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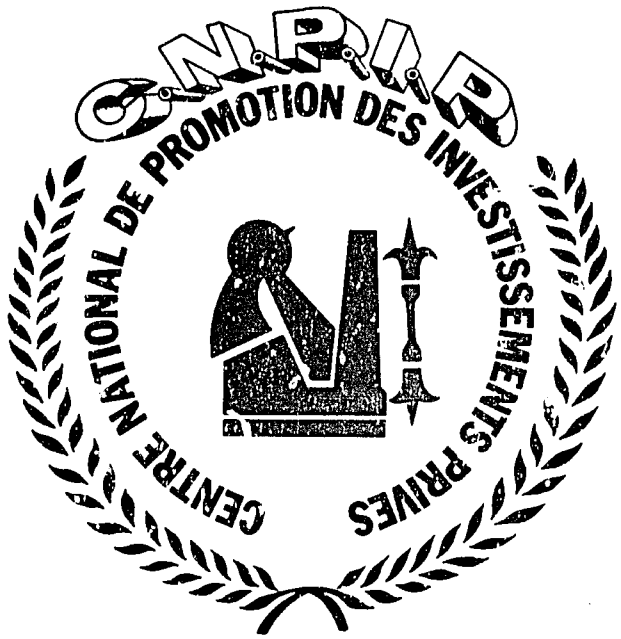
INTEGRATED POULTRY VENTURE



Prepared under the
Guinea Private Agribusiness
Preparation Project

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Executive Summary

The Guinea Integrated Poultry (GIP) project outlined in this profile document seeks to capitalize on the infancy of Guinea's poultry industry by introducing an integrated venture that relies on a nucleus farm and outreach approach. The project would first center its attention on the more populated and urban region of lower Guinea, expanding its operation as warranted by successful results.

The project's goal, aside from attaining an adequate return, is to move the poultry industry in Guinea out of its nascent stage and to solidly place it in a growth phase. To accomplish this the project would move through three development phases.

A. Project Structure

The project would operate from a nucleus farm where a broiler dressing unit, layer unit, breeder/hatchery unit, and a feed production unit would be maintained. The project would rely on contracted producers to supply broilers for the dressing operation, giving technical assistance to these growers to enhance the quantity and quality of their birds.

These contracted producers would also be the primary market for the chicks hatched by the breeder/hatchery unit. As feed represents a significant percentage of variable costs, the venture would grow its own feed ingredients and mix its own feed in quantities sufficient to supply internal and contractor needs.

B. Profitability

As presented in this analysis, the project is worthy of further consideration and possible investment. The internal rate of return is greater than forty percent, on a ten-year basis, and should be acceptable to most Africa-wise investors, even given the cautions explained in the section on profitability. At 25%, the net present value is over $4.3 million.

Throughout the analysis, each unit, except administration, is deemed a profit center. Each of these operating units, when considered independently, is a net positive contributor to overall company cash flow position.

C. Marketing

The items for sale by the enterprise are separated into primary and secondary products. The former includes dressed broilers, table eggs, and broiler chicks. The latter

includes live broilers, sixteen-week-old layers, spent layers, spent female and male breeder broilers, and excess feed or feed ingredients, i.e., over and beyond the project's own needs.

Existing market prices in Guinea for the above products are used in all calculations or used as the basis from which estimates are derived. The greatest unknown factor is the actual size of the market for each product category.

Conservative estimates place the poultry meat market and table egg market at 104,860 birds and 223,000 dozen eggs a week, respectively. These estimates are based on an initial target population of 2 million people. GIP's share of these estimated markets represents less than 50% and 10%, respectively. Obviously though, the marketing aspect of this pre-feasibility study needs further clarification, as it will determine ultimate project size and potential profitability.

D. Production Site

The project is divided between two sites, Faranah, and the SOMAPAS operation near Conakry*. In the former case, SOMAPAS already has existing poultry production infrastructure that GIP could profit from plus it is near ports-of-entry and the primary market area. In the latter instance, the Faranah area offers ample and acceptable land for the growing of feed ingredients. Both are connected by one of the best roads in Guinea.

E. Production Methodology

Each of the four units would operate semi-independently with overall coordination and input flow managed by the administrative unit. The four production units would be phased in over four years starting with the broiler operation, followed by the layer and feed production units, and finally the breeder/hatchery unit.

The broiler unit would rely on technical assistance, provided by extension agents to contracted producers, to develop and maintain an adequate grow-out of broilers for the dressing plants. After several years a hand-operated killing plant for dressing poultry would be replaced by a mechanical plant, which would permit a significant increase in the number of dressed broilers delivered to market.

The layer unit would operate seven barns for raising layer chicks to production age and four barns for producing layers. To take full advantage of grow-out facilities, the unit would raise additional layers for sale to other table egg producers. Layers are expected to produce for about one year at roughly 220 eggs/layer/year.

*SOMOPAS is a joint venture poultry complex, now almost defunct.

As feed is such an important cost component in raising poultry, 1300 acres of land would be brought into production as soon as possible. Policy will be to produce for the milling and mixing of feed and only after mill/mix capacity is reached will excess feed ingredients be sold on the open market. This is important given the disparity between current ingredient prices ($900/mt) and feed prices ($500/mt).

Center pivot irrigation would be used, permitting double cropping. Two-thirds of the acreage would be devoted to corn and the remainder to soy bean. Six month's storage capacity is planned at the Faranah farming site, with a one-month supply of feed stored at the poultry site near Conakry.

The breeder/hatchery unit will commence only after a sufficient number of contracted broiler producers have agreed to purchase their day-old chick needs from the unit. The unit would operate two grow-out barns where imported broiler breeder chicks (male and female) would be raised and three barns for laying breeders. A breeder is expected to lay 130 hatching eggs during the course of its eight-month production cycle.

The hatchery complex would take the broiler breeders' eggs, incubate, and hatch them over a twenty-one-day period. The objective would be to place, on average, 6,000 broiler chicks a day with contracted broiler producers. At 6,000 chicks a day, the mechanical dressing plant's estimated throughput can be maintained without relying on imported broiler chicks.

CNPIP PROJECT PROFILE #3

GUINEA INTEGRATED POULTRY VENTURE

Unlike many of the other developing countries of West Africa (e.g., Senegal, Mali, Sierra Leone, Ivory Coast), Guinea does not yet possess a poultry meat and egg production and distribution industry. The industry's present status in Guinea is best characterized by dispersed small-farm production and a poorly organized distribution network. These factors result in erratic supply of low quality poultry products at the urban consumer level.

A. Project Concept

The poultry project envisaged will capitalize on the poultry industry's positioning at the early, informal stages of market development by supplying pent-up demand through an integrated poultry venture. The venture will first concentrate on serving the more populated and urban region of lower Guinea, but will expand its operations to other geographic areas in Guinea as it progresses through planned growth phases.

The project will move the Guinean poultry industry from its informal infancy into an output-maximizing growth stage. Besides broiler and layer operations, the venture will develop ancillary but strategic integrated poultry production activities including a hatchery and grain production and milling. In addition, the project will encourage and support independent poultry producers.

The Guinea integrated poultry (GIP) venture will progress through three expansionary phases. The period covered by these three development stages is four years; however, the exact duration of each phase will be at the discretion of company management, as subsequent expansion will depend on the success of each preceding phase.

1. Phase I (one year estimated duration)

The essence of phase I is to establish a small nucleus poultry operation consisting of a layer unit, producing more than 16,000 functioning layers a year (with an even greater number of layers raised each year for sale to other producers) and an outreach unit, contracting for a minimum of 1,000 eight-week-old broilers a day for delivery to a hand-operated killing plant. The layer unit and the hand-operated killing plant will commence operations some time during the phase (assumed here for analysis as month eight and six, respectively).

The outreach program is an important aspect of the nucleus farm, around which the GIP company would be incorporated. An effective extension unit will reduce the capital investment costs of the proposed venture

through technical assistance and other support to third party producers, whom the project could then contract to provide nucleus farm needs, as for example, broilers. Besides technical assistance, the extension unit will also offer, for nominal fees, baby chicks, feed, material, and drugs to producers interested in establishing broiler and/or layer operations. By the middle of the second phase, approximately 162 producers will be under contract to the nucleus farm to market their combined yearly output of 1,620,000 broilers (2,000 broilers/9 week cycle x 5 cycles/year x 162 contracted producers) or about 4,450 broilers per day.

Training of nucleus farm personnel and extension agents will begin six months prior to the project start. Chicks (for both broilers and layers), feed, and feed concentrate will be imported. However, as feed represents by far the greatest single variable cost in raising poultry, the venture will integrate backwards and implement a corn and soy bean production program. In addition, a feed mill/mix complex will commence operation, milling and mixing local and imported feed ingredients and concentrate. Contracted poultry producers will also receive instruction on how to enhance their yields of feed corn, should they opt to grow their own rather than purchase from the nucleus farm.

2. Phase II (two year estimated duration)

During this phase the layer unit comes into full production, producing on average almost 9,000 table eggs for market each day. In addition, the contracted broiler operation would be expanded to 25,000 to 30,000 birds a week, as a mechanical killing plant is constructed towards the second half of phase II.

To eliminate the need to rely on overseas suppliers of broiler chicks, towards the end of phase II, a breeder program will be developed to support a hatchery unit, provided success to date justifies such an operation. The outreach program will continue. Depending on success and demand, contracted farmers may be encouraged to increase production from 2,000 birds/cycle to upwards of 5,000+/cycle. In addition, expansion to Faranah and Labe will be considered, as will the opening of a fried chicken outlet in Conakry.*

*This prefeasibility study does not analyze the potential of these expansion activities.

3. Phase III (one year estimated duration)

The most important aspect of Phase III will be the development of the hatchery unit, provided the venture has contracted with a sufficient number of producers to take delivery of day-old broiler chicks. Finally, if warranted, production centers will be opened in Kankan and Gaoual.*

4. Concept Overview

Given that feed represents the preponderance of variable costs in a broiler, layer, and breeder program, a truly integrated poultry enterprise is one that tries to control and manage the upstream, feed ingredient production costs. Hence, the event with the greatest impact on industry development and project growth will occur about halfway through phase I, as the venture grows corn and soybean to control feed costs, and begins operating a killing plant, offering to the consumer the first Guinean mass-produced, dressed, and marketed poultry product.

B. Project Contribution to National Development

The GIP venture will most obviously enhance the nascent Guinean poultry industry, taking it from immaturity to a growth industry focused on output maximization. It may be, however, the nurturing of requisite conditions for industry growth and the resultant effects of such growth that contribute most to Guinean development.

The project highlights the Guinean private sector potential to participate in and contribute to the nutritional, agricultural, and educational development of all those who are in contact with the project. Poultry represents one of the most affordable means of increasing the protein level of a diet. By increasing the availability and the marketability of poultry products, the project will contribute to improving the nutritional value of the diet of many Guineans.

Because the venture will rely on an outreach program to provide some of its needs, the GIP project will extend improved poultry husbandry to many other poultry producers. Such outreach increases the supply of poultry in the rural market as some of this rural production can be sold locally as well as distributed throughout the targeted, more urban marketing area. Furthermore, as the project grows, it will have countrywide impact, through the planned production centers in Faranah, Labe, Kankan, and Gaoual.

*This prefeasibility study does not analyze the potential of these expansion activities.

As an integrated company, the GIP venture will also contribute to improved cereal production. In turn the grain produced will provide the key ingredients for a feed milling and mixing operation, with excess production available on the open market, which should reduce the need for imported feed and feed inputs.

Besides the labor necessary to operate a broiler processing unit, a layer growout and egg producing unit, a broiler breeder/hatchery unit, and a feed production unit, the GIP undertaking will help fill a veterinary void in the field of poultry husbandry. The project will provide overseas training and, more important, hands-on experience for a poultry vet, initially under the supervision of an expatriate expert. In addition, the vet will have at his/her disposal a modern diagnostic laboratory and library facility.

Given the venture's anticipated rapid four-year development, these and other contributions will be felt relatively soon. In fact, except for the breeder/hatchery unit, all other production units should be in operation by year three.

C. Marketing

A detailed market investigation was not undertaken for this prefeasibility study. The assumptions spelled out below must be verified by a thorough market survey. Nonetheless, the market information presented is considered conservative and indicative of expected minimum initial market levels.

1. Poultry Market Location & Trends

Generally, an integrated poultry operation in West Africa requires a fairly urban target population of roughly one million people. Given this rule-of-thumb, the logical initial marketing area is the region of lower Guinea. One-third of Guinea's nearly seven million people live in lower Guinea and the majority of these live within the area outlined in Figure 1, with Conakry representing nearly 600,000 people. In addition, Conakry and Kamsar have the greatest population of expatriates, a small but potentially important trend setting market segment.

While not substantiated in this study, indicators exist which allude to a possible improvement in the economy. Among some of these subjective, qualitative trends are:

- increasing recognition of the importance of the private sector as evidenced by, among other things, the new investment code, the creation of CNPIP (National Private Investment Promotion Center), and the opening of a foreign exchange auction

Guinea

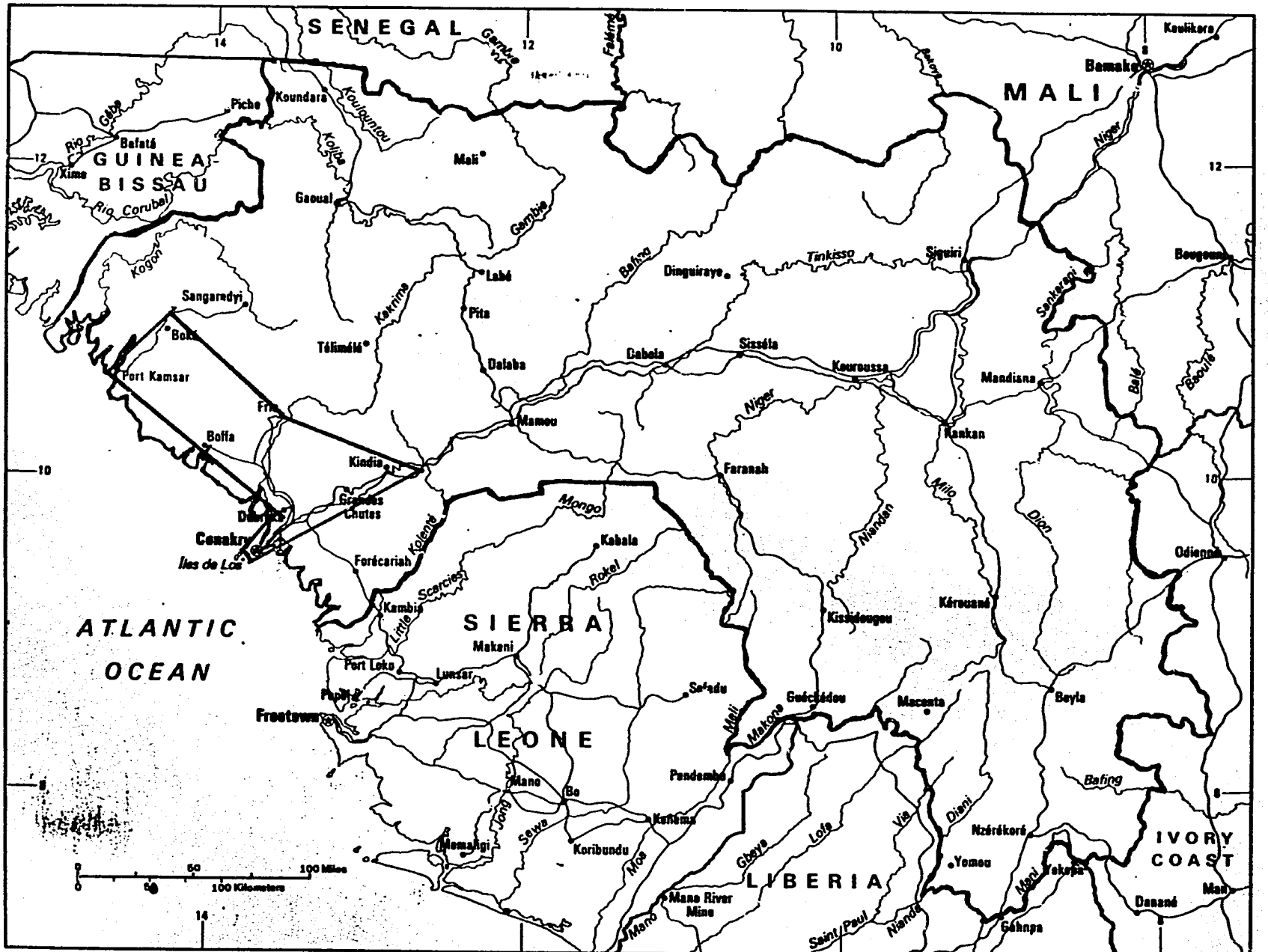


FIGURE 1
Initial Poultry Marketing Area

- Guinea's pending and likely acceptance as a member of the CFA zone, which would put its currency at a fixed 50:1 exchange rate with the French franc

- the Government of Guinea's efforts to reduce the size of its public sector, e.g., reducing its payroll and privatizing current parastatal companies

The importance of these and other indicators of potential economic turnaround is that as per capita income rises consumption of poultry products tends to rise faster. An observation made in a World Bank paper put such income elasticity for poultry consumption at two to three times the increase in per capita income.*

Poultry products are almost universally accepted and urbanization tends to lead to a preference for commercially raised poultry rather than traditional village birds. Thi- coupled with the extent of assumed supressed demand in Guinea, due to lack of supply, means that even a rapidly expanding supply is not likely to lead to a decrease in price.

2. Primary Products

Inadequate market data affects all estimates of poultry product consumption in Guinea; therefore, conservative estimates are made based on observations during a field visit to Guinea in May 1986 and the author's own experience. The primary products of the GIP venture, and the year of introduction (in parentheses), are: dressed broilers (1), table eggs (2), and broiler chicks (4).

a. Broiler Market

With respect to broiler demand the pertinent assumptions are:

- Initial target region is lower Guinea.

- One-third of this population could buy an improved broiler (live or dressed).

- Consumption would average two birds/month.

- One bird would serve three individuals.

- Serviceable expatriate population is 3,000, at three birds/month/two people.

*Appraising Poultry Enterprises for Profitability: A Manual for Potential Investors. World Bank Technical Paper Number 10. 1983.

Given these conditions, the estimated potential daily and weekly consumption of broilers is 14,980 and 104,860, respectively.

Initially, birds will be sold live. This approach offers two benefits. First, it allows the company to establish its all-important distribution system. Second, by marketing live broilers, the company can build recognition and acceptance of its broilers through a more widely known and consumed product, while promoting the soon-to-be-available dressed broiler.

As awareness, consumption, and production expands, the venture will begin to supply the market with a New York dressed type product.* Prices are not expected to fall as increased production (live and dressed) will still not be sufficient to meet estimated weekly needs. Even contracting for twice the capacity of the mechanical killing plant, to insure necessary supply, would represent less than 50% of estimated weekly consumption. Restated, predicted market size could be off by as much as 50% and the venture could still not meet expected demand.

The price for a live bird in the Conakry market as of May 1986 was 1,300 GF per kilogram (or $3.71, at GF 350/$).** The same figure is used in revenue projections for both live and dressed birds. This represents a conservative sales price as it assumes no added value for dressing a bird.

b. Egg Market

The following assumptions are made regarding the table egg market:

- Initial target region is lower Guinea.
- Entire population is potential consumer, with conservatively one-third consuming two eggs/week and two-thirds consuming one egg/week.
- Expatriates would consume four eggs/week.

With these parameters, the estimated weekly and daily consumption of eggs is 2,678,400 and 382,630, respectively. At this level of demand the venture (nucleus farm production plus third party production, where the layers are purchased from the nucleus farm) would supply less than 10% of market needs.

*A New York dressed bird is killed, with blood and feathers removed. In this instance, the head and feet are left on and viscera removed. This product has proven very popular in other West African countries.

**This price ranged from a low of $2/kg for a rough, old bird to $4.57/kg for a very large, healthy bird.

Current supply comes from local producers and Sierra Leone. Prices range from 50 GF to 70 GF per egg, which are smaller than those expected to be produced by the project. For revenue calculation, a price of 60 GF (or $0.17/egg) is used.

c. Chick Market

Since a breeder/hatchery unit is a difficult undertaking, this study only analyzes the feasibility of operating a small unit. This approach will allow the unit to expand as dictated by its own viability at lower levels of production and by market demand.

