041)
1982	38,041	929	169,976	51,215	8,794	(7,268)
1983	small increase	big incr.	small decline	63,197	9,279	(8,552)

Price per ton:

1974	MK	708	n.a.	389	1,327	295	(932)
	$	845	n.a.	464	1,584	352	(1,112)
1983	MK	1,452	2,353	276	1,485	741	(2,745)
	$	1,228	1,991	234	1,340	627	(2,322)

The figures in parentheses for smallholder tobacco indicate the quantities and values at which it is resold on the open auction floor by ADMARC after grading and transporting it.

These commodities, apart from some 25,000 tons of sugar, are almost exclusively produced for export. Prices are volatile -- for example, the price of estate tobacco in 1982 was K2,087 ($1,942), and of sugar in 1981 was K514 ($464).

The quantity of long-term crops produced is dependent on weather conditions in the short term, whereas the other commodities respond fairly quickly to price changes.

Estimated livestock slaughterings number	Cattle	Sheep/goats	Swine	Poultry
1974	65,500	57,500	20,000	2,550,000
1975	65,500	45,000	22,500	2,600,000
1976	58,500	38,500	21,500	2,660,000
1977	63,500	42,000	18,000	2,710,000
1978	73,000	55,500	17,500	2,770,000
1979	79,000	50,500	12,500	2,820,000
1980	73,000	48,000	10,500	2,880,000
1981	86,000	48,000	7,800	2,940,000
1982	90,000	48,000	6,000	3,000,000
1983	not yet	available		

Wholesale price per ton cold dressed weight:

1974	MK	615	796	947	1,165
	$	734	950	1,130	1,390
1983	MK	1,294	2,176	2,706	2,287
	$	1,095	1,841	2,289	1,935

As noted above, the slaughterings of red meat and swine could be understated by up to 60%.

Production of swine and poultry have proved particularly responsive to the effect of price controls, and there have been small importations of meat products in years when local supply has been restricted.

Detailed export statistics by crop have been published only since 1978. The figures in parentheses are kwacha values per short ton:

	1978	1979	1980	1981	1982	to July 1983
Tea	32,418 (898)	32,854 (931)	33,150 (897)	33,419 (931)	39,533 (1,145)	32,118 (1,398)
Tobacco	42,943 (2,006)	57,790 (1,707)	63,930 (1,577)	42,365 (2,398)	46,565 (1,131)	15,882 (2,940)
Peanuts	7,240 (645)	14,519 (611)	27,089 (588)	11,788 (901)	7,662 (605)	431 (538)
Cotton	844 (834)	1,523 (1,211)	3,194 (1,414)	1,093 (1,345)	530 (628)	- (-)
Sugar	50,911 (241)	67,041 (268)	96,781 (390)	130,687 (514)	136,988 (274)	84,681 (276)
Pulses	8,959 (261)	9,376 (207)	6,837 (258)	7,026 (319)	3,828 (524)	5,706 (451)
Rice	8,160 (261)	7,378 (303)	10,391 (291)	8,545 (361)	3,283 (519)	290 (317)
Coffee	161 (2,211)	394 (3,008)	263 (1,954)	524 (1,969)	966 (2,111)	400 (2,217)

(the value of tea in 1977 was K1,317 per ton).

Only the confectionary type of peanut is normally exported.

It is clear that prices do not move uniformly, and that crop diversification is in the nature of insurance.

2. Projections:

Detailed crop-by-crop projections cannot be calculated over the next five or ten years, due to the number of variables involved -- weather, international price trends, local price trends and controls, availability of firewood for curing, crop marketing strategies, etc. The past record makes this clear.

The level of maize corn surpluses for marketing seems set to decline after the exceptional performances of the last two seasons. These performances were largely price-induced by the authorities and are unlikely to be required again now that reserve food stocks have been established. They would be difficult to sustain in the longer term without greatly increased fertilizer application, as this would involve near mono-cropping, a practice which tends to be self-defeating. The acreage under low-yielding UCA maize (the preferred food variety) is therefore likely to drop for a period before being forced up again by population pressures. At this stage, an important decision will be required as to whether to go for fertilizer-induced yield increases of the UCA type, or to attempt to change traditional tastes towards the much higher yielding hybrid maize varieties. Given that maize is the staple food crop, however, the point is probably academic to the estate grower as the price of whatever variety is always likely to be controlled at a level of marginal profitability, and direct export of so vital a food resource is unlikely to be permitted. For the foreseeable future, therefore, estate maize-growing activities are likely to be restricted on economic grounds to what is required for labor rations, silage and a safety margin to cover poor climatic seasons.

Other crops traditionally grown by smallholders have been, in a sense, neglected over the past two years in the drive for sustained self-sufficiency in maize. Although a fairly strong swing back to cotton and peanuts is to be anticipated, the production of oilseed crops generally by estates is likely to be welcomed as a result of increased population, standards of living and urbanization. There is in any event a ready export market for the products of these crops. World Bank price projections indicate increases of 43% for peanuts and 25% for cotton in real terms over the decade from 1980 to 1990. This has not so far been manifested, doubtless due to international recession.

In this regard, and also in respect of crops not traditionally grown for which there is an actual or submerged market, the crop diversification program encouraged by the World Bank's structural adjustment process should ensure a bright future. Items clearly falling into this category are macadamia nuts, rubber, wheat, barley, soybeans, sunflower, saffron, exotic vegetables and fruits, as well as certain pulses. The import substitution values (or in some cases the export values) on these crops are attractive, and are likely to remain so for a considerable period.

As regards livestock, a land availability problem is clearly going to arise as regards cattle, sheep and goats. This implies a switch towards intensive rearing of these animals and also increased offtake of poultry, swine and fish as sources of protein. Little market research has been done on fish, but it already constitutes an important export for Malawi, and could undoubtedly be used more within the country (it is a popular dietary item) if transportation costs from lake areas were reduced.

Other livestock studies indicate that a significant meat supply deficiency is likely to emerge in urban areas by the end of the decade, and also a suppressed demand situation in rural areas if dynamic action is not instituted quickly, and indeed this is a stated objective of government policy. The 1990 supply deficit was estimated in a study by Booker Agriculture International Limited in 1982 for the Malawi Government as follows:

	Zero real income growth per capita	1.5% real income growth per capita
Meat - urban areas	256 short tons	1,860 short tons
- rural areas	567 short tons	4,167 short tons
	823 short tons	6,027 short tons
Eggs - urban areas	8.7 million	22.2 million

Easing of restrictive pricing policies (believed to be imminent) will be an important factor in alleviating these shortages -- which will continue to increase as income rises and population grows. Improved rural animal husbandry, extension and disease control procedures will also help in the rural areas, as will an extension of the existing stallfeeder schemes.

However, abbatoir facilities will also require major extension and improvement, diversification into fish farming on a commercial scale will be required, and intensive rearing procedures in the estate sector will have to be greatly expanded. This will also assist materially in import substitution and satisfaction of existing and intensifying demand shortfalls for milk and dairy products, so far as cattle are concerned.

Given the importance of improved pasturage in crop rotation, particularly where tobacco is involved to reduce nematode populations, both natural and intensive running of cattle under grazing rights schemes appear to be a logical part of the overall cropping pattern for estates; also the development of fish farming on inland estates to supplement the protein available to labor forces and their families.

If is also quite possible that a strong demand will emerge for improved stockfeeds calling for the growing of substantial quantities of soybeans as well as providing a ready and stable market for other crop residues, including cotton seedcake.

Rearing of grain-fed cattle and swine for export is also a possibility if abbatoir facilities are improved to comply with international standards and may help to provide the foreign exchange requirement for any ultimate need to import lower quality meat products to satisfy local market demand.

There is no doubt that improved collection and handling techniques of animal hides and skins could also lead to the establishment of tannery facilities producing for both local and external markets.

D. SOCIO-ECONOMIC ENVIRONMENT:-

1. GDP:

Per capita income figures calculated for Malawi are surprisingly low for a country with its apparent level of development, and compared to casual visual observation by a visitor. A number of factors may be relevant, such as a realistic exchange rate policy, the low proportion of urbanized and adult population, more accurate population and other statistics than elsewhere, more equitable income distribution; alternatively, the value of smallholder production or of production not requiring cultivation may be understated ir the statistical base. The signs of abject poverty found in other countries with similar, and higher, per capita incomes are largely absent.

Published figures indicate:

	K's (current prices)	K's (constant 1983 prices)	$'s (current prices converted)	$'s (constant prices at 1983 exchange rate)
1964 (Independence)	36	131	50	108
1974	90	216	107	178
1975	101	224	116	185
1976	114	229	125	189
1977	132	234	147	193
1978	141	250	168	206
1979	151	261	186	215
1980	169	258	207	213
1981	190	248	210	205
1982	224	246	209	203
1983 (estimated)	252	252	208	208

2. Population:

The 1977 census revealed (thousands):

Age	Total	Male	Female	Cumulative percentage
Under 1 year	249	121	128	4.5
1 to 4 years	831	408	423	19.5
5 to 9 years	825	408	417	34.4
10 to 14 years	571	294	277	44.7
15 to 19 years	541	261	280	54.4
20 to 24 years	449	195	254	62.5
25 to 29 years	437	204	233	70.4
30 to 34 years	306	145	161	75.9
35 to 39 years	277	132	145	80.9
40 to 44 years	204	95	109	84.6
45 to 49 years	219	105	114	88.5
50 to 54 years	147	66	81	91.1
55 to 59 years	132	65	67	93.5
60 to 64 years	104	49	55	95.4
Over 65 years	255	125	130	100.0
	5,547	2,673	2,874	

Population growth during the preceding 11 years had been greatest, by far, in the central region of the country -- a trend likely to have continued since 1977. The infant mortality rate was improving, though still high at 14%, with the child death rate (age 1 to 4) at 9%. The annual population growth rate since 1977 is officially estimated at 3.2%, giving an approximate total population now in the region of 6,500,000, and an average population density of 94 per square mile in 1977 and 110 now (167 per square mile possible for cultivation then and 196 now -- almost the highest density in Africa). Theoretical stability has been forecast by United Nations at 36 million in the year 2110, a density of 925 per cultivable square mile, or 1.45 per acre.

While this level can in theory be supported by a smallholder system of cultivation, acceptable living standards call for rapid and continued increases in paid employment.

Life expectancy at birth increased from 37 in 1960 to 47 in 1979.

The ratio of short-stay expatriates is amongst the lowest in Africa. Including white residents the European population is 6,000 to 7,000 including families. The Asian population is declining steadily from a similar level in 1977.

3. Health:

Health care is heavily state and mission subsidized, but is not entirely free of charge. There are 47 full hospitals in the country, plus a much larger number of maternity units, primary health centers and dispensaries. Hospital and maternity unit beds total over 11,000. In government hospitals the bed occupancy rate in 1980 was 84% (up to 160% in cases) and the death rate 3.5% of the 137,000 admissions. Out-patient attendances totalled 10.5 million (including 40% of all under 5's).

Ante-natal clinic attendance appears to be very high -- over 90%, and attendance at under-5 clinics is also high, although only some 50% of confinements take place in hospitals. Child immunization rates for BCG, DPT, polio and measles are substantial, but were still some way off total coverage in 1980.

The major recorded causes of childhood mortality are measles, malnutrition, enteritis, malaria, anemia and pneumonia, also probably aggravated in many cases by malnutrition. Many of these are preventable or curable, and the small number of medical personnel appear to be sensibly deployed towards that end. Nonetheless, there appears to be a shortage of common drugs and of primary health care centers in rural estate areas from observation.

4. Education:

At the time of the 1977 population census, 54% of the population aged 5 years and over had never attended school, and would presumably be categorized mostly as illiterate; 43% had some primary schooling, 2% secondary schooling and a mere 3,500 had higher education.

Primary school drop-outs are continuous, presumably caused by pressure on places rather than by the modest fees charged. At the time of the census, primary school enrollment was about 59% of the total number in the age groups 5 to 14. Secondary school enrollment was much lower, about 3.5% of the age group 15 to 18. From 1977 to 1981, enrollments in both categories moved closely in line with assumed population growth.

It is clear that there is still great scope for the extension of school facilities. Although the primary teacher/pupil ratio is 70 (21 in secondary schools) examination pass rates are good, although this may be largely a function of the high primary drop-out rate.

Enrollments in institutions of further education in 1981 were:

Technical schools	637	
Teaching colleges	1,751	
Malawi Young Pioneers	2,330	
Government staff college	543	
University - College of Agriculture	427	
- Chancellor College	761	
- Polytechnic	384	
- College of Nursing	169	
College of Accountancy (day release)	400	(app.)
Sponsored studies overseas	535	

5. Employment:

Total numbers in paid employment are not known. The subject was not covered in the 1977 census. Employment in the business and government sectors is recorded as:

	Agriculture	Manufacturing	Construction	Services	Total
1978	169,000	36,000	31,000	103,000	339,000
1979	182,000	37,000	33,000	108,000	360,000
1980	181,000	40,000	33,000	113,000	367,000
1981	157,000	35,000	24,000	112,000	328,000
1982	179,000	31,000	25,000	109,000	344,000
With average earnings:					
1978	173	568	467	785	428
1979	172	610	476	834	444
1980	191	729	582	963	524
1981	226	816	556	1,048	592
1982	297	1,190	566	1,132	662

These figures have to be regarded with some caution, but could reflect minimum wage increases in agriculture and retention at basic rates of pay of semiskilled construction labor during an extended period of recession. As the number of domestic workers and of smallholder farm laborers is not known but is undoubtedly substantial, and as the number of women and children recorded above is not known, no meaningful conclusions as regards the level of adult male employment can be drawn, except that:

(a) it is comparatively low

(b) it has dropped substantially during recession, particularly as regards skilled and semiskilled workers.

Whilst the first factor is not necessarily a cause of concern in a predominantly smallholder economy, the second conclusion indicates a readily available pool of labor of substantial proportions.

When dependants are taken into account, the earnings for agricultural labor appear low in relation to per capita GDP (K224 in 1982), but, of course, virtually all farm employees also participate in the smallholder economy directly or through the efforts of their dependants. It is clear that there is no major rural/urban incomes gap, and that in fact the average smallholder may well be better off financially than the average urban worker. The total population of urban areas in 1977 was 470,000 (an annual growth rate of 14% since 1966), and was at that time probably fully employed when dependants are allowed for; that will not be the case at the present time, despite the low ratio of urban drift compared to most other developing countries.

Overall, average earnings appear to have increased by somewhere in the region of 55% between 1978 and 1982.

6. Cost of living:

Retail price indices (excluding rent and certain other items) are published for low income households (annual expenditure under K600) and for higher income households (annual expenditure K2,000) for both Blantyre and Lilongwe:

	Blantyre (1970 = 100)		Lilongwe (1974 = 100)	
	Low income	Higher income	Low income	Higher income
1978	185.2	240.8	141.3	172.7
1979	206.1	278.3	156.5	193.0
1980	243.9	352.2	177.0	228.9
1981	267.2	388.9	198.6	256.3
1982	292.4	425.9	219.9	285.9
1983 July	335.8	507.5	261.8	343.1
Increase 1978 to 1982	58%	77%	56%	66%

Taking per capita GDP into account, it would thus appear that the rural dweller and the low paid urban dweller had higher disposable earnings in 1982 than in 1978, but that the higher paid urban resident

had less to spend, particularly when the progressive nature of the tax system and its lack of indexing is allowed for. The position may well have become more pronounced during 1983.

The wide divergence between these figures and the GDP implicit price deflator is accounted for mainly by changes in indirect taxation and the pressures on margins resulting from recession.

7. Other economic indicators:

Business profitability has declined sharply since 1978, but recovery has already commenced in the nontobacco agricultural sector, and is expected to be about to commence in other major sectors of the economy with the possible exception of construction which reached an abnormally high peak due to government building programs previously.

Movements in the index of manufacturing output from a base of 100 in 1970 have been:

1978	220
1979	221
1980	224
1981	247
1982	232
1982 - first 8 months	258
1983 - first 8 months	246

Recovery has been concentrated in tea, tobacco and cotton processing.

Electricity sales have followed a similar pattern:

	Mn. Kwh	t/Kwh
1978	288	3.8
1979	330	4.0
1980	354	4.4
1981	343	5.2
1982	358	5.7
1982 - first 10 months	286	5.9
1983 - first 10 months	329	5.9

The 50% increase in average revenues, however, contributed to a slowdown in sales of electricity over the 5 years to 1982 and a switch to firewood as an energy source. There is ample scope for expansion of the hydro-power resources of Malawi and for extension of the distribution network provided competitive pricing can be restored.

Commercial internal road transportation costs range between 30 and 50 tambala per ton mile; rail transportation is considerably cheaper where it is available. Import and export freight is entirely containerized and can be switched between Mocambican and South African routes as required.

8. Government policy:

Government policy has been continuously and consistently enunciated over the whole period since Independence in 1964 as being to create the economic conditions required to improve the standard of living of the ordinary people of the country. Implementation of this policy has been by way of provision and extension of infrastructural facilities (transport, communications, electricity), education, health and clean water facilities, land extension and reafforestation encouragement, and the creation of a financial climate in which the profit-motive motivates both the smallholder and the urban or rural employer. Where necessary, and when the resources are available, government will itself step in through one of its parastatal bodies to speed this process along. As a landlocked country, food self-sufficiency and as much self-sufficiency as possible in energy supply, are seen as vital, as is the efficient harnessing of the agricultural potential to generate the foreign exchange needed to pay for required imports and service external debts and equity.

The emphasis naturally changes from time to time and the next few years under the Structural Adjustment Program are likely to see concentration on education, health and water supply and improved administrative efficiency and parastatal performance in the public sector, and

crop diversification and added value and development of small industries in the private sector. There will be less emphasis on transportation and public buildings.

It is a reasonable expectation that if the Program is successful as anticipated and terms of trade improve, the present fairly stringent exchange control regime and high indirect taxes will gradually be ameliorated.

IV. THE SPEARHEAD PROJECT OVERVIEW:-

A. A General Overview of Spearhead Estates:

1. The past -

In 1968 the Malawi Young Pioneers organization (the national youth movement of Malawi) undertook responsibility for the running of a gasoline station in a remote area of the country where a private operator could not be found. This move into the area of commerce was soon followed by other similar developments. As the objective of the Movement was to train young people in modern methods of agriculture, husbandry, and hygiene, training bases were established in many comparatively underdeveloped areas of the country and food crops for self-sufficiency were grown, followed by other crops on an experimental basis. Soon crop surpluses were generated for sale, and by 1975 this revenue had become an important source of income to the Movement. Around that date, the enterprises in question were grouped separately from the Movement itself, christened "Malawi Young Pioneers Enterprises" (subsequently "Spearhead Enterprises"), and moved to an altogether higher level of activity, developing tobacco and other types of farms in newly accessible, but remote, regions and employing specialist expatriate management - but still retaining very close links with the Movement. By 1978, Spearhead operated over 20 tobacco estates, an irrigated rice plantation, a tea estate and a coffee estate, vegetable farms, a beef cattle ranch and a dairy, and had also acquired a garment factory, an air charter business, an entertainment center, a large transport fleet and a commercial garage, plus numerous properties spread literally throughout the country. In particular, Spearhead assumed responsibility for a considerable number of small farmer burley tobacco settlement schemes, all but one of which were soon converted to direct labor estates for a variety of reasons. All of these operations were funded principally by bank overdraft under Ministry of Finance guarantee arrangements.

The legality of this form of operation by an arm of central government having been questioned, legislation was passed permitting the Youth Movement to establish limited liability companies for carrying on commercial activities, and "Spearhead Enterprises Limited" was then incorporated. On August 1, 1978, all of the commercial activities referred to were passed across to the company, which traded on equal terms to private sector companies and was subject to all forms of taxation in the normal manner. The government guarantees for its borrowings were withdrawn and its bankers and other lenders were issued with floating charge debentures as security.

From the first the company was hamstrung by lack of equity capital or soft loan finance, but the drive to develop its new estates in the national interest and with the objective of funding the Youth Movement could not be slackened. Simultaneously, tobacco prices started to drop sharply in real terms, management was stretched beyond its capacity, certain noncommercial transactions were entered into and some clear loss-making activities were continued for reasons of prestige. The financial problems became ever more acute - for example, land titles were not formally transferred to the company at least partly due to inability to finance the transactions.

Early in 1980 the maximum drawings permissible under Spearhead's debentures were exceeded, and guidance was sought from the Head of State. In accordance with the wishes expressed by His Excellency the Life President the normal approach of the commercial world was followed, and on April 11, 1980, Mr. R. H. Martin of Price Waterhouse was appointed Receiver and Manager by the debenture holders to administer the company's affairs - in this case with a brief to pursue whatever steps were necessary to restore the enterprises to viability and profitability.

2. The present -

The Receiver and Manager has been supported by an advisory committee comprising the chief executives of the two commercial banks in Malawi, the Attorney-General and the Secretary to the Treasury of the Malawi Government, a senior officer of the Malawi Young Pioneers Movement, Mr. A. S. Sacranie, S.C., barrister-at-law, and another leading attorney (representing the interests of the company's unsecured creditors).

A receivership under the English-based system of commercial law operative in Malawi has a number of special characteristics:

(a) the powers of the company's directors and shareholders are effectively put in abeyance

(b) there is a compulsory legal moratorium so far as concerns nearly all unsecured creditors

(c) as agent for the company the receiver can carry out in the company's name any function which the company has the inherent power to carry on, but need not be bound by onerous contracts previously entered into by the company, as only its assets vest in him in terms of the deeds governing his appointment

(d) he can either carry on the company's business operations or sell its assets as he thinks best with the objective of the earliest practicable repayment of the debenture-secured indebtedness

(e) he can raise fresh funds secured by prior charge on the company's assets.

This receivership concept provides the possibility of a unique approach to a "re-birth" situation in which the slate of the past is wiped clean through the introduction of new technical, marketing and financial partnership arrangements by means of realization companies that can be, and in this case have been, established.

In the case of Spearhead it quickly became apparent that there were three main categories of business operations:

A. The central core comprising tobacco-farming (both virginia and burley types) on estates totalling some 58,000 acres fairly widely spread across the country. Here the company had some high caliber management.

B. Other specialist agricultural activities (tea, coffee, macadamia, pineapples, vegetables, poultry, dairy and beef cattle, principally) on a further 40,000 acres. The company had little management expertise in these crops.

C. Peripheral commercial activities not directly related to agriculture, ineffectively managed, and quickly sold off.

There was also a complex web of transactions with the Youth Movement and central government to be gradually disentangled.

Faced with the defective land title situation and these entanglements, both of which clearly required time to resolve, and faced also with an unprecedented slump in prices for tobacco and other agricultural produce in 1980, the debenture-holders have provided the Receiver and Manager with the funds required to mount limited scale holding operations so as to avoid abandonment and deterioration of the company's valuable farming properties. For the potential of Spearhead's enormous and underexploited fertile agricultural assets can only be achieved if development opportunities are vigorously pursued. The infrastructure already built up on the company's farms provides an extraordinarily advantageous jumping-off point to full exploitation, a status as a pure investment holding company for Spearhead, and a financial and economic return to new investors and the national economy much more quick and certain than through alternative projects started up in virgin areas -- particularly as regards otherwise unduly speculative ventures into diversification on a sizeable scale from the present national reliance on tobacco, tea, sugar and maize as estate crops.

To date, progress towards the creation of a suitable corporate vehicle to sponsor these new ventures has been considerable:

management and business operations have been restructured to operate on an efficient and profitable basis

- relationships with the Malawi Young Pioneers Organization have been put on to an arm's length basis and landholdings for it identified so as to maintain its primary objective of self-sufficiency for its training bases

- the complex land title issues have been resolved, subject to minor "tidying-up" transactions

- new companies have been formed into which selected assets and business activities of Spearhead can be transferred including companies for tobacco and rotational cropping and for livestock operations with grazing rights on suitable estates

- feasibility studies have been completed into the major discrete areas of potential and technical partners largely identified

- capital reconstruction plans have been agreed upon whereby all of Spearhead's assets and liabilities, after debt write-downs and conversions into equity will be transferred free of mortgage liabilities to a new, solvent, publicly owned investment corporation, "Spearhead Holdings Limited." About 55% of this corporation's equity will be government controlled. The corporation will introduce its assets at negotiated valuations into the various successor companies in exchange for majority or minority equity holdings along with local and foreign technical and financial partners.

3. Geographic location of the tobacco/rotational cropping project -

The 16 large and 2 small estates designated for introduction into this project are spread over the 3 administrative regions of the country (Northern, Central and Southern). While there are clusters of properties in the Northern and Central Regions the overall dispersion leads to logistical problems which are, however, compensated for by the "insurance" afforded against crop losses through disease, adverse weather conditions or labor shortages.

The country itself is narrow with a 600 mile north/south axis between 9^{o} and 17^{o} latitude south of the equator. The 35^{o} east longitude line runs through the country, which is equivalent in size to Portugal or the State of Pennsylvania. A considerable part of the gross area is taken up by the 360 mile long Lake Malawi, other lakes

and mountains. The dominant geological feature is the Great Rift Valley in which Lake Malawi lies, with escarpments on either side of it leading up to the Central African plateau at a fairly constant elevation of 3,400 to 4,000 feet. The valley floor drops from 1,500 feet almost to sea level at the south end of the country and the highest mountain outcrop is almost 10,000 feet.

The country is landlocked. Mocambique cradles its southern half, Tanzania is to the northeast and Zambia to the northwest. The capital city of Lilongwe is in the geographical and agricultural heart of the country, although the main commercial center of Blantyre is in the south.

The accompanying maps illustrate the location of the estates and of the country in relation to its neighbors and the ocean.

4. Geographical location of the Livestock Projects:

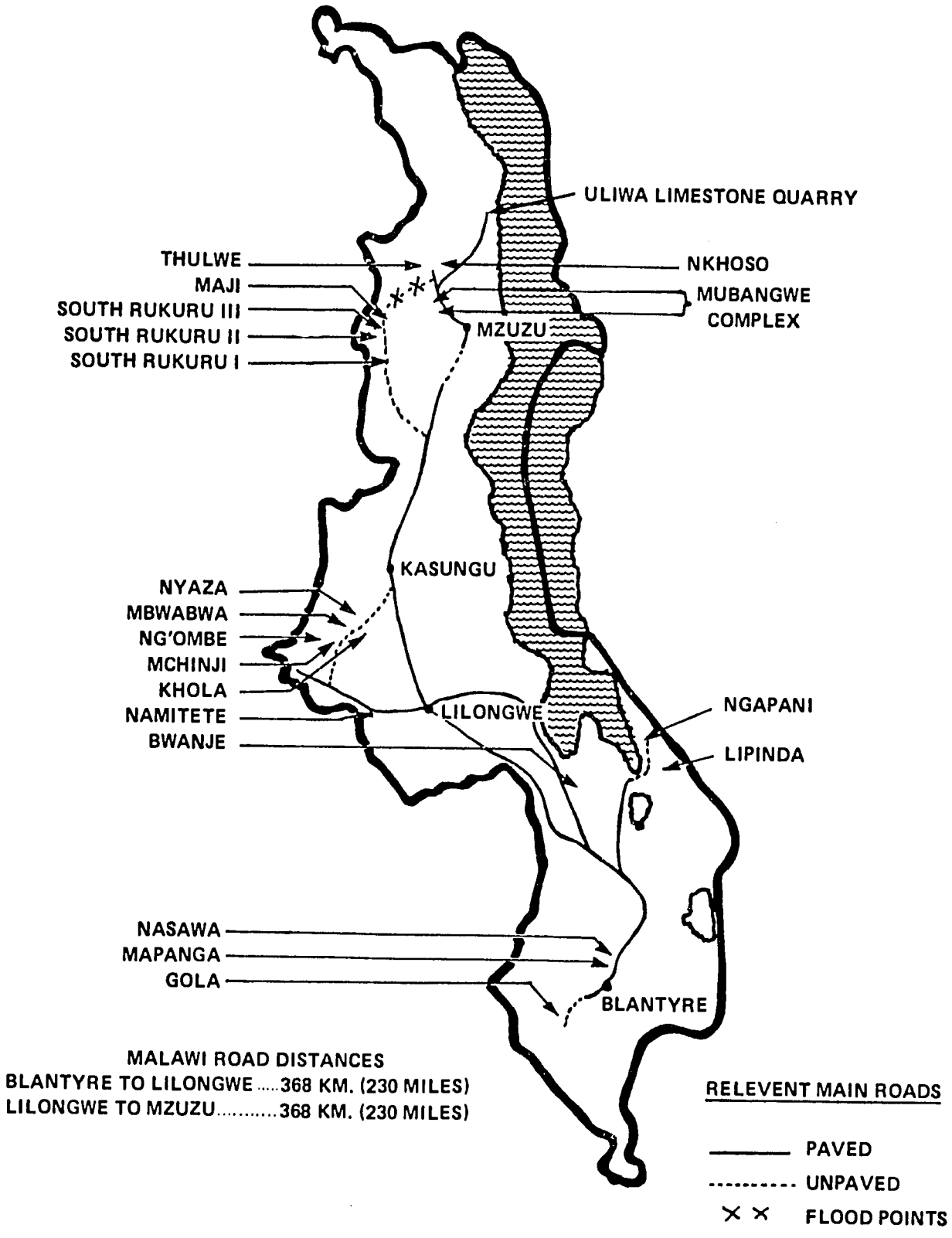
One or more livestock projects will be located on thirteen of the AFRAM-FARM estates shown on the relevant map. These are:

- Mubangwe
- Maji
- South Rukuru I, II and III
- Khola
- Nyaza
- Mbwabwa
- Ngombe
- Mchinji
- Namitete
- Mapanga

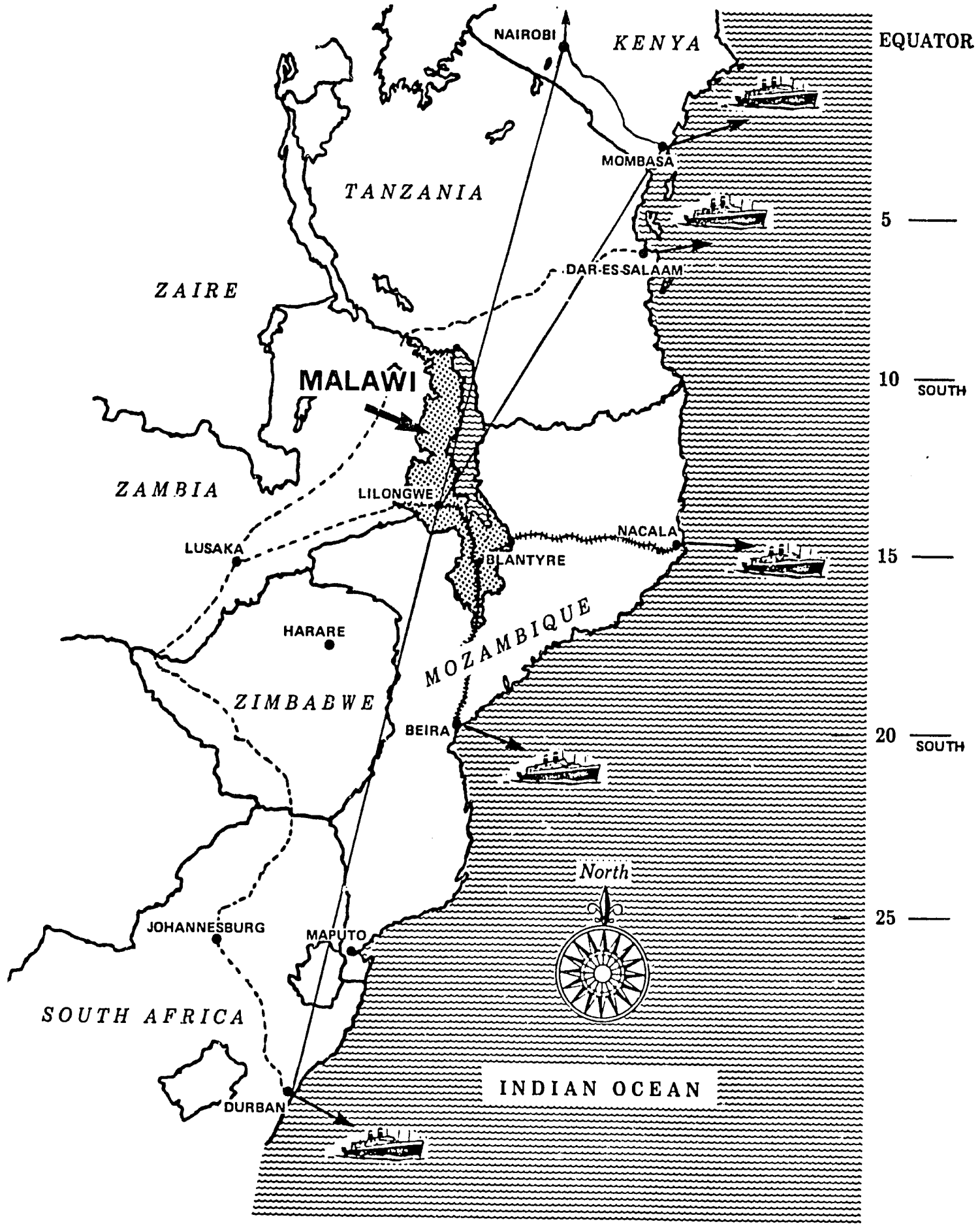
In addition, 7,000 to 9,000 acres will be available at the 24,000 acre Bwanje estate, the greater part of which is to be developed to intensive, irrigated double-cropping by a separate consortium.

MALAWI

LOCATION OF ESTATES



SOUTH EASTERN AFRICA



5. The estates -

The estates selected for inclusion in the livestock development project with one exception share similar elevation, rainfall and temperature characteristics. There is a cool dry "winter" period from April until August, followed by hot weather of increasing humidity until the tropical rains break in November or December and continue through March or April.

These characteristics are excellent for the growing of tobacco, edible oil seed, fiber and certain grain crops and can also be suitable for temperate climate grains and other annual crops under irrigation during the winter months. Except for the hot, low-lying Bwanje estate, which is suited for ranching only, they also provide good conditions for both dairy and beef cattle where perennial water and supplementary dry-season fodder can be provided.

The temperature range is from 35°F to 95°F (except for Bwanje where the range is up to 110°F) and frost is unknown. Rainfall averages 34 inches and the soils are mainly sandy clays to clayey sands on a uniform base. The following tabulation sets out the land areas involved:

	Gross acres	Presently cleared and cultivated	Partly reverted	Cultivable	Suitable only for grazing
Northern region					
Nkhoso	4,359	900	1,573	1,386	138
Thulwe	2,095	375	818	787	20
Mubangwe complex	7,205	1,250	1,170	3,564	1,168
South Rukuru - 1	3,558				
South Rukuru - 2	3,501	2,060	3,176	4,763	560
South Rukuru - 3	3,687				
Maji	2,617	539	-	1,958	117
Central region					
Khola	2,985	1,016	-	210	1,205
Nyaza	7,324	1,100	48	2,144	3,272
Mbwabwa	1,052	165	255	100	227
Mchinji	2,317	1,100	121	-	456
Ngombe	4,337	825	75	400	2,433*
Namitete	2,080	795	-	67	492
Southern region					
Ngapani	6,874	1,125	2,299	1,678	7
Lipinda	660	125	205	-	-
Nasawa	460	-	230	-	-
Mapanga	1,996	250	1,341		100
Gola	3,212	-	200	2,362	-
	60,319	11,625	11,511	19,419	10,195
Bwanje	24,000	2,000	10,000	3,000	9,000

Note - "presently cleared and cultivated" - in almost all cases only 30% is in fact supporting a crop (tobacco and maize) in any one agricultural season.

*could be reduced by 1,000 acres approximately (see pages 107-108)

The remainder of the land will be used for infrastructural requirements, reafforestation or will be surrendered as indicated in the land tenure section of the study.

6. Existing infrastructure and operating facilities -

The present Spearhead remains a fully operational company under the supervision of a highly experienced Receiver and Manager. It has most of the facilities required to operate effectively on a very

limited scale considering the total acreage of its estates. These facilities include a general manager and regional managers of very great experience in virginia and burley tobacco and a strong cadre of individual estate managers, as well as fully functioning support units covering financial administration, legal services, fleet haulage, field maintenance service units and a dolomitic limestone quarry.

Managers, their assistants and a small number of the permanent labor force are housed on the estates. Support staff mostly live in rented urban accommodation.

Curing, drying, grading, bulking and storage facilities exist for a much larger tobacco crop than is grown at present, and are adaptable to other uses.

There is a large inventory of mainly aging cars, trucks, tractors, generators, pumps, steam boilers and farm equipment generally. Minor development of water and irrigation resources has been carried out for domestic water supply, establishment of seed beds and planting out early before the start of the rainy season.

These infrastructural facilities are summarized in the following table:

SCHEDULE OF EXISTING INFRASTRUCTURE AND OPERATING FACILITIES

	Manager standard housing	Senior employee housing	Improved labor housing	Virginia tobacco barns*	Burley tobacco barns*	Tobacco handling sheds*	Workshop facilities, stores and offices*	Water reservoirs (cu. ft.)	Tractors K's	Farm equipment and engines K's	Miscellaneous and office equipment K's
Northern region:-											
Nkhoso	1				72,960	24,615	13,077		41,560(4)	68,502	
Thulwe		4			42,000	11,760	8,142				
Mubangwe complex	2	1	7	108,000	51,840	113,485	16,163	744	39,560(4)	80,044	
South Rukuru:											
1	1			45,000		41,400	9,450	744			
2	1	1	7	80,000		58,000	9,918	1,116	74,240(8)	117,892	
3	1	1		51,200		30,000	2,400	372			
Maji		1		35,200		14,400	18,100	744			
Pools and regional office									9,450(1)	21,731	5,569
Central region:											
Khola	1			60,000		60,000	6,300	52,211	29,670(3)	61,757	
Nyaza	1	3	1,578*	48,000	84,480	40,962	3,385	744	39,560(4)	70,267	
Mbwabwa		2			75,000	19,296	1,898	963	Uses Ngombe's		
Mchinji	1	1	2	42,800	9,480	38,000	7,400	1,488	49,450(5)	76,691	
Ngombe	1	1	5	36,000		29,058	13,439	1,000	39,560(4)	77,295	
Namitete	1	2	4,842*		7,744(A)	18,790	2,493		14,900(.)	30,937	
Pools and regional office									59,290(7)	76,522	13,795
Southern region:											
Ngapani	1			56,000	28,848	37,500	7,750		53,450(5)	73,622	
Lipinda	1	1		7,776		16,000	2,400			4,609	
Nasawa	1	1		18,432		28,752	3,033			6,250	
Mapanga, excluding dairy	1		1	68,218		12,420	675			914	
Gola											
Pools and head office									8,500(1)	38,949	66,267
	15	19	n.a.	656,626	372,352(A)	594,438	126,023	K60,126	K459,190(48)	K803,982	K85,631
Bwanje	2	3			72,000(A)	24,000	5,000	Small (not relevant to ranching)			

* - Floor area in square feet.
(A) - Plus 250 tenant barns for 1 acre of tobacco each.
K's - estimated valuations based on recent transactions.
Notes - There are 33 automobiles, 1 light trailer and 25 motor cycles, valued at K312,725; 14 Toyota 7-ton trucks, 2 gasoline 7-ton tankers, 1 7-ton cattle carrier, 1 7-ton recovery vehicle and 13 locally made 5-ton trailers, valued at K208,695; 158 trained oxen valued at K31,600; household and office furniture, fittings and minor equipment valued at K75,000.

