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TECHNICAL ASSISTANCE TO THE MINISTRY OF INDUSTRY
DP/UGA/83/001

UGANDA

Technical report: Assistance in improving the performance of
Uganda Animal Feeds Ltd.*

Prepared for the Government of Uganda
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of A. W. A. Burt, animal feed adviser

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Vienna

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RECOMMENDATIONS

The Consultant recommends that:-

(A) The Government of Uganda and the appropriate official agencies:-

- (1) Offer the shares in UGMC held by the Government to the other shareholders in proportion to their existing shareholdings at a realistic price, that any shares not so taken up should be offered to private investors with priority given to UGMC management and workers.
- (2) Encourage the production of oilseeds by appropriate pricing and other means because of the national requirements and potential for export.
- (3) Carefully restrict export of soya beans involved in barter deals with other Governments to ensure adequate supplies are retained in Uganda, especially as soya is a partial replacement for Nkejje which is likely to become more difficult to obtain.
- (4) Encourage UGMC to explore the possibility of importing cottonseed from Tanzania and the export of surplus wheat bran.
- (5) Allow Uganda Feeds to purchase spare parts and premixes under Open General Licence, because of the upsets caused by spasmodic foreign exchange allocations to forward planning.
- (6) Carefully review the real requirements for increased feed production capacity and its location before supporting further investment in feed manufacture.

(B) The Management of U.G.M.C. and Uganda Feeds Ltd.:-

- (1) Adopt a more positively aggressive commercial attitude to counter increasing competition.
- (2) Improve the marketing of animal feed by -
 - (a) Paying more attention to pricing policies taking account of the market situation of individual products.
 - (b) Offering special terms to key customers e.g. hatcheries
 - (c) Mill management visiting customers on a planned basis to obtain information about product performance and customer attitudes, to pass on information about products and prices and to generally improve communication with customers.

- (d) Simple inexpensive advertising and use of the press.
 - (e) Offering products not made by competition e.g. chick crumbs.
 - (f) Actively developing new products and organising supply of complementary products e.g. drugs, day old chicks etc.
 - (g) Appointing a Marketing Manager (Animal feeds) whose sole task would be marketing feeds, working with the Feed Mill management
- (3) Improve customer service by:-
- (a) Ensuring that products are available at all times at Jinja and the Kampala depot.
 - (b) Ensuring adequate and rapid communication between depot and mill.
 - (c) Increasing the limit for cash payment to 7t of any feed.
 - (d) Accepting personal cheques from regular customers in good standing.
 - (e) Moving feed sales from the present sales office to the cash office next to the finished feed store.

Many of these recommendations have already been implemented.

- (4) Immediately establish a depot or other substantial distribution centre at Mbarara, stocked with cattle feed in view of the heavy concentration of cattle in that area.
- (5) Produce a new product, cattle feed nuts, for sale initially only in W. Uganda, based on bran and pollard to use up surpluses and enable Uganda Feeds Ltd. to sell a highly competitive product in a new trading area in spite of the transport cost.
- (6) Undertake carefully controlled sales of the current excess of bran and pollard to farmers and competing compounders and explore the possibilities of export.
- (7) Adopt the system of pricing animal feeds set out in this report as a basis for regular monthly reviews of the selling prices of individual products.
- (8) Establish their future supplies of oilseed cake more firmly by making serious enquiries about the possible purchase of the Iganga Oil Mill and/or establishing alternative processing arrangements with the Mahdvani plant and/or completing the outline feasibility study presented in this report on the establishment of oilseed processing and vegetable oil refining within U.G.M.C.

(C) The Management of Uganda Feeds Ltd.

- (a) Make every effort to obtain any locally available fish meal or fish offal.
- (b) Attempt to stimulate the local supply of burnt bone to replace imported dicalcium phosphate.
- (c) Pay particular attention to the accurate expression of the formulation in the product and ensure that supervision is adequate to guarantee the inclusion of premixes and minerals in all products.
- (d) Review the proposed requirements for additional storage for feed raw materials (5000t) as production rises in view of the factors discussed in this report.
- (e) Thoroughly assess the appropriate scale and location of any substantial additional production capacity for feed manufacture beyond that of the existing plant (including the modifications and additions covered by the DANIDO proposals) before putting expansion into effect.

(D) UNIDO and/or other aid agencies:-

- (a) Fund the short-term training previously recommended for the Mill Manager and Financial Controller from sources other than the project in view of the urgency of the requirement and its low cost.
- (b) Consider whether or not the oilseed processing industry requires any aid to improve its facilities and operations.
- (c) Give serious consideration to the use of split missions when providing consultancy to the general or technical management of particular industrial operations.

INTRODUCTION

This was the last visit made by the consultant to the Uganda Grain Milling Co.'s Uganda Feeds Ltd. mill at Jinja under the UNIDO project following a short visit in 1983 and working visits in June 1986 and Jan - March 1987. This mission lasted from Feb.4th to Mar.6th 1988. The mission was scheduled for 30 days, and although the consultant spent longer in Uganda, this was not sufficient to satisfactorily cover all the aspects mentioned in this report.

The mission was timely. The consultant was very aware that he had not been able to do anything effective about marketing of feeds during previous visits simply because all feed produced disappeared very rapidly into the hands of customers and the problems were those of allocation rather than marketing. Now all is changed, production easily exceeds sales and other mills are producing, providing some competition to Uganda Feeds. This is a pleasing development, indicating that the supply position is becoming slightly easier, although the supply of day old chicks is causing some concern and has probably resulted in some reduction in the size of the market for poultry feeds. In consequence sales by Uganda Feeds have fallen below potential output and the consultant devoted most of his visit to attempting to improve marketing and customer service by this Company.

Much of this report is therefore devoted to this topic. In summary, this Company has overcome many, but not all, of its production problems, allocation is no longer relevant and the Company must now become commercially competitive in the fullest sense.

In addition to examining customer service and the marketing of feeds, the consultant visited the Mbarara area to assess the potential and problems of expanding cattle feed sales into that area, and suggested a new product for the purpose. A system of pricing feeds was proposed to ease the task of management in assessing production costs, estimating expected profit margins and adjusting prices according to market considerations.

This report also includes some assessment of oilseed milling in relation to the operation of Uganda Feeds, a brief review of the feed supply position, and of present and future production capacity and raw material storage.

The four reports in 1983, 1986, 1987 and this report, taken together, provide some measure of the changes in the problems confronting Uganda Feeds Ltd., and the progress made by it over the last 5 years. The consultant wishes this Company and UGMC well and expects that its progress will continue.

MANAGEMENT

The most urgent present need of Uganda Feeds is to improve its customer service and marketing and some noticeable progress was made in these fields during this mission. However, much remains to be done to improve these aspects of the whole Company and this must be achieved if the Company is to flourish as a fully competitive commercial operation in the future.

It is important to put this need in its historical context. Since 1984, UGMC has been substantially rehabilitated by the efforts of its management, being brought from an uncontrolled and unprofitable to a controlled and profitable concern. This has been done by giving priority to financial and physical controls on the movements of funds and raw materials, and priority to production. The principal task of the Marketing/Sales Department has been to fairly allocate scarce supplies of product between demanding customers. This has now changed, not only in animal feeds, but in maize meal, in both of which production can readily exceed current demand and real competition exists. Management has therefore to accomplish the task of changing its stance to not only control of the business, but also to become fully competitive in the market place. This means that it will have to spend much more time on customer service, pricing, distribution and all aspects of marketing than has previously been the case.

Parts of this report may seem to be excessively critical, even too demanding, requiring standards of management usually, but not always, seen in developed countries. This is deliberate, as the performance of this management team within the consultant's experience has been such as to lead him to believe that they can make the necessary effort and successfully accomplish the task that lies before them.

Privatization

The question of privatization of the 47% shareholding in UGMC currently owned by the Government of Uganda, following its compulsory acquisition from Mercat Ltd. in 1974 has recently been the subject of some discussion. In view of the need for the group to become fully commercial and competitive in every sense, the consultant feels that the sensible disposal of this shareholding could have a beneficial and psychologically stimulating effect upon the Company and its management. The most sensible means of disposal would

seem to be to offer this shareholding to the other existing shareholders in proportion to their present holdings at a sensible commercial valuation. Any shares not taken up in this manner could then be offered to Uganda private investors, with priority given to the Company's management and workers. The end result could be that many more individual Ugandans than heretofore acquire a positive interest in the long-term success of UGMC. In the view of the consultant the package would be completed by negotiating settlement of the outstanding claim by Mercat for some sensible compensation for its loss of assets when this shareholding was compulsorily taken from it.