For analysis, the broiler chick market may be considered as essentially equal to the contracted broiler production, even though interest may be such that a sizeable non-contracted market could develop. Market size, therefore, is based on minimum throughput of 25,000 birds a week for the mechanical killing plant. Allowing for mortality and some excess broiler production (sold as live birds), a breeder/ hatchery unit would need to place 30,000 chicks a week.*

The expected import cost of broiler chicks is $0.60/ chick. Therefore, the unit would have to hatch at or less than the import cost of day-old broiler chicks to justify a breeder/ hatchery operation. If the costs are not prohibitive, operating a breeder/hatchery unit will offer the added benefit of enabling the enterprise to control a sufficient supply of chicks to at least maintain target killing plant throughput.

3. Secondary Products

Secondary and important cash flow products, with the year of introduction (in parentheses), are: live broilers (1), sixteen-week-old layers (2), spent layers (3), spent broiler breeder layers and males (4), and excess feed ingredients and/or feed (1).

The sale price for live birds is estimated at the current market price of 1,300 GF per kilogram ($3.71/kg.). It is assumed that spent layers and spent breeder hens will be sold at $3.71 a bird, regardless of weight. The market price for a spent breeder cock is calculated at 700 GF/kg. ($2/kg.) because the cock, while a bigger bird, looks more weathered after a year of breeding and has much tougher meat than the other available live birds. The lower price, however, should be attractive to a different, lower income market segment than the other poultry products.

*As the venture would contract for broilers at almost twice its estimated killing plant needs, broiler chicks would still have to be imported.

Assuming an average third party layer hen operation of 1,000 layers, which would only require one small barn, a total of 30 producers could purchase the GIP project's estimated annual excess sixteen-week-old layer production. Based on interest shown during the May 1986 field trip and interested parties registered with CNPIP, placing the layers will not pose a problem. Sixteen-week-old layers will be sold at cost plus $0.60.

Excess grain production (corn and soy bean) will be sold on the local market at prevailing prices, which in the past have ranged from $900 to $2,000 a metric ton. Excess feed will be sold at the estimated import price for each variety of feed mixture produced.* Even though the sale of grain is likely to show a much greater contribution than the sale of feed, the venture will produce as much feed as milling and mixing unit capacity will permit, to promote poultry and other livestock growth throughout Guinea.**

4. Competition

A few moderate-sized broiler and layer operations do exist, but direct competition should not be a major factor. The GIP enterprise will not be growing broilers but contracting for production. Consequently, the present local operators may actually become contracted broiler producers for the project.

As total table egg production from all project grown layers (whether kept on the farm or sold) will represent less than 10% of potential demand, the project poses little competitive threat, nor should it be threatened in such a vast, untapped market. Those producing table eggs may actually come to purchase their layers from the project, as they will receive a better bird at the same or a lower cost than if they grew their own layer from a chick.

The greatest competition is likely to come from red meat, such as beef, goat, and lamb. These commodities are already widely consumed and poultry meat will be seen as a substitute for these other accepted products.

Viewed as a substitute, price and availability will greatly affect the frequency of substitution. The already high consumption of red meat is not likely to increase vis-a-vis alternatives, such as poultry. In fact, red meat consumption as a percentage of total consumption may actually decrease as poultry becomes more widely available.

*For calculations assumed to be on average $500/mt.

**By also offering grain farming extension, the project may be able to contribute to increased local grain production, thereby bringing down the price.

Currently, at 1,300 GF/kg., poultry sells for more than some of the poorer meat cuts but less than the prime cuts. And in the future, there should be less upward pressure on poultry prices (perhaps even downward) than on meat prices. This is primarily due to poultry's already relatively high price resulting from demand/supply constraints and production cost factors.

5. Distribution

There are two major aspects to the distribution problem in Guinea. First, the physical delivery and pick-up and, second, the set-up of channels through which company products can be sold. In the former instance, ample provision is made for necessary vehicles. In the latter case, the GIP venture could become a wholesaler or operate retail outlets for poultry products.

Physical distribution is seen as primarily a capital cost. Depending on the approach, channel distribution could be either primarily a capital or operating cost. For simplicity, it is treated here as an operating expense, expressed as a percentage of sales in Table 1.

Table 1. Estimated Marketing Costs*

Product	Year -1-	-2-	-3-	-4-	-5-	6-7	8-10
Broilers: Live	4	4	4	3	3	3	3
Dressed	6	6	6	6	5	4	3
Eggs	-	2	2	1	1	1	.5
Chicks	-	-	-	3	3	2	1
16-Week Layers	-	3	3	3	2	2	1
Spent: Layers	-	-	2	2	1	1	.5
Breeder Hens	-	-	-	2	2	1	.5
Cocks	-	-	-	2	2	1	.5
Feed/Feed Inputs	3	3	3	3	3	3	3
XS Feed/Feed Inputs	5	5	5	5	5	5	5

Percentage of Dollar Sales By Volume

6. Barriers

There exist many factors which can have an adverse impact on the project. However, none of these "barriers" are insurmountable provided one is aware of them and plans accordingly. Among some issues to consider are the following:

- Guinea is primarily a muslim country. Broilers, therefore, must be killed following muslim prescripts, which essentially means the killing room must allow the birds to be killed towards Mecca, or the east.

- A taste preference exists for older birds and a purchase preference for live birds.

- Freezers are a luxury, so production of dressed broilers is primarily for consumption on the day they are delivered to the retail channel (depending on retail storage capacity).

- It is necessary to assure that third party producers comply with delivery contracts.

- Domestic and international communications are inadequate.

D. Project Site

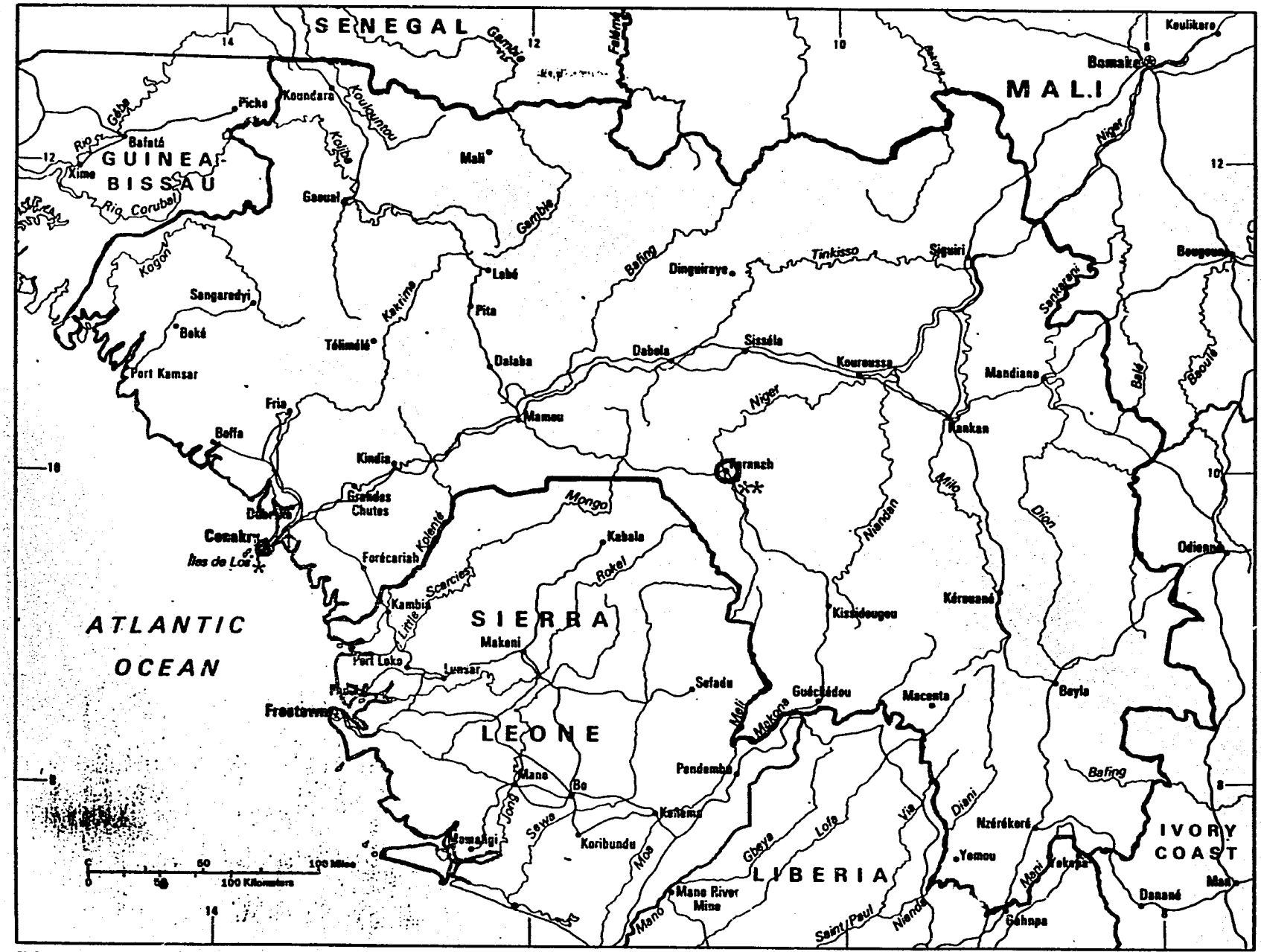
Whether chick, broiler, layer, or breeder, poultry do not travel well. To minimize losses on the production end and to speed placement on the marketing end, two poultry production sites are located in lower Guinea, within easy access of Conakry and a few kilometers from each other. The feed production unit is situated in the area most suitable to input farming, although some distance from Conakry (one to two days). Figure 2 indicates the approximate location of the poultry and feed production sites.

1. Poultry Site

The preferred poultry location is the site of the present poultry operation of SOMAPAS. SOMAPAS started as a joint operation in June 1983. SOMAPAS now finds itself in a difficult operating situation and it is believed an agreement could be reached with the present board to either lease the facilities or determine a fair equity value.

The two SOMAPAS sites have adequate space for all facilities, a number of which already exist, including: layer barns, hatchery, and a small mix mill. For investme--

Guinea



* Poultry Production Site
**Feed Production Site

FIGURE 2
Poultry and Feed Sites

purposes, however, it is assumed that all needed structures will be built, except for the layer barns which are in excellent condition.

One of the advantages of the SOMAPAS operation are its proximity to Conakry, the international airport, and the port facilities. In addition, there exist adequate water and fuel supplies. Moreover, there are an adequate number of interested poultry producers to contract with nearby. SOMAPAS could also offer a pool of employees, at different levels, who are already familar with poultry production.

2. Farm Site

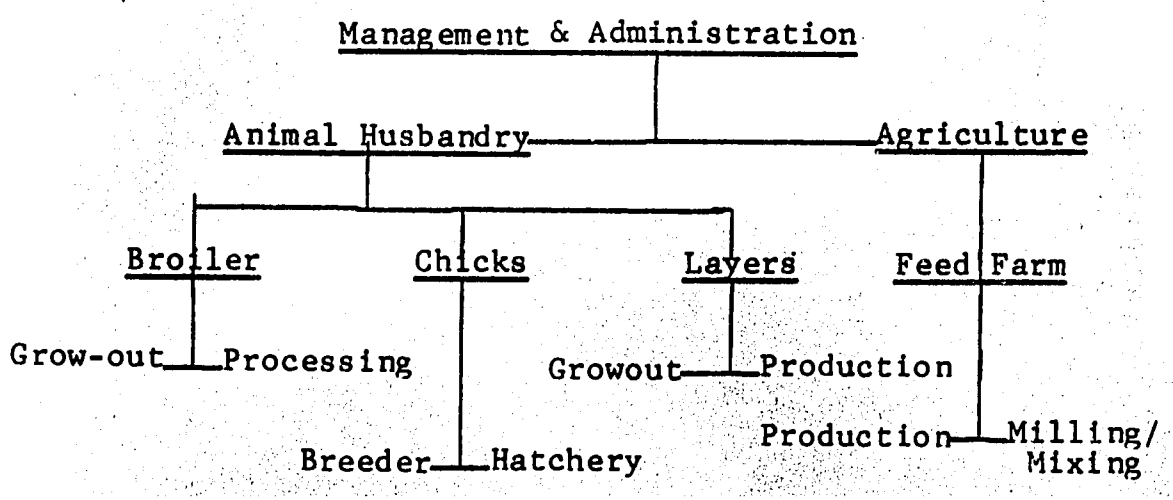
The location for the grain production unit is the area of Faranah. The land is good, some infrastructure facilities already exist, and the road to Conakry is one of the best in the country, with long stretches of black top and intermitent sections of deteriorated road.

Land in the Faranah area is savannah-like and sparsely covered, not requiring substantial investment in land clearing and preparation. In addition, the nearby Niger river will permit double cropping.

E. Production

As envisaged, GIP will be an integrated operation consisting of a dressed broiler unit, an egg production (layer) unit, a breeder/hatchery unit for broiler chicks, and a feed production unit. Each of these divisions is discussed below. An overview of the operational structure is shown in Table 2.

Table 2. GIP Operational Structure



Initially, each unit is considered semi-independent. That is, return will be judged on overall performance and each unit will be expected to contribute, i.e., operate as a profit center. In the future, it may be determined that it is more advantageous to manage certain aspects as cost centers.

1. Dressed Broiler

To take advantage of a high level of interest among potential producers and to reduce capital expenditures, the GIP venture will rely on contracting local producers to grow broilers for processing as dressed birds or for sale as live birds. The objective will be to contract with enough third party producers to supply a minimum of twice the killing plant's weekly needs. In years one and two that would equal 12,000 birds a week and after year two 50,000.

Company-hired and trained extension agents will provide farmers with technical assistance to help them produce a better broiler at a lower cost. The project will be responsible for the delivery of requested inputs to the contracted producer and for the delivery of broilers to the live market or the processing unit. A typical production cycle will be nine weeks; eight weeks to market weight of 1.75 kgs. to 2 kgs. (although financial projections assume a lower market weight) and one week for clean-out and preparation, with an average number of cycles per contractor per year of five.*

a. Contractors and Extension Agents

Assuming an average grow-out run of 2,000 broilers per contractor per cycle, a poultry producer could deliver 10,000 birds a year. Contracting for double the anticipated throughput of the hand-operated plant would require 63 participants. At 10 poultry producers per extension agent, the GIP venture would need to hire and train seven agents.

From year three on, assuming an average grow-out of 3,000 broilers per contractor per cycle, a poultry producer could deliver 15,000 birds a year. Again, contracting at twice the anticipated throughput (this time for the mechanical plant) would require roughly 140 participants. At this point, the original seven agents will manage 15 contractors each, requiring three additional extension agents.

b. Dressing

A hand-operated killing plant will be erected to begin operation in month six. Throughput will be 6,000

*This allows seven weeks or almost one cycle for unforeseen losses and developments.

birds a week based on a five-day work week and a five-hour work shift (240 birds/hour).*

The hand-operated killing plant is divided into two major operations: the dirty job (where the live bird is killed) and the clean job (where the slaughtered bird is dressed). Referring to the schematic in Chart A, the two operations come together at point 'F', where the birds are switched to a set of shackles running through the clean operation.

Chart B depicts a floor plan for the mechanical killing plant, which is essentially an expansion of the hand-operated plant. There still exist two primary operating sections brought together at point 'H'. The mechanical plant semi-automates a few jobs and has a greater capacity. Throughput will be increased to a minimum of 25,000 birds a week, based on a seven-hour work day and a five-day week.*

c. Outreach Program

The company will provide contracted producers with technical assistance and needed inputs, and guarantee a return above cost to purchase the contractor's entire output. The advantages to a producer who contracts with GIP are several:

- He receives assistance to improve the quantity and quality of his output.
- He has access to all necessary inputs in sufficient quantity and quality.
- While he must pay a fair price (at or above cost) for these inputs, with a guaranteed return above his costs (including his labor), he knows that he will make a profit on each bird.
- He has an assured market for his entire flock.
- He will receive assistance in the form of a guaranteed loan guarantee should he desire a bank loan to expand.

The biggest perceived disadvantage a contractor is likely to raise is that he will receive less for each bird than the going market rate. While this is true, without GIP assistance he will produce fewer and smaller birds and

*If labor capability, broiler supply, and dressed broiler demand warrant an increase in throughput, every effort will be made to bringit about. For conservative reasons, however, all calculations will assume a limited level of operation.

will also require a means of getting them to market. Convincing a potential contract producer that he is better off, despite the disparity between the company purchase price and the prevailing market price, will be the responsibility of the extension agent.

2. Table Eggs

Assuming the SOMAPAS site is used, the layer unit, like the broiler unit, will require minimal capital outlay. There exist 11 barns at SOMAPAS, all in excellent condition. Seven will be used for layer grow-out and four for producing layers.

The layer unit will commence operation towards the end of the first year (month eight), when the first batch of day-old layer chicks are imported to begin the grow-out phase*. The objective is to have on the average over 16,000 producing layers each year beginning in year two.

a. Grow-out

As illustrated in Chart C, at approximately three-month intervals a grow-out flock is started. At the end of four months the flock is moved to one of the layer barns. Each layer barn comfortably holds 4,032 layers. Each 16-week cycle, a grow-out barn will produce 3,294 sixteen-week-old layers. As a result, two grow-out barns are used to fill one layer barn.** Due to the staggered grow-out, six grow-out barns are needed to fill the four layer barns but seven barns will be used to protect against a disaster.**

Anticipating a mortality rate of 12% during grow-out, a total of 3,745 day-old layer chicks must be placed in each grow-out barn. At this time, a breeder program for layer chicks is not envisaged, so these chicks will be imported.

Grow-out is staggered in the seven barns to avoid empty layer production barns once full capacity is realized in year two. In addition, such a replacement program establishes producing layer flocks consisting of a number of age groups, thus stabilizing production. Downtime between grow-out flocks in any particular grow-out barn will be filled with an additional batch of birds, which will be for sale as sixteen-week-old layers (see discussion on marketing of secondary products).

b. Layers

Each of the four layer barns will be filled with 4,032 sixteen-week-old layers. The layers will start producing around week 20, giving them four weeks to adjust

* One possible source near Guinea is Tunisia.
**Excess layers are sold to other producers.

to the move and the new surroundings. Once production starts, a layer will produce for about 12 months. During this period, each bird will lay approximately 220 eggs.

As laying proficiency tends to be lower at the beginning and end of each laying cycle, staggering grow-out production will provide a layer population varied in age and, therefore, production capability. Taken together, the four layer barns will produce, as a result, a fairly constant average daily egg supply of 8,935, once full production is reached.

At the end of each layer cycle, the layer barn is left empty for one month for cleaning, fumigating, and resting in preparation for the next flock. Spent layers are sold as live birds on the consumer market. Assuming a 12% mortality during the laying period, approximately 3550 spent layers per barn will be available for sale.

c. Excess Grow-out Capacity

With a 16-week grow-out phase and staggered production, there exists ample time to grow layers for sale to other table egg producers. Producing one flock of sixteen-week-old layers between grow-out cycles will result in a minimum of 28,000 sixteen-week-old layers for sale each year after year one. Extension agents will assist in the placement of these layers, of which some may go to previously contracted broiler producers.

3. Broiler Chicks

To eliminate the need to import broiler chicks and to gain control over this important aspect of broiler production, the project will develop a broiler breeder (BB) program towards the end of phase two (year three). The objective of the program will be to place with contracted broiler farms 6,000 chicks a day.*

BB chicks will be imported and raised through grow-out to egg-producing age. The eggs laid by the BB hens will be placed in a hatchery. In turn, the broiler chicks which hatch from these eggs will be placed with contracted broiler producers. When the broilers reach marketable age and size, GIP will purchase them from the contracted producer.

a. Hatchery

Prior to hatching, eggs will be removed from the incubator and placed in a hatcher, where they will be hatched over a two-day period. To place 6,000 chicks a day

*Allowing for an on-farm mortality of 4%, placing 6,000 chicks a day will result in 5,760 broilers eight weeks later, or more than 34,000 broilers per six-day week. This figure provides a cushion of 9,000 birds based on a killing plant throughput of 25,000 birds/week.

will require a hatcher capacity of 7,060 eggs, allowing for 15% nonhatchability. With one additional day for clean-up between hatches, three hatchers will be needed for the project to hatch, stabilize, and place the needed 6,000 broiler chicks a day.

