Short-Term Solutions to Meat Shortage in Nigeria

By

MR. S. O. BAMGBOSE

*Olaogun Enterprises Limited, Ife Road,
Ibadan*

I HAVE confined my paper mainly to poultry because I have more accurate costings in poultry than I have in Pig and Rabbit husbandry. We have been in Piggery for only three years. I will show in the course of this paper that prices now obtainable for poultry meat and eggs are below the cost of production. Anything that can be done to give a profitable return on capital invested in poultry business commensurate with the risks involved in poultry keeping will increase the supply both in the short and in the long run.

To do this, I wish to draw attention to the following:

Grains One of the greatest constraints to livestock production is the shortage of grains. The government of course is working very hard in improving the supply position. With the acceptance of the "Anti-Inflation Task Force" recommendation for a 75% subsidy on fertilizer, grant for bush clearing and subsidy on seeds, the only other things left for the government to do to encourage abundant production are as follows:

(1) *Fertilizer*

The government should set up more fertilizer production facilities in the country and pilot plants that can turn poultry and piggery manure into fertilizer. These two operations will not only reduce the cost of fertilizer subsidy but they will ensure that fertilizers are more readily available as, when and where required.

(2) *Capital Grants*

In addition to "Pioneer Status" incentive to attract businessmen into agriculture, the government should be called upon to commission full scale studies of capital

grants, subsidies, and price supports as used in Europe and North America to stimulate production along the line most desirable to the Nation.

Capital Grants (See appendix 3 for an example of the rate of capital grants operating in Europe since 1973). It was by far higher in 1970-1972.

(3) *Implements for Hire*

The government should encourage the co-operative and the private sector to operate in this business by providing liberal credit and capital grants. The government should set up pilot schemes and use agricultural engineers who are willing to take over their units in the future as the owners if the pilot operation proves profitable.

(4) *Marketing*

The government should also pay adequate attention to processing, storage and distribution of grains. Sufficient capital should be provided to purchase and store grains at harvesting time. Price maintenance scheme should be introduced to give the farmer as much money as possible. The Nigerian Supply Company to import grains to augment local supply until production catches up with demand. We should not fight shy of this step as it will be for only a short time. The effect of this will be to make grains available throughout the year both at sufficient quantities and steady prices.

Starch Factory

I am made to understand that about 5 starch factories are planned to be built in Nigeria soon. The by-product, corn or wheat gluten, will be very useful to the feed industry. But as the starch industry will also draw from the already drastically

short grain supply, my recommendation is that such factories should be allowed to start production only if they will import the grains for their factory from abroad until the position of the local grains supply catches up with demand. Otherwise, starch can still be imported.

Feed subsidy

I have shown later that the cost of eggs or Broiler is higher than the price now offered by the market. I have therefore

suggested either feed subsidy OR consumer subsidy. I have shown the cost of producing a dozen egg at various levels of production, feed intake and cost of feed. It is most desirable both in the short and in the long runs that price of feeds to farmers be not more than ₦75.00 per ton. To achieve this, the rate of subsidy is only 60%. This is less than the 75% already approved for fertiliser (and both are inputs.) At ₦75.00 per ton, the following range of prices are possible per dozen:-

	Cost price	Selling price
Farm production costs	₦0.57	₦0.64
Wholesale price	₦0.64	₦0.67
Retail price	₦0.67	₦0.75

At these prices, the levels of profit are:-

Farmer's margin	12.5%
Whole saler's Margin	5.0%
Retailer's Margin	15%

(The level of margin for table egg is slightly lower for the farmer and wholesaler than for broiler because the broiler is more hazardous.)

Administration of Subsidy

Compound feed production had been estimated as follows:

	1973/74	1974/75	1976/77
Poultry Feed	168,500	155,750	190,000
Pigs	34,000	29,000	36,250
Cattle	1,000	1,500	2,000
Others	2,500	3,000	4,000
	206,000	189,250	232,250

From a present price average of ₦200.00, if subsidy brings farmers price down to:

₦150.00	per	tonne,	total subsidy	is	₦11.6m
₦125.00	"	"	"	"	₦17.4m
₦100.00	"	"	"	"	₦23.2m
₦75.00	"	"	"	"	₦29.0m

The value of subsidy may well be less because confronted with magnitude of feed subsidy of ₦29.0m per annum for a price of ₦75.00 suggested earlier, the government will take adequate steps to reduce costs of raw materials. At present, capacity utilisation of feed factories is less than 50% because of low demand and difficulties in obtaining regular supply of raw materials throughout the year. With increased demand, these capacities will be better utilised resulting in the reduction of cost of production and therefore subsidy.

Administration

I also feel that the subsidy should be administered by the Federal Livestock Department through the state ministries of agriculture. This is so because:

- (i) They can conveniently monitor costs of production of the various feed operators who will co-operate more willingly with them than with a competitor e.g. N. L. M. A.
- (ii) They can lay down the standards for the various livestock feeds

- (iii) They can set up a regular sample analysis of the feeds to ensure quality and their findings will be mutually respected.
- (iv) They can also obtain field performances of the various feed compounders products.