Training

The report on the previous mission recommended that the potential Laboratory Superintendent, the Feed Mill Manager and the Financial Controller should receive short periods of training overseas. The Laboratory Superintendent was receiving such training in the U.K. during the course of this mission, and after its completion, the consultant was able to provide her with a short period of experience in least cost computer formulation of feeds.

Unfortunately for various reasons, the training fellowships intended for the Financial Controller and the Feed Mill Manager, could not be covered by the project funds. The performance of these two Managers is a vital component in the success of the whole operation and there is a very great need for both to gain experience of the manner in which their functions are tackled in a fully competitive commercial environment. In consequence, we strongly recommend that UNIDO makes every possible effort to fund these short-term fellowships for their training in the U.K. from other sources, particularly as UGMC have expressed their willingness to contribute to the cost of this exercise by paying air fares, providing that these can be paid in local currency, and as no training fees are being demanded by the Companies involved.

THE FEED INDUSTRY IN UGANDA

Requirements for Manufactured Feed

It is difficult to obtain any reliable estimate of the present and likely future requirements for manufactured feed in Uganda. It has been suggested that this could be 50,000 t/year, but this is certainly not true at the moment when production, sales and requirements probably total between 15,000 and 20,000 t. The requirement appears to have fallen over the past year because of, what one hopes, are temporary reasons, namely a shortage of day old chicks which has seriously affected the poultry industry leading to delayed replacement and reduction in numbers of laying birds and lack of broiler chicks. Since most manufactured feed is used for poultry, this has affected the whole industry to a degree which cannot be satisfactorily estimated. The only other significant feed requirement arises from the dairy industry. This is likely to increase with the importation of numbers of Friesian cattle from Europe, as these animals and their crossbred offspring will respond to better feeding, and the price of milk in Kampala is such as to encourage this practice. A further extension of this particular market will follow once the problems of shipping milk from S.W. Uganda to the main centre of consumption have been overcome (see below). The pig sector is currently very small as African Swine Fever has had a severe effect and the industry has not recovered. It is likely to expand somewhat in the future if only to meet the demands of what one hopes will eventually be an expanding tourist industry.

Raw Material Supply

Compared with the rest of Africa, Uganda is in quite a favourable position with regard to supplies of raw materials for animal feed. The basic cereal maize, together with some sorghum is fairly readily available, maize bran and broken maize are available as by-products from maize milling, while wheat bran and pollard are available within UGMC from its wheat milling. Oilseed cakes, while available, are not yet in sufficient supply to avoid shortages from time to time. The output of seed cotton and hence the cottonseed cake has diminished in the recent past. While more sunflower has been produced,

particularly in 1985-7, production has been affected by security problems in the major area of production. The success story has been in soya bean production which has risen substantially over the last few years, to the point where reasonably adequate supplies of soya bean are currently available to the Uganda Feeds operation. The stimulus of price and a ready commercial market for the product appears to have been responsible for this.

Because of the requirements for vegetable oil in Uganda and the requirement for oilseed cake, we recommend that production of oilseeds should continue to be stimulated in a co-ordinated manner taking account of national requirements for oil, cotton fibre and oilseed cakes, and the export potential of some of these products. While we are aware of potential barter deals of exported soya bean in exchange for sugar and other materials, the amounts of soya bean traded in such deals must be restricted to a level which ensures that adequate supplies remain within the country to properly cover requirements for animal feed. We strongly recommend that such restrictions be applied.

An adequate supply of properly processed soya bean cake is made doubly important by the difficulties encountered in obtaining adequate supplies of local sundried fish (Nkejje) (*Hoplochromis*) for feed production. In late 1987, and January 1988 use of this material in feeds produced by Uganda Feeds was somewhat excessive, simply because adequate supplies of oilseeds, particularly soya beans, were not available. The supply of Nkejje fluctuates, being subject to restrictions on fishing in the lake and demands for crossborder trade as human food into neighbouring countries. Some is occasionally shipped into Uganda from neighbouring countries bordering Lake Victoria. These restrictions on supply are such as to be likely to limit the supply of Nkejje particularly as feed production rises again in the future. In the longer term the supply of Nkejje from Lake Victoria may well diminish to very low levels. The introduction of Nile Perch into the lake has resulted in a substantial diminution, indeed practical wipeout of other species including the *Hoplochromis* fishes which provide Nkejje. (See Hughes J. Fish Biol. 1986 29, 541-548) However, fish processing plants are being built in Jinja, one of which includes a small fish meal plant. Uganda Feeds should keep in touch with this development, purchase any fish meal product and seek to find ways of using any fish offal in excess of that processed into fish meal e.g. by making fish silage followed by absorption of the protein liquor on to wheat bran before incorporation into diets.

Regular importations of fish meal, using scarce foreign currency, will be an inevitable requirement, unless the usage of fish in feeds can be restricted by the availability of a plentiful supply of soya bean cake. We recommend that export limits be imposed based on this requirement and estimates of the probably limited availability of local fish.

It appears that substantial amounts of cottonseed are presently stored/available in Northern Tanzania (Mwanza), which will take a very long time to move to Dor Es Salaam for export or use. There exists a regular shipping service between Jinja and Mwanza.

We recommend that U.G.M.C. be encouraged by the Government of Uganda to explore the possibility of purchasing some of this material and/or reciprocal trade in feed materials (e.g. the present local excess of wheat bran - see P 24)

Other Feed Materials

- (1) Cassava is available and has been used in the past. Although it is relatively cheap, its use to replace maize increases the requirement for oilseed cakes to replace maize protein, so that substantial inclusion in feeds is not suggested at the moment.
- (2) Molasses. With the re-start up of the local sugar industry, molasses will be produced, but it is sensible to use this material to supply human needs e.g. for fermentation to alcohol with corresponding reduced need for importation.
- (3) Limestone. Providing the supply can be better organised and crushing facilities improved, limestone is available and need not be imported. Lake shells are also a lower grade source of calcium. Use of both these materials increase wear on the grinder hammers and slow throughput. It is expected that they will be preground in Uganda Feeds in future, using the secondary grinder system.
- (4) Salt. is available locally.
- (5) Dicalcium Phosphate. Some of this material has been imported and is currently being used by Uganda Feeds. We recommend that efforts be made by pricing etc. to stimulate the acquisition of locally produced burnt bone to provide an alternate source of P.

(6) Premixes - These continue to be imported, and subject to delays and imbalances in supply v usage occasioned by the spasmodic allocation of foreign exchange.

General - The feed raw material supply position in Uganda is reasonably good and appears to be capable of further improvement in the future.

Requirements for foreign exchange for the importation of premixes etc. by Uganda Feeds are limited and we recommend that every effort be made to get these requirements covered by an Open General Licence.

Competition in Feed Production

As far as we can ascertain, feed mills which are presently producing feeds in competition with Uganda Feeds Ltd. are listed below. The total capacity of these competing mills is approximately 14t/h i.e. about twice the current rate of production of Uganda Feeds Ltd. However, the latter is already organised to operate on a two shift 24 hr. basis, so that the effective total capacity of the feed industry is about 50,000t/year of which Uganda Feeds could produce 25,000-30,000t. In this circumstance, the need for further increases in capacity does not appear to be very pressing. At the moment raw material shortages in Western Uganda and absence of any substantial unsatisfied demand appears to be restricting total feed output. Many of the smaller mills appear to be only producing feed to order.

We recommend that the appropriate Government agencies should carefully review the real requirements for increased feed production capacity and its location before supporting further investment in feed manufacture.

A further competitive factor has been the rise in home mixing. Some organisations in Kampala now distribute diet sheets giving suggested feed mixes for different classes of livestock. Many of the necessary ingredients are now available for sale in retail shops in Kampala. If manufactured feed is scarce, of low quality and expensive due to substantial retailers margins, then home mixing provides an alternative which some small feed users will, and are attempting, to use. Its attractions diminish when good quality feed are available at reasonable prices.

