

# Poultry Layer Farming

## 1. Introduction

Poultry egg and meat are important sources of high quality proteins, minerals and vitamins to balance the human diet. Commercial layer strains are now available with traits of high egg production and high feed conversion efficiency. Superior germplasm of chicken have been developed by both public and private sectors which met the requirement of Indian Poultry Industry. Depending on the farm-size, layer (for eggs) farming can be main source of family income or can provide income and gainful employment to farmers throughout the year. Poultry manure has high manure value and can be used for increasing yield of all crops.



## 2. Scope for Layer farming and its National Importance

Poultry is one of the fastest growing segments of the agricultural sector in India today. India has emerged on the world map as the 3rd largest egg producer (56 billion eggs) and annual growth rate in egg production approximated 6% per year (Source; Report of the Working Group on AH & dairying, 12th Five Year Plan). The current strength of layers in India is estimated to be 230 million and the annual per-capita availability of eggs has increased from 7 eggs in 1961 to 52 eggs in 2010. However, the present availability is far below the ICMR recommendation of 180 eggs per capita per annum.

In the poultry industry, value added products utilizing poultry eggs, culled birds for human consumption have been developed. However only 6% of the eggs produced in the country are converted into processed egg products mainly for export.

The poultry sector in India has undergone a paradigm shift in structure and operation. This transformation has involved sizable investments in breeding, hatching, rearing and processing. Farmers in India have moved from rearing non-descript birds to rearing hybrids which ensures faster growth, good liveability, excellent feed conversion, high egg production and profits to the rearers. High quality chicks, equipment, vaccines and medicines are now available through both public and private players. Technically and professionally competent guidance is available to the farmers. The managerial practices have improved and disease and mortality incidences are reduced to a great extent. The industry has grown largely due to

the initiative of private enterprises, government intervention, and considerable indigenous poultry genetic capabilities and adequate support from the complementary veterinary health, poultry feed, poultry equipment and poultry processing sectors.

### **3. Financial assistance available from Banks**

Loan from banks with refinance facility from NABARD is available for starting poultry farming. For poultry farming schemes with very large outlays, detailed project reports will have to be prepared. Banks provide financial assistance for the following purposes:

- a. For construction of brooder/grower and layer sheds, feed store, quarters etc.
- b. For purchase of poultry equipment such as feeders, waterers, brooders etc.
- c. For creating infrastructure items for supply of electricity, feed, water etc.
- d. For purchase of day old chicks or ready to lay pullets.
- e. For meeting working capital requirement in respect of feed, medicines and veterinary aid etc. for the first 5 to 6 months (i.e. till the stage of income generation).

For high value projects, the borrowers can utilise the services of NABARD Consultancy Services (NABCONS) who are having wide experience in preparation of Detailed Project Reports.

### **4. Scheme formulation for bank loan**

**4.1** A scheme can be prepared by the beneficiary after consulting local technical persons of State Animal Husbandry / Veterinary department, Poultry Corporation or private commercial hatcheries. If possible, they should also visit the progressive layer farms in the area and discuss the profitability of farming. A good practical training and experience on a layer farm will be highly desirable, before starting a farm.

**4.2** The project should include the following information on technical, financial and managerial aspects in detail.

#### **Technical:**

- a. Land and land development (Location, area, suitability, proximity to road, site map etc.)
- b. Proposed capacity / farm size
- c. Civil structures (sheds, feed mixing unit, egg room, godown / store room, office quarters, staff room etc.)

- d. Equipments, Plant & Machinery – (Feeder, waterer, cages, feed grinder & mixer, Deep freezer, vaccinator, debeaker etc.)
- e. Housing (capacity, Type- Deep litter / Cage, Area required, system of housing (1+2, 1+3, 1+1+2 etc.)
- f. Chicks – (Strain, number of birds / batch strength, source of chicks, vaccination of chicks etc.)
- g. Feeding (Feed requirement, source of feed, type of feed – chick, grower and layer mash, price of feed etc.)
- h. Availability of utilities – Water, power & fuel
- i. Veterinary aid and transportation arrangements
- j. Production parameters (Egg production, Feed efficiency - FCR, Mortality etc.)
- k. Flock projection chart
- l. Marketing (Marketing of eggs / culled birds and other products / by-products – place of marketing, basis of payment (kg or no.), price per unit etc.)

**Financial:**

- a. Project cost - capital (land, building, chicks, plant and machinery etc.) and recurring costs
- b. Funding pattern (Margin contribution, bank loan, etc.)
- c. Techno-Economic assumptions
- d. Income – expenditure statement
- e. Cash flow analysis showing financial indicators (IRR, NPW, BCR and DSCR)
- f. Analysis of ratios (DER, ROCE, current ratio, etc.)
- g. Repayment schedule indicating repayment of principal and payment of interest

**Managerial:**

Borrower's profile

- a. Individual/Partnership/ Company/Corporation/ Co-operative Society/Others
- b. Capability in managing the proposed business
- c. Experience in the proposed activity or others
- d. Financial soundness
- e. Technical/Other special qualifications
- f. Technical/Managerial Staff and adequacy thereof

**Others:**

- a. Name of the financing bank branch

- b. Training facilities
- c. Assistance available from State / Central Government
- d. Regulatory clearances, if any etc.

