Pre-Feasibility Study

ENVIRONMENTAL CONTROLLED LAYER FARM (65,520 Layers)

Small and Medium Enterprises Development Authority

Ministry of Industries & Production

Government of Pakistan

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TABLE OF CONTENTS

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2 EXECUTIVE SUMMARY

In a commercial layer farm, Day Old Chicks (DOCs) of layer are procured from hatcheries and breeder companies. These are brooded and reared for a period of 140 days (4.60 months) after which, they start laying eggs for a period of next 476 days (15.65 months). On an average, one hen lays about 375-415 eggs. The price of egg varies with demand and supply and is generally higher in winter. As these birds stop laying or feed-efficiency drops, the layers are culled and sold in market determined on live body weight basis. Higher yields are achievable with better farm management and better quality breeds.

Farm management in line with best husbandry practices is vital for the success of this business. All farm operations would be done with strict compliance to recommended husbandry practices including standard hygiene, proper temperature, and humidity, vaccination, medication, feeding and lighting management.

This Pre-feasibility Study is about establishing an environmentally controlled layer farm of 65,520 birds. Total estimated investment of Rs. 127.78 million is required, including capital investment of Rs. 116.69 million and working capital of Rs. 11.09 millions. This project is planned to be started on 50% debt and 50% equity basis. The Net Present Value (NPV) of the project is around Rs. 53.06 million with an Internal Rate of Return (IRR) of 25% and a Payback Period of 4.36 years. The project will generate direct employment for 22 persons. The legal status of this business is proposed as ‘Partnership’.

3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out ‘sectoral research’ to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based

capacity building programs of different types in addition to business guidance through help desk services.

4 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document / study covers various aspects of project concept development, start-up, and production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Environmental Controlled Layer Farm** by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and it's successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later on, which form basis of any Investment Decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

This project is related to establishing an environmentally controlled layer farm. In the proposed layer farm, the Day Old Chicks (DOCs) of commercial layer are brooded and reared on specially formulated feed for a period of 140 days on a rented place and then transported to the facility for laying. After that, layers start laying eggs with changed feeding regime for next 476 days. Purpose built environmentally controlled shed comprising of a space of 15,041 sq. ft. will be built on a procured land. On an average it is estimated that, one bird will lay about 375-415 eggs, after which, the layers are culled and sold in the market on live body weight basis to traders and wholesalers.

One flock will be housed for 88 weeks (1.69 years) at the premises of the same farm. As per the plan, the layers will be ready to lay eggs in October / November. Although, there is year-round demand of eggs, however the demand increases especially during winter season, hence fetching higher prices. Eggs will be packed in paper or plastic trays and will be sold in bulk in wholesale markets.

5.1 Farm Management / Operations

The overall operational days of the proposed layer farm can be categorized in to three main activities, i.e. 'Rearing', 'Laying' and 'Fumigation'. There will be a lag time of 15 days for cleaning and disinfection (Fumigation) and necessary arrangements for preparation of next flock. The schedule for rearing and laying period required for each flock of operation of the farm is provided in the below table:

Table 1: Rearing and Laying Period for a Flock

Rearing Days	Laying Days		Fumigation Days
	Starter Layer Days	Full Layer Days	
140	28	448	15

Each flock will produce approximately 138,000 dozen eggs per month. Detailed ten years schedule of rearing and laying calendar is attached as Annexure

The production process and farm management practices starts with the sanitation of layer house. It should be ensured that, each house should remain empty at least two weeks after it is disinfected and fumigate. The effectiveness of sanitizing a house is depended upon the extent of the cleaning before the germicide is applied. This cleaning helps to control disease because:

- ⇒ It reduces number of pathogenic material
- ⇒ Remove material that helps in multiplication of pathogens.
- ⇒ Expose surface to the disinfectant and fumigants.

The major steps involved in the process flow of layer farm management and operation are briefly discussed in the succeeding paragraphs.

5.1.1 Selection of Day Old Chicks

For this project, LSL breed is recommended as it is considered to be the most efficient layer with excellent livability and good egg production capacity. It lays dozens of good quality and strong-shelled eggs at minimum feed intake. The DOCs procured from reliable hatcheries should be of uniform size, active, alert and bright eyed. The skin of shanks of healthy chicks should be bright and shiny.

5.1.2 Management of Chicks

The chicks should be of uniform size, active, alert and bright eyed. The shank or leg covering (skin) of healthy chicks should appear bright and shiny. Improved and high yielding chicks should be purchased from reputed farms.

5.1.2.1 Pre-Brooding Management

In the process of pre-brooding management following measures will be considered for taking good results.

⇒ The house should lie empty for one to two weeks prior to placing new chicks in them.