7. Present production of the relevant estates -

Starting from a zero financial base at the inception of receivership, Spearhead's resources since 1980 have been restricted to surpluses arising from limited asset realizations and crop surpluses generated from severely restricted seasonal financing credit lines made available by its debenture-secured creditors. Capital development and improvement programs have been almost nonexistent, although, taking one year with another, profitability has been restored based on greatly improved management techniques, sharp acreage cutbacks and disengagement from peripheral activities and unprofitable digressions.

It has been necessary to concentrate available resources primarily on virginia and burley tobacco growing (plus maize corn for labor rations and small areas of experimental rotational cropping) as tobacco prices, although volatile, generally provide a higher cash return per acre than any other single crop. Concentration on this product has enabled almost all of the estates to be kept operative, thereby avoiding deterioration of infrastructure. The exposure resulting from monocropping, however, is an undesirable feature. Dairy and beef cattle herd quality has been enhanced, but the scale of operations has been small.

The foreign exchange value of the tobacco produced is close to double the auction floor sale prices realized. The table which follows gives an overview of results of recent years:

	1979-1980 (pre-receiver-ship)	1980-1981	1981-1982	1982-1983	1983-1984 (projected)
Acreage grown					
- virginia	4,015	927	933	886	1,683
- burley	1,966	1,402	1,263	1,439	907
	5,981	2,329	2,196	2,325	2,390
Yields in lbs./acre					
- virginia	836	1,632	1,676	1,568	1,700
- burley	916	1,635	1,625	1,620	1,700
	862	1,634	1,647	1,600	1,700
Price in Kwacha/lb.					
- virginia	0.37	0.89	1.04	0.85	1.04
- burley	0.53	1.08	1.00	0.61	0.73
National average price					
- virginia	0.46	0.81	0.96	0.85	1.04
- burley	0.54	1.05	0.98	0.59	0.73
Expressed in 1983 prices					
- virginia	0.71	1.06	1.06	0.85	0.94
- burley	0.82	1.37	1.08	0.59	0.66
	K000's	K000's	K000's	K000's	K000's
Gross sale proceeds of tobacco, maize and experimental crops	2,615	4,276	4,124	3,007	4,085
Direct costs	(4,391)	(2,729)	(2,860)	(3,235)	(3,584)
Administrative costs	(220)	(304)	(350)	(395)	(442)
Cash profit (loss)	(1,996)	1,243	914	(623)	59
Depreciation	(677)	(404)	(404)	(471)	(500)
Accounting profit (loss) before financing cost	(2,673)	839	510	(1,094)	(441)

Cattle results have not been significant in financial terms.

The allocation of administrative costs and depreciation charges to the company's annual crop estates are necessarily subjective.

The accounts summarized have not been audited.

7. Present employment summary on the estates -

Each estate growing tobacco is directly controlled by specialist managers in that crop. In three cases, managers also control adjacent estates. At present, the majority of the managers are expatriates, brought up and trained in Zimbabwe. The Bwanje tobacco manager looks after the beef cattle, and a trained assistant supervises the existing dairy herd at Mapanga.

These managers are supervised by regional managers with exceptional theoretical and practical proven expertise, who in turn report to the general manager (who personally supervises the Southern Region) and the Receiver and Manager. The head of the SETAMS transport and field service units also acts as commercial manager and, like the financial administrator, reports to the general manager.

The Receiver and Manager, general manager, regional managers, financial administrator, the transport/commercial manager and the company's retained general legal counsel make up the management committee, with day-to-day control lying very largely in the hands of the general manager, Mr. Alessandro Gafforio, subject to the constraints imposed by receivership law.

All trucking and equipment maintenance is carried out by the SETAMS and field service support sections, which have staff based in each region. Preventative maintenance schedules are operated.

Major buying activities are coordinated through the head office in Blantyre.

The general labor force is engaged on short-term service contracts and subject to a high rate of turnover.

The present personnel position related to the cattle operations totals less than 100, although Spearhead's total labor force averages 4,300 and peaks annually at about 5,500, each wholly or partly supporting an average of five dependants.

B. Project objectives:

1. Project definition -

(a) An interim operation will be supported in the 1984-1985 agricultural season to meet circumstances where the present debentureholder financiers of Spearhead are no longer able or willing to see their way to provide continued financial support for the continued holding operation required to prevent serious deterioration in estate infrastructure, which would be expensive to restore.

Although the growing season in Malawi runs from establishment of seedbeds in July/August through to harvesting and preparation for sale in March/April, expenditure on land preparation, fertilizer and chemical procurement begins as early as March, 1984. By this date it is also necessary to advise managers whether their services will be required for the forthcoming season.

As a financing package for the AFRAM-FARM and MALTEX projects proper cannot possibly be structured and implemented in a period of less than six to nine months, there is a need to secure interim finance for one season's continued small-scale operations, covering also technical assistance from the prospective U.S. partners in supervising small acreages of the intended diversification crops and the dairy, grazing and ranching operations.

The Receiver and Manager could in theory pledge the company's estates and crop sale proceeds as collateral for external borrowing to cover this requirement but this would lead to heavy fiscal and legal charges, a foreign exchange debt service outflow and complications which could prejudice the project proper in the event of a poor agricultural season. It is therefore an undesirable route to follow in circumstances where the commercial bank debentureholders in Malawi have indicated informally that they could make available the estimated K4 million bank line of credit required purely for a holding operation against a first-class guarantee and commitment statements as regards the project as a whole, the implementation of which would lead to a continued economically sound banking proposition and ultimate recovery of money previously lent out. The U.S. participants detailed in section C. below are willing to give that commitment, subject to simultaneous pro rata financial draw-down of the whole of the finance required for the project.

The Investment and Development Bank of Malawi has also expressed interest in the provision of up to $250,000 in venture capital to assist in project promotion costs for the two complementary companies during 1984.

A guarantee for the interim finance required is therefore being sought from either the Private Enterprise Bureau of the United States Agency for International Development or from the Overseas Private Investment Corporation (from which investment insurance will later be sought). Should such a guarantee be permitted only for lending directly by a United States bank, it is believed that the Malawi Exchange Control Authorities would be likely to accede to such a proposition despite the interest outflow, but this would not be the locally preferred solution in Malawi. Cross-security for the guarantee is available through inexpensive equitable pledge of Spearhead's estate titles and by a stop order lien over its tobacco sale proceeds registered at the tobacco auction floor. A conversion option into medium or long-term loan stock or preferred equity covering the main project could also be offered.

(b) PHASE I of the projects proper will be implemented over the period up to 1988-1989 and involve:

- introduction of full rotational cropping (including pasture grazing rights for livestock) on the present 11,625 acres of tobacco lands
- introduction of crop rotations incorporating leguminous crops (which cannot be mixed with tobacco) on the 11.500 acres of partly-reverted land cropped in the period up to 1979-1980
- granting rough grazing rights for cattle over the 10,195 acres of land suitable only for that purpose (plus 7,000 to 9,000 acreas at Bwanje)
- the erection of a low-cost, low-volume cotton gin in the northern region of Malawi
- the installation of similar oil expression and livestock feed plants in the northern and central regions of Malawi, and of a vegetable oil refinery in the central region
- development of cotton seed varieties suitable for mechanical harvesting in the first part of the period
- introduction of irrigated cropping on a modest scale
- development of the beef cattle herds
- introduction of three dairy projects utilizing embryo transplant procedures with a centralized embryo transplant laboratory on Spearhead land at Lingadzi, Lilongwe
- establishment of nine fish farms

It is this phase I which is considered in detail in the financial projections section of this study (for livestock) and the companion study "AFRAM-FARMS - FEASIBILITY STUDY - ROTATIONAL ROW-CROP FARMING IN MALAWI."

(c) PHASE II of the project will involve the opening up of the 19,000 acres of virgin land assessed as cultivable and increased introduction of irrigation, involving principally extension of crops which will have been subjected to a proving process on a small scale in the course of phase I. More sophisticated secondary and tertiary processing will be introduced in phase II, which will be considerably more capital-intensive than phase I since also to be included in phase II are additional livestock projects for pigs, sheep and poultry, as well as projects for processing the various livestock including:

- slaughterhouse development
- milk processing plants
- meat freezing, canning and specialty items
- tanneries
- fish processing, packaging and freezing
- broiler processing, freezing and packaging.

The commencement date for phase II has not been fixed. It will follow on as soon as phase I is seen to be commercially successful and thorough familiarity has been gained with all aspects of operating in and marketing from Malawi. It is the intention that it should be started by the 1987-1988 season. Detailed financial projections for phase II cannot be prepared at this stage.

2. Economic objectives -

Simply stated, the economic objective is to achieve profitable development of the large estate acreages presently unutilized or underutilized by Spearhead by private sector initiative and technology transfer in such a way as to enhance Malawi's GDP and GNP and simultaneously generate invisible and machinery export earnings for the United States of America. Substantial equity investment, initially from the USA, will fund the development of integrated row crop, field grain, fiber and livestock farming operations. The products introduced initially will be largely orientated towards existing or impending import-substitution requirements or meeting suppressed, unfulfilled demands. Export revenues will also be generated, particularly in phase II, but also in the first phase, more especially if market saturation

occurs due to continued internal recessionary conditions or the simultaneous introduction of similar developments by others. Wherever practicable, value will be added locally by the company to enhance its own profitability and to optimize foreign exchange earnings from exports.

There will be substantial, but unquantifiable, spin-off effects in the Malawi economy as a whole, and especially in the neighborhood of the estates and the processing plants. There will also be substantially enhanced tax revenues to the Government of Malawi from licenses and land taxes, import duties, payroll taxes and, ultimately, corporate profit taxes. Spearhead's present exposure to sale price volatility of a single export commodity will be ended and the national dependence on a very narrow range of mostly specialist crops will be reduced.

Indirect access to protected markets for agricultural products will be available to U.S. participants by production in Malawi through its Lome Convention association with the European Economic Community and its proximity to regional African markets and to South Africa.

Involvement of a major North American-based tobacco merchant and processor will help to stabilize the future of tobacco in Malawi, and the participant's access to that tobacco.

Electricity generation and offtake will be enhanced, and improved water resource usage and land conservation introduced.

Equity purchase options will be available to Malawians both as part of the capital funding requirements and from the U.S. and international financing participants over an extended period likely to cover years 10 to 25 from inception, thereby ultimately reducing the foreign dividend outflow from Malawi.

3. Technical objectives -

The overriding technical objective is to make available in Malawi the practical, technical know-how of successful United States farmers and livestock producers in the planning, financing, development, management, growing and product marketing of a wide range of agricultural and livestock products; also the benefits and techniques of adding value locally to export produce.

Direct management supervision and the introduction of structured and monitored training programs will develop local farm managers and assistants for the project and other beneficiaries in soil assessment and usage, fertilization techniques, crop selection and plant breeding, water resource management, land conservation, harvesting, storage and handling techniques, animal husbandry and marketing methodology. Processing skills, particularly in relation to vegetable oils, stockfeeds and product presentation will also be transferred, and practical mechanical skills will be more widely introduced.

Where availability of labor permits, efficient labor-intensive procedures will be used; elsewhere, as in cases where optimum yield or quality demands it, mechanical farming processes will be introduced.

Access to tobacco market intelligence and growing technique improvements will be enhanced. Given the protectionist import policies of potential foreign markets for much U.S. agricultural produce and the transportation costs involved in the export of U.S. produce to the Middle East and Eastern Africa, the U.S. is unlikely to experience any detrimental effects from this technology transfer process, and the aid program burden should in due course be reduced, or be freed for other pressing requirements which cannot be handled by the private sector so far as Malawi is concerned.

The example set by the project in Malawi may even encourage initiatives for similar project development elsewhere in the Eastern African Region, thereby greatly enhancing the potential benefits of the Spearhead project over a period of time by helping other underdeveloped countries also to see how best to help themselves to develop healthier and better balanced economies.

4. Social objectives -

Wherever practicable, a labor-intensive approach to farming and processing is to be adopted, given the relatively low labor/productivity cost ratio prevailing in Malawi and the increasing underemployment which must manifest itself even when recession is over, due to population growth projections and resultant ultimately extreme pressures likely to arise as regards availability of arable land.

Per capita and total incomes will be increased in the areas surrounding the Spearhead estates, and ex-employees can be expected to apply the skills learned working for the new company in their own gardens, including the benefits of crop rotation and diversification, and in their cattle, dairy and fish farming operations..

Support service industry opportunities will be generated in the provision of consumables for the labor force and its dependants, contracting out of capital works and in many other ways also.

Improved labor housing will gradually be introduced with a view to establishing a fixed, semiskilled permanent labor force (without detracting from the income augmentation possibilities for local smallholders at times of peak labor requirements).

It is intended that primary school and dispensary or primary health-care buildings should be erected on all estates for the fixed labor force and its dependants as soon as Government or aid sources are in a position to meet the staffing and supply requirements for their operations.

Access to pure domestic water supplies and improved calorie and protein ration issues will be provided for employees, along with encouragement and education in basic hygiene requirements.

5. Political -

The objective of the proposed project in political terms as seen by the participants is to assist in the maintenance of the present first-class relationships between the United States of America and the Republic of Malawi on an arm's length, commercial basis structured in such a way as to contribute towards a further permanent enhancement in the skills and standard of living of a substantial number of primarily rural Malawians. These objectives will be addressed through the mediums of crop diversification, livestock development and local processing for both export and import-substitution purposes, associated technology transfer, improved land usage and conservation methods, increased employment and national earnings resulting from a labor intensive approach. Produce will become available to increase sales to neighboring countries at a lower cost to them than by importation from overseas thereby further improving relationships with them at the same time as reducing present trade imbalances and increasing national foreign exchange earnings.

The predominantly equity nature of the long-term funding and the intention of the U.S. participants to grant sale options for all but a small proportion of their equity to Malawian purchasers should ensure that these benefits are not merely transitory in nature. In addition, any political difficulties that have arisen through the financial collapse and reduced level of activity of Spearhead should be most effectively overcome.

From the U.S. viewpoint, capital equipment, livestock and spare parts procurement will assist in its own process of recovery from recession, and the increased investment and managerial and technical involvement in a stable African environment should benefit its

interests. The range of export crops planned is not intended to compete with existing U.S. export markets or with internal production in the U.S., and the import substitution activities will not be at the expense of present U.S. exports.

C. Project participants:

1. Identities -

(a) "Spearhead Holdings Limited," the planned solvent successor company to the present Spearhead Enterprises Limited, intends to introduce into AFRAM-FARM the estates designated elsewhere in this study, with existing buildings, improvements and related machinery and movables at a negotiated value expected to be in the region of $6.5 million in exchange for a substantial equity stake in the region of 45% to 55% of the total in issue. SHL may well have as its 55% controlling shareholder the Government of Malawi (although this is not yet certain), with some 400 to 500 other shareholders (the former creditors of SEL) whose shares will be publicly traded. The former bank debentureholders will hold unsecured preferred income notes in SHL and the assets transferred will be free of old encumbrances.

(b) Technical partners will comprise Spearhead as regards tobacco growing and local knowledge, Richard Anderson & Sons, row crop farmers, Tulare, California for rotational cropping, ginning and oil expression, the Standard Commercial Tobacco Group of Wilson, North Carolina for tobacco strategy and foreign techniques, and the Daniel Land & Cattle Co. of San Antonio, Texas for cattle, dairy and fish farming expertise. The American partners will contribute substantial but not controlling equity in tranches and Richard Anderson & Sons and Daniel Land & Cattle Co. will also provide day-to-day management expertise.

(c) Financial partners in the equity are expected to be attracted from private estate owners in Malawi, INDEBANK or an international financing institution as part of an equity/loan participation, and from Mr. Leonard Lundgren's International Agri-Consortium of Bonsall, California. The Private Enterprise Bureau of the United States Agency for International Development (AID) has a right to offer up to 25% of the total capitalization by way of debt but not equity in recognition of the financial assistance it has extended towards the carrying out of feasibility studies.

It is intended that the name of the row-crop operating company should be "African-American Farming Corporation Limited" (AFRAM-FARM).

The livestock company, which is the subject of this feasibility study, provisionally titled "MALTEX," will secure grazing and other rights from AFRAM-FARM. It will also utilize a large quantity of farm, gin and expressing plant crop residues as a result of which it can, and should, participate in a sharecropping arrangement with AFRAM-FARM.

It will also be utilizing the head office, Regional offices and support services of AFRAM-FARM.

A sharecropping feature at 10% of gross revenue has therefore been taken up as a cost in the livestock company projections, as a result of which AFRAM-FARM will have close interest in optimizing the livestock company's profits. MALTEX will also have similar interest in cooperating with AFRAM-FARM as it will take an equity position in AFRAM-FARM in the amount of K 1.5 million ($1.2 million U.S.).

2. History and activities of the proposed equity participants -

Spearhead's background and intended reconstruction has been detailed in section IV.A. A "day 1" balance sheet of the planned Spearhead Holdings Limited is included at Appendix 1. Spearhead will be looking for a maximum distribution policy after providing for capital replacements through depreciation, for loan redemptions and for inflationary increases in working capital requirements. It is unlikely to be in a position to subscribe for additional equity in cash beyond that introduced at inception; inflationary escalations in development costs will require to be funded by the new shareholders through equity subscriptions at a premium or by program cutbacks.

Daniel Land & Cattle Company is a family company which has extensive cattle, oil and gas, real estate, and gravel operations in Texas. Its headquarters are in San Antonio. Bob Daniel, the principal operations officer of the company, is in his early forties and works closely with his father, the chief operating officer. Bob has already

visited almost all of the relevant Spearhead estates. Daniel's company has been successful and consistently profitable since its founding over 100 years ago by the great grandfather of Bob.

The Daniel family settled in Texas prior to it becoming part of the United States. Each generation of the family has been trained at leading agricultural universities in the United States so that the most advanced husbandry technology has been adapted to their operations in Texas and in other projects in Latin America, including Brazil and Mexico. Thus, they have practical experience in tropical, developing regions of the world. MALTEX's management will also utilize the advisory services of Dr. J. D. Aughtrey, who has managed semi-tropical livestock projects in a variety of developing countries over a period of 40 years.

Richard Anderson & Sons is a family company which has farmed intensively on 17,000 acres of the San Joaquin Valley of California for many years. Richard Anderson, the founder, is in his early sixties and his two sons who are active in the business are in their thirties. Richard and one of his sons between them have already visited almost all of the relevant Spearhead estates. Their operations have been varied successful and consistently profitable for over 30 years, and on a steadily increasing scale.

The holding company of the Standard Commercial Tobacco Group is listed on the Chicago Stock Exchange, and therefore registered with the Securities and Exchange Commission. From its base in North Carolina the group has been built up into one of the largest tobacco processing and merchanting organizations in the world. It carries on business principally in North America, Brazil, Southern Europe, the Far East and Central Africa. In Malawi it already is a major shareholder and investor in two of the four leading tobacco processing plants and buys some 23% of the total auctioned tobacco crop of K132 million.

The Investment and Development Bank of Malawi Limited is headquartered in Blantyre, Malawi and has as its shareholders

- ADMARC of Malawi
- CDC of Britain
- IFC, the private sector financing arm of the World Bank
- DEG of West Germany
- FMO of Holland

Indebank has an investment portfolio entirely within Malawi of K25 million in primary and secondary agricultural activities and in industry. It has been a leading institutional investor in Malawi over the past decade.

The International Agri-Consortium represents a group of entrepreneurs interested in investment in stable developing countries generally, particularly Costa Rica, Egypt and Malawi at this stage. It is headed by Mr. Leonard Lundgren, an international developer, and retains the services of agricultural, marketing and financial specialists. Its major objective is to help joint ventures between U.S. and foreign private sector companies in developing countries on a mutually beneficial basis involving technology and capital transfer.

It is likely that Daniel Land & Cattle Co. and the International Agri-Consortium will invest jointly through a U.S. limited partnership formed for the purpose.

AFRAM-FARM will have a structure similar to MALTEX, with Richard Anderson & Sons of California as the principal U.S. participant.

Should AFRAM-FARM invest in another Spearhead successor company, the Bwanje Estate Development Company, rather than invest in its own edible oil production facilities, this would have as a side effect a closer relationship between MALTEX and the owners of its planned grazing rights at Bwanje.

V. THE SPEARHEAD ESTATES:-

A. General Features:

1. Geographical, climatic and other features -

The estates to be introduced into AFRAM-FARM are located as marked on the map in section IV.A.3. Pertinent details are as follows:

	Acreage available	Elevation (feet)	Annual rainfall (inches)	Mean temperature °F	Mileage to city	Mileage to airstrip
North						
*Nkhoso	4,160	3,400/3,600	25-30	74	65MZ	30
Thulwe	1,900	3,400/3,600	25-30	72	65MZ	30
*Mubangwe	7,200	3,700/4,050	34-36	74	30MZ	30
*South Rukuru-1	3,560	3,500/4,000	25-30	71	100MZ	1
-2	3,400	3,500/4,000	25-30	71		1
-3	3,290	3,500/4,000	25-30	71	or	1
Maji	2,620	3,400/4,000	25-30	71	250LL	12
Center						
Khola	2,900	3,400/3,500	30-32	70	100LL	20
Nyaza	7,320	3,500/3,600	34-36	71	100LL	30
Mbwabwa	950	3,500/3,600	34-36	71	100LL	40
Mchinji	2,320	3,500/3,600	34-36	71	100LL	40
*Ngombe	3,340	3,500/3,600	34-36	71	100LL	40
*Namitete	2,080	3,400/3,500	34-36	72	40LL	55
South						
*Ngapani	6,760	3,700/4,000	40-50	70	180BT	45
Lipinda	330	3,200/3,400	34-36	66	150BT	15
Nasawa	230	3,000/3,200	33-40	66	40BT	55
*Mapanga	1,900	3,000/3,200	36-40	66	6BT	21
Gola	3,140	2,300/2,600	28-30	74	80BT	95
*Bwanje	24,000	1,500/1,800	25-30	78	150BT	10

MZ = Mzuzu; LL = Lilongwe; BT = Blantyre

Estates marked * already have telephone or radio communication systems installed.

90% of annual precipitation generally falls between November 15 and March 15, i.e, over 120 days in summer.

Except for Bwanje, average temperatures range from 79°F in November to 60°F in July. Average high and low temperatures in November are in the region of 88°F/64°F, and in July 74°F/47°F. Extreme highs and lows are within 10°F of these figures, and frost is unknown. It is the intention to construct airstrips at Bwanje, Nhkoso, Mchinji, Ngapani and Gola, so that no estate of size will be much more than 1 hour's travel time from Lilongwe. Flying conditions are restricted by weather only for a few days in the year.

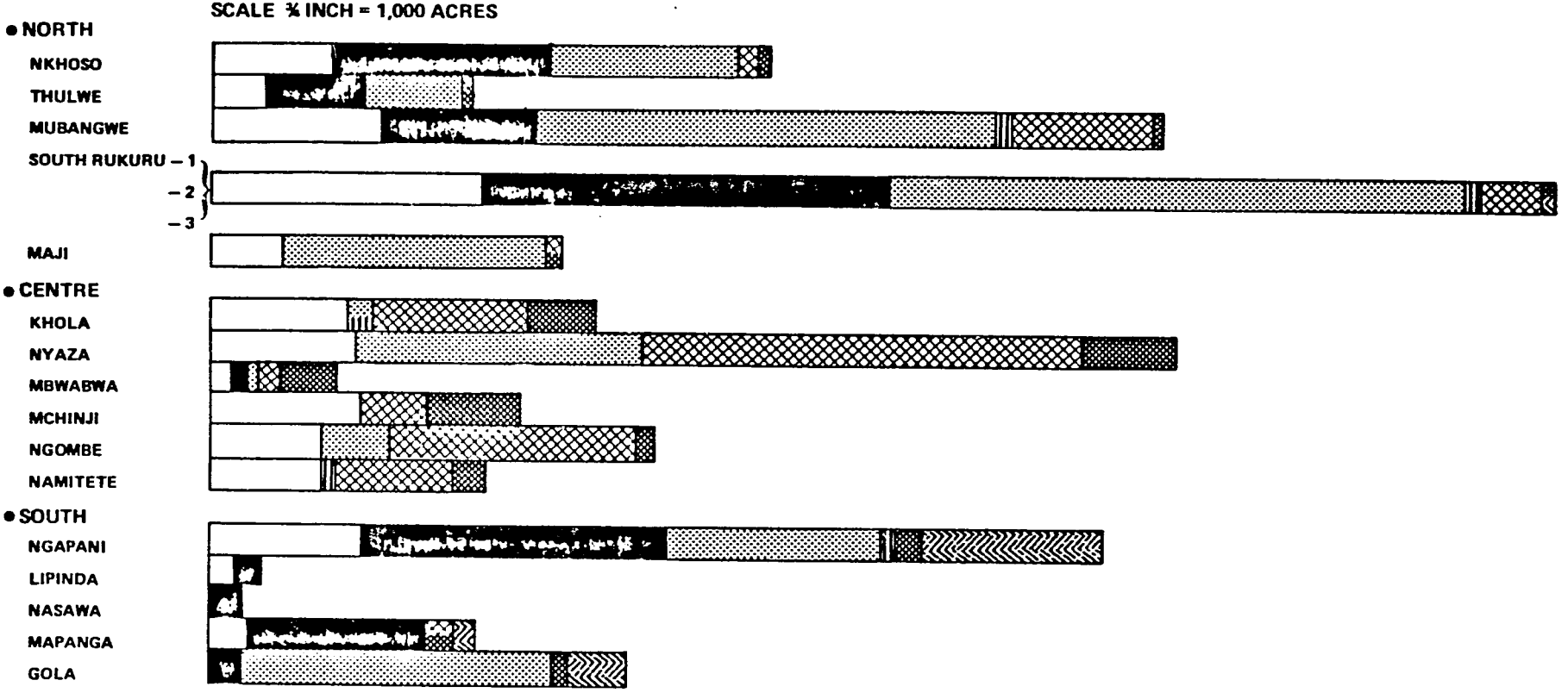
Road communications on unpaved roads are frequently difficult between January and March, but are rarely impassable for more than a few hours except for the direct route between South Rukuru/Maji and Mzuzu, where the construction of the necessary all-weather river bridge is planned by the authorities.

Only Maji, Ngapani and Gola Estates are particularly isolated from existing farming communities or small towns.

(a) Reduced scale maps of each of the relevant estates are included as Appendix 2, showing boundaries, river courses, public and permanent estate roads and permanent buildings. Seasonal estate road networks are naturally intensive in cleared areas, but are generally accessible only to tractor/trailer units, ox-carts and 4-wheel drive or limited slip differential vehicles. Full soil analysis maps detailing crest lines, cleared areas, unusable areas and areas likely to be given up are not yet available, although the data required has been obtained.

GRAPHIC ILLUSTRATION OF ESTATES (EXCLUDING BWANJE)

SCALE ¾ INCH = 1,000 ACRES



KEY:

- CLEARED AND CULTIVATED UNDER 1 YEAR IN 5 TOBACCO ROTATION
- PARTLY REVERTED – I.E. INCLUDED IN TOBACCO ROTATION PRIOR TO RECEIVERSHIP
- VIRGIN UNCLEARED, BUT SUITABLE FOR ARABLE CROPPING
- SUBSTANTIAL AREA OF PLANTED REAFFCRESTATION
- USABLE AS SEEDED OR UNIMPROVED GRAZING FOR CATTLE
- INFRASTRUCTURAL REQUIREMENTS
- UNUSABLE

AREAS LESS THAN 100 ACRES HAVE NOT BEEN SEPARATELY CLASSIFIED ABOVE.

(b) Soil classification

Fuller details are given in Appendix 3.

Northern -	
Nkhoso	Sandy loam to sandy clay loam overlying sandy clay
Thulwe	Sandy clay loams to sand
Mubangwe-northwest	Sandy loam to sandy clay loam topsoil overlying sandy clay loam to clay subsoil. Acid reaction.
-southeast	Sandy loam overlying reddish clay soils
South Rukuru 1,2,3	Sandy loam to loamy sand topsoil with the clay content increasing downwards from 20% to 30%
Maji	Sandy clay loams
Central -	
Khola	Sandy loams
Nyaza	Sandy loams turning to sandy towards the Rusa river basin, which itself is clay
Mbwabwa	Sandy loams
Mchinji	Sandy clay loams to sandy
Ngombe	Sandy clay loams to sandy
Namitete	Clay loams
Southern -	
Ngapani	Clay loams
Lipinda	Clay loams
Nasawa	Sandy loams
Mapanga	Clay and sandy loams
Gola	Sandy loams of mopanosols

As is the case with the East African plateau country generally, the soils are moderately fertile, but delicate and subject to rapid erosion if not carefully tended after clearing. Except at Ngapani, where the topsoil is somewhat deeper than elsewhere, the underlying rock formations are generally granitic gneiss. At Bwanje, vertisols ("cotton soil") predominate, having been laid down by run-off and lake coverage in earlier times.

(c) Natural vegetation and reafforestation

Northern -

Nkhoso (burley)	No indigenous vegetation left, but probably savannah type. Ten acres of eucalypts were planted in 1981/82 season and 20 to 30 acres are being established now. The timber requirement is minimal.
Thulwe (burley)	Brachystegia/jubernalia woodland and acacia cambretum. There is no reafforestation program on this tenant estate as yet.
Mubangwe (burley and virginia)	Brachystegia/jubernalia woodland predominantly with areas of short, sparse grasses in the eastern section. 83 acres of eucalypts have been established in recent years, and up to 150 acres are being planted now.
South Rukuru 1,2,3 (virginia)	Brachystegia/jubernalia woodland. Only 100 acres of eucalypts were established in recent years while these estates were leased out. Over this year and next, this is to be increased by 500 acres to ensure continuity of firewood supplies.
Maji (virginia)	Brachystegia/jubernalia woodland. There has been no reafforestation development during the four seasons this estate (which is now leased out on an annual basis) lay dormant pending successful resolution of a dispute over title.

Central -

Khola (virginia)	Acacia cambretum and piliostigma. 40 acres of eucalypts have been established in recent years, and up to 150 acres are being established now. When necessary, firewood is meantime taken from virgin land at Nyaza.

Nyaza (burley, converted to virginia this year)	Acacia cambretum and piliostigma. 10 acres of eucalypts were established in 1981/82. With the switch to virginia tobacco an annual planting program of 40 to 50 acres is being instituted.
Mbwabwa (burley)	Acacia cambretum and piliostigma. Five acres of eucalypts were established in 1981/82 on this estate where timber usage is minimal. Trees are now being established on boundaries, however.
Mchinji (mainly virginia - some burley)	Savannah woodland dominated by brachystegia/jubernalia. 30 acres of eucalypts were established in 1981-1982. The program is now being rapidly stepped up, and meantime firewood is drawn from virgin land at Ngombe.
Ngombe (virginia)	Open savannah woodland dominated by brachystegia/jubernalia. Recent plantings of 44 acres of eucalypts have not been particularly successful due to underlying rock strata. Plantings of gmelina and cypress are now being attempted.
Namitete (tenant burley)	A combination of acacia cambretum, piliostigma and brachystegia/jubernalia woodland. 64 acres of gmelina and 14 acres of eucalpyts have been established in recent years, which is adequate for the needs of a tenant scheme.
Southern -	
Ngapani (virginia and burley)	Brachystegia plateau woodland. 75 acres of eucalypts have been established and a further 125 acres are scheduled for this season and next.
Lipinda (virginia)	Brachystegia/jubernalia plateau and savannah woodland regrowth. Approximately 10 acres of eucalypts have been established on this estate, which has grown only maize corn during receivership.
Nasawa (burley)	Regrowth from brachystegia/jubernalia woodland. Some 10 acres of eucalypts have been established.

Mapanga (virginia)	Brachystegia/jubernalia woodland regrowth. 30 acres of eucalypts have been established on this estate which has supported only maize corn and dairy cattle during receivership.
Gola	Mixed savannah and colophospermum mopane woodland. No afforestation has occurred as the estate, although suitable for burley tobacco, has been dormant during receivership.
Bwanje	Predominantly acacia and rough grass; swampy towards the lakeshore. Details are available in a separate report.

An enhanced rate of reafforestation, particularly on the virginia tobacco estates, is urgently required to ensure long-term self-sufficiency of supply of this increasingly scarce resource for which no practical alternative exists in the absence of grid electricity to farms (although recent research indicates potential savings up to 60% by improved curing techniques).

(d) Infrastructure

Details of existing farm buildings and residential accommodation have been provided in Section IV.A.5. above. Head office, SETAMS transport and regional management staff live in rented accommodation in the cities of Blantyre, Lilongwe and Mzuzu.

In many cases, the storage and even curing barn facilities are substantially in excess of requirements for the restricted crop acreages currently being grown.

(e) Water resources

Details of known water resources are given on the schedule overleaf. Little, if any, drilling for artesian water below 300 feet has been attempted in Malawi, and the equipment required for the purpose is not available at present. On similar highveld land in Zambia and Zimbabwe, deep drilling has frequently been successful, and hence it is possible that deep artesian water resources may exist on Spearhead's estates also. However, this possibility has been discounted for the present. Extraction of surface water is subject to a once-only application for offtake rights, and objections can be raised at this stage by or on behalf of downstream occupiers or on ecological grounds. Where water rights have not already been obtained, objections are believed unlikely to be a problem except perhaps on the Central Region Estates (excluding Namitete). There are many downstream actual or potential users in this region.

Accurate data on existing river flows is not available and, although it is adequate in all cases for tobacco seedbed and water-transplanting/survival purposes, estate-by-estate evaluation will be required in most cases before plans involving extensive additional offtake can be formulated. Hence, most of the potential irrigation schemes must of necessity be deferred to phase II of the planned project. Existing wells are mainly used for supply of clean domestic water. Where reservoir tanks and pipelines are not installed, water is taken to seedbeds and fields by water-bowsers.

Water rights are already held wherever use is presently made of surface water.

Large-scale irrigation development is already planned for Bwanje estate and will benefit the ranch cattle run there.

SCHEDULE OF WATER RESOURCES

	Surface water	Known underground water	Irrigation potential
Northern Nkhoso	The estate is bounded by the perennial and large Runyina river, from which 5,000 gallons/hour pumping capacity is installed.	Well yielding 300 US gallons/hour	Excellent gravity flood irrigation potential by fluming from the Runyina at a cost professionally estimated between K1.5 and K2.5 million. A hydroelectric site exists within 8 miles.
Thulwe	No perennial source, but the major South Rukuru river is only 2 miles distant.	Well yielding 850 US gallons/hour	Exists, but would probably involve pumping from the South Rukuru river.
Mubangwe complex	The Kasitu river provides a small perennial flow, supplemented seasonally by the Katonthowolo river. 4,000 gallons/hour pumping facilities exist from the Kasitu to reservoir tanks.	Well yielding 300 US gallons/hour; small hand operated well	Limited to damming of the Kasitu river unless deep drilling reveals large artesian resources.
South Rukuru:			
1	2 dams fed from seasonal streams, supplemented by pumping to reservoirs 5 miles from the South Rukuru river.	Well yielding 600 US gallons/hour	Probably exists only if pumping costs from the South Rukuru river can be reduced by use of a fuel other than diesel.
2	Similar to above, but further dams could eliminate the supplementary pumping (7 miles in this case).	Nil	Similar to above.
3	Similar to No. 2 above (8 miles of pumping in this case).	Nil	Similar to above.
Maji	Pumped 4 miles from the South Rukuru river to two reservoir tanks - damming of seasonal streams may provide a cheaper alternative source.	Well yielding 600 US gallons/hour	Similar to above.

	Surface water	Known underground water	Irrigation potential
Central Khola	Pumping on a very low gradient 2 miles from the major perennial Rusa river to reservoir tanks with almost 40,000 US gallons capacity.	2 wells yielding a total of 3,400 US gallons/hour	Only if a cheap fuel for pumping is developed and no objections raised by downstream actual or potential users.
Nyaza	Similar to Khola, with the river boundary 4 miles from the center of the estate; reservoir capacity 53,000 US gallons.	3 wells yielding a total of over 4,000 US gallons/hour	Offtake from weirs on the Rusa river could provide low-cost irrigation to 1,000 acres of this estate.
Mbwabwa	No perennial streams or significant dam sites.	Well yielding 1,000 US gallons/hour to a 72,000 US gallon reservoir tank	None unless through deep drilling.
Mchinji	As for Mbwabwa.	6 wells yielding a total of 4,800 US gallons/hour	As for Mbwabwa, but the existence of a dambo makes the possibility more likely.
Ngombe	As for Mbwabwa.	3 wells yielding a total of 3,400 US gallons/hour to 144,000 US gallon reservoir tanks	As for Mbwabwa, but the existence of a dambo makes the possibility more likely, and the estate boundaries may be altered to provide access to the Rusa river.
Namitete	The perennial Namitete and Kakuyu streams run through the Kakuyu section; only seasonal streams serve the Kapanula section, and there is little obvious dam potential; the Malowa section has only seasonal streams, but there is perennial water 2 miles distant.	2 small wells meet the domestic water requirements of each of the 3 sections and for seedbeds. Tenants plant out only with the rains	Gravity irrigation from dams on the Kakuyu section has excellent potential provided tenant support for the concept is secured. It is doubtful whether irrigation is a practical proposition for the other two sections.
Southern Ngapani	5 perennial rivers run down through the estate and are tapped by pipeline to reservoir tanks.	A well provides a domestic water supply	Professional assessment has identified two sites for small hydro plants from which an initial gravity flood irrigation system could be extended to cover the whole estate area.
Lipinda	2 small perennial rivers bound the estate and its present requirements are pumped from these.	None	Exists provided cheap pumping can be introduced and no downstream objections arise.

