New Partnership for
Africa's Development (NEPAD)

Comprehensive Africa Agriculture
Development Programme (CAADP)

Food and Agriculture Organization
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Investment Centre Division

GOVERNMENT OF THE REPUBLIC OF ZIMBABWE

SUPPORT TO NEPAD–CAADP IMPLEMENTATION

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Volume VII of VII

BANKABLE INVESTMENT PROJECT PROFILE

Livestock Feeds Processing

November 2004

ZIMBABWE: Support to NEPAD–CAADP Implementation

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NEPAD–CAADP BANKABLE INVESTMENT PROJECT PROFILE

Country: Zimbabwe

Sector of Activities: Livestock

Proposed Project Name: **Livestock Feeds Processing**

Project Location: National

Duration of Project: 5 years

Estimated Cost: Foreign Exchange.....US$9.5 million
Local Cost.....US$23.1 million
Total..... US$32.6 million

Suggested Financing:

Source	***US$ million***	***% of total***
Government	1.6	5
Financing institution(s)	17.9	55
Beneficiaries	3.3	10
Private sector	9.8	30
Total	***32.6***	***100***

ZIMBABWE:

NEPAD–CAADP Bankable Investment Project Profile

"Livestock Disease Control"

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Abbreviations

ARDA	Agricultural and Rural Development Authority
AREX	Department of Agricultural Research and Extension Services
CAADP	Comprehensive Africa Agriculture Development Programme
CSO	Central Statistical Office
DLPD	Department of Livestock Production and Development
DVS	Department of Veterinary Services
GDP	Gross Domestic Product
GMB	Grain Marketing Board
LDT	Livestock Development Trust
MARD	Ministry of Agriculture and Rural Development
NEPAD	New Partnership for Africa's Development
NGO	Non–governmental Organization
NMTIP	National Medium–term Investment Plan
NR	Natural Region
PSIP	Public Sector Investment Programme
SIRDC	Scientific and Industrial research and Development Centre
UZ	University of Zimbabwe
VSC	Veterinary Service Council
ZAPF	Zimbabwe Agricultural Policy Framework

I. PROJECT BACKGROUND

A. Project Origin

I.1. The original project idea was presented by the *Grain Marketing Board* (GMB), a parastatal body under the *Ministry of Agriculture and Rural Development* (MARD). The proposal was developed on the basis of studies carried out within Zimbabwe on ways to re–evaluate and resuscitate the declining livestock industry. The concept of establishing stock–feed processing businesses by small–scale entrepreneurs recognizes the need for processed feeds to reach more livestock producers throughout the country. Stock–feed processing is also a concept in line with the ongoing expansion of the GMB's commercial business to ensure that the operations of the GMB are viable and self–sustaining at no cost to the government. At a national stakeholders' workshop held in Harare in March 2004 to validate the NEPAD–CAADP *National Medium–Term Investment Programme* (NMTIP) for the agricultural sector, livestock feed production was identified as one of the priority areas for bankable investment projects.

B. General Information

I.2. ***The Agricultural Sector.*** Agriculture is the mainstay of Zimbabwe's economy, contributing about 18% of GDP. Agriculture also contributes to the nation's food requirements,, provides 60% of raw materials for industry and 45% of total foreign exchange earnings and is a main source of livelihoods for about 70% of the population. The country has five natural regions (NR) as summarised in Table 1 below.

Table 1: Classification of Natural Regions and Farming Systems in Zimbabwe

Natural Region	Farming Systems	Land area (%)	Mean annual rainfall (mm)	Reliability of rainfall
I	Specialized and diversified farming: Forestry, plantations and intensive livestock production	1.8	>1,050	Year–round rainfall
II	Intensive farming: Cropping (tobacco, wheat) and intensive livestock production	15.0	750–1,050	Reliable summer rain
III	Semi–intensive farming: Cropping (can be risky) and livestock production	18.7	650–750	Erratic with seasonal droughts
IV	Semi–extensive farming: Drought–resistant cropping and semi–extensive livestock production	37.8	450–650	Frequent seasonal droughts
V	Extensive farming; (Extensive livestock production)	26.7	<450	Low, prone to droughts

I.3. About 85% of the 39 million ha land area in Zimbabwe is agricultural land. Of the total land area, about 7% is arable, 13% is permanent pastures, 23% is forest and woodland and the remaining 57% represents urban areas, mines and water bodies. About 64% of Zimbabwe lies in Natural Regions (NR) IV and V, in which rainfall is too erratic and unreliable for consistent and viable crop production (see Table 1, above). Except for situations where water for irrigation is available, range livestock and wildlife production are the most viable agricultural activities. On the other hand, the higher rainfall regions offer potential for intensive production of all species of livestock because of the possibility of integrating crops with livestock. Consequently, commercial livestock production has been highly dependent on grain, particularly maize, as the energy source. Secondly, the cattle feedlot systems developed since the mid 1960s and now in common use in NR II and III depend primarily on availability of grain. This has made crop and livestock production in Zimbabwe highly complementary. It has also enabled cattle to be sold off at a young age, thus enhancing production

turnover and making the high–rainfall cropping areas a major source of beef for both domestic and export markets. For pigs and poultry, grain accounts for some 70% of their diets.