Eggs must spend 19 days in an incubator before moving them to a hatcher; therefore, incubator capacity must equal six times hatcher capacity if hatcher downtime is to be kept to a minimum. Assuming one incubator per hatcher means an incubator capacity of at least 43,000 eggs. Eggs will be placed every third day in the incubator and, starting 19 days later, removed every third day on a first-in first-out basis. Egg movement from incubator to hatcher over a 60-day period is shown in Chart D.

b. Broiler Breeders

BB hens will have to produce on average 7,850 eggs/day to obtain the necessary 7,060 eggs per day for the incubators. This excess, equal to roughly 10%, allows for eggs which are either too large or small or infertile.*

It is anticipated that the BB hens will start to lay after four months of grow-out but will not lay properly until after five months. BB hens will lay on average 170 eggs during their eight-month laying cycle. At this rate of production the project must have on average a minimum of 16,800 producing BB hens.

Like table egg layers, BB laying proficiency tends to be lower at the beginning and end of each laying cycle. Production rises sharply in the early weeks, tapering off week-to-week at a moderate and consistent rate until the end of the production period eight months later. Staggering BB grow-out will produce a laying flock comprised of various age groups and production capability, thereby stabilizing egg production.

Breeder broilers take four months to begin production and then produce for eight months. Assuming a chick to end-of-lay mortality rate of 13% (5% through grow-out and 1% per month thereafter), starting a new grow-out flock of 9,205 birds every four months will insure an adequate average producing flock of different age groups.

Female chicks for grow-out will be imported every four months, with an additional 12% (1,105) male chicks imported as well. Over a year, the company would import about 30,930

*Unacceptable eggs will be sold as table eggs.

breeder broiler chicks as opposed to over 1,800,000 broiler chicks without the breeder/hatchery program.*

Two barns will be used for BB grow-out and three for BB producing hens, as diagrammed in Chart E. Spent BB female and male birds will be sold as live birds, as previously discussed.

c. Success Factors

The breeder/hatchery program will bring under the partial control of project management the availability of broiler chicks. Provided GIP can place broiler chicks hatched at its facilities at or below the cost of importing the chicks, such control will be easier to justify.

There are several factors which will influence the project's ability to insure that the cost of the breeder/hatchery program remains acceptable.

- An adequate number of contracted broiler producers must be "signed-up" well in advance of the first hatch, preferably before construction begins.
- A reliable supplier of BB chicks must be secured, preferably one who is capable of providing the most genetically advanced breeds.
- Training of breeder/hatchery unit employees should begin about four months prior to placement of the first incubator load.

4. Feed

Feed can represent upwards of 65% of total operating cost for an integrated poultry venture. To contain feed costs, modern poultry operations often employ linear programs to establish a least-cost, balanced ration. Variables which must be considered include local ingredient prices and availability, temperature changes, age of flock, nutritional value of ingredients (which can change with the season and the source), flock density, and desired market weight or production weight.

At this stage of project analysis, no attempt is made to develop such a least-cost model. However, feed costs are estimated for each type of bird through its growth and production phases using two basic ingredients, corn and soya,

*Note that the breeder/hatchery unit will provide only anticipated killing plant throughput needs. However, as the venture will contract for roughly twice its needs, broiler chicks will still be imported for distribution to contracted broiler producers. The effect of the breeder/hatchery program then is to cut by half the import of broiler chicks.

along with a vitamin/mineral concentrate. Soy bean meal, or soya, has the higher protein level. Corn, on the other hand, represents the greatest ingredient in terms of quantity and also supplies energy requirements.

The composition of feed varies with the kind of bird and its stage of growth. For example, in general, the purpose of broiler feed is to put as much weight on a broiler with the least amount of feed. This relationship is described by a feed conversion ratio, where a low ratio is generally considered better than a high ratio. On the other hand, with layers and breeders the objective is to control the weight, maintaining an acceptable protein level. A fat bird is not a good egg producer. Chart F provides a series of feed tables which systematically present the parameters for determining the composition of each type of feed by age and kind of bird.

Initially, GIP will import corn meal and soya along with the concentrate. As soon as possible though, corn and soy bean will be grown by the feed production unit.

Imported feed ingredients will be stored and mixed at the SOMAPAS site. Because ingredients can be imported at regular intervals, a storage capacity equal to a one-month supply of feed ingredients is suggested.

As the project undertakes growing its own feed ingredients (corn and soy bean--concentrate will remain imported), a six-month storage capacity will be necessary, given two harvests per year. These harvests will be stored at the proposed feed production site near Faranah. At regular intervals then (at least once a month), corn and soy bean will be trucked to SOMAPAS, where it will be stored and later milled and mixed as needed.

a. Broiler Feed

From starter through finisher a broiler will consume about 4.5 kgs. of feed. At a market weight of 1.8 kilos, the feed conversion ratio (discussed in Chart F) is 2.5. At 2.0 kilos the ratio becomes 2.25.

It is anticipated that the first two years of broiler production will be at the lower weight and higher feed conversion ratio. From year three on, market weight (before dressing) should be about 2.0 kilos, or a conversion ratio of 2.25.

If the company contracts for double the killing plant throughput, feed will be needed for roughly 624,000 broilers in years one and two and 2,600,000 broilers a year after year

*Depending on availability, price, and nutritional value, other ingredients that could be explored include milo, millet, fonio, peanut, and fish meal.

two. These bird population figures mean that the venture must import and/or grow broiler feed ingredients totaling 1,279 mt a year for years one and two and 5,330 mt thereafter. Table 3 disaggregates this tonnage by feed type and composition.

Table 3. Broiler Feed Requirements Per Year*

	Ingredients	Starter	Grower	Finisher
Year 1&2	Corn	208.2	404.5	111.9
	Soya	168.5	263.8	58.2
	Concentrate	19.8	35.2	9.0
After Year 2	Corn	867.3	1685.9	466.2
	Soya	702.1	1099.5	242.5
	Concentrate	82.6	146.6	37.3

*In metric tons.

b. Layer Feed

From day-old chick through its laying cycle, a layer will consume 52 kgs. of feed. Table 4 provides an estimate of layer feed requirements, assuming the project provides feed for all layers it grows to production age plus feed for all producing layers it raises, whether kept at the project site or sold as 16-week-old layers to other producers.

These figures assume an average yearly layer population after year one of about 45,000 laying hens and an equivalent number of layer chicks in the grow-out stages. In year one grow-out population is estimated at the equivalent of 8,200 birds. As the layer unit commences operation in the first year (month 8), there is no producing layer population.

Table 4. Layer Feed Requirements Per Year*

	Ingredients	Starter	Grower	Finisher	Grower II
Year 1	Corn	5.2	8.1	7.0	---
	Soya	3.4	4.2	2.5	---
	Concentrate	0.4	0.7	0.5	---
After Year 1	Corn	29.2	44.5	87.0	613.6
	Soya	19.2	23.1	31.0	163.6
	Concentrate	2.6	3.4	6.0	40.8

*In metric tons.

c. Broiler Breeder Feed

An estimate of feed ingredient needs for broiler breeders at various stages of growth is shown in Table 5. For calculation purposes it is assumed that a broiler breeder grow-out and placement program is started in month 32, which means one flock of BB hens has completed grow-out (about 9,800 birds) by the end of project year three.

Starting with year four (month 36), three grow-out flocks will be started and completed in a year (about 29,400 birds). Feed consumed during the year by producing broiler breeders will be equivalent to the complete laying cycle for 18,816 birds, male and female.

Table 5. Broiler Breeder Feed Requirements Per Year*

	Ingredients	Starter	Grower	Finisher	Grower II
Year 3	Corn	10.6	16.0	9.0	---
	Soya	5.5	5.8	3.0	---
	Concentrate	0.9	1.2	1.0	---
After Year 3	Corn	19.8	31.4	58.5	295.6
	Soya	10.6	11.4	15.6	78.7
	Concentrate	1.6	2.2	3.9	19.7

5. Feed Production Unit

The total tonnage of each ingredient needed, by year, to produce the required types of feed is presented in Table 6. Feed concentrate will always be imported but corn and soya will be produced locally on the feed production unit near Faranah.

Table 6. Ingredient Requirements Per Year*

	Year 1	Year 2	Year 3	After Year 3
Corn	745	1499	3829	4200
Soya	501	727	2295	2397
Concentrate	66	85	291	316

*In metric tons.

The proposed site is the area around the town of Faranah. Existing infrastructure is adequate, provided one of two previous USAID project sites can be used. The land is adequate for corn and soy bean production. The road connecting Conakry and Faranah, while not great, is one of the better in the country, which will facilitate shipments. Faranah is also served by regular Air Guinea flights. In fact, the runway is long enough to land any type of cargo plane.

Thirteen hundred acres are expected to be put under center pivot irrigation, enabling two crops a year to be harvested. Although the Niger River is nearby, center pivot rather than ditch irrigation is proposed, as herbicides, insecticides, and fertilizers can be economically applied with more even distribution through center pivot sprinklers.

One planting would occur in April for harvest in October/November. The other planting would take place in October/November, with harvesting in March/April. The land will not require significant clearing as it is mostly grass or small shrub covered savannah. Clearing will be accomplished by making several additional passes with farm machinery prior to planting.

The entire 1300 acres will be brought into production as soon as possible. The anticipated mix is two-thirds corn and one-third soy bean. In the first year, only one harvest is expected, but each year after that, double cropping will be practiced. The complex will have "wet" grain, drying, cleaning, and "dry" grain capability/capacity.

6. GIP Production Factors

The GIP venture will have to contend with many issues because of its integrated nature. All of the constraints are manageable provided the project is approached as one entity for planning purposes and then disaggregated into its individual operating units. Among some factors to take into consideration are:

- Coordinating activities at various levels especially when dealing with contract producers.

- Maintaining a continual flow of inputs. Once started, an interruption in the supply of chicks (broilers and layers), feed ingredients, feed, broilers to the killing plant, etc., can result in costly production slow downs. Of these, maintaining the supply of feed ingredients will be perhaps the most difficult, given the tonnage needed and the distance to travel.

- Finding a labor supply and training staff. Supply of labor should not pose a problem; however, it is important to note that poultry projects are notorious for high attrition rates.

- Developing and operating a sound veterinary facility. If extension agents are to assist contract producers and if nucleus facilities are to function at maximum potential, the ability to diagnose problems quickly and accurately is paramount.

- Selecting and training a cadre of supervisory personnel, including extension agents.

- Locating an adequate supply of water. Although a minimal cost item, a poultry project can not function without an acceptable source of water.

- Keeping accurate and current records. Changes in bird count and production levels will necessitate adjustments in feed, drugs, and vitamins.

- Growing feed ingredients to replace imported ingredients. Any attempt to involve contracted producers in a feed growing program, through the provision of technical assistance and inputs, will have to consider the market pressure on a farmer to sell that production for human, rather than poultry, consumption given the wide disparity between grain prices ($900 to $1,200 a ton) and feed prices (about $400 a ton). These same opportunity costs will bear down on the management of the feed production unit.

F. Capital and Operating Costs

Each of the production units is discussed below, along with the non-income-producing administrative unit. The capital and operating costs for these units are presented in tables 7 through 19. The final sub-section summarizes the project's estimated capital and operating costs for all units.

Note that land acquisition is not included with capital expenditures. If it is not contributed as equity, its acquisition/lease cost should be a minor item, representing less than five percent of total capital investment.

1. Broiler Unit

Normally, a broiler unit accounts for a significant portion of fixed assets. However, as the GIP project will contract out its broiler production, capital expenditure for this unit is reduced, although still significant vis-a-vis other units. Capital purchases are summarized in table 7.

Initial acquisitions are financed. Subsequent replacements are to be purchased from project cash flow. Vehicles and equipment will be depreciated over five years; buildings and other items over ten years.

Table 7. Broiler Unit Capital Expenditures

Year	0	3	5	8	10
Vehicles+	42,000	4,500	42,000	4,500	42,000
Building++	65,000	150,000	---	---	---
Equipment+++	70,000	740,000	---	690,000	---
Miscellaneous	27,000	180,000	---	---	---
Total	$204,000	$1,074,500	$42,000	$694,500	$42,000

+Vehicles include three vans (with parts) and up to ten specially equipped motorcycles capable of carrying a few poultry.

++Initially, the hand-operated plant will be constructed, with the mechanical plant coming on-line in year three. It is assumed that the hand-operated plant will be sold for its book value, less the value of the building, the year following the opening of the mechanical plant.

+++Equipment includes, among other things, generator, cold storage, and water supply plant, not all of which is replaced.

Table 8 depicts the estimated grow-out cost per broiler for a contracted producer delivering 10,000 and 15,000 broilers a year. All inputs are assumed to be purchased from GIP's nucleus operation at cost or with some mark-up. In the case of feed, any profit is assumed to accrue to the feed production unit and, therefore, is a cost of operation for the broiler unit.

Chicks will be supplied by the broiler unit for $0.75 each. This price includes a $0.15 margin, reducing the actual cost per finished broiler. Labor is calculated at $60/month. Depreciation of buildings and equipment for a contracted producer is estimated at $50,000, assuming one bird per square foot (appr. 11/m2). Miscellaneous items include drugs, vaccines, and veterinary services.

Table 8. Cost of Broiler to Killing Plant

Year		1-2+		3-10++
Chick	.75		.75	
Mortality	5%		4%	
Cost of Live chick		.79		.78
Cost of feed:+++		1.05		1.05
Starter	.323		.323	
Grower	.575		.575	
Finisher	.150		.150	
Labor		.07		.05
Miscellaneous		.05		.04
Depreciation		.50		.42
Subtotal		2.46		2.34
Revenue to producer		.75		.75
(Less chick margin)		(.15)		(.15)
Total Cost of Broiler		3.06		2.94

+For a level of 10,000 birds/year, at an average live weight of 1.8 kgs/bird.

++For a level of 15,000 birds/producer/year, at an average live weight of 2.0 kgs/bird.

+++See Chart F, for in-depth presentation of feed costs.

Processing costs are estimated at $0.20 per bird for the hand-operated plant and $0.30 per bird dressed in the mechanical plant. These figures (shown in Table 9) include labor, electricity, water, repairs/maintenance, packaging, and other sundry items.

At 6,000 birds/week, the total operating cost, including transport, of the hand-operated plant equals $62,400, of which labor is $14,400 (excluding supervision).* With 25,000 birds/week capacity the variable costs of the mechanical plant amount to $391,000, of which $32,400 is labor (again, excluding management).**

Table 9. Variable Costs Of Dressing Unit

Year	1-2	3-10
Purchase price of broiler	3.06	2.94
Operating cost/bird	.20	.30
Variable Cost/Dressed Broiler	$3.26	$3.24

*Thirty employees at $40/month.
**Forty-five employees at $60/month.

2. Layer Unit

Using the SOMAPAS facilities would reduce the necessary capital outlay for production of table eggs. These facilities would be considered in all likelihood as part of SOMAPAS' equity contribution. Therefore, the capital outlays normally associated with table egg production are tabulated in Table 10, as representative of SOMAPAS' contribution, or, of what it might cost to establish a layer unit should SOMAPAS not participate in GIP.*

As with the broiler unit, initial acquisitions are financed. Subsequent replacements are made from projected cash flow. Vehicles/equipment and buildings are depreciated over five and ten years, respectively.

Table 10. Layer Unit Capital Requirements

Years	1	6
Vehicles+	30,200	30,200
Buildings	220,000	---
Equipment++	220,000	170,000
Miscellaneous	88,000	---
Total	$558,200	$200,200

+Vehicles include one van, a small tractor with wagon, and spare parts.

++Equipment includes, among other items, water supply plant and generator, not all of which is replaced.

Variable operating costs for the layer unit are depicted in Table 11. Feed is purchased from the feed producion unit at a transfer price equal to the import cost (See Chart F, table 7 for futher discussion). Miscellaneous items include water, electricity, repairs, packaging, and transport.

Labor is calculated at 3,000 birds per employee, not including supervision. With an average of 45,000 birds in grow-out stages and another 16,000 birds of various ages producing for the nucleus operation, a total labor force of 21 is needed. The cost per layer through grow-out equals $0.24. The cost of labor unil the end of lay equals another $0.27/bird.

*The figures in Table 10 probably overestimate the true value of SOMAPAS' facilities since they have been in operation for a few years.

Table 11. Variable Costs Of Layer Unit

Year		1+		2-10+
Chick	1.60		.60	
Mortality	.12		.12	
Cost of live chick		1.68		1.82
Feed:				
To 16 weeks		2.12		2.12
To end of lay		--		9.58
Labor:				
To 16 weeks++		2.09		.24
To end of lay		--		.27
Medicine/litter:				
To 16 weeks		.34		.34
To end of lay		--		.76
Miscellaneous:				
To 16 weeks		.06		.06
To end of lay		--		.20
Variable cost/Layer		$6.43		$15.39
Avg. Eggs/Layer		--		220
Variable Cost/Table Egg				$.07

+Start-up is considered to take place in project month eight therefore, year one represents four months of operation, grow-out stages only.

++For training purposes, all employees are assumed to be hired during year one (month six) and their cost consequently distributed over fewer birds. Each employee receives $40/month during the first year of operation and $60/month thereafter.

3. Breeder/Hatchery Unit

The construction of a breeder/hatchery unit is one of the most costly capital outlays for an integrated poultry enterprise. For GIP, two grow-out barns and three BB layer barns are envisaged, each capable of handling approximately 11 birds/m2. The unit will also require three incubators and hatchers, as well as two vans.

Table 12 shows that construction takes place in year three, with operation beginning in project month 32. Although the hatchery will not be needed until year four, due to the grow-out time for BB layers, the unit will be constructed at the same time as BB grow-out and layer barns. The finished hatchery building will be used for training purposes prior to the first placement of BB eggs.

Initial capital expenditures are financed, while replacements are purchased from internal cash generation. Vehicles and equipment are depreciated over five years. Buildings and other items are assigned a ten-year life.

Table 12. Breeder/Hatchery Unit Capital Requirements

Year	3	8
Vehicles+	20,400	20,400
Grow-out & layer barns	600,000	---
Incubators & Hatchers++	300,000	---
Equipment+++	350,000	300,000
Miscellaneous	230,000	---
Total	$1,500,400	$320,400

+Vehicles include two vans and spare parts.

++Includes building for incubator and hatchers, all depreciated over 10 years.

+++Some of the equipment included: generators, water supply plant, and additional hatchery equipment, not all of which is replaced.

Table 13 outlines the variable cost per placed broiler chick with a breeder/hatchery unit. Feed is transferred from the feed production unit at a price equal to its probable import cost. Miscellaneous items include, among other things, water, electricity, repairs, and transport.

During a complete, one-year cycle, an average of 29,380 birds (male and female) should make it through grow-out (three flocks of 9,795 each). Throughout a year there will be an average of 16,800 BB hens in production at any one time, with an additional 2,016 males. At 3,000 birds/employee, four laborers are needed for the grow-out operation and seven workers are required for the layer phase. Four employees are expected to work in the hatchery.* Supervision is not included in any of these labor figures.

*Laborers will receive $40/month for the first year of breeder/hatchery operation and $60/month each year thereafter.

Table 13. Variable Costs Of Breeder/Hatchery Unit

Year	3+	4-10
Chick	3.75	3.75
Mortality	5%	5%
Cost of live chick	3.95	3.95
Feed:		
To 16 weeks	2.65	2.65
To end of lay	--	11.72
Labor:		
To 16 weeks++	.37	.10
To end of lay	--	.27
Medicine/litter:		
To 16 weeks	.40	.40
To end of lay	--	.70
Miscellaneous:		
To 16 weeks	.08	.08
To end of lay	--	.15
Variable Cost/Laying Broiler Breeder	7.45	20.02
Avg. Hatched Eggs/ Laying BB	--	130
Variable Costs/HE+++	--	.154
Hatchery Labor & Misc./HE+*	--	.056
Total Variable Cost/One-day Old Broiler Chick		$.21

+Start-up takes place in project month 32; therefore year three represents only four months of grow-out.

++For training purposes, all employees are assumed to be hired during year three (month 30) and their cost consequently distributed over a small number of birds in grow-out.