	Surface water	Known underground water	Irrigation potential
Nasawa	There is a 600,000 US gallon capacity dam fed by seasonal streams from which water is piped.	Well yielding 2,400 US gallons/hour	None, unless through deep drilling.
Mapanga	The farm is bounded by 4 perennial rivers with dam potential. Significant winter precipitation occurs in this area.	4 wells yielding a combined total of almost 10,000 US gallons/hour to 6,000 US gallon tanks and pipeline reticulation	Considerable on those parts of this undulating estate which can be commanded by gravity from the dam sites.
Gola	Several seasonal streams flow through the estate, but shallow dams would be affected by the high evapotranspiration rate prevailing.	Well yielding 1,200 US gallons/hour	Very limited unless through successful deep drilling.
Bwanje	Seasonal only at present (very high evapotranspiration rate)	Adequate for domestic purposes	Very large - being developed separately

B. Present economic base:

1. Introduction -

The present value of the going-concern of the estates and operating establishment to be introduced into AFRAM-FARM and made available to MALTEX by Spearhead Holdings in exchange for equity is essentially comprised of three components, individually difficult to quantify and the whole of which is undoubtedly greater than the sum of the individual parts in isolation. The three components are:

1. The natural resource, that is the land.
2. The inherent value of the sustained production which that land is capable of supporting with its existing infrastructure.
3. The existence and quality of the present management and expertise.

The area and characteristics of the land, including climatic features and cropping potential have already been described in considerable detail. The logistical complications of the geographical spread of the estates is compensated for by the insurance which this geographical spread provides against infestation, disease and adverse climatic conditions. Given that the existing use of the land is overwhelmingly geared to the production of tobacco, with maize featuring principally as a labor ration crop and other crops either minor or experimental, the inherent value must depend on the tobacco acreage which the present infrastructure and management and support activities can sustain. Essentially, this is a function of barn-curing space and arable land, and a formula exists in Malawi for the quantification of this on a global basis, with add-ons applied for land which is usable but not yet opened up, for land with irrigation potential and for moveable assets. The basic formula is to assess the weight of tobacco that can be produced and value it at the inflation-adjusted last three years' average sale prices achieved; 10% of the resultant total is the going rental value at which tobacco estates are dry-leased, and 5 years' capitalized rental value is taken as the measure of the capital

value involved - i.e. a 20% return pretax is offered on the basis of a pure investment without taking into account the profits realizable from active participation in management.

2. Management and support services -

The quality of management, administrative and technical expertise and the availability of adequate support service is, of course, vital to achievement of profitability.

Brief details of Spearhead's present management and staffing levels have already been given at section IV.A.7, and it is understood that all, or substantially all, of the staff concerned would be willing to transfer to AFRAM-FARM. Except for the provision of limited, paid, tobacco advisory services to the proposed Bwanje Estate Development Corporation, the other successor companies to Spearhead other than MALTEX will not be calling on the services of its existing administration after the 1984/85 interim exercise.

The quality of the line and support management is assessed as generally good to excellent and its loyalty to the company in an extended period of uncertainty in a competitive market place for such skills has been outstanding. Administrative and support services in place may be described as:

a. From head office -

- overall planning, budgeting, financial administration and management
- prompt compilation of monthly and annual financial statements
- routine accounting services and internal audit
- staff welfare and conditions of service and certain recruitment services
- both routine and complex legal and land-related matters

- insurance cover, premium and claims negotiations
- marketing
- development studies and procurement of finance
- crop intelligence, crop surveys and regular field visits
- control and coordination of buildings and maintenance staff activities

b. From regional offices -

- at least weekly estate visits to ensure maintainance of high agricultural standards and advice on all aspects of crop, land and labor management and expenditure monitoring
- collation and dissemination of crop and administrative data, wage distribution and centralized purchasing
- liaison with government departments on relevant matters including boundary disputes, labor affairs and water rights
- soil conservation, survey work, water resource utilization, experimental crop programs, research station liaison, wildlife preservation and control
- participation in management committee meetings to exchange information, review progress, formulate budgets and future planning

c. the SETAMS transport and commercial division provides an efficient and reliable trucking and fuel delivery system to estates (as well as to third parties during slack periods) and coordinates bulk purchasing of major crop inputs. In addition it maintains the physical asset registry and controls asset transfers and:

- provides full repair service to the company's trucks, tankers, trailers, automobiles, and motor cycles, including preventive maintenance routine
- fabricates certain customized equipment for estates
- controls bulk fuel distribution, purchases and storage in each region
- ensures compliance with licensing, certification of roadworthiness and commercial carrier permit laws.

d. The field service unit operates under Setams out of depots in the central and northern regions and:

- maintains extensive spare parts stocks for agricultural tractors and equipment
- holds back-up pool equipment in each region to cover for major breakdowns and periods of peak activity
- relieves estate managers from responsibility for all but routine equipment and engine maintenance by regular estate visits and preventive maintenace progams
- trains and supervises estate mechanics

The overall effect appears to be an efficient and motivated administrative and support service, and farm managers who are able to concentrate on farming. Whenever possible, it is policy to promote to fill vacancies rather than resort to outside recruitment.

3. Valuation -

In the light of the foregoing, the transfer value of relevant assets to AFRAM-FARM proposed by and discussed with the receiver and manager of Spearhead appears reasonable at K 8,189,000 ($6,142,000 at 0.75).

As regards MALTEX, the valuation tentatively agreed upon is:

	K 000's
Cattle herds introduced	133
Dip tanks, miscellaneous equipment, etc.	50
Mapanga dairy complex	100
Grazing rights (including Bwanje), usage rights of support unit assets and general farm equipment	317
Feasibility study direct outlay - estimate	50
	650

In addition, cash payment will require to be made based on first-in-first-out cost of nonobsolete spares and ration stocks as at the date of inception of AFRAM-FARM. As at July 31, 1983 (Spearhead's last annual accounting date) these totalled approximately	K 10,000

All of the above figures will require adjustment to take account of the results of the 1983/84 and perhaps 1984/85 crop seasons, depreciation, routine asset replacements and inflation. The total is thus likely to increase by some 20% by the inception date in Kwacha; the effect on the dollar equivalent cannot be forecast as exchange rate movements over the next 12 to 18 months cannot be estimated.

C. Social aspects:

1. Land tenure -

The majority of the estates concerned are held on long leasehold titles from the State for 99 years from 1 July, 1983. In the case of Ngombe and Mchinji estates, the form of title is identical, but the lease periods run from 1 July, 1975. The land rent payable is K1 per acre, subject to revision should land rents generally on State estate leases in Malawi be revised. Such adjustments are thought unlikely to do more than keep pace with inflation in the foreseeable future. The Mapanga estate is freehold.

All of the titles reserve mineral rights to the State, as is the custom in Malawi. Compensation is payable at market value if exploitation occurs. Wayleaves for roads, transmission lines etc. can also be compulsorily acquired.

Water rights, except for shallow wells and small farm weirs require case-by-case applications to the appropriate government department and applications are advertised so that objections can be lodged by those downstream who might suffer or by the authorities should a water conservation area be threatened. In practice, this is rarely a contentious area at the present stage of national water resource development.

All of the leases also contain various covenants binding on the lessee. These vary somewhat from estate to estate, but generally include:

a. a development expenditure commitment, which has already been complied with in all cases except Gola Estate,

b. a requirement to establish one acre of afforestation for every five acres of virginia tobacco and for every 10 or 20 acres of burley tobacco planted every year, and re-establish clear-fellings once the total area required has been established,

c. the application of sound techniques of land husbandry and soil erosion preventive measures.

Copies of these leases have been made available to those preparing this study, and a specimen is attached at Appendix 4. In all cases, the estate areas are subject to definitive survey, which is unlikely to take place for a number of years. The precise acreages will only then be established with absolute certainty; at present they have been taken from 1:50,000 maps.

As part of the disengagement exercise from joint operations with the Malawi Young Pioneers Organization the receiver and manager of Spearhead has agreed with it upon small areas of land which will be excised from Spearhead's present holdings and assigned to the Organization. In addition, during the period before title was granted formally and hence before ownership rights could be exercised effectively, illegal occupants established residence on certain of the estates and in some cases it is expedient to recognize this occupation and excise small areas contiguous to the boundaries of the estates. The areas have not yet been precisely demarcated although work on this is in progress. Except in the case of Ngombe Estate, the areas involved are not substantial.

The position may be set out as follows in acreage terms:

	Area to which title held	Area to be assigned to MYP	Estimated area to be given up	Residual area
Nkhoso	4,359		200	4,159
Thulwe	2,095		200	1,895
South Rukuru - 1	3,558			3,558
- 2	3,501	100		3,401
- 3	3,687		400	3,287
Maji	2,617			2,617
Mubangwe complex	7,205			7,205
Khola	2,985	80		2,905
Nyaza	7,324			7,324
Mbwabwa	1,052		100	952
Mchinji	2,317			2,317
Ngombe	4,337		1,000	3,337
Namitete	2,080			2,080
Ngapani	6,874	115		6,759
Lipinda	660	330		330
Nasawa	460	230		230
Mapanga	1,996	100		1,896
Gola	3,212	71		3,141
Total acres	60,319	1,026	1,900	57,393

Compensating acreage with perennial river access, may be obtainable at Ngombe for that given up.

Once the overall investment package has been put together and accepted by the receiver and the authorities in Malawi, consent from the Ministry of Lands will be required for transfer of the leases to AFRAM-FARM. Stamp duty will be payable by the new company at 3% of the negotiated value agreed upon for the transfer of the estates, excluding movable items. Legal costs will also arise.

Formalities for grazing rights on these estates and on Bwanje call for only straightforward commercial contracts.

2. Employment -

A summary of the current labor force has been provided at Section IV.A.7. General laborers average one man per acre for tobacco growing, considerably less in respect of maize and other crops and 0.5 men per year for head of cattle. There is a very pronounced seasonal fluctuation, however, with the March peak being double the August minimum on the non-livestock activities.

In general, labor supply is not a problem except at Ngapani, Mubangwe and the South Rukuru Estates. Social practices and doubtless smallholder crop purchase price fluctuations would appear to play a significant role in these localized peak period shortages as the estates affected happen to be located in areas that have been particularly severely hit by recession and foreclosure of neighboring estates (possibly brought about partly by the labor availability problems). It is therefore intended to concentrate crops suited for mechnanized planting and harvesting in the northern region in phase I, until a pattern of regular employment is re-established there. Severe labor supply problems are unlikely to emerge anywhere given the population pressures referred to elsewhere in the study provided enlightened employment practices are adopted.

There is a steady supply of agriculture graduates from the University's Bunda College of Agriculture and training programs will be introduced to prepare recruits from this source for management responsibility. In the early years of the project, however, three specialists will be required from the United States for the planned dairies and embryo transplant laboratory in addition to regular technical visits by the project participants themselves - which will be an ongoing feature.

3. Employee relations and social practices -

At senior and farm management levels no radical changes are proposed in the present bonus-related employment contract system. Tax-free end-of-contract gratuities are payable to expatriates amounting to 25% of basic earnings over the 3-year contract; some Malawian permanent staff are on a pension scheme at a contribution cost to the company of approximately 11% of basic earnings. Small medical insurance premiums are shared between employer and employee. There are life and accident cover insurances and annual vacation entitlement is four to six weeks.

Lower level permanent staff are not covered by pension or medical insurance (except for work accidents) and have only two weeks vacation entitlement. MALTEX intends to secure pension status for all permanent employees. Other features of employment and labor relations may be summarized as follows:

(a) a small number of lower-paid permanent staff at present live in company constructed low-cost housing on estates. It is the intention that these schemes should be extended to all permanent employees, and that in the interim period any city dwellers be paid realistic housing allowances. Dormitory accommodation will also be erected on farms for the use of seasonal laborers.

(b) All nonmanagerial estate workers are issued with 18 lbs. of maize flour weekly at present at a net cost to the company of K0.08 per man day. It is the intention that this should be supplemented by animal or fish protein or by common or soybeans grown on the AFRAM-FARM estates, provided at least partly by the issue of a cooked midday meal. While this is not a feature on other annual cropping or livestock estates, it is the accepted practice on long-term crop plantations and is believed to contribute significantly to the relative stability of their labor forces and to productivity as a malnourished laborer cannot be expected to perform effectively. Permanent areas of infrastructure will be set aside for the cultivation of small gardens by permanent employees for the support of their dependants (the practice is already followed on most estates but not as of right).

(c) as indicated earlier in this study, AFRAM-FARM proposes to erect primary schooling and primary health care facilities on its estates. Unfortunately this cannot be implemented until Government or a donor agency is in a position to provide staff and supplies, as it is impossible in practice to confine attendees to estate staff and their direct blood dependants.

(d) present minimum pay rates set by law are:

Unskilled laborers	- in Blantyre and Lilongwe	- K0.81 per day
	- in Mzuzu and Zomba	- K0.69 per day
	- elsewhere	- K0.58 per day

for a six-day, 48 hour working week (lower rates apply for women and for juveniles).

While it is not the intention to upset these nationally accepted rates of pay, employee motivation and productivity will be enhanced by continuation and extension of present Spearhead practices whereby:

- The day's wage is earned by reference to completion of an assigned task at average productivity levels for an 8-hour day. The employee can then opt for full wages based on shorter working hours or can achieve premium earnings by working beyond the assigned task should he so wish and provided work is available.

- Waiving of payment for the subsidized food ration when an absence-free week of attendance and task completion is achieved.

A self-employed "contract task" basis of work allocation will also be considered for introduction, whereby an individual assumes responsibility for larger tasks on an ongoing basis and employs dependants or friends to assist him in their achievement.

Conventional hourly pay rates with overtime are prescribed for semi-skilled and skilled employees ranging between K0.20 and K0.56 hourly.

Clerical, administrative and junior managerial pay rates are set by negotiation in the general range between K450 and K2,000 per annum.

All personal emoluments, other than occasional temporary laborers, are paid monthly.

(e) Working hours for administrative and skilled support staff are generally a 5-day, 42-1/2 hour week. There are approximately ten national public holidays annually, on four of which only watchmen and domestic staff are permitted to work without special Ministerial consent.

(f) Periods of notice are calculated by reference to the basis of remuneration notwithstanding the monthly system of wage payment. Hourly and daily paid workers need give or be given only one day's notice of termination of employment. Lower paid nonpensionable workers, including regular seasonal attendees, are entitled to modest severance payments on a sliding scale after five years' continuous employment.

A three-month period of notice is incorporated into the special contracts of service at senior managerial level. Summary dismissal (without severance pay) occurs only following serious disciplinary breaches or neglect, and normally only after formal warning or warnings. Terminated employees generally have recourse to officers of the Ministry of Labor or officials of the Malawi Congress Party, both of which act as "honest brokers" in achieving a cash settlement fair to both parties. Reinstatement is rarely if ever insisted upon.

(g) Workmen's compensation awards for lower paid workers are generally adjudicated upon by the Ministry of Labor; at higher levels legal counsel are likely to be retained but recourse to the Courts is rare. The company will carry insurance cover against work accident compensation for all levels of employees.

(h) The Trade Union movement is not at present active amongst livestock employees, workers on annual crop estates, or amongst administrative staff. However, this has not always been the case, and a revival of the Union Movement could occur. In industries where Unions are active, the main areas of concern tend to relate to working conditions and benefits, rather than to wage levels. In annual farming operations at present, most grievances are handled instead by local officials of the Malawi Congress Party, who are people of importance and influence in the community (virtually all Malawi nationals are Party members). A conciliatory spirit generally prevails. Long-term strikes are unknown.

(i) Party official employees are customarily given certain paid time off to attend to political matters, and on occasions of visits to a given locality by the Head of State paid time-off and assistance with transportation of the whole labor force is a feature. The cumulative effect is not a factor of significance, however.

4. Overall policy control and its execution -

Effective control of a corporation in Malawi lies with its board of directors -- or even with a managing director -- albeit subject to shareholder control over the composition of the board and certain specific powers exercisable only by general or special resolution of the shareholders.

In the case of MALTEX, as with other joint-venture type corporations in Malawi, it is envisaged that there will be a shareholders' agreement to ensure that policy decisions are not taken without prior reference to major shareholders; there will also be technical agreements with the U.S. participants, who will be acting in a visiting Agent capacity.

Nonetheless, composition of the company's board will be of great importance, and is planned to be on the following lines:

Nominees of Spearhead Holdings, representing Government, the banking system and its general shareholders, as at least 45% equity participants	3
Nominees of the U.S. based financing and technical limited partnership as likely 40% equity participants	3
Nominees of private Malawi shareholders and funding institutions, including Indebank, as the holders of the balance of the equity	2
	8

As is customary in Malawi, directors will be expected to nominate alternates to represent them when they are not in the country, or are unavailable. Independent senior counsel is likely to be invited to participate in an advisory role, and also the erstwhile receiver and manager of Spearhead, in early board deliberations.

D. Infrastructure:

Existing infrastructure has been summarized in earlier sections, and full asset listings are held by the project participants. Some enhancements will be required in phase I of the development project.

1. Land -

While soil conservation work has generally been adequate, erosion problems do exist, particularly on the South Rukuru estates and the Mbwabwa estate. These are reversible provided early action is taken to fence, contour, bund, control drainage and protect stream and river bed edges. As part-reverted lands are reopened and virgin areas opened up, whether for crops or pasturage, similar low-cost measures will be required.

Definitive boundary demarcation on almost all of the estates is poor, and cannot await national government survey. Tree belts, roads or permanent firebreaks require creation in almost all areas for this purpose.

The reafforestation program to provide fuel self-sufficiency is seriously behind on nearly all estates. For commonsense reasons, as well as to comply with lease covenants, this shortfall must be remedied without delay. To a significant degree the complementary objectives of demarcating boundaries, protecting streams, rivers and dambo water sources and the establishment of windbreaks can be achieved simultaneously through this program.

Only minor works are required on the estate road systems, but a pontoon to cross the South Rukuru river and ensure year-round direct access from the Maji and South Rukuru estates to Mzuzu will be essential if a bridge is not built by Government or on a cost-shared basis between AFRAM-FARM, MALTEX and other users of the route.

Low-cost grass airstrips will be required at Bwanje, Nkhoso, Mchinji, Ngapani and Gola estates on improved pasture lands.

Considerable amounts of fencing -- solar powered where there is a predator problem -- will be required.

Water resources and reticulation require considerable enhancement. The irrigation schemes proposed for phase I will be low-cost (around K250 per acre commanded), but higher costs will be required in phase II for the planned major schemes at Nkhoso and Ngapani. Construction of earth dams is required on a number of estates to retain seasonal water flows, and large reservoir tanks, and in some cases, more or larger piping is required, including the Mubangwe complex.

2. Housing -

An additional two farm manager houses will be required, plus housing for the resident specialists.

Priority is to be given to the erection of mostly low-cost housing for all of the permanent non-urban labor force, and also of dormitory accommodation in areas where seasonal labor requirements are difficult to meet.

3. Other buildings -

In phase I, additional warehousing, workshop and office space on a significant scale is likely to be required on only Maji, Mubangwe, Namitete and Bwanje for the livestock program. At Maji and Bwanje these requirements are very modest.

The logical headquarters for MALTEX and AFRAM-FARM is in the Lilongwe region, not in Blantyre. If reasonably priced office, housing and workshop facilities cannot be rented in Lilongwe itself, a special complex may have to be built at nearly Namitete. This possible necessity has been ignored in the financial planning on the assumption that it could be handled on a long-lease basis by a construction company or an insurance fund.

Buildings will be required for the embryo transplant laboratory at Lingadzi in Lilongwe, as well as for the ancillary stock feed mixing equipment.

4. Mechanical equipment -

The majority of the estates' mechanical equipment is aging and in need of an accelerated renewal program. This applies equally to stationary pumping engines and generators, to tractors and implements, to trucks and trailers, automobiles and workshop equipment. The increased acreage to be cropped will also call for additions to the inventory of all of these items, although not on the same scale of intensity as is required for tobacco.

5. Auxilliary items -

Access to AFRAM-FARM's minicomputer will be necessary to handle the increased volume of financial and statistical data generated and required promptly and accurately (fortunately Spearhead's accounting records are already in computer-compatible format although entirely manually processed). Businessmen's computers may also be required for regional offices and some of the estates.

Radio communications will have to be installed at the nine estates which do not at present have access to communication facilities, and a telecopier link may be needed for communications between Malawi and U.S.A.

A twin engined turbo-prop 4 or 6 seater light aircraft will be required, to tropical specification (second-hand models are known to be available at a landed cost before duty of approximately K100,000). In addition, a C-130 or equivalent aircraft may have to be wet-leased in order to overcome the transportation problems affecting imports and exports. Outright purchase is also a possibility, but has not been taken into account in the financial projections.

E. Institutions:

1. Obligatory participation in government programs -

There are few obligations of this kind in Malawi. The lease covenant required commitment to reafforestation has already been detailed in Section V. C. 1.

A cess is deducted in respect of hides and skins elements of sale proceeds, and these can only be commercially handled through the Government controlled Cold Storage Company Limited. In phase II it is intended that MALTEX should offer its services in all aspects of this trade, and also in slaughterhouse upgrading and management. At present, all urban slaughtering must be handled by the Cold Storage Company Limited for a slaughter fee.

Taxation has to be deducted from most employees' wages and accounted for to the Taxation Authorities by direct remittance for senior employees and by the purchasing of special stamps and attaching them to cards kept for each worker for the main labor force.

An apprenticeship levy has to be paid calculated by reference to the numbers employed with certain designated specialist skills (carpenters, mechanics, etc.). The fund thus created can be drawn on to subsidize the costs of employing apprentices. The rate is fixed semiannually, and to date has been modest.

Small donations in cash or in kind are frequently called for to defray the costs of political events of national or local importance.

2. Contractual marketing agreements -

Requirements concerning tobacco, grain, fibre and beverage crops are detailed in the AFRAM-FARM study. As regards livestock, the only mandatory requirements are detailed below. There is no monopoly in milk products but MMM has established a dominant position in the market.

There are no restrictions on the sale of livestock internally (except from any diseased areas where only quarantined sale for slaughter is allowed), but the ultimate price to the consumer is controlled, and margins therefore require consideration. There are strictly enforced restrictions on the slaughter of young female cattle, although a special licensing procedure applies for vealers. All hides and skins of commercial value must be handled by the Cold Storage Company, and a cess is payable. Exports of livestock require a license, for which various conditions are likely to have to be complied with.

The price at which fresh milk can be sold is also effectively controlled.

3. Transportation of goods -

Virtually all freight into or out of Malawi is containerized. Stuffing and destuffing is mostly carried out at container depots unless the quantities involved are particularly large. Through rates for containers apply to port of destination whether they leave Malawi by the rail route to Mocambique or by road to South African or Tanzanian ports.

Specimen rates for a container of 989 cubic feet capacity from Lilongwe are:

	Sunflower seed	Cotton lint	Vegetable oil
To England	$2,400 (4,900)	$3,400 (4,760)	$3,600 (4,900)
To Marseilles, France	2,400 (4,900)	3,400 (4,760)	3,600 (4,900)
To Suez	2,600 (4,670)	3,665 (4,530)	3,800 (4,670)
To Bombay	3,600 (5,670)	4,665 (5,530)	4,800 (5,670)
To New Orleans	5,100 (4,370)	6,100 (4,230)	6,300 (4,370)
To Johannesburg	R2,800	R2,800	R2,800

( ) = using road route through Durban

Inwards freight is normally consigned carriage paid to seaport of landing and to a freight agent in that port who will arrange for it to be transported to Malawi and bill all port and inland freight costs for settlement in Kwacha. Specimen costs for a container to Lilongwe are:

	Fertilizer	Spares or machinery
From London, England	$2,300	$4,800
From New York	3,100	5,500
From Johannesburg	K3,500	K4,500

Major farm inputs are normally purchased locally, but large users can apply for permission to import direct.

Perishables can be sent by airfreight twice weekly to Europe by scheduled flights. Tariffs are negotiable for large users, but are quoted as:

Avocado pears	K0.38 per lb. - London
Chilled beef	K0.45 per lb. - London K1.81 per lb. - Cairo

During the recent years of disruptions on the traditional Mocambique route many urgent or high value goods have been moved by chartered air freighters. The tariffs are complex, but, as an example:

B747 London - Lilongwe - 110 short-tons payload - UK £150,000

An alternative routing to overseas markets would be by chartered airfreight to the efficient, containerized port of Mombasa, Kenya and sea from there. The cost of chartering a 15.3 short ton payload DC-6 freighter from Lilongwe to Mombasa on a one-off basis would be $6,400 per trip ($12,200 for a return load round trip), and the costs from Mombasa to England for a container are in the region of $1,250.

4. Barter contracts -

Although there are undoubtedly opportunities for barter trade within Africa and exports to countries suffering acute foreign exchange problems might be increased thereby, this form of trading is not particularly favorably looked upon by the Malawi Exchange Control Authorities as it is difficult to control and imbalances adverse to Malawi can build up and prove impossible to settle. The concept is certainly not ruled out, however. Each such contract would require specific approval, and should be on a purely bilateral basis.

VI. OVERVIEW OF THE MALTEX PROGRAM:-

A. Introduction:

Until now, except for the existing small cattle herds, Spearhead's estates, like virtually all similar estate properties in Malawi, have been used to grow tobacco on a one-year-in-five rotation, followed in the second year by about half that acreage of ration maize and lying fallow and untended for the rest of the time.

This represents more than just an appalling failure to optimize increasingly scarce land resources, and also profitability. Introduction of sound rotational cropping procedures maintains soil condition, disinfests soils of pests attendant on specific crops, prevents erosion and wasteful deforestation, creates increased employment opportunities and reduces nutritional deficiencies. It will also contribute to the quality and quantity of the country's and the operator's financial and economic growth by reducing the existing dependence on a specialist export crop subjected to volatile price swings, creating new export earnings and leading to import substitution and satisfaction of suppressed demand. It is to be noted that pasture and hence livestock are an important factor in certain crop rotations, and all of the above features apply also to this rotational activity.

A similar situation of mono-cropping on commerical estates existed in Zimbabwe prior to its 1965 Unilateral Declaration of Independence. When the market for that country's tobacco exports diminished as a result of trade sanctions diversification, particularly into cotton, maize corn, soybeans, peanuts, sunflower, wheat and barley, was forced upon it - with irrigation being developed for the wheat and barley winter crops and to supplement rainfall in summer. The results were spectacularly successful, and usage of the crop residues also led to substantial expansion of the livestock industry.

Prices of processed agricultural produce tend to be very much more stable than world commodity market prices for raw agricultural produce; internally, the profit margin on processing activities remains comparatively steady regardless of crop yields. The distribution of the overall value added from seed to packaged product tends to favor the processor rather than the grower, particularly in an economy where benchmark crop sale prices tend to be set at a level commensurate only with the perceived needs of the smallholder, who has few direct production costs. The existence of cotton gins to feed existing textile plants, edible oil extraction, refining and packaging plants and livestock feed mix facilities ensures maximum local product beneficiation both for the operating company and for the national economy. This occurs both from maximization of export sale proceeds and from the emergence of spin-off growth in upstream and downstreamrelated industries.

Again, this is borne out by the experience of the last 20 years in Zimbabwe, and will be complemented in this case by Malawi's soil, humidity, temperature and rainfall which provide growing conditions that cannot easily be surpassed elsewhere in South Eastern Africa.

Most of the products which AFRAM-FARM and MALTEX propose to grow are intensively produced in the United States by the technical partners, who also have ready access to the processing technology planned. This experience will be applied first to livestock and crops already produced in Malawi and then to products new to the country after research under trial conditions. The technology will be adopted wherever it is practicable and cost-effective to do so in a manner maximizing employment and minimizing the applications of expensive, imported inorganic fertilizers, soil conditioners and insecticides. The intention is naturally to mimimize production costs and make the end-products competitive in either or both the internal and export markets as appropriate. The medium term objective is to generate the track record and financial base required for the inception of phase II, as well as to generate a substantial financial return for the "forced investors" locked into Spearhead Holdings.

The products chosen by AFRAM-FARM and MALTEX for large-scale production in phase I are largely aimed at the local market (although export markets exist for surpluses). This is intended to meet suppressed demand and demand presently met from imports in a manner which eases present balance of payments strains, thereby ameliorating the national nutritional deficiencies. Export production is primarily targeted towards drought-prone or agriculturally moribund territories within the South-Eastern African area, where cost competitiveness need not be eroded by transportation costs. At the same time, export markets further afield will be explored for feasibility.

As indicated in detail in section IVB, management cadre training will be given high priority. In addition, the secondee experts will provide existing national and expatriate farm managers with expertise in crops and livestock in which they have little or no experience at present, and this will spread down to the general labor force, and thence to surrounding smallholder farmers. Modern administrative crop monitoring procedures and computer control will be introduced, as will ginning and oilseed expression and refining capability and improved techniques of livestock feed preparation. Also, modern animal husbandry techniques will be introduced, including embryo transplant procedures. The technical participants from the U.S. will themselves be paying extensive visits to the project in Malawi to provide advisory services to protect their investment and optimize both profit-related returns and capital appreciation. In addition, a special K 200,000 training program will be established at the embryo transplant laboratory to be constructed as part of the MALTEX program.

There will be close two-way cooperation with agricultural research institutes in Malawi, and also with the agricultural college of the University.

The advancement of Malawian national farm and process managers will ultimately lead to cost savings and to a reduction in the level of direct technical assistance as a planned stock divestiture plan is implemented.

Tours by Malawi managers to the farming enterprises of Daniel Land & Cattle in Texas are foreseen throughout the period of direct technical assistance.

As previously noted, the Malawi-Texas livestock program, "MALTEX," is a proposed major livestock project on thirteen estates in Malawi, utilizing 22,000 acres of land in the Northern, Central and Southern Regions of the country.

MALTEX will be managed by Daniel Land & Cattle Company of San Antonio, Texas with the technical assistance of Dr. J. D. Aughtrey who has managed semi-tropical livestock projects in various developing countries.

MALTEX will obtain grazing and other rights on twelve estates from the complementary company, AFRAM-FARM (African-American Farming Corporation Limited), a row-cropping company to be established in Malawi on 16 estates formerly operated by Spearhead Enterprises Limited (in receivership).

Grazing rights on a thirteenth estate, Bwanje, in the Southern Region, will be obtained through the lease of 7,000 to 9,000 acres from Bwanje Estate Development Company, another proposed company (independent of AFRAM-FARM), which will undertake a major irrigation project on Spearhead lands in the Southern Region.

The development, operational and financial plans for AFRAM-FARM are described in another feasibility report entitled Feasibility Study: Rotational Row Crop Farming in Malawi, February 1984, and have been summarized in previous sections of this study.

In addition to grazing rights, MALTEX will utilize a large quantity of farm, gin and expressing plant crop residue from AFRAM-FARM. It will also use the head office, regional offices, and support services of AFRAM-FARM.

As consideration for these rights and services, MALTEX will participate in a sharecropping (crop sharing) arrangement with AFRAM-FARM.

A sharecropping feature at 10% of gross revenue has therefore been taken up as a cost in the livestock company projections, as a result of which AFRAM-FARM will have close interest in optimizing the livestock company's profits. MALTEX will also have a similar interest in cooperating with AFRAM-FARM as it will take an equity position in AFRAM-FARM in the amount of K 1.5 million ($1.2 million U.S.).

Because of these close operational and financial arrangements between AFRAM-FARM and MALTEX, this feasibility study has described the structure, operational plan and financial projections of AFRAM-FARM in considerable detail.

A major objective of the AFRAM-FARM project is optimum utilization of the land on the 16 estates it will manage. Cattle grazing is, in many cases, a part of the rotational cropping plan. Other lands, suitable only for grazing, are also available for MALTEX.

The proposed cropping plans for AFRAM-FARMS during the period 1984 through 1988 are shown on pages 131 through 134. A few aspects of this cropping program should be noted as they relate to the MALTEX livestock program.

1. Soybeans -

Soybean cultivation is presently virtually unknown in Malawi for two reasons:

(a) unsatisfactory results from experimental hand-harvested areas. However, experience in climatically similar areas of neighboring Zambia have demonstrated convincingly that mechanical production of this crop on a large scale is feasible.

(b) the lack of a solvent process oil extraction plant in Malawi, as a result of which the percentage oil extraction would be lower than is now customary elsewhere and the high oil content cattle cake residue would have a short shelf-life. Against this, there is an identified, although unquantified, demand for soybean meal as improved poultry food in Malawi; also it is not believed that the short shelf-life of any cattle-cake produced would affect sale potential during the period of seasonal availability since there is also an unsatisfied demand for better quality cattle feed than is now available.

A small acreage of soybeans close to the mechanical expression and refining facilities in Blantyre has therefore been planned and could readily be expanded into other non-tobacco rotations if demand is expressed or if a solvent extraction facility is erected in the country.

The oil could play an important role in import substitution/satisfaction of suppressed demand for vegetable oils and protein, although the very attractive financial returns projected would decline considerably if the stage is reached where exports on to world markets were required-but this is an unlikely scenario as shortages exist in neighboring countries to which transport costs are lower and where landed costs are similar to Malawi's for what is an imported product.

By-products of soybean cultivation and processing will be available for supplemental livestock feed, as previously noted.

2. Catambora Rhodes grass -

This grass plays an important role in ridding soils of infestation, particularly eelworm, in a crop rotation, especially a rotation involving tobacco. Four seed crops are taken from it over a two-year period; alternatively or complementarily the improved grazing which it provides can be leased out for livestock grazing.

There is a substantial market for the seed of this grass in Malawi and a virtually limitless and profitable demand in neighboring countries and Japan, according to investigations made by The National Seed Company of Malawi Limited, which would act as sole third party purchasers.

There is no licensing requirement for the production of catambora grass seed.

3. Afforestation -

Substantial areas of afforestation are required to provide fuel for tobacco-curing and workers domestic requirements and also to protect watercourses, establish boundaries and windbreaks. By seeding these plantations with star grass, they can be most effectively used for improved cattle pasturage.

4. General -

The crop development planned for phase I of the project calls for little in the way of promotion effort, competitive pricing or distribution policy decisions. As internal and world market relative price advantages change, however, a flexible approach will undoubtedly have to be addressed to the cropping mix to optimize returns. The rotation patterns planned provide that flexibility, except for the modest area to be put to coffee.

Improved nutritional supplies to estate laborers and their dependants have not been overlooked in the cropping plan. Apart from the garden areas envisaged for pemanent employees, MALTEX will be establishing cattle herds and fish farms accessible to all estates, and dairy products accessible to some of them. AFRAM-FARM will be entering into supply contract arrangements with this company, either for cash or as a condition of reduced cost growing, occupation leases and share-cropping arrangements.

PROPOSED CROPPING PLAN 1984/85 (ACRES)

	Tobacco	Commercial (ration) maize	Irrigated winter wheat	Soy beans	Sorghum	Manipinta peanut	Sunflower	Cotton	Catambora grass plantings (biennial)	Maize and bean seeds	Afforestation plantings (7-year cycle)	Coffee (permanent)	Total land in use for crops
Northern:													
Nkhoso	150	50					100	100	150		35(35)		620
Thulwe	96	96					40	40	40		17		329
Mubangwe complex	200	60			50			25	50		235(230)		850
South Rukuru:													
1	} 400	} 100				} 80	} 40	} 40	} 140		} 461(139)		} 1,400
2													
3													
Maji	____	____	—	—	—	—	—	—	____	—	____	—	-
	846	306	—	—	50	80	180	205	380	—	748(404)	—	3,199
Central:													
Khola	200	50				50			50	25(A) 25(A)	130(190)		695
Nyaza	400	200				100			75	100(B)	200(50)		1,150
Mbwabwa	100					40			50	100(B)	50(5)		345
Mchinji	200	50				50			50	25(B)	130(50)		555
Ngombe	150					50			50	100(B)	129(50)		529
Namitete	250	250	—	—	50	—	—	—	80	—	31(58)	—	719
	1,300	550	—	—	50	290	—	—	355	375	670(403)	—	3,993
Southern:													
Ngapani	300	100	50						200		80(120)	50(5)	905[50]
Lipinda		50			50				50		10(10)	25	195
Nasawa											(10)		10
Mapanga		100			50				50		25(30)	100	355
Gola	____	____	—	—	—	—	100	—	____	—	____	—	100
	300	250	50	—	100	—	100	—	300	—	115(170)	175(5)	1,565[50]
Total	2,446	1,106	50	—	200	370	280	205	1,035	375	1,533(977)	175(5)	8,757[50]

(A) Inbred hybrid maize.
(B) MH12 maize.
(C) Common phasoleus bean.

Notes:
Figures in ( ) indicate plantings brought forward from the previous year or years.
Figures in [ ] indicate double-cropped acreage under irrigation.
Considerable additional winter wheat may be established at Khola/Nyaza, Ngombe, Mchinji, Namitete and Ngapani during Phase I if extended irrigation schemes prove economically feasible after more detailed study.
Limitations on usable land at Namitete may lead to part of its projected sorghum crop being transferred elsewhere in the Central Region.
Land at Lipinda earmarked for Malawi Young Pioneer use will be leased back from that organization.