I.4. Following the implementation of the recent Land Reform Programme, the agricultural industry now comprises three major farming sectors. In the communal sector farmers have access to small pieces of land with average land holdings of 2.1 ha arable and share grazing land. The Model A1 scheme is a resettled villagized and self–contained model aimed at decongesting the communal areas. Farmers have access to an average of 5 ha arable land and grazing land ranging from 6 ha in NR I to 20 ha in NR V. Model A2 scheme is a commercial farm model, through which farmers have access to land under four categories as follows: peri–urban commercial farms (sizes range from 15 ha–50 ha); small scale commercial farms (15 ha in NR I to 350 ha in NR V); medium–scale commercial farms (100 ha in NR I to 1,500 ha in NR V); and large–scale commercial farms (250 ha in NR I to 2,000 ha in NR V).

I.5. ***The Livestock Subsector.*** The livestock subsector plays an important role in the agricultural sector of Zimbabwe. Livestock products contribute about 25% of value of total agricultural output. Beef accounts for over 70% of domestic consumption of marketed meat followed by poultry products, pig meat and small ruminants (sheep and goat) meat. The data on livestock populations since Independence are given in Table 2.

Table 2: Livestock Population Estimates (1980–2003)

Year	Livestock type ('000 head)			
	Cattle	Goats	Sheep	Pigs
1980	5,279	982	387	132
1981	5,286	1,243	469	193
1982	5,692	904	401	184
1983	5,546	1,071	399	180
1984	5,465	1,508	430	178
1985	5,499	1,624	569	171
1986	5,783	1,986	–	–
1987	5,918	2,162	567	216
1988	5,805	2,317	671	238
1989	5,850	2,368	569	304
1990	6,218	2,564	592	289
1991	6,374	2,539	584	305
1992	5,914	2,545	485	278
1993	5,020	2,297	416	240
1994	5,140	4,471	436	232
1995	4,992	5,001	435	264
1996	–	–	–	–
1997	4,890	2,883	510	229
1998	5,668	2,953	603	287
1999	6,069	2,910	640	279
2000	6,186	3,804	691	340
2001	6,432	3,779	635	314
2002	5,241	3,380	643	184
2003	5,297	3,276	515	419

Source: Dept. of Veterinary Services, *CSO Statistical Yearbook*, 1997.

I.6. Over the period 1980–1995 the population of different types of livestock increased continuously, especially the population in the commercial farming subsector. This trend has, however, changed in recent years as a result of an increased occurrence of droughts. Zimbabwe experienced

severe droughts in the years 1991–92, 1998 and 2000–2002. The 1991–92 drought, the worst in living memory, resulted in substantial loss of animals of all species. The smallholder sector was more affected because of the limited feed and water resources in this farming sector. In the case of cattle, the drought resulted in an 8% decline in the size of the herd in the commercial sector and a 31% decline in the smallholder sector. Growth of the commercial beef herd subsequent to the 1991–92 drought has been hampered by viability problems. It is estimated that the commercial beef herd declined from 1.5 million head before 1991 to somewhere between 250,000–400,000 head in 2002. Over the same period, the number of commercial dairy farmers and the size of the national dairy herd also declined from about 190,000 milking cows in 1999 to about 70,000 cows in 2002. At least 50,000 cattle died from 2001 to 2003, mostly within the Matabeleland South Province because of pastures conditions related directly to the drought.

I.7. ***Livestock Production Systems.*** Livestock production systems in Zimbabwe are determined mainly by the agro–ecological region and the type of farming sector. In the semi–arid NR IV and V and parts of NR III, the main production system is extensive grazing of cattle and small ruminants on natural rangeland as well as wildlife production. Other specialized systems such as dairying, pig and poultry production and pen fattening of ruminants are also practised where feed and other resources are available. Because of the arid nature of these regions, production can be risky and success will depend on availability of external inputs such as supplementary feeds as well as breeding stock for restocking after droughts. In the smallholder sector, the production system is mainly of mixed livestock and crop production, and livestock production depends mainly on natural grazing with little or no supplementary feeding. The smallholder production system in the semi–arid areas is, therefore, a low–input–low–output production system; consequently, livestock productivity is generally low.

I.8. In the high–rainfall areas (NR I, II and parts of III), the system of livestock production is generally much more intensive than in the semi–arid regions. Because of the intensification of production and the opportunity for integration with crop production, at least 60% of production of all livestock species in the country is from the high–rainfall areas.