⇒ Cleaning and disinfect of cages, equipment, building interior and attached service areas and equipment

⇒ Checking to make sure equipment is working properly and is adjusted to the right height

⇒ Removal of all old feed from bins, hoppers, and troughs. Disinfect and allow drying before new feed is delivered

⇒ Placement of rodenticide where it will not be consumed by the chicks

⇒ Good ventilation and environmental conditions will greatly help in reducing smell. There is no hope of overall hygiene process being fully effective if there is any much left in the house.

⇒ One day before delivery of chicks; Check water system, adjust to proper height for chicks. Disinfect and flush water lines and set heating system at 32–33°C (90–92°F).

5.1.2.2 Brooding Management

⇒ On delivery day; the chicks should be arriving early in the morning so that the management have full day to observe them and take care of them.

⇒ Checking of brooder temperatures

⇒ Water tanks must be full or water system should be in operation. As chicks are placed, trigger water cups or nipples to encourage drinking.

⇒ While using nipple drinkers, reduce the water pressure so birds can see the drop of water hanging on the drinker.

⇒ Feed should be placed on paper in cage.

⇒ Operate feeders at highest feed level.

⇒ Keep light at high intensity 20–22 hours per day for the first week.

⇒ In the beginning, starter feed might be used as a source of energy for chicks, starter feed is easily digestible and due to its high fiber content reduce pasting problem. It is a good source of energy.

⇒ Grow pullets in strict isolation from older birds. Maintain good sanitation. Plan work routines so that disease causing agents cannot be carried from older birds to the growing pullets.

⇒ During the first six weeks, operate feeders to provide feed at least twice daily, or more often. After six weeks, check feed consumption and body weights against the given charts provided by Day Old Chick Suppliers.

⇒ Weigh 100 pullets weekly during the growing period, beginning at five weeks of age.

⇒ Check water availability in each cage row daily. Check for and repair leaks.

⇒ Raise waterers as the birds grow (nipples higher than the birds' heads; cups or troughs level with their backs).

⇒ Plan and follow a vaccination schedule to fit the area.

⇒ Remove mortality daily and dispose of properly. Examine for causes of excessive mortality.

⇒ Management should Place the chick guard 2-3 feet from the edge and increase area weekly this will reduce cannibalism and increase feed utilization.

⇒ Management should do flushing at start by using 250 gm sugar/gallon of water, which is mixed to provide carbohydrate to chick and clear the digestive tract.

For ensuring best farm management and brooding practices, a qualified and experience farm manager will be present and ever alert. The farm manger along with other workers will count the number of the chicks, closely regulates temperature of shed and of the brooder and above all observes closely, all stated requirements of birds.

5.1.3 Feeding

The requirement of feed during laying depends on the rate of eggs production and the body weight of layer birds. The birds may need more feed in winter and less feed in summer. On average a bird take 90 to 94 grams feed per day in laying season. During summer months the flock is under severe stress, it is suggested to temporarily change the ration to a higher level of protein content. The actual feed consumption may be influenced by several factors as follows:

⇒ Body weight of the bird leads to rate of egg production

⇒ Season and weather condition

⇒ Health and physical condition of the bird

⇒ Feed quality such as protein contents, caloric value of feed etc. Generally the feed intake increases with an increase in egg production

5.1.4 Caging System

The battery cage system for laying layers was introduced commercially on a wide scale in the 1950's. Since that time, it has become the predominant method for maintaining layers. Cages provide the egg producer with an efficient and cost-effective means of collecting eggs, disposing of wastes, reducing feed wastage, maintaining an adequate environmental temperature, and inspecting the condition of individual birds. “H” frame battery layer production system has been put into the international market for many years and helped the layer farm management to achieve good performances. In this Pre-feasibility study, it is recommend to acquire 5 tiers “H” type battery cages for the production of 65,520 layers.

5.1.5 Disease Prevention and Control

Following control and preventive measures should be taken at the farm for maintaining disease free layers and to get healthy eggs production:

⇒ Implementation and execution of an appropriate hygiene program that will start with procurement of disease-free chicks

⇒ Regular vaccination as per prescribed schedule to chicks against Ranikhet, Marek’s and other disease

⇒ Keeping feed free from all aflatoxins

⇒ Do not allowing the visitors or attendants inside the layer farm without wear disinfected boots and clean clothing

⇒ When there are several age groups on the farm, always care for the youngest birds first while performing daily routine works

5.1.6 Layer House Temperature and Ventilation

On the first week 90-92º F is quite comfortable. This may be reduced at the rate of 5º F weekly until 7º F is reached on the sixth week. When chicks circle, wide, it is too hot. If they tend to crowd, under the hover it is too cool. In either case, adjustment is needed immediately. The main functions of ventilation are to maintain Oxygen, keep CO_2 at low level, removing dust or moisture and ammonia from the house and maintain required temperature.