Import Duty

The government should abolish duties on all equipments, raw materials and drugs meant for livestock production. To protect local producers, the government should introduce the "Approved Users Scheme" to enable them import duty free while the Non-Users should pay current rates of duty.

Day-Old-Chicks Supply

The government should consider a subsidy to the Hatchery operators who pay as high as ₦4.00 per parent Day-Old-Chick. This is so because breeding is not done in Nigeria and may not be done unless by government's deliberate policy to attract one of the successful breeders to set up in Nigeria (under subsidy).

With increase in demand for chicks expected from points raised earlier, the Hatcheries will increase their parents placements and be able to meet the demand for Day-Old-Chicks at cheaper prices.

Rural Development Scheme

In order that a lot of people may benefit from this laudable Federal Government Scheme, I suggest the government should consider 100% grant to the private investors putting up:

- (i) Bore holes or dams for water supply.
- (ii) Electricity installations.
- (iii) Road building and maintenance to open up villages and farms.
- (iv) Health facilities like maternity, clinics etc.
- (v) Bridges, culverts etc.

Indegenisation

With these subsidies and grants, the government should ensure that the fullest benefits accrue to Nigerians. To ensure this, poultry and piggery should be transferred to schedule (I) of the Decree (except breeding) I would like to emphasize this

to prevent a situation that occurred elsewhere from happening here; and that is country in Europe opened his gates to international poultry magnates most of which are integrated. The effect was that most of their nationals found it impossible to compete and so they had to fold up. The poultry of that particular country is now in a few hands mostly foreigners. This should not be allowed to happen in Nigeria.

Other Livestock

These points that I have raised here for poultry are equally applicable to all other livestock especially piggery and rabbits which lend themselves to very quick yield of meat or eggs. I will now go quickly to the points on poultry production.

POULTRY PRODUCTION IN NIGERIA

I intend to treat this topic under 3 main headings viz:

- 1) What are the financial requirements of Poultry Production
- 2) Finding the fund to finance the production and
- 3) The financial results.

There are at present only two levels of Poultry Farmers in Nigeria; the third one, i.e. the Breeders, is not in Nigeria at present.

The 2 levels are the Hatchery operators and the producers of table eggs and table birds.

The Hatchery Operators

There are over 20 Hatcheries producing various breeds of chicks. Although there is no published statistics, the combined hatchery capacity of all the Hatcheries is estimated at over 20.5 million chicks per annum. The Major Hatcheries are:

- (a) Olaogun Enterprises Limited, Ibadan
- (b) Mitchell Farms Limited, Agege
- (c) Ejinaka and Thornbers, Aba
- (d) Nigerian Livestock & Meat Authority Kaduna, Jos and Ilorin
- (e) Amo Kathman, Awe

The majority are situated in Lagos and Oyo States.

Because the Hatchery operation is limited to a few people I intend to ignore it and dwell more on the second level for the production of table eggs and table birds.

Financial Requirements of Table Eggs and Table Birds Production

The financial requirement of the table egg production is different from the table bird and so I shall treat them separately.

Table Eggs

The majority of farmers in Nigeria are producing eggs as this is the final stage at which it is now being sold in this country i.e. there is no further processing.

Finances are required for the following: land, housing, utilities — water and where possible, electricity, day-old chicks or point of lay pullets, feeds and marketing.

(i) Land

Because of the problem of transporting the fragile eggs to the town dwelling consumers, most farms are located near big towns. This makes land very expensive. So, only small area of land is often availa-

ble to the average farmer. This creates a lot of problems as regards the necessary distances between poultry houses. It has been suggested that the poultry diseases which are air-borne, become important after travelling for a distance of 100 metres. The ideal distance between two types of poultry houses should not be less, therefore, than 100 metres (330ft.) The chicks rearing houses should not be less than 100 metres from layers house. What one sees very often is that all types of birds are kept even under the same roof. The birds are thus prevented from giving off their best. The birds will therefore deviate from their production profile as a result of the stress of poor or sub-normal environment.

Housing

This includes the shelter and the equipment. There are two main systems in use, namely the battery system and the deep litter system. In a recent calculation we arrived at the following costs per bird housed:

	Battery System	Deep Litter System
(i) Cost of the house including concreting of the floor area as necessary	3.00	6.50
(ii) Cost of equipments viz:- Cages, Drinkers, Feeders, Laying boxes etc.	3.37	2.00
	8.37	8.50
Depreciation for 5 years at 20% of cost	1.67	1.70

These costs reveal that there is not much difference between battery and deep litter system if all necessary facilities are provided for both.

Utilities

Water and perhaps electricity are also two major attractions to locate poultry

houses near the big towns. Water can be a very big problem and in some parts of Ibadan farmers are seen to be paying as much as ₦3.50 for 1,500 gallons of water delivered by a tanker. The cost of water can be better imagined as follows: Let us think of a farmer with 5,000 layers,

Estimated daily drinking water requirements in gallons

Categories of birds	100 Birds	500 Birds	1,000 Birds
Day Old	0.60	3	6
4weeks old	3.40	12	24

8	"	"	4.5	22.5	45
12	"	"	6.0	30	60
16	"	"	7.5	37.5	75
20	"	"	9.0	45	90
Throughout laying period			9.0	45	90
1,000 layers require	135 gallons	per day;	945	per week	4095 per month
500 "	67.5 "	" "	472.5 "	" "	2047.5 "
100 "	13.5 "	" "	94.5 "	" "	404.75 "
(These include 50% for cleaning and wastage)					
5,000 layers will need about			5,000 gallons	per week	
			20,000	" "	month
			245,700	" "	annum

The cost of providing water for the above for one year at N3.50 per 1,500 gallons is N573.00.