List of Competing Mills

1. Affi Feeds, Masaka	2 ton per hour <u>Max.</u>
2. Tatanda Fish Enterprises, Kampala	1 " " "
3. Hybrid Feeds, Jinja	7 " " day
4. Feedstuffs(U) Ltd. Jinja	5 " " "
5. Mukono Poultry Farm. Mukono	1 " " hour
6. Kabanyolo University Farm	1 " " "
7. Kiigo Feed Mill (U.Prisons) Kampala	2 " " "
8. Kenana Feeds (Bushenyi)	2 " " "
9. Tropical Farmers, Kampala	1 " " "
10. Paquebot Farm, Kasangati	?½ " " " for own breeding unit.
11. Kansanga	?

Possible Big New Mills to be Built

Kasenya Farmers - UDB/USAID Loan

Hoima (W.Lake)

- (Mbarara - Large poultry development, hatchery - and feed mill.
? (Ministry of Animal Industry - Organisation to run 2 large regional poultry projects in W. Uganda supported by BDEAA (17M \$?) aimed at producing 40,000 eggs per week.

This schedule indicates that competition is increasing and will continue to increase particularly in Jinja, the West and Kampala.
Uganda Feeds must fight its competition more positively and look for new markets.

PRESENT STATE - UGANDA FEEDS LTD.

Present Rate of Production and Sales

Rates of production and sales since the last mission in January - March 1987 have been as follows:

	1987	Feb.	Mar.	Apl.	May	June	July	Aug	Sept.
Production (t)	1167	1333	924	896	1099	1131	1075	823	
Sales (t)	1091	1278	1039	721	1146	1166	1074	839	
		Oct.	Nov.	Dec.	Jan 1988		Feb.		
Production		702	681	1059	986		780		
Sales		734	703	752	743		762		

Apart from May sales, which were affected by the currency change, sales of feed exceed 1000t/month from Feb. to August 1987. Sales fell in Sept. and Oct. to 700-750t/month and have remained at about that level showing a small increase in Feb. 1988 with the opening of the Kampala depot and the changes in customer service and marketing which then occurred. The fall in sales during Sept. and Oct. appears to have been due to several reasons. First, the total market was reduced due to lack of day old chicks to replace existing poultry stocks. Second, competition started to be noticeable. Finally, Uganda Feeds not only suffered from shortages of oilseed cakes and Nkejje which restricted its production, but also suffered quality problems, particularly due to using soya beans which had not been properly heat treated. This was due to failure in the operations of the neighbouring oilseed processing plant. The consultant expects that production and sales will now increase with expansion of the poultry industry and increased marketing effort by the Company.

State of Present Feed Plant

There has been little change in this respect since the last mission. In February 1987 a pro-forma invoice for spare parts from Simon-Barron Ltd. was finalized and some mill hammers were delivered by air in the Spring of 1987, prior to any letter of credit being issued, in order to keep the mill running. The delays in obtaining the necessary foreign exchange were such that at the conclusion of this mission no further spare parts had been received, although an air freighted consignment of mill hammers and screens was expected at any moment. Because of this lack of spares, production has been restricted, breakdowns have been frequent and the situation has been exacerbated by quite frequent power cuts. In one sample week during the mission 30% of potential production was lost due to breakdowns and maintenance. It is fortunate, in

some ways, that sales have fallen to levels where lack of production has not been a restriction. Adequate spares and adequate power should allow production to rise substantially and easily achieve the 20,000t/year target which was expected at this time from the projections made during the last mission.

Management Problems in the Feed Plant

The consultant found this somewhat difficult to assess because the plant was under no particular pressure to produce at the time of his visit. Nevertheless it is clear that problems exist and must be tackled by the feed mill management, because of their effects upon product quality. The following require consistent attention and checking:-

- (1) The formulation in use for any particular product at any one time must be properly calculated and checked by the Nutritionist and it must be correctly copied on the mixing sheet. This is the responsibility of the Nutritionist checked by the Mill Manager.
- (2) There have been cases where salt and/or premixes have been omitted from batches of product with consequent detrimental effects upon quality and upon the reputation of Uganda Feeds Ltd. Dishonest disposal of the materials concerned has undoubtedly played a part in bringing this about. Management must take every possible step to prevent this happening.

These problems appear to arise from insufficient supervision, particularly when the night shift is operating. The operation must be tightened up in readiness to produce properly at much higher rates than at present. The consultant recommends that management at all levels puts substantial effort into correcting this situation including the use of severe disciplinary measures where these are appropriate.

Future Development of the Feed Plant

During the mission, the consultant was able to discuss with management, proposals which are being prepared by DANIDA to improve storage and production facilities in the feed plant. It was agreed and proposed to the consultant engineers that the additions should be:-

- (1) Provision of a weighbridge (see recommendation in earlier reports).
- (2) Replace existing bogging unit with larger capacity hopper and bag stitching unit.

- (3) Instal existing bagging unit to bag preground material from secondary grinder.
- (4) Add 8 x 10 x 20t blending bins and 2 x 250t maize silos to the existing plant to largely replace the present hand weighing and tipping system.
- (5) Provide 2 small weighing machines for weighing salt/premixes.
- (6) Provide 2 years supply of spare parts.

With these modifications, the output of the existing mill should be able to rise easily to 25,000 to 30,000 t/year. It is envisaged in the corporate plan that this level of production will be reached by July 1991, but the consultant hopes that this level will be achieved earlier.

Longer-Term Development

There are proposals to substantially increase the present storage capacity for raw materials at the mill beyond the additional 700t. arising from the new maize silos and blending bins. This should be the subject of more detailed study before it is put into effect. The proposals envisage the addition of a further 5000t of storage in addition to the 600 to 700t additional storage in the DANIDA proposals.

The present raw material store holds 1500t., as does the finished product store. Some raw materials are currently stored in the latter in addition to the finished product. When output rises to 30,000t/a this will become less feasible as 1500t. finished product storage will then equate to about 2½ weeks production. However, with the establishment of the depot in Kampala and the possibility of further depots, an increasing proportion is being and will be shipped very rapidly from Jinja after manufacture, so that some continuing usage of the finished product store for raw materials can be envisaged. In addition some raw materials can be stored in the existing mill and the pressure on this space will diminish with the advent of the new blending plant replacing practically all the existing hand tipping. The principal changes in pressure on raw material storage will arise in the future away from the feed mill for the following reasons:-

- (1) Bron and Pollard - currently excess is being produced which is putting pressure on existing storage facilities by the wheat mill. In future, as feed production rises, or alternative means of disposal

- come into effect, pressure on this storage should become less.
- (2) Materials stored in the Bread plant. Most of these will obviously have to be removed within 12 months as the plant is rehabilitated and brought into operation.
 - (3) Oilseed - principally soya beans - purchased in two seasons per year, which have to be stored on site as beans, shipped out for processing and then stored as soya bean cake. At the moment, quantity stored is around 1000t. In future assuming a total output of feed for poultry and pigs of 20,000t/a, including 15% soya bean cake, maximum soya bean requirement will be about 3000 - 3500 t. annually. However, in one way or another oilseed processing facilities available to process these beans will have to expand considerably to cope and storage of some, or most of these beans, at the relevant oilseed mills can be envisaged e.g. at Madvoni or in any new facility established by UGMC.
 - (4) The old mill used sometimes for storage needs rehabilitation to make it into secure storage. We believe that UGMC management intend to proceed with this rehabilitation, which will noticeably increase the available storage.
 - (5) Maize. At the moment, substantial amounts of maize have to be acquired and stored at Jinja for exchange with wheat obtained through the World Food Programme. Substantially increased storage for maize elsewhere at Jinja and is proposed under the DANIDA programme. Will this have any effect upon storage requirements of UGMC?
 - (6) The very high ratio of stored raw materials relative to rate of production in the present animal feed operation is in part a hangover from the time when raw materials were very scarce. This may continue to some extent and in times of high inflation substantial storage can be profitable. With more plentiful raw materials, however, and relatively stable prices long term storage can be very expensive.

A rough preliminary estimate of the raw material and storage requirements for 30,000t. feed is given below:-

<u>Raw Material</u>	<u>Tons/year in 30,000t.feed</u>	<u>Storage Required</u>	<u>Remarks</u>
Maize	15,700	4000	3 months supply ?
Bran	2000	100	Use as produced
Pollard	1600	100	" "
Maize Bran	2000	200t.	Almost continuous supply
Lime	1400	500t.	Probably excessive storage
Dical Phosphate/Bone	150	100t.	If most imported
Salt	150	100t.	If spasmodic delivery
Soya	3000	1000t.	Max. remainder at oil mills
Cotton	1000	500t.	Seasonal supply ?
Nkejje	1000	300t.	Allowing for imported fish me
Sunflower	2000	500t.	Could be less with storage at oil mills.