+++HE = hatched egg.

+*Based on an annual hatching egg production level or 2,184,000.

4. Feed Production Unit

This unit is divided into two semi-autonomous profit centers, a feed ingredient production complex and a feed mill/mix complex. Capital expenditures for the feed production unit are shown in Tables 14 and 15. The former lists the required investment to farm 1300 acres of corn and soy bean, while the latter table presents the expected capital cost of milling and mixing.

Table 14. Farm Complex Capital Requirements

Year	1+	6++
Farm machinery	953,200	953,200
Irrigation Equip.	1,272,000	1,272,000
Storage	1,326,020	----
Shop Equip.	100,000	100,000
Rolling Stock	300,000	300,000
Freight	427,600	427,600
Total	$4,378,820	$3,052,800

+Information was provided by Golden Spread of Memphis, Texas (USA), which currently operates a similar farm for poultry feed production in Nigeria. Golden Spread assumes five year depreciation on all equipment and storage facilities.

++Assumes only equipment actually replaced five years later.

Given the need for a month's supply of feed ingreditents and feed, a storage capacity near Conakry of about 1,200 mt is required by year four. Ninety percent of this capacity is also needed by year three; therefore, one-half of the storage capacity is built in year one, with the remaining capacity built in year two.

The mill/mix complex will consist of a building and a three mt/hour mill/mix machine. Even though internal demand will be limited until year three, the mill/mix unit will begin operation in year 1. Depreciation is over five years, as for the farm complex, although only equipment is replaced.

Table 15. Mill/Mix Complex Capital Requirements

Year	1	2	6
Vehicles+	250,000	---	250,000
Building	150,000	---	---
Storage @ $400/mt	240,000	240,000	---
Mill/Mix++	35,000	---	35,000
Add'l Equip.+++	100,000	---	100,000
Total	$775,000	$240,000	$385,000

+Includes four 12-ton trucks and two pick-ups, with parts.

++At three mt/hour, the mill/mix would need to operate 25 days a month, 8 hours/day, to meet feed requirements.

+++Includes small stand-by mill/mix unit, bagging machine and generators.

Variable costs for the farm complex are depicted in Table 16 on a per acre and per ton basis. These figures include cost of labor and other operating expenses and assume a yield per acre of three metric tons.

Table 16. Variable Cost of Farm Complex

	Per Acre	Per Ton
Seed	36.10	12.03
Fertilizer	47.00	15.67
Insecticide, Fumigants	90.00	30.00
Herbicide	19.20	6.40
Machinery	40.00	13.33
Irrigation	45.00	15.00
Labor	100.00	33.33
Miscellaneous	25.00	8.33
Harvest	10.00	3.33
Hauling	6.00	2.00
Drying	12.00	4.00
Total Variable Costs	$430.30	$143.43

Variable costs, excluding the cost of the ingredients, for the mill/mix complex are estimated at $200,000 per year at full operation. This equates to about $28 per ton of feed, at 7200 tons milled and mixed a year. This figure includes labor costs (13 workers) and all other operating costs, such as transport.

Based on the expected tonnage of feed ingredients used in one year, the weighted average cost to the mill/mix complex of one mixed ton of feed (using corn, soya, and concentrate) equals $408. The estimated total variable cost per ton of mixed feed is $436 (operating cost of $28/mt plus feed ingredient costs of $408/mt).

5. Administrative Unit

Administration is primarily a cost center. it includes top GIP management, technical services, e.g., veterinary, marketing, and mechanic shop. Capital expenditures are estimated in table 17.

Table 17. Administrative Unit Capital Requirements

Year	0	1	2	5&10	6
Housing+	750,000	---	100,000	---	---
Office	25,000	---	---	---	---
Laboratory	30,000	---	---	---	---
Workshop	30,000	---	---	---	---
Central Generator	40,000	---	---	40,000	---
Central Water Plant	55,000	---	---	---	---
Telecommunications	75,000	---	---	75,000	---
Construc. Equip	200,000	---	---	---	---
Vehicles++	72,000	72,000	---	72,000	72,000
Workshop Equip.	80,000	---	---	80,000	---
Other Equip.	80,000	---	---	60,000	---
Training	75,000	---	---	---	---
Miscellaneous	190,000	---	---	---	---
Total	$1,227,000	$72,000	$100,000	$327,000	$72,000

+Includes expatriate (12) and counterpart (14) lodging.

++Includes the following: two station wagons (long wheel base), two station wagons (short wheel base), two vans, and two Land Rovers, all with parts.

Administrative operating costs, excluding fixed charges (e.g., management salaries, depreciation) are tabulated in Table 18. Labor includes workers for administration, workshop, laboratory, and housing, plus benefits, for a total of 35 individuals. Other operating costs (repairs, supplies, petrol products, etc.), at full development (year three), equal about 15% of initial capital investment. Year one is figured at fifty percent of this level and year two at 75%.

Table 18. Variable Costs Of Administrative Unit

Year	1	2	3-10
Labor	50,000	75,000	100,000
Sundry Items	90,000	120,000	180,000
Total	$140,000	$195,000	$280,000

6. Summary of Capital Costs

Capital investment by unit and year is shown in Table 19. Total initial and recurring investment over ten years equals $16,176,000. Of this amount, financed expenditures equal about 64% and occur over a three-year period. The remaining 36% represents capital costs that will be financed from internal cash flow. The feed production unit is the greatest single initial and recurrent capital outlay.

Table 19. Summary of Capital Costs ('000)

Year	0	1	2	3	4
Broiler Unit	204	---	---	1,073	---
Layer Unit	---	558	---	---	---
Breeder/Hatchery	---	---	---	1,500	---
Feed Pdtn Unit:					
Farm Complex	---	4,379	---	---	---
Mill/Mix Complex	---	775	240	---	---
Administrative Unit	1,812	72	100	---	---
Total	$2,016	$5,784	$ 340	$2,573	$0

Year	5	6	7	8	9	10
Broiler Unit	42	---	---	695	--	42
Layer Unit	---	200	---	---	--	---
Breeder/Hatchery	---	---	---	320	--	---
Feed Pdtn Unit						
Farm Complex	---	3,053	---	---	--	---
Mill/Mix Complex	---	385	---	---	--	---
Administrative Unit	327	72	---	---	--	327
Total	$369	$3,710	$ 0	$1015	$0	$369

G. Fixed Costs

Fixed costs are composed of depreciation/amortization and management salaries, both expatriate and local. All training costs and pre-operating expenses are amortized over a ten-year period. Chart G presents a depreciation/amortization schedule for each unit by major category. Unless specified otherwise, training/pre-operating expenses equal about 40% of miscellaneous capital costs.

Training is considered a pre-operating item that is amortized over a ten-year period. While not significant in relation to other capital expenditures, its importance can

1. Financing

Working capital financing varies according to the unit; the terms, however, do not. Working capital financing is calculated on the average amount outstanding (50% of the opening and closing working capital balance) at 10% for one year. All long-term capital loans assume a 60:40 debt-to-equity ratio, a five-year term, with one year's grace (interest and principal), and 10% interest.

2. Project Return

Chart N depicts GIP consolidated cash flow. Excluding financing, this cash flow translates to an internal rate of return (IRR) of 44%, shown in Chart O. This calculation does not assume a terminal value. The net present value at 30% after ten years is $2.6 million.

3. Individual Unit Return

The broiler unit shows by far the greatest return at 220%. The unit's profitability is significantly influenced by two factors: no capital investment in grow-out facilities and the large contribution of by-product sales (live broilers). In fact, the latter throws off so much cash that one could question the validity of the dressing operation. Nonetheless, the distribution of only live birds would not address one of the project's prime objectives: the development of an integrated poultry industry.

Layer unit profitability (IRR: 40.8%) is not overly influenced by the sale of by-products. It is, however, greatly affected by the cost of feed. Feed represents 75% of the variable, operating costs.

Both the breeder/hatchery (IRR: 43.7%) and layer units require several operating periods before realizing a positive, cumulative cash flow. Like the layer unit, feed costs greatly affect the variable cost of the breeder/hatchery unit. Feed represents more than 70% of the cost per hatched egg through grow-out and laying operations. As a percentage of total operating cost per hatched egg through hatching, feed is still more than 50% of such expenses.

Given the current market value of essential feed ingredients, the project could make a phenomenal return if it sold its produce on the open market. Such action, however, would not be congruent with project goals.

The farm complex to some extent subsidizes the mill/mix complex as only after mill/mix capacity is attained will excess feed ingredients be sold on the open market at the higher price. Still, even when transferring to the mill/mix complex at a lower import equivalent price, both complexes (farm and mill/mix) operate in the black by years three and two, respectively. The feed production unit's IRR is 41.8%.

As a cost center, an IRR was not determined for the administrative unit. Outside of financing, management personnel salaries represent the most significant cost element in the first five years. Beyond year five, the non-cash expenditure depreciation/amortization is the largest single cost item.

4. Cautions

Several factors deserve mentioning (or perhaps repeating) regarding GIP financial projections.

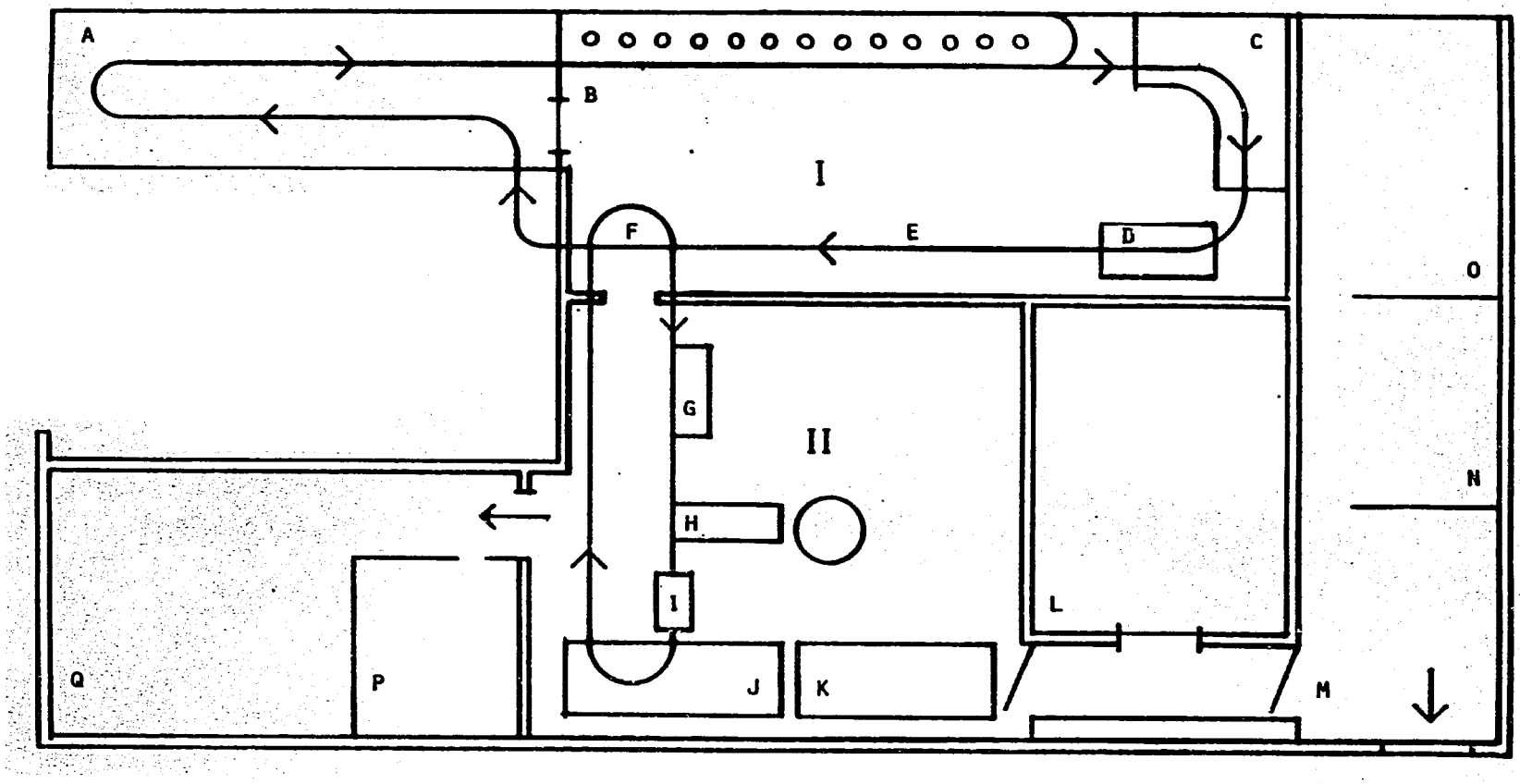
- Even though GIP sales represent less than a 50% share of any estimated potential market, the market size is just that, "estimated potential." A serious market survey should be undertaken.

- The broiler and feed production units help carry the venture through its development phase. Any significant changes in market value or forecasted sales could drastically affect the amount of cash thrown off by these units and in turn require GIP to acquire additional financing.

- Substantial increase in the interest rates will affect the net cash flow postion, as it is not until year three that a large cumulative cash flow position is established. The effects of any increase in interest rates could be offset by a longer grace period, delaying interest and prinicipal payments until an ample cash reserve is built up in year three.

- Foreign exchange needs and repayments will present a problem. Much of the total investment will require hard currency debt but the project will return only Guinean francs. This potential problem could be mitigated somewhat if the GOG maintains its current auction of foreign exchange and Guinea does indeed become a member of the CFA zone, tying its franc directly to the French franc.

HAND-OPERATED KILLING PLANT



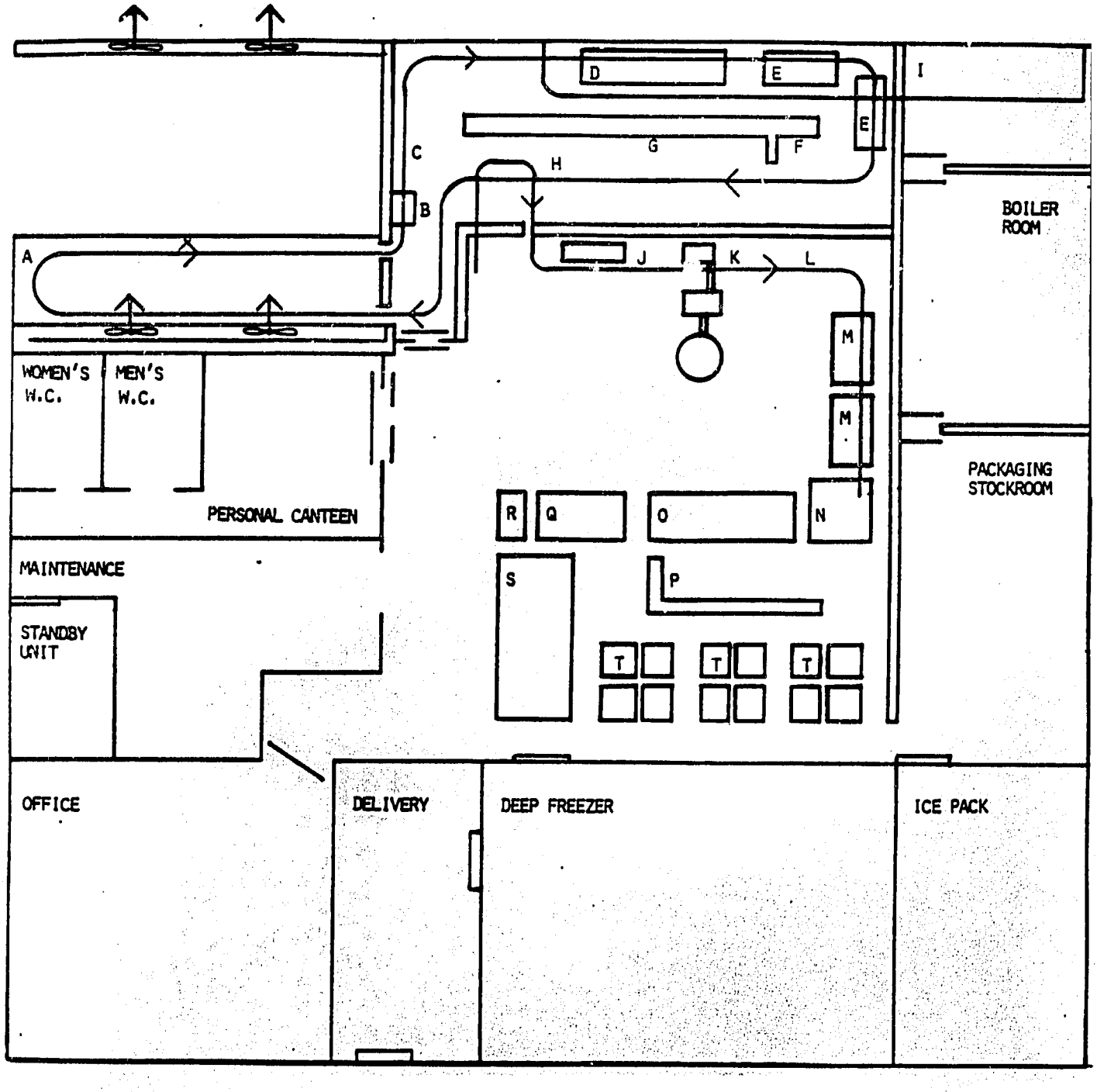
I
A - HAND-PULLED SHACKLES ON ROLLERS
B - BLEEDING CONES
C - SCALDERS
D - DEFEATHERING
E - EVISCERATION
F - LINE CHANGE

II
G - VETERINARY STAND
H - LIVER, HEART AND GIZZARDS
I - VACUUM: LUNGS AND KIDNEYS
J - CHILLER
K - CARCASS HANDLING AND PACKING
L - FREEZERS
M - SHIPPING
N - MATERIALS STOCK
O - SHOP: STOCK MAINTENANCE
P - W.C.
Q - OFFICES

CHART A

CHART B

MECHANICAL KILLING PLANT



A - LANDING DOCK
B - STUNNER
C - KILLING
D - SCALDERS
E - DEFEATHERING
F - HAND PICKERS
G - EVISCERATION
H - LINE CHANGE
I - OFFAL HANDLING GUTTER
J - VETERINARY STAND
K - LIVER, HEART AND GIZZARDS MACHINE
L - VACUUM: LUNGS AND KIDNEYS
M - CHILLERS
N - CARCASS HANDLING
O - WEIGHING AND CLASSIFICATION
P - CUT-UP
Q - CROYVAC GUNS
R - SHRINKER
S - GLYCOL CYROVAC FREEZER
T - HOLDING TANK FOR FRESH KILLED ON ICE

CHART C

GROW-OUT & PLACEMENT OF LAYERS

MONTHS*	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
BARN NO.:																																																															
BROOD OUT	1	(to barn 8)								***	(to barn 11)								***	(to barn 10)							***	(to barn 9)							***	(to barn 8)							***	(to barn 11)							***	(to barn 10)							***	(to barn 9)					
	2	(to barn 8)									(to barn 11)									(to barn 10)								(to barn 9)								(to barn 8)								(to barn 11)								(to barn 10)								(to barn 9)					
	3		(to barn 9)							***		(to barn 8)							***		(to barn 11)						***		(to barn 10)						***		(to barn 9)						***		(to barn 8)						***		(to barn 11)						***		(to barn 10)				
	4		(to barn 9)									(to barn 8)									(to barn 11)								(to barn 10)								(to barn 9)								(to barn 8)								(to barn 11)								(to barn 10)				
	5			(to barn 10)						***			(to barn 9)						***			(to barn 8)						***			(to barn 11)						***			(to barn 10)						***			(to barn 9)						***			(to barn 8)					
	6			(to barn 10)									(to barn 9)									(to barn 8)									(to barn 11)									(to barn 10)									(to barn 9)									(to barn 8)					
	7			(to barn 10)									(to barn 9)									(to barn 8)									(to barn 11)									(to barn 10)									(to barn 9)									(to barn 8)					
LAYERS	8				(from barn 01-02, 4,032 layers; excess grow-out equals 2,556 layers)																																																													
	9																																																																			
	10																																																																			
	11																																																																			

MONTHS*	4	7	10	13	18	21	24	27	32	35	38	41	46	49	52	55	60
EXCESS LAYERS	2556	2556	5850	2556	2556	5850	2556	2556	5850	2556	2556	5850	2556	2556	5850	2556	2556

MONTHS*	17	20	23	26	31	34	37	40	45	48	51	54	59
SPENT LAYERS+	3508	3508	3508	3508	3508	3508	3508	3508	3508	3508	3508	3508	3508

MONTHS*	8	12	16	18	22	26	29	32	36	40	44	46	50	54	57
ADDT'L LAYERS	6588	6588	9882	6588	6588	9882	6588	6588	9882	6588	6588	9882	6588	6588	9882

*AS OF THE END OF THE PERIOD SHOWN. IF GROW-OUT COMMENCES AS PLANNED, ADD 8 TO EACH MONTH TO DETERMINE PROJECT MONTH, E.G., MONTH 0 EQUALS PROJECT MONTH 8, MONTH 4 PROJECT MONTH 12, MONTH 16 PROJECT MONTH 24, ETC.