I.9. ***Breeds and Breeding Systems.*** The indigenous breeds are numerically the most important animals in all the livestock species in the country. The main indigenous cattle breeds are the Mashona, Nguni and Tuli, found mainly in the smallholder sector. Exotic beef cattle breeds are predominant in the commercial sector, especially in the high rainfall NRs. The main exotic beef cattle breeds are the Brahman, Simmental, Hereford, Sussex, Aberdeen Angus, Beefmaster, Limousin and Charolais. For dairying, the Holstein–Friesian is the predominant dairy cattle breed in the country, followed by the Jersey, the Red Dane and the dual–purpose Simmental. The Jersey is more common in the drier parts of the country, whereas Holstein–Friesian is the more common breed in the high–rainfall areas. Several smallholder dairy improvement schemes, promoted mainly by ARDA, have been established; they use exotic dairy breeds crossed with indigenous cattle.

I.10. The main goat breeds are the indigenous Matabele and Mashona (Small East African) types. The predominant goat breed in the commercial sector is the South African Boer goat, raised primarily for meat production. A few commercial farmers raise the Saanen breed, mainly for milk production while Angora goats are raised for mohair production.

I.11. The Dorper is the predominant breed in commercial production of lamb and mutton. There has, however, been considerable infusion of the Dorper and the Blackhead Persian sheep breeds in the smallholder–farming sector, and now crossbred types are predominant.

I.12. The major pig breeds in the commercial sector are the exotic Landrace, the Large White, the Duroc and the recently introduced Dalland. The indigenous Mukota pig is the dominant breed in the

smallholder communal sector, although the exotic pigs are the animals of choice in smallholder commercial production because they are preferred by the formal markets. Similarly, commercial poultry production (in both the large and smallholder sectors) is based on exotic hybrids.

I.13. ***Livestock Feed Supply and Demand.*** The main ingredients in stock feeds are:

- grain, mainly maize as the energy source,
- oilseed cakes, mainly from cotton seed, soybeans and sunflower, and
- minerals and vitamins.

I.14. The supply of stock feeds in recent years has been hampered by shortage of raw materials as a result of droughts and shortage of the foreign currency needed for purchase of imported ingredients. This has resulted in higher prices for processed feeds. The resultant high cost of compounded feeds contributed to the decline in the dairy herd, along with viability problems. In the beef industry, reduced viability has led to a substantial decline in the practice of pen fattening of slaughter stock, to the extent that very few, if any, feedlot operations have been undertaken in the country during the past 5–6 years. Very few farmers are practicing dry–season supplementary feeding of beef cattle and small ruminants owing to the high cost of concentrated feeds.

I.15. Because of the high cost of complete rations from feed manufacturers and in order to reduce feed costs, livestock producers rearing feedlot cattle or sheep and those rearing pigs or poultry often grow their own maize, which they mix with protein and mineral concentrates processed for direct mixing and sold by feed manufacturers. Many of these farmers, particularly the smallholders, become seasonal producers rearing the marketable animals only when they have adequate home–grown maize.

I.16. The net effect of this supply/demand situation is that a number of stock feed brands, such as mineral licks and dry–season supplements for cattle, are not readily available at present. The manufacturers prepare them only when they have the inputs and when there is sufficient demand from livestock producers. Secondly, suppliers of oilseed cakes as well as minerals and vitamins used in feed processing are large corporations that prefer to deal with the two large feed manufacturers, National Foods and Agrifoods. This makes it difficult for farmers who are trying to cut feed costs by compounding their own feeds or for small players intending to join the stock feed manufacturing industry. It also results in oligopolistic pricing policies.

I.17. The stock feeds produced by the two major feed manufacturers are processed in their manufacturing plants in Bulawayo, Gweru and Harare. However, both Agrifoods and National Foods have depots in all major towns and cities throughout the country, but these depots merely market stock feeds manufactured in Bulawayo, Gweru or Harare. The prices of feeds from such depots include the costs incurred by the manufacturers in transporting the feeds from the processing plants, thus making stock feeds relatively more expensive for those farmers more distant from the manufacturing plants. Establishment of small–scale feed processing enterprises in other parts of the country could reduce feed cost and encourage greater use of stock feeds by livestock farmers. Secondly, a deliberate use of the more drought tolerant small grains in place of maize in stock feed formulation and manufacturing by processors located in the semi–arid regions of the country could promote their production in line with government policy of promoting small grains in dry areas. Because small grains are less preferred than maize for human consumption, promotion of small grains as livestock feed would reduce competition between humans and livestock for maize and the need to use maize in stock feeds. In this regard, it is observed that feed manufacturers do use small grains in feed formulation and manufacturing when the cost of the small grains is competitive to that of maize grain. The real problem has been the shortage of small grains on the market.