Usually a well is sunk and an overhead tank and a hand pump are installed. These may run into about N1,000 to N2,000 depending on how deep the well has to be to have a good volume of water. I have ignored the cost of plumbing installations in and around the poultry houses. Electricity which aids egg production is usually not available from the NEPA. Most of the big farmers provide and run their own electric plants. This is very expensive.

The absence of electricity will prevent the lighting pattern which is usually recommended by the breeders to obtain maximum production from the potential of the birds. Again, this is another of those environmental differences which make birds perform less on our farms.

Day Old Chicks

The general price level now is N0.50k per bird.

Raising Day Old Chicks to Point-of-Lay

In the appendix 1, attached, I have analysed the cost of raising chicks to Point of Lay. If purchased from contract rearers, a known fixed price of N4.00 at 19 weeks is paid per pullet. However, if reared on own farm, the cost per pullet will range between N2.877 and N3.402 per point of lay pullet.

Feeding

I have included feeding costs in raising day old chicks to point of lay. I suggest this is capitalised and depreciated over a period of 12 months in lay as follows:

Working with contract figure

Cost of Point of Lay	N4.00
Estimated cost of feeding to 28 weeks at 1.80lbs	
18.0lbs at 0.836 per week	1.50
Total	N5.50
Less end of lay sale 1.85k at N1.75 =	N3.238
Less estimated mortality of 15% —N0.486 =	2.75
Depreciated over 12 months at	N0.23 per month.

Comment

Up to 28 weeks of age, the cost of feeding exceeds the value of eggs produced by N1.50. From week 29, the income from eggs is higher than feeding costs.

Marketing

Usually, the small farmer has no marketing costs as most have their eggs purchased from the farm gate. The big farmers may have transport and salesmen's expenses. However, they obtain higher prices than the farm gate sales to off set their expenses.

Cash Flow

My cash flow for the sake of simplicity assumes that the farmer is starting afresh and he buys point of lay birds. I also work with the battery cage system of housing.

Price of eggs have been estimated as follows:

22-28 weeks,	N0.75	per dozen
29-36	"	N0.85 "
37-44	"	N0.90 "
45-64	"	N1.00 "
65-72	"	N1.05 "

Initial cash requirements

	₦	k	₦	k
Housing			8	37
Point of Lay	4	30		
Feeding to break-even point at 28 weeks	1	50	5	50
Total			₦13.87	

This has taken care of eggs produced up to week 28.

Feeding Costs

See appendix ii where we detail out feed requirements of 2 birds as well as their production. I am using the one for B390 which is more like what we get on an average farm. Starting from week 29:

Weeks	F E E D S (lb)	E G G S Value (₦)	Doz	Price (₦)	Value (₦)
29 — 32	7.74	0.65	1.75	0.85	1.49
33 — 36	7.80	0.65	1.71	"	1.45
37 — 40	7.60	0.64	1.65	0.90	1.49
41 — 44	7.56	0.63	1.60	"	1.44
45 — 48	7.50	0.63	1.53	1.00	1.53
49 — 52	7.44	0.62	1.45	"	1.45
53 — 56	7.40	0.62	1.39	"	1.39
57 — 60	7.20	0.60	1.32	"	1.32
61 — 64	7.20	0.60	1.26	"	1.26
65 — 68	7.20	0.60	1.20	1.05	1.26
69 — 72	7.35	0.61	1.16	1.05	1.22
Total	81.99	6.85	16.02		15.30
Add 10% for Feed wastage		0.70	Less Soft, etc.	5% for Break-age etc.	0.75
Total		7.53			14.55

Average Selling price of 16.02 dozen ₦0.91 per dozen.
Average feed cost for layers ₦184. per tonne.

Cash Flow

	DR * +10%	CR ** Less 5%	Net Cash Flow
Week 28 Balance (B/F)	13.87		- 13.87
Period			
1	0.72	1.42	- 13.17
2	0.72	1.38	- 12.51
3	0.70	1.42	- 11.79
4	0.69	1.37	- 11.11
5	0.69	1.45	- 10.35
6	0.68	1.38	- 9.65
7	0.68	1.32	- 9.01
8	0.66	1.25	- 8.42
9	0.66	1.20	- 7.88
10	0.66	1.20	- 7.34
11	0.67	1.16	- 6.85
Sales of culled Layer	—	2.75	- 4.10

* 10% for feed wastage and rodents.

** 5% for soft/cracks/badly damaged eggs, that cannot be sold.

At the end of the 1st year, the cash flow is still negative by -4.10 per bird. This of course includes the investment in accommodation which should be depreciated over a period of 5 years.

The profit and loss account takes care of the above.