**EACH GROW-OUT BARN WILL PRODUCE 3294 SIXTEEN WEEK-OLD LAYERS.

***DOWNTIME USED FOR GROW-OUT OF ADDITIONAL LAYERS FOR SALE TO OTHER EGG PRODUCERS.

+ASSUMES A 1% PER MONTH MORTALITY.

CHART D
INCUBATOR TO HATCHER EGG PLACEMENT

DAY*	INCUBATOR NO: 1**	INCUBATOR NO: 2**	INCUBATOR NO: 3**
0	L***		
1		L	
2			L
3	L		
4		L	
5			L
6	L		
7		L	
8			L
9	L		
10		L	
11			L
12	L		
13		L	
14			L
15	L		
16		L	
17			L
18	L		
19		L	
20			L
21	L		
22		L	
23			L
24	L		
25		L	
26			L
27	L		
28		L	
29			L
30	L		
31		L	
32			L
33	L		
34		L	
35			L
36	L		
37		L	
38			L
39	L		
40		L	
41			L
42	L		
43		L	
44			L
45	L		
46		L	
47			L
48	L		
49		L	
50			L
51	L		
52		L	
53			L
54	L		
55		L	
56			L
57	L		
58		L	
59			L
60	L		

HATCHER NO:+														
1	(Inc 1) (day 0)	(Inc 1) (day 3)	(Inc 1) (day 6)	(Inc 1) (day 9)	(Inc 1) (day12)	(Inc 1) (day15)	(Inc 1) (day18)	(Inc 1) (day21)	(Inc 1) (day24)	(Inc 1) (day27)	(Inc 1) (day30)	(Inc 1) (day33)	(Inc 1) (day36)	(Inc 1) (day39)
2	(Inc 2) (day 1)	(Inc 2) (day 4)	(Inc 2) (day 7)	(Inc 2) (day10)	(Inc 2) (day13)	(Inc 2) (day16)	(Inc 2) (day19)	(Inc 2) (day22)	(Inc 2) (day25)	(Inc 2) (day28)	(Inc 2) (day31)	(Inc 2) (day34)	(Inc 2) (day37)	(Inc 2) (day40)
3	(Inc 3) (day 2)	(Inc 3) (day 5)	(Inc 3) (day 8)	(Inc 3) (day11)	(Inc 3) (day14)	(Inc 3) (day17)	(Inc 3) (day20)	(Inc 3) (day23)	(Inc 3) (day26)	(Inc 3) (day29)	(Inc 3) (day32)	(Inc 3) (day35)	(Inc 3) (day38)	(Inc 3) (day41)

*AS OF THE END OF THE DAY INDICATED.
**CAPACITY REQUIRED 42,360 (7,060 X 6). DAILY QUANTITY OF UNACCEPTABLE EGGS, SCREENED BEFORE PLACING IN INCUBATOR, EQUALS 790. THESE EGGS ARE SOLD AS TABLE EGGS.
***'L' = LOAD INCUBATOR.
+EACH HATCH WILL PROVIDE APPROXIMATELY 6,000 DAY-OLD CHICKS. INFORMATION IN PARENTHESES INDICATES FROM WHICH INCUBATOR EGGS WERE TRANSFERRED AND THE DAY THE EGGS WERE FIRST LOADED IN THE INCUBATOR.

CHART E

BROILER BREEDER GROW-OUT & PLACEMENT

MONTH*	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
BROILER BREEDER GROW-OUT BARNS:**																																																															
1	(to barn 03)										(to barn 05)										(to barn 04)										(to barn 03)										(to barn 05)										(to barn 04)										(to barn 03)										(to barn 05)									
2	***										***										(to barn 04)										(to barn 03)										(to barn 05)										(to barn 04)										(to barn 03)										(to barn 05)									
BROILER BREEDER LAYER BARNS:																																																															
3	***										***										(from barn 01, 8745 layers, 1050 male)										***										(from barn 02, 8745 layers, 1050 male)										***										(from barn 01, 8745 layers, 1050 male)										***										(from barn 02, 8745 layers, 1050 male)										***										(from barn 01, 8745 layers, 1050 male)									
4	***										***										***										(from barn 02, 8745 layers, 1050 male)										***										(from barn 01, 8745 layers, 1050 male)										***										(from barn 02, 8745 layers, 1050 male)										***										(from barn 01, 8745 layers, 1050 male)										***										(from barn 02, 8745 layers, 1050 male)									
5	***										***										***										(from barn 01, 8745 layers, 1050 male)										***										(from barn 02, 8745 layers, 1050 male)										***										(from barn 01, 8745 layers, 1050 male)										***										(from barn 02, 8745 layers, 1050 male)										***										(									
MONTHS*													12								16										20										24										28										32										36										40										44										48										52										56										60									
SPENT LAYERS+													8070								8070										8070										8070										8070										8070										8070										8070										8070										8070										8070										8070										8070									
SPENT MALES+													969								969										969										969										969										969										969										969										969										969										969										969									

*AS OF THE END OF THE PERIOD SHOWN.

**EACH GROW-OUT BARN WILL RECEIVE 9205 FEMALE AND 1105 MALE CHICKS.

***DOWNTIME.

+ASSUMES A 1% PER MONTH MORTALITY DURING EIGHT MONTH LAYING CYCLE.

CHART F
Feed Tables

Table F1 defines each stage of development for each kind of bird. These ages, defined in weeks, apply to all subsequent tables.

Table F1. Development Stages Defined in Weeks

	Starter	Grower	Finisher	Grower II
Broiler	0 - 3	4 - 6	7 - 8	---
Layer	0 - 5	6 - 11	12 - 20	20+
BB*	0 - 5	6 - 12	13 - 25	25+

*BB stands for breeder broiler, male or female.

Table F2 highlights the difference in desired weight at various stages of growth for the three types of fowl. With a broiler the weight is put on rapidly. Whereas with a layer the weight is added more gradually and then maintained at a lower level throughout the laying cycle.

The BB is an interesting combination of the two. Because the BB is bred to produce broiler chicks, it tends itself to be a heavier, meatier bird. Weight is added quickly but then maintained throughout its laying cycle, albeit at a higher level than for a layer. Of course the trade off is in the number of eggs laid. A layer will produce on average 220 eggs in a year and the BB 170.

Table F2. Target Weight By Stage Of Development*

	Starter	Grower	Finisher	Grower II
Broiler	.6	1.7	1.7 - 2.0	---
Layer	.5	1.0	1.0 - 1.2	1.2 - 1.5
BB	.8	2.0	2.0 - 2.5	2.0 - 2.5

*In kilograms.

The information in Table F3 provides an estimate of desired calorie and protein levels per kilogram of feed for each fowl through its growth stages. Generally, a bird starts out at a higher protein level than that at which it will finish. Moreover, by lowering the caloric count, feed consumption can actually increase. The bird doesn't feel as full so it eats more, resulting in the intake of additional protein, an important element for a bird during the laying cycle.

For a broiler the intent is to add weight as quickly as possible. Calories add weight; therefore, the caloric intake for a broiler is much more than for a layer or broiler breeder. To maintain the feed's nutritional balance, though, the protein level is also increased.

Table F3. Target Calorie And Protein Intake

	Starter		Grower		Finisher		Grower II	
	C*	P*	C	P	C	P	C	P
Broiler	3100	23%	3200	21%	3250	19%	--	--
Layer	1700	21%	1900	19%	1900	17%	1900	15%
BB	1800	19%	1900	17%	2000	15%	1700	15%

*Calorie (C) and protein (P) level per kilogram of feed.

With a protein level of 45% and 8.5% for soya and corn meal, respectively, and a fixed vitamin/mineral concentrate content of 5% for each type of feed, it is possible to calculate the mixture of corn and soya needed to reach the desired protein level. Table F4 presents the required feed composition for each type of bird at its various development stages. The numbers indicate the percentage a particular ingredient represents in a kilogram of feed.

Chart F Continued

Table F4. Composition Of Various Feeds*

	Ingredients	Starter	Grower	Finisher	Grower II
Broiler	Corn	52.5	57.5	62.5	---
	Soya	42.5	37.5	32.5	---
	Concentrate	5.0	5.0	5.0	---
Layer	Corn	57.5	62.5	70.0	75.0
	Soya	37.5	32.5	25.0	20.0
	Concentrate	5.0	5.0	5.0	5.0
BB	Corn	62.5	70.0	75.0	75.0
	Soya	32.5	25.0	20.0	20.0
	Concentrate	5.0	5.0	5.0	5.0

*Expressed as percentage.

Knowing the desired target weight and the calories and protein content of a kilogram of feed it is possible to figure how much feed must be consumed. The calculations are summarized in Table F5.*

It is common to refer to broiler consumption in terms of a feed conversion ratio (shown in parentheses in Table F5 under the kilograms consumed by broiler at each level of growth), which indicates how effectively the bird gained weight given the amount of feed consumed. The ratio is calculated by dividing the feed consumed by the weight gained.

In the case of a grower broiler, then, the feed conversion ratio is 2.25 (2.48/1.1). The expected weighted average feed conversion ratio for a 2.0 kg. broiler is 2.25. If the broiler weighs 1.8 kgs., rather than two, the weighted average ratio rises to 2.5, as .65 kgs of feed consumed during the finisher stage contributed only .1 kgs. of weight (assuming no change in weight gain through the first two stages).

With layers and broiler breeders the objective is to put weight on over a period of time, then to maintain an optimum egg production level according to the type of bird. As a a consequence, a feed conversion ratio would not have the same meaning. However, the amount of feed consumed through the various growth phases is followed.

*The disparity among amounts of feed consumed for different birds is a function of the feed objective, feed mixture, and the duration of any given development phase.

Chart F Continued

For example, from starter through finisher a layer and a broiler breeder are expected to consume 12 kgs. and 18 kgs. of feed, respectively. Throughout the grower II stage 40 kgs. and 46 kgs. will be consumed, respectively. Table F5 shows a rough distribution of the feed from starter through finisher for both layers and broiler breeders.

Table F5. Feed Consumed In Kilograms

	Starter	Grower	Finisher	Grower II	Total
Broiler	1.38 (2.3)	2.48 (2.25)	.65 (2.15)	--- ---	4.51 (2.25)
Layer	2.47	3.46	6.07	40	52
BB	3.7	5.19	9.11	46	64

Table F6 shows the percentage each type of feed represents of the total amount consumed by each kind of bird.

Table F6. Feed Type As Percentage Of Total Consumed

	Starter	Grower	Finisher	Grower II	Total
Broiler	31%	55%	14%	---	100%
Layer	5%	6%	12%	77%	100%
BB	6%	8%	14%	72%	100%

Finally, estimated feed costs per bird are calculated below in Table F7. Feed prices are based on the imported cost of corn and soy bean. Corn is estimated at $100/mt and soy bean at $200/mt. A mixed ton (2/3 corn and 1/3 soy bean) could be delivered for about $400/mt, or a mixed ton cost of $133 and a delivery cost of $267/mt. Corn would then equal 367/mt (.167/kg.) and soy bean would cost about $466/mt (.212/kg.).

Concentrate is valued at $500/mt delivered (.227/kg.). The cost of milling and mixing is estimated at $100/mt (.045/kg.).

*This assumes identical shipping costs per ton.

CHART 8
DEPRECIATION/AMORTIZATION SCHEDULE

DEPRECIATION/AMORTIZATION KEY (IN YEARS):

VEHICLES	5
BUILDINGS	10
EQUIPMENT	5
MISCELLANEOUS	
T/PO*	10
EQUIP	5

(*T/PO: TRAINING/PRE-OPERATING EXPENSES)

BROILER UNIT:

	TIME PERIOD	0	1	2	3	4	5	6	7	8	9	10
VEHICLES	AMOUNT	$42,000	$0	$0	$4,500	$0	$42,000	$0	$0	$4,500	$0	$42,000
	DEPRECIATION	$0	$8,400	$8,400	$9,300	$9,300	$9,300	$9,300	$9,300	$9,300	$9,300	$9,300
BUILDINGS	AMOUNT	$65,000	$0	$0	$150,000	$0	$0	$0	$0	$0	$0	$0
	DEPRECIATION	$0	$6,300	$6,500	$21,500	$21,500	$21,500	$21,500	$21,500	$21,500	$21,500	$21,500
EQUIPMENT	AMOUNT	$70,000	$0	$0	$740,000	$0	$0	$0	$0	$690,000	$0	$0
	DEPRECIATION	$0	$7,000	$7,000	$74,000	$74,000	$74,000	$74,000	$74,000	$69,000	$69,000	$69,000
MISCELL.	AMOUNT	$27,000	$0	$0	$150,000	$0	$0	$0	$0	$0	$0	$0
EQUIP	DEPRECIATION	$0	$3,240	$3,240	$21,600	$21,600	$21,600	$21,600	$21,600	$0	$0	$0
T/PO	AMORTIZATION	$0	$1,080	$1,080	$8,280	$8,280	$8,280	$8,280	$8,280	$8,280	$8,280	$8,280
TOTAL	DEPR/AMORT	$0	$26,220	$26,220	$134,680	$134,680	$134,680	$134,680	$134,680	$108,080	$108,080	$108,080

CHART G CONTINUED

LAYER UNIT:

	TIME PERIOD	0	1*	2	3	4	5	6	7	8	9	10
VEHICLES	AMOUNT	$0	$30,200	$0	$0	$0	$0	$30,200	$0	$0	$0	$0
	DEPRECIATION	$0	$2,013	$6,040	$6,040	$6,040	$6,040	$6,040	$6,040	$6,040	$6,040	$6,040
BUILDINGS	AMOUNT	$0	$220,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
	DEPRECIATION	$0	$7,333	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000	$22,000
EQUIPMENT	AMOUNT	$0	$220,000	$0	$0	$0	$0	$170,000	$0	$0	$0	$0
	DEPRECIATION	$0	$14,667	$44,000	$44,000	$44,000	$44,000	$44,000	$44,000	$44,000	$44,000	$44,000
MISCELL.	AMOUNT	$0	$88,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
EQUIP	DEPRECIATION	$0	$3,520	$10,560	$10,560	$10,560	$10,560	$7,040	$0	$0	$0	$0
T/PO	AMORTIZATION	$0	$1,173	$3,520	$3,520	$3,520	$3,520	$3,520	$3,520	$3,520	$3,520	$3,520
TOTAL	DEPR/AMORT	$0	$28,706	$86,120	$86,120	$86,120	$86,120	$82,600	$75,560	$75,560	$75,560	$75,560

*ASSUMES LAYER UNIT START-UP IN MONTH EIGHT; THEREFORE, ONE-THIRD OF DEPRECIATION/AMORTIZATION IS TAKEN IN START-UP YEAR.

BREEDER/HATCHERY UNIT

	TIME PERIOD	0	1	2	3*	4	5	6	7	8	9	10
VEHICLES	AMOUNT	$0	$0	$0	$20,400	$0	$0	$0	$0	$20,400	$0	$0
	DEPRECIATION	$0	$0	$0	$1,350	$4,080	$4,080	$4,080	$4,080	$4,080	$4,080	$4,080
BUILDINGS	AMOUNT	$0	$0	$0	$900,000	$0	$0	$0	$0	$0	$0	$0
	DEPRECIATION	$0	$0	$0	$30,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000
EQUIPMENT	AMOUNT	$0	$0	$0	$350,000	$0	$0	$0	$0	$300,000	$0	$0
	DEPRECIATION	$0	$0	$0	$23,333	$70,000	$70,000	$70,000	$70,000	$64,666	$60,000	$60,000
MISCELL.	AMOUNT	$0	$0	$0	$230,000	$0	$0	$0	$0	$0	$0	$0
EQUIP	DEPRECIATION	$0	$0	$0	$9,200	$27,600	$27,600	$27,600	$27,600	$18,400	$0	$0
T/PO	AMORTIZATION	$0	$0	$0	$3,067	$9,200	$9,200	$9,200	$9,200	$9,200	$9,200	$9,200
TOTAL	DEPR/AMORT	$0	$0	$0	$66,950	$200,880	$200,880	$200,880	$200,880	$188,346	$163,280	$163,280

*ASSUMES BREEDER/HATCHERY UNIT START-UP IN MONTH 32; THEREFORE, ONE-THIRD OF DEPRECIATION/AMORTIZATION IS TAKEN IN START-UP YEAR.

CHART 8 CONTINUED

FEED UNIT (FARM COMPLEX):

	TIME PERIOD	0	1*	2	3	4	5	6	7	8	9	10
VEHICLES	AMOUNT	$0	$1,253,200	$0	$0	$0	$0	$1,253,200	$0	$0	$0	$0
	DEPRECIATION	$0	$125,320	$250,640	$250,640	$250,640	$250,640	$250,640	$250,640	$250,640	$250,640	$250,640
BUILDINGS	AMOUNT	$0	$1,326,020	$0	$0	$0	$0	$0	$0	$0	$0	$0
	DEPRECIATION	$0	$132,602	$265,204	$265,204	$265,204	$265,204	$132,602	$0	$0	$0	$0
EQUIPMENT	AMOUNT	$0	$1,372,000	$0	$0	$0	$0	$1,372,000	$0	$0	$0	$0
	DEPRECIATION	$0	$137,200	$274,400	$274,400	$274,400	$274,400	$274,400	$274,400	$274,400	$274,400	$274,400
MISCELL.	AMOUNT	$0	$427,600	$0	$0	$0	$0	$427,600	$0	$0	$0	$0
EQUIP	DEPRECIATION	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
T/PO	AMORTIZATION	$0	$42,760	$85,520	$85,520	$85,520	$85,520	$85,520	$85,520	$85,520	$85,520	$85,520
TOTAL	DEPR/AMORT	$0	$437,882	$875,764	$875,764	$875,764	$875,764	$743,162	$610,560	$610,560	$610,560	$610,560

*ASSUMES FARM COMPLEX START-UP IN MONTH SIX; THEREFORE, ONE-HALF OF DEPRECIATION/AMORTIZATION IS TAKEN IN START-UP YEAR.
IN THIS INSTANCE, BUILDINGS (STORAGE) ARE DEPRECIATED OVER FIVE YEARS BUT LAST FOR TEN. MISCELLANEOUS EQUALS AMORTIZATION OF FREIGHT OVER FIVE YEARS.

FEED UNIT (MILL/MIX COMPLEX):

	TIME PERIOD	0	1*	2	3	4	5	6	7	8	9	10
VEHICLES	AMOUNT	$0	$250,000	$0	$0	$0	$0	$250,000	$0	$0	$0	$0
	DEPRECIATION	$0	$16,667	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
BUILDINGS	AMOUNT	$0	$390,000	$240,000	$0	$0	$0	$0	$0	$0	$0	$0
	DEPRECIATION	$0	$39,000	$102,000	$126,000	$126,000	$126,000	$87,000	$24,000	$0	$0	$0
EQUIPMENT	AMOUNT	$0	$135,000	$0	$0	$0	$0	$135,000	$0	$0	$0	$0
	DEPRECIATION	$0	$13,500	$27,000	$27,000	$27,000	$27,000	$27,000	$27,000	$27,000	$27,000	$27,000
MISCELL.	AMOUNT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EQUIP	DEPRECIATION	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
T/PO	AMORTIZATION	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	DEPR/AMORT	$0	$69,167	$179,000	$203,000	$203,000	$203,000	$164,000	$101,000	$77,000	$77,000	$77,000

*ASSUMES MILL/MIX COMPLEX START-UP IN MONTH SIX; THEREFORE, ONE-HALF OF DEPRECIATION/AMORTIZATION IS TAKEN IN START-UP YEAR.
IN THIS INSTANCE, BUILDINGS & STORAGE ARE DEPRECIATED OVER FIVE YEARS BUT LAST FOR TEN.