C. Government Policy

I.18. The long–term policy objectives for the agricultural sector as a whole are set out in the *Zimbabwe Agricultural Policy Framework* (ZAPF), 1995–2020. Although there is no written blueprint government livestock policy, the Framework envisages an expansion of livestock output through growth in production and increased smallholder participation in marketing of livestock and livestock products. The major objectives as stated in the Framework are:

- to increase the national cattle herd through breeding and sustainable grazing systems, particularly in smallholder areas in the light of the role of cattle in the smallholder farm production systems;
- to increase milk production primarily through developing viable self–sustaining smallholder dairy schemes, supplying both local and urban markets; and
- to achieve greater production of other livestock categories (sheep, goats, pigs, poultry, etc.) in order to increase family farm incomes, particularly on smallholder farms.

I.19. The strategies to achieve these objectives include:

- provision of credit to farmers to restock their herds or flocks;
- promoting intensive livestock production through pen fattening of slaughter stock and supplementary feeding of ruminants during the dry season;
- encouraging livestock farmers to produce home–grown feeds in order to reduce feed costs; and
- to develop livestock water supplies.

I.20. To these ends, government in 2000 launched a crop and livestock Inputs Credit Scheme to support agricultural production following the implementation of the Land Reform Programme. Currently, farmers are being provided with credit for purchasing breeding animals to restock their herds.

D. Institutions

I.21. The *Ministry of Agriculture and Rural Development* (MARD) and its departments and divisions is the most important institution to the livestock industry. However, many other public sector institutions, parastatal organizations, statutory bodies, private sector associations or societies and non–governmental organizations (NGOs) support or have influence on the livestock subsector. Among these are the Commercial Banks, the *Agricultural Research Council*, the *Livestock Development Trust* (LDT), the Cold Storage Company, COLCOM, private abattoirs, Dairibord Zimbabwe Limited, the *Pig Industry Board*, the *Livestock and Meat Advisory Council*, the *Livestock Identification Trust*, the *Zimbabwe Dairy Industry Trust*, farmers' unions, livestock departments in the national universities and the *Veterinary Services Council* (VSC). Many NGOs actively support animal production in areas as diverse as assistance in group formation, training and arrangement of credit facilities and re–stocking after droughts. Over the years, reduced budgetary allocation to the public sector extension services has resulted in lowered effectiveness because it has not been possible to maximize contact with farmers in the smallholder sector. This situation has been mitigated to a considerable extent by delivery of extension services by the private sector; stock feed companies, agro–chemical companies and other input suppliers.

I.22. As mentioned earlier, Agrifoods (Pvt) Ltd and National Foods Limited are the main manufacturers of stock feeds in the country. The GMB is a 100% government owned entity under the MARD. The GMB specializes in buying, storing and selling grains and oilseeds. In addition, the GMB is responsible for the management of the national strategic food reserves at costs reimbursable by government. It is thus the main supplier of grain used in the stock feed industry.

E. Constraints and Opportunities

I.23. Major ***constraints*** facing the stock feeds industry include the following:

- ***Shortage of raw materials.*** The ability of stock feed manufacturers to compound feeds depends on the supply of grain and oilseed cakes. The supply of these raw materials in turn depends on the seasonal rainfall situation. The drought conditions in recent years have contributed to shortages of stock feeds. When a drought occurs, priority for the limited maize grain is for human consumption, which means that the range and quantity of manufactured stock feeds will be limited.

- ***Shortage of foreign exchange*** for the importation of such raw materials such as vitamins and trace minerals. Foreign exchange is needed for the purchase of vitamins and minerals used in feed manufacturing. In drought years, foreign exchange is also needed to import oilseeds and maize. Shortage of foreign exchange therefore limits the amount of stock feeds that can be manufactured and increases the price of feeds.

- ***Inconsistent grain marketing policy.*** Following market reforms of the 1990s, stock feed manufacturers were able to contract grain producers to grow maize for direct delivery to their processing plants without GMB involvement, and were able to offer higher producer prices than the GMB. This arrangement did enhance maize production thus ensuring a more consistent supply of stock feeds. Following recent shortages in maize in the country, however, this policy has been reversed and the GMB has retained its monopoly for purchasing all grains from producers. Stock feed manufacturers can still contract farmers to produce grain for them but such contracts must be approved by the GMB.

- ***Limited competition.*** As pointed out earlier, there are only two feed manufacturing companies in the country. Competition is therefore limited.

I.24. Major ***opportunities*** include the following:

- Following the implementation of the *Land Reform Programme*, the current situation in the country is that there now exists a large number of small–scale commercial livestock producers as opposed to a scenario where the livestock industry was dominated by a small number of large–scale producers. The new class of livestock producers can be a major consumer of stock feeds.