PROPOSED CROPPING PLAN 1985/86 (ACRES)

	Tobacco	Commercial (ration) maize	Irrigated winter wheat	Soy beans	Sorghum	Manipinta peanut	Sunflower	Cotton	Catambora grass plantings (biennial)	Maize and bean seeds	Afforestation plantings (7-year cycle)	Coffee (permanent)	Total land in use for crops
Northern:													
Nkhoso	150	100					500	500	250(150)		15(70)		1,735
Thulwe	96	96					200	200	256(40)		12(17)		917
Mubangwe complex	200	100			100			100	50(50)	25(A)	55(465)		1,145
South Rukuru:													
1	400	125				411	500	500	560(140)	25(A)	113(600)		3,374
2													
3													
Maji													-
	846	421			100	411	1,200	1,300	1,116(380)	50	195(1,152)		7,171
Central:													
Khola	200	50				200			50(50)	25(B)	90(320)		985
Nyaza	400	300				400			275(75)	225(B)	200(250)		2,125
Mbwabwa	100					100			50(50)	100(B)	50(55)		505
Mchinji	200	50				100			50(50)	50(B)	90(180)		770
Ngombe	150					150			50(50)	150(B)	57(179)		786
Namitete	250	250			250				90(80)		31(89)		1,040
	1,300	650			250	950			565(355)	550	518(1,073)		6,211
South:													
Ngapani	300	300	100						100(200)		80(200)	100(55)	1,435[100]
Lipinda		100			100		100		50(50)		10(20)	25(25)	480
Nasawa											(10)		10
Mapanga		150		150	100				100(50)		25(55)	100(100)	830
Gola							200	100	100				400
	300	550	100	150	200		300	100	350(300)		115(285)	225(180)	3,155[100]
Total	2,446	1,621	100	150	550	1,361	1,500	1,400	2,031(1,035)	600	828(2,510)	225(180)	16,537[100]

See notes on 1984/85 cropping plan.

PROPOSED CROPPING PLAN 1986/87 (ACRES)

	Tobacco	Commercial (ration) maize	Irrigated winter wheat	Soy beans	Sorghum	Manipinta peanut	Sunflower	Cotton	Catambora grass plantings (biennial)	Maize and bean seeds	Afforestation plantings (7-year cycle)	Coffee (permanent)	Total land in use for crops
Northern:													
Nkhoso	150	100					750	750	650(250)	25(B)	15(85)		2,775
Thulwe	96	96					400	400	240(256)		12(29)		1,529
Mubangwe complex	200	100			175			175	150(50)	25(A)	55(520)		1,450
South Rukuru:													
1	400	125				411	750	750	590(560)	25(A) 100(B)	113(713)		4,537
2													
3													
Maji													-
	846	421			175	411	1,900	2,075	1,630(1,116)	175	195(1,347)		10,291
Central:													
Khola	200	100				200			150(50)	75(B)	90(410)		1,275
Nyaza	400	350				400			400(275)	275(B)	200(450)		2,750
Mbwabwa	100					100			150(50)	100(B)	50(105)		655
Mchinji	200	100				200			150(50)	100(B)	90(270)		1,160
Ngombe	150					150			100(50)	150(B)	57(236)		893
Namitete	250	250			400				80(90)		31(120)		1,221
	1,300	800			400	1,050			1,030(565)	700	518(1,591)		7,954
Southern:													
Ngapani	300	300	200						500(100)	275(B) 25(C)	80(280)	100(155)	2,315[200]
Lipinda		100			100		100		50(50)		10(30)	25(50)	515
Nasawa											(10)		10
Mapanga		275		275	275				175(100)		25(80)	(200)	1,405
Gola							200	200	(100)		25		525
	300	675	200	275	375		300	200	725(350)	300	140(400)	125(405)	4,770[200]
Total	2,446	1,896	200	275	950	1,461	2,200	2,275	3,385(2,031)	1,175	853(3,338)	125(405)	23,015[200]

See notes on 1984/85 cropping plan.

PROPOSED CROPPING PLAN 1987/88 (ACRES)

	Tobacco	Commercial (ration) maize	Irrigated winter wheat	Soy beans	Sorghum	Manipinta peanut	Sunflower	Cotton	Catambora grass plantings (biennial)	Maize and bean seeds	Afforestation plantings (7-year cycle)	Coffee (permanent)	Total land in use for crops
Northern:													
Nkhoso	150	100					1,000	1,000	650(650)	50(B)	15(100)		3,715
Thulwe	96	96					400	400	256(240)		12(41)		1,541
Mubangwe complex	200	125			200			200	250(150)	25(A) 50(B)	55(575)		1,830
South Rukuru: 1, 2, 3	400	125				411	1,000	1,000	1,210(590)	25(A) 250(B)	113(826)		5,950
Maji													-
	846	446	-	-	200	411	2,400	2,600	2,366(1,630)	400	195(1,542)	-	13,036
Central:													
Khola	200					200			250(150)	200(B)	90(500)		1,590
Nyaza	400	500				400			400(400)	400(B)	200(650)		3,350
Mbwabwa	100					100			50(150)	100(B)	50(155)		705
Mchinji	200					200			250(150)	200(B)	90(360)		1,450
Ngombe	150					150			200(100)	150(B)	57(293)		1,100
Namitete	250	250			400				90(80)		32(151)		1,253
	1,300	750	-	-	400	1,050	-	-	1,240(1,030)	1,050	519(2,109)	-	9,448
Southern:													
Ngapani	300	300	300						100(500)	275(B) 25(C)	80(360)	(255)	2,495[300]
Lipinda		100			100		100		50(50)		(40)	(75)	515
Nasawa											(10)		10
Mapanga		275		275	275				100(175)		25(105)	(200)	1,430
Gola							200	200	200		25(25)		650
	300	675	300	275	375	-	300	200	450(725)	300	130(540)	- (530)	5,100[300]
Total	2,446	1,871	300	275	975	1,461	2,700	2,800	4,056(3,385)	1,750	844(4,191)	- (530)	27,584[300]

See notes on 1984/85 cropping plan.

B. Program phasing:

The MALTEX Livestock Development Program will involve several immediate and longer-term projects located throughout much of Malawi.

Immediate projects, to be initiated during fiscal 1985, have been selected on the following criteria:

- Short implementation period.
- Low capital investment.
- High and relatively short-term cash flow.
- Efficient utilization of participants' management and technological know-how.
- Ability to transfer that know-how rapidly and effectively to the Malawian socio-economic environment, both on estates and to the traditional smallholder sector.
- Synergistic integration with the AFRAM-FARM row-crop Development Program.
- Low Foreign exchange requirements.
- High value added.
- Widespread use of unutilized and underutilized lands.
- Strong existing local demand for outputs.
- Existence of the essential marketing mechanisms.
- Existence of essential infrastructure.
- Provision of basic protein foods.

Accordingly, three types of projects have been selected for Phase One implementation which meet each of the above criteria:

- Daily farms.
- Cattle ranches.
- Fish farms.

One or more of these projects will be located on thirteen existing Spearhead estates in the Northern, Central and Southern Regions of the country as shown on the Map of Malawi on page 70.

Northern Region

Maji	Cattle grazing
Rukuru I. II. III	Fish farms, cattle grazing
Mubangwe	Dairy farm, fish farm

Central Region

Khola	Fish farms, cattle grazing
Nyaza	Fish farms, cattle grazing
Mbwabwa	Cattle grazing
Ngombe	Fish farms, cattle grazing
Mchinji	Fish farms, cattle grazing
Namitete	Dairy farm, fish farm

Southern Region

Bwanje (not part of AFRAM-FARM)	Cattle grazing
Mapanga	Dairy farm, fish farm

With the exception of Bwanje in the Southern Region, all the estates are part of AFRAM-FARM.

The principal emphasis in Phase One is the development of modern dairy farms by transferring embryo transplant technology to Malawi and the importation of extremely highly productive donor milk cows.

The dairy farm at Mubangwe will be a fully integrated, independent operation providing milk as well as beef cattle for slaughter to be sold in the Northern Region. The dairy farms at Mubangwe and Namitete will concentrate on providing milk. No significant grazing land is available at these sites. Thus, the steers and culls resulting from the development of the dairy herds will be transferred to five estates in the Central Region where they will be fattened on available grazing lands with supplemental feeding during the dry season from various AFRAM-FARM residues. Although zero-grazing involves high costs, it has the advantage of reducing the risks presented by endemic diseases (such

as East Coast Fever and Liver Fluke) as regards the particularly valuable donor cows and the offspring selected for breeding and milk production.

Cattle will also be grazed on four estates in the Northern Region. These will be strictly fattening operations with cattle being purchased at the end of the rainy season and grazed for about one-half year prior to supplemental feeding and sale for slaughter.

Bwanje is an independent cattle ranch which will also utilize open grazing for fattening prior to slaughter.

Finally, eight estates will be used for the development of fish farms on a total of 300 acres of land. Fish farm projects will be initiated in 1985 on a pilot scale basis, and will be expanded as experience dictates.

C. Integration of Phase One and Phase Two projects:

After the high priority projects have been initiated and assimilated by management, in approximately three to five years, an additional series of projects will be initiated to achieve a high degree of vertical and horizontal integration. These will include three types of projects:

. Horizontal Integration of Commercial Agricultural Projects

Cattle feedlots
Hog farms
Sheep grazing
Poultry and egg farms

. Backward Vertical Integration In Support of the Traditional Agricultural Sector (Small-holders) including distribution of:

Breeder cows, sows and ewes
Day-old broiler chicks
Parent layer stocks
Fish fingerlets

Forward Vertical Integration Into Industrial Operations

Milk processing
Slaughterhouses
Meat freezing, canning and specialties
Tanneries
Fish processing, packaging and freezing
Egg packing

The chart in Figure 1 indicates the relationships between Phase One and Phase Two projects.

Projects in support of the Traditional Sector will emphasize upgrading existing livestock in conjunction with Malawi Government veterinary services and animal husbandry knowledge through demonstration. They will be long term in nature but will be given priority so that they may be initiated early in the program.

Projects of an industrial nature, especially food processing, will utilize the output of AFRAM-FARM's agricultural projects as well as outputs from other commercial operations.

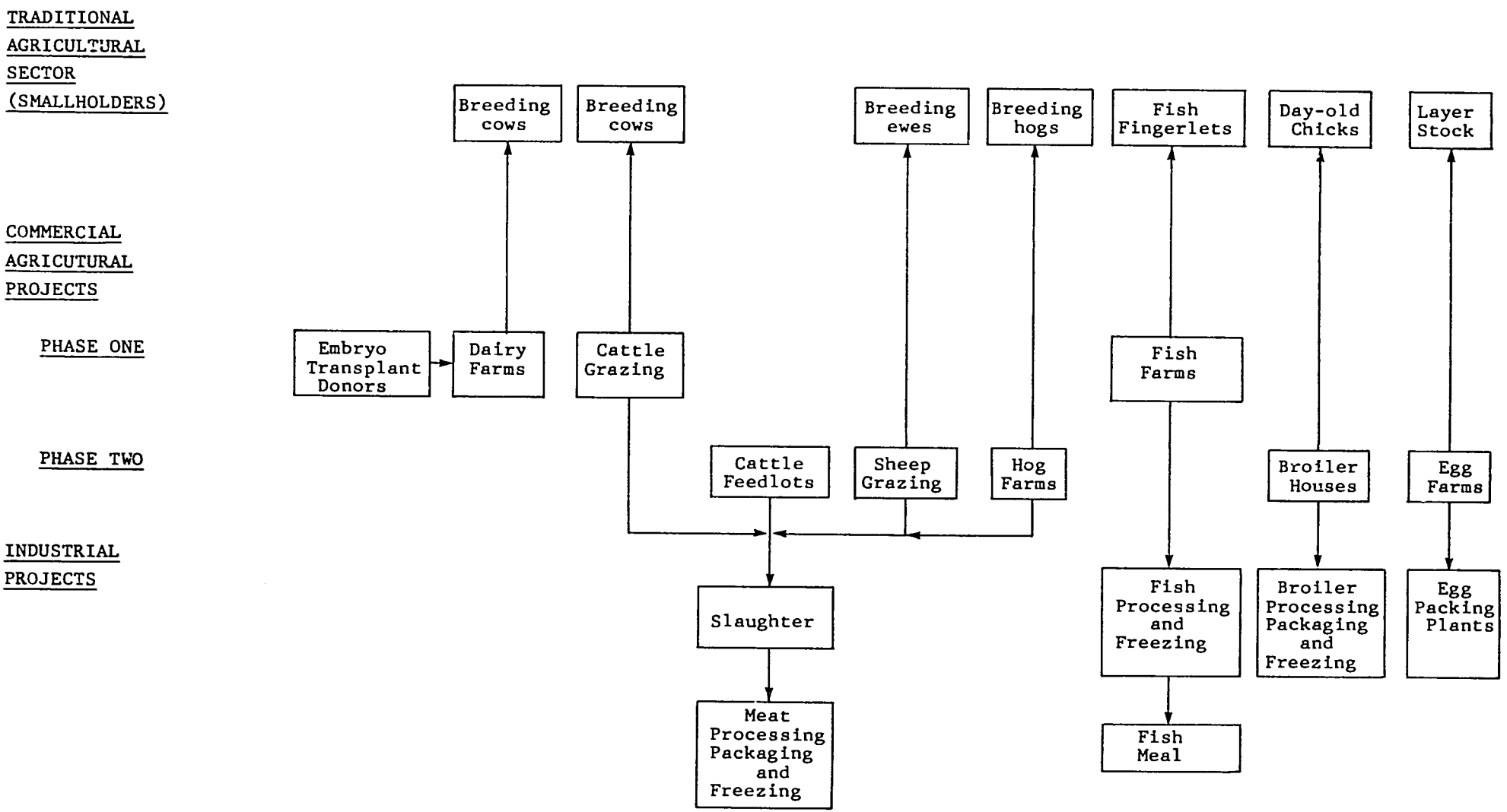
This feasibility study focuses on the Phase One projects.

The cropping plan to be adopted by AFRAM-FARM has taken the requirements of MALTEX into account and is set out in detail for the period March 1987/88 at the end of Section A above.

FIGURE 1

INTEGRATION OF LIVESTOCK DEVELOPMENT PROJECTS

PHASE ONE AND PHASE TWO (1984-2004)



VII. MALTEX LIVESTOCK PROGRAM DETAILS:

A. Dairy farms:

1. Introduction -

During the first phase of the MALTEX Livestock Development Program, high priority will be given to the modernization and expansion of the existing small dairy farm at Mapanga, in the south of Malawi near Balantyre, and the establishment of an Embryo Transplant Laboratory at Lingadzi near Linongwe (to which Spearhead has long leasehold tenure). This study assumes that these two faciliies will be operational by the end of 1985.

During 1985, two additional dairy farms will be established at Mubangwe in the north, and at Namitete, near Lilongwe.

The farm at Mubangwe will, at full capacity, consist of a 500 head milk cow herd plus their progeny which will be used for herd replacement, sold for slaughter when fattened, or sold to local smallholders to upgrade neighboring small dairy herds. This capacity was chosen due to market considerations and a lack of adequate milk processing facilities at Mzuzu.

The dairy farms at Mapanga and Namitete will, at full capacity, consist of 1,500 head of high quality milk cows. Progeny of these milk cows plus those of other host cows will be transferred as calves (or when culled) to five estates in the central region for fattening.

The operational concept is to commence milk production utilizing existing and purchased commercial milking cows. This will be followed by a rapid build-up of high grade milking cows through modern embryo transplant procedures. By the end of 1993, each of the three dairy farms will have achieved the full capacity of extremely productive milking cows producing a conservatively estimated 29 million liters of milk annually.

The raw milk produced in Phase One will be sold under long-term contract to Malawi Milk Marketing (MMM), a milk collection, processing and distribution organization of the Malawi Government, at the existing wholesale price. MMM has agreed to this concept, and has agreed to pick up the raw milk from each dairy farm free of collection charges. Therefore, MALTEX will not be required to invest in milk tanker trucks and supporting buildings, equipment and staff.

In addition to milk production and cattle for fattening, the dairy farms will be able to supply about 250 one-year old heifers, with excellent genetic characteristics to the traditional agricultural sector. These heifers will be supplied to the smallholders at nominal cost and with credit terms favorable to the small farmer.

The smallholders will be encouraged to develop small five and ten head dairies to provide increased milk supplies to the rural population. The MALTEX staff will provide support to the Malawian veterinary extension service in helping the smallholders establish and maintain their dairies.

The objectives of the dairy projects are threefold:

- Establishment in all regions of high, proven quality dairy herds to be managed by MALTEX.
- Provision of a limited supply of quality dairy animals to improve the nation's herd by their sale to smallholders whose income and contribution to the national economy will be enhanced.
- Production of high quality beef to the local markets, with a possible exportable surplus.

2. Embryo transplant laboratory -

The Embryo Transplant Laboratory will utilize fifty highly-productive milk cows imported from the United States as donor cows. These cows can produce about 60 embryos per year per cow for transplant into local milking cows and other, less costly, host cows.

Assuming a failure rate of 50 percent (conservative by U.S. standards), these embryos can produce 30 calves annually, or a total of 1,500 calves per year. The host cows will pass to their progeny genetic immunities and resistance which the local breed has built up over time. This is extremely important in areas where east coast fever, tick, and tsetse fly are present. The immunities will be retained in later generations.

Most of the heifers will, in three year's time, become part of the dairy's milking cow herd. After herds have been built-up to capacity, heifers not needed for herd replacement will be sold to smallholders. The steers will be used for beef, most being transferred to grazing estates in the Central Region.

Although the Embryo Transplant Laboratory requires a large initial investment, as will be shown, a rapid return on investment is anticipated.

The cost of the Laboratory's building and equipment is expected to be about K 100,000. Additional capital costs, as shown in Table 1, total about K 170,000. Donor cows will be of high genetic characteristics. A budget of K 4,000 per cow, including transport costs, has been assumed. A full airplane load of 50 donors will be shipped to Malawi. Total investment in donors will be about K 200,000.

An experienced expatriate will manage the laboratory. During the first three years the manager will be assisted by expatriate embryo transplant specialists who will train Malawian personnel in transplant procedures. A budget of K 160,000 has been provided for the three-year training program, as shown in Table 2. Start-up costs are estimated at K 70,000.

Annual operating costs of the laboratory have been estimated at K 300,000 as shown in Table 3.

The cows which are not implanted with embryos will be artificially inseminated with a beef strain so as to build-up the national beef cattle herds on the MALTEX grazing estates in the Central Region as well as smallholder beef herds through sale of 15 month old heifers at nominal costs.

TABLE 1

MALTEX DAIRY PROJECT

EMBRYO TRANSPLANT LABORATORY

ESTIMATED CAPITAL COSTS

(in 100's of Kwacha)

Item	Costs
Laboratory and equipment	100
Manager - house and furniture	40
Laboratory Manager - house and furniture	35
Assistant Manager - house and furniture	15
Trainees (say 6) - housing	30
Motor vehicles Manager and Assistant	45
Office equipment	5
Total capital costs	270

TABLE 2

MALTEX DAIRY PROJECT

EMBRYO TRANSPLANT LABORATORY

ESTIMATED START-UP AND TRAINING COSTS

1985-1987

(in 000's of Kwacha)

Year		Costs
1985	Start up	70
	Training	40
1986	Training	80
1987	Training	40

TABLE 3

MALTEX DAIRY PROJECT

EMBRYO TRANSPLANT LABORATORY

ANNUAL OPERATING COSTS

(in 000's of Kwacha)

Staff expenses	General Manager	Asst. Manager	Lab. Manager	Trainees	2 Techs. 1 Typist	Costs
Salary	40	6	30	22	4	
Leave	5	1	4	2	-	
Gratuity	10	-	8	-	-	
School fees	20	-	-	-	-	
School travel	18	-	-	-	-	
Mid-contract passage	6	-	6	-	-	
Utilities and servants	2	-	1	-	-	
Car running	7	-	6	-	-	
Medical	1	-	1	-	-	
	109	7	56	24	4	200
Training						(80)
Utilities						3
Travel						3
Office expenses						3
Laboratory supplies, semen, donor cows, maintenance, etc.						171
Recurrent annual operating costs						300

3. Milking herd build-up -

From 1985 through 1993, the total MALTEX herd of milking cows expands rapidly until it reaches a total of 3,500 bred milk cows. This is accomplished by purchasing an additional 600 milk cows during 1985 and 1986, and another 100 in 1987. Thus, from a 1984 herd of 200, the number of milk cows reaches 1,500, a number sufficient to meet the embryo transplant capacity of the Laboratory.

The milk cows will be zebus, purchased locally if available, or imported from Zambia at a cost of about K 750 per head.

Prior to achieving this herd level, inexpensive local dry cows are used as hosts at an estimated cost of K 200. For example, in 1985, a total of 700 host cows are purchased and used. After calving, all but 100 are sold for beef at K 250 per head. The remaining 100 host cows, after calving, are sold at the end of 1986.

It is expected that the 3,000 embryos from the donor cows will yield 1,500 calves annually. Assuming that 50 percent are females, the donor bred milking cow stock will continually build-up, as shown in Appendix 5, until it reaches 3,500 head.

Steers, culls and the progeny of artificially inseminated cows are transported to five grazing estates in the Central Region. The estates are Khola, Nyaza, Mbwabwa, Ngombe, and Mchinji. On these estates the cattle will be allowed to graze in the open. During those periods when grazing lands are insufficiently stocked with natural feeds, cattle will be fed supplementary feeds from various residues available from AFRAM-FARM as explained in the next section below.

Appendix 5 also indicates the build-up and sale of steers and culls. Milk cows not bred from embryos will be sold to smallholders to improve their herds. All others will be sold for slaughter when fully fattened. An average price of K 250 per head is assumed for cattle sales.

Eventually, some 250 donor bred cows will also be available for sale to smallholders. These cows will be sold at about K 700 per head, an extremely conservative price compared to the K 4,000 per head cost of the donor cows.

4. Milk production -

Milk production build-up at the MALTEX dairy farms is shown in Appendix 5. The production data are based on the following assumptions regarding yield:

- 30 litres per day, donor cows.
- 20 litres per day donor-bred cows and heifers two years of age and older.
- 10 litres per day for local milk cows and for heifers after their first calving, about 18 months of age.

These yields are average and will vary seasonably reching a low in the cold winter months and a high in the summer. The figures have been checked by Spearhead against relevant husbandry literature provided by the Zimbabwe agricultural authorities. In general the yields assumed are low, even lower than those being achieved by Spearhead now. The time of lactation appears to be slightly early, however. This is one reason for implanting expensive expertise and cattle. Better results are, in fact, hoped for.

5. Marketing the milk produced -

There is a growing demand for milk in Malawi that can not be satisfied through current production. As a result imports of powdered milk have been increasing. MMM believes that they will have no trouble in marketing the full 29 million litres of milk produced by the three MALTEX dairies. In fact, MMM is prepared to collect all milk produced by the dairies at the farm's coolers on a long-term contract basis. The current price paid by MMM for raw milk is 30t per litre, depending on butter fat content. However, with proper cooling facilities at the dairy farms, MMM pays a premium of 2t per litre, and a possible further increase for bulk factor.

Table 4 indicates the annual revenue at farmgate for milk assuming 32.9t per litre.

TABLE 4

MALTEX DAIRY PROJECTS

FARMGATE REVENUE FROM MILK PRODUCTION

Year	Milk production (000's of litres)	Annual revenue at 32.9t/l (in 000's of Kwacha)
1985	525	173
1986	1,950	642
1987	3,750	1,231
1988	7,050	2,319
1989	11,700	3,849
1990	16,200	5,330
1991	18,450	6,070
1992	19,950	6,564
1993	21,450	7,057
1994	21,450	7,057
1995	22,850	7,551
1996	25,950	8,538
1997 through 2004	28,950	9,525

6. Direct costs -

In calculating the direct costs of operating the dairy farms, it has been assumed that there will be zero grazing. Consequently, the annual costs of carrying a milk cow are estimated to be K 1,020 per year per head. Although this may appear very high compared to previous studies conducted for Malawi (which run as low as K 50 per head per year), these costs include highly nutritional feeds so as to achieve high milk yields.

The costs assume that each cow will require 12 tons of silage (green maize) per year plus two tons of dairy feed per cow per year. The detailed cost calculation is as follows (including the cost of the cows' cavles to the age of six months):

Item	Costs per year in Kwacha
Silage (12 tons at K 8 per ton)	100
Dairy feed (2 tons at K 150 per ton)	300
	400
Labor costs (based on 1-1/2 man days per cow, 2 years and over, at K 1 per day)	547
Dips, drenches, etc.	53
	1,000
Diesel and tractor maintenance (silage, manure removal, etc.)	20
Total annual direct costs per head	1,020

The costs of carrying host cows is estimated to be K 25 per head per annum, but since these costs are eliminated early in the program through the sale of all host cows, the cost has been included in the initial price of the cows for simplicity.

The cost of carrying calves for the second six months (the first six months having been included in the cost of carrying milk cows) is estimate to be K 75 per head. Costs of carrying heifers to the age of two years are estimated to be K 150, and of carrying steers and culls to age two years is K 75.

These costs have been used to determine revenue cash flow, and for the financial analysis in Section VIII.

B. Cattle grazing:

1. Introduction -

During the first phase of the MALTEX Livestock Development Program, cattle will be grazed on eight estates located in the north, central and southern regions of the country.

Within 5 years, these projects will be producing approximately 1,200 metric tons of high-grade beef annually.* In addition, improved breeding stock will be available for sale to the traditional small farm sector to upgrade herds.

Both cattle and dairy projects will be closely integrated with AFRAM-FARM row-crop projects on seven estates so as to take advantage of uncultivated and fallow lands, reafforested land planted with stargrass, nutrient replacement and disease prevention. Rotation requirements--especially in tobacco growing regions-crop residues, and by-products of crop processing. Bwanje, the eighth estate, in the southern region, will utilize grazing land leased from the proposed Bwanje Estate Development Company.

As will be demonstrated subsequently, each of the cattle projects is highly profitable from a business point of view. In addition, each project contributes substantially to gross domestic product with little need for imported capital goods or raw materials.

Malawi's demand for red meat, especially high quality beef, is expected to expand rapidly over the next decade as a result of increasing population, rising per capita incomes, and limitations on other protein food sources--especially fish, which now accounts for over three-fourths of meat consumption. If demand for beef is to be met, it will have to be principally through increased imports or through the development of commercial cattle and dairy operations on estates. Output from the traditional small farm sector, which now accounts for some 96 percent of Malawi's cattle stock, is unlikely to expand significantly in the near term.

*Unless otherwise specified, meat tonnages are expressed in carcass weight equivalents (CWE).

However, the MALTEX Cattle Projects will be structured with a secondary goal of improving traditional cattle operations in two ways:

- As soon as breeding stock on the estates have reached preestablished levels, high quality stock, over and above replacement needs, will be sold to the traditional sector at a price and on credit terms affordable to the smallholders.
- Each project will also be used to demonstrate to traditional farmers the advantages of good animal husbandry techniques, including improved genetic, nutritional, and disease control practices. This demonstration program will be conducted in conjunction with government veterinary services.

In this section of the feasibility study, the grazing projects will be described and evaluated. Cattle feedlot operations (stall-feeding) will be undertaken in Phase 2 starting about 1988. The feasibility studies for stallfeeding projects will be initiated as soon as MALTEX management has had more experience in cattle ranching in Malawi.

2. Cattle grazing areas -

Open grazing operations for beef cattle will be initiated during Phase 1 on the eight estates shown on the map (page 71). Initially, a total of 23,100 acres will be used for open grazing as follows:

- Northern Region (S. Rukuru I, II, III and Maji) 9,000 acres
- Central Region (Khola, Nyaza, Ngombe, Mbwabwa and Mchinji) 7,100 acres
- Southern Region (Bwanje) 7,000 acres

The amount of land devoted to grazing will remain constant in the Central and Southern Regions. However, within three years, 1,000 acres in the Northern Region will be turned over to crop production.

The remaining 22,100 acres will be sufficient to support the following three types of operations:

- In the Northern Region, 1,500 Zebu cattle will be purchased annually at the end of the rainy season and fattened for a period of about six months and then sold for slaughter.
- In the Southern Region, 7,000 to 9,000 acres will be leased from the Bwanje Estate Development Company for a traditional, independent cattle ranching operation consisting of a 300 Zebu/Brahman breeder herd and their offspring.
- In the Central Region offspring (steers, culls and progeny of artifically inseminated milk cows) from the two dairy farms at Mapanga and Namitete will be raised for slaughter, or - in the case of milk cows - for sale as heifers to smallholders. The five estates utilized in the Central Region for this program will have sufficient capacity to carry up to 3,000 yearlings and 3,000 steers.

In addition to grazing in the open, cattle will receive supplemental feeds from crop residues and by-products of crop processing. Restricted grazing will also take in reafforested areas where stargrass or legumes will be planted, and in fields of Rhodes grass rotated in tobacco areas. This will allow MALTEX to maintain a greater number of head per acre than if strictly open natural grazing systems were used, and a greater increase in weight gain ability.

The crop residues referred to are maize stover, groundnut hay and husks, Rhodes grass hay, sorghum, sunflower and soya bean hay and coffee husks all of which have nutritional value to cattle but would cost too much to be moved off the farms economically.

In general, the proposed MALTEX company will work under a system which is alien to the Malawi concept of farming. MALTEX plans to enter into a share-cropping arrangement with AFRAM-FARM. Under this system, in return for 10% of the MALTEX revenue, AFRAM-FARM will supply, free of further charge, grazing, all crop residues of a noncommercial value to MALTEX, and supply it with all nontechnical infrastructure requirements.

3. Northern Region -

The Northern Region has a large amount of acreage available for open grazing of cattle. However, due to the restricted local market for beef and the alternative high cost of transport to other regions of the country, it is felt that, apart from the dairy farm at Mubangwe, there is only a potential for a ranch type fattening operation of approximately 1,500 head. The local availability of suitable cattle is also a limiting factor.

Cattle will be purchased at the end of each rainy season, in March or April, when ample grasses are available for grazing.

These cattle will be grazed until the end of the dry season in November or December and then sold for slaughter. Additional purchases will not be made until after the subsequent rainy season to allow the grass to grow back.

It is estimated that cattle can be carried during the half-year fattening period for a maximum of K 40 per head, including supplemental feeding prior to sale.

Cattle will be purchased for K 150 per head on average and sold at a price which will average K 250 per head less transportation costs. Thus, each of the cattle will yield a marginal contribution to revenue of K 60 (K 250 - K 150 - K 40), or a total of about K 70,000 annually after deducting transportation costs and allowing for a death loss of about five percent.

Thus, an important contribution will be made to cash flow during the initial implementation period, as shown in the Revenue and Cost Projections, Table 5, Cash flow will thus be positive throughout the project implementation period.

TABLE 5

MALTEX CATTLE GRAZING PROJECT

NORTHERN REGION

ANNUAL OPERATING COSTS, REVENUE AND NET CONTRIBUTION TO CASH FLOW

	1,000's of Kwacha
Annual operating costs:	
Cattle purchases (1,500 x K 150)	225
Dips, drenches, labour, etc.	40
Transport K 8 each (costed at AFRAM-FARMS' internal rate)	11
Sundries	10
Total annual operating costs	286
Annual revenues:	
Sale of 1,425 head at K 250	356
Cash flow contribution	70

The sales price per head has been conservatively estimated at K 250. Currently Malawi farmgate prices average about K 200. However, the cattle supplied by MALTEX will be of considerably higher quality, the average weight of the cattle will be about 50% higher than cattle now being sold, and MALTEX will receive a credit for cattle hides and offals. Therefore, the price of K 250 is quite conservative.

4. Southern Region -

A small beef breeder herd has already been established at Bwanje. This herd wil be further expanded and raised on 7,000 to 9,000 acres of land to be leased from the proposed Bwanje Estate Development Company. This is the only Livestock operation outside of the AFRAM-FARM estates. However, Bwanje is one of Spearhead's estates.

Bwanje's basic beef breeder herd will comprise of 300 Zebu/Brahman crosses and during the first 5 years high quality breeder cross will be built up. High grade Brahman bulls will be used for stud purposes so

that the quality of the breeding stock will be continuously improved. The Zebu will also pass to their progeny immunities and resistance which this breed has built up over the time. This is extremely important in areas where east coast fever and Tsetse fly are present.

Dipping and vaccination facilities will be available on site together with expert management.

Table 8 indicates the cattle herd development program at Bwanje, assuming an 85 percent annual birthrate.

TABLE 6

MALTEX CATTLE PROJECT, BWANJE

HERD DEVELOPMENT PROGRAM 1984 AND 1985

		Heifers			Steers	
Date	Cows	2 years old	1 year old	Calves	1 year old	Calves
Actual December 1983	192	79	20	40	20	40
Projected July 1984	250	20	40	60	60	40
Purchases	50					
Sales	(20)				(60)	
Births				125		125
Transfers	20	(20) 40	(40) 60	(60)	40	40
1984/5 year-end totals	300	40	60	125	40	125
1985 sales	(40)	(10)			(40)	
Births				125		125
Transfers	40	(40) 60	(60) 125	(125)	125	(125)
1985/6 year-end totals	300	50	125	125	125	125

Value of herd	Values in 1000's of Kwacha
The herd to be established will comprise:	
300 cows at K200	60
50 cows 2 years old at K150	8
250 yearlings at K100	25
250 calves 0-3 months at K50	12
Total value of herd	105
Annual costs	
Deaths	5
Dip drenches, labor, etc.	20
Transport 250 x K16	4
Sundries	3
Total annual cost	32
Annual sales	
250 at K250	62
Contribution to cash flow	30

5. Central Region -

The build-up of the cattle herd in the Central Region has already been described. By the end of 1998 it will consist of approximately 3,000 calves and 3,000 steers, of which approximately 3,000 will be sold annually at K 250 per head.

The direct costs of carrying these cattle are also discussed in the dairy farm section where it was noted that the cost to carry heifers to the age of two years was estimated to be K 150, and of carrying steers and culls to age two years was K 75.

C. Fish Farms:

The demand for fish is very high in Malawi. In fact, fish accounts for nearly three-fourths of meat consumption in the country. As population increases, demand will increase accordingly. However, supplies of fish in the natural waters of the country are limited. Therefore, as part of the Phase 1 Livestock Development Program, MALTEX plans to establish approximately 450 acres of fish ponds on the following ten estates:

Northern Region
Rukuru I, II, and III; and Mubanqwe

Central Region
Khola, Nyaza, Ngombe, and Mchinji

Southern Region
Mapanga

Because of the lack of skilled manpower, the first year of operation will comprise a training program on approximately 10 acres, an average of one acre per estate. This will be followed by a rapid build-up in 1986 through 1988 as shown below:

Years	1985	1986	1987	1988
Pond acreage:				
Annual	10	140	150	150
Cumulative	10	150	300	450

The cost of constructing ponds, which will be fed and emptied by gravity, has been estimated at K 2,000 per acre. This is a conservative estimate of costs based on Spearhead meetings with Fisheries Research at Domasi.

Each pond is expected to yield approximately 2,000 pounds of fish per acre twice a year which can be sold at 20t per pound, with one crop in the year of construction.

The direct costs, based on experience with other projects in Malawi, will not exceed K 240 per acre annually. Overhead costs include a fish specialist at K 75,000 per annum.

At full capacity the 450 acres will contribute about K 177,000 to cash flow. The build-up is shown below in 1,000's of Malawi Kwachas:

Year	1985	1986	1987	1988	1989
Revenue	4	64	180	300	360
Direct costs	1	19	54	90	108
Cost of specialist	75	75	75	75	75
Total annual costs	76	94	129	165	183
Contribution to cash flow	(72)	(30)	51	135	177

The yields and direct costs were supplied by the team from the United States. These data compare favorably with similar studies Spearhead has conducted with the assistance of Israeli consultants.

D. Summary:

Table 7 summarizes the income from the various beef cattle and fish projects described in subsections B and C above. They do not include the dairy farm projects, which are summarized elsewhere.

TABLE 7

COMMERCIAL CATTLE

INCOME STATEMENTS YEAR ENDED JULY 31

	1985	1986	1987	1988	1989
Bwanje:					
Income	10	22	62	62	62
Costs	(39)	(25)	(32)	(32)	(32)
North:					
Income	356	356	356	356	356
Costs	(286)	(286)	(286)	(286)	(286)
Mapanga:					
Income	50	-	-	-	-
Fish farming:					
Income	4	64	180	300	360
Costs	(76)	(94)	(129)	(165)	(183)
	19	37	151	235	277
AFRAM share cropping	(37)	(44)	(60)	(72)	(78)
Net contributions	(18)	(7)	91	163	199
					Steady state

MALTEX DAIRY PROJECTS

MILK PRODUCTION BUILD-UP

1985-1997

(in 1,000's of litres)

Year	Donor cows (30 l/day)	Milk cows (10 l/day)	Donor bred cows (20 l/day)	Bred heifers			Totals
				3-yr old (20 l/day)	2-yr old (20 l/day)	1-yr old (10 l/day)	
Annual yield per head	9,000	3,000	6,000	6,000	6,000	3,000	-
1985	225	300	-	-	-	-	525
1986	450	1,500	-	-	-	-	1,950
1987	450	3,300	-	-	-	-	3,750
1988	450	4,350	-	-	-	2,250	7,050
1989	450	4,500	-	-	4,500	2,250	11,700
1990	450	4,500	-	4,500	4,500	2,250	16,200
1991	450	2,250	4,500	4,500	4,500	2,250	18,450
1992	450	-	9,000	4,500	4,500	1,500	19,950
1993	450	-	13,500	4,500	3,000	-	21,450
1994	450	-	18,000	3,000	-	-	21,450
1995	450	-	21,000	-	-	1,500	22,950
1996	450	-	21,000	-	3,000	1,500	25,950
1997	450	-	21,000	3,000	3,000	1,500	28,950

Notes:

(1) It is assumed that the new herd produces the same amount of butter fat content as is currently achieved by Spearhead.

(2) The one-year old heifers are defined to represent animals about 18 months of age at beginning of year.

(3) Yields are averages and assume 300 milking days per year.

(4) After 1997 steady state is achieved.