CHART 6 CONTINUED

ADMINISTRATIVE UNIT	TIME PERIOD	0	1	2	3	4	5	6	7	8	9	10
VEHICLES	AMOUNT	$72,000	$72,000	$0	$0	$0	$72,000	$72,000	$0	$0	$0	$72,000
	DEPRECIATION	$0	$14,400	$28,800	$28,800	$28,800	$28,800	$28,800	$28,800	$28,800	$28,800	$28,800
BUILDINGS*	AMOUNT	$890,000	$0	$100,000	$0	$0	$0	$0	$0	$0	$0	$0
	DEPRECIATION	$0	$89,000	$89,000	$99,000	$99,000	$99,000	$99,000	$99,000	$99,000	$99,000	$99,000
EQUIPMENT**	AMOUNT	$475,000	$0	$0	$0	$0	$255,000	$0	$0	$0	$0	$327,000
	DEPRECIATION	$0	$95,000	$95,000	$95,000	$95,000	$95,000	$51,000	$51,000	$51,000	$51,000	$51,000
MISCELL.	AMOUNT	$375,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EQUIP	DEPRECIATION	$0	$36,000	$36,000	$36,000	$36,000	$36,000	$0	$0	$0	$0	$0
T/PD	AMORTIZATION	$0	$19,500	$19,500	$19,500	$19,500	$19,500	$19,500	$19,500	$19,500	$19,500	$19,500
TOTAL	DEPR/AMORT	$0	$253,900	$268,300	$278,300	$278,300	$278,300	$198,300	$199,300	$198,300	$198,300	$198,300

*ASSUMES HOUSING, OFFICE, LABORATORY, WORKSHOP, AND CENTRAL WATER PLANT.

**ASSUMES CENTRAL GENERATOR, TELECOMMUNICATIONS, WORKSHOP EQUIP., OTHER EQUIP., AND ONE TIME PURCHASE OF CONSTRUCTION EQUIPMENT.

CHART H

GIP MANAGEMENT & MANAGEMENT COST SCHEDULE

GIP MANAGEMENT KEY:

INFLATION FACTOR (EXPATRIATE): 0 EXPATRIATE POSITION = (E) EXPATRIATE SUPPORT COST = 0.25

INFLATION FACTOR (LOCAL HIRE): 0 LOCAL HIRE POSITION = (L)

BROILER UNIT: TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
UNIT MANAGER (E)	$40,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$50,000	$50,000	$50,000	$50,000	$50,000	$0	$0	$0	$0	$0
COUNTERPART (L)	$10,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
PLANT MANAGER (L)	$2,400	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400
SUPERVISORS (L)	$1,200	NUMBER	2	2	3	3	3	3	3	3	3	3
		COST	$2,400	$2,400	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600
BROILER UNIT MANAGEMENT COST			$64,800	$64,800	$66,000	$66,000	$66,000	$16,000	$16,000	$16,000	$16,000	$16,000

LAYER UNIT TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
UNIT MANAGER (E)	$40,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$50,000	$50,000	$50,000	$50,000	$50,000	$0	$0	$0	$0	$0
COUNTERPART (L)	$10,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
SUPERVISOR (L)	$1,200	NUMBER	3	3	3	3	3	3	3	3	3	3
		COST	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600
LAYER UNIT MANAGEMENT COST			$63,600	$63,600	$63,600	$63,600	$63,600	$13,600	$13,600	$13,600	$13,600	$13,600

CHART H CONTINUED

BREEDER/HATCHERY UNIT

TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
UNIT MANAGER (E)	$40,000	NUMBER	0	0	1	1	1	1	1	0	0	0
		COST	$0	$0	$50,000	$50,000	$50,000	$50,000	$50,000	$0	$0	$0
COUNTERPART (L)	$10,000	NUMBER	0	0	1	1	1	1	1	1	1	1
		COST	$0	$0	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
SUPERVISOR (L)	$1,200	NUMBER	0	0	3	3	3	3	3	3	3	3
		COST	$0	$0	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600	$3,600
BREEDER/HATCHERY MGT COSTS			$0	$0	$63,600	$63,600	$63,600	$63,600	$63,600	$13,600	$13,600	$13,600

FEED PRODUCTION UNIT: FARM COMPLEX

TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
COMPLEX MGR (E)	$40,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$50,000	$50,000	$50,000	$50,000	$50,000	$0	$0	$0	$0	$0
COUNTERPART (L)	$10,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
MECHANIC (E)	$35,000	NUMBER	1	1	1	1	0	0	0	0	0	0
		COST	$43,750	$43,750	$43,750	$43,750	$0	$0	$0	$0	$0	$0
COUNTERPART (L)	$5,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
SUPERVISORS (L)	$1,200	NUMBER	3	5	7	7	7	7	7	7	7	7
		COST	$3,600	$6,000	$8,400	$8,400	$8,400	$8,400	$8,400	$8,400	$8,400	$8,400
FARM COMPLEX MANAGEMENT COST			$112,350	$114,750	$117,150	$117,150	$73,400	$23,400	$23,400	$23,400	$23,400	$23,400

FEED PRODUCTION UNIT: MILL/MIX COMPLEX

TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
COMPLEX MGR (E)	$30,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$37,500	$37,500	$37,500	$37,500	$37,500	$0	$0	$0	$0	$0
COUNTERPART (L)	$7,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000
SUPERVISORS (L)	$1,200	NUMBER	1	2	2	2	2	2	2	2	2	2
		COST	$1,200	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400	$2,400
MILL/MIX COMPLEX MGT COST			$45,700	$46,900	$46,900	$46,900	$46,900	$9,400	$9,400	$9,400	$9,400	$9,400

CHART H CONTINUED

ADMINISTRATIVE UNIT TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
GENERAL MANAGER (E)	$60,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
COUNTERPART (L)	$20,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
GM ASSISTANT (E)	$30,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$37,500	$37,500	$37,500	$37,500	$37,500	$0	$0	$0	$0	$0
COUNTERPART (L)	$10,000	NUMBER	2	2	2	2	2	2	2	2	2	2
		COST	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
ACCOUNTANT (E)	$35,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$43,750	$43,750	$43,750	$43,750	$43,750	$0	$0	$0	$0	$0
COUNTERPART (L)	$13,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000
ACCTG ASSISTANTS (L)	$3,000	NUMBER	1	2	3	3	3	3	3	3	3	3
		COST	$3,000	$6,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000
EXT. AGENT SUPER (L)	$2,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
EXTENSION AGENTS (L)	$1,500	NUMBER	7	7	10	10	10	10	10	10	10	10
		COST	$10,500	$10,500	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000
VETRINARIAN (E)	$40,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$50,000	$50,000	$50,000	$50,000	$50,000	$0	$0	$0	$0	$0
COUNTERPART (L)	$15,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000
VET ASSISTANTS (L)	$2,000	NUMBER	1	2	2	2	2	2	2	2	2	2
		COST	$2,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
MECHANIC (E)	$35,000	NUMBER	1	1	1	1	1	0	0	0	0	0
		COST	$43,750	$43,750	$43,750	$43,750	$43,750	$0	$0	$0	$0	$0
COUNTERPART (L)	$5,000	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
SUPERVISOR (L)	$1,200	NUMBER	1	1	1	1	1	1	1	1	1	1
		COST	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200

CHART H CONTINUED

ADMINISTRATIVE UNIT TITLE	COST/PERSON/YEAR	YEAR	1	2	3	4	5	6	7	8	9	10
CONSTRUCTION MGR (E)	$35,000	:: NUMBER	1	1	1	1	0	0	0	0	0	0
		:: COST	$43,750	$43,750	$43,750	$43,750	$0	$0	$0	$0	$0	$0
COUNTERPART (L)	$10,000	:: NUMBER	1	1	1	1	0	0	0	0	0	0
		:: COST	$10,000	$10,000	$10,000	$10,000	$0	$0	$0	$0	$0	$0
SUPERVISOR (L)	$2,000	:: NUMBER	2	2	2	2	0	0	0	0	0	0
		:: COST	$4,000	$4,000	$4,000	$4,000	$0	$0	$0	$0	$0	$0
PERSONNEL ADMINT. (L)	$7,000	:: NUMBER	2	2	2	2	0	0	0	0	0	0
		:: COST	$14,000	$14,000	$14,000	$14,000	$0	$0	$0	$0	$0	$0
ADMINISTRATIVE UNIT MGT COSTS		::	$413,450	$418,450	$425,950	$425,950	$354,200	$179,200	$179,200	$179,200	$179,200	$179,200

CHART I
BROILER UNIT

PROFORMA PROFIT AND LOSS STATEMENT

PRODUCTION & REVENUE FACTORS

A. EXPECTED PLANT THROUGHPUT

	HAND-OPR'D	MECHANICAL
THROUGHPUT PER WEEK	6000	25000

B. BROILER PURCHASES

YEAR	1*	2	3**	4	5	6	7	8	9	10
EST'D. THROUGHPUT	156000	312000	806000	1300000	1300000	1300000	1300000	1300000	1300000	1300000
EST'D PURCHASES @ TWICE THROUGHPUT	312000	624000	1612000	2600000	2600000	2600000	2600000	2600000	2600000	2600000
MARKETING COSTS:										
LIVE BROILER	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
DRESSED BROILER	0.06	0.06	0.06	0.06	0.05	0.04	0.04	0.03	0.03	0.03
PURCHASE PRICE PER BROILER	3.06	3.06	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
DRESSING COST PER BROILER	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
LIVE WEIGHT (KGS.)	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
DRESSED WEIGHT (KGS.)	1	1	1	1	1	1	1	1	1	1

*FIFTY PERCENT OF ANNUAL THROUGHPUT
**FIFTY PERCENT HAND-OPERATED ANNUAL THROUGHPUT RATE PLUS FIFTY PERCENT ANNUAL MECHANICAL PLANT THROUGHPUT RATE.

C. SALE PRICE:

DRESSED BROILER	$3.71 KGS
LIVE BROILER	$3.71 KGS.

CHART I CONTINUED

YEAR	1	2	3	4	5	6	7	8	9	10
I. REVENUE										
DRESSED BROILERS	$578,760	$1,157,520	$2,990,260	$4,823,000	$4,823,000	$4,823,000	$4,823,000	$4,823,000	$4,823,000	$4,823,000
LESS COST OF SALES	$34,726	$69,451	$179,416	$289,380	$241,150	$192,920	$192,920	$144,690	$144,690	$144,690
GROSS MARGIN	$544,034	$1,088,069	$2,810,844	$4,533,620	$4,581,850	$4,630,080	$4,630,080	$4,678,310	$4,678,310	$4,678,310
II. OPERATING (VARIABLE) COSTS										
BROILER COST	$477,360	$954,720	$2,369,640	$3,822,000	$3,822,000	$3,822,000	$3,822,000	$3,822,000	$3,822,000	$3,822,000
DRESSING COST	$31,200	$62,400	$241,800	$390,000	$390,000	$390,000	$390,000	$390,000	$390,000	$390,000
TOTAL VARIABLE COSTS	$508,560	$1,017,120	$2,611,440	$4,212,000	$4,212,000	$4,212,000	$4,212,000	$4,212,000	$4,212,000	$4,212,000
CONTRIBUTION	$35,474	$70,949	$199,404	$321,620	$369,850	$418,080	$418,080	$466,310	$466,310	$466,310
III. FIXED COST										
DEPR/AMORT	$26,220	$26,220	$134,680	$134,680	$134,680	$134,680	$134,680	$108,080	$108,080	$108,080
MGT PERSONNEL	$64,800	$64,800	$66,000	$66,000	$65,000	$16,000	$16,000	$16,000	$16,000	$16,000
TOTAL FIXED COST	$91,020	$91,020	$200,680	$200,680	$200,680	$150,680	$150,680	$124,080	$124,080	$124,080
IV. PROFIT (LOSS) FROM DRESSING OPERATION	($55,546)	($20,071)	($1,276)	$120,940	$169,170	$267,400	$267,400	$342,230	$342,230	$342,230
V. SALE OF BY-PRODUCTS										
LIVE BROILERS	$810,264	$1,620,528	$4,186,364	$6,752,200	$6,752,200	$6,752,200	$6,752,200	$6,752,200	$6,752,200	$6,752,200
LESS PURCHASE COST	$477,360	$954,720	$2,369,640	$3,822,000	$3,822,000	$3,822,000	$3,822,000	$3,822,000	$3,822,000	$3,822,000
LESS COST OF SALES	$32,411	$64,821	$167,455	$202,566	$202,566	$202,566	$202,566	$202,566	$202,566	$202,566
TOTAL CONTRIBUTION OF BY-PRODUCTS	$300,493	$600,987	$1,649,269	$2,727,634	$2,727,634	$2,727,634	$2,727,634	$2,727,634	$2,727,634	$2,727,634
VI. UNIT PROFIT (LOSS) B/4 INTEREST & TAXES	$244,948	$580,916	$1,647,994	$2,848,574	$2,896,804	$2,995,034	$2,995,034	$3,069,864	$3,069,864	$3,069,864

CHART 1 CONTINUED

SUMMARY OF FINANCING

A. DEBT: 0.6 B. EQUITY: 0.4

C. WORKING CAPITAL AS PERCENT OF VARIABLE COSTS: 0.25

YEAR	0	1	2	3	4	5	6	7	8	9	10
I. CAPITAL EXPENDITURES	$204,000	$0	$0	$1,074,500	$0	$42,000	$0	$0	$694,500	$0	$42,000
INTERNALLY FUNDED											
EQUITY	$81,600	$0	$0	$429,800	$0	$0	$0	$0	$0	$0	$0
CASH FLOW	$0	$0	$0	$0	$0	$42,000	$0	$0	$694,500	$0	$42,000
EXTERNALLY FUNDED	$122,400	$0	$0	$644,700	$0	$0	$0	$0	$0	$0	$0
II. WORKING CAPITAL (PEAK NEEDS)	$0	$127,140	$254,280	$652,860	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000

III. FINANCING

CAPITAL EXPENDITURES:

TERM 5
RATE 0.1
GRACE 1 YEAR

YEAR OF LOAN #1: 0
YEAR OF LOAN #2: 3
YEAR OF LOAN #3:

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #1: $32,289
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #2: $170,070
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #3:

WORKING CAPITAL:

TERM 1
RATE 0.1
GRACE 0 YEAR

AVERAGE WORKING CAPITAL OUTSTANDING AND INTEREST ARE CALCULATED ON 50% OF THE OPENING AND CLOSING BALANCE OF PEAK WORKING CAPITAL NEEDS.

PAYMENT SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10
TERM LOANS	$0	$32,289	$32,289	$202,359	$202,359	$202,359	$170,070	$170,070	$0	$0
WORKING CAPITAL LOANS	$69,927	$209,781	$498,927	$938,223	$1,158,300	$1,158,300	$1,158,300	$1,158,300	$1,158,300	$1,158,300
TOTAL	$69,927	$242,070	$531,216	$1,140,582	$1,360,659	$1,360,659	$1,328,370	$1,328,370	$1,158,300	$1,158,300

CHART I CONTINUED

SOURCES/USES CASH FLOW

YEAR	0	1	2	3	4	5	6	7	8	9	10
UNIT INCOME B/4 TAXES & INTEREST	$0	$244,948	$580,916	$1,647,994	$2,848,574	$2,896,804	$2,995,034	$2,995,034	$3,069,864	$3,069,864	$3,069,864
PLUS DEPRECIATION	$0	$26,220	$26,220	$134,680	$134,680	$134,680	$134,680	$134,680	$108,080	$108,080	$108,080
PLUS EQUITY	$81,600	$0	$0	$429,800	$0	$0	$0	$0	$0	$0	$0
PLUS DEBT (LT AND WC)	$122,400	$63,570	$190,710	$1,098,270	$852,930	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000
LESS CAPITAL EXPENDITURES	$204,000	$0	$0	$1,074,500	$0	$42,000	$0	$0	$694,500	$0	$42,000
LESS REPAYMENTS PRINCIPAL & INTEREST	$0	$69,927	$242,070	$531,216	$1,140,582	$1,360,659	$1,360,659	$1,328,370	$1,328,370	$1,158,300	$1,158,300
CASH FLOW	$0	$201,241	$365,066	$1,251,458	$2,695,602	$1,670,825	$1,769,055	$1,801,344	$1,849,574	$2,019,644	$2,019,644
CUMULATIVE CASH FLOW	$0	$201,241	$566,307	$1,817,765	$4,513,367	$6,184,192	$7,953,247	$9,754,591	$11,604,165	$13,623,809	$15,643,453

CHART J
LAYER UNIT

PROFORMA PROFIT AND LOSS STATEMENT

PRODUCTION & REVENUE FACTORS

YEAR	1	2	3	4	5	6	7	8	9	10
A. LAYER GROW-OUT										
EST'D. NO. 16 WEEK-OLD LAYERS	0032	40000	45000	45000	45000	45000	45000	45000	45000	45000
EST'D PRODUCING BIP LAYERS	0	10000	16120	16120	16120	16120	16120	16120	16120	16120
EST'D EXCESS LAYERS SOLD	0	29920	28872	28872	28872	28872	28872	28872	28872	28872
B. MARKETING COSTS										
EGGS	0	0.02	0.02	0.01	0.01	0.01	0.01	0.005	0.005	0.005
16 WEEK-OLD LAYERS	0	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01
SPENT LAYERS	0	0	0.02	0.02	0.01	0.01	0.01	0.005	0.005	0.005
EST'D SPENT LAYERS SOLD	0	0	0070	14193	14193	14193	14193	14193	14193	14193
EST'D NO. OF EGGS/LAYER	220	220	220	220	220	220	220	220	220	220

C. SALE PRICE:

EGG	$0.17	PER EGG
16 WEEK-OLD LAYERS	$5.10	PER BIRD
SPENT LAYER	$3.71	PER BIRD

CHART 3 CONTINUED

YEAR	1	2	3	4	5	6	7	8	9	10
I. REVENUE										
TABLE EGGS	$0	$376,992	$603,187	$603,187	$603,187	$603,187	$603,187	$603,187	$603,187	$603,187
LESS COST OF SALES	$0	$7,540	$12,064	$6,032	$6,032	$6,032	$6,032	$3,016	$3,016	$3,016
GROSS MARGIN	$0	$369,452	$591,123	$597,155	$597,155	$597,155	$597,155	$600,171	$600,171	$600,171
II. OPERATING (VARIABLE) COSTS										
COST PER LAYER TO 16 WEEKS	$6.43	$4.58	$4.58	$4.58	$4.58	$4.58	$4.58	$4.58	$4.58	$4.58
COST TO END OF LAY	$0.00	$10.81	$10.81	$10.81	$10.81	$10.81	$10.81	$10.81	$10.81	$10.81
COST PER EGG	$0.00	$0.07	$0.07	$0.07	$0.07	$0.07	$0.07	$0.07	$0.07	$0.07
TOTAL VARIABLE COSTS	$51,646	$155,131	$248,210	$248,210	$248,210	$248,210	$248,210	$248,210	$248,210	$248,210
CONTRIBUTION	($51,646)	$214,321	$342,914	$348,945	$348,945	$348,945	$348,945	$351,961	$351,961	$351,961
III. FIXED COST										
DEPR/AMORT	$28,706	$86,120	$86,120	$86,120	$86,120	$82,600	$75,560	$75,560	$75,560	$75,560
NST PERSONNEL	$63,600	$63,600	$63,600	$63,600	$63,600	$13,600	$13,600	$13,600	$13,600	$13,600
TOTAL FIXED COST	$92,306	$149,720	$149,720	$149,720	$149,720	$96,200	$89,160	$89,160	$89,160	$89,160
IV. PROFIT (LOSS) FROM DRESSING OPERATION	($143,952)	$64,601	$193,194	$199,225	$199,225	$252,745	$259,785	$262,801	$262,801	$262,801
V. SALE OF BY-PRODUCTS										
SPENT LAYERS	$0	$0	$32,909	$32,655	$32,655	$32,655	$32,655	$32,655	$32,655	$32,655
EXCESS 16 WEEK-OLD LAYERS	$0	$154,986	$149,557	$149,557	$149,557	$149,557	$149,557	$149,557	$149,557	$149,557
LESS BROW-OUT COSTS	$0	$137,034	$132,234	$132,234	$132,234	$132,234	$132,234	$132,234	$132,234	$132,234
LESS COST OF SALES	$0	$898	$1,044	$1,150	$719	$719	$719	$360	$360	$360
TOTAL CONTRIBUTION OF BY-PRODUCTS	$0	$17,054	$49,189	$68,828	$69,259	$69,259	$69,259	$69,618	$69,618	$69,618
VI. UNIT PROFIT (LOSS) B/4 INTEREST & TAXES	($143,952)	$81,655	$242,382	$268,053	$268,484	$322,004	$329,044	$332,420	$332,420	$332,420

CHART 3 CONTINUED

SUMMARY OF FINANCING

A. DEBT: 0.6 B. EQUITY: 0.4

C. WORKING CAPITAL AS PERCENT OF VARIABLE COSTS: 0.5

YEAR	0	1	2	3	4	5	6	7	8	9	10
I. CAPITAL EXPENDITURES	$0	$558,200	$0	$0	$0	$0	$200,200	$0	$0	$0	$0
INTERNALLY FUNDED	$0	$223,280	$0	$0	$0	$0	$0	$0	$0	$0	$0
EQUITY	$0	$0	$0	$0	$0	$0	$200,200	$0	$0	$0	$0
CASH FLOW	$0	$334,920	$0	$0	$0	$0	$0	$0	$0	$0	$0
EXTERNALLY FUNDED											
II. WORKING CAPITAL (PEAK NEEDS)	$0	$25,023	$77,566	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105

III. FINANCING

CAPITAL EXPENDITURES:

TERM 5 YEAR OF LOAN #1:
RATE 0.1 YEAR OF LOAN #2:
GRACE 1 YEAR YEAR OF LOAN #3:

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #1:
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #2: $88,351
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #3:

WORKING CAPITAL:

TERM 1
RATE 0.1
GRACE 0 YEAR

AVERAGE WORKING CAPITAL OUTSTANDING AND INTEREST ARE CALCULATED ON 50% OF THE OPENING AND CLOSING BALANCE OF PEAK WORKING CAPITAL NEEDS.