## **5. Appraisal of the project**

The project so formulated considering the above mentioned aspects should be submitted to the nearest branch of the bank for availing credit facility for establishment of the layer farm. The bank will then examine the project for its technical feasibility, financial viability and bankability.

## **6. Sanction of Bank loan and its disbursement**

After ensuring technical feasibility and financial viability, the loan is sanctioned by the bank. The loan is disbursed in stages viz., construction of sheds / other civil structures, purchase of equipment and machinery, recurring cost on purchase of chicks, feeds, medicines, etc. The end use of the loan is verified and constant follow up / monitoring is done by the bank.

## **7. Lending terms - General:**

### **7.1 Outlay:**

Outlay of the project depends on the local conditions, unit size and the investment components included in the project. Prevailing market prices / cost may be considered to arrive at the outlay.

### **7.2 Margin Money:**

Margin depends on the category of the borrowers and may range from 10% to 25%.

### **7.3 Interest Rate:**

Banks are free to decide the interest rates within overall RBI guidelines. However, for working out financial viability and bankability of model project, the rate of interest is assumed at 12.50% p.a.

### **7.4 Security:**

Security will be as per RBI / NABARD guidelines issued from time to time.

### **7.5 Repayment period of loan**

Repayment period depends upon the gross surplus from the project. The loan will be repaid in suitable monthly/quarterly installments usually within a period of seven to nine years with first year as grace period.

### **7.6 Insurance**

The birds and other assets (poultry sheds, equipment) may be insured. Wherever necessary, risk/mortality fund may be considered in lieu of insurance.

A model project with 20000 layers (1:2 cage system) is given below. This is indicative and the applicable input and output costs as also the parameters observed at the field level may be incorporated.

### A. Project Cost

<b>I. Capital Cost</b>	<b>Amount Rs.</b>
Construction of brooder cum grower house	2000000
Construction of layer house	3400000
Purchase of brooder cum grower equipment	204000
Purchase of layer equipment	1000000
<b>Total (I)</b>	<b>6604000</b>
<b>II. Recurring Expenditure</b>	
Cost of day old chicks	525000
Cost of feed upto 10% of feed requirement during laying	3588892
Cost of medicines & miscellaneous expenses upto laying	244800
Insurance of sheds and equipment	33350
Insurance of birds	94500
<b>Total (II)</b>	<b>4486543</b>
<b>Grand Total (I+II)</b>	<b>11090543</b>
<b>Margin (25%)</b>	<b>2772636</b>
<b>Bank Loan</b>	<b>8317907</b>

*\*It is assumed that the farmer is having his own necessary arrangements for storage of feed.*

### B. Techno economic parameters

Number of birds	20000
Number of batches	2
Batch strength	10000
Birds purchased per batch	10500
Birds considered for brooding cum growing	10200
Birds considered for laying	10000

Birds considered for culling	9000
Floor space per bird in brooder cum grower house (deep litter system) - sft per bird	1
Floor space per bird in layer shed (cage system) - sft per bird	0.85
Cost of construction of shed (Rs. per sft)	200
Cost of brooder cum grower equipment (Rs. per bird)	20
Cost of cages for layers (Rs. per bird)	50
Cost of day old chick (Rs. per bird)	25
Feed requirement upto laying, i.e. 20 weeks (kg per bird)	8.5
Feed requirement during laying (kg per bird) - 52 weeks laying	40
Cost of chick and grower mash (average price Rs. per kg)	18
Cost of layer mash (Rs.)	16
Medicines, vaccines, labour and misc. charges (upto laying) - 20 weeks (Rs.)	12
Medicines, vaccines, labour and misc. charges (laying) - 52 weeks (Rs.)	20
Insurance per bird (Rs. per bird)	4.5
Insurance of sheds and equipment( Rs. per thousand)	5.05
Egg production per bird (No.)	310
Sale price per egg (Rs.)	3.15
Sale price of culled bird (Rs.)	60
Manure production (chicks) - kg per bird per week	0.2
Manure production (layers) - kg per bird per week	0.5
Sale price of manure (Rs. per ton)	300
Sale price of gunny bags (Rs. per bag)	10
Margin (%)	25
Interest on bank loan (% per annum)	12.50%

*\* Feed quantity capitalized for first two batches- 8.5 kg up to laying and 10% of the feed requirement during the laying period*