Profit for the Year

	Analysis	DR	CR
Cost of Point of lay pullet		4.00	
Net costs from 18-28 weeks		1.50	
Feeds from week 29-72	6.85		
Add 10% estimate wt lost to rodent etc.	0.70	7.55	
Labour	<u>N480</u>		
	1200	0.40	
Depreciation of House & Equipment	20% of N8.37	1.67	
Miscellaneous-Drugs, Packing & cleaning materials etc.		0.25	
Estimate value of eggs	15.30		14.55
Less 5% for soft/breakages	0.75		2.75
Value of culled layer			
Total		15.37	17.30
Estimated Gross Profit		1.93	
		17.30	17.30

It must be realised that this estimate has been based on a bird eating 97lbs of feed and laying 203 eggs a year.

Selling Price Per Dozen

Total Income from Eggs	=	N14.55
Selling per dozen	=	N 0.91
Profit per dozen	=	N 0.12

Cost per dozen

Production cost	15.37
Less cost of culled layer	2.75
Cost for 16.02 doz =	<u>12.62</u>
Cost per dozen =	<u>N0.79</u>

AGAIN, It must be realised that these estimates are based on a bird eating 97lbs of feed and producing 203 eggs a year. The costs will be a lot different if the feed intake and eggs output are different from the above.

Total production costs per dozen eggs at Various feed cost and eggs output levels.

		No of eggs		Feed Costs at N185.00		Feed Costs at N200.00		
		per bird per annum		Feed Cost Per doz eggs	Other Cost Per Doz	Total Cost per doz	Feed Cost per doz eggs	Other Cost per doz eggs
		No	Doz	N4.854		4.994		
Bird eating 100 lbs of feed per Annum.	190	15.33	0.57	0.31	0.88	0.63	0.32	0.95
	200	16.67	0.55	0.29	0.84	0.61	0.30	0.91
	210	17.50	0.52	0.28	0.80	0.57	0.29	0.86
	220	18.33	0.49	0.26	0.75	0.55	0.27	0.82
	240	20.00	0.41	0.24	0.65	0.51	0.25	0.76
				Feed Cost at N185 per Tonne		Feed Cost at N200.00		
Bird eating 110 lbs of Feed per Annum.	190	15.83	0.64	0.31	0.95	0.69	0.32	1.01
	200	18.67	0.61	0.29	0.90	0.66	0.30	0.96
	210	17.50	0.58	0.28	0.86	0.63	0.20	0.92
	220	18.33	0.56	0.26	0.82	0.61	0.27	0.83
	240	20.00	0.51	0.24	0.75	0.55	0.25	0.80
				Feed Costs at N100 per tonne		Feed cost at N150.00		
Bird eating 110 lbs of feed per annum.	210	17.50	0.32	0.16	0.48	0.47	0.20	0.67

This calculation has taken into consideration 10% on cost on feeds for wastage and rodents. It has also taken credit for the sale of end of lay birds at ₦2.75 per

bird.

Annual feed consumption 110lb + 10%
" egg production 210 eggs

Feed Price per tonne	Cost per dozen eggs (and culs at ₦2.75) each	Cost per dozen (value of culled layer ignored)
₦100.00	0.48	0.64
₦150.00	0.67	0.82
₦185.00	0.80	0.95
₦200.00	0.86	1.01

With ex-farm selling price of ₦0.91 as at present and a cost of ₦0.95, the producer is running at a loss on eggs income alone. The profit is only made when the old layers are sold. This means he has to wait for 72 to 73 weeks before he makes any profit. There are some efficient farmers who can save a few lbs of feed per bird per annum. They may also manage with less cracks and soft eggs. This will give a little profit on eggs before the sale of culled layers.

The facts just given explain why most of the smaller farmers fold up every year. This tends to leave only the big and efficient farmers on the business.

Subsidy on feed

It is gratifying to note that the Federal Government has accepted the "Anti-Inflation Task Force" recommendation that feed be subsidised although the percentage was not given. In my own calculation, to get eggs to the consumers at ₦0.75 per dozen, feed prices should be about ₦75.00 per tonne. So, instead of recommending a fixed percentage as subsidy, I have suggested a fixed price for the feed. This will make the calculation of cost per dozen of eggs fixed. Again, the subsidy should be administered by the Federal Livestock Department through the State Ministries of Animal and Forest Resources. This should be paid at source of production. On the alternative, the consumers may be subsidised per dozen of eggs at ₦0.16 giving a net price of ₦0.75.

Capital Grant

The picture presented by this submission is that at the end of the first year of opera-

tion, the farmer will still be owing some ₦4.10 per bird. This is about 50% of his fixed investment of ₦8.37 on accommodation. This in fact does not include investments, in the utilities. My recommendation is that the Federal Government should give a capital grant of 50% to cover fixed investments. This is the practice in other parts of the world. See appendix 3 for those of Britain since 1973. The alternative to this is, for Government to build model farms and let them out to farmers at subsidised rent to say 25% of the annual depreciation of the property which I suggest should be for 5 years. The annual rent should be at 5% of the value of the property. The farmer should be responsible for the maintenance.