PAYMENT SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10
TERM LOANS	$0	$88,351	$88,351	$88,351	$88,351	$88,351	$0	$0	$0	$0
WORKING CAPITAL LOANS	$14,203	$56,864	$110,919	$136,515	$136,515	$136,515	$136,515	$136,515	$136,515	$136,515
TOTAL	$14,203	$145,215	$199,270	$224,866	$224,866	$224,866	$136,515	$136,515	$136,515	$136,515

CHART J CONTINUED

SOURCES/USES CASH FLOW

YEAR	0	1	2	3	4	5	6	7	8	9	10
UNIT INCOME B/4 TAXES & INTEREST	$0	($143,952)	$81,655	$242,382	$268,053	$268,484	$322,004	$329,044	$332,420	$332,420	$332,420
PLUS DEPRECIATION	$0	$28,706	$86,120	$86,120	$86,120	$86,120	$82,600	$75,560	$75,560	$75,560	$75,560
PLUS EQUITY	$0	$223,280	$0	$0	$0	$0	$0	$0	$0	$0	$0
PLUS DEBT	$0	$347,831	$51,694	$100,835	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105
LESS CAPITAL EXPENDITURES	$0	$558,200	$0	$0	$0	$0	$200,200	$0	$0	$0	$0
LESS REPAYMENTS PRINCIPAL & INTEREST	$0	$14,203	$145,215	$199,270	$224,866	$224,866	$224,866	$136,515	$136,515	$136,515	$136,515
CASH FLOW	$0	($116,537)	$74,255	$230,068	$253,412	$253,842	$103,642	$392,193	$395,569	$395,569	$395,569
CUMULATIVE CASH FLOW	$0	($116,537)	($42,282)	$187,786	$441,198	$695,040	$798,683	$1,190,876	$1,586,445	$1,982,014	$2,377,583

CHART K
BREEDER/HATCHERY UNIT

PROFORMA PROFIT AND LOSS STATEMENT

A. PRODUCTION & REVENUE FACTORS

YEAR	1	2	3	4	5	6	7	8	9	10
EST'D YRLY GROW-OUT 16 WK-OLD BD (HL & FML)	0	0	9795	29380	29380	29380	29380	29380	29380	29380
EST'D AVG. NO. LAYING (FEMALE) BD	0	0	0	14115	16800	16800	16800	16800	16800	16800
EST'D AVG. NO. MALE BD	0	0	0	1694	2016	2016	2016	2016	2016	2016
MARKETING COSTS:										
DAY-OLD BROILER CHICKS	0	0	0	0.03	0.03	0.03	0.03	0.02	0.02	0.02
SPENT FEMALE BD	0	0	0	0.02	0.02	0.01	0.01	0.005	0.005	0.005
SPENT MALE BD	0	0	0	0.02	0.02	0.01	0.01	0.005	0.005	0.005
EST'D SPENT FEMALE BD SOLD	0	0	0	16090	24135	24135	24135	24135	24135	24135
EST'D SPENT MALE BD SOLD	0	0	0	1932	2898	2898	2898	2898	2898	2898
EST'D HATCHED EGGS PER BD	0	0	0	130	130	130	130	130	130	130
EST'D DAY-OLD BROILER CHICKS PLACED	0	0	0	1834950	2184000	2184000	2184000	2184000	2184000	2184000

B. SALE PRICE:

DAY-OLD BROILER CHICK	$0.60	(TRANSFER PRICE TO BROILER UNIT)
SPENT MALE BD	$2.00	
SPENT FEMALE BD	$3.71	

CHART K CONTINUED

YEAR	1	2	3	4	5	6	7	8	9	10
I. REVENUE										
DAY-OLD CHICKS	$0	$0	$0	$1,100,970	$1,310,400	$1,310,400	$1,310,400	$1,310,400	$1,310,400	$1,310,400
LESS COST OF SALES	$0	$0	$0	$33,029	$39,312	$39,312	$39,312	$26,208	$26,208	$26,208
GROSS MARGIN	$0	$0	$0	$1,067,941	$1,271,088	$1,271,088	$1,271,088	$1,284,192	$1,284,192	$1,284,192
II. OPERATING (VARIABLE) COSTS										
COST PER BB TO 16 WEEKS	$0.00	$0.00	$7.45	$7.18	$7.18	$7.18	$7.18	$7.18	$7.18	$7.18
COST TO END OF LAY	$0.00	$0.00	$0.00	$12.84	$12.84	$12.84	$12.84	$12.84	$12.84	$12.84
COST PER HATCHED EGG	$0.000	$0.000	$0.000	$0.154	$0.154	$0.154	$0.154	$0.154	$0.154	$0.154
COST OF HATCHING EGG	$0.000	$0.000	$0.000	$0.056	$0.056	$0.056	$0.056	$0.056	$0.056	$0.056
	$0.000	$0.000	$0.000	$0.210	$0.210	$0.210	$0.210	$0.210	$0.210	$0.210
TOTAL VARIABLE COSTS	$0	$0	$72,973	$385,340	$458,640	$458,640	$458,640	$458,640	$458,640	$458,640
CONTRIBUTION	$0	$0	($72,973)	$682,601	$812,448	$812,448	$812,448	$825,552	$825,552	$825,552
III. FIXED COST										
DEPR/AMORT	$0	$0	$66,960	$200,880	$200,880	$200,880	$200,880	$188,346	$163,280	$163,280
MGT PERSONNEL	$0	$0	$63,600	$63,600	$63,600	$63,600	$63,600	$13,600	$13,600	$13,600
TOTAL FIXED COST	$0	$0	$130,560	$264,480	$264,480	$264,480	$264,480	$201,946	$176,880	$176,880
IV. PROFIT (LOSS) FROM BREEDER/HATCHERY OPERATION	$0	$0	($203,533)	$418,121	$547,968	$547,968	$547,968	$623,606	$648,672	$648,672
V. SALE OF BY-PRODUCTS										
SPENT FEMALE BB	$0	$0	$0	$59,694	$89,541	$89,541	$89,541	$89,541	$89,541	$89,541
SPENT MALE BB	$0	$0	$0	$3,864	$5,796	$5,796	$5,796	$5,796	$5,796	$5,796
LESS COST OF SALES	$0	$0	$0	$360	$541	$270	$270	$135	$135	$135
TOTAL CONTRIBUTION OF BY-PRODUCTS	$0	$0	$0	$63,197	$94,796	$95,067	$95,067	$95,202	$95,202	$95,202
VI. UNIT PROFIT (LOSS) B/4 INTEREST & TAXES	$0	$0	($203,533)	$481,319	$642,764	$643,035	$643,035	$718,808	$743,874	$743,874

CHART K CONTINUED

SUMMARY OF FINANCING

A. DEBT: 0.6 B. EQUITY: 0.4

C. WORKING CAPITAL AS PERCENT OF VARIABLE COSTS: 0.75

YEAR	0	1	2	3	4	5	6	7	8	9	10
I. CAPITAL EXPENDITURES	$0	$0	$0	$1,500,400	$0	$0	$0	$0	$320,400	$0	$0
INTERNALLY FUNDED											
EQUITY	$0	$0	$0	$600,160	$0	$0	$0	$0	$0	$0	$0
CASH FLOW	$0	$0	$0	$0	$0	$0	$0	$0	$320,400	$0	$0
EXTERNALLY FUNDED	$0	$0	$0	$900,240	$0	$0	$0	$0	$0	$0	$0
II. WORKING CAPITAL (PEAK NEEDS)	$0	$0	$0	$54,730	$289,005	$343,980	$343,980	$343,980	$343,980	$343,980	$343,980

III. FINANCING

CAPITAL EXPENDITURES:

TERM 5 YEAR OF LOAN #1: 3

RATE 0.1 YEAR OF LOAN #2:

GRACE 1 YEAR YEAR OF LOAN #3:

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #1: $237,481

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #2:

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #3:

WORKING CAPITAL:

TERM 1

RATE 0.1

GRACE 0 YEAR

AVERAGE WORKING CAPITAL AND INTEREST ARE CALCULATED ON 50% OF THE OPENING AND CLOSING BALANCE OF PEAK WORKING CAPITAL NEEDS.

PAYMENT SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10
TERM LOANS	$0	$0	$0	$237,481	$237,481	$237,481	$237,481	$237,481	$0	$0
WORKING CAPITAL LOANS	$0	$0	$30,101	$189,054	$348,142	$378,378	$378,378	$378,378	$378,378	$378,378
TOTAL	$0	$0	$30,101	$426,535	$583,623	$615,859	$615,859	$615,859	$378,378	$378,378

CHART K CONTINUED

SOURCES/USES CASH FLOW

YEAR	0	1	2	3	4	5	6	7	8	9	10
UNIT INCOME B/4 TAXES & INTEREST	$0	$0	$0	($203,533)	$481,319	$642,764	$643,035	$643,035	$718,808	$743,874	$743,874
PLUS DEPRECIATION	$0	$0	$0	$66,960	$200,000	$200,000	$200,000	$200,000	$180,346	$163,200	$163,200
PLUS EQUITY	$0	$0	$0	$600,160	$0	$0	$0	$0	$0	$0	$0
PLUS DEBT (LT & WC)	$0	$0	$0	$927,605	$171,867	$316,492	$343,980	$343,980	$343,980	$343,980	$343,980
LESS CAPITAL EXPENDITURES	$0	$0	$0	$1,500,000	$0	$0	$0	$0	$320,400	$0	$0
LESS REPAYMENTS PRINCIPAL & INTEREST	$0	$0	$0	$30,101	$426,535	$585,623	$615,059	$615,059	$615,059	$370,378	$370,378
CASH FLOW	$0	$0	$0	($139,309)	$427,531	$574,314	$572,036	$572,036	$314,675	$872,756	$872,756
CUMULATIVE CASH FLOW	$0	$0	$0	($139,309)	$288,222	$862,736	$1,434,771	$2,006,807	$2,321,482	$3,194,437	$4,067,193

CHART L
FEED PRODUCTION UNIT

PROFORMA PROFIT AND LOSS STATEMENT

PRODUCTION & REVENUE FACTORS

YEAR	1	2	3	4	5	6	7	8	9	10
ACREAGE FARMED (2/3 CORN, 1/3 SOY BEAN)	1300	2600	2600	2600	2600	2600	2600	2600	2600	2600
AVERAGE YIELD PER ACRE (MT)	2	2	3	3	3	3	3	3	3	3
AVAILABLE SUPPLY OF FEED INGREDIENTS (MT)										
CORN	1733	3466	5199	5199	5199	5199	5199	5199	5199	5199
SOYA	867	1734	2601	2601	2601	2601	2601	2601	2601	2601
ANTICIPATED INGREDIENT NEEDS (MT)										
CORN	745	1499	3829	4200	4200	4200	4200	4200	4200	4200
SOYA	501	727	2295	2397	2397	2397	2397	2397	2397	2397
CONCENTRATE	66	85	291	316	316	316	316	316	316	316
EXCESS CORN & SOY BEAN PRODUCED (MT)	1354	2974	1676	1203	1203	1203	1203	[illegible]	1203	1203
MILL/MIX PLANT CAPACITY (MT)	3600	7200	7200	7200	7200	7200	7200	7200	7200	7200
EXCESS CAPACITY (MT)	2200	4089	785	287	287	287	287	287	287	287
EXCESS FEED FOR SALE (MT)	1354	2974	785 *	287 *	287 *	287 *	287 *	287 *	287 *	287 *
EXCESS FEED INGREDIENTS FOR SALE (MT)	0	0	891	916	916	916	916	916	916	916

IMPORT COST OR TRANSFER PRICE (FROM FARM COMPLEX) PER MT TO MILL/MIX COMPLEX

CORN	$367.00
SOYA	$466.00
CONCENTRATE	$590.00

*ASSUMES ABOUT 60% CORN AND 40% SOYA.

SALES PRICE PER MT OF FEED	$500.00
SALES PRICE PER MT OF EXCESS INGREDIENTS	$900.00

MARKETING COSTS:

EXCESS FEED INGREDIENTS	0.05	FEED INGREDIENTS TO MIX/MILL	0.03
EXCESS FEED	0.05	FEED TO OTHER BIP UNITS	0.03

CHART L CONTINUED

YEAR	1	2	3	4	5	6	7	8	9	10
I. REVENUE FARM COMPLEX										
SALES TO MIX/MILL COMPLEX	$1,040,017	$2,080,034	$3,120,051	$3,120,051	$3,120,051	$3,120,051	$3,120,051	$3,120,051	$3,120,051	$3,120,051
LESS COST OF SALES	$31,201	$62,401	$93,602	$93,602	$93,602	$93,602	$93,602	$93,602	$93,602	$93,602
GROSS MARGIN	$1,008,817	$2,017,633	$3,026,450	$3,026,450	$3,026,450	$3,026,450	$3,026,450	$3,026,450	$3,026,450	$3,026,450
II. OPERATING (VARIABLE) COSTS PER ACRE $430.30	$559,390	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780
TOTAL VARIABLE COSTS	$559,390	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780	$1,118,780
CONTRIBUTION	$449,427	$898,853	$1,907,670	$1,907,670	$1,907,670	$1,907,670	$1,907,670	$1,907,670	$1,907,670	$1,907,670
III. FIXED COST										
DEPR/AMORT	$437,882	$875,764	$875,764	$875,764	$875,764	$743,162	$610,560	$610,560	$610,560	$610,560
MGT PERSONNEL	$112,350	$114,750	$117,150	$117,150	$73,400	$23,400	$23,400	$23,400	$23,400	$23,400
TOTAL FIXED COST	$550,232	$990,514	$992,914	$992,914	$949,164	$766,562	$633,960	$633,960	$633,960	$633,960
IV. PROFIT (LOSS) FROM FARM COMPLEX	($100,805)	($91,661)	$914,756	$914,756	$958,506	$1,141,108	$1,273,710	$1,273,710	$1,273,710	$1,273,710
V. SALE OF BY-PRODUCTS										
EXCESS INGREDIENTS	$0	$0	$801,900	$824,400	$824,400	$824,400	$824,400	$824,400	$824,400	$824,400
LESS COST OF SALES	$0	$0	$40,095	$41,220	$41,220	$41,220	$41,220	$41,220	$41,220	$41,220
TOTAL CONTRIBUTION OF BY-PRODUCTS	$0	$0	$761,805	$783,180	$783,180	$783,180	$783,180	$783,180	$783,180	$783,180
VI. COMPLEX PROFIT (LOSS) B/4 INTEREST & TAXES	($100,805)	($91,661)	$1,676,561	$1,697,936	$1,741,686	$1,924,288	$2,056,890	$2,056,890	$2,056,890	$2,056,890

CHART L CONTINUED

YEAR	1	2	3	4	5	6	7	8	9	10
I. REVENUE MILL/MIX COMPLEX										
SALES TO OTHER BIP UNITS	$656,000	$1,155,500	$3,207,500	$3,456,500	$3,456,500	$3,456,500	$3,456,500	$3,456,500	$3,456,500	$3,456,500
LESS COST OF SALES	$19,680	$34,665	$96,225	$103,695	$103,695	$103,695	$103,695	$103,695	$103,695	$103,695
GROSS MARGIN	$636,320	$1,120,835	$3,111,275	$3,352,805	$3,352,805	$3,352,805	$3,352,805	$3,352,805	$3,352,805	$3,352,805
II. OPERATING (VARIABLE) COSTS										
PURCHASE OF FEED INGREDIENTS	$539,881	$931,415	$2,620,213	$2,816,402	$2,816,402	$2,816,402	$2,816,402	$2,816,402	$2,816,402	$2,816,402
COST OF MILL/MIX/HT $28.00	$36,736	$64,708	$179,620	$193,564	$193,564	$193,564	$193,564	$193,564	$193,564	$193,564
TOTAL VARIABLE COSTS	$576,617	$996,123	$2,799,833	$3,009,966	$3,009,966	$3,009,966	$3,009,966	$3,009,966	$3,009,966	$3,009,966
CONTRIBUTION	$59,703	$124,712	$311,442	$342,839	$342,839	$342,839	$342,839	$342,839	$342,839	$342,839
III. FIXED COST										
DEPR/AMORT	$69,167	$179,000	$203,000	$203,000	$203,000	$164,000	$101,000	$77,000	$77,000	$77,000
MGT PERSONNEL	$45,700	$46,900	$46,900	$46,900	$46,900	$9,400	$9,400	$9,400	$9,400	$9,400
TOTAL FIXED COST	$114,867	$225,900	$249,900	$249,900	$249,900	$173,400	$110,400	$86,400	$86,400	$86,400
IV. PROFIT (LOSS) FROM MILL/MIX COMPLEX	($55,164)	($101,188)	$61,542	$92,939	$92,939	$169,439	$232,439	$256,439	$256,439	$256,439
V. SALE OF BY-PRODUCTS										
EXCESS FEED	$677,000	$1,487,000	$392,500	$143,500	$143,500	$143,500	$143,500	$143,500	$143,500	$143,500
LESS PURCHASE OF CORN & SOY BEAN	$533,136	$1,191,119	$318,341	$116,694	$116,694	$116,694	$116,694	$116,694	$116,694	$116,694
LESS COST OF SALES	$33,850	$74,350	$19,625	$7,175	$7,175	$7,175	$7,175	$7,175	$7,175	$7,175
TOTAL CONTRIBUTION OF BY-PRODUCTS	$110,014	$221,531	$54,534	$19,631	$19,631	$136,325	$136,325	$136,325	$136,325	$136,325
VI. COMPLEX PROFIT (LOSS) B/4 INTEREST & TAXES	$54,850	$120,343	$116,076	$112,570	$112,570	$305,764	$368,764	$392,764	$392,764	$392,764
VII. UNIT PROFIT (LOSS) B/4 INTEREST & TAXES	($45,956)	$28,682	$1,792,636	$1,810,506	$1,854,256	$2,230,052	$2,425,654	$2,449,654	$2,449,654	$2,449,654

CHART 1CONTINUED

SUMMARY OF FINANCING

A. DEBT: 0.6 B. EQUITY: 0.4

C. WORKING CAPITAL AS PERCENT OF VARIABLE COSTS: 0.65

YEAR	0	1	2	3	4	5	6	7	8	9	10
I. CAPITAL EXPENDITURES	$0	$5,156,820	$240,000	$0	$0	$0	$3,437,000	$0	$0	$0	$0
INTERNALLY FUNDED	$0	$2,062,728	$0	$0	$0	$0	$0	$0	$0	$0	$0
EQUITY	$0	$0	$240,000	$0	$0	$0	$3,437,000	$0	$0	$0	$0
CASH FLOW	$0	$3,094,092	$0	$0	$0	$0	$0	$0	$0	$0	$0
EXTERNALLY FUNDED											
II. WORKING CAPITAL (PEAK NEEDS)	$0	$730,405	$1,374,687	$2,547,098	$2,683,685	$2,683,685	$2,683,685	$2,683,685	$2,683,685	$2,683,685	$2,683,685

III. FINANCING

CAPITAL EXPENDITURES:

TERM 5 YEAR OF LOAN 01:
RATE 0.1 YEAR OF LOAN 02:
GRACE 1 YEAR YEAR OF LOAN 03:

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN 01:
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN 02: $816,214
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN 03:

WORKING CAPITAL:

TERM 1
RATE 0.1
GRACE 0 YEAR

AVERAGE WORKING CAPITAL OUTSTANDING AND INTEREST ARE CALCULATED ON 50% OF THE OPENING AND CLOSING BALANCE OF PEAK WORKING CAPITAL NEEDS.