Apart from the maize storage requirement, 3200t. of the storage appears to be reasonably ample to cover the storage requirements for 30,000t.feed. This provisional assessment should be reviewed and re-reviewed in detail when amendments to storage are under consideration.

Expansion of Production Beyond 25,000 - 30,000t.

With regard to the expansion of production in the future, we doubt if the Jinja site should be so expanded. Any further expansion would probably involve the installation of a second production line.

It seems more probable that with competing mills in existence in the Kampala/Jinja area, that future expansion in production would happen by the installation of satellite mills in other areas of Uganda. These would be served by supplying concentrates produced at Jinja for admixture with local grain and byproducts. We recommend that the position be thoroughly assessed before any plans are implemented to expand the output of the Jinja mill beyond that level which can be achieved by relatively minor further modification to the existing plant.

MARKETING OF ANIMAL FEED

Marketing embraces all those activities which contribute towards enhancing the sale of the product. It is an activity involving the whole organisation and not just the Marketing Department. Mental attitude is as important as physical activity. Lack of appropriate attitudes to marketing and customer service is one of the biggest difficulties currently affecting Nuvita Feed Sales. While it is difficult to change the attitudes of a whole organisation from controlling allocation of scarce feeds to that of aggressive competition for customers, such a change must be made immediately if this business is to flourish.

Image

The image of a company can be both positive and negative. At the moment the image of Nuvita Feeds is largely negative, as it is ostensibly noted for being Government owned, producing high priced feeds, lack of supply on some occasions, and cumbersome and obstructive customer service procedures. These matters must be rectified immediately. The image needs to be that of an aggressively competitive commercial company taking an active interest in the needs of its customers, providing high quality feeds with a good fast and reliable service to customers.

Another negative element in the present marketing of animal feeds is that this activity is a part-time function of the marketing department which has been primarily concerned with the sale of maize meal and wheat flour. Smart young men who may be totally appropriate for the latter activity can give the wrong impression to the farmer customer.

Price and Quality

It is the job of the Nutritionist and the Mill Management to produce feeds of a consistent quality, while coping with variations in the supply of raw materials. Pricing is based on cost of raw materials plus other direct and processing costs plus profit margin. Pricing of Nuvita Feeds up to until now, has been entirely automatic, in total disregard of the marketplace. This has been possible because limited supplies of feed, plus ever continuing inflation, have ensured that all feed produced was sold, often very quickly. This situation of almost total lock of competition no longer exists. Much attention will have to be paid from now on to general price levels and prices

of particular products in particular situations as part of the marketing policy. Price structures will no longer be invariable. Fortunately, it does not appear that competition is yet so fierce that very low margins must be contemplated in order to gain market share. However, pricing policy must be aggressive to gain market share.

The general retail market for feeds appears to be one in which the lowest price attracts buyers. The concept of value for money, using feed of reasonable quality at a reasonable price appears to be difficult to get across to customers in the markets in which most of Nuvita's production is currently sold. Such concepts are more appropriate to more sophisticated producers. These exist in Uganda and are likely to increase in number. Direct sales to such producers must form the basis of Nuvita's further expansion. (Later contact with some of these suggested that they are very aware of quality).

A controlled flexibility of pricing allows special deals to attract important customers e.g. a discount on breeder feeds to all main suppliers of chicks might have benefits in terms of publicity - encouraging the chick purchaser to feed them on Nuvita. Discounts for quantity should also be considered.

To summarize, price must be seen as an important element of marketing and a proper strategy worked out applied and reviewed at each price change.

(A discount scheme allowing a 5% price reduction on all orders of 10 x 70Kg bags or more was started on Feb. 24. 1988)

Supply as a Marketing Weapon

This needs careful consideration. It can be applied in times of shortage, when every effort should be made to continue supplies to loyal customers, who are encouraged to book feed in advance. These customers would include all loyal former customers and the best of the agents whose needs should receive priority, thus retaining the core of the mill's market in times of scarcity. It is hoped that this will not be necessary in the future, but the matter must be considered.

Technical Services to Customers/Technical Selling/Flow of Information

At the moment there is no regular contact between customers and those marketing and manufacturing feeds. There is no positive attempt to find out about the problems of the customer, no policy of visiting customers, and information about the price of feed ingredients and animal products is obtained almost entirely from casual contact. This must change.

The only people who presently appear to be qualified to do most of the technical service work are the Mill Manager and the Nutritionist. They should be encouraged to begin. The proposed Marketing Manager (Animal Feeds) should join this operation as soon as possible.

Technical selling would be carried out by regular visits to customers and potential customers (farmers) on a planned basis. Written reports would be filed on each visit, so that a target of calls per day could be monitored. This process should begin immediately with the Mill Manager and the Nutritionist each taking one day per week to call on farmers in the Jinja area and outside Kampala. Each call should be recorded - Name, Address. No. of animals, plans for future, present source of feeds, prices of feeds and raw materials locally. Names of competitors, customers views on our products. Names of other local animal producers known locally to that producer. By this means and with relatively little positive effort Nuvita should be able to build up a much better picture of present and potential future customers and their perceived requirements. At the moment such knowledge is fragmentary and anecdotal. This must change very rapidly. Sales assistants are not suitable for this work as the person concerned must be able to talk technical sense to the farmer. (These visits began in late February 1988 and immediately produced useful information).

Structure of the Marketing Department

The Marketing Department as currently constituted divides its activities between human foods and animal feeds. The problems and complexity of the marketing of wheat and maize flours will be compounded when Bread Limited comes on stream about 12 months hence and it becomes necessary for U.G.M.C. to fight its way into a new market against existing suppliers. There seems to be a case for planning the divorce of feed marketing from food marketing at some not too distant point, principally because of the large co-ordinated effort required on the human food side and the vast difference between that marketing operation and that required for animal feeds. Principal differences are the nature and breadth of the product range, the technical element involved and that one is dealing with almost entirely different groups of customers.

A Marketing Manager, Animal Feeds, should be appointed who has technical qualifications and experience, who can work very closely with Mill Management and, on occasions, stand in for the Mill Nutritionist. Both these people and

INFORMATION TO BE COLLECTED ON FARM VISITS

Name _____

Address _____

Telephone (If any) _____

Type of animals/birds _____

No. of different classes of stock _____

Future plans _____

Present sources of Feeds _____

Prices paid for feeds _____

Raw Material prices locally if relevant _____

His views in feeds applied by us and others _____

Specific problems - disease - needs for new feeds etc. as expressed by him

Will he buy our feeds? _____

If not, why not? _____

Location of other animal units known to him _____

Other information (competitors products, prices, quality and location of new Mills, new developments e.g. imported cattle, new poultry units and hatcheries, dairy units etc).

NB You are trying to sell feeds, not conduct a survey, so go gently.
Use this as a guide and maybe fill it in later.

The Mill Manager would be concerned with technical services to customers. The Marketing Manager (Animal Feeds) would carry out and supervise all the present Marketing Department functions in relation to animal feeds currently carried out and supervised by the present Marketing Manager and while generally responsible to the latter would work closely with the Feed Mill management on a day to day basis. The case for this is strengthened by the needs for new product development and sales of supplementary products (see below).

Advertising

This can assist and spread knowledge of the Company name and its products. Animal feed is not a market which is susceptible to high pressure advertising and no considerable expenditure of money should be contemplated but the following should be done:-

- (1) Stencil Nuvita on all feed bags.
- (2) Put the name on lorries and/or on stickers on rail wagons.
- (3) Insert newspaper advertisements on occasion referring to new product or price changes - why not one on Nuvita selling in 70kg. bags v competitors selling in 60kg. bags (or press story see below).

Press Relations

Opportunities should be seized to put positive stories to the press in Kampala, if only in the form of written press releases. At the moment, most of the publicity on U.G.M.C. is negative, stimulated by its enemies or those whose margins it has hurt, with the flames fanned by a scandal seeking press.

Overall Company image building should focus on the transformation of the operation from a monopoly allocating scarce commodities to a genuine commercial operation. I look forward to the day when adverse press stories are about unfair competition by Nuvita because of the low prices charged for its feeds.