Air movement requirements are best determined by observing bird comfort, litter condition, and odors build up. If necessary, the exhaust fan should also be used in the house.

5.1.7 Laying Mechanisms

After the completion of rearing phase of 20 weeks, the layers will produce eggs for next 68 weeks. During the rearing phase, the birds consume feed and are non-productive. After the rearing phase is over, the birds start laying eggs and remain productive for the next 68 weeks. In this Pre-feasibility Study, it is assumed to insert flock of 65,520 birds from the month of April / May so that in winter season, the entrepreneur can get maximum rate of Eggs.

5.1.8 Culling of Unproductive Layers

Culling is the procedure of selection and rejection of unproductive and poor producers. Culling is a very important job for running layer farm profitably. Poor layer should be culled to minimize the cost of production. The birds that have laid well for short period but have stopped laying for one reason or another should be culled out. Sales price varies in a range of Rs. 100 to Rs. 130 as per demand.

5.2 Installed and Operational Capacities

Under this project 65,520 DOCs will be reared for a period of 20 weeks per flocks. Hence, all the calculations in this Pre-feasibility study are based on considering the stated revolving flock size of 65,520 layers, kept for 1.69 years. After assuming 3% of mortality there will be 63,554 layers left on the farm who will lay eggs.

6 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

This project is intended to setup in any rural area, which are close to the metropolitan cities like Karachi, Lahore, Peshawar, Quetta, Multan, Bahawalpur, Faisalabad, Rawalpindi, Hyderabad, Ziarat, D.I. Khan etc. The rural and peri-urban areas around these and other major cities across the country having abundant water, clean and disease free environment as well as easy access to poultry markets and veterinary services makes it a better choice for the proposed layer farming.

Similarly, setting up a farm at an isolated place will minimize the risk of diseases. Proximity of layer farm near to these cities enables the entrepreneur to develop easy links with the market for the purchase of farm inputs and for selling eggs and culled birds.

7 POTENTIAL TARGET CUSTOMERS / MARKETS

The wholesale and retail price of eggs and poultry meat is determined daily on demand and supply dynamics. Wholesalers / bulk buyers of eggs and chicken and bakeries & confectionaries in all the nearby cities and peri–urban locations are the primary markets. Following are some of the target clients for a layer farms product mix:

- ⇒ Eggs traders both wholesalers and bulk buyers
- ⇒ Bakeries and confectionaries
- ⇒ Chicken meat traders
- ⇒ Contractors / dealers

8 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Environmental Controlled Layer Farm. Various costs and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are also attached as annexure.

8.1 Project Economics

All the figures in this financial model have been calculated for estimated revenues of Rs. 156.21 Million in the year one.

The following table shows internal rate of return, payback period and net present value of the proposed venture.

Table 2: Project Economics

Description	Details
Internal Rate of Return (IRR)	25%
Payback Period (Yrs.)	4.36
Net Present Value (Rs.)	53,055,601

8.2 Project Financing

Following table provides details of the equity required and variables related to bank loan:

Table 3: Project Financing

Description	Details
Total Equity (50%)	Rs. 63,890,281
Bank Loan (50%)	Rs. 63,890,281
Markup to the Borrower (%age / annum)	12%
Tenure of the Loan (Years)	5 Years

8.3 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

Table 4: Project Cost

Capital Investment	Amount (Rs.)
Land	3,000,000
Building/Infrastructure	26,325,588
Machinery & equipment	53,680,248
Furniture & fixtures	220,000
Office equipment	164,000
Pre-operating costs*	33,296,094
Total Capital Costs	**116,685,930**
Working Capital	
Raw material inventory	9,642,371
Cash	1,452,262
Total Working Capital	**11,094,633**

Total Investment	**127,780,563**

* Including DOC and Brooding Cost with Feed, Vaccination, Labor, Electricity and Transportation Cost for 140 days.

8.4 Space Requirement

Approximately, 1 acre of land would be required for setting up the proposed Farm. As this business is land intensive, therefore, it is suggested to purchase the required land instead of rental or leased land. However, in order to avoid the initial high capital costs, the long-term lease contract for land acquisition may be considered. But entrepreneur can be more risk free on purchased land because of making heavy investment on shed and boundary wall as well as future business expansion.

The total cost for acquiring land is assumed at Rs. 3 million.