PAYMENT SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10
TERM LOANS	$0	$816,214	$816,214	$816,214	$816,214	$816,214	$0	$0	$0	$0
WORKING CAPITAL LOANS	$406,123	$1,162,200	$2,156,982	$2,876,931	$2,952,053	$2,952,053	$2,952,053	$2,952,053	$2,952,053	$2,952,053
TOTAL	$406,123	$1,978,414	$2,973,196	$3,693,145	$3,768,267	$3,768,267	$2,952,053	$2,952,053	$2,952,053	$2,952,053

CHART L CONTINUED

SOURCES/USES CASH FLOW

YEAR	0	1	2	3	4	5	6	7	8	9	10
UNIT INCOME B/4 TAXES & INTEREST	$0	($45,956)	$28,682	$1,792,636	$1,810.506	$1,854.256	$2,230,052	$2,425,654	$2,449.654	$2,449.654	$2,449.654
PLUS DEPRECIATION	$0	$507,049	$1,054,764	$1,078,764	$1,078,764	$1,078,764	$907.162	$711,560	$687,560	$687,560	$687,560
PLUS EQUITY	$0	$2,062,728	$0	$0	$0	$0	$0	$0	$0	$0	$0
PLUS DEBT (LT & WC)	$0	$3,463,294	$1,056,546	$1,950,893	$2.615,392	$2,683,685	$2.683.685	$2,683,685	$2,683.685	$2,683,685	$2,683,685
LESS CAPITAL EXPENDITURES	$0	$5,156,820	$240,000	$0	$0	$0	$3.437.800	$0	$0	$0	$0
LESS REPAYMENTS PRINCIPAL & INTEREST	$0	$406,123	$1,978,414	$2,973,196	$3,693,145	$3,768,267	$3.768.267	$2.952.053	$2,952.053	$2,952,053	$2.952.053
CASH FLOW	$0	$424,173	($78,422)	$1,859,098	$1.811,517	$1.848.438	($1.385.168)	$2.868.845	$2.868.845	$2,868.845	$2,868.845
CUMMULATIVE CASH FLOW	$0	$424,173	$345.751	$2,204,848	$4,016.365	$5,864,803	$4.479.635	$7,348.480	$10.217.326	$13.086.171	$15,955.017

CHART M
ADMINISTRATIVE UNIT

PROFORMA PROFIT AND LOSS STATEMENT

PRODUCTION & REVENUE FACTORS

YEAR	1	2	3	4	5	6	7	8	9	10
CONTRACTED BROILER PRODUCTION	312000	624000	806000	1300000	1300000	1300000	1300000	1300000	1300000	130000
BIP RAISED LAYERS WITH OTHER PRODUCERS	0	29920	28872	28872	28872	28872	28872	28872	28872	2887
VETRINARY SERVICE CHARGES PER BIRD	$0.015									

YEAR	1	2	3	4	5	6	7	8	9	10
I. REVENUE										
VETRINARY FEES	$4,680	$9,809	$12,523	$19,933	$19,933	$19,933	$19,933	$19,933	$19,933	$19,933
II. OPERATING (VARIABLE) COSTS										
LABOR	$50,000	$75,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
SUNDRY ITEMS	$90,000	$120,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000	$180,000
TOTAL VARIABLE COSTS	$140,000	$195,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000
CONTRIBUTION	($135,320)	($185,191)	($267,477)	($260,067)	($260,067)	($260,067)	($260,067)	($260,067)	($260,067)	($260,067)
III. FIXED COST										
DEPR/AMORT	$253,900	$268,300	$278,300	$278,300	$278,300	$198,300	$198,300	$198,300	$198,300	$198,300
MGT PERSONNEL	$413,450	$418,450	$425,950	$425,950	$354,200	$179,200	$179,200	$179,200	$179,200	$179,200
TOTAL FIXED COST	$667,350	$686,750	$704,250	$704,250	$632,500	$377,500	$377,500	$377,500	$377,500	$377,500
IV. UNIT PROFIT (LOSS) B/4 INTEREST & TAXES	($802,670)	($871,941)	($971,727)	($964,317)	($892,567)	($637,567)	($637,567)	($637,567)	($637,567)	($637,567)

CHART N CONTINUED

SUMMARY OF FINANCING

A. DEBT: 0.6 B. EQUITY: 0.4

C. WORKING CAPITAL AS PERCENT OF VARIABLE COSTS: 1.25

YEAR	0	1	2	3	4	5	6	7	8	9	10
I. CAPITAL EXPENDITURES	$1,227,000	$72,000	$100,000	$0	$0	$327,000	$72,000	$0	$0	$0	$327,000
INTERNALLY FUNDED											
EQUITY	$490,800	$28,800	$40,000	$0	$0	$0	$0	$0	$0	$0	$0
CASH FLOW	$0	$0	$0	$0	$0	$327,000	$72,000	$0	$0	$0	$327,000
EXTERNALLY FUNDED	$736,200	$43,200	$60,000	$0	$0	$0	$0	$0	$0	$0	$0
II. WORKING CAPITAL (PEAK NEEDS)	$0	$175,000	$243,750	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000

III. FINANCING

CAPITAL EXPENDITURES:

TERM 5
RATE 0.1
GRACE 1 YEAR

YEAR OF LOAN #1: 0
YEAR OF LOAN #2: 1
YEAR OF LOAN #3:

YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #1: $194,208
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #2: $27,224 (INCLUDES FINANCING FROM YEAR TWO)
YEARLY PAYMENT (INTEREST & PRINCIPAL) ON LOAN #3:

WORKING CAPITAL:

TERM 1
RATE 0.1
GRACE 0 YEAR

AVERAGE WORKING CAPITAL AND INTEREST CALCULATED AS 50% OF THE OPENING AND CLOSING BALANCE OF PEAK WORKING CAPITAL NEEDS.

PAYMENT SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10
TERM LOANS	$0	$194,208	$221,432	$221,432	$221,432	$221,432	$27,224	$0	$0	$0
WORKING CAPITAL LOANS	$96,250	$230,313	$326,563	$385,000	$385,000	$385,000	$385,000	$385,000	$385,000	$385,000
TOTAL	$96,250	$424,521	$547,995	$606,432	$606,432	$606,432	$412,224	$385,000	$385,000	$385,000

CHART N CONTINUED

SOURCES/USES CASH FLOW

YEAR	0	1	2	3	4	5	6	7	8	9	10
UNIT PROFIT (LOSS) B/4 TAXES & INTEREST	$0	($802,670)	($871,941)	($971,727)	($964,317)	($892,567)	($637,567)	($637,567)	($637,567)	($637,567)	($637,567)
PLUS DEPRECIATION	$0	$253,900	$268,300	$278,300	$278,300	$278,300	$198,300	$198,300	$198,300	$198,300	$198,300
PLUS EQUITY	$490,800	$28,800	$40,000	$0	$0	$0	$0	$0	$0	$0	$0
PLUS DEBT (LT & WC)	$736,200	$130,700	$269,375	$296,875	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000
LESS CAPITAL EXPENDITURES	$1,227,000	$72,000	$100,000	$0	$0	$327,000	$72,000	$0	$0	$0	$327,000
LESS REPAYMENTS PRINCIPAL & INTEREST	$0	$96,250	$424,521	$547,995	$606,432	$606,432	$606,432	$412,224	$385,000	$385,000	$385,000
CASH FLOW	$0	($557,520)	($818,787)	($944,546)	($942,449)	($1,197,699)	($767,699)	($501,491)	($474,267)	($474,267)	($801,267)
CUMULATIVE CASH FLOW	$0	($557,520)	($1,376,307)	($2,320,853)	($3,263,302)	($4,461,001)	($5,228,700)	($5,730,191)	($6,204,458)	($6,678,725)	($7,479,992)

CHART N

CONSOLIDATED CASH FLOW

CASH FLOW

YEAR	0	1	2	3	4	5	6	7	8	9	10
UNIT PROFIT (LOSS)											
BROILER UNIT	$0	$244,948	$580,915	$1,647,994	$2,848,574	$2,896,804	$2,995,034	$2,995,034	$3,069,864	$3,069,864	$3,069,864
LAYER UNIT	$0	($143,552)	$81,655	$242,382	$268,053	$268,484	$322,004	$329,044	$332,420	$332,420	$332,420
BREEDER/HATCHERY UNIT	$0	$0	$0	($203,533)	$481,319	$642,764	$643,035	$643,035	$718,808	$743,874	$743,874
FEED PRODUCTION UNIT	$0	($45,956)	$26,682	$1,792,636	$1,810,506	$1,854,256	$2,230,052	$2,425,654	$2,449,654	$2,449,654	$2,449,654
ADMINISTRATIVE UNIT	$0	($802,670)	($268,300)	($971,727)	($964,317)	($892,567)	($637,567)	($637,567)	($637,567)	($637,567)	($637,567)
SUB-TOTAL	$0	($747,630)	$420,953	$2,507,752	$4,444,135	$4,769,741	$5,552,558	$5,755,200	$5,933,179	$5,958,245	$5,958,245
PLUS DEPRECIATION											
BROILER UNIT	$0	$26,220	$26,220	$134,680	$134,680	$134,680	$134,680	$134,680	$108,080	$108,080	$108,080
LAYER UNIT	$0	$28,706	$86,120	$86,120	$86,120	$86,120	$82,600	$75,560	$75,560	$75,560	$75,560
BREEDER/HATCHERY UNIT	$0	$0	$0	$66,960	$200,880	$200,800	$200,880	$200,880	$188,346	$163,280	$163,280
FEED PRODUCTION UNIT	$0	$507,049	$1,054,764	$1,078,764	$1,078,764	$1,078,764	$907,162	$711,560	$687,560	$687,560	$687,560
ADMINISTRATIVE UNIT	$0	$253,900	$268,300	$278,300	$278,300	$278,300	$198,300	$198,300	$198,300	$198,300	$198,300
SUB-TOTAL	$0	$815,875	$1,435,404	$1,644,824	$1,778,744	$1,778,664	$1,523,622	$1,320,980	$1,257,846	$1,232,780	$1,232,780
PLUS EQUITY											
BROILER UNIT	$81,600	$0	$0	$429,800	$0	$0	$0	$0	$0	$0	$0
LAYER UNIT	$0	$223,280	$0	$0	$0	$0	$0	$0	$0	$0	$0
BREEDER/HATCHERY UNIT	$0	$0	$0	$600,160	$0	$0	$0	$0	$0	$0	$0
FEED PRODUCTION UNIT	$0	$2,062,728	$0.	$0	$0	$0	$0	$0	$0	$0	$0
ADMINISTRATIVE UNIT	$490,800	$28,800	$40,000	$0	$0	$0	$0	$0	$0	$0	$0
SUB-TOTAL	$572,400	$2,314,808	$40,000	$1,029,960	$0	$0	$0	$0	$0	$0	$0
PLUS DEBT											
BROILER UNIT	$122,400	$63,570	$190,710	$1,098,270	$852,930	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000	$1,053,000
LAYER UNIT	$0	$347,821	$51,694	$100,835	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105	$124,105
BREEDER/HATCHERY UNIT	$0	$0	$0	$927,605	$117,867	$316,492	$343,980	$343,980	$343,980	$343,980	$343,980
FEED PRODUCTION UNIT	$0	$3,463,294	$1,056,546	$1,960,893	$2,615,392	$2,683,685	$2,683,685	$2,683,685	$2,683,685	$2,683,685	$2,683,685
ADMINISTRATIVE UNIT	$736,200	$130,700	$269,375	$296,875	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000
SUB-TOTAL	$858,600	$4,005,395	$1,568,325	$4,384,478	$4,060,294	$4,527,282	$4,554,770	$4,554,770	$4,554,770	$4,554,770	$4,554,770

CHART N CONTINUED

LESS REPAYMENTS											
BROILER UNIT	$0	$69,927	$242,070	$531,216	$1,140,582	$1,350,659	$1,350,659	$1,328,370	$1,328,370	$1,158,300	$1,158,300
LAYER UNIT	$0	$14,203	$145,215	$199,270	$224,866	$224,866	$224,866	$136,515	$136,515	$136,515	$136,515
BREEDER/HATCHERY UNIT	$0	$0	$0	$30,101	$426,535	$555,623	$615,859	$615,859	$615,859	$378,378	$378,378
FEED PRODUCTION UNIT	$0	$406,123	$1,978,414	$2,973,196	$3,693,145	$3,768,267	$3,768,267	$2,952,053	$2,952,053	$2,952,053	$2,952,053
ADMINISTRATIVE UNIT	$0	$96,250	$424,521	$547,995	$606,432	$606,432	$606,432	$412,224	$385,000	$385,000	$385,000
SUB-TOTAL PAYMENTS	$0	$586,503	$2,790,220	$4,281,778	$6,091,560	$6,545,847	$6,576,083	$5,445,021	$5,417,797	$5,010,246	$5,010,246
LESS CAPITAL EXPENDITURES											
BROILER UNIT	$204,000	$0	$0	$1,074,500	$0	$42,000	$0	$0	$694,500	$0	$42,000
LAYER UNIT	$0	$558,200	$0	$0	$0	$0	$200,200	$0	$0	$0	$0
BREEDER/HATCHERY UNIT	$0	$0	$0	$1,500,400	$0	$0	$0	$0	$320,400	$0	$0
FEED PRODUCTION UNIT	$0	$5,156,820	$240,000	$0	$0	$0	$3,437,000	$0	$0	$0	$0
ADMINISTRATIVE UNIT	$1,227,000	$72,000	$100,000	$0	$0	$327,000	$72,000	$0	$0	$0	$327,000
SUB-TOTAL	$1,431,000	$5,787,020	$340,000	$2,574,900	$0	$369,000	$3,709,200	$0	$1,014,900	$0	$369,000
YEARLY CASH FLOW	$0	$14,925	$334,462	$2,710,336	$4,191,613	$4,160,840	$1,345,667	$6,185,929	$5,313,098	$6,735,549	$6,366,549
CUMMULATIVE CASH FLOW	$0	$14,925	$349,387	$3,059,723	$7,251,336	$11,412,176	$12,757,843	$18,943,772	$24,256,870	$30,992,419	$37,358,968

CHART O
GIP
DISCOUNTED CASH FLOW

PROJECT YEAR	CASH OUTFLOW	CASH INFLOW	NET CASH FLOW
0	$1.431.000	$0	($1.431,000)
1	$5.787,020	$68.245	($5.718,775)
2	$340.000	$1.856.357	$1,516.357
3	$2,574,900	$4,152.576	$1.577.676
4	$0	$6.222.879	$6.222,879
5	$369,000	$6,548,405	$6.179.405
6	$3.709.200	$7,076.180	$3,366.980
7	$0	$7,076,180	$7,076,180
8	$1,014,900	$7.191,025	$6,176,125
9	$0	$7,191,025	$7,191.025
O	$369.000	$7.191.025	$6,822.025

INTERNAL RATE OF RETURN ESTIMATE 30.00%

INTERNAL RATE OF RETURN ACTUAL 44.08%

NET PRESENT VALUE CALCULATION

DISCOUNT RATE	NPV
15.00%	$10,674,393
20.00%	$6,906.678
25.00%	$4,357.158
30.00%	$2.602.888

CHART O CONTINUED

BROILER UNIT

PROJECT YEAR	CASH OUTFLOW	CASH INFLOW	NET CASH FLOW
0	$204,000	$0	($204,000)
1	$0	$271,168	$271,168
2	$0	$607,136	$607,136
3	$1,074,500	$1,782,674	$708,174
4	$0	$2,983,254	$2,983,254
5	$42,000	$3,031,484	$2,989,484
6	$0	$3,129,714	$3,129,714
7	$0	$3,129,714	$3,129,714
8	$694,500	$3,177,944	$2,483,444
9	$0	$3,177,944	$3,177,944
10	$42,000	$3,177,944	$3,135,944

INTERNAL RATE OF RETURN ESTIMATE	300.00%
INTERNAL RATE OF RETURN ACTUAL	222.27%

NET PRESENT VALUE CALCULATION

DISCOUNT RATE	NPV
15.00%	$7,972,617
20.00%	$5,929,198
25.00%	$4,497,852
30.00%	$3,472,790

CHART D CONTINUED

LAYER UNIT

PROJECT YEAR	CASH OUTFLOW	CASH INFLOW	NET CASH FLOW
0	$0	$0	$0
1	$558.200	($115.246)	($673.446)
2	$0	$167,775	$167,775
3	$0	$328,502	$328,502
4	$0	$354,173	$354,173
5	$0	$354,604	$354,604
6	$200,200	$404,604	$204,404
7	$0	$404.604	$404,604
8	$0	$407,980	$407,980
9	$0	$407.980	$407,980
10	$0	$407,980	$407,980

INTERNAL RATE OF RETURN ESTIMATE 30.00%

INTERNAL RATE OF RETURN ACTUAL 40.79%

NET PRESENT VALUE CALCULATION

DISCOUNT RATE	NPV
15.00%	$631.928
20.00%	$399.946
25.00%	$242.820
30.00%	$134.755

CHART O CONTINUED

BREEDER/HATCHERY UNIT

PROJECT YEAR	CASH OUTFLOW	CASH INFLOW	NET CASH FLOW
0	$0	$0	$0
1	$0	$0	$0
2	$0	$0	$0
3	$1.500.400	($136,573)	($1,636.973)
4	$0	$682,199	$682,199
5	$0	$843,564	$843,564
6	$0	$843,915	$843,915
7	$0	$843,915	$843,915
8	$320,400	$907,154	$586,754
9	$0	$907,154	$907,154
10	$0	$907,154	$907,154

INTERNAL RATE OF RETURN ESTIMATE	30.00%
INTERNAL RATE OF RETURN ACTUAL	43.67%

NET PRESENT VALUE CALCULATION

DISCOUNT RATE	NPV
15.00%	$947,074
20.00%	$581,341
25.00%	$346,823
30.00%	$195,051

CHART O CONTINUED

'EED PRODUCTION UNIT

PROJECT YEAR	CASH OUTFLOW	CASH INFLOW	NET CASH FLOW
0	$0	$0	$0
1	$5.156,820	$461,093	($4,695,727)
2	$240.000	$1,081,446	$841,446
3	$0	$2,871,400	$2,871,400
4	$0	$2,889,270	$2,889,270
5	$0	$2,933,020	$2,933,020
6	$3,437,000	$3,137,214	($299,786)
7	$0	$3,137,214	$3,137,214
8	$0	$3,137,214	$3,137,214
9	$0	$3.137,214	$3.137,214
10	$0	$3,137,214	$3,137,214

INTERNAL RATE OF RETURN ESTIMATE 30.00%

INTERNAL RATE OF RETURN ACTUAL 41.78%

'NET PRESENT VALUE CALCULATION

DISCOUNT RATE	NPV
15.00%	$4.603.302
20.00%	$2,937.036
25.00%	$1.808.188
30.00%	$1.030.906