DAIRY PROJECT

REVENUE CONTRIBUTION

(in K 000's)

Herd costs	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cows	102	204	816	1,428	2,295	3,060	3,060	3,060	3,570	3,570	3,570	4,080	4,590	4,590	4,590	4,590				
Heifer:																				
1 year	-	-	-	112	112	112	112	112	112	112	112	112	112	112	112	112				
Calves	-	-	113	113	113	169	225	225	225	263	263	263	263	300	300	300				
Steers:																				
1 year	-	-	-	56	56	56	113	169	169	169	206	206	206	206	244	244		Steady state		
Fixed	200	450	500	500	500	500	500	500	500	500	500	500	500	500	500	500				
AFRAM	17	64	123	251	404	571	676	750	800	774	836	935	1,046	1,046	1,059	1,059				
Total	319	718	1,552	2,460	3,480	4,468	4,686	4,816	5,376	5,388	5,487	6,096	6,717	6,754	6,805	6,805				
Income:																				
Milk	173	642	1,234	2,319	3,849	5,330	6,070	6,564	7,057	7,057	7,551	8,538	9,525	9,525	9,525	9,525				
Herd movements	(250)	(590)	(300)	187	188	375	687	938	938	688	626*	813	938	938	1,063	1,063		Steady state		
Totals	(77)	52	934	2,506	4,037	5,705	6,757	7,502	7,995	7,745	8,177	9,351	10,463	10,463	10,588	10,588				
Revenue cash flow	(396)	(666)	(618)	46	557	1,237	2,071	2,686	2,619	2,357	2,690	3,255	3,746	3,709	3,783	3,783				

The herd costs are made up by the product of the herd numbers at the beginning of each year x cows 2 years and over

Calves	1,020
Heifers 1 year	75
Steers and culls 1 year	150
	75

The income is taken from the milk literages schedule and herd program respectively.

*This figure provides for the replacement of the donor herd (net).

VIII. FINANCIAL ANALYSIS -

A. Development and production plans:

1. Introduction -

The provisional physical development plan for each estate for MALTEX and for AFRAM-FARM as a whole has been described in narrative or tabular form in various preceding sections. A number of uncertainties exist at this stage, which have been referred to and the anticipated solution defined. The program for the interim 1984/85 season assumes that the finance required for it will have been spoken for by early March 1984, and this in turn was until February 24, 1984 dependent on consent in principle to the longer term development program, and phase I concepts in particular. Implementation of the main development will either prove impossible, be much more costly or, at best, delayed if this does not occur or if the interim facility is restricted.

It has been assumed that initial drawdown on funding for the project proper and incorporation and transfer of land titles to AFRAM-FARM and the contract with the associated livestock company will occur on or about March 1, 1985, in good time for implementation of the ambitious 1985/86 estate and off-estate development program for that season.

Capital cost estimates expressed in end-1983 Malawi kwacha prices are as set out on the following page for the interim period and for phase I. It is to be borne in mind that the as yet unquantified phase II development costs are likely to be commenced at any time from the 1986/87 season onwards. In the capital replacement program, resale proceeds from used asset sales have been taken as equal to their depreciated values.

Production costs and revenues are summarized on the pages following the capital cost estimates. These are built up taking into account the estate acreage plans scheduled earlier in this study.

Investment costs amount to K'000's	In cash	In kind	Total
Tangible assets and livestock	5,237	600	5,837
Intangibles and AFRAM-FARM investment	1,500	1,067	2,567
	6,737	1,667	8,404

The seasonal financing requirement indicated in the early years of the project could be eliminated if necessary by deferring the fish-farming project and accelerating the draw-down of the Daniel Land & Cattle cash equity contribution.

MALTEX PROJECT

2. CAPITAL EXPENDITURE BUDGET

(In 1000,s of Kwacha)

5-Year life:-	
1985:	
Vehicles -	
Laboratory General Manager	25
Laboratory Training Manager	20
Mapanga Manager	25
Commercial cattle and fish Manager	30
	100
Equipment -	
Laboratory	60
Fish	1
	61
Furniture -	
Laboratory	35
Mapanga dairy	15
	50
	211
1986:	
Vehicles -	
Namitete dairy	20
Mubangwe dairy	20
	40
Tractors -	
Mapanga dairy (manure removal)	25
Plant -	
Mapanga dairy manure spreader, hammermill, and miner	34
Fish	3
	37
Furniture -	
Dairy Namitete	15
Dairy Mubangwe	15
	30
	132

1987:	
Tractors -	
Mubangwe	25
Namitete	25
	50
Plant -	
Namitete	33
Mubangwe dairy manure spreader, hammermill, and miner	33
Fish	3
	69
	119
1988:	
Plant -	
Fish	3
20-Year life:-	
1985:	
Dairy -	
Mapanga upgrading	100
Mapanga manager	25
Mapanga assistant manager's house	15
Laboratory	140
Commercial cattle -	
Bwanje housing	15
North housing	15
Fish housing and store	10
	320
1986:	
Dairy -	
Namitete	265
Mubangwe	265
Commercial cattle and fish housing and stores	20
	550
1987:	
Commercial cattle and fish housing and stores	30
1988:	
Commercial cattle and fish housing and stores	30
1995:	
Dairies upgrading	300

10-Year life:-	
1985 Fish ponds 10 acres	20
1986 Fish ponds 14 acres	280
1987 Fish ponds 15 acres	300
1988 Fish ponds 15 acres	300

MALTEX

DAIRY PROJECT

REVENUE CONTRIBUTION

K 000's

HERD COSTS	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
COWS	102	204	816	1,428	2,295	3,060	3,060	3,060	3,570	3,570	3,570	4,080	4,590	4,590	4,590	4,590				
HEIFER 1 YEAR	-	-	-	112	112	112	112	112	112	112	112	112	112	112	112	112				
CALVES	-	-	113	113	113	169	225	225	225	263	263	263	263	300	300	300				
STEERS 1 YEAR	-	-	-	56	56	56	113	169	169	169	206	206	206	206	244	244		Steady State		
FIXED	200	450	500	500	500	500	500	500	500	500	500	500	500	500	500	500				
AFRAM	17	64	123	251	404	571	676	750	800	774	836	935	1,046	1,046	1,059	1,059				
TOTAL	319	718	1,552	2,460	3,480	4,468	4,686	4,816	5,376	5,388	5,487	6,096	6,717	6,754	6,805	6,805				
INCOME																				
MILK	173	642	1,234	2,319	3,849	5,330	6,070	6,564	7,057	7,057	7,551	8,538	9,525	9,525	9,525	9,525				
HERD MOVEMENTS	(250)	(590)	(300)	187	188	375	687	938	938	688	* 626	813	938	938	1,063	1,063		Steady State		
TOTALS	(77)	52	934	2,506	4,037	5,705	6,757	7,502	7,995	7,745	8,177	9,351	10,463	10,463	10,588	10,588				
REVENUE CASH FLOW	(396)	(666)	(618)	46	557	1,237	2,071	2,686	2,619	2,357	2,690	3,255	3,746	3,709	3,783	3,783				

The herd costs are made up by the product of the herd numbers at the beginnning of each year x cows 2 years and over 1,020

calves 75

heifers 1 year 150

Steers & culls 1 year 75

The income is taken from the milk literages schedule and herd programme respectively.

* This figure provides for the replacement of the donor herd (net).

COMMERCIAL CATTLE

INCOME STATEMENTS YEAR ENDED JULY 31

	1985	1986	1987	1988	1989
BWANJE					
Income	10	22	62	62	62
Costs	(39)	(25)	(32)	(32)	(32)
NORTH					
Income	356	356	356	356	356
Costs	(286)	(286)	(286)	(286)	(286)
MAPANGA					
Income	50	-	-	-	-
FISH FARMING					
Income	4	64	180	300	360
Costs	(76)	(94)	(129)	(165)	(183)
	19	37	151	235	277
AFRAM Share Cropping	(37)	(44)	(60)	(72)	(78)
	(18)	(7)	91	163	199

Steady State

MALTEX

FISH FARMING

Because of the lack of skilled manpower in Malawi, the consultants feel that the first year of operation should comprise a training program which will enable the project to take off in year two.

Capital costs

The project envisages the following annual rate of construction of one acre ponds, 10, 140, 150, 150, at cost of K2,000 per pool with life of 10 years. This is a conservative estimate of cost based on Spearhead meetings with Fisheries research at Domasi.

Yields

Each pond will yield 2,000 lbs of fish which can be sold farmgate at 20t per lb twice a year with one crop in the year of construction.

Costs

The direct costs based on experience in other projects will not be more than 30% of gross revenue. The only overhead cost on a share cropping basis, will be the specialist.

	[illegible]	1986	1987	1988	1989
Ponds - annual	10	140	150	150	-
cummulative	10	150	300	450	450
Revenue (K 000's)	4	64	180	300	360
Costs - direct	1	19	54	90	108
Specialist	75	75	75	75	75
	76	94	129	165	183

The yields and direct costs were supplied by the team from the United States and they compare favourably with comparative studies Spearhead has done with work by Israeli consultants.

4. Working capital -

Working capital financing and resultant interest arise only in the early years of the project while herds are being established, and to prevent unnecessary overcapitalization. The amount projected peaks at K 1.7 million in 1988.

As indicated in section VIII A.1., this requirement could, if need be, be eliminated.

In the figures presented, no third-party revenue has been assumed, and AFRAM-FARM's internal charge rates for support services have been used.

B. Financial Statement Internal Rate of Return Projections:

1. Overview -

Pro forma projections covering a twenty-year period are set out in this section. These are expressed in Malawi kwacha at constant prices estimated at end 1983 levels and exchange rates. Certain detailed back-up data is included in appendices; full detail is held in support of the projections by the sponsors.

In the limited time available, it has been possible to prepare only one detailed base model in constant prices. The financial returns indicated are attractive, even although they specifically ignore:

(a) Trend sale price indicators (recession-influenced end - 1983 prices have been used)

(b) Yield increases from what is presently achieved in Malawi to be anticipated from the introduction of Californian farming methods, technology and management supervision

(c) Tax or duty exemption of any kind.

As it stands, the base model provides a clear indication of how the somewhat unusual capital structure being proposed (see Section IX) will work in practice.

Simplified sensitivity analyses have been calculated, although full print-outs have not been prepared for each case. These analyses are slightly understated in the effect indicated as the residual impact of additional funds generated or absorbed has not been adjusted for. They indicate the following rates of return using the 10% per annum inflation rate projected officially by the Government of Malawi for the medium term in the current prices model (i.e. ignoring any possible resultant exchange adjustments on any foreign currency denominated project borrowings):

	Constant prices	Current prices
Base case	27.48%	40.23%
Revenues or herd performance		
mortality - 20% increase	38.86%	
- 20% decrease	15.81%	N
- 10% increase	33.14%	o
- 10% decrease	21.73%	t
Operating costs - 10% decrease	32.28%	
- 10% increase	22.88%	C
Tangible capital costs - 10% decrease	28.27%	l
- 10% increase	26.73%	a
All operating costs and revenues - 10% favorable	38.67%	t
- 10% unfavorable	16.21%	e

Gross revenues and livestock mortality are thus clearly the areas of primary sensitivity.

Once the optimal activity program, following the AFRAM-FARM computerized linear programming exercise becomes available, taking all relevant factors into account, it is believed that corporate taxation will become a limiting factor (detailed calculations have not been made), and that Government of Malawi consent to the transfer of the relevant portion of the existing Spearhead tax losses could help to attract third-party equity investment.

It is quite possible that the requirement for capital replacements has been substantially overstated in the base-case model, and that the costs and potential profitable third-party work by the laboratory been the subject of undue conservatism. The points will be examined further.

In these calculations, the assets being introduced by Spearhead have been regarded as a sunk cost and ignored as the company is clearly not capable of generating income flows on a sustained basis as it stands. A disposal of assets at recorded book amounts, and settlement of liabilities on the closing day of the 20-year period has been assumed.

2. Detailed assumptions -

The following detailed assumptions have been consistently applied in the base model:

(a) that necessary inputs and equipment spare parts will continue to be available given good forward planning and early purchasing or direct importation with approval. (The short-term finance profile used for interest calculations takes this into account.)

(b) that cleared and afforested land, and land under a permanent crop, will continue to be used effectively and hence will not suffer depreciation in value.

(c) that intangible costs will be amortized over a hypothetical 40-year period.

(d) that the economic working lives of tangible fixed assets will approximate on average to the following:

Items acquired from Spearhead -	
buildings (capable of extension by maintenance)	10 years
water schemes	10 years
movable items	3 years
New items -	
buildings	20 years
water schemes	10 years
farm equipment	5 years
vehicles of all kinds	5 years
furniture, etc.	10 years

(e) that the relationship amongst cost items, and between costs and sale prices, will remain constant in real terms.

(f) that each of the proposed three U.S. partners' nominee directors will visit Malawi three times annually on average.

(g) that all but a moderate fixed fee to the U.S. partners will be payable only as dividends on preferred equity to be issued to them in recognition of preliminary and start-up services to MALTEX.

(h) that normal taxes and duties will be payable in full by the company.

(i) that creditors, including contract staff provisions etc., will average two months' running costs.

(j) that the harvesting, sale and land preparation time schedules achieved by Spearhead in the past will generally be adhered to.

(k) that consumable inventories are valued on a first-in-first-out basis and livestock based on the cost of the initial herd.

(l) that comprehensive deferred tax accounting on the liability method will be adopted.

(m) that no overheads are capitalized in self-constructed fixed assets.

Comments and assumptions concerning the capital structure are set out in Section IX; interest on the short-term cash position has been taken into account.

A fundamental assumption, here as elsewhere, is the procurement of finance for the 1984-1985 season, including the finance required for new crop trials, and certain capital assets (the operating costs in that year assume a particularly high level of involvement by the U.S. participants and consultants).

M A L T E X

INCOME STATEMENT YEAR ENDED JULY 31

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cash surplus:																				
Dairy	(396)	(666)	(618)	46	557	1,237	2,071	2,686	2,619	2,357	2,690	3,255	3,746	3,709	3,783	3,783	3,783	3,783	3,783	3,783
Fish and commercial cattle	(18)	(7)	91	163	199	199	199	199	199	199	199	199	199	199	199	199	199	199	199	199
Training, etc.	(110)	(80)	(40)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Herd enhancement	263	896	630	355	338	(147)	(41)	50	100	250	200	200	25	50	-	-	-	-	-	-
Profit (loss) before standing charges	(261)	143	63	564	1,094	1,289	2,229	2,935	2,918	2,806	3,089	3,654	3,970	3,958	3,982	3,982	3,982	3,982	3,982	3,982
Depreciation	(56)	(143)	(197)	(230)	(230)	(230)	(230)	(230)	(230)	(230)	(245)	(245)	(245)	(245)	(245)	(245)	(245)	(245)	(245)	(245)
Amortization		(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)	(26)
Interest:																				
Term 13.5%	(192)	(384)	(384)	(384)	(384)	(384)	(384)	(365)	(327)	(289)	(251)	(212)	(174)	(136)	(98)	(60)	(22)	-	-	-
Seasonal 15%	74	133	3	(159)	(193)	(131)	44	317	502	531	508	517	563	587	617	656	690	759	858	979
Profit (loss) before taxation	(435)	(277)	(541)	(235)	261	518	1,633	2,631	2,837	2,792	3,075	3,688	4,088	4,138	4,230	4,307	4,379	4,470	4,569	4,690
Taxation:																				
Payable	-	-	-	-	-	-	-	(990)	(1,[illegible])	(1,420)	(1,467)	(1,710)	(1,949)	(2,016)	(2,219)	(2,190)	(2,250)	(2,294)	(2,385)	(3,135)
Deferred movement	-	-	-	-	-	-	(462)	(220)	[illegible]	(34)	(100)	(49)	2	39	46	(18)	4	8	43	49
Profit after taxation	(435)	(277)	(541)	(235)	261	518	1,171	1,421	1,360	1,338	1,508	1,929	2,141	2,161	2,057	2,099	2,133	2,184	2,227	1,604
Dividends receivable	-	-	-	-	-	-	-	100	144	118	114	113	124	118	114	110	108	103	98	172
	(435)	(277)	(541)	(235)	261	518	1,171	1,521	1,504	1,456	1,622	2,042	2,265	2,279	2,171	2,209	2,241	2,287	2,325	1,776
Dividends payable:																				
Preferred equity (noncash option)	-	-	-	-	-	-	(92)	(263)	(284)	(279)	(307)	(369)	(409)	(414)	(423)	(431)	(438)	(447)	(457)	(469)
Common equity stock	-	-	-	-	-	-	(370)	(1,212)	(1,066)	(934)	(957)	(1,115)	(1,123)	(1,026)	(880)	(823)	(772)	(732)	(693)	(425)
Deferred equity stock	-	-	-	-	-	-	-	(46)	(154)	(243)	(358)	(558)	(733)	(839)	(868)	(955)	(1,031)	(1,108)	(1,175)	(882)
Carried to (from) reserves	(435)	(277)	(541)	(235)	261	518	709	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained earnings brought forward	-	(435)	(712)	(1,253)	(1,488)	(1,227)	(709)	-	-	-	-	-	-	-	-	-	-	-	-	-
Retained earnings per balance sheet	(435)	(712)	(1,253)	(1,488)	(1,227)	(709)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital structure:																				
Developers fees - Daniel	50																			
	500																			
	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550
Preferred equity:																				
Spearhead 26.53%	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650
Daniel 40.82%	250	500	750	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Funding institutions 32.65%	400	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Ordinary voting equity	1,300	1,950	2,200	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450
Daniel	-	-	-	-	-	-	-	92	355	639	918	1,225	1,594	2,003	2,417	2,840	3,271	3,709	4,156	5,082
Deferred equity	-	-	-	-	-	-	-	92	355	639	918	1,225	1,594	2,003	2,417	2,840	3,271	3,709	4,156	5,082
Total equity	1,850	2,500	2,750	3,000	3,000	3,000	3,000	3,092	3,355	3,639	3,918	4,225	4,594	5,003	5,417	5,840	6,271	6,709	7,156	8,082
Funding institutions	1,600	3,200	3,200	3,200	3,200	3,040	2,720	2,400	2,080	1,760	1,440	1,120	800	480	160	-	-	-	-	-
	3,450	5,700	5,950	6,200	6,200	6,040	5,720	5,492	5,435	5,399	5,358	5,345	5,394	5,483	5,577	5,840	6,271	6,709	7,156	8,082

M A L T E X

BALANCE SHEET JULY 31

(K'000)

	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04
Fixed assets:																				
Cost	551	1,513	1,962	2,295	2,295	2,295	2,295	2,295	2,295	2,295	2,595	2,595	2,595	2,595	2,595	2,595	2,595	2,595	2,595	-
Depreciation	56	199	396	626	856	875	973	1,084	1,311	1,541	1,555	1,388	1,214	1,156	1,401	1,435	1,548	1,674	1,916	-
	495	1,314	1,565	1,669	1,439	1,420	1,322	1,211	984	754	1,040	1,207	1,381	1,439	1,194	1,160	1,047	921	679	-
Intangible assets - net of amortization	567	553	539	525	511	497	483	469	455	441	427	413	399	385	371	357	343	329	315	301
Intangible assets - developers fees	500	488	476	464	452	440	428	416	404	392	380	368	356	344	332	320	308	296	284	272
	1,562	2,355	2,581	2,658	2,402	2,357	2,233	2,096	1,843	1,587	1,847	1,988	2,136	2,168	1,897	1,837	1,698	1,546	1,278	573
Investment - AFRAM	250	750	1,250	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	-
Current assets:																				
Livestock	336	1,232	1,862	2,217	2,555	2,408	2,367	2,417	2,517	2,767	2,967	3,167	3,192	3,242	3,242	3,242	3,242	3,242	3,242	-
Cash	867	651	-	-	-	-	864	2,992	3,558	3,448	3,260	3,618	3,954	4,003	4,417	4,607	5,105	5,777	6,548	7,509
	1,203	1,883	1,862	2,217	2,555	2,408	3,231	5,409	6,075	6,215	6,227	6,785	7,146	7,245	7,659	7,849	8,347	9,019	9,820	7,509
Current liabilities:																				
Seasonal finance	-	-	996	1,663	1,484	774														
Current portion of loans	-	-	-	-	-	160	320	320	320	320	320	320	320	320	320	160				-
Provision for taxation	-	-	-	-	-	-		990	1,486	1,420	1,467	1,710	1,949	2,016	2,219	2,190	2,250	2,294	2,385	-
Proposed dividends	-	-	-	-	-	-	462	1,521	1,504	1,456	1,622	2,042	2,265	2,279	2,171	2,209	2,241	2,287	2,325	-
	-	-	996	1,663	1,484	934	782	2,831	3,310	3,196	3,409	4,072	4,534	4,615	4,710	4,559	4,491	4,581	4,710	-
Net current assets	1,203	1,883	866	554	1,071	1,474	2,449	2,578	2,766	3,019	2,818	2,713	2,612	2,630	2,949	3,290	3,856	4,438	5,110	7,509
	3,015	4,988	4,697	4,712	4,973	5,331	6,182	6,174	6,108	6,106	6,165	6,201	6,248	6,298	6,346	6,627	7,054	7,484	7,888	8,082
Represented by:-																				
Capital and reserves:																				
Preferred equity stock	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550
Common voting equity stock	1,300	1,950	2,200	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450
Deferred equity stock								92	355	639	918	1,225	1,594	2,003	2,417	2,840	3,271	3,709	4,156	5,082
	1,850	2,500	2,750	3,000	3,000	3,000	3,000	3,092	3,355	3,639	3,918	4,225	4,594	5,003	5,417	5,840	6,271	6,709	7,156	8,082
Retained earnings	(435)	(712)	(1,253)	(1,488)	(1,227)	(709)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,415	1,788	1,497	1,512	1,773	2,291	3,000	3,092	3,355	3,639	3,918	4,225	4,594	5,003	5,417	5,840	6,241	6,709	7,156	8,082
Deferred taxation							462	682	673	707	807	856	854	815	769	787	783	775	732	-
Loans due over a year ahead	1,600	3,200	3,200	3,200	3,200	3,040	2,720	2,400	2,080	1,760	1,440	1,120	800	480	160					
	3,015	4,988	4,697	4,712	4,973	5,331	6,182	6,174	6,108	6,106	6,165	6,201	6,248	6,298	6,346	6,627	7,054	7,484	7,888	8,082

5.

M A L T E X

CASH FLOW PROJECTION FOR YEAR ENDED JULY 31

(K'000)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Trading cash surplus (deficit)	(464)	(753)	(567)	209	756	1,436	2,270	2,885	2,818	2,556	2,889	3,454	3,945	3,908	3,982	3,982	3,982	3,982	3,982	3,982
Capital expenditure	(551)	(962)	(449)	(333)	-	(211)	(132)	(119)	(3)	-	(531)	(412)	(419)	(303)	-	(211)	(132)	(119)	(3)	-
Investment in AFRAM	(250)	(500)	(500)	(250)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends receivable	-	-	-	-	-	-	-	100	144	118	114	113	124	118	114	110	108	103	98	172
	(1,265)	(2,215)	(1,516)	(374)	756	1,225	2,138	2,866	2,959	2,674	2,472	3,155	3,650	3,723	4,096	3,881	3,958	3,966	4,077	4,154
Investment:																				
Daniel	250	250	250	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	400	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Term finance	1,600	1,600	-	-	-	-	(160)	(320)	(327)	(320)	(320)	(320)	(320)	(320)	(320)	(320)	(160)	-	-	-
Interest on loans	(192)	(134)	(384)	(384)	(384)	(384)	(384)	(365)	(324)	(289)	(251)	(212)	(174)	(136)	(98)	(60)	(22)	-	-	-
Taxation	-	-	-	-	-	-	-	-	(990)	(1,486)	(1,420)	(1,467)	(1,710)	(1,949)	(2,016)	(2,219)	(2,190)	(2,250)	(2,294)	(2,385)
Dividends paid	-	-	-	-	-	-	-	(370)	(1,258)	(1,220)	(1,177)	(1,315)	(1,673)	(1,856)	(1,865)	(1,748)	(1,778)	(1,803)	(1,840)	(1,868)
	793	(349)	(1,650)	(508)	372	841	1,594	1,811	64	(641)	(696)	(159)	(227)	(538)	(203)	(466)	(192)	(87)	(57)	(99)
Interest - bridging	74	133	3	(159)	(193)	(131)	44	317	502	531	508	517	563	587	617	656	690	759	858	979
Cash movement in year	867	(216)	(1,647)	(667)	179	710	1,638	2,128	566	(110)	(188)	358	336	49	414	190	498	672	801	880
Cash brought forward	-	867	651	(996)	(1,663)	(1,484)	(774)	864	2,992	3,558	3,448	3,260	3,618	3,954	4,003	4,417	4,607	5,105	5,777	6,578
Cash per balance sheet	867	651	(996)	(1,663)	(1,484)	(774)	864	2,992	3,558	3,448	3,260	3,618	3,954	4,003	4,417	4,607	5,105	5,777	6,578	7,458

Fixed assets sold	434
Stock sold	3,242
Tax paid	(3,818)
Dividends paid	(1,307)
Sale of investment	1,500
	7,509

IRR 27.48%

C. Balance of payments analysis/economic and social rates of return:

1. Balance of payments -

In any foreign funded project, it is of the greatest importance that the host country's balance of payments situation should be affected favorably, and not adversely. In this case, the meeting of this objective is assisted by the stated intention of the U.S. partners to apply the greater part of their fees and dividend entitlements to the acquisition of additional equity. Expansion funded in this way is likely to assume a similar balance of payments profile to Phase I and has been ignored in the analysis which follows.

Once the optimal operating plan has been identified, the balance of payments effect should also be optimized.

Estimating this factor in circumstances where suppressed unsatisfied demand exists is difficult. It is also difficult to quantity accurately the c.i.f. border cost of inputs purchased through third party importers. Broad assumptions have therefore of necessity been made.

At steady state, the balance of payments profile is estimated as follows for incremental production annually:

Two-thirds of value of net crop revenues	7
One-third of total operating costs	2
	K 5 million

interest and foreign debt repayments will run from 1985 until 1999, peaking at K0.7 million in 1992, and average K0.4 million annually over the period.

The initial capital inflow spread over 1984 or early 1985 to 1987/8 will total K5 million, net of foreign fixed asset costs of some K1 million, and insignificant annually at steady state.

Equity divestment proceeds are likely to be some K0.4 million annually from year 10 onwards.

Overall, therefore, the effect on the balance of payments of Malawi should be markedly favorable throughout, including the period of project implementation.

2. Economic and social rates of return -

Shadow-pricing adjustments are generally reckoned to be unnecessary in calculating the economic rate of return for projects in Malawi, either as regards foreign exchange rates, labor costs or otherwise.

So far as can be ascertained, no substantial overt or hidden subsidy will flow from government or statutory bodies to MALTEX. There may be a small element of subsidy in certain research and extension services made available, but this should be more than balanced by savings to the Cold Storage Company Limited on transporting cattle from remote Northern region markets.

Import duties on initial capital requirements will be fairly small.

Stamp duties on company formation, land title transfers and registration of securities are estimated at K300,000, or more, in 1985 and 1986, although certain exemptions will be sought.

Recurrent payments of taxes and duties at steady state are estimated at perhaps K150,000 annually.

Corporate taxation on the base case model would rise from K1 million in 1993 to over K2 million annually frm 1998 onwards.

The combined effect of these revenues will be to render the economic rate of return from the project a few percentage points higher than the financial rate of return on the level of investment foreseen. This ignores the multiplier effect on the economy as a whole which will certainly exist, but cannot be quantified.

The social benefits which will flow are also incapable of quantification in financial terms, but they will not be insignificant, particularly in the areas of:

- Job creation - up to 1,000 additional jobs will be created
- Nutrition - Certain suppressed demands will be met, particularly in protein and quality livestock availability; also from the rations given to employees and the garden areas set aside for them.
- Building - Primary school and health-care buildings will be erected, and much improved housing for workers.
- Technology - Expertise from the world's most advanced agricultural economy will be introduced, of benefit to ordinary workers who also have smallholdings, and who move on to other positions, as well as to the country as a whole.

IX. FINANCING REQUIREMENTS:-

A. Debt/Equity Ownership Structure:

1. General concept -

It is the firm belief of all of the project participants that only the genuine seasonal financing requirement of annual row-cropping should be financed on a short-term basis from commercial banking sources, and that such finance should:

- be in the currency of the territory of operations if possible
- be secured essentially by guarantees if necessary and available, rather than by pledging of permanent assets or livestock.

Finance for herds, fixed assets, intangibles and necessary base levels of spares and rations can only prudently be long-term in nature -- ideally equity. Indeed it has been the expressed intention of the U.S. participants that the whole of such funding should take the form of equity. However, detailed examination of the project has revealed that the total capital or "permanent" costs will be very considerably higher than was foreseen by them based on the limited objectives of the investment opportunity put to them initially by Spearhead's receiver and manager. Although the most rewarding cropping pattern in definitive format has yet to emerge, the participants doubt whether the key lies in capital costs -- it is more probably in the crop/livestock mix and selection farm-by-farm.

It is therefore necessary to consider quite a high admixture of term loan finance -- on the base model this peaks at 52% of the committed equity (and more if initial operating losses are deducted from equity in issue). Taking the seasonal crop financing into account this results in comparatively high leverage in the early years of the project, particularly before sales from the grazing herds commence. This is believed tenable in view of the very high level of technical, managerial and administrative experience already existing in Spearhead.

However, it will most probably make the availability of first mortgage/ debenture security a point of importance to some of the loan participants.

2. The equity -

It is not a precondition that the planned Spearhead Holdings Limted will wish to control a majority of the common voting stock of MALTEX but every effort will be made to attempt to ensure that Malawian interests in total are in a controlling position. The capital structure of Spearhead Holdings Limited is apparently to be along the following lines:

	K million
Voting equity:	
Government of Malawi	0.9 (53%)
Some 400 former unsecured creditors of the old Spearhead Enterprises Limited	0.8 (47%)
	1.7
Reserves	0.8
	2.5
Unsecured nonvoting income notes held by the commercial bank former debentureholders	9.1
	11.6

This may change slightly as negotiations with the various parties are concluded by the agreed completion date of March 23, 1983. Any adjustments are likely to result in a reduction in Government of Malawi equity position, quite possibly to less than a 50% position.

The board of directors is likely to include bankers as well as shareholders, and there will be no legal encumbrances over the company's land, including that which it plans to transfer to AFRAM-FARM.

It has always been the intention of the U.S. participants that the reward for their technical expertise input should be based largely on the bottom line results of MALTEX achieved under their management.

A long-term management contract is therefore proposed, and with it the following equity structure:

(a) A fixed amount of preferred equity stock (nonvoting in normal circumstances) issued in reimbursement of their feasibility study costs and their efforts during the development period (K 50,000 and K 500,000, respectively, totalling K550,000). This stock would carry entitlement to 10% of MALTEX's pretax legally distributable profits calculated on a cumulative basis, and these dividends will be automatically applied in purchasing deferred equity stock in the company at par unless the holder opts for payment in cash. This approach reduces the income statement gearing, commits the managers very strongly to the company and thereby assists in obtaining the seasonal financing security arrangements proposed. The holder will be the Richard Anderson International limited partnership of the U.S.A.

The stock will acquire voting status in the event of termination of the management contract and inability of the company to find a purchaser for it at the fair market value of its earnings as assessed by independent certified public accountants in a third party country. That is to say, on the projected capital structure, Spearhead Holdings Limited would then no longer be likely to be in a position to effectively control the company.

(b) Common voting equity stock will be issued initially to:

Spearhead Holdings Limited in exchange for the assets which it introduces into MALTEX, and its unrecovered costs (estimated at K50,000) directly attributable to this feasibility study and the promotion of MALTEX

The Daniel Land & Cattle limited partnership for cash. This partnership will include Mr. Leonard Lundgren's International Agri-Consortium and, possibly, others

Malawi resident individuals or companies willing to subscribe.

Institutional lenders other than the Private Enterprise Bureau of the U.S. Agency for International Development for one-fifth (or more) of the total funding extended by them to MALTEX.

There will be a divestiture option exercisable at the instance of either the Daniel partnership or the other shareholders for the Daniel shares to be sold to Malawians or Malawi companies over the period from year 10 to year 25 after start-up on a formula similar to that put forward for the preferred stock (except that a fall-back conversion option will not exist). It is the intention that the partnership can divest over a 3-year period at any time after year 10 if it chooses to do so, and that it will be required to run its holding down to no more than 10% of the voting common stock by year 25.

It is expected that divestiture formulas will also apply to institutional investors, but that these will be negotiated directly between them and Spearhead Holdings Limited.

It will be open to holders of common voting stock to take dividends in cash or to apply their entitlements instead to par options for deferred stock, it being recognized that Spearhead Holdings Limited is likely to insist upon a maximum distribution policy otherwise detrimental to the company's growth.

(c) Deferred equity stock (non-voting in normal circumstances) will be issued to holders of preferred and common equity stock on the basis outlined above. Its dividend position and the divestment program will be identical to and contemporaneous with common stock and it will acquire voting rights should an option called by the holder not be satisfactorily taken up.

In addition to the managment contract already referred to, it is clear that a shareholder agreement will be required to regulate various matters amongst themselves with greater precision than seems to be implicit in Malawi's corporate code of law.

B. Term loan finance:

1. General -

The company will neither be suited by its cash flow profile for suppliers' credits, nor eligible for any substantial amount of them. The requirement, peaking at K3,200,000 if no local third-party equity is attracted, is quite high, and the grace period required for capital repayments effectively restricts potential sources.

2. Sources -

The sources tentatively identified for immediate follow-up include:

The Private Enterprise Bureau of the US Agency for International Development up to its permitted maximum of $2.5 million
The Investment and Development Bank of Malawi up to what is understood to be its project maximum at K1 Million
Private individuals or companies in Malawi to the extent identifiable
The International Finance Corporation
The Commonwealth Development Corporation
The Overseas Private Investment Corporation for a loan channeled though the Daniel partnership.

3. Loan conditions -

Naturally, this is fundamentally a matter for the lenders. However, international institutional funding agencies are normally amendable to tailoring their loan terms to a project's financial profile projections.

In view of the strong American participation in the project, the Bureau of Private Enterprise is looked to to provide an early lead, perhaps on the basis of a repayment option out of AFRAM-FARM's 1984/5 crop season proceeds should the rest of the financing package fail for any reason to be procured.

In all cases, interest only servicing until the first semester 1991 will be desirable, with repayment in 10 equal annual instalments thereafter.

It is anticipated that some lenders will wish mortgage and/or debenture security over MALTEX assets, presumably on a pari passu basis amongst themselves.

Provision has been made for board representation for those lenders who customarily seek this.

Lenders will be asked to agree to the rollover of one capital repayment instalment to provide maneuverability should a disastrous season of the kind which strikes agriculture anywhere from time to time occur during the loan repayment periods.

Interest rates have been assumed to be 9% in the case of PRE and 12% in other cases in the financial projections.

4. Cost overruns and end finance -

Due to the compartmentalized and extended period of project development, provision for cost-overruns should not be required in this case, in dollar terms at any rate. The project can, if need be, be tailored to the finance available with a great degree of flexibility. End-finance cannot be better covered than through the expressed willingness of the technical partner not to withdraw the greater part of his entitlement during the early part of the project life. Purely inflationary increases are intended to be matched by increased equity participation by the limited partnership.

C. Equity and term debt drawdown:

The profile required is as follows (K 000's):

	1st half 1985	1st half 1986	1st half 1987	1st half 1988
Equity:				
Spearhead	650			
Daniel, etc.	250	250	250	250
Institutions	400	400	-	-
	1,300	650	250	250
Loans	1,600	1,600	-	-

Expressed in $000's at year-end 1983 exchange rates, that is:

	1st half 1985	1st half 1986	1st half 1987	1st half 1988
Equity:				
Spearhead	494			
Daniel, etc.	190	190	190	190
Institutions	304	304	-	-
	988	494	190	190
Loans	1,216	1,216	-	-

The date of loan drawdown assumed in the financial projections in section VIII is March 1.

D. Seasonal finance:

It is assumed that this will be drawn down from commercial banks in Malawi each fiscal year on the basis of budgets mutually agreed between the banks and the company. Settlement will largely be through livestock sale proceeds. An interest rate of 15% has been allowed for in the financial projections.

X. LEGAL REQUIREMENTS:-

A. Corporate entities:

Two corporate entities have to be formed for the project:

(a) A limited partnership in the United States of America, led by Mr. Leonard Lundgren and Mr. Bob Daniel, to cocrdinate the US source equity and expertise for the project into one source.

(b) A private limited liability company in Malawi ("the Malawi-Texas Livestock Corporation Limited") with an initial authorized share capital of K5 million (approximately $4 million). Formation formalities apparently normally take three to four months, but can be speeded-up in this case by changing the name and increasing the authorized capital of one of the "shell" companies which the receiver and manager has incorporated for such a purpose with government of Malawi consent.

The formation and documentation surrounding the American partnership is relatively straightforward, but it will then have to enter into a comprehensive, and doubtless complex, agreement with the receiver and manager of Spearhead Enterprises Limited, for adoption by the planned new Spearhead Holdings Limited as soon as that company is activated following creditor and Malawi High Court consent to the scheme of arrangement giving birth to it. This agreement will require skilled legal counsel's services in both countries, and approval by the highest authorities in Malawi to ensure that speedy implementation follows.

The American partnership and Spearhead will then have to finalize the financing package and shareholder and management agreements with all of the initial shareholders and term lenders to MALTEX. In the interim period until this process is completed the Daniel partnership will have to enter into a short-term management assistance agreement with Spearhead on a normal cost-related basis.

A comprehensive agreement will also have to be drawn up between MALTEX and the planned complementary rotational cropping company ("the African-American Farming Corporation Limited" - AFRAM-FARM) to cover Maltex usage of AFRAM-FARM land and crop residues and the supply of ration protein.

B. Government incentives and support:

A formal declaration of Government of Malawi support for the new company will be required, and consent from the Life President as Minister responsible for the Department of Lands to the assignment and conveyance of Spearhead's land title to AFRAM-FARM. It is anticipated that this declaration and consent will be given readily in view of the Government's pivotal role and interest in finding and activating a definitive solution to the "Spearhead problem." Strong verbal support was indicated at the most senior executive levels of Government during the reconnaisance, feasibility study and follow-up vists to Malawi. Political level clearance in principle has also already been agreed upon.