The infrastructural requirements of the project mainly comprise of the construction of Sheds, open space, labor room and other facilities. Details of space requirement and cost of construction of building and infrastructure for the proposed farm is provided in the table below:

Table 5: Space Requirement

Description	Area (Sq.ft.)	Cost / Sq.ft	Amount (Rs.)
Laying Shed (Height 14')	15,041	1,100	16,544,588
Feed Store	750	1,200	900,000
Generator Room	300	1,200	360,000
Switch Room / Panel Room	117	1,000	117,000
Labor Colony	2,050	1,200	2,460,000
Rooms for Security Guards and Electriation	360	1,200	432,000
Mess and Kitchen	500	1,200	600,000
Washrooms	108	1,500	162,000
Management Building	500	2,500	1,250,000
Open Area	23,835		
Sewerage and Landscaping			2,000,000
Boundary Wall with Barbed Wire			1,500,000
Total	**43,560**		**26,325,588**

The entrepreneur should make sure that the following things are available at the farm site before setting up the farm:

i. Electricity Connection

ii. Clean Water Supply

8.5 Machinery & Equipment

Detail of Machinery & Equipment required for the farm is given below in table;

Table 6: Machinery & Equipment

Description	Quantity	Cost	Amount (Rs.)
Machinery Cost (CNF Karachi)			**35,483,000**
Custom Duty	3%		1,064,490
Sales Tax	20%		7,096,600
Income Tax	7%		2,306,395
Misc. Tax.	2%		709,660
Erection and installation charges of machinery	5%		1,774,150
Freight	2%		620,953
Total Imported Machinery & Equipment Cost			**49,055,248**
Perkin Generator set of 45 KVA	2	1,000,000	2,000,000
Stabilizer 45 KVA	1	500,000	500,000
Transformer 750 KVA	1	500,000	500,000
LT Panel (Complete Set) & Electrification	1	750,000	750,000
Water Pumps (1.5 HP)	5	15,000	75,000
Electric Poles	1	500,000	500,000
Electric Poles for LT Cables for 400 feet length	1	300,000	300,000
Total Machinery & Equipment Cost			**53,680,248**

Table 7: Items of Imported Machinery & Equipment

Sr. No	*Imported Machinery & Equipment*
1	Vertical type battery with PPP belt manure removing, Cage: 60 x 63,5(63,5) cm
2	Sliding type door
3	2 nipples per 2 cages with trough
4	One 4 liter tank per tier
5	"EGG WAY" Egg conveyor
6	Egg Collection Electric Control Panel

7	Egg Collection Electric Cables
8	Sy P/Pn Type Corrugated Steel Sheet Silo with supporting legs, ladder with safety cage
9	Manure removing system from the building
10	Manure elevator in line with transversal belt
11	Transversal manure removing
12	Belt manure removing elevator
13	Belt elevator unloading
14	Pad Humidification
15	Tunnel Ventilation system
16	Feeding System: Cable trolley
17	Cooling System
18	Manure Removal System
19	Alarm System
20	Building Accessories
21	Control Panel Enclosures
22	Main Control Systems
23	Lighting System

8.6 Furniture & Fixture

Detail of Furniture & Fixture required for the farm is given below in table;

Table 8: Furniture & Fixture

Description	Quantity	Cost	Amount (Rs.)
Furniture	1	100,000	100,000
Air conditioner	2	60,000	120,000
Total Furniture & Fixtures			**220,000**

8.7 Office Equipment

Detail of Office Equipment required for the farm is given below in table;

Table 9: Office Equipment

Description	Quantity	Cost	Amount (Rs.)
Computers	2	40,000	80,000
Computer printer (s)	2	15,000	30,000
UPS	1	50,000	50,000
Telephones	2	2,000	4,000
Total Office Equipment			**164,000**

8.8 Raw Material Requirement

The major raw material required for poultry birds mainly comprises of feed, clean water and vaccination. The estimated cost of feed during rearing per bird is Rs. 299.60 and during laying is Rs. 1,935.42 per flock, while vaccination and medication cost per bird per flock is taken at Rs. 50. Similarly, brooding and transportation expenses per bird are assumed as Rs. 15.08.

8.9 Human Resource Requirement

In order to run operations of Layer Farm smoothly, details of human resources required in first year of operation along with monthly salary are recommended as under:

Table 10: Human Resource Requirment (Year 1)

Description	No. of Employees	Monthly Salary per person (Rs.)
Consultant	1	50,000
Supervisor	1	35,000
Electrician	1	30,000
Mechanical Technician	1	30,000
Accountant	1	30,000
On-Farm Labor	10	15,000
Guards	4	16,000
Mess In-charge	1	25,000
Mess Assistant	1	15,000
Sweeper	1	15,000
Total	**22**	

Apart from this labor cost for rearing shed will also be paid during rearing of birds which is calculated as Rs. 511,562 in year 1.

8.10 Utilities and Other Costs

An essential cost to be borne by the project is the cost of electricity which is estimated to be Rs. 5.17 million in the first year of operations. The travelling expense being essential for farm and estimated Rs. 125,400 in year one.