- In addition to the existing stock feed manufacturers, opportunities exist for other players to participate in the stock feed manufacturing business. As mentioned earlier, the establishment of small–scale feed processing enterprises in different parts of the country could reduce feed cost and encourage greater use of stock feeds by the largely new livestock farmers. Such localized small–scale private manufacturers are likely to have comparative advantage over the existing and distant manufacturers and the GMB.

- There is also the opportunity to diversify the energy sources through increased use of small grains in stock feeds prepared by small–scale processing plants located in semi–arid

areas of the country. This would allow intensive production of both ruminants and non–ruminants in the arid areas.

- The GMB has considered going into stock feed manufacturing and using its national network of depots for purchase and storage of grain and marketing of the stock feeds. This opportunity would enhance competition. Because of its potential operational size as a feed manufacturing entity, the GMB considers that it will have the comparative advantage of economies of scale over existing manufacturers and can offer lower stock feed prices to livestock producers and remain viable. Such a scenario could benefit both livestock producers and, ultimately, the consumers.

F. Ongoing and Planned Projects

I.25. Currently, there are no planned or ongoing projects in livestock feed production. A number of other donor supported development projects were halted following suspension of financial disbursements by some donors/lenders because of GOZ non–payment of loan arrears and, for some, because political differences with GOZ. However, GOZ has continued to support development projects from its own resources under the *Public Sector Investment Programme* (PSIP). PSIP–funded livestock production projects include the establishment of the following facilities:

- hatching facilities for guinea fowls;
- breeding and multiplication centres for beef and dairy cattle, in collaboration with the livestock research stations;
- construction of sale pens through the LDT; and
- vehicle procurement programme to enhance staff mobility.

I.26. Other livestock projects fall under the mandate of the DVS and these include the following:

- GOZ programmes: In the PISP for 2004, Z$1.8 billion was allocated for vehicle procurement and Z$3.4bn for FMD fence construction. In the 2004 recurrent budget, some Z$8bn has been allocated for purchase of FMD vaccine.
- FAO, through the emergency programme, is supporting FMD control activities through the provision of vaccines and other inputs.
- A regional emergency FMD and CBPP eradication project is in the pipeline, covering several SADC countries including Zimbabwe. The project will be financed with trust funds from South Africa and executed by FAO.
- A regional infectious disease control project is planned under an EU Trust Fund.

II. PROJECT AREA

II.1. The project will be nationwide. Small–scale feed manufacturing facilities will be located in each province excluding Harare. Selection of the location of the processing plants will be based on:

- stock feed demand and the potential for marketing of stock feeds for cattle, small ruminants and non–ruminants in the area;

- potential for production of grain (maize and/or small grains) and oilseeds by farmers in the area; and
- potential for development of livestock feeding systems by farmers in the area.

II.2. In addition to the small–scale processing plants, the project will support the establishment of a stock feed manufacturing plant by the GMB at its Norton depot on the outskirts of Harare. Below are some of the advantages of positioning the GMB feed mill at Norton:

- There is space at the Norton Depot not currently being utilized.
- The area surrounding the depot constitutes a high crop production area and the silos at the depot have large storage capacities.
- The depot has the lowest cost of transport inward and transport outward. In addition, Norton is well connected to the railway network.
- Norton constitutes a central point from which to distribute feeds to all the corners of Zimbabwe through the GMB depot network.
- Norton is close to Harare hence it is relatively easy to procure raw materials for the processing plant.
- A large number of poultry producers conduct their operations in and around Harare because there is a huge market of approximately 1.5 million people in Harare and Chitungwiza alone. Other towns that are within a 100 km radius from Norton include Kadoma, Chegutu, Chinhoyi, Banket and Mhondoro.

II.3. The GMB Norton depot has storage capacity for 162,000 tonnes comprising the following:

- Silo (Bulk) Storage, 58,000 tonnes;
- Bag Hard Stands, 100,000 tonnes;
- Bag Shed, 4,000 tonnes.

II.4. In addition, the Norton depot also has a large shed covering an area of approximately one hectare, part of which is currently being leased to third parties.

III. PROJECT RATIONALE

III.1. Since independence in 1980 it has been recognized that there is need to make stock feeds more accessible to most livestock producers and that this is an essential ingredient in encouraging smallholder farmers to increase livestock production and participate in the cash economy. More recently, the demand for stock feeds has been on the increase following the land reform programme that has created a large number of small–scale livestock producers from land previously occupied by a few large farms. This scenario, in which individual farm sizes have became smaller, is resulting in a shift from extensive livestock production focusing on range beef production, to more intensive systems for both ruminants and non–ruminants, which require relatively less land but are more dependent on the use of processed stock feeds. Secondly, the stock feed marketing system by the two stock feed manufacturers in the country has not been adequate in terms of reaching the majority of the

smallholder farmers, particularly those in the more remote communal areas. The rationale for the proposed development of small–scale stock feed processing plants in different parts of the country is, therefore, to increase stock feed availability to livestock farmers throughout the country, to address the particular needs of farmers in the different regions, and making the best use of animal feed resources available in these regions. This will be a major departure from the current scenario in which the same type of maize–based stock feed is manufactured for all farmers in the country regardless of the availability of relatively small quantities of alternative feed resources.