### C. Flock chart

Years	1	2	3	4	5	6	7	8	9
No. of batches purchased	2	2	2	2	2	1	2	2	2
No. of brooder cum grower weeks	40	40	34	34	34	38	36	34	34
No. of layer weeks	38	92	98	92	92	92	96	94	92
No. of batches culled	0	2	2	1	2	2	2	1	2

### D. Economics

Item / Year	1	2	3	4	5	6	7	8	9
<b>Income</b>									
Sale of eggs	71359 62	172765 38	184032 69	172765 38	172765 38	172765 38	180276 92	176521 15	172765 38
Sale of culls	0	108000 0	108000 0	540000	108000 0	108000 0	108000 0	540000	108000 0
Sale of gunny bags	62094	117479	120165	114011	114011	116323	119270	116062	114011
Sale of manure	81480	162480	167808	158808	158808	161256	166032	161808	158808
<b>Total</b>	<b>72795 36</b>	<b>186364 97</b>	<b>197712 42</b>	<b>180893 57</b>	<b>186293 57</b>	<b>186341 17</b>	<b>193929 94</b>	<b>184699 86</b>	<b>186293 57</b>
<b>Expenditure</b>									
Cost of day old chicks	52500 0	525000	525000	525000	525000	262500	525000	525000	525000
Feed consumption upto laying (kg)	17340 0	173400	147390	147390	147390	164730	156060	147390	147390
Cost of feed upto laying	31212 00	312120 0	265302 0	265302 0	265302 0	296514 0	280908 0	265302 0	265302 0
Feed consumption during	29230 8	707692	753846	707692	707692	707692	738462	723077	707692

laying (kg)									
Cost of feed during laying	46769 23	113230 77	120615 38	113230 77	113230 77	113230 77	118153 85	115692 31	113230 77
Cost of medicines , labour & misc. expenses upto laying	24480 0	244800	208080	208080	208080	232560	220320	208080	208080
Cost of medicines , labour & misc. expenses during laying	14615 4	353846	376923	353846	353846	353846	369231	361538	353846
Insurance of sheds & equipment	33350	33350	33350	33350	33350	33350	33350	33350	33350
Insurance of birds	94500	94500	94500	94500	94500	47250	94500	94500	94500
<b>Total</b>	<b>88419 27</b>	<b>156957 73</b>	<b>159524 12</b>	<b>151908 73</b>	<b>151908 73</b>	<b>152177 23</b>	<b>158668 66</b>	<b>154447 19</b>	<b>151908 73</b>
<b>Gross Surplus*</b>	<b>29241 51</b>	<b>294072 4</b>	<b>381883 0</b>	<b>289848 4</b>	<b>343848 4</b>	<b>341639 4</b>	<b>352612 8</b>	<b>302526 6</b>	<b>343848 4</b>

*\*A part of recurring expenses for the first year (as detailed at A ii) has been capitalized in the project cost and the same has not been netted out from the expenditure shown during the first year at "C" above. Hence while arriving at the surplus, the recurring expenditure has been included / added*

#### **E. Calculation of NPV, BCR & IRR**

<b>Years</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
Capital Cost	660400 0								
Recurring Expenses	884192 7	156957 73	159524 12	151908 73	151908 73	152177 23	158668 66	154447 19	151908 73
Total Costs	154459 27	156957 73	159524 12	151908 73	151908 73	152177 23	158668 66	154447 19	151908 73
Income	727953 6	186364 97	197712 42	180893 57	186293 57	186341 17	193929 94	184699 86	186293 57



Residual value									255825
Total Benefit	7279536	18636497	19771242	18089357	18629357	18634117	19392994	18469986	21187882
Net Benefit	-8166391	2940724	3818830	2898484	3438484	3416394	3526128	3025266	5997009
Disc cost @ 15%	73937535								
Disc benefit @ 15%	80433923								
<b>NPV</b>	<b>6496388</b>								
<b>BCR</b>	<b>1.09</b>								
<b>IRR</b>	<b>37.93%</b>								

#### F. Repayment Schedule

Year	Loan	Gross surplus	Interest	Principal	Total repayment	Net surplus
1	8317907	2924151	1039738	0	1039738	1884413
2	8317907	2940724	1039738	800000	1839738	1100986
3	7517907	3818830	939738	1600000	2539738	1279092
4	5917907	2898484	739738	900000	1639738	1258746
5	5017907	3438484	627238	1500000	2127238	1311246
6	3517907	3416394	439738	1500000	1939738	1476656
7	2017907	3526128	252238	1700000	1952238	1573890
8	317907	3025266	39738	1675641	1715379	1309887

#### **DISCLAIMER**

*The views expressed in this model project are advisory in nature. NABARD assume no financial liability to anyone using the report for any purpose. The actual cost and returns of projects will have to be taken on a case by case basis considering the specific requirement of projects*