8.11 Revenue Generation

Revenue along with its assumption for the 1st year of operations is given in table below;

Table 11: Revenue Generation (Year 1)

Description / Product Range	Units	Total No Units Produced	Sales Price (Rs. / Unit)	Sales Revenue (Rs) Year 1*
Eggs (Starter)	Dozen	103,286	58	5,990,617
Eggs (Full Size)	Dozen	1,553,513	97	150,172,939
Culled Birds	Nos			
Manure	Lump sum			50,000
Total				**156,213,555**

* Difference in calculation is due to rounding off.

9 CONTACT DETAILS

In order to facilitate potential investors, contact details of consultants and experts relevant to the proposed project are provided below:

Name and Address	Contact
Feed Suppliers	
Supreme Feeds (Pvt.) Ltd. Head Office: 176-Shadman 1, Lahore.	Phone: +92-42-37522104-7
National Feeds Ltd. 171 Shadman – II Lahore.	Phone: +92-42-35961021-28 http://www.nationalfeeds.com.pk/
Asia Feed (Pvt.) Ltd. 359 Shamsabad Colony, Humayun Road Multan.	Phone: +92-61-6221161 – 65 http://www.asiafeeds.net/
Day Old Chick Supplier	
Big Bird Poultry Breeders (Pvt.) Ltd. 2-A, Ahmed Block, New Garden Town Lahore	Phone : +92-42-111 111 220 http://www.bigbirdgroup.com.pk/
Hi-Tech Poultry Breeders (Pvt.) Ltd. 1-A, Shadman Chowk Jail Road, Lahore	Phone : +92-42-111 111 110 http://www.hitechgroup.pk/
Jadeed Farms (Pvt.) Ltd. 6, Allied Commercial Plaza, Murree Road, Chandni Chowk Rawalpindi.	Phone: +92-51-111523 333 https://jadeedgroup.com/
Machinery Supplier	
TEC-MAN House # 226, Race Course Road, Westridge # 1, Rawalpindi Cantt - Pakistan	Phone: +92-51-5174284, 5174285. https://tecmanint.com/
Khalid Majeed Group 156-B/2, New Muslim Town, Lahore - Pakistan.	Phone: +92-321-490 66 88 Email: info@khalidmajeed.com

10 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
Government of Pakistan	www.pakistan.gov.pk
Ministry of Industries & Production	www.moip.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk
Government of Baluchistan	www.balochistan.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Government of Azad Jammu Kashmir	www.ajk.gov.pk
Security Commission of Pakistan (SECP)	www.secp.gov.pk
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
State Bank of Pakistan (SBP)	www.sbp.org.pk
Punjab Small Industries Corporation	www.psic.gop.pk
Sindh Small Industries Corporation	www.ssic.gos.pk
Punjab Vocational Training Council (PVTC)	www.pvtc.gop.pk
Livestock & Dairy Development Department, Government of Punjab.	www.livestockpunjab.gov.pk
Punjab Industrial Estates (PIE)	www.pie.com.pk
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	www.fiedmc.com.pk
Punjab Agriculture and Meat Company.	http://www.pamco.bz/
Punjab Livestock & Dairy Development Board	http://www.plddb.pk/
University of Agriculture Faisalabad	www.uaf.edu.pk
University of Veterinary & Animal Sciences, Lahore	http://www.uvas.edu.pk/
Pakistan Poultry Association	http://pakistanpoultrycentral.com/

11 ANNEXURE

11.1 Rearing & Laying Schedule

Total Days a year	365		
Days per Month	30.42		
Weeks in a month	4.35		
	Weeks	**Months**	**Days**
Total Life of the Bird Weeks	**88**	**20.25**	**616**
Rearing	20	4.60	140
Laying			
Starter Laying	4	0.92	28
Full Laying	64	14.73	448
Fumigatation and Cleaning		0.49	15

Years	Rearing	Laying		Fumigation
		Starter Laying	Full Laying	
Year 1	140	28	335	-
Year 2	40	28	322	15
Year 3	100	28	322	15
Year 4	140	13	337	15
Year 5	140	15	350	-
Year 6	27	28	322	15
Year 7	113	28	322	15
Year 8	140	-	350	15
Year 9	140	28	337	-
Year 10	-	28	322	15