III.2 The decision taken by the GMB to enter the stock feed manufacturing business is based on the realization that it will have several comparative advantages over the two existing stock feed manufacturers and has the potential to offer prices that are more competitive to farmers. The wide depot network gives the GMB the economies of scale for the distribution and storage of stock feed products. This will substantially reduce the distance farmers have to walk to procure feeds and hence the overall cost of purchasing feeds.

III.3 The GMB launched the *Contract Farming Project* in 2003 that will be entering its second year in 2004. This is intended to ensure a steady supply of raw materials for the stock feed business as well as empowering farmers by providing them with a ready and guaranteed market for their produce. It is noteworthy that, although the GMB is a parastatal entity, its stock feed manufacturing activity will be strictly a business venture.

IV. PROJECT OBJECTIVES

IV.1. The ***overall objective*** of the project is to increase livestock production and productivity by improving the supply and accessibility of stock feeds to livestock farmers. The ***immediate objectives*** are to:

- increase processed feed production by providing financial and material support to small–scale processors and the GMB; this is expected to increase the supply of stock feeds and their utilization by livestock farmers, leading to improved livestock production;
- enhance food security and nutrition through the increased availability of livestock products;
- increase incomes of livestock farmers and, in general, the rural areas by boosting trade and commerce;
- enhance foreign exchange earnings through increase livestock exports; and
- build the capacity of stock feed processors.

V. PROJECT DESCRIPTION

V.1. The project will have two components.

<u>Component 1:</u> Stock Feed Production

V.2. ***Sub–component 1: Support to small–scale feed manufacturers.*** The project will support entrepreneurs and farmers, individually or as groups, in establishing small–scale stock feed processing

plants. At least 32 such small–scale enterprises, 4 in each of the 8 rural provinces, will be established. These facilities will be able to mill and mix up to 2 tonnes of feed per day. The facilities will produce feeds for use by livestock producers in the geographical area and will supplement supplies from the big commercial manufactures. The project will provide the small–scale processors with a line of credit for buying plant equipment, constructing storage facilities and initial working capital.

V.3. ***Sub–component 2: Support to large–scale feed manufacturers.*** The project will support the GMB with a line of credit for the purchase of imported equipment needed to complete and commission the stock feed manufacturing plant in Norton. The bulk of locally sourced equipment and materials are already in place and other preparations have already been done by the GMB using its own resources.

V.4. The GMB will install and commission the Norton mill. The mill will have a capacity of processing at least 60,000 tonnes of feeds per year and a useful working life of approximately 20 years after which a comprehensive overhaul or replacement of equipment will be done.

V.5. *Product Lines*. GMB proposes to manufacture and sell various types of stock feeds to the beef, dairy, poultry, ostrich, pig and related industries. The following branded products will be produced at the GMB's Norton depot:

- Silo layers concentrate/mash
- Silo broilers concentrate/mash
- Silo pig concentrate/mash
- Silo beef concentrate/mash
- Silo breeder concentrate/mash
- Silo dairy concentrate/mash

V.6. *Manufacturing Process*. A premixing process will be employed to convert the concentrate into highly nutritious livestock feeds. The branded premixes will be packaged and sold by GMB through its countrywide depot network. The equipment that GMB has identified for this project comprises a 10–tonne automated stock feeds manufacturing plant with 16 intakes and proportioning bins.

V.7. Through its countrywide depot network and its value–adding operations, the GMB handles at least 16 different types of raw materials that will all be used in manufacturing stock feeds. Table 3 shows the raw materials to be used in stock feed manufacturing.

Table 3: Raw materials available within the GMB System

Energy sources	Fibres	Plant proteins
1. Barley	1. Screening from mill	1. Edible beans
2. Sorghum	2. GMB dust	2. Soybeans
3. Maize	3. Dust from Silo	3. Groundnuts
4. Wheat	4. Pollards from Mill	4. Sunflower
5. *Mhunga*		
6. *Rapoko*		

V.8. As GMB does not have an oil extraction plant to produce soybean cake, sunflower cake and cottonseed cake, feed rations will be prepared using whole full fat soybeans.

V.9. The proposed feed mill will be constructed with close involvement of GMB technical staff including fitters and other technical staff to pave the way for easy hand over of the completed plant to the GMB.

Component 2: Training

V.10. The project will provide small–scale processors with training in various areas, including the operation and maintenance of plant machinery, stock control, feed formulation and manufacturing, quality control and marketing. At least 32 technicians, one from each processing mill, will be trained.