Approvals from certain Ministries will also be required for certain investment incentives, particularly:

- Project of national importance status from the Ministry of Finance for the purposes of duty and surtax exemption in respect of capital goods imported during the project development period.
- Approval by the Minister of Finance to "required in the national interest "status for tax depreciation allowances in respect of off-farm workshops, laboratories, warehousing, administrative buildings and housing belonging to MALTEX.
- Confirmation that tariff protection will be forthcoming to protect the company's market competitiveness from dumping or from the effects of temporary world over-supply of commodities produced by the company for internal consumption.

- Confirmation that the company will be regarded as Malawian - controlled in the light of the mandatory share options which the Daniel partnership proposes to commit itself to.

- Confirmation that the expatriate work permits and visas required for the efficient and profitable operation of the company will not be unreasonably withheld or delayed.

- Availability of the required water offtake rights and radic transmission licenses.

- Agreement that the necessary bridge over the South Rukuru river will be constructed during 1984.

C. Repatriation of income and capital etc.:

Binding approval is required from the Reserve Bank of Malawi as the authority responsible for the administration of the Exchange Control Act that:

- Import approval for goods or services will be granted timeously for materials essential for the carrying on of the company's business, or at least that it will be treated no less favorably than Government entities in this regard.

- Remittance of the base level of management fees required to cover direct costs incurred ($60,000 annually until the financing package for Phase I is in place and $50,000 annually, thereafter), and of director fees at the same rate as for resident directors.

- Issue of nine paid travel advices for directors, their alternates or nominees to visit Malawi from the State of California annually, and confirmation that other, emergency, applications will also be approved.

- Confirmation that dividends on the Daniel partnership holdings in the preferred, ordinary and deferred shares or stock of the company will be recognized as U.S. source investment if in the form of scrip issues, or be approved for remittance in the event that any cash option is elected for.

- Confirmation that the Daniel partnership entitlements arising from the divestiture program outlined in section IX will be regarded as eligible for repatriation in convertible currency over a period not exceeding three years.

- Confirmation that insurance premiums for any forms of cover not competitively available locally will be approved for remittance.

- Confirmation that any barter transactions negotiated by the company and favorable to the economy of Malawi will be given favorable consideration.

- Agreement on base levels of expatriate employee remuneration eligible for repatriation on a long-term basis.

- Approval of local borrowing as envisaged in the financial plan in the event that the company becomes nonresident controlled.

D. Other relevant legislation:

Formal confirmation is required under the relevant legislation in Malawi that the company will be permitted to buy and market livestock and livestock products freely within the country or outside it; also that in any cases where retrictive licensing has to be applied for orderly marketing or to conform with international agreements, the company will be treated no less favorably than other estate producers of the product concerned.

Confirmation is also desirable that:

- Export duties or taxes will not be imposed on the company's produce provided local market demand is being satisfied at a price equivalent to export parity price.

- That expatriate staff annual home vacation passages, and passages related to the education of dependant children up to the age of 21, will not be regarded as taxable benefits on the employees concerned or disallowed as tax deductible expenses on the company.

- That Malawi will use its best endeavours to reactivate the Double Tax Treaty with the United States of America on a basis no less favorable to the Daniel partnership than pertained under the treaty revoked at the instigation of the American government effective December 31, 1983.

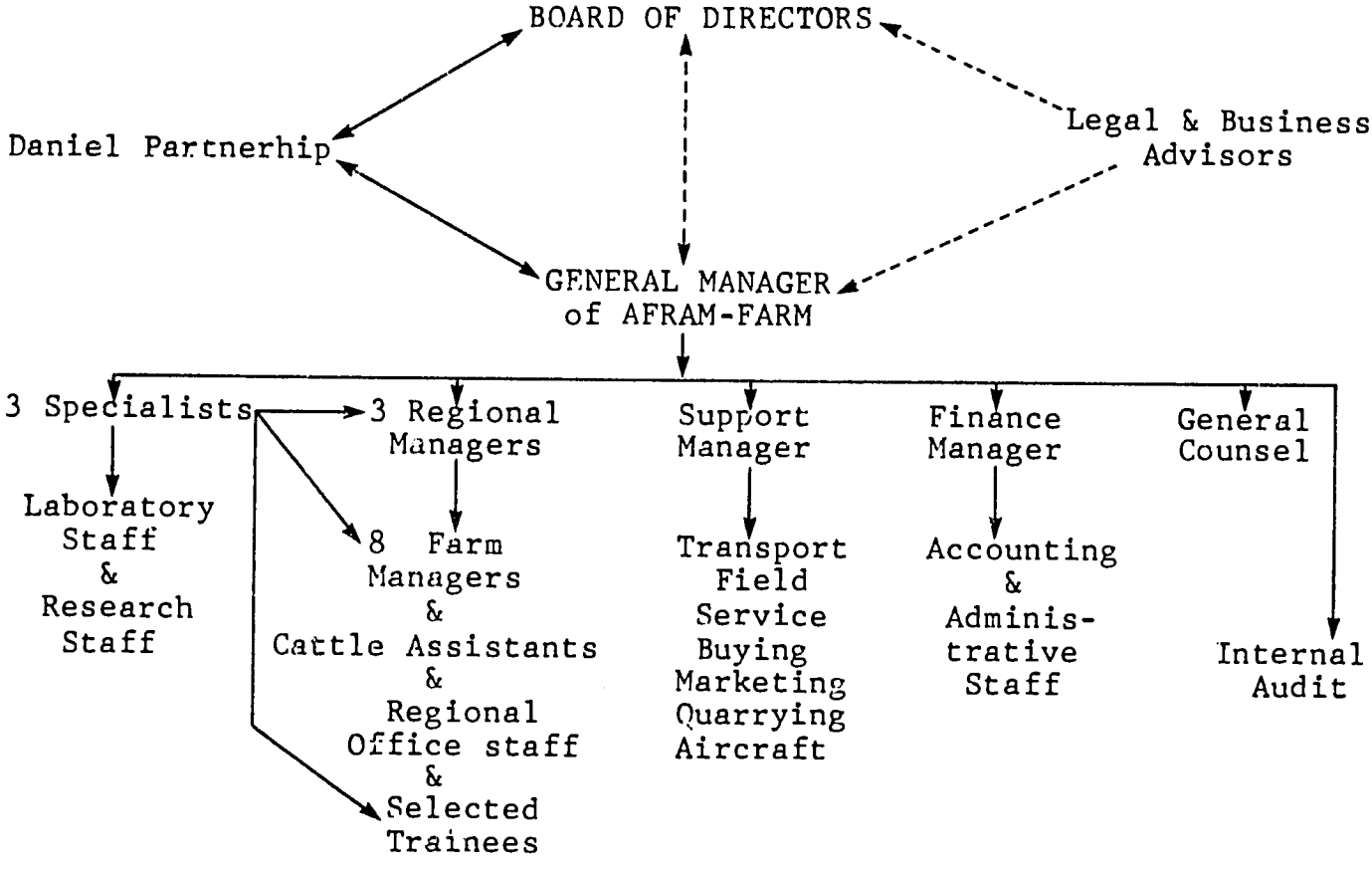
- That land transfers to AFRAM-FARM from Spearhead be free of duties and taxes.

XI. MANAGEMENT PLAN:-

A. Proposed management structure:

1. Organization -

This may be diagrammatically represented as follows:



2. Location -

The head office will be situated in Lilongwe or at Namitete. There will be regional offices in Lilongwe, Mzuzu and Blantyre. The activities supervised by the support manager will be located in Lilongwe and at Namitete, except for the Uliwa limestone quarry. The specialist staff will be housed in or near Lilongwe, but will visit all the areas of relevance to their duties frequently.

3. Selection and recruitment -

It is the intention that all competent senior staff should be retained in their present posts, and few, if any, redundancies at that level are anticipated. There will, however, be vacancies for dairy, grazing and fishfarming managers for the 1984/85 season, and for further appointments over the two following seasons. Many assistant manager vacancies will also arise. These will be filled from within where possible or by local or regional recruitment. The three specialists will be hand-picked and highly remunerated individuals from the U.S. selected by the Daniel partnership, but the research staff are expected to be recruited locally, as are the management trainees.

B. Functional areas and responsbilities:

As few changes as possible will be made to the existing structure, which appears to work smoothly and well in an environment complicated by the logistics of distances between estates.

Essentially the Daniel partnership, which will have a director or alternate in Malawi for about half of the year, will replace the Receiver and Manager; the Board of Directors will replace the Receiver's Advisory Committee; the responsilities of the General Manager will be upgraded. He will attend Board Meetings, and the Finance Manager will act as his deputy in nontechnical matters.

Of the three specialists, two will be experienced cattlemen/fishfarmers, and the third will be experienced in the management of embryo transplant techniques.

An Executive Committee will meet regularly (probably monthly as at present) under a Daniel partnership representative or the general manager, and will comprize those responsible directly to the general manager except for the head of internal audit.

The two livestock specialists will act as "visiting agents" to all of the relevant estates, and will normally visit in the presence of the regional manager concerned except for emergency visits. They will be selected with this factor in mind, and it is hoped to replace them by regional expatriates or nationals after one or at most two contract tours in Malawi.

There will be a small central research laboratory at the embryo operation near Lilongwe, but most research staff conducting trials, and all selected trainees, will be based on estates, visiting central locations as required for courses.

The general counsel may well be on a retainer basis as at present, and the indepedent auditors are expected to act as business advisors to the Board of Directors, the Daniel partnership and the general manager.

C. Skill transfer and training:

Very heavy emphasis will be placed on these areas with the objective of staffing the company entirely on a regional, and ideally on a national, basis during the period of the management contract (anything from 10 to 25 years). Ultimate divestment and the end of Daniel partnership procured technical assistance should find MALTEX able to stand entirely on its own feet as a private corporation in Malawi.

Towards this end, trainees will be selected from amongst existing workers and recruited from the Bunda College of Agriculture. Within two years, it is intended that there should be at least two such people on each estate and significant operating and administrative section on managerial orientated, supervised training programs. Program selection and supervision will come from the U.S. specialists, regional and equivalent level managers and farm or functional department heads. Appropriate trainees will be released for courses of relevant further education.

A small number of farm or laboratory trainees of particular promise will be taken for short periods on exchange to the Daniel farming operations, or business associates, in Texas - as well as certain members of the existing management team.

XII. IMPLEMENTATION PLAN:-

A. Description of activities:

Mr. Leonard Lundgren will work closely with the Receiver and Manager of Spearhead and the head of Spearhead Holdings Limited if it is activated in the meantime in:

- Further examining the land use, cropping and processing plan envisaged in Phase I by the continued application of linear program computerized technique, in order to identify the optimal activity pattern and sequence required to raise the projected internal rate of return to the optimum.

- Procuring term and seasonal finance for use in the 1984/85 crop season for the existing Spearhead operation. If totally unavoidable this could perhaps be restricted to K5 million, instead of the desired K7 to K8 million, and on the basis of repayment at the end of the season in full, but a great deal of momentum would be lost thereby, and the activity schedule put back seriously.

- Procuring the term loan and equity finance required for implementation of Phase I proper from Indebank in Malawi and financial institutions in the United States and elsewhere.

- Drafting the necessary agreements relating to MALTEX and AFRAM-FARM, and negotiating the required undertakings from government.

He will also act as the chief liaison person between the other Anderson partnership participants and Spearhead on a continuing basis.

Mr. Bob Daniel and his sons and expert consultants retained by them will pay regular visits to the Spearhead estates and office. During the 1984/85 season these activities will be for a fixed fee, low in relation to the time devoted and the losses resulting from absence from their home estates and representing a substantial investment by them in the project. After MALTEX has been activated and this investment recognized they will take up equity in it as detailed in section IX and continue their visits for the foreseeable future for a minimal basic retainer charge and a dividend on their preferred stock of 10% of the company's pretax profits - most of which will be reinvested.

As soon as it is legally in order to do so, Mr. Daniel will recruit the specialists required from the U.S. Acting through the general manager, they will also somewhat reorganize the company's management structure (see section XI).

It is therefore for the receiver, debentureholders and creditors of Spearhead to implement the planned scheme of arrangement leading to the creation of solvent Spearhead Holdings Limited with unencumbered assets without further delay to match the faith demonstrated in the project by the intending U.S. participants.

B. Estimated time schedule:

	1984
Presentation of draft feasibility study to PRE	February 2
Presentation of the draft study to other project participants, including the Spearhead Advisory Committee	February 10
Identify optimized corporate plan and redraft financial and other sections of the study	by February 24
Dispatch the final feasibility study to all parties	by February 29
Explore with Indebank in Malawi the procurement of K250,000 venture capital for project promotion	March
Obtain 1984/5 season facilities from bank(s) in Malawi against U.S. participation or guarantees or otherwise	March
Seek to obtain commitment from PRE to the project, and OPIC approval for investment insurance	March
Activate 1984/5 technical assistance program	April 1
Conduct negotiations, agreement preparation and residual funding procurement activities	by December 31

By March 1984, the necessary legal processes should have been initiated for the corporate reconstruction leading to the creation of Spearhead Holdings Limited.

	1985
Finalize investment commitments from all parties	January
Equity and loan drawdowns into AFRAM-FARM and MALTEX against agreement to land transfers	March 1

	1986
Review progress and define Phase II development	July
	1987
Procure finance for Phase II	by March
Initiate Phase II	April 1

XIII. OUTSTANDING ISSUES:

In view of the commitment to the interim period of the AFRAM-FARM and MALTEX projects now given by Richard Anderson and Sons of Tulare, California, and by Daniel Land & Cattle of San Antonio, Texas, conditional only upon procurement of 1984/5 seasonal finance, and to Phase I conditional on the whole of the financing package required being assembled, few major outstanding issues now remain. They are:

1. Formal declaration of support for all aspects of the project by a Minister of the Government of Malawi with authority to do so.

2. Promulgation of the definitive plan for the creation of a solvent Malawi joint venture equity sponsor in the AFRAM-FARM and MALTEX projects.

3. Procurement of the finance required to operate the Spearhead estates for the 1984/85 season.

At a slightly later date, the following issues also required to be cleared:

4. Approval of the complementary AFRAM-FARM row-cropping project and its financing.

5. Procurement of the balance of finance needed for implementation of MALTEX Phase I.

PROJECTED DAY-1 BALANCE SHEET OF THE PROPOSED SPEARHEAD HOLDINGS LIMITED

(Expressed in millions of Malawi Kwacha)

Fixed assets (to be replaced by investments in joint venture companies)	9.0
Trading stocks	0.8
Cash or 15% Malawi government bonds	1.8
	11.6
Represented by:	
Ordinary shares - Malawi Government	0.9
- former creditors of SEL	0.8
	1.7
Reserves	0.8
	2.5
Unsecured convertible 16-1/2% income notes (held by the former debentureholders of SEL)	9.1
	11.6

Minor amendments prior to the agreed finalization date may result in a slightly reduced cash position and Malawi Government equity interest. The latter may fall below 50% of the equity in issue.

REDUCED SCALE MAPS OF THE RELEVANT ESTATES

Data for detailed maps of soil classification, land use, roads, crests and seasonal and perennial rivers have been obtained for all estates. Reduced scale outline maps detailing only major features are attached.

Region

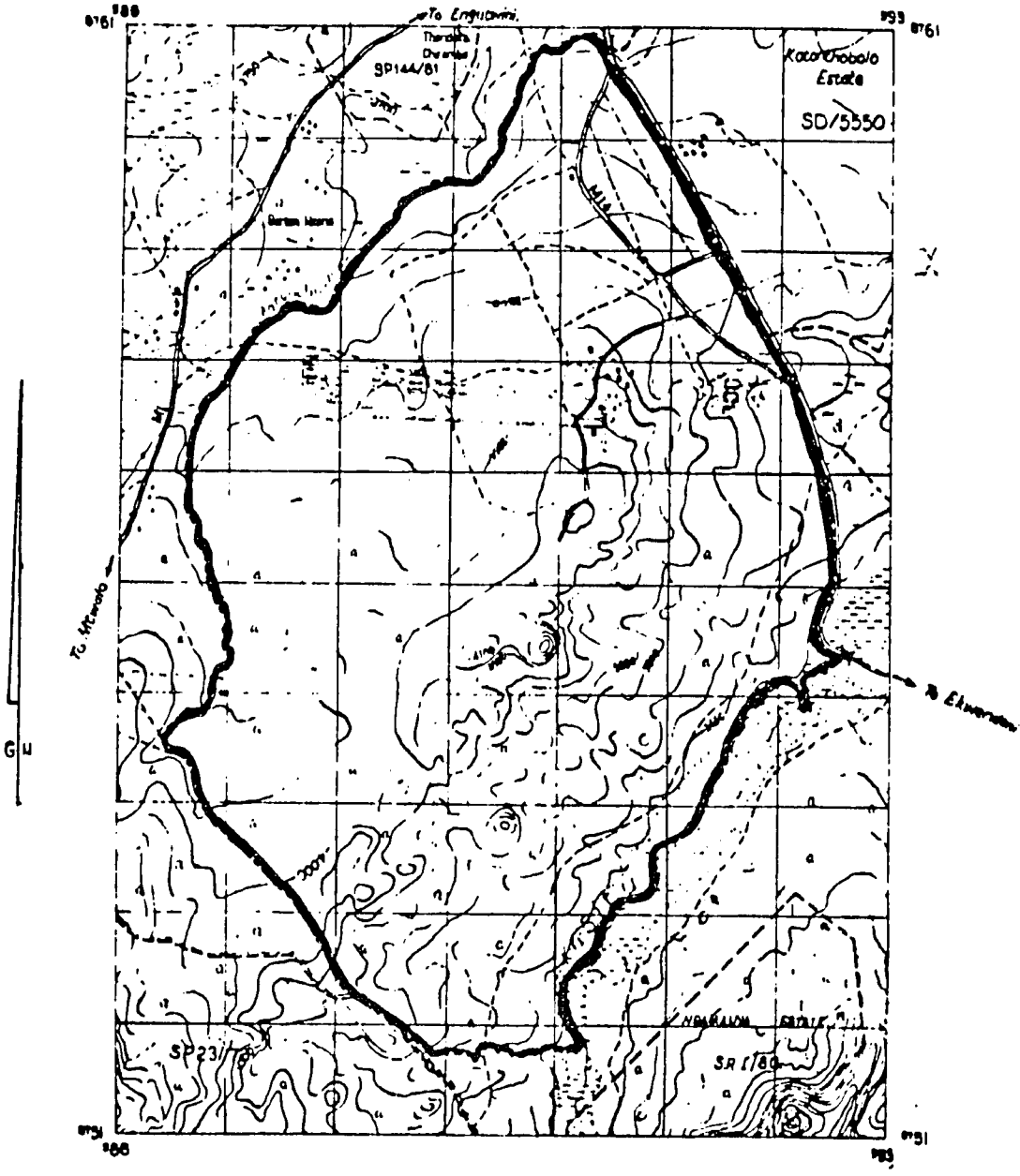
District

SKETCH PLAN
No 168/83.

Locality AT CHILE MWALO

Ref No (L) 4[illegible]

Piece OF LAND FOR LEASE TO SPEARHEAD ENTERPRISES (MUBANIGWE FARM



SCALE 1" 50000

The above figure marked [illegible] and edged RED

represents approximately 2916.00 Hectares

APPROXIMATE SIDES & BEARINGS		
Side	Distance	Bearing
—	—	—

Drawn by J MATIPA MAFWE

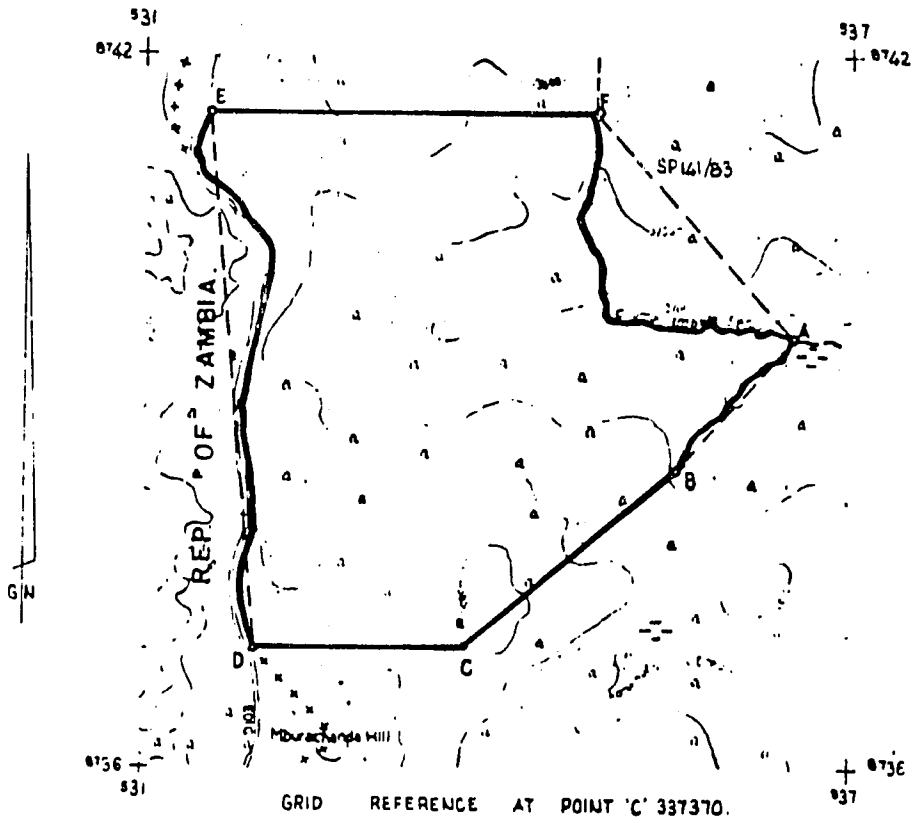
Checked by....

NORTHERN **Region**
MZIMBA **District**
Locality AT MBUZI MZUMARA'S AREA

SKETCH PLAN No.140/83.

Registry Map 1133 A 4
Ref.No. (L) 44594

Piece OF LAND FOR LEASE TO SPEARHEAD ENTERPRISES Ltd (SOUTH RUKURU 1)



GRID REFERENCE AT POINT 'C' 337370.

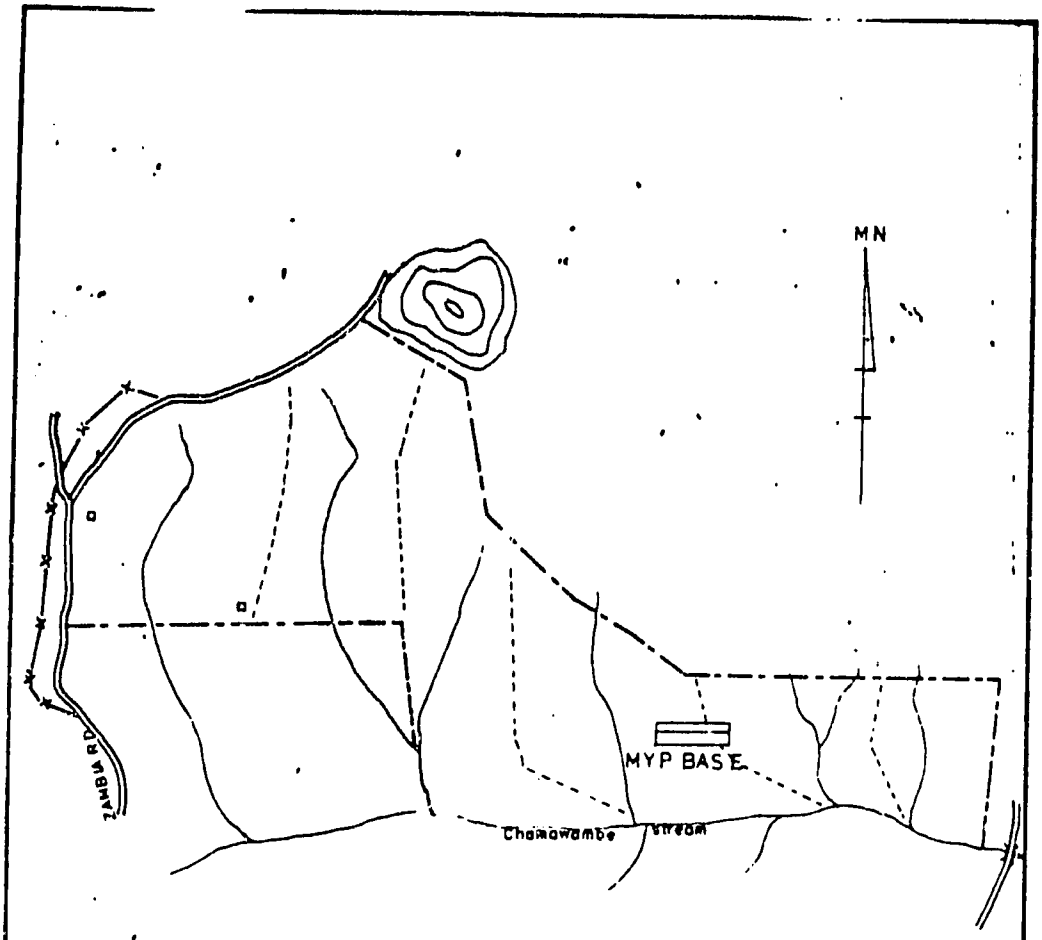
SCALE 1 50000.

A along the Stream B.C, D. along the road E.
The above figure marked F along the Chamdulambwa Stream A. and edged RED
represents approximately 1,440.00 Hectares/Acres of land

APPROXIMATE SIDES AND BEARINGS			
Side	**Distance**	**Bearing**	
A — B	1500.00 m	222°	00'
B — C	2300.00	231°	30'
C — D	1800.00	270°	00'
D — E	2500.00	355°	15'
E - - F	3300.00	90°	00'
F - - A	2550.00	138°	00'

Drawn by J MATIKI MBEVIE

Checked by 21-6-83



LEGEND

—x—x—x— INT. BOUNDARY

— · — · — FARM BOUNDARY

MAIN ROAD

CREST LINE

STREAM

BUILDINGS

ALTITUDE 3950'
LATITUDE 11° 22' 40"
LONGITUDE 33° 17' 10"
MAP SHEET No 1133A4 (N.R.19)

Compiled by-F E K Drawn by-L M N Checked by-F E K Date- April 1982 SCALE-1:50,000	SOUTH RUKURU II SPEARHEAD ENTERPRISE ACREAGE 1417 ha.	ORDER No INDEX No I X C 81 LAND HUSBANDRY OFFICE BLANTYRE A.D.C. SOUTHERN REGION

NORTHERN
MAZIMBA — Region / District

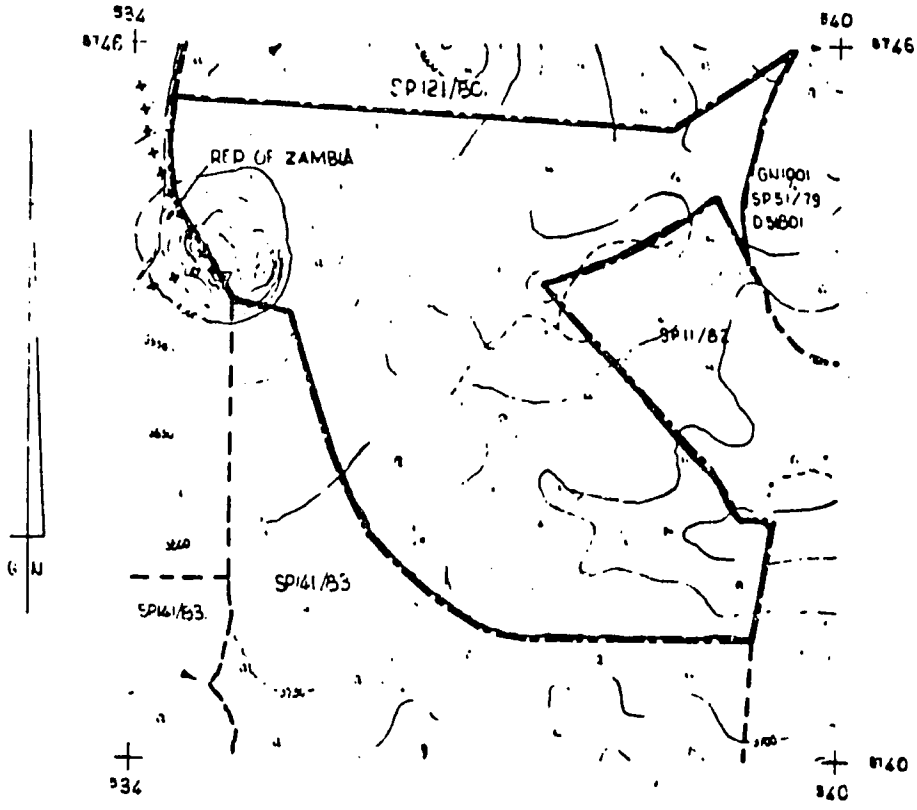
Registry Map 1133 A 4

SKETCH PLAN No.142/83.

Ref.No. (L) 44594

Locality AT MBUZI MZUMARAS AREA

Piece OF LAND FOR LEASE TO SPEARHEAD ENTERPRISES Ltd (SOUTH RUKURU 3).



SCALE 1 50000

The above figure marked ——•——•——•——•—— and edged RED.....
represents approximately 1492.00... Hectares/Acres land

APPROXIMATE SIDES AND BEARINGS		
Side	Distance	Bearing

Drawn by J. MATIKI MBEWE

Checked by

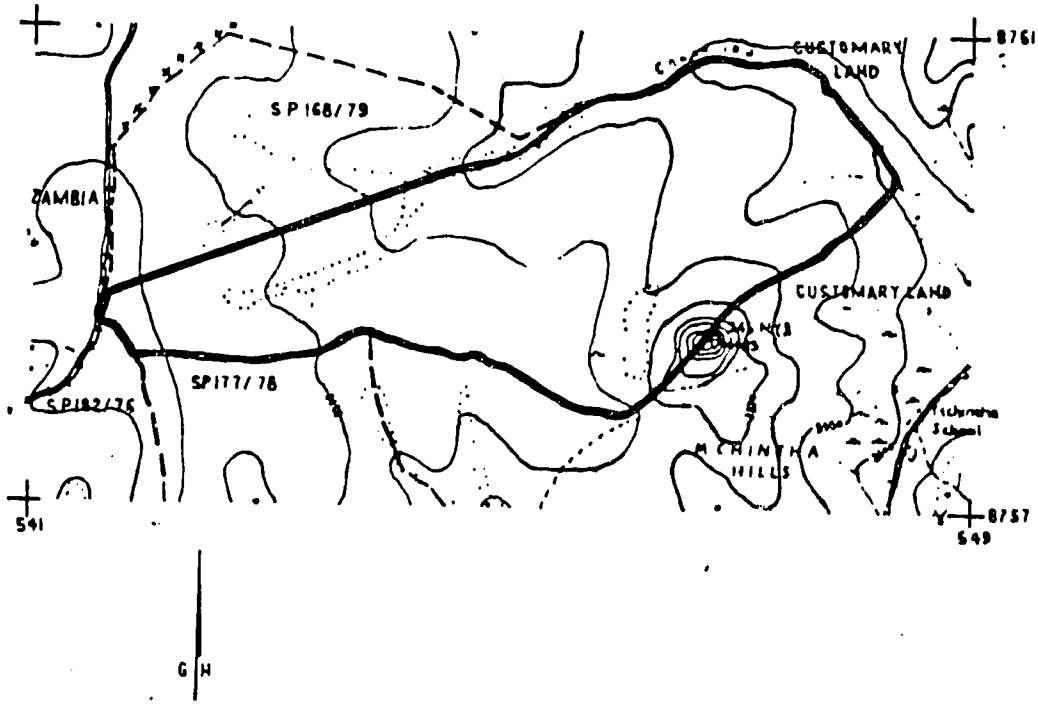
21-6-83

NORTHERN Region
MZIMBA District
Locality AT MBUZI MZUMARA AREA

SKETCH PLAN No.138/83

Registry Map 1133A2
Ref.No. (L) 44878

Piece OF LAND FOR LEASE TO SPEARHEAD ENTERPRISES LIMITED.



SCALE 1:50,000

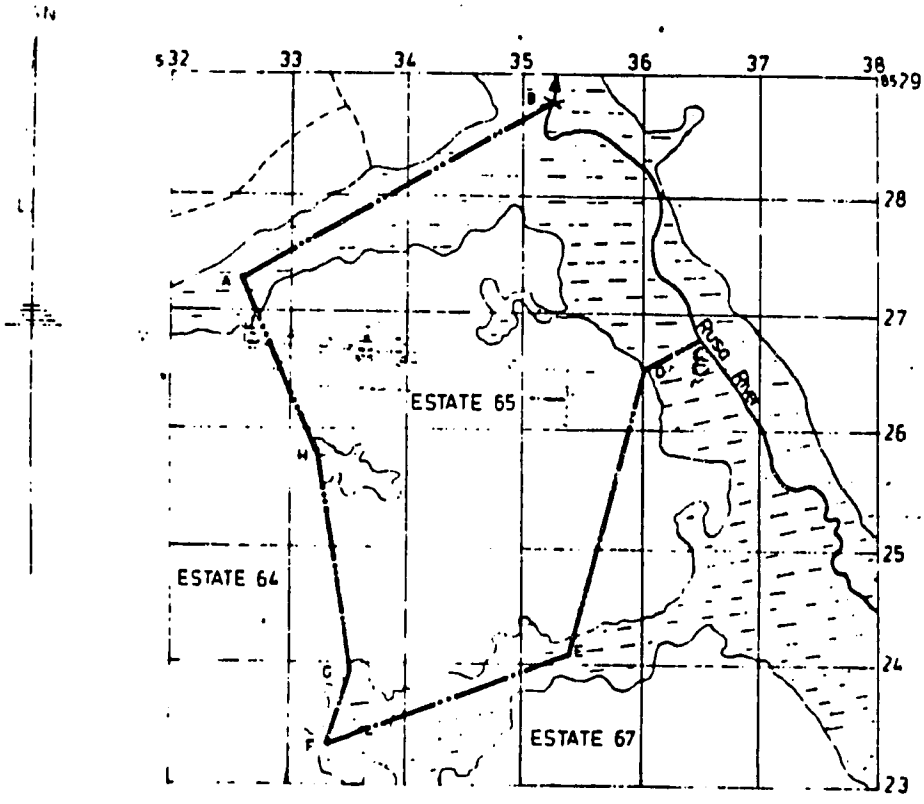
The above figure marked ——— and edged RED ..... represents approximately 1059.00 hectares/demarcated land

APPROXIMATE SIDES AND BEARINGS		
Side	Distance	Bearing

Drawn by T S C NYIRENDA

Checked by
16-6-83

PLAN OF AMENDED BOUNDARY OF ESTATE Nº 65
LEASED BY MALAWI YOUNG PIONEER AS
NEW KHOLA FARM, KASUNGU DISTRICT.



LINE	M M B	DISTANCE
	248°.30	500m
	207° 30	2500
	256°	2250
	26° 30'	700
H	359°	1950
H A	342° 30'	1520
A B	68°	3050
	RUSA RIVER	

MAP SHEET Nº 133/4A (Kasungu)
GRI REF AT POINT "B" 353 788
Retraced from R L O/1/14/65 (26 7 73)

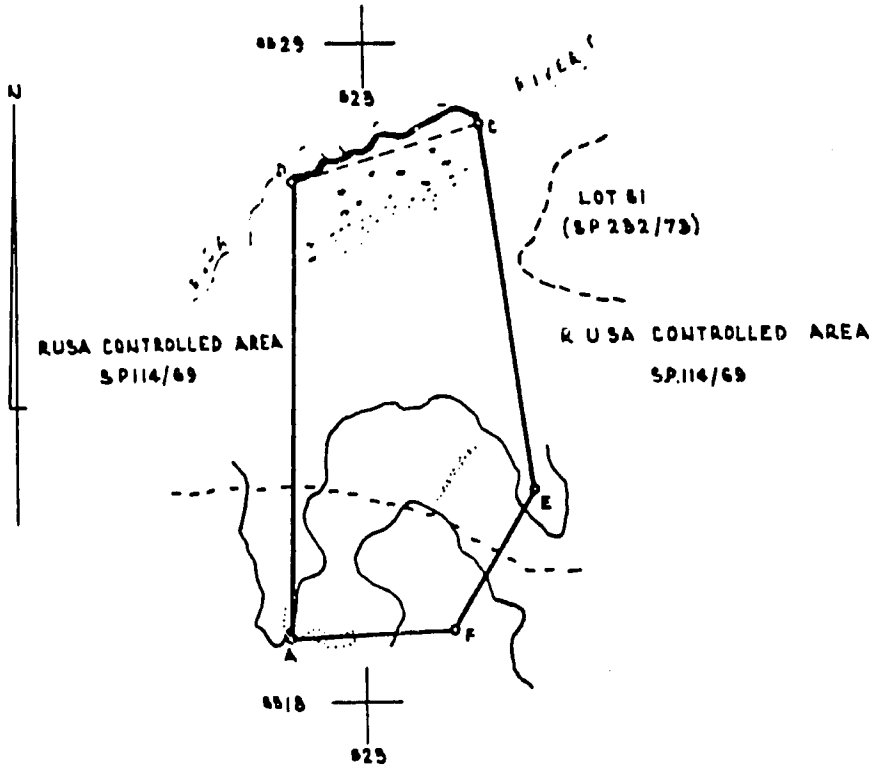
Surveyed by -	NEW KHOLA FARM KASUNGU DISTRICT Acreage 1208 ha. 2,985 Ac.	ORDER Nº/INDEX Nº IX C 58
Drawn by		
Traced by - B E L		
Checked by - F E K		
Date - April 1982		Land Husbandry Office Blantyre A D D Southern Region
SCALE :- 1. 50,000		

CENTRAL Region
KASUNGU District
Locality RUSA / NYAZA

SKETCH PLAN No.164/83

Registry Map 15354.3
Ref.No. (L) 44263

Place OF LAND FOR LEASE TO SPEARHEAD ENTERPRISE.