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Availability of Eggs for sale (month)		**11.93**	**11.51**	**11.51**	**11.51**	**12.00**	**11.51**	**11.51**	**11.51**	**12.00**	**11.51**
Starter Laying		0.92	0.92	0.92	0.43	0.49	0.92	0.92	-	0.92	0.92
Full Laying		11.01	10.59	10.59	11.08	11.51	10.59	10.59	11.51	11.08	10.59
Birds Sales in times		-	1.0	1.0	1.0	-	1.0	1.0	1.0	-	1.0
Birds Purchased in times	1.0	1.0	-	1.0	1.0	1.0	-	1.0	1.0	-	1.0
Birds Transportation in times		1.0	1.0	1.0	1.0	-	1.0	1.0	-	1.0	-
Rearing in Months	4.6	1.3	3.3	4.6	4.6	0.9	3.7	4.6	4.6	-	0.5
Fumigation											
Rearing	1.0	1.0	-	1.0	1.0	1.0	-	1.0	1.0	-	1.0
Laying	-	1.0	1.0	1.0	-	1.0	1.0	1.0	-	1.0	1.0
Vaccination & Medication	1.0	1.0	-	1.0	1.0	1.0	-	1.0	1.0	-	1.0
Rearing Calculation for Direct Labor		1.32	3.29	4.60	4.60	0.89	3.72	4.60	4.60	-	0.46

11.2 Income Statement

Calculations
Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	**156,213,555**	**174,512,823**	**191,964,105**	**215,838,851**	**234,411,721**	**255,504,224**	**281,054,647**	**321,848,503**	**336,779,474**	**373,965,837**
Cost of sales										
Feed Cost	99,412,137	114,912,101	133,189,611	146,508,572	143,637,280	171,178,391	195,002,909	214,503,200	202,184,260	217,891,452
Vaccination Cost	3,276,000	-	3,963,960	4,360,356	4,796,392	-	5,803,634	6,383,997	-	7,724,637
DOC Cost	6,126,120	-	7,412,605	8,153,866	8,969,252	-	10,852,795	11,938,075	-	5,569,200
Diesel Cost for Heater	365,904	-	442,744	487,018	535,720	-	648,221	713,043	-	862,782
Liter Cost	500,000	-	605,000	665,500	732,050	-	885,781	974,359	-	1,178,974
Labor Cost of Rearing Shed	511,562	1,406,795	2,166,464	2,383,110	505,560	2,327,447	3,171,919	3,489,111	-	422,182
Labor Cost for Laying Shed	2,820,000	3,102,000	3,412,200	3,753,420	4,128,762	4,541,638	4,995,802	5,495,382	6,044,920	6,649,412
Birds Rearing Rental Cost	749,246	2,060,426	3,173,057	3,490,362	740,455	3,408,838	4,645,672	5,110,240	-	618,339
Machinery Maintenance	240,000	264,000	290,400	319,440	351,384	386,522	425,175	467,692	514,461	565,907
Electricity & Diesel Expense	4,990,685	5,659,726	6,488,252	7,137,077	7,242,121	8,399,979	9,499,450	10,449,395	10,289,226	10,922,061
Birds Transportation Cost	635,544	699,098	769,008	845,909	-	1,023,550	1,125,905	-	1,362,345	-
Water Cost	90,000	99,000	108,900	119,790	131,769	144,946	159,440	175,385	192,923	212,215
Fumigation Cost	1,037,605	808,824	1,222,456	1,344,701	1,525,309	1,184,199	1,789,798	1,968,777	1,643,718	2,382,221
Gas Cost	120,000	132,000	145,200	159,720	175,692	193,261	212,587	233,846	257,231	282,954
Total cost of sales	120,874,803	129,143,970	163,389,856	179,728,842	173,471,746	192,788,771	239,219,089	261,902,502	222,489,085	255,282,337
Gross Profit	35,338,753	45,368,853	28,574,249	36,110,009	60,939,974	62,715,453	41,835,558	59,946,001	114,290,389	118,683,501
General administration & selling expenses										
Administration expense	2,508,000	4,165,595	5,201,144	5,721,258	4,177,523	6,366,606	7,614,994	8,376,494	5,376,121	6,335,915
Electricity expense	180,000	198,000	217,800	239,580	263,538	289,892	318,881	350,769	385,846	424,431
Travelling expense	125,400	208,280	260,057	286,063	208,876	318,330	380,750	418,825	268,806	316,796
Communications expense (phone, fax, mail, internet, etc.)	300,000	330,000	363,000	399,300	439,230	483,153	531,468	584,615	643,077	707,384
Office expenses (stationary, entertainment, janitorial services, etc.)	420,000	462,000	508,200	559,020	614,922	676,414	744,056	818,461	900,307	990,338
Professional fees (legal, audit, consultants, etc.)	100,000	110,000	121,000	133,100	146,410	161,051	177,156	194,872	214,359	235,795
Depreciation expense	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704
Amortization of pre-operating costs	6,659,219	6,659,219	6,659,219	6,659,219	6,659,219	-	-	-	-	-
Miscellaneous expense 1	425,383	471,395	501,328	518,006	480,811	375,454	412,250	436,668	362,780	393,334
Subtotal	17,440,706	19,327,192	20,554,452	21,238,250	19,713,232	15,393,605	16,902,259	17,903,408	14,874,000	16,126,697
Operating Income	17,898,047	26,041,661	8,019,797	14,871,759	41,226,742	47,321,849	24,933,298	42,042,593	99,416,389	102,556,804
Other income (interest on cash)	-	-	-	-	-	-	-	-	-	-
Earnings Before Interest & Taxes	17,898,047	26,041,661	8,019,797	14,871,759	41,226,742	47,321,849	24,933,298	42,042,593	99,416,389	102,556,804
Interest expense on long term debt (Project Loan)	6,513,591	5,364,544	4,069,770	2,610,786	966,766	-	-	-	-	-
Interest expense on long term debt (Working Capital Loan)	367,152	-	-	-	-	-	-	-	-	-
Subtotal	6,880,743	5,364,544	4,069,770	2,610,786	966,766	-	-	-	-	-
Earnings Before Tax	11,017,304	20,677,116	3,950,027	12,260,973	40,259,977	47,321,849	24,933,298	42,042,593	99,416,389	102,556,804
Tax	3,078,556	6,459,490	710,007	3,513,840	13,313,491	15,785,146	7,949,154	13,937,407	34,018,235	35,117,381
NET PROFIT/(LOSS) AFTER TAX	**7,938,748**	**14,217,626**	**3,240,021**	**8,747,133**	**26,946,485**	**31,536,702**	**16,984,145**	**28,105,186**	**65,398,154**	**67,439,423**