Sources of Funds

There are various sources of funds to start poultry business. Unfortunately co-lateral is usually demanded far in excess of what a farmer may have. This limits those who can benefit to wealthy people. The rate of return on poultry is of course not very attractive to them. This means, if lending policy is not changed, the supply of poultry products will continue to be short.

1. The Government should guarantee loans from commercial banks to people of proved ability — again this is the practice elsewhere say in U.K.
2. The loan should be for a minimum of 3 years with moratorium for the first year of operation since cash flow will still be negative.

3. The loan should be sufficiently large to set up a large flock so that it could be run full-time with income commensurate to what the farmer would have earned from another business.
Again this is the practice in Europe.
4. The Government should set up a price maintenance system in conjunction with a marketing scheme. This will protect the farmer from price fluctuations.
Again this is the practice in Europe.
5. As production approaches the level of demand, Government should regulate the poultry business to prevent over production.

The Broiler Business

The Broiler is a little bit more involved in that the operation is divided into:

- (a) Broiler Raising and
- (b) Broiler Processing.

The financing of Broiler raising is very similar to pullet raising although the rate of cropping is about 4 per pen per year. However, the cash flow is also negative for the first year. I recommend for the broiler raising the same thing that I recommended for table egg production.

(See appendix 4 for production costs of Broiler.)

Broiler Processing

This is more of a factory. Usually, this is separated in management and financing from the broiler raising as the methods of management are so far apart.

This demands investment in:

- (a) Processing equipments
- (b) „ building
- (c) Refrigerated vehicles

It is the high cost of setting this up that has really limited the appeal of this business to the average farmer unless he can become a member of an Integrated scheme. Unless the through-put is very large, the time required to pay back the cost of setting up a processing plant is prohibitive. The Government should help especially

by establishing a co-operative processing plant in all State Capitals where farmers can deliver their broiler for immediate cash. The Government should hand over this project on rent or loan. The Government has a considerable job to do in helping to finance the Broiler Operation. They should give outright grants and loan guarantees and establish a price maintenance scheme. The commercial banks should be instructed to give loan for poultry production.

Importation of Broiler

At present, frozen broiler is now imported and being sold at ₦2.50 per kilo. At this price, birds raised in Nigeria will sell at a loss of ₦0.198 per kg. This government open policy is at this rate further destroying the little broiler business that are now operating. What the Government should do is to pay subsidy on feed and the price of Day Old Chicks will come down and so will the cost of raising broiler.

This will reduce price of end products and increase production to meet the demand. At present, we are aiding the farmers of other countries. We assume that prices are too high in Nigeria as compared with imports. A careful analysis will reveal that:

- (a) Prices are forced up because of the cost of feed and Day Old Chicks.
- (b) Those now being imported have their Government assistance in form of export grant.
- (c) The benefit to us to grow the birds in Nigeria with Government subsidy is that the effect is multiplied in the production of Day-Old-Chicks, production of feeds, raising of the birds, processing of the birds and distribution of birds.

Each of these five steps will contribute to G. N. P. of this country.

In the interim period, the Government should pay a consumer subsidy per kg of broiler meat to reduce the price to ₦2.50 per kg paid for imported Broiler.

APPENDIX TABLE I

PULLET RAISING

Basic Assumptions

1. One attendant to look after 3,000 Day Old Chicks to Point of Lay;

Salary = ₦40.00 per month	
Period 4½ months at = ₦40	= ₦180
Salary per Bird	= ₦0.06

2. Fuel for Heating

15 gallons kerosine at ₦0.45	= ₦6.75
per bird	= ₦0.002

3. Building and Equipment Depreciation

Cost of building at ₦2.5 per sq foot	
3,000 birds at 1.5 sq ft per bird	= 4,500 sq ft.
Cost of 4,500 sq ft. at ₦2.5 per sq ft	= ₦11,250.00
120 long feeders or 100 hanging conical feeders at 10.70	= ₦1,070.00
30 Chick Drinkers at ₦1.00	= 30.00
30 Automatic Poultry Drinkers at ₦12.00	= 360.00
6 Brooders at ₦100	= 600.00

Total	= ₦13,310.00
-------	--------------

Depreciation at 20% per annum	= ₦2,626.00
-------------------------------	-------------

Crops

Clearing, disinfecting and resting	= 2 weeks
Rearing to Point-of-Lay	= 18 weeks

Each crop uses the house	20 weeks
--------------------------	----------

There are only 2½ crops per annum.

Depreciation per crop	= ₦2,626	= ₦105.40
-----------------------	----------	-----------

25

Cost per pullet	=	1050.40	= ₦0.35
		3,000	

Supervision

1 supervisor to 6 attendants	
Salary ₦1,200 per annum	
Cost per attendant = ₦200	
Cost per bird = ₦0.027	

Feeds [Medium Hybrid SB 411]

Feeds Prices

Chicks' Mash ₦200 per tonne = 0.09 per lb	
Growers' Mash ₦168 per tonne = 0.076	
Layers' Mash ₦184 per tonne = 0.084 per lb	

Feeding Costs

Chicks mash (0-8 weeks) 5.35 lbs at 0.09	= ₦0.482
Growers mash (9-18 ") 13.25 lbs at 0.076	= ₦1.007
Total	= ₦1.489