SCALE 1/100000

The above figure marked A,D, ALONG RUSA RIVER, C,E,F, A, and edged RED,
represents approximately 296 Hectares/Acres of land

APPROXIMATE SIDES AND BEARINGS		
Side	Distance	Bearing
A D	7650·00 m.	0° 00'
D C	9500·00 "	73 00
C E	8200·00 "	171 00
E F	2700·00 "	210 00
F A	2750·00 "	266 30

Surveyed by G.B. MAHUKA

Checked by [signature] 83

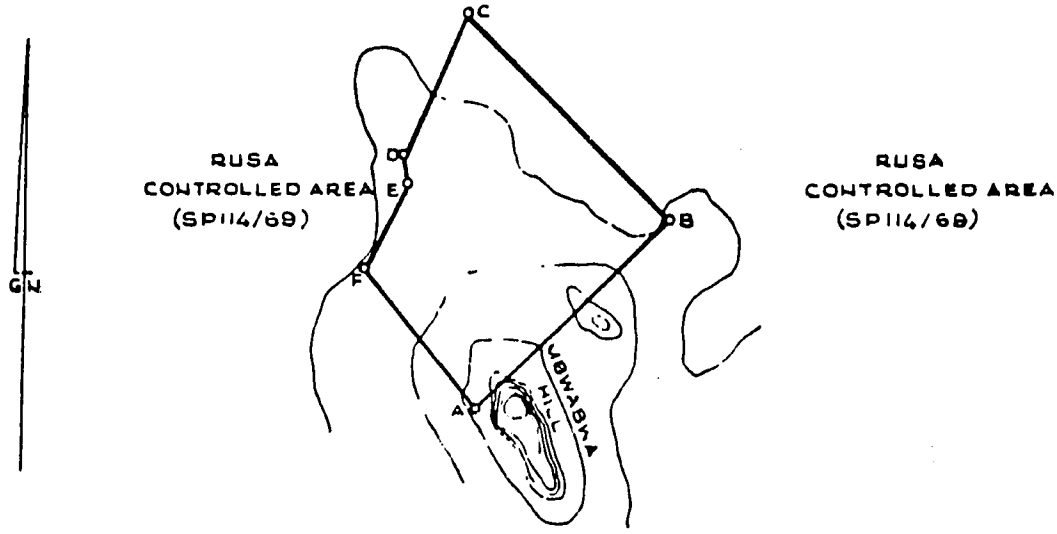
CENTRAL Region
KASUNGU District
Locality RUSA/MBWABWA

SKETCH PLAN No. 165/83

Registry Map 1333 A3
Ref.No. (L)44263

Piece OF LAND FOR LEASE TO SPEARHEAD ENTERPRISE.

8517
521



8510
521

SCALE 1 50,000

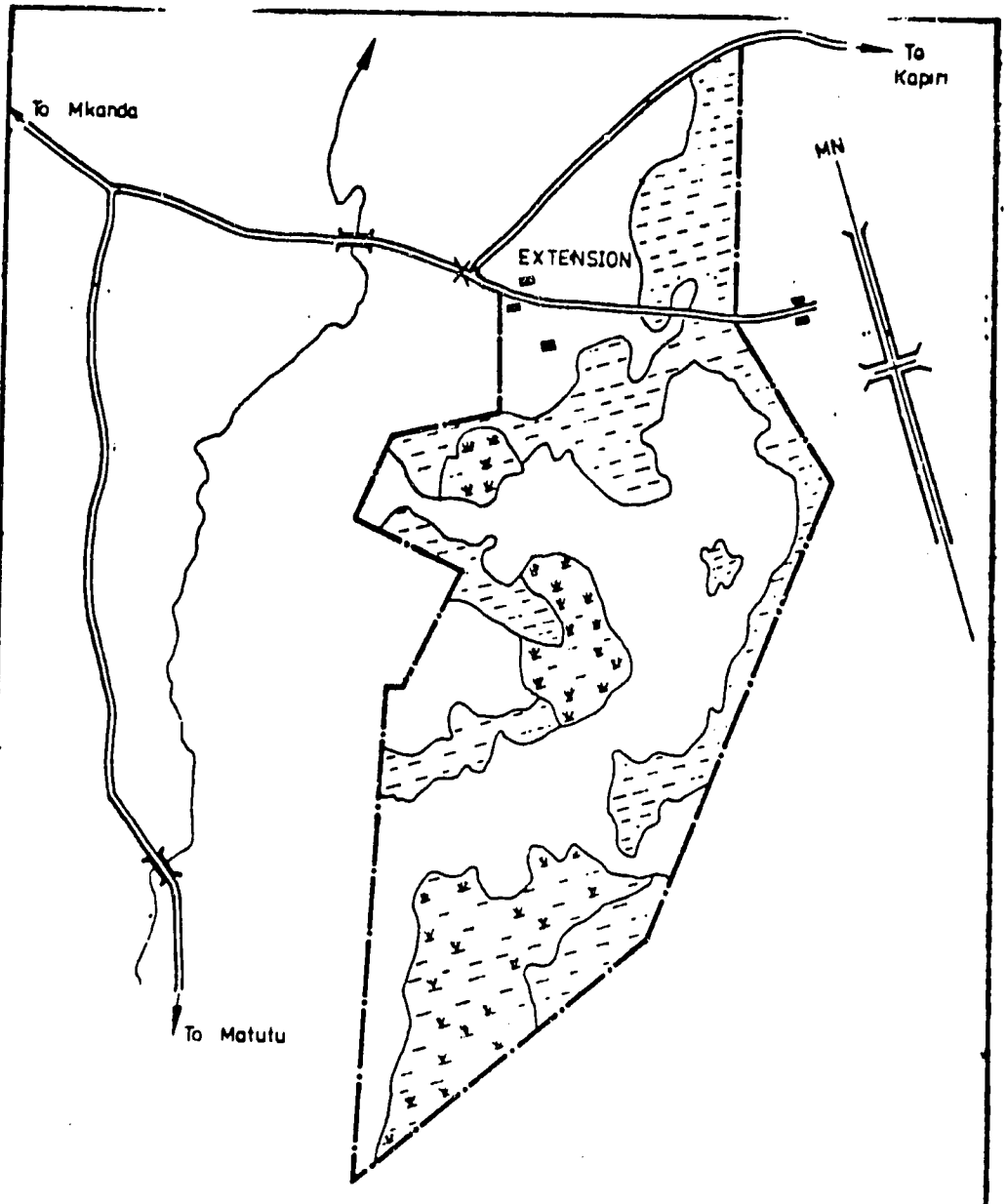
The above figure marked A, F, E, D, C, B, A ... and edged RED ...
represents approximately 426·00 Hectares/Acres of land

APPROXIMATE SIDES AND BEARINGS			
Side	Distance	Bearing	
A – F	1500 00m	321°	00'
F – E	800 00 "	27	00
E – D	250 00 "	354	30
D – C	1300 00 "	24	00
C – B	2450 00 "	134	30
B – A	2300 00 "	226	00

Drawn by M.E MWASE

Checked by

11th Aug, 83



LEGEND

Farm boundary

Road

Buildings

Land suitable for tobacco growing

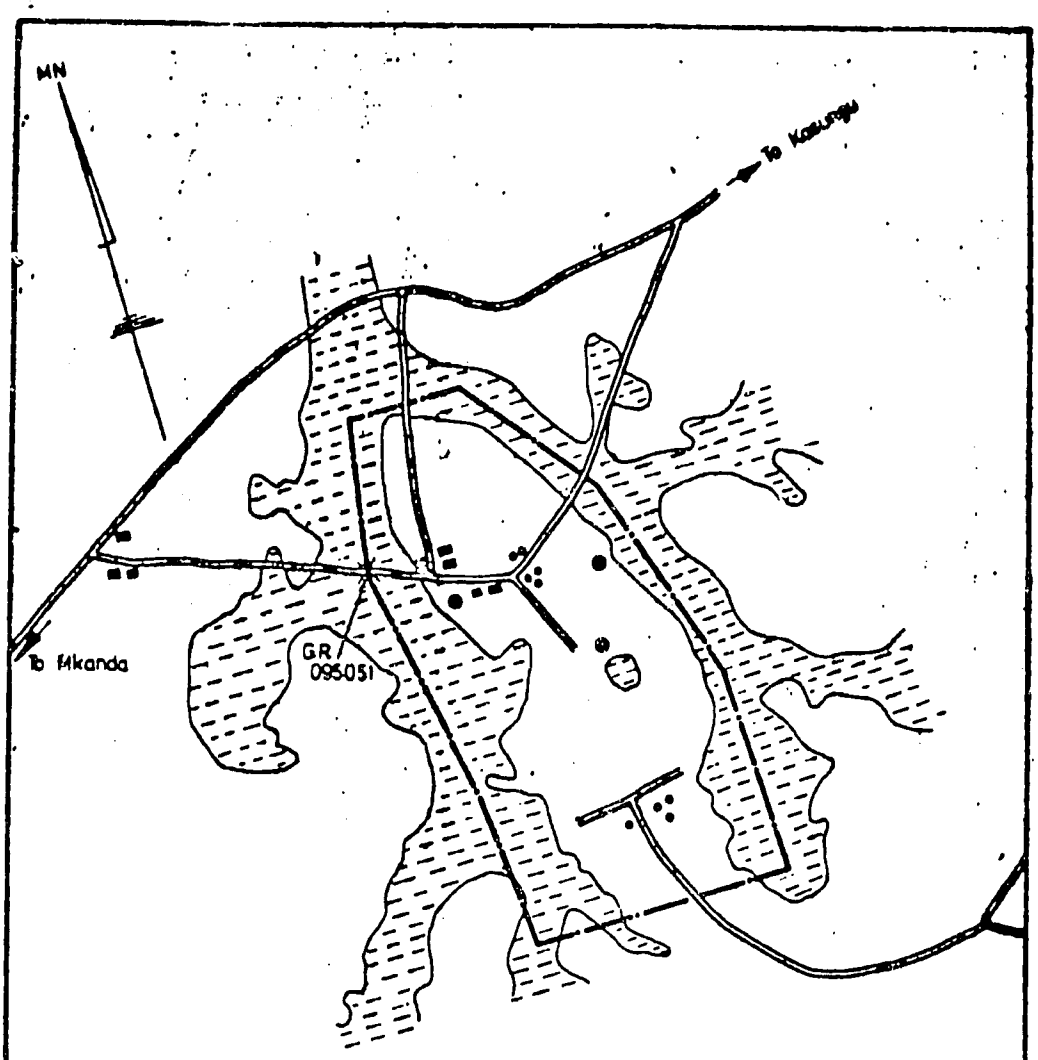
Permanently wet land (Dambo) not ideal.

Marginally wet land suitable for tobacco

ALTITUDE 3550'
LATITUDE 13° 30' 45"
LONGITUDE 33° 03' 45"

MAP SHEET 1333C1 (C R 13)
GRID REF AT X 068 162

Compiled by F E K Drawn by L M N Checked by F E K Date April 1982 SCALE :- 1. 50000	NGONDE X (THOKOZILE) ESTATE - MCHINJI I SPEARHEAD ENTERPRISE Acreage 1,755 ha.	ORDER Nº/INDEX Nº IX C 73 Land Husbandry Office Blantyre A D D Southern Region



Farm boundary

Old Road

Land suitable for tobacco growing

Seasonal (Dambo) suitable for tobacco growing - only under special management technique

Buildings

Compound

Borehole

ALTITUDE 3500'
LATITUDE 13° 31' 25"
LONGITUDE 35° 05' 15"

MAP SHEET Nº 1333C1 (C.R.12)
GRID REF AT POINT "X" 095051

Compiled by - F E K Drawn by - B E L Checked by - F E K Date - April 1982 SCALE :- 1:50,000	MCHINJI ~~II~~ X SPEARHEAD ENTERPRISE Acreage 937 ha.	ORDER Nº/INDEX Nº IX C 74 Land Husbandry Office Blantyre A D D Southern Region

CENTRAL — Region
LILONGWE — District
KAMUYU ESTATE — Locality
Piece A' KAMUYU ESTATE (Farm No. 2)

MALAWI
DEED PLAN
No. 90/75
SCALE 1/25,000

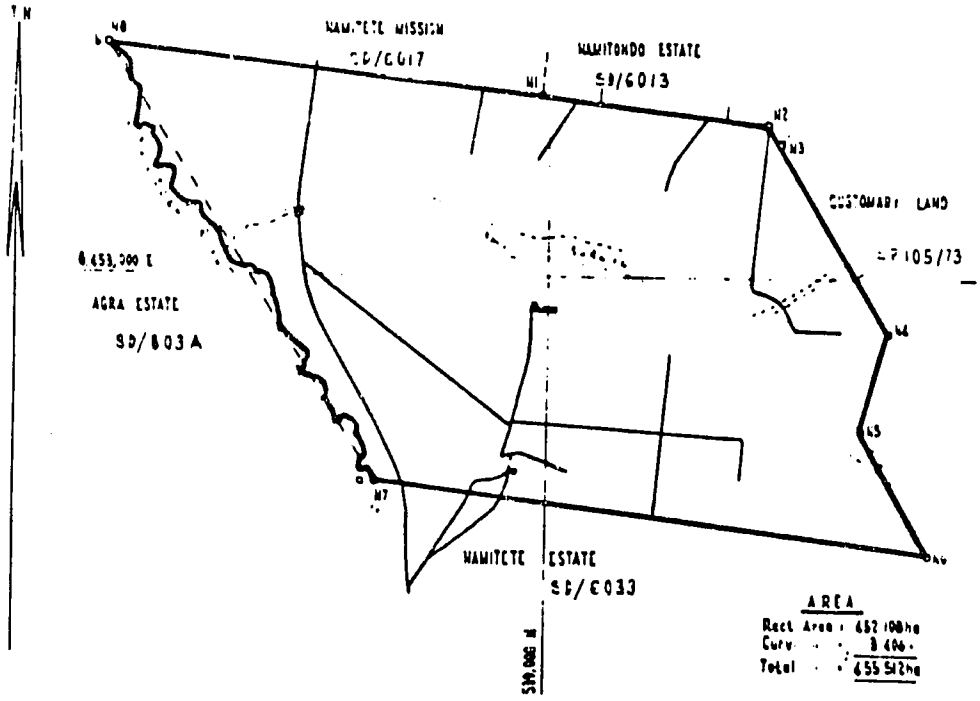
Department of Survey
Archive Reference

Original plan No. SD/ [illegible]
of RESURVEY OF KAMUYU ESTATE
Surveyed [illegible] SEPT '74 JAN - FEB '75
by N. K. AGRAWAL

Registry Map 1333C4 & 1433A2

SIDES AND BEARINGS			
Beacon	Distance	Bearing	Beacon Description
M1	982.66m	96° 45' 20"	3cm I R C P
M2	1023.53	169 47 50	" -
M3	626.60	195 23 40	" -
M4	592.02	169 27 20	" -
M5	2381.93	276 45 49	" -
M6	2179.96	327 51 22	" -
CONNECTIONS			
M7-a	14.00m	276° 45' 49"	
b-M8	14.00	96 23 30	

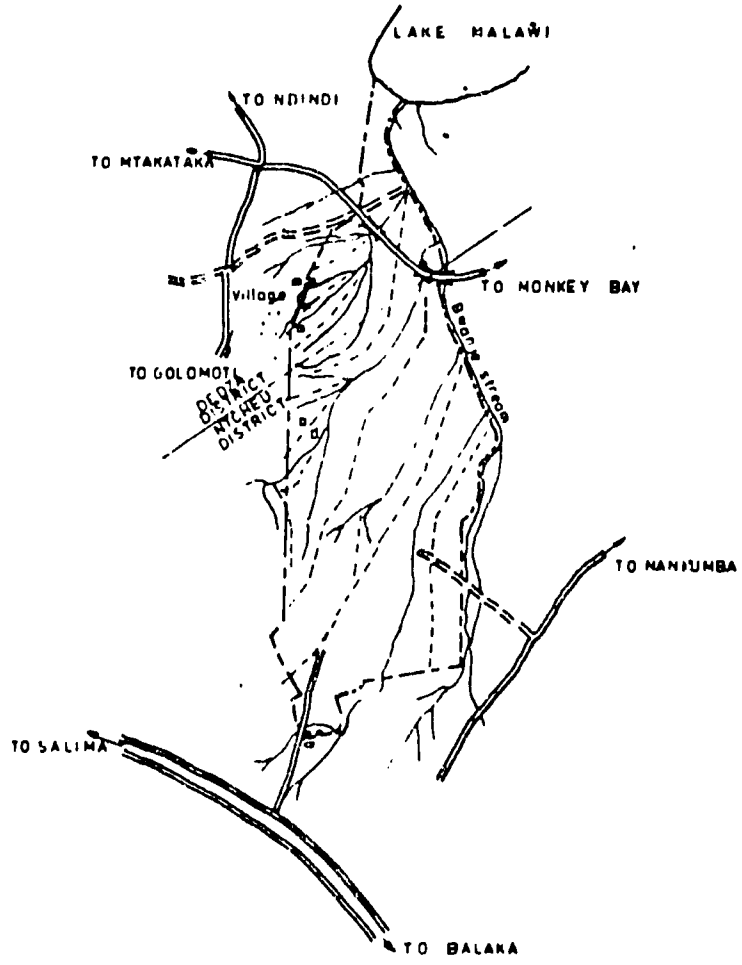
CO ORDINATES (U.T.M.)		
Beacon	E	N
M1	538,965.25	8,453,767.03



The above figure marked M1, M2, M3, M4, M5, M6, M7, a, along the right bank of Nomkoka river, b, M8, M1
and edged red represents 455.512 Hectares of land
Drawn by S B LUMWIRA
Checked by Dan J.S. Kamanga

I certify that this deed plan conforms with the Original Plan No SD 6066 approved by the Director of Surveys and that numerical data shown above are mutually consistent

J. [illegible]
Ag. Director of Surveys
Blantyre 30th September 1975

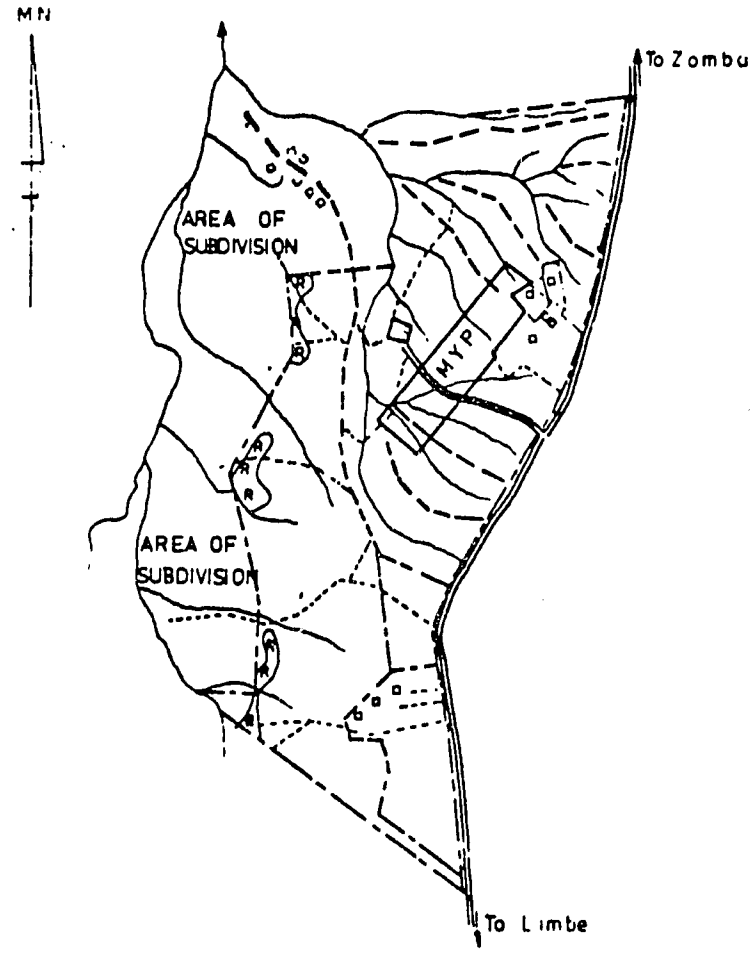


LEGEND

- FARM BOUNDARY
- DISTRICT BOUNDARY
- EXISTING ROAD
- FOOT PATH
- CREST LINE
- BUILDINGS
- STREAMS

GRID REF AT BWANJE BRIDGE 839141

Compiled by:- F.E.K.	BWANJE FARM	ORDER No INDEX No
Drawn by:- L.M.N	SPEARHEAD ENTERPRISE	IXC 64
Checked by:- F.E.K.	24,255·33 Acres	LAND HUSH OFF HLANTYRE AIR
Date:- April 1982		
SCALE-1:200000		

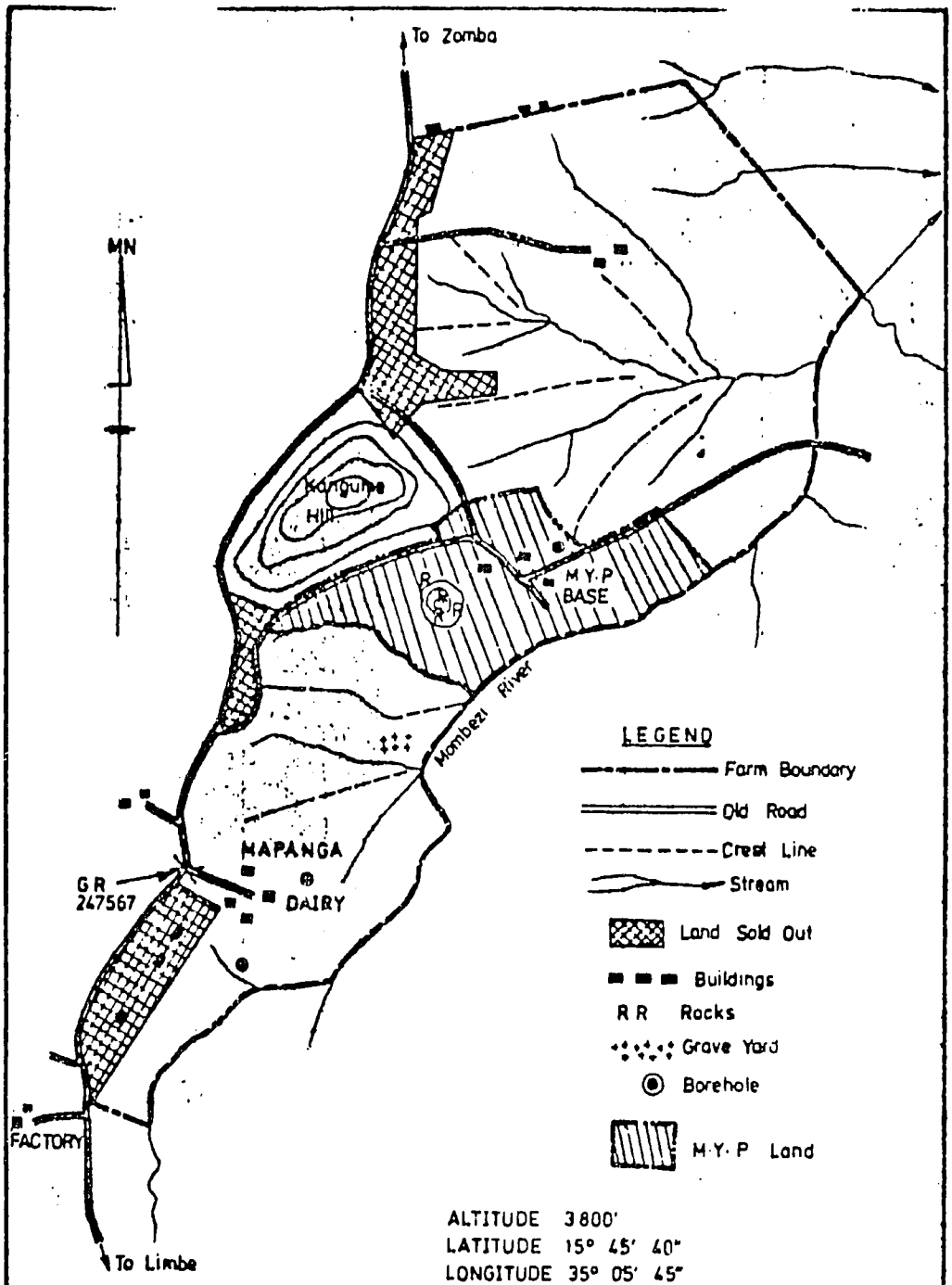


LEGEND

- FARM BOUNDARY
- ROAD
- CREST LINE
- PATH
- STREAM
- BUILDINGS
- ROCKS
- MYP LAND

MAP SHEET No 1535 C3 & D1

Compiled by:- F. E.K.	MAPANGA SPEARHEAD ENTERPRISE	ORDER No INDEX No
Drawn by:- L.M. N.		
Checked by:- F.E.K.	Proposed Layout of Crest Line, Waterways, Streams And Roads.	IX C 56A
Date - April 1982		
SCALE - 1:20,000		LAND USE OFFICE BLANTYRE Southern Region



Compiled by:- F. E. K	MAPANGA DAIRY SPEARHEAD ENTERPRISE Acreage 624 ha.	ORDER Nº/INDEX Nº
Drawn by :- L. M. N		IX C 78
Traced by :- B E. L		
Checked by :- F K		Land Husbandry Office Blantyre A [illegible] Southern Region
Date :- April 1982		
SCALE :- 1 2500		

APPENDIX 3

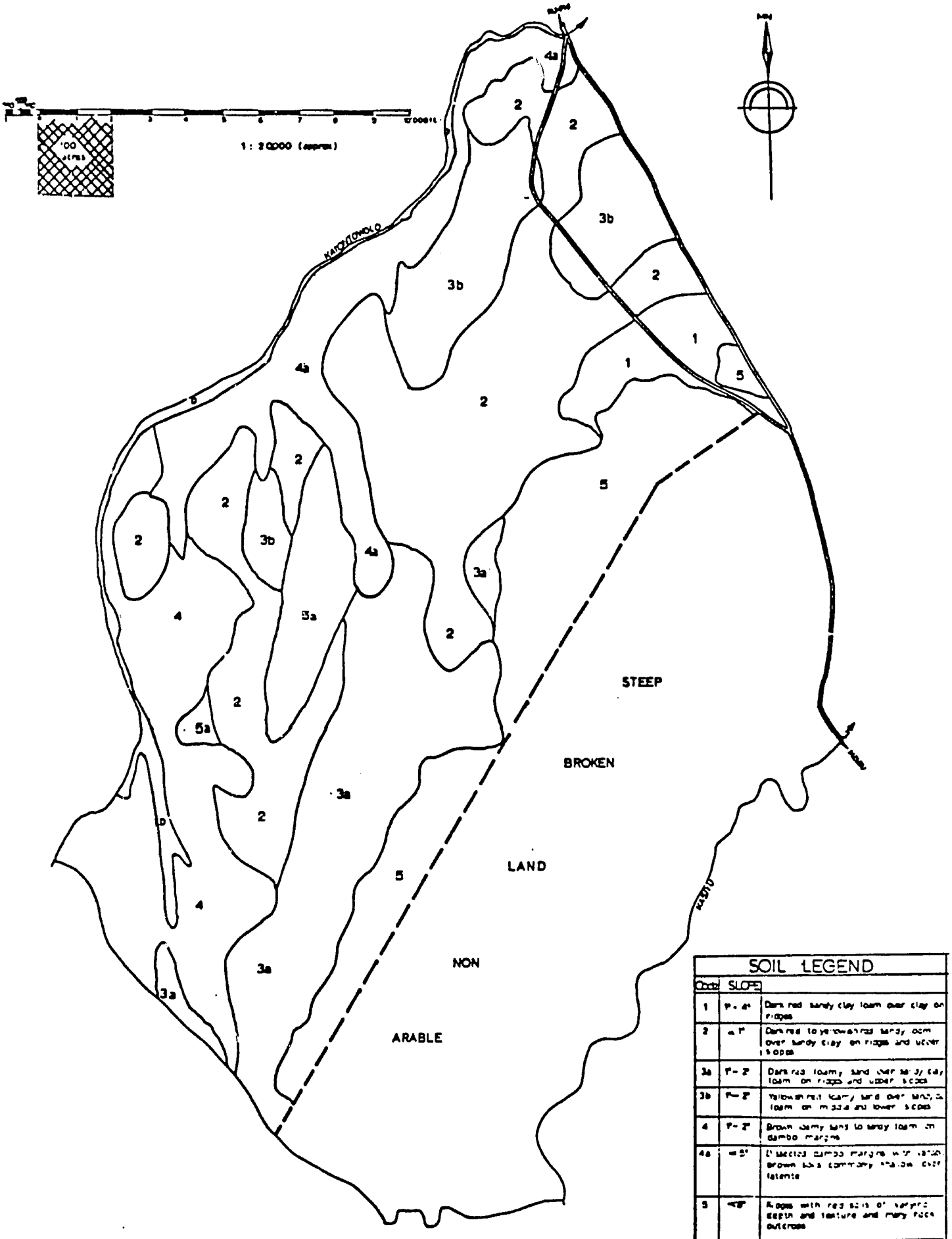
SOIL CLASSIFICATION DATA

Detailed soil studies were undertaken some years ago at Mubangwe estate in the Northern Region and in 1982 at Bwanje estate.

In December 1983 soil analysis data for all of the MALTEX estates except Bwanje were obtained. Most of these have already been evaluated and are detailed in the contemperaneously prepared AFRAM-FARM feasibility study. The Bwanje estate evaluation is contained in a separate study. Details are not reproduced here, but are available from the project sponsors. The detailed analyses and evaluations are of marginal importance to the MALTEX study. However, the Mubangwe estate maps are reproduced on the following pages as an indication of the data available.

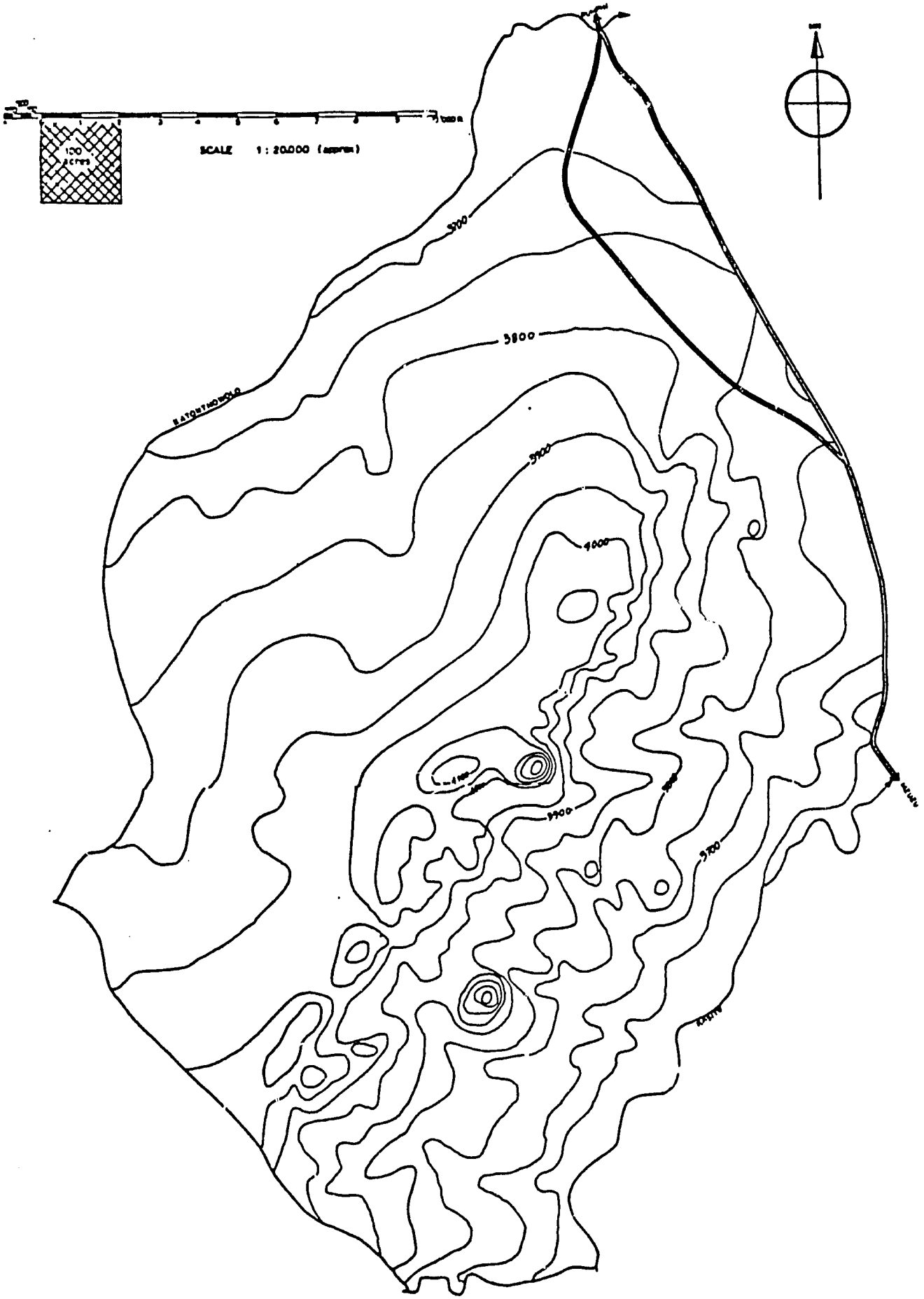
MUBANGWE SETTLEMENT SCHEME

SEMI DETAILED SOIL SURVEY

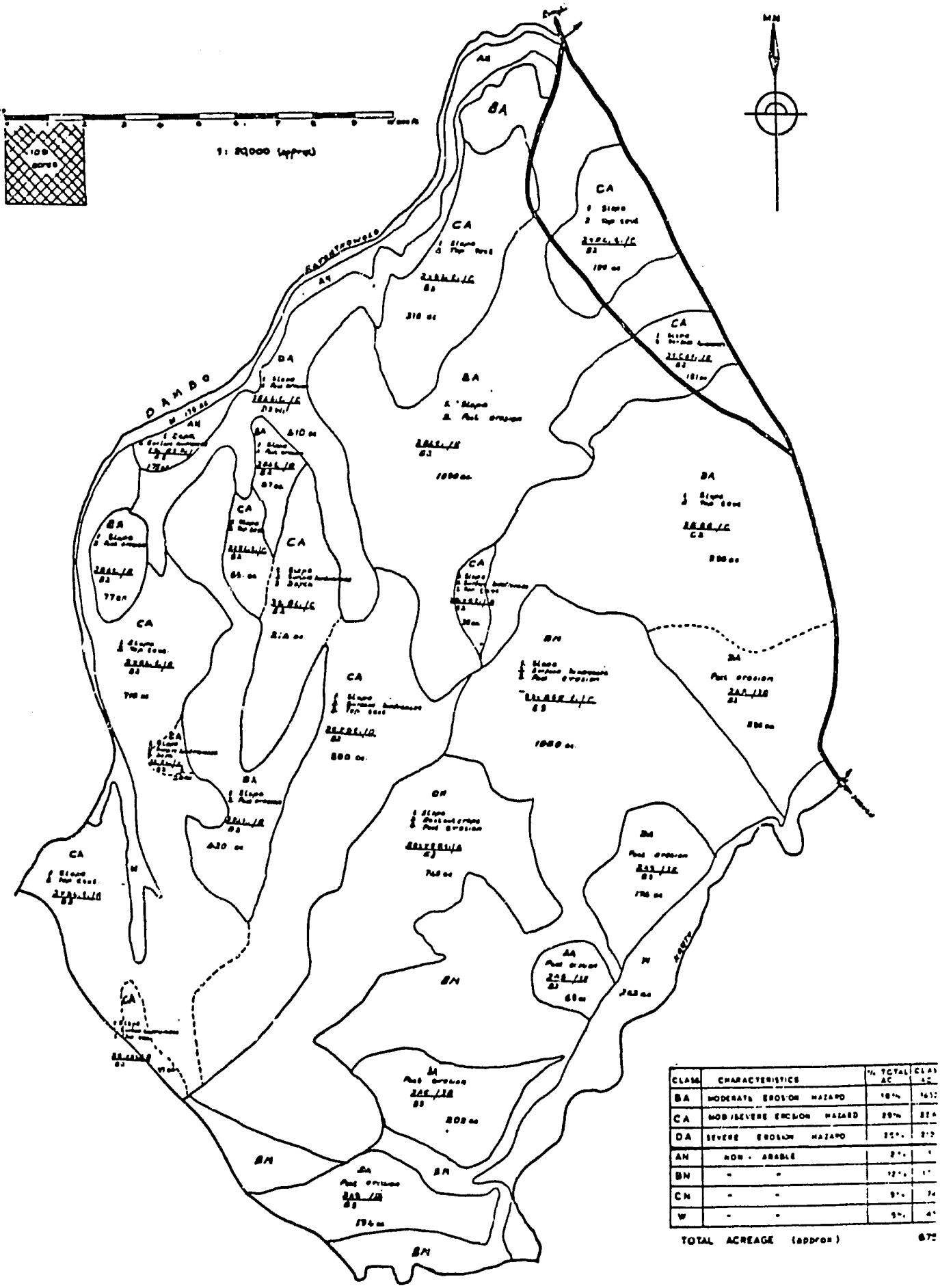


SOIL LEGEND		
Code	SLOPE	
1	0 - 4%	Dark red sandy clay loam over clay on ridges
2	< 1°	Dark red to yellowish red sandy clay loam over sandy clay on ridges and upper slopes
3a	1° - 2°	Dark red loamy sand over sandy clay loam on ridges and upper slopes
3b	1° - 2°	Yellowish red loamy sand over sandy clay loam on middle and lower slopes
4	1° - 2°	Brown loamy sand to sandy loam on dambo margins
4a	< 5°	Imperfect dambo margins with black brown soils commonly shallow over laterite
5	> 8°	Ridges with red soils of variable depth and texture and many rock outcrops
5a	1° - 2°	Low ridges with shallow yellowish red sandy loam over quartz, weathered rock, or iron concretions

MUBANGWE SETTLEMENT SCHEME
CONTOUR MAP



MUBANGWE SETTLEMENT SCHEME
LAND CAPABILITY MAP

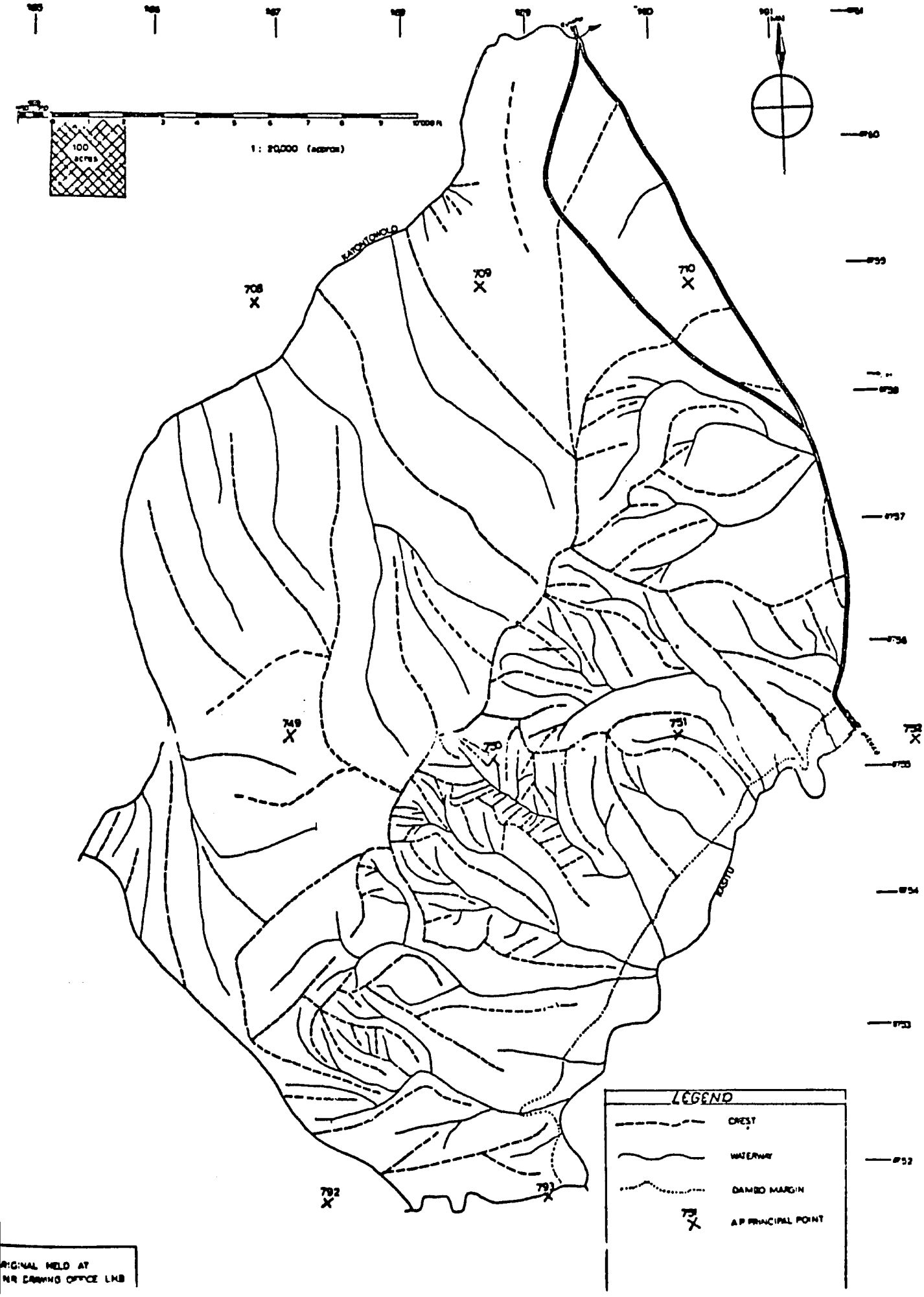


CLASS	CHARACTERISTICS	% TOTAL AC	CLASS AC
BA	MODERATE EROSION HAZARD	18%	161
CA	MOD/SEVERE EROSION HAZARD	39%	354
DA	SEVERE EROSION HAZARD	22%	213
AN	NON - ARABLE	2%	1
BN	" "	12%	11
CN	" "	9%	74
W	" "	5%	45

TOTAL ACREAGE (approx) 872

MUBANGWE SETTLEMENT SCHEME

CRESTS & WATERWAYS



ORIGINAL HELD AT
NR DRAWING OFFICE LMB

ORIGINAL

DEED REGISTRY No. 54262

DATED the 2nd day of August 1983

THE MINISTER OF THE MALAWI
GOVERNMENT RESPONSIBLE FOR
LAND MATTERS

to

SPEARHEAD ENTERPRISES LIMITED

L E A S E

of

1,764 hectares of public land known as
Nkhozo Farm in the Rumphi District

Term: 99 years

Date of Commencement: 1st July, 1983

Rent: K4,357 per annum

M.P. No. (L) 42442

Kbb. 66 SD.