11.3 Balance Sheet

Calculations
Balance Sheet

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
Current assets											
Cash & Bank	1,452,262	9,759,891	29,276,116	31,857,503	42,815,536	78,019,370	123,183,533	147,880,055	198,496,946	294,441,978	452,163,817
Accounts receivable		-	-	-	-	-	-	-	-	-	-
Raw material inventory	9,642,371	11,126,560	15,460,233	18,706,882	20,428,846	24,259,994	33,140,383	40,099,864	38,248,270	48,442,331	-
Pre-paid building rent	-	-	-	-	-	-	-	-	-	-	-
Total Current Assets	11,094,633	20,886,450	44,736,349	50,564,385	63,244,383	102,279,364	156,323,916	187,979,919	236,745,216	342,884,309	452,163,817
Fixed assets											
Land	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Building/Infrastructure	26,325,588	25,009,308	23,693,029	22,376,750	21,060,470	19,744,191	18,427,911	17,111,632	15,795,353	14,479,073	13,162,794
Machinery & equipment	53,680,248	48,312,223	42,944,198	37,576,173	32,208,149	26,840,124	21,472,099	16,104,074	10,736,050	5,368,025	-
Furniture & fixtures	220,000	198,000	176,000	154,000	132,000	110,000	88,000	66,000	44,000	22,000	-
Office vehicles	-	-	-	-	-	-	-	-	-	-	-
Office equipment	164,000	147,600	131,200	114,800	98,400	82,000	65,600	49,200	32,800	16,400	-
Total Fixed Assets	83,389,835	76,667,131	69,944,427	63,221,723	56,499,019	49,776,315	43,053,610	36,330,906	29,608,202	22,885,498	16,162,794
Intangible assets											
Pre-operation costs	33,296,094	26,636,875	19,977,657	13,318,438	6,659,219	-	-	-	-	-	-
Total Intangible Assets	33,296,094	26,636,875	19,977,657	13,318,438	6,659,219	-	-	-	-	-	-
TOTAL ASSETS	**127,780,563**	**124,190,457**	**134,658,433**	**127,104,546**	**126,402,620**	**152,055,678**	**199,377,527**	**224,310,825**	**266,353,418**	**365,769,807**	**468,326,611**
Liabilities & Shareholders' Equity											
Current liabilities											
Accounts payable		-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	-
Other liabilities											
Deferred tax		3,078,556	9,538,046	10,248,052	13,761,892	27,075,383	42,860,530	50,809,683	64,747,090	98,765,326	133,882,706
Long term debt (Project Loan)	58,342,965	49,282,872	39,073,732	27,569,817	14,606,919	-	-	-	-	-	-
Long term debt (Working Capital Loan)	5,547,317	-	-	-	-	-	-	-	-	-	-
Total Long Term Liabilities	63,890,281	52,361,427	48,611,777	37,817,869	28,368,811	27,075,383	42,860,530	50,809,683	64,747,090	98,765,326	133,882,706
Shareholders' equity											
Paid-up capital	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281	63,890,281
Retained earnings		7,938,748	22,156,374	25,396,395	34,143,528	61,090,014	92,626,716	109,610,861	137,716,047	203,114,200	270,553,624
Total Equity	63,890,281	71,829,030	86,046,656	89,286,676	98,033,810	124,980,295	156,516,997	173,501,142	201,606,328	267,004,482	334,443,905
TOTAL CAPITAL AND LIABILITIES	**127,780,563**	**124,190,457**	**134,658,433**	**127,104,546**	**126,402,620**	**152,055,678**	**199,377,527**	**224,310,825**	**266,353,418**	**365,769,807**	**468,326,611**