Attitude of Sales Staff

Sales staff should remember that they are the face which the Company presents to its customers, and they must therefore be friendly, patient and helpful at all times.

Product Differentiation as a Marketing Tool

Unlike many of its competitors UFL can make pelleted feeds and does so. It also has a set of crumbling rolls, which although not currently operational, appear to be capable of operation. This facility should be brought into operation as soon as possible to widen the range of products by adding e.g. chick starter crumbs, broiler starter crumbs etc. to the product range and thus effectively attacking those competitors who do not have such facilities.

Customer Service

The relationship between supply and demand for feeds has changed very substantially. The mill now holds substantial stocks of feeds which are not moving very quickly. Substantial and immediate improvements in customer service are therefore essential.

A recent and very useful development was the opening, in the last week of January 1988, of a depot for Uganda Feeds in Kampala with a storage capacity of about 300 t. This is served by rail delivering from Jinja and has taken all the pressure off the outloading bay at the Jinja store, as a substantial proportion of the feed sold has been into the Kampala area. While, at the time of writing (24.2.88) the depot and Jinja store are both full of stock, the longer term operation of this system raises several important issues:-

- (1) It is essential that the depot be kept properly stocked. In the presence of competition, customers must not be sent away empty handed.
- (2) A telephone must be installed o.s.a.p. to give a direct link to the feed mill to assist in co-ordinating production and deliveries with sales.

Meanwhile Company transport going to Kampala should call at the depot practically every day to collect the latest stock and sales positions.

- (3) Lorry transport should be considered as a means of topping up deliveries by rail to ensure that the depot is properly stocked at all times. This costs more than rail (150/-/bag v 32/-/bag) but would be worthwhile if feeds were moving quickly to ensure that the service is maintained.

(In the course of this Mission, this was agreed as a longer term improvement). These systems should become increasingly effective with time.

System of Payment for Feeds

The present system grew up when feed was scarce and had to be allocated between clamouring customers. The system consists of get allocation, go to town to get Bankers draft, get invoice, have bankers draft checked, load. The whole system in place when the consultant arrived was a total disincentive to sales and needed complete revision especially with regard to the following:-

- (1) Cash Limits. The cash limit was 4,000/- i.e. not sufficient to buy 2 bags of feed, just one. In early February after discussion with the consultant, this was raised to 10 bags of any feed. It was felt that this was a reasonable load in relation to the pick-up transport available to the farmer. We recommend that the cash limit be raised to one seven ton lorry load with immediate effect. This must be done to attract worthwhile sales. This may cause some potential security problems, but these must be overcome as this type of cash limit, or none, is applied by competitors.
- (2) Cheque Payments. Personal cheques should be accepted from regular customers, who are well known and of good standing and also from agents in a similar position. It will take effort to prepare a list of such people but it should be done immediately.
- (3) Credit should be considered only for customers of excellent standing, when things have settled down, and when the competition offers it. At the moment it would seem better to avoid the costs and complications of credit and to concentrate on keeping prices competitive.

The whole process of buying feed must be shortened to get invoice, pay cash or cheque, load. THE SYSTEM MUST BE MADE USER FRIENDLY TO CUSTOMERS OR THEY WILL NOT BUY

The present sales office is too small and confusing for its multiplicity of functions. Selling animal feed should be carried out from the finished product store cash office and should normally involve the attendance of the customer at that point and that point only.

Communication with Customers

When the consultant arrived this was practically non-existent. Visits to farmers in the Jinja and Kampala area made by the Mill Manager have since revealed that the present situation, quality, price, supply and payment terms for Nuvita feeds were totally unknown by these people who were all previous customers and who were for various reasons had started purchasing feeds from other suppliers. There seems to be only two effective means of communication. One is by farm visits, the other by newspaper advertisements. An advertisement dealing with the new cash limits and discounts scheme now in operation at Uganda Feeds should be inserted immediately. (Hopefully this has now appeared).

New Product Development

A large competitive commercial animal feed manufacturer in a developing market, which we expect to be the future situation in Uganda, must always be actively seeking new products to diversify and increase its market penetration. Elsewhere in this report we refer to the potential for different physical forms of product and the plant is relatively well endowed with physical facilities compared with those of its competitors. Elsewhere, we also set out, an example of the thinking which must go into the generation of a new product, in this case, cattle feed nuts. We hope that this example will be helpful and we recommend that suggestions for new products with cases presented in writing on the lines of the example mentioned above should be a regular topic for consideration at the monthly price review meetings. The feed mill and marketing management must generate such progress based upon their own ideas and the increasing feed back which they get from customers.

Supplementary Products

Similar considerations apply to the supply of drugs, disinfectants, medications and other items as part of the total selling programme of Nuvita. The supply of day old chicks is another major possibility. All these have been discussed from time to time, without positive or consistent co-ordinated action being taken. We believe that now is the time to bring these into the total animal feed operation.

We appreciate that both these proposals place additional burdens upon feed mill management. They therefore strengthen the case for the appointment of a Marketing Manager, Animal Feed as recommended above.

CATTLE PRODUCTION IN THE MBARARA REGION

This area contains 1 million head of cattle and is therefore a good potential market for Nuvita cattle feeds. There is little sale of poultry feeds because of lack of poultry in the area.

There is competition from Kenana Mills, Bushenyi about 18 miles away, but they are reported to be only manufacturing to order owing to raw material shortages and their dairy feeds are regarded as being of lower quality than those of Nuvita.

The biggest problem in marketing cattle feeds is its price v the price received for milk. Much milk is produced around Mbarara but the price is controlled at 15/-/l. Milk sells in Kampala at 90/-/l. The producers complain that the price is too low to encourage proper feeding and production. Meanwhile the Kampala milk supply is topped up by reconstituted aid supplies of butter oil and skim milk powder. The local milk price of 15/-/l compares with local feed prices of 32 - 33/-/kg. i.e. feed costs twice as much as the milk price. It is no wonder that practically no compound cattle feed is used.

The system of transporting milk from Mbarara to Kampala appears to be totally inadequate to cope with the potentially available supply. This must be rectified and producer prices raised to exploit a valuable national resource and eliminate imports of milk products. It is stupid to leave local production to languish due to lack of incentive while imported milk products are used to supply Kampala. We understand that this is being dealt with under the auspices of the FAO/UNDP project on the development of milk production in S.W.Uganda.

There are a number of recently imported Fresian cattle from West Germany at the Veterinary Research Farm at Mbarara, and further importations are planned for breeding and distribution to dairy farmers in the area. This station

is practically the only present Nuvita customer in this area. In addition some crossbred cattle remain from a previous importation in 1979. There is concern that these exotic cattle are suffering from lack of adequate supplementary feeding owing to the relatively high cost of feed, and that this could result in difficult calvings and in substantial losses of cattle, both local and exotics, during the dry season. Substantial losses in local cattle during this season already occur because of malnutrition.

Nuvita Marketing and Distribution in the Mbarara Area

At present Nuvita feeds are sold by one agent in this area who adds 25% to the ex-works price to determine final selling price. This agent has a small stock of feed purchased in mid 1987 and has admitted that there is very little demand. The local poultry population is very small due to lack of a hatchery and there is little demand for poultry feed. There is a proposed project under the auspices of the Ministry of Animal Industry and BDEAA to set up a hatchery, increase the local production of eggs and build a feed mill. The hatchery is likely to come into operation some time before the feed mill.

Nuvita should therefore immediately seek to establish firmly based sales in this area by (1) setting up a depot or a more favourable distribution system and (2) building up sales of the special cattle feed nuts (see below) while offering Dairy meal/nuts as an alternative. During our visit, Mbarara Dairy Farmers Association expressed interest in handling Nuvita feeds for sale to their members at a small mark-up and they have some suitable storage. In addition, a provisional offer of a building at the Veterinary Research Station was made and an application for suitable premises was submitted to the D.A. by U.G.M.C.

The consultant recommends that these matters be followed up immediately to firmly establish sales of Nuvita Feeds in Mbarara, based on a depot and that sales of Cattle Feed Nuts be initially confined to this area.

Further examination of the potential for establishing depots in other areas e.g. Kasese is also urgently required.

New Product - Cattle Feed Nuts

This product was formulated for three reasons:-

- (1) To help to get rid of the excess of bran and pollard presently being produced by UGMC.
- (2) To produce a cheap cattle feed which could carry the cost of transport to S.W.Uganda and still be strongly competitive with locally produced feeds.