Add 10% for wastage	₦0.149
Total	= ₦1.638

Cost of Day Old Chicks
SB 411 N0.50k

Pullet Raising

		<i>Point-of-Lay (Contract Rearers)</i>	<i>Pullet Raising (on Own farm)</i>
		N	N
Chicks	=	0.50	
Add 10% for mortality		0.05	0.55
Feeds		1.64	
Less 5% for mortality		0.08	1.56
<i>Services</i>			
Supervision		0.027	—
Labour		0.05	0.06
Debaking		0.03	0.03
Heating		0.002	0.002
Water		0.01	0.01
Litter		0.003	0.003
Drugs and Medication		0.01	0.01
Innoculation		0.10	0.10
Depreciation		0.35	0.35
Contingencies		0.10	0.10
		2.802	2.775
Interest for 18 weeks at 10% per annum		0.097	0.097
Add 7½% reserve for runts	0.228		
Less sales value as table birds	0.076		
	0.152	0.152	—
		3.051	2.872
Add 12½% for contract rearers guarantee and after sales-service		3.432	2.877
Add contract rearer margin at 15%		0.515	—
		3.947	2.877

This assumes that the "own farm" rearer uses his brooder house facility to the maximum of 2½ times per annum. Any decrease in the rate of usage will increase the depreciation charge.

If used once to	0.875 less	0.35 = 0.525
If „ 1½ times to	0.853 less	0.35 = 0.233
If „ 2 times to	0.438 less	0.35 = 0.088

Cost will be

	<i>Own farm costs</i>	<i>Add Diff</i>	<i>Total</i>
If used 2 times	2.877	0.088	= 2.965
If used 1½ times	2.877	0.233	= 3.110
If used once only	2.877	0.525	= 3.402

No of crops per annum

	<i>2½ times</i>	<i>2 times</i>	<i>1½ times</i>	<i>Once only</i>
Own farm reared costs	2.877	2.965	3.110	3.402

It should be realised that supervision has not been charged for.

About 7½% of the flock is estimated to be runts which should have been culled.

Our experience is that runts are transferred to laying quarters. These will lower profitability. Whereas only good birds will be received from contract rearers.

Spacing of houses

In addition to the cost analysis, a general purpose farmer will not be able to allow the gap of 100 meters between the adult and the growing birds (which must also be of one age per location).

The effect of this has not been esta-

blished, although it no doubt reduces the performances of the birds.

This, together with about 7½% runs kept on the farm makes "own farm rearing" less profitable for small table egg farmers and it is not recommended.

APPENDIX TABLE 2

Weekly Hen-Day Targets:- B390, Superlay SB411

Age in weeks	Weekly Hen-Day Babcock %	Minimum Production B390 Eggs per Bird	Weekly Hen-Day Superlay %	Minimum Production SB411 Eggs per Bird	Maximum lbs per week	Maximum Feed Bird Week	Maximum Soft cracks and Air-Crack	Maximum Mortality and cull per week
					B390 SB411	B390 SB411	B390 SB411	B390 SB411
1	0.25	0.02	0.25	0.02	1.75	1.65	-	-
2	0.50	0.04	0.50	0.04	1.75	1.65	-	-
3	2.50	0.08	2.50	0.08	1.80	1.70	1.0	-
4	10	0.70	10	0.70	1.85	1.75	2.0	0.2
5	15	1.05	15	1.05	1.85	1.75	2.0	0.2
6	25	1.75	25	1.75	1.90	1.80	2.1	0.2
8	60	4.20	60	4.20	1.90	1.80	2.3	0.2
9	70	4.90	70	4.90	1.92	1.82	2.4	0.3
10	75	5.25	78	5.46	1.92	1.82	2.5	0.5
11	78	5.46	83	5.81	1.95	1.85	2.6	0.5
12	78	5.46	85	5.95	1.95	1.85	2.7	0.4
13	75	5.25	84	5.88	1.95	1.85	2.8	0.4
14	73	5.11	83	5.81	1.95	1.85	2.9	0.3
15	73	5.11	82	5.74	1.95	1.85	3.0	0.3
16	72	5.04	81	5.67	1.95	1.85	3.1	p.3
17	72	5.04	80	5.60	1.90	1.80	3.2	0.16
18	71	4.97	79	5.53	1.90	1.80	3.3	0.16
19	70	4.90	78	5.46	1.90	1.80	3.4	0.16
20	70	4.90	75	5.25	1.90	1.80	3.5	0.16
21	69	4.83	74	5.18	1.90	1.80	3.6	0.15
22	69	4.83	73	5.11	1.88	1.78	3.7	0.15
23	68	4.76	72	5.04	1.88	1.78	3.8	0.15
24	68	4.76	71	4.97	1.88	1.78	3.9	0.14
25	67	4.69	71	4.97	1.88	1.78	4.0	0.14
26	66	4.62	70	4.90	1.88	1.78	4.1	0.14
27	65	4.55	70	4.90	1.87	1.77	4.2	0.13
29	64	4.48	69	4.83	1.87	1.77	4.4	0.13
30	63	4.41	68	4.83	1.85	1.75	4.5	0.12
31	62	4.34	65	4.55	1.85	1.75	4.6	0.12
32	61	4.27	65	4.55	1.85	1.75	4.7	0.12
33	61	4.27	65	4.55	1.85	1.75	4.8	0.10
34	60	4.20	64	4.48	1.85	1.75	4.9	0.10
35	59	4.13	64	4.48	1.85	1.75	5.0	0.10
36	59	4.13	64	4.48	1.85	1.75	5.1	0.12
37	58	4.06	62	4.34	1.80	1.70	5.2	0.13
38	57	3.99	62	4.34	1.80	1.70	5.3	0.13
39	56	3.92	62	4.34	1.80	1.70	5.4	0.14
40	56	3.92	60	4.20	1.80	1.70	5.5	0.15
41	55	3.85	60	4.20	1.80	1.70	5.6	0.14
42	54	3.78	50	4.20	1.80	1.70	5.7	0.15
43	54	3.78	58	4.06	1.80	1.70	5.8	0.15
44	53	3.71	58	4.06	1.80	1.70	5.9	0.16