11.4 Cash Flow Statement

Calculations
Cash Flow Statement

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating activities											
Net profit		7,938,748	14,217,626	3,240,021	8,747,133	26,946,485	31,536,702	16,984,145	28,105,186	65,398,154	67,439,423
Add: depreciation expense		6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704	6,722,704
amortization of pre-operating costs		6,659,219	6,659,219	6,659,219	6,659,219	6,659,219	-	-	-	-	-
Deferred income tax		3,078,556	6,459,490	710,007	3,513,840	13,313,491	15,785,146	7,949,154	13,937,407	34,018,235	35,117,381
Raw material inventory	(9,642,371)	(1,484,189)	(4,333,674)	(3,246,649)	(1,721,964)	(3,831,147)	(8,880,389)	(6,959,480)	1,851,593	(10,194,061)	48,442,331
Cash provided by operations	(9,642,371)	22,915,038	29,725,365	14,085,301	23,920,932	49,810,752	45,164,163	24,696,522	50,616,890	95,945,033	157,721,839
Financing activities											
Project Loan - principal repayment		(9,060,093)	(10,209,140)	(11,503,914)	(12,962,899)	(14,606,919)	-	-	-	-	-
Working Capital Loan - principal repayment		(5,547,317)	-	-	-	-	-	-	-	-	-
Additions to Project Loan	58,342,965	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	5,547,317	-	-	-	-	-	-	-	-	-	-
Issuance of shares	63,890,281	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	127,780,563	(14,607,410)	(10,209,140)	(11,503,914)	(12,962,899)	(14,606,919)	-	-	-	-	-
Investing activities											
Capital expenditure	(116,685,930)	-	-	-	-	-	-	-	-	-	-
Acquisitions											
Cash (used for) / provided by investing activities	(116,685,930)	-	-	-	-	-	-	-	-	-	-
NET CASH	**1,452,262**	**8,307,628**	**19,516,226**	**2,581,387**	**10,958,034**	**35,203,834**	**45,164,163**	**24,696,522**	**50,616,890**	**95,945,033**	**157,721,839**

12 KEY ASSUMPTIONS

12.1 Operating Cost Assumptions

Table 12: Operating Assumptions

Description	Details
Operational Days Per Year	365
Fumigation Days	15

12.2 Production Cost Assumptions

Table 13: Production Cost Assumptions

Description	Details
Day Old Chick (DOC) Price	Rs. 85
Vaccination Cost per Bird	Rs. 50
Brooding Expenses Per Bird	Rs. 5.08
Transportation Cost per Bird (Rearing to Laying Shed)	Rs. 10
Fumigation Cost	Rs. 1,250,000 per flock
Feed Cost per 50 Kg Bag	Rs. 2,140
Feed Consumption during Rearing	50 gram / Day
Feed Consumption during Laying	95 gram / Day
Electricity and Diesel Cost during Rearing	Rs. 150,000 / Month
Electricity and Diesel Cost during Laying	Rs. 400,000 / Month
Expense Growth Rate	10%

12.3 Revenue Assumptions

Table 14: Revenue Assumptions

Description	Details
No. of Birds per Flock	65,520
Livability	97%
Layer Life	88 Weeks
Rearing	20 Weeks
Laying	68 Weeks
Starter Laying	4 Weeks
Full Laying	64 Weeks
No. of Eggs Laid / Layer / Month (Starter Laying)	21 Eggs
No. of Eggs Laid / Layer / Month (Full Laying)	27 Eggs
Selling Price Per Dozen (Starter Eggs)	Rs. 58

Selling Price Per Dozen (Full Size Eggs)	Rs. 97
Culled Birds Selling Price	Rs. 130
Manure Sales Per Year	Rs. 50,000
Selling Price Growth Rate	10%

12.4 Cash Flow Assumptions

Table 15: Cash Flow Assumptions

Description	Details
Accounts Receivable Cycle	On Cash
Accounts Payable Cycle	On Cash
Raw Material Inventory	30 Days
Depreciation Rate	10%
Amortization Rate	20%

12.5 Financial Assumptions

Table 16: Financial Assumptions

Description	Details
Debt	50%
Equity	50%
Interest Rate on Debt	12%
Debt Tenure	5 Years