(3) To extend Nuvita's coverage to markets which are not at present served effectively.

The formulation of this product is:-

Wheat Bran	86.5		
Pollard	10	Cost ex Jinja	14.38/-/kg
Lime	3	i.e. Formulation cost	4.07
Salt	0.45	Packing	2.10
Cattle Premix	0.2	Mill costs (March)	3.8
		Suggested profit margin	4.41

Product Specification

Protein Min.	16% (Actual 17%)
MER	6.6
Ca	1.0
P.	0.8
Na	0.2

Specification similar to Dairy meal except energy value is slightly lower.

Product Use

Supplementary feed for all classes of cattle to provide necessary protein, minerals and vitamins to help to maintain body condition, growth and milk yield.

Market Limitations

NOT to be sold in competition with Nuvita's existing cattle products in its existing markets, as the special low price is designed to allow the company to capture new markets in the West and to dispose of its present excess of bran and pollard, and it would merely replace sales of existing products.

Pricing and Competitive Position

The pricing of this and other cattle feeds has been based on the price ex Jinja Mill + 300/-/bag for transport and depot charges at Mbarara as follows:-

	Cost ex Jinja /70kg.	Cost ex Mbarara Depot /70kg.	Cost in Mbarara /kg
Nuvita Cattle Feed Nuts	1007/-	1307/-	18.7/-
Nuvita Dairy Meal/Nuts	1495/-	1795/-	25.6/-
Nuvita Calf Early Weaner	1610/-	1910/-	27.3/-
(Kenana Mill Dairy Meal - ex Mill + delivery 16 miles)		2250/-	32/-

Evidently, the new cattle feed product could be very competitive with local feeds, costing over 40% less. If a depot were stocked with this and with smaller amounts of normal Dairy Meal plus Calf Early Weaner, priced slightly lower than usual, as there is plenty of margin available to allow for this, there is every hope that sales would begin to build up, particularly of cattle feed nuts. We recommend that this be pushed forward immediately.

DISPOSAL OF WHEAT BRAN AND POLLARD

UGMC is now producing the above well in excess of its requirements for its own feeds. The excess must therefore be the subject of controlled disposal. While it is hoped that the new cattle feed nuts will soak up some of the excess, it is unlikely to remove it all in the immediate future. The pressure of excess bran and pollard on the nature of the formulation manufactured can depress quality versus the competition when maize and oilseed cakes are reasonably available. The present production of bran and pollard is sufficient to supply the feed production of over 20,000t/year.

The sale of bran and pollard through the mill gate or to the feed manufacturers or e.g. from a depot in the West or Kampala must be considered as possible alternatives. What are the problems:-

1. To do this is a confession of failure, but the only alternative is to be likely to be burning the material, which should be regarded as scandalous by any outsider getting to know about it.
2. Making this material available will help the competition. If it is not made available UGMC could be accused of deliberately obstructing the competition and of abusing its position as a monopoly supplier. Eventually, unless Nuvita food sales rise rapidly to above 20,000 tons, UGMC will have to sell this material anyway.
3. Disposal price to be carefully set at a slight discount to the real value of this material in feed formulation.
4. Disposal of bran rather than pollard to be encouraged.
5. Regular weekly reviews of disposals versus feed production.
6. Disposal to be stopped immediately projections indicate that remaining excess will be used by feed.

Present Real Value in Formulation

Bran - $0.486 \times$ price of cottonseed cake = 9.72/-per Kg.

Pollard - $0.421 \times$ price of cotton $\times 1.5$ = 12.63/-per Kg.

These values should be used as a basis to price for sale. Note that bran and pollard contain 18.7% and 16.2% protein respectively. UF are currently paying Shs30/-per Kg. for sunflower cake containing 21% crude protein.

I can therefore see no reason to significantly reduce the above offer prices ex Mill on the above. I recommend price should be Shs9.5/- for bran, 12.0/- for pollard both plus cost of sacks. If it does not sell then reduce price slightly until it does. Trade only with end users e.g. feed millers and farmers, preferably the latter.

Export Markets

Following his Mission, the consultant visited Nairobi, where he discussed the possibilities of export of bran to Kenya. The major wheat mills, Unga Ltd., produce sufficient for their own needs as the major manufacturer of compound feed and sell any slight excess to farmers. Other wheat millers supply the rest of the feed trade. There does not appear to be much hope of substantial export to Kenya, but the consultant has passed a list of potential contacts to UGMC.

The situation may be more promising in Tanzania. We understand (a) that feed ingredients are difficult to obtain particularly around Dar-Es-Salaam (b) that substantial quantities of oilseed, particularly cotton, remain unprocessed in the area around Mwanza. There is regular transport across the lake between Jinja and Mwanza. It therefore seems sensible for UGMC to explore the possibility of reciprocal trade whereby wheat bran into Tanzania is exchanged for oilseed for processing in Uganda. We recommend that the Government of Uganda support UGMC in exploring this potential trade.

PRICING OF ANIMAL FEEDS

The suggestion in our last report that wheatfeed and pollard should be priced into feeds at their commercial value, based on nutrient content, that selling prices should be calculated by initially adding a flat rate per ton, per kg. or per bag and then making final adjustments product by product for production and marketing reasons, and that price should be reviewed monthly, have not been fully applied. The consultant recommends that they should now be put into effect, in view of the new importance of marketing and the very high rates of inflation in raw material costs. Adjustments to feed prices were made in November 1987 and early February 1988. This interval is too great.

The present system of pricing consists of adding to the cost of raw material 5% process cost, cost of bags, a standard charge for mill costs and the addition of 30% margin to the total. This system is cumbersome, automatic and allows little scope for management to vary prices in accordance with market and technical considerations, or to have a true projection of the likely profit to be earned by the mill in the ensuing month.

The actual mill costs (in addition to raw materials and packing) for the months of October and November 1987 as shown in the completed accounts were:-

	<u>Oct.</u>	<u>Nov.</u>
Administration charges	1.88M/-	1.58M/-
Other direct costs	<u>0.39M/-</u>	<u>0.47M/-</u>
Total	<u>2.27M/-</u>	<u>2.05M/-</u>

These totals represent the sums of money which the mill had to earn in addition to the costs of raw materials (formulation costs) and packing (sacks) before it earned any profit. In each of these months, production and sales

were about 700 tonnes, so that the margin/tonne needed before any profit was made (i.e. milling costs) was 3242/-/t in October and 2928/-/t in November, that is about 3000/-/t or 3/-/kg.feed. The actual margins between costs of raw material and packing and sales return were 6,739/-/t in October. That is in spite of the mill running at only about a third of its capacity, a profit margin of more than the milling costs was actually earned. The consultant considers that this margin could have been adjusted downwards with probably advantage accruing in increased sales.

The system which should be used is as follows:- (illustrated on P29)

1. The total costs of mill operation for the coming month are estimated (Administration charges and other direct costs) from the latest historical data, adjusted by the Financial Controller for any recent cost changes. This estimate must be realistic, not used as a means of acquiring further margins. For instance the estimate for March 1988 was Admin.costs 2.2M/- + other directs 0.47M/- = Total 2.67M/-
2. An estimate of the tonnage likely to be produced and sold during the month is made, and divided into the above total cost to give cost/t or /kg.
3. The Mill Manager with the Nutritionist are responsible for ensuring that formulations and formulation costs are up to date, are properly costed using appropriate values for the coming month and that they properly take account of the forward raw material supply.
4. To the formulation costs of each product is then added the packing charge, the milling cost and the profit margin to prepare the working sheet (Example P 33).
5. Final pricing decisions should be taken by the General Manager working with the Financial Controller, Mill Manager and Marketing Manager so that variations in customer response, technical costs of manufacture of each product, and sales performance can all be taken into account.

This should be done on a regular basis on a fixed day late in every month so that everyone knows that the necessary information for the subsequent month must be ready by that date.

Pricing policies have critical effect upon the sales and profits of the Company. With competition in the market place this matter must receive much more regular and detailed consideration than has so far been given to it. It cannot be left to a fixed pricing formula applied automatically without the proper consideration and judgement of the relevant members of the management team. Unless this changes, the end result is likely to be that the

competition make a good living eating Nu·ita's market under the comfortable price umbrella which it has erected for them.