45	52	3.64	57	3.99	1.80	1.70	6.0	0.16
46	52	3.64	57	3.99	1.80	1.70	6.1	0.16
47	51	3.57	56	3.92	1.80	1.70	6.2	0.17
48	51	3.57	56	3.92	1.80	1.70	6.3	0.17
49	50	3.50	56	3.92	1.80	1.70	6.4	0.17
50	50	3.50	55	3.85	1.85	1.75	6.5	0.18
51	49	3.43	55	3.85	1.85	1.75	6.6	0.18
52	49	3.43	55	3.85	1.85	1.75	6.7	0.18
155 67A		203 07	203 07		60 27A	219 38T	96 69T	91 49T
Legend	T = Total of 52 weeks in lay A = Average of 52 weeks in lay							

APPENDIX TABLE 3
CAPITAL GRANTS

Eligible Works and Facilities and Rates of Grant

Item No.	Column 1 Kind of work or Facility	Column 2 Agricultural Rate of Grant (per cent)	Column 3 Horticultural Rate of Grant (per cent)	Column 4 Rate of Grant for Business at Risk per cent	
				Agricultural Rate	Horticultural Rate
1	Provision, replacement, improvement, alteration, enlargement or reconditioning of permanent buildings (except living accommodation and buildings designed and intended for horticultural use of any use mentioned in Item 12), silos and bulk dry stores	25	Not Applicable (N/A)	20	Not Applicable (N/A)
2	Provision or enlargement of permanent buildings, of permanently sited frames and of durable structures for cladding with film plastic, designed and intended for the production of horticultural produce.	N/A	10	N/A	8
3	(i) Replacement, reconstruction, alteration, reconditioning or other improvement of existing permanent buildings, of permanently sited frames and of durable structures for cladding with film plastic, designed and intended for horticultural use (excluding those operations specified in Item 2).	N/A	30	N/A	25
	(ii) Provision or enlargement of permanent buildings designed and intended for horticulture use (excluding operations specified in Item 2).	N/A	30	N/A	25
	(iii) Supply and installation of permanent thermal insulation vapour sealing or gas sealing for the control of temperature or atmosphere in buildings designed and intended for horticultural use (except those specified in Item 2).	N/A	30	N/A	25
4	Provision, replacement, improvement, alteration, enlargement or reconditioning of yards, loading platforms, ramps, or banks.	25	30	20	25
5	Provision, replacement or improvement of systems for disposal of agricultural waste	25	30	20	25

6	Provision, replacement or improvement of facilities for the supply of electricity or gas for agricultural purposes.	25	30	20	25
7	Field drainage, including under-drainage and ditching	60	60	55	55
8	Provision, replacement or improvement of facilities for the supply of water	25	30	20	25
9	Provision or improvement of farm flood protection works, protection or improvement of river banks.	25	25	20	20
10	Provision, replacement or improvement of roads, paths and other permanent ways, hard-standings, fords, bridges, culverts, railway crossings, creeps, piers, jetties or slips.	25	30	20	25
11	Provision, replacement or improvement of sheep grids or cattle grids.	25	30	20	25
12	Provision, replacement or improvement of pens, dips, stalls, or other facilities designed and intended for use in connection with the gathering, feeding or treatment of sheep or cattle or for sheltering them in periods of adverse weather but not for inwintering.	25	N/A	20	N/A
13	Provision, replacement or improvement of permanent fences, hedges, walls or gates.	10	30	8	25
14	Provision, replacement or improvement of shelter belts or shelter hedges.	10	30	8	25
15	Clearance of scrub (excluding felled woodland), land levelling or grading (including filling in of ditches or ponds), removal of hedges, tree roots, boulders or other like obstructions to cultivation.	10	30	8	25
16	Claying and marling and soil mixing	10	10	8	8
17	Provision, replacement or improvement of wire-work for hop gardens.	25	N/A	20	N/A
18	Orchard grubbing.	25	30	20	25
19	Provision, replacement, improvement, alteration, enlargement or reconditioning of watercress beds.	N/A	30	N/A	25
20	Installation or provision of plant or machinery (including fixtures and fittings) for agricultural purposes (excluding plant or machinery which has been used before installation or which is installed is wholly or partly for the benefit of living accommodation or which is of a kind specified in items 21, 22 or 23 of this Appendix).	10	10	8	8
21	Plant or equipment designed and intended for the production or harvesting of horticultural produce (excluding plant or equipment of a kind specified in items 22 or 23 of this Appendix).	N/A	20	N/A	15
23	Plant or equipment, including tractors and ancillary equipment, designed and intended for the cultivation	N/A	10	N/A	8
24	Purchase of livestock.	10	N/A	8	N/A
25	Provision, replacement, improvement, alteration or enlargement of facilities for the farming of fresh water fish for food.	10	N/A	8	N/A