V.11. The firm that will supply the equipment to GMB is expected to train personnel in all aspects of operating the feed mill. Training of GMB staff in feed formulation has already commenced and five GMB employees have attended a one–week training programme conducted at the University of Zimbabwe (UZ). GMB has also engaged a consultant to conduct feed formulation and to assist in all the preparatory work ahead of the launch of the project. Therefore, the major area in which the project training will assist GMB will be in product quality control and assurance to meet both the national and international feed standards. It will also assist the GMB and small–scale processors in building capacity for marketing their products in order to enhance competitiveness. The training should enable the processors including the GMB to engage the following marketing strategies:

- Enhance total value delivered to the customer by product innovation and differentiation by developing unique stock feeds to give high return to farmers and hence empower them.
- Ensure there is extensive distribution of feeds in new resettlement areas.
- Embark on promotional programs that include demonstrations or training to enhance the development of the livestock sector especially in the new resettlement areas.

V.12. **Product Marketing.** The various customer segments to be targeted for the processed products by both the GMB and the small–scale processors include the following:

- urban farmers rearing backyard poultry;
- peri–urban farmers;
- communal farmers;
- small–scale commercial farmers;
- Model A1 resettlement farmers;
- Model A2 resettlement farmers; and
- institutions including agricultural/technical/tertiary colleges.

VI. INDICATIVE COSTS

VI.1. The project will be implemented over a 5–year period and is estimated to cost US$32.6 million. Of this total base cost, US$23.1m or 71% will be in local currency and the remaining US$9.5m or 29% will be in foreign exchange. These estimates are summarized in Table 4 below. The estimates for sub–component 1.1 are very preliminary, as detailed costing have not been carried out. Those for sub–component 1.2 have been provided by GMB.

Table 4: Project Cost Summary by Component (US$000)					
Component	Local	Foreign	Total	% Foreign exchange	% Total base costs
1. Stock feed production					
1.1 Small–scale feed manufacturing	400	600	1,000	60	3.8
1.2 Large–scale feed manufacturing	17,950	7,000	24,950	28	95.8
2. Training	100	0	100	0	0.4
Total baseline costs	18,450	7,600	26,050	29	100
Physical contingencies	1,845	760	2,605		10
Price contingencies	2,767	1,140	3,907		15
Total project costs	23,810	8,750	32,562	29	125

VII. PROPOSED SOURCES OF FUNDING

VII.1. No significant financing role is foreseen for the government, which will contribute only 5%. The small–scale processors are expected to raise about 10% of the funding as equity and the balance will come from the project credit line. As all materials and equipment needed by the small–scale stock feed processors are available locally, no foreign exchange is required under this sub–component. For sub–component 1.2, the GMB will finance 72% of the costs. The GMB has already procured most of the items needed to commission the processing plant at Norton. However, it will require US$7m or 28% of the budget in foreign exchange for procurement of some of the imported equipment needed to complete installation of the manufacturing plant. The beneficiaries will finance the full cost of the training component. The donors/IFIs will contribute about 55% of the needed funding while the private sector will bring in another 10%.

VIII. PROJECT BENEFITS

VIII.1. The major benefits of the project would accrue to the livestock farmers, especially the newly resettled and smallholder farming communities willing to embark on commercial livestock production. Other main beneficiaries will be the feed manufacturers and suppliers of raw materials, including crop farmers.

VIII.2. The envisaged major benefits from this project include the following:

- Increased incomes to both the feed processors and traders, livestock farmers and the rural community as a result of revenues from feed and livestock sales.
- Increased livestock production and productivity by the farming community.
- Improved feeds product range, therefore, greater choice for farmers.
- Stabilization of feed prices and increased availability of feeds in the country.
- Increased generation of foreign currency through feed and livestock product exports.

IX. IMPLEMENTATION ARRANGEMENTS

IX.1. The *Ministry of Agriculture and Rural Development* (MARD) will be the lead agency with overall responsibility for project–level planning, coordination, monitoring and evaluation of all the project components. The GMB will implement the sub–component 1.2 and training activities pertaining to the GMB under Component 2. A team of GMB officials and the GMB consultant have already been to South Africa to assess and recommend on suitable equipment for the feed processing plant. The tender document for ordering the equipment has now been prepared for action by the State Procurement Board. The tender for the construction work will be floated after the equipment tender has been awarded. Buildings may take up to four months to complete while the whole plant will be in place within a period of 10 months.

IX.2. The MARD through its service departments will be responsible for identification and selection of potential small–scale stock feed entrepreneurs based on criteria to be developed during project formulation, including the ability of the entrepreneur to raise funds to meet part of the project costs. Training needs of the processors will be identified through a study commissioned by MARD for this purpose, and private and public sector institutions, consultants and NGOs will be identified to provide relevant and time–scheduled training to the small–scale processors and their staff. It is expected that the GMB will provide own training using its own resources. Together with the Ministry of Finance and other relevant entities also to be identified during project formulation, MARD will develop modalities for channelling funds to all project beneficiaries and to institutions and NGOs providing service to the project.