Transfer Prices of Wheat Bran and Pollard

These should also be reviewed monthly, at the start of the above exercise, so that the formulation costs used reflect the amended prices. One of the reasons for the apparently high margins earned by the feed mill is the excessively low transfer prices ascribed to bran and pollard. These should approach their real value (see P27) so that feed mill profit margins and the sale prices of products are set at a more realistic level.

EXAMPLE CALCULATION OF FEED PRICES

(Present average gross margin including packing approx. Shs15/- per Kg and present profit margin = Shs 9.9/- per Kg - late February 1988)

Calculation of Prices for March

Estimated Admin. Costs	2.2M/- total
" Other directs	<u>0.47M/-</u> "
Total costs	2.67M/- to be borne by feed mill in mon

Equivalent to:-

- (1) 3.814/-per Kg. on 700 ton production/sales
- (2) or 2.67/- per Kg. on 1000 ton production/sales
- (3) or 3.0/- per Kg. on 890 ton production/sales

Management chose assumption (1), hence:-

Formula cost e.g. Layers Compleat Meal	16.21/- per Kg.		
+ Packing	2.10/-	"	} Mark up = <u>15.00/-</u>
+ Costs (1) above	3.8/-	"	
+ Profit Margin	<u>9.1/-</u>	"	
	<u>31.21/-</u>		

+ same as present price - no change

Overall profit on 700 ton = 700t x 9.1/-per Kg. = 6.37M/-

	<u>C/D</u>	<u>GR.</u>	<u>LOM</u>	<u>BROILER</u>	<u>BREEDER</u>	<u>S&W</u>	<u>CEW</u>	<u>DAIRY</u>
<u>Formulation cost</u>	16.58	11.82	16.21	19.25	16.97	11.68	10.21	9.00
+ 15/- Mark-up	<u>15.0</u>	<u>15.0</u>	<u>15.0</u>	<u>15.0</u>	<u>15.0</u>	<u>15.0</u>	<u>15.0</u>	<u>15.0</u>
New Price	31.58	26.82	31.21	34.25	31.97	26.68	25.21	24.00
Present Price	31.69	25.19	31.18	35.33	35.22	25.0	22.99	21.33
Change	+ 0.11	+ 1.63	+0.03	-1.08	-0.25	+1.68	+2.22	+2.67

Weighted average change in price = + 0.137/- per Kg.

Now adjust invididual products in view of marketing considerations and actual cost of production e.g. reduce price of layers because of market, increase price of pelleted feeds because of production costs. These prices can be expressed per 70kg. bag and marketing decisions taken on that basis because this is the price actually applying to the customer.

OILSEED MILLING AND UGANDA FEEDS LTD.

The capacity of the local oilseed milling industry may become a serious limiting factor in the encouragement of increased oilseed production in Uganda and in the supply of properly processed oilseed cakes to Uganda Feeds and the rest of the industry. For example, the processing of soya beans purchased by Uganda Feeds is carried out almost entirely by Iganga Oil Milling next door, which is run as part of the Lint Corporation. Processing is limited by the state of the machines, the availability of wood to fire the boiler and other considerations to about 10t/day. This will not keep up with the expanding amount of soya beans being purchased by Uganda Feeds and the soya cake being used in formulations, particularly when the future requirements discussed elsewhere in this report are taken into account. Some efforts have already been made to find processing facilities elsewhere (see below), but the amounts of oilseed cakes required by Uganda Feeds in the future is such that it needs to be assured of supplies.

We therefore recommend that a serious effort be made by UGMC to take over the Iganga oil mill from the Lint Corporation and the custodian of departed Asians properties. This oilseed mill properly rehabilitated, and properly run could help to ensure that Uganda Feeds can satisfactorily process at least a portion of its requirements for oilseed. We further recommend that the alternative means of processing oilseed be followed up.

An alternative is to develop a working relationship with the Mahdvani Oil Mill (EMCO Oil Refineries). This unit has 24 old Maxoil presses installed, most of which are out of commission. 9 only are at present partly operational, and rehabilitation is proceeding slowly. There is a shortage of labour at this unit and lack of a satisfactory steam supply, although it is hoped that this will be rectified fairly shortly, at least sufficiently to run the 9 presses properly. This unit is purchasing sunflower seed through an outgrowers scheme and also local cottonseed. It is experimenting with processing soya for Uganda Feeds. If this plant were fully operational, its capacity could be over 50t/d. The refinery is partly operational.

A further alternative is that it is reported that a Chinese mill for processing soya is being installed somewhere in Jinja, but no details are available.

The remainder of this section gives a preliminary outline feasibility study of a possible oilseed mill built on the UGMC Jinja site, following a comment on the potential use of extruded whole soya.

The Use of an Extruder to Process Soya Beans

Extrusion with applied heat and pressure has been used to heat treat whole soya beans for some considerable time in several countries. Heat treatment is needed to detoxify the bean before it can be used for animal feed without adversely affecting animal performance. The product is used as a protein and oil source, particularly in feeds for young animals and in mills which lack facilities for adding fat and oils. The purchase of such a machine by Uganda Feeds is totally inappropriate for the following reasons:-

- (1) Uganda is short of high grade vegetable oil and therefore all soya beans grown locally should be processed to increase the supply of vegetable oil in the local market.
- (2) The oil content of Uganda Feeds products is already higher than is needed for correct animal nutrition. This is because maize, wheat bran and pollard, which are major ingredients, all provide adequate oil for this purpose, which is further increased by the much higher oil contents of maize bran, and the locally produced oilseed cakes due to poor oil extraction.

The purchase of such a machine would therefore be counterproductive as long as means exist to get soya processed in local oilseed mills. In this respect Iganga is still operating and Madhvani are experimenting with processing soya for UGMC, as they further rehabilitate their oilseed mill. In addition the question of possible installation of an oilseed processing plant by UGMC is dealt with in the following section.

Oilseed Milling and Oil Refining UGMC, Jinja -
Outline Feasibility Study

This section contains an outline proposal for oilseed processing on the UGMC site at Jinja. This would serve two objectives (i) to provide a captive supply of oilseed cake to the feed operation (ii) to add refined vegetable oil to the products marketed by UGMC.

Size of Proposed Mill

20t/day oilseed mill operating 24 hrs. in 2 shifts - 6000t. of seed processed/year in 300 d. yielding 3300t. oilseed cake and 1140t. fibrous by-products, assuming that equal amounts of soya, cotton and sunflower are processed. 5t/day oil refinery producing 1250t. refined oil per year. The output figures could be higher, depending upon the residual oil left in the cake.

Supply of Seed

There appears to be room for a substantial increase in oilseed production around Jinja. U.F. are already buying over 1000t. of soya bean annually which they have to get processed in a nearby oil mill. The supply of cottonseed cake is limited, but rehabilitation of the cotton ginning capacity and adequate purchasing measures should rectify this. Sunflower is being produced in N.E.Uganda, but its production and processing have been disrupted by security problems.

Use of Outputs

3300t. of oilseed cake would more than meet the requirements for production of 20,000t. feeds. In addition over 1000t. of fibrous by-products would be available for use in some cattle feeds or for disposal in other ways.

Plant. Oilseed Mill

Based on Simon-Rosedawn. Model III Press. Capacity 20t/24h.

Equipment
Cleaner
Hammer Mill
Decorticator.
Crocking Rolls
Cooker/Conditioner
Press
Filter
Mechanical Handling Equipment
Small Tanks and Pumps
+ Boiler (See Refinery)

Refinery

2 Main vessels under vacuum
i.e. Neutralize/Wash/Bleach and
Deodorizer. Tanks. pumps etc.
Boiler, steam supply/water recovery
Packing line

Capacity 5t/day

Civils

Oilseed Mill - Normal industrial building 8M x 15M

Refinery - 10M x 10M x 16M high (for Barometric leg)

Boiler House

Plus ancillary works - roadways, stores etc.

Approximate Capital Cost

Oilseed Mill £240,000 (including Decorticator £80,000)

Refinery £150,000

Boiler & Water Recovery £100,000

£490,000

Plus Transportation
and Erection (15%) £74,000

£564,000

Plus Civils ?

Consumable Stores

- Filter Cloths 200/year
- Sacks for cake - UGMC re-used
- Lubricants
- Spare Parts

Chemicals for Refining

Caustic Soda	- 4.26 kg/1000kg oil @ 3% FFA	<u>5.75 t.</u> /1350t.oil
Bleaching Earth	- 20 kg/ "	27 t.
Citric Acid	1mg/kg oil	1.5 kg.