(3) *Housing*

- (i) Building space per bird 0.75 sq. ft
 Cost of building per sq ft = ₦2.50
 Cost of building per bird = ₦2.06

(ii) *Feeders and Drinkers*

- (a) 1 Drinker for 35 birds at ₦12.00
 cost per bird = ₦0.34
 (b) 1 Feeder for 30 birds at ₦10.70
 cost per bird = ₦0.35
 (c) 1 brooder for 500 chicks at ₦100
 cost per bird = ₦0.20

Total cost of Housing

	₦ k
(i) Building	2.06
(a) Drinkers	0.34
(b) Feeders	0.35
(c) Brooder	0.20
	2.95

Depreciation at 20% of ₦2.95
 = ₦0.59 per annum

Depreciation per crop = ₦0.14

Crops

Each crop to market the last lot 10 weeks
 Clearing, Disinfecting and Resting 2 „
 Each crop uses the house for 12 „
 Crops per annum 4.3
 Depreciation costs per crop
 = ₦0.59 ÷ 4.3 = ₦0.14

(4) *Labour & Supervision*

- (i) One attendant to look after 3,000 broilers
 To market weight: salary
 per month ₦40.00
 Period 12 weeks i.e. 3 months = ₦120.00
 Salary per Bird = 0.04

(5) *Supervision*

1 supervisor to 6 attendants: salary ₦1,200.00
 Cost per attendant = ₦200
 Cost per crop = ₦200 ÷ 4.3

= ₦45.51
 Cost per bird = ₦0.015

- (6) Fuel for Heating = ₦30.00
 Cost per bird = ₦ 0.01

- (7) Cost of Litter = ₦ 0.01

Target Live Weight in lbs

(3) Week	1	0.374
	2	0.660
	3	1.100
	4	1.606
	5	2.200
	6	2.816
	7	3.250
	8	3.750
	9	3.750
	10	3.750

Kill-out percentage is 66.7%

The same weight has been given for the ages of 8, 9 and 10 weeks because at the end of the 8th week, the heaviest will be cropped leaving those below 3.750. The heavy ones will again be cropped at the end of the 9th week leaving the 3rd slowest lot till the end of the 10th week now estimated to also achieve 3.750 lbs per bird.

Selling prices

The farmer is allowed 15% profit

The processor is allowed 10% profit in addition to income from heads and legs.

The retailer is allowed 15% profit for liveweight or dead weight.

Costing per bird

1. Cost of Day Old Chicks	0.525
2. Cost of Feed	1.065
3. Depreciation of housing	0.140
4. Labour	0.040
5. Supervision 0.015	0.015
6. Heating	0.010
7. Litter	0.010
8. Innoculation	0.030
9. Debeaking	0.030
10. Routine medication	0.020
11. Contingencies	0.050
	<u>1.935</u>

Costing per lb/kg

3.750 lbs live weight cost =	1.935
Cost per kg =	₦ 1.135
Cost per lb =	0.516
Add 15% farmers profit per lb	0.074
Minimum farmers wholesale price per lb	₦ 0.593
per kg is	₦ 1.305
The retailer is allowed 15% profit	
The Retail price per kg is therefore	₦ 1.50

Dressed

Broiler plant buys per lb	=	₦0.593
Cost per broiler of 3.75 lb.		
live weight	=	₦2.224
Cost of processing per bird	=	₦0.10
Cost of cold room	=	₦0.05
Packing Materials	=	₦0.05
Cost per bird		<u>₦2.424</u>

Kill-out-percentage 66.7

3.75 lbs will dress out at 2.5 lbs
or 1.14 kg

Cost per bird at ₦2.424

Yields cost per lb of ₦0.970

Cost per kg ₦2.133

Selling prices of dressed chicken per kg

- (1) Processors selling price at 10% profit

10% of ₦2.13 is ₦0.213

Production costs ₦2.133

Minimum wholesale ₦2.346

- (2) Retailers selling price at 15% profit of wholesale price

15% of ₦2.346 is ₦0.352

Purchase price ₦2.133

Consumer price 2.698

Summary of relevant costs per kg**(A) Live Weight**

	₦	k
(1) The farmer's production cost liveweight is	1.144	per kg
(2) The farmer's Wholesale price liveweight is	1.305	„ „
(3) The Retail price liveweight is	1.50	„ „

(B) Dead Weight

(1) The processor's cost for deadweight is	2.133	„ „
(2) The processor's whole price deadweight is	2.346	„ „
(3) The retailer's consumer price deadweight is	2.698	„ „