IX.3. AGRI Bank and the commercial banks will manage the project credit line for lending to interested small scale feed processors. The private sector will manufacture, supply and install the equipment for the processing plants. GMB and crop farmers will supply the grain required as raw materials for the plants.

X. TECHNICAL ASSISTANCE REQUIREMENTS

X.1. In addition to the technical expertise in feed formulation currently being availed to the GMB by the consultant engaged to spearhead the implementation of this project, the GMB will require assistance from the *Department of Livestock Production and Development* (DLPD), AREX, the *Department of Animal Science* at UZ, the SIRDC, the *Biotechnology Institute of Zimbabwe* and the Zimbabwe Institute of Engineers. These institutions are expected to provide advice on the suitability of the proposed brands of feeds GMB will be launching and to assess the appropriateness of the plant layout and structures as and when the need arises.

X.2. The small–scale processors will require technical assistance in the following areas:

- Appropriate building designs and layout for the processing plants.
- Inventory and specifications of plant and equipment required.
- Identification of sources and types of raw materials.
- Feed formulation, including the use of alternative raw materials at least cost.
- Staff training.

X.3. Details of the assistance required will be developed further during project formulation.

XI. ISSUES AND PROPOSED ACTIONS

XI.1. Donor funding might not be forthcoming in the short term. This might delay project implementation. However, the GoZ has recently resumed some negotiations with the IMF and World Bank. This is an indication that donors have not closed the doors completely and is a hopeful sign for this and other projects.

XI.2. The proposed scale of feed processing operations by the GMB is substantial, ideally requiring substantial additional human capital and infrastructure in the form of technical field and laboratory staff and related equipment, a dedicated fleet of transport and support vehicles and services, as well as possible additional storage space at some depots. Most of the facilities already exist but these were developed for grain marketing and storage under the GMB's traditional mandate as a parastatal entity. It is not clear how the stock feed manufacturing business by the GMB will fit in with its traditional mandate. It is also not clear as to the level of autonomy the stock feeds business will enjoy. These issues need to be addressed during project formulation. Secondly, because the GMB is a monopoly as regards purchase, storage, distribution and trade in grain in the country, another issue is whether the GMB will be a fair and transparent competitor in the feed processing industry without some substantial change in the grain marketing policy.

XII. POSSIBLE RISKS

XII.1. Several major risks have been identified.

- ***Persistent Macroeconomic Instability.*** The present macro–economic difficulties, particularly high inflation, the shortage of foreign exchange and the high cost of borrowing, could deter entrepreneurs interested in establishing feed processing enterprises or could hamper ongoing feed processing activities.
- ***Droughts.*** Occurrence of droughts may lead to shortages of raw materials and to increased cost of the limited stock feeds produced during drought periods.
- ***Raw Material Prices.*** Because the profitability of livestock feeding depends largely on the cost of feed in relation to the price of the livestock products, any government intervention that increases the price of raw materials like grain or restricts their availability for stock feed manufacturing has the risk of negatively affecting feed processing and livestock production generally.
- ***Product Quality.*** Experience elsewhere in Africa has shown that participation in stock feed manufacturing by several small–scale processors must be accompanied by a comprehensive quality control monitoring system, including strict registration of stock feed brands. Otherwise, there is risk that farmers will be provided with substandard stock feeds. Thus, the role of the *Standards Association of Zimbabwe* in monitoring adherence to stock feed quality standards will be crucial.

ANNEXES

Annex 1: Some Processes for Raw Material and Stock Feed Handling and Other Related Equipment and Materials

Annex 2: Management Structure of the GMB Stockfeeds Manufacturing Project

Annex 1: Some Processes for Raw Material and Stock Feed Handling and Other Related Equipment and Materials

During stock feeds formulation raw materials undergo the following series of modification and handling sequence:

- Cleaning
- Milling
- Weighing
- Mixing
- Bagging

The packaging that is used has to be strong to withstand rough handling and Jute or Hessian bags are recommended for this purpose. On the other hand, the feed mill will also have a facility for bulk dispatch to cater for large livestock breeders.

The components of an automated stock feeds manufacturing plant include the following:

- Bin/raw materials/storage bins.
- PLC Control System.
- Elevators/conveyor – transportation of products.
- Precision weighing system/proportions of raw materials for stock feeds.
- Milling process to crush raw materials to required size.
- Mixing conveyor–mixes batches.
- Bagging off–take.
- Bulk off–take.
- The other accessories are small–ingredients incorporating machines to allow addition of:
- Vitamins
- Minerals
- Molasses
- Medicines
- Pelletizer
- Cube formers
- Block formers
- Flake formers

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