Packing - Tins for oil

Labour

Oilseed Mill

- 1 Manager +
- 1 Supervisor, 1 Press Operator, 1 Filter Press Operator + 5 (2 feeding, 2 cake bagging, 1 boiler)
- Total 8/shift = 16 for 2 x 12 hr. shifts.

Refinery

- Technologist 1 + on each shift:-
 - Foreman 1, Maintenance Engineers - Unskilled 3 = 9 for 2 shif
 - + Packing staff (single shift)
-

Utilities

Electricity

- Oilseed Mill 100 KWH/t seed = 600,000 KWH / γ
- Refinery 18 KWH/t oil = 25,000 "
- 625,000 "

Water

- Approx. 100 galls+/h. for refinery and mill together.
- " 1M gallons/year.

Oil

- 130,000 galls/year

Yields

Oilseed Milling

Sunflower - output/10t.processed - Hulls 2t
Oil 3.76t
Coke3.68t

Soya Beans - output/10t processed - Oil 1.3t
Coke 8.6t

Cottonseed - " - Oil 1.7t
Coke 4.6t
Hulls/Lint 3.7t

(Sesame " - Oil 4.7t)
Coke 5.2t)

Hence - Yield from 2000t each of Sunflower, Soya and Cotton seed:-

	<u>Crude Oil</u>	<u>Coke</u>	<u>Hulls etc.</u>
Soya	260t.	1720t.	-
Sunflower	752t.	736t.	400t.
Cotton	<u>340t.</u>	<u>920t.</u>	<u>740t.</u>
	<u>1352t.</u>	<u>3376t.</u>	<u>1140t.</u>

Yield of Refined Oil

1352t. Crude less 7% refining loss = 1257t.
(Say 1250t.)

Refining Residues - Some for use in feeds - say 100t.

Calculation of Gross Margin

	<u>Total</u>
Costs of Seeds - Soya bean 30/-/kg. 2000t. =	60M/-
Sunflower 20/-/kg "	= 40M/-
Cotton 20/-/kg "	= <u>40M/-</u>
TOTAL	<u>140M/-</u>

Output

1250t. Refined vegetable oil @ 100/-/kg. =	125M/-
Oilseed cake for feed:- Soya 1720t. @ 30/-/kg.=	51.6M/-
Sunflower 736t. @ 25/-/kg.=	18.4M/-
Cotton 920t. @ 20/-kg. =	18.4M/-
Value of other byproducts in oilseed feed	
1240t. @ 3/-/kg say	<u>3.7M/-</u>
TOTAL	<u>217.1M/-</u>

Total Gross Margin/year 77M/-

(Present feed mill gross margin @ 1000t/month is approximately 170M/year)

Note: The prices assumed for oilseeds are the prices actually paid by UGMC for Soya Beans, Mahdvanj for sunflower + 10% and an assumed price for cottonseed. Values for oil were based on local market prices of 167/-/kg. retail for imported refined oil, reduced to 100/- for ex-works price. This is probably excessively low. Oilseed cakes - Soya and cotton were valued at current prices paid by Uganda Feeds. Sunflower valued at 25/-/kg. from this oil mill would be appreciably superior (lower fibre content) than sunflower currently purchased at 30/-kg. by Uganda Feeds, but the latter is a distorted price resulting from gross shortage when the contract was made. The consultant believes that the true gross margin likely to be earned by this plant has been underestimated and that all these figures need substantial reconsideration and revision.

General

This study is incomplete and the requirements to complete it are listed below. The other costs to be borne would be less than the feed mill for labour, and power, but much more for fuel oil.

The total investment involved is over £600,000 (or 330M/- at the market rate). This is substantial, but could be worthwhile for the following reasons:-

- (1) To enhance the total effectiveness of the oil milling industry of Uganda, and substantially increase the local production of refined vegetable oil.
- (2) To expand the range of human food products marketed by UGMC.
- (3) To protect what will be a substantial animal feed operation from being subjected to intermittent supplies of poorly processed oilseed cake.

Requirements to Complete this Feasibility Study

- (1) Detailed analysis of the present and likely future requirements for oilseed production nationally, likely production and the adequacy, and distribution of present and proposed processing facilities.
- (2) Possible export/import trade in oilseeds/cake. Substitution of home produced for imported oils.
- (3) Cost/benefit analysis of inclusion of a decorticator.
- (4) Assessment of likely future supplies and costs of oilseeds and the market for, and value of, refined vegetable oils.
- (5) Evaluation of alternative oilseed processing machinery of different sizes and from different suppliers.
- (6) Sources of finance and detailed evaluation of costs and returns from the project to U.G.M.C.

Note on Other Local Oil Mills

These are listed at the beginning of this section and their present capacities are as follows:

- (1) Iganga - 10t. seed/day
- (2) O.K. Oil Mills capacity not known - probably as Iganga
- (3) Mahdvani - ?20t seed /day - ultimately 50-70t/day?
- (4) Chinese Mill, Jinja for soya bean - capacity not known but believed small.
(Note - difficulties have been experienced with Chinese soyabean cake imported into U.K. because of inadequate heat treatment).

The addition of a new facility processing 20t seed/day to the above would therefore be a substantial increase (say 50%) on present local effective oil milling capacity.

Action on Recommendations made in Previous Reports

The recommendations made in the reports prepared in 1986 and 1987 have generally been implemented apart from certain exceptions which are mentioned elsewhere in this report and the following:-

- (1) The need for assistance to improve the effectiveness of the oilseed processing industry in Uganda was pointed out in the 1986 report and has been the subject of some local consideration in this report. While we understand that this is the subject of part of a current planning study within the Ministry of Industry funded by the World Bank, we believe that action to improve the operating efficiency of this industry is still needed.
- (2) The 1987 report suggested that graduate recruitment and training should be the subject of some effort by UGMC. We understand that recruitment has been attempted without too much success. However, we recommend that UGMC persist with these attempts because of their needs for well trained management in the future.
- (3) The Buying Department suggested in an earlier report has yet to be fully established. We recommend that this should be developed gradually and fully established in due course.
- (4) Maintenance of the feed mill. This still needs improvement, but we understand that a Mechanical Engineer has been appointed and with a more adequate supply of spare parts, we expect this to improve.

Summary of the Contribution made by this Project to Uganda Feeds Ltd.

This project, contributing short missions by the consultant in 1986, 1987 and 1988 has enabled him to contribute to the management of the plant under varying conditions., in terms of production rate, raw material supply and markets. In that time progress has been made in the standards of formulation, quality of product, rate of production, and the approach to the market, so that Uganda Feeds Ltd. are poised to increase their market share and their production as the market for feed expands. In addition UNIDO have made contribution to training the Laboratory Superintendent which we hope will be augmented by the training envisaged for the Mill Manager and Financial Controller, thus enhancing the performance of 3 key people in this operation. Contributions have also been made in Accounting Systems and Engineering management. Finally, in quality control, UNIDO has provided financial backing for chemical analysis of samples of all the major feed ingredients in 1986 and 1987 in addition to providing the equipment and chemicals for a quality control laboratory for feed and flour milling which will begin operation very shortly. The consultant feels that UNIDO has made a substantial contribution to the future success of this Company, and he hopes to maintain contact with it in the future.

The Place of Split Missions in the Operation of UNIDO

When work on this project began seriously in 1986, UNIDO agreed that the consultant's input should be in the form of three short missions rather than one 6 month input. His experience of this mission has convinced the consultant that this format has particular merits when applied to a consultant working with a particular company which has management in place, for the following reasons:-

- (1) This system allows the consultant to gain a much greater knowledge of the personnel and the total operation under a wide range of conditions than is possible in a single mission.
- (2) It is possible for the consultant to provide an input of recommendations, leave management to implement them and then monitor the results on his next mission.
- (3) The input of the consultant can spread over a much longer period, particularly when contact is maintained between missions, and therefore have a much greater impact than is possible in a single mission.
- (4) This approach counteracts the tendency for management of the operation to be effectively in the hands of the consultant during his mission, with disastrous consequences when he departs.

The consultant therefore recommends that UNIDO gives serious consideration to the use of split missions when providing consultancy support to the general or technical management of industrial operations.

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