2652

THIS LEASE dated the 2nd day of August one thousand nine hundred and eighty three BETWEEN THE MINISTER OF THE MALAWI GOVERNMENT RESPONSIBLE FOR LAND MATTERS (hereinafter referred to as "the Minister") of the one part and SPEARHEAD ENTERPRISES LIMITED (IN RECEIVERSHIP), a company incorporated in Malawi and having its principal office in Blantyre (hereinafter called "the Lessee") of the other part

WITNESSETH as follows:

1. THE MINISTER hereby demises unto the Lessee ALL THAT piece or parcel of land and premises more particularly described in the First Schedule hereto EXCEPT AND RESERVING unto the Minister as is herein and in the Land Act Cap. 57:01 excepted and reserved

TO HOLD the same unto the Lessee for the term of 99 years from the First day of July, 1983 YIELDING AND PAYING therefor yearly and proportionately for any part of a year the rent of four thousand three hundred and fifty seven(K4,357) Kwacha (subject to revision under the said Act) the said yearly rent (or revised rent as the case may be) to be paid in advance clear of all deductions on the First day of April in every year

2. THE LESSEE to the intent that these obligations may continue throughout the term hereby created hereby covenants with the Minister as follows:

(1) to perform and observe the covenants implied by the Regulations made by the Minister under the Land Act and with any amendments or additions thereto which may from time to time be made by the Minister (hereinafter called "the Regulations")

(2) to perform and observe the conditions set out in the Second Schedule hereto

3. IT IS HEREBY DECLARED that in assessing the yearly rent hereby reserved the Minister has taken the area of the demised premises as being 1,764 hectares and the scale of rent as being K2.47 per hectare and has rounded up the resultant figure to the next Kwacha AND IT IS HEREBY FURTHER DECLARED that if the demised premises at any time hereafter shall be surveyed then with effect from the 1st day of April next following the date of such survey the said yearly rent shall be increased or decreased as the case may be so as to reflect the true

area of the demised premises PROVIDED ALWAYS if at the time of such revision of rent a new scale of rents for agricultural lands shall be in use by the Minister then he shall be entitled to fix the new rent in accordance with such new scale and to round up the resultant figure to the next Kwacha

4. IN THIS LEASE where the context so admits the expression "the Minister" shall include the person for the time being entitled to the reversion immediately expectant on the determination of the term hereby created and the expression "the Lessee" shall include his successors in title AND where there are 2 or more persons included in the expression "the Lessee" covenants and conditions expressed to be binding on the Lessee shall be deemed to be binding on such persons jointly and severally

IN WITNESS whereof HIGHTON LEWIS JIYA Acting Commissioner for Lands for and on behalf of the Minister has set his hand and seal and the Lessee has caused its common seal to be affixed the day and year first above written

THE FIRST SCHEDULE ABOVE REFERRED TO

ALL THAT piece or parcel of land containing an area of One thousand seven hundred and sixty-four (1,764) hectares or thereabouts situate at and known as NKHOZO FARM in the RUMPHI DISTRICT the boundaries whereof (the same to be more precisely ascertained and defined by survey) being more particularly described and delineated on Survey Department Sketch Plan No. IXC 98 hereunto annexed and thereon edged red

THE SECOND SCHEDULE ABOVE REFERRED TO

1. PURPOSE FOR WHICH THE LEASE IS GRANTED
   For agricultural purposes
2. SUM EXPENDED ON AGRICULTURAL IMPROVEMENTS
   K 215,000
3. THE LESSEE HEREBY COVENANTS WITH THE MINISTER AS FOLLOWS:

(A) To keep and maintain the demised premises in a good and proper condition maintaining the fertility of the soil thereof in a good and husbandlike manner according to the most approved method of cultivation

management and husbandry in the area and shall not allow any part thereof to become impoverished by soil erosion exhausting crops or otherwise

(B) To proceed with the Scheme of Development of the demised premises in conformity in every respect with the Project and/or Cash Flow documents furnished by the Lessee to the Ministry of Agriculture (hereinafter referred to as "the said Ministry") IT BEING HEREBY DECLARED it shall be at the said Ministry's sole discretion whether or not it consents to any departure from the approved Scheme

(C) To crop all arable land on a 4 year crop rotation basis and so as to maintain that land clean and in a good state of cultivation and fertility and in a good condition

(D) To take all necessary steps for protection and preservation of crops harvested or lifted or in course of being harvested or lifted including (but without limiting the generality of the foregoing) where tobacco is grown the erection of barns or sheds for the storage of the same

(E) To plant each year sufficient trees to enable the demised premises to be self sufficient in fuel PROVIDED ALWAYS (but without limiting the generality of the foregoing) the area of trees planted for firewood shall not be less than 10% (ten per centum) of the area planted for tobacco

(F) To take all necessary steps to ensure an adequate supply of water to the demised premises

(G) Not to sell any stone gravel or earth from the demised premises

(H) To keep a record of all development effected on the demised premises and when required to produce the said record and vouchers for all items therein for the inspection of the duly authorised officers of the said Ministry

(I) On all such parts of the demised premises as are suitable for such purposes to lay down fences or plant hedges on the boundaries thereof and to maintain the same in good condition

(J) To comply at once and give sufficient effect to every order directions or notice relating to the demised premises duly made by a Competent authority AND in the performance of the covenants hereinbefore contained in sub-clause A to I hereof to comply with all reasonable directions as to the mode of performance of the same covenants as may be given to the Lessee by the Ministry or any of its duly authorised officers

(K) In addition to the covenants implied herein by No. 2(a) of the Regulations and on the Lessee's part to be performed the Lessee shall pay on demand the cost of the maintenance (including replacement) to the satisfaction of any officer of the Survey Department not below the rank of Survey Assistant of the Survey beacons which now or hereafter demarcate the boundaries of the demised premises and shall protect such beacons from damage and injury

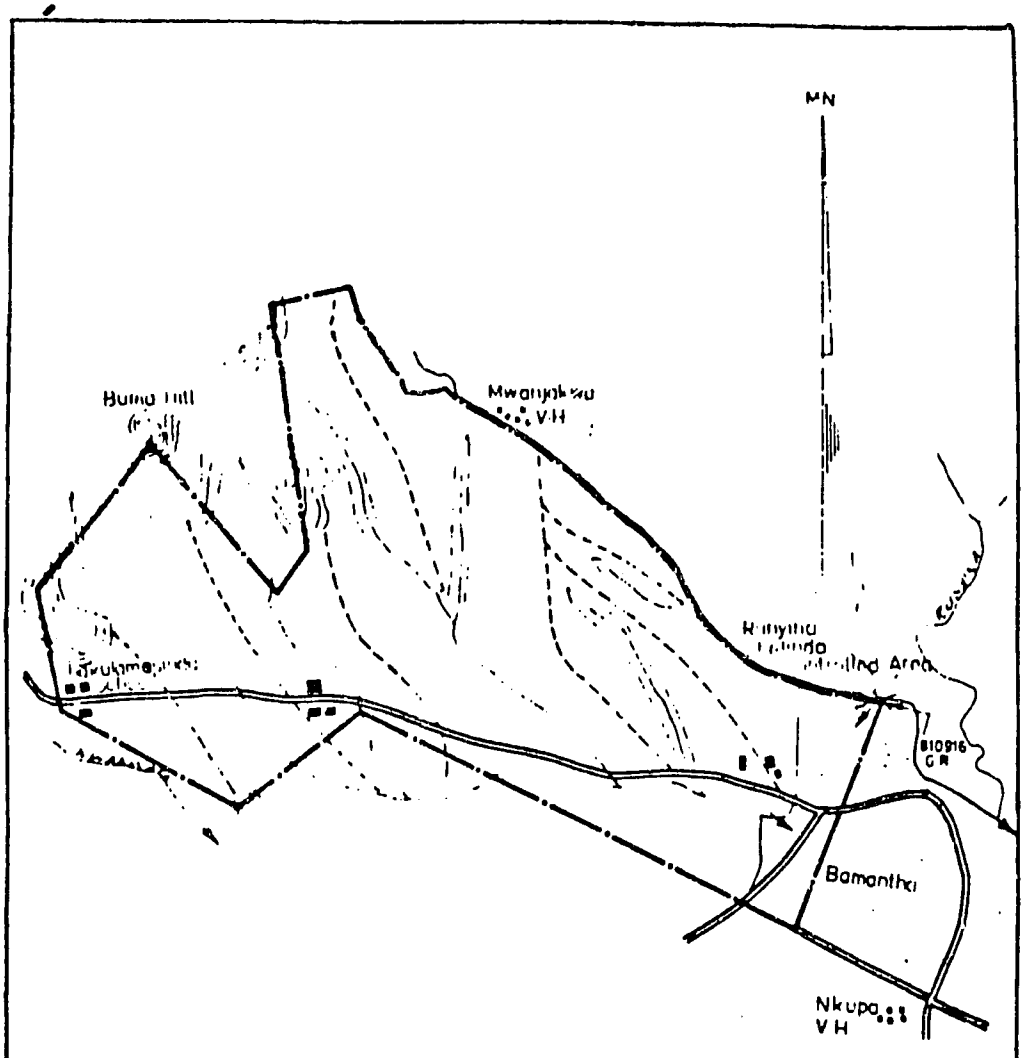
(L) The survey description and the survey plan of the demised premises as Certified in writing by the Commissioner for Lands (or any officer duly authorised by him for the purpose) to that effect shall be deemed to describe accurately the demised premises and to be in substitution for the description herein contained and the plan hereto annexed and no error omission or misstatement in the description herein contained or in the Survey Department Sketch Plan No. IXC 98 shall be the subject of any claim by the Lessee to receive compensation in respect thereof

SIGNED SEALED AND DELIVERED by
the above named HIGHTON LEWIS JIYA
in the presence of:

WITNESS :
ADDRESS : P.O. Box 2133, Blantyre.
OCCUPATION: Legal Consultant.

THE COMMON SEAL of SPEARHEAD ENTERPRISES LIMITED
was affixed hereto by the RECEIVER/MANAGER
as agent of Spearhead Enterprises Limited
(In Receivership) in the presence of:

WITNESS :
ADDRESS :
OCCUPATION:



LEGEND

- Farm boundary
- Old road
- Crest line
- Streams
- Waterway
- Buildings

ALTITUDE 4000'
LATITUDE 10° 56'
LONGITUDE 33° 44' 45"
MAP SHEET Nº 1044D3 (NR 21)
GRID REF AT POINT X 810916

Compiled by · F. E. P	NKHOZO FARM	ORDER Nº/INDEX Nº
Drawn by B. E. L	SPEARHEAD ENTERPRISE	IX C 98
Checked by P. C. P	Acreage 1,764 ha.	Land Husbandry Office
Date · April 1982		R'untyre A D D
SCALE:- 1. 50,000		Southern Region

... document be ... presented ... and that it is ... the under- signed

A.g. ... for Lands

Date 19/8/83

... R. ... Lilongwe

Registered 10TH AUGUST

1983 at 12.15 PM

Stamp Duty K66 ——— 00

Registration fees K3 ——— 00

Drawing fees ——

Receipt No. 183915 d/d 13/8/83.

Book No.

Registrar

54262

FIXED ASSETS (K000's)

		Buildings	Vehicles	Tractors	Equipment and plant	Furniture	Subtotal	Ponds	Total
1985	Purchases	320	100		61	50	531	20	551
1986	Purchases	550	40	25	37	30	682	280	962
		870	140	25	98	80	1,213	300	1,513
1987	Purchases	30	-	50	69	-	149	300	449
		900	140	75	167	80	1,362	600	1,962
1988	Purchases	30	-	-	3	-	33	300	333
		930	140	75	170	80	1,395	900	2,295
1989	NIL	-	-	-	-	-	-	-	-
1990	Disposals	-	(100)	-	(61)	(50)	(211)	-	(211)
	Purchases	-	100	-	61	50	211	-	211
		930	140	75	170	80	1,395	900	2,295
1991	Disposals	-	(40)	(25)	(37)	(30)	(132)	-	(132)
	Purchases	-	40	25	37	30	132	-	132
		930	140	75	170	80	1,395	900	2,295
1992	Disposals	-	-	(50)	(69)	-	(119)	-	(119)
	Purchases	-	-	50	69	-	119	-	119
		930	140	75	170	80	1,395	900	2,295
1993	Disposals	-	-	-	(3)	-	(3)	-	(3)
	Purchases	-	-	-	3	-	3	-	3
		930	140	75	170	80	1,395	900	2,295
1994	NIL	-	-	-	-	-	-	-	-
1995	Disposals	-	(100)	-	(61)	(50)	(211)	(20)	(231)
	Purchases	300	100	-	61	50	511	20	531
		1,230	140	75	170	80	1,695	900	2,595
1996	Disposals	-	(40)	(25)	(37)	(30)	(132)	(280)	(412)
	Purchases	-	40	25	37	30	132	280	412
		1,230	140	75	170	80	1,695	900	2,595
1997	Disposals	-	-	(50)	(69)	-	(119)	(300)	(419)
	Purchases	-	-	50	69	-	119	300	419
		1,230	140	75	170	80	1,695	900	2,595
1998	Disposals	-	-	-	(3)	-	(3)	-	(3)
	Purchases	-	-	-	3	-	3	-	3
		1,230	140	75	170	80	1,695	900	2,595
1999	NIL	-	-	-	-	-	-	-	-
2000	Disposals	-	(100)	(61)	(50)	-	(211)	-	(211)
	Purchases	-	100	61	50	-	211	-	211
		1,230	140	75	170	80	1,695	900	2,595
2001	Disposals	-	(40)	(25)	(37)	(30)	(132)	-	(132)
	Purchases	-	40	25	37	30	132	-	132
		1,230	140	75	170	80	1,695	900	2,595
2002	Disposals	-	-	(50)	(69)	-	(119)	-	(119)
	Purchases	-	-	50	69	-	119	-	119
		1,230	140	75	170	80	1,695	900	2,595
2003	Disposals	-	-	-	(3)	-	(3)	-	(3)
	Purchases	-	-	-	3	-	3	-	3
		1,230	140	75	170	80	1,695	900	2,595
2004	NIL	-	-	-	-	-	-	-	-

MALTEX
DEPRECIATION
(Expressed in thousands of Malawi Kwacha)

		Buildings	Plant, etc.	Sub.	Ponds	Total
1985	Charge	16	38	54	2	56
1986	Charge	44	69	113	30	143
		60	107	167	32	199
1987	Charge	45	92	137	60	197
		105	199	304	92	396
1988	Charge	47	93	140	90	230
		152	292	444	182	626
1989	Charge	47	93	140	90	230
		199	385	584	272	856
1990	Disposals	-	(211)	(211)	-	(211)
	Charge	47	93	140	90	230
		246	267	513	362	875
1991	Disposals	-	(132)	(132)	-	(132)
	Charge	47	93	140	90	230
		293	228	521	452	973
1992	Disposals	-	(119)	(119)	-	(119)
	Charge	47	93	140	90	230
		340	202	542	542	1,084
1993	Disposals	-	(3)	(3)	-	(3)
	Charge	47	93	140	90	230
		387	292	679	632	1,311
1994	Charge	47	93	140	90	230
		434	385	819	722	1,541
1995	Disposals	-	(211)	(211)	(20)	(231)
	Charge	62	93	155	90	245
		496	267	763	792	1,555
1996	Disposals	-	(132)	(132)	(280)	(412)
	Charge	62	93	155	90	245
		558	228	786	602	1,388
1997	Disposals	-	(119)	(119)	(300)	(419)
	Charge	62	93	155	90	245
		620	202	822	392	1,214
1998	Disposals	-	(3)	(3)	(300)	(303)
	Charge	62	93	155	90	245
		682	292	974	182	1,156
1999	Charge	62	93	155	90	245
		744	385	1,129	272	1,401
2000	Disposals	-	(211)	(211)	-	(211)
	Charge	62	93	155	90	245
		806	267	1073	362	11435
b/f						
		-	(132)	132	-	(132)
2001	Disposals					
	Charge	62	93	155	90	245
		868	228	1096	452	1548
2002	Disposals	-	(119)	(119)	-	(119)
	Charge	62	93	155	90	245
		930	202	1132	542	1674
2003	Disposals	-	(3)	(3)	-	(3)
	Charge	62	93	155	90	245
		992	292	1284	632	1916
2004	Charge	62	93	155	90	245
		1054	385	1439	722	2161

DAIRY PROJECT

HERD PROGRAM

Type	Donor cows	Host cows	Milk cows	Bred cows	Bred heifers: 3 year	Bred heifers: 2 year	Bred heifers: 1 year	Bred heifers: Calves	Steers and culls: 2 year	Steers and culls: 1 year	Steers and culls: Calves	Annual sales and (purchases)	Funds flow (K'000)
1992:													
Sales	-	-	-	-	-	-	(750)	-	(2,250)	-	-	750 at K500, 2,250 at K250	938
Births	-	-	-	-	-	-	-	750	-	-	2,750		
Transfers	-	-	-	750	(750)	(500)	750	(750)	2,250	(2,250)	-		
	-	-	-		500					2,250	(2,250)		
	50	=	=	3,000	500	-	-	750	-	2,250	2,750		
1993:													
Sales	-	-	-	-	-	-	(250)	-	(2,250)	-	-	250 at K500, 2,250 at K250	688
Births	-	-	-	-	-	-	-	750	-	-	(2,750)		
Transfers	-	-	-	500	(500)	-	750	(750)	2,250	(2,250)	(2,750)		
	-	-	-							2,750			
	50	=	=	3,500	-	-	500	750	-	2,750	2,750		
1994:													
Sales	-	-	-	-	-	-	(250)	-	(2,750)	-	-	250 at K500, 2,750 at K250	813
Births	-	-	-	-	-	-	-	750	-	-	2,750		
Transfers	-	-	-	-	-	500	(500)	(750)	2,750	(2,750)	(2,750)		
	-	-	-				750			2,750			
	50	=	=	3,500	-	500	500	750	-	2,750	2,750		
1995:													
Sales	-	-	-	-	-	-	(250)	-	(2,750)	-	-	250 at K500, 2,750 at K250	813
Births	-	-	-	-	-	-	-	750	-	-	2,750		
Transfers	-	-	-	-	500	(500)	(500)	(750)	2,750	(2,750)	2,750		
	-	-	-			500	750			2,750			
	50	=	=	3,500	500	500	500	750	-	2,750	2,750		
1996:													
Sales	-	-	-	(500)	-	-	(250)	-	(2,750)	-	-	250 at K500, 3,250 at K 250	938
Births	-	-	-	-	-	-	-	750	-	-	3,250		
Transfers	-	-	-	500	(500)	(500)	(500)	(750)	2,750	(2,750)	(2,750)		
	-	-	-		500	500	750			2,750			
	50	=	=	3,500	500	500	500	750	-	2,750	3,250		
1997:													
Sales	-	-	-	(500)	-	-	(250)	-	(2,750)	-	-	250 at K500, 3,250 at K250	938
Births	-	-	-	-	-	-	-	750	-	-	3,250		
Transfers	-	-	-	500	(500)	(500)	(500)	(750)	2,750	(2,750)	(3,250)		
	-	-	-		500	500	750			3,250			
	50	=	=	3,500	500	500	500	750	-	3,250	3,250		
1998:													
Sales	-	-	-	(500)	-	-	(250)	-	(3,250)	-	-	250 at K500, 3,750 at K250	1,063
Births	-	-	-	-	-	-	-	750	-	-	3,250		
Transfers	-	-	-	500	(500)	(500)	(500)	(750)	3,250	(3,250)	(3,250)		
	-	-	-		500	500	750			3,250			
	50	-	-	3,500	500	500	500	750	-	3,250	3,250		

Note - A "transfer" is a movement of a number from one column to another in subsequent years as cattle mature. For example calves are deleted from the calves column in 1986 and transferred to the one year old column for bred heifers.

MALTEX

MILK YIELDS LT. PER YEAR IN 300** DAYS

← LITRE 000's →

YEAR	DONOR COWS	HOST COWS	MILK COWS	BRED COWS	BRED HEIFERS 3 YEAR	BRED HEIFERS 2 YEAR	BRED HEIFERS 1 YEAR	CALVES	STEERS & CULLS 2 YEAR	STEERS & CULLS 1 YEAR	CALVES	TOTAL	INCREASE	FUNDS FLOW K'000
Annual Yield per cow	9,000	NIL	3,000	6,000	6,000	6,000	3,000	-	-	-	-	-	-	-
1985	225	-	300	-	-	-	-	-	-	-	-	525	● K329 *	173
1986	450	-	1,500	-	-	-	-	-	-	-	-	1,950	-	642
1987	450	-	3,300	-	-	-	-	-	-	-	-	3,750	-	1,234
1988	450	-	4,350	-	-	-	2,250	-	-	-	-	7,050	-	2,319
1989	450	-	4,500	-	-	4,500	2,250	-	-	-	-	11,700	-	3,849
1990	450	-	4,500	-	4,500	4,500	2,250	-	-	-	-	16,200	-	5,330
1991	450	-	2,250	4,500	4,500	4,500	2,250	-	-	-	-	18,450	-	6,070
1992	450	-	-	9,000	4,500	4,500	1,500	-	-	-	-	19,950	-	6,564
1993	450	-	-	13,500	4,500	3,000	-	-	-	-	-	21,450	-	7,057
1994	450	-	-	18,000	3,000	-	-	-	-	-	-	21,450	-	7,057
1995	450	-	-	21,000	-	-	1,500	-	-	-	-	22,950	-	7,551
1996	450	-	-	21,000	-	3,000	1,500	-	-	-	-	25,950	-	8,538
1997	450	-	-	21,000	3,000	3,000	1,500	-	-	-	-	28,950	-	9,525
													Steady State	

* This is subject to the new herd producing the same amount of butter fat content as is currently achieved by Spearhead.

** 300 days is normal annual lactation period per cow.

MALTEX

DAIRY PROJECT

HERD VALUATIONS JULY 31

YEAR	DONOR COWS	HOST COWS	MILK COWS	BRED COWS	BRED HEIFERS 3 YEAR	2 YEAR	1 YEAR	CALVES	STEERS & CULLS 2 YEAR	1 YEAR	CALVES	TOTAL	INCREASE
1985	200	-	50	-	-	-	-	-	-	-	-	250	250
1986	200	140	600	-	-	-	-	150	-	-	37	1,127	877
1987	200	20	1,050	-	-	-	225	150	-	75	37	1,757	630
1988	200	-	1,125	-	-	300	225	150	-	75	37	2,112	355
1999	200	-	1,125	-	300	300	225	150	-	75	37	2,450	338
1990	200	-	566	375	300	300	225	150	-	75	112	2,303	(147)
1991	200	-	-	750	300	300	225	150	-	225	112	2,262	(41)
1992	200	-	-	1,125	300	200	-	150	-	225	112	2,312	50
1993	200	-	-	1,500	200	-	-	150	-	225	137	2,412	100
1994	200	-	-	1,750	-	-	150	150	-	275	137	2,662	250
1995	200	-	-	1,750	-	200	150	150	-	275	137	2,862	200
1996	200	-	-	1,750	200	200	150	150	-	275	137	3,062	200
1997	200	-	-	1,750	200	200	150	150	-	275	162	3,087	25
1998	200	-	-	1,750	200	200	150	150	-	325	162	3,137	50
1999													

These are the values arising from the product of stock on hand x the accounts values as shown on the herd programme.

STOCK VALUATIONS FOR STANDARD VALUE FOR TAX

VALUES	200	200	200	200	200	150	100	50	-	100	50		
1985	10	-	40	-	-	-	-	-	-	-	-	50	-
1986	10	140	160	-	-	-	-	38	-	-	38	386	-
1987	10	20	280	-	-	-	75	38	-	75	38	536	-
1988	10	-	300	-	-	113	75	38	-	75	38	649	-
1999	10	-	300	-	150	113	75	38	-	75	75	836	-
1990	10	-	150	150	150	113	75	38	-	150	113	949	-
1991	10	-	150	300	150	113	50	38	-	225	113	999	-
1992	10	-	-	450	150	75	-	38	-	225	113	1,061	-
1993	10	-	-	600	100	-	-	38	-	225	138	1,111	-
1994	10	-	-	700	-	-	50	38	-	275	138	1,211	-
1995	10	-	-	700	-	75	50	38	-	275	138	1,286	-
1996	10	-	-	700	100	75	50	38	-	275	138	1,386	-
1997	10	-	-	700	100	75	50	38	-	275	163	1,411	-
1998	10	-	-	700	100	75	50	38	-	325	163	1,461	-
1999	10	-	-	700	100	75	50	38	-	325	163	1,461	-

These are the values arising from the product of stock

MALTEX

COMMERCIAL CATTLE

HERD PROGRAMME

BWANJE

		COWS K200	HEIFERS 2 YEAR OLD K150	HEIFERS 1 YEAR OLD K100	CALVES K50	STEERS 1 YEAR OLD K100	STEERS CALVES K50	CASH FLOW K'000	HERD NO.	HERD VALUE K'000
ACTUAL										
DECEMBER 1983	Nos.	192	79	20	40	20	40			
PROJECTED										
JULY 1984	Nos	250	20	40	60	60	40		470	73
PURCHASES	Nos	50						(10)		
SALES	Nos	(20)				(60)		20		
BIRTHS	Nos				125		125			
TRANSFERS	Nos		(20)	(40)						
		20	40	60	(60)	40	40			
1985	Nos	300	40	60	125	40	125		690	86
SALES	Nos	(40)	(10)			(40)		22		
BIRTHS	Nos				125		125			
TRANSFERS	Nos		(40)	(60)						
		40	60	125	(125)	125	(125)			
1986		300	50	125	125	125	125		850	105

MALTEX

DEFERRED TAX CALCULATION

(Expressed in thousands of Malawi Kwacha)

	Qualifying Assets			Tax		Stock Valuations						
	Cost	Depreciation	NBV	WDV	Difference	Accounts	Tax	Difference	Change in year	Total Difference	Tax at 50%	Change in year
1985	531	54	477	391	86	250	50	200	200	286	143	143
1986	1213	167	1046	889	157	1127	386	741	541	898	449	306
1987	1362	304	1058	891	167	1757	536	1221	480	1388	694	245
1988	1395	444	951	839	112	2112	649	1463	242	1575	787	93
1989	1395	584	811	772	39	2450	836	1614	151	1653	826	(39)
1990	1395	513	882	788	94	2303	949	1354	(260)	1448	724	(102)
1991	1395	521	874	764	11	2262	999	1263	(91)	1373	686	(38)
1992	1395	542	853	740	113	2312	1061	1251	(12)	1364	682	(4)
1993	1395	679	716	671	45	2412	1111	1301	50	1346	673	(9)
1994	1395	819	576	613	(37)	2662	1211	1451	150	1414	707	(34)
1995	1695	763	932	893	39	2862	1286	1576	125	1615	807	101
1996	1695	876	909	872	37	3062	1386	1676	100	1713	856	49
1997	1695	822	873	841	32	3087	1411	1676		1708	854	(2)
1998	1695	974	721	767	(46)	3137	1461	1676		1630	815	(39)
1999	1695	1129	566	704	(138)	3137	1461	1676		1538	769	(46)
2000	1695	1073	622	723	(101)	3137	1461	1676		1575	787	(18)
2001	1695	1096	599	710	(111)	3137	1461	1676		1565	783	(4)
2002	1695	1132	563	689	(126)	3137	1461	1676		1550	775	(8)
2003	1695	1284	411	622	(211)	3137	1461	1676		1465	732	(43)
2004	1695	1439	256	566	(310)	3137	1461	1676		1366	683	(49)

M A L T E X

INCOME TAX COMPUTATION

(Expressed in thousands of Malawi Kwacha)

	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04
Profit (loss) per accounts	(435)	(277)	(541)	(235)	261	518	1,633	2,631	2,837	2,792	3,075	3,688	4,088	4,138	4,230	4,307	4,379	4,470	4,569	4,690
Add:																				
Depreciation	56	143	197	230	230	230	230	230	230	230	245	245	245	245	245	245	245	245	245	245
Amortization		26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Deduct:																				
Herd standard value add back	(200)	(541)	(480)	(242)	(151)	260	91	12	(50)	(150)	(125)	(100)								
Fish ponds	(20)	(280)	(300)	(300)							(20)	(280)	(300)	(300)						
Capital allowance	(178)	(142)	(160)	(88)	(67)	(201)	(159)	(155)	(72)	(58)	(267)	(159)	(162)	(77)	(63)	(198)	(151)	(152)	(70)	(56)
Taxable profits (losses)	(777)	(1,071)	(1,258)	(609)	299	833	1,821	2,744	2,971	2,840	2,934	3,420	3,897	4,032	4,438	4,380	4,499	4,589	4,770	4,905
Losses brought forward		(777)	(1,848)	(3,105)	(3,415)	(3,416)	(2,583)	(762)												
Net tax loss position	(777)	(1,848)	(3,106)	(3,715)	(3,416)	(2,583)	(762)	1,982	2,971	2,840	2,934	3,420	3,897	4,032	4,438	4,380	4,499	4,589	4,770	4,905
Liability at 50%								990	1,486	1,420	1,467	1,710	1,949	2,016	2,219	2,190	2,250	2,294	2,385	2,452

APPENDIX 6

CAPITAL EQUIPMENT AND LAND DEVELOPMENT PROGRAM

Fixed asset requirements for each sector of the project have been detailed in Section VIII of the study.

Land usage has also been detailed in Sections V and VI. Herd enhancement and reconciliation are also covered comprehensively in Sections VI and VII and Appendix 5.

APPENDIX 7

SPEARHEAD ENTERPRISES LIMITED
(IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON
(selected estates)

MUBANGWE NORTH

	MM
1982:	
August	-
September	-
October	18.00
November	128.10
December	71.05
1983:	
January	135.04
February	147.10
March	97.90
April	22.20
May	16.00
June	-
July	-
Total	635.39

SPEARHEAD ENTERPRISES LIMITED (IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

MUBANGWE SOUTH

	MM
1982:	
August	4.00
September	-
October	24.00
November	173.50
December	151.00
1983:	
January	126.00
February	130.00
March	71.00
April	54.50
May	16.00
June	-
July	18.00
Total	768.00

SPEARHEAD ENTERPRISES LIMITED
(IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

KHOLA FARM

	MM
1982:	
August	-
September	-
October	115.57
November	97.03
December	317.50
1983:	
January	185.93
February	237.49
March	233.93
April	99.06
May	-
June	-
July	-
Total	1,286.51

SPEARHEAD ENTERPRISES LIMITED
(IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

MBWABWA FARM

	MM
1982:	
August	-
September	-
October	12.00
November	165.00
December	369.00
1983:	
January	176.00
February	181.00
March	215.00
April	110.00
May	-
June	-
July	-
Total	1,228.00

SPEARHEAD ENTERPRISES LIMITED
(IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

MCHINJI ESTATE

	MM
1982:	
August	-
September	-
October	67.31
November	196.85
December	417.83
1983:	
January	486.41
February	-
March	294.64
April	88.90
May	-
June	-
July	-
Total	1,551.94

SPEARHEAD ENTERPRISES LIMITED
(IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

NGOMBE ESTATE

	MM
1982:	
August	-
September	-
October	15.00
November	115.00
December	91.00
1983:	
January	213.00
February	310.00
March	143.00
April	116.00
May	-
June	-
July	-
Total	1,003.00

SPEARHEAD ENTERPRISES LIMITED (IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

NAMITETE SETTLEMENT SCHEME

	MM
1982:	
August	-
September	-
October	-
November	104.80
December	131.90
1983:	
January	137.00
February	167.90
March	110.00
April	75.00
May	5.00
June	-
July	-
Total	731.60

SPEARHEAD ENTERPRISES LIMITED
(IN RECEIVERSHIP)

RAINFALL STATISTICS FOR 1982/83 SEASON

BWANJE FARM

	MM
1982:	
August	-
September	-
October	17.00
November	100.00
December	185.00
1983:	
January	112.00
February	178.00
March	47.00
April	24.00
May	-
June	1.50
July	-
Total	664.50

IRRIGATION POTENTIAL

Comprehensive details are given in the contemporaneous study perfoımed for the AFRAM-FARM project, and in the separate 1982 study of Bwanje estate.

The phase I livestock development program can be accomodated by the existing, or planned and costed, water resource development on the relevant estates.

APPENDIX 9

UNIVERSITY OF MALAWI:

Bunda College of Agriculture, Lilongwe. Bunda College of Agriculture has several areas of expertise relative to this project that may be drawn upon for advisory and consultation services as well as assistance in testing of various crops for production purposes. Among the important departments are: (1) Agricultural Engineering with a faculty (lecturer and staff) of 13 that cover soil and water engineering, farm power and machinery, farm structures, and farm mechanization, (2) Crop Production, with a faculty (lecturers and staff) of 16 that includes plant breeding, agronomy, soil chemistry, soil science, plant pathology, entomology, plant physiology, horticulture and pasture agronomy, and (3) Livestock Production with a faculty of 12 that covers animal breeding, animal health, animal nutrition, livestock production, animal physiology, agricultural chemistry and poultry and dairy management.

Bunda College of Agriculture with Dr. O.T. Edge as Director is working with Michigan State University on a Coordinated Bean/Cowpea Research Project, jointly sponsored by the U.S. Government and the Malawi Government. Since beans may be an important crop ultimately in this project information gained from the Bean/Cowpea Research Project could be very useful in integrating this crop into a rotation sequence of crop production.