

PROJECT REPORT ON LAYER FARMING



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EXECUTIVE SUMMARY

- Unit going to setup a layer unit in my own land, the expenditure cost included for site development & electrification, shed.
- Total number of eggs/batch is calculated is after 10% mortality from the total number of eggs produced.
- The cost of bird is Rs.40 for five month old hens
- Cost of bird is Rs.20 for one month old chicks...
- Fixed assets are shed, fencing.
- From the total amount of the project
- Own contribution -10%
- Bank loan -90%

ASSUMPTIONS

- Total No. of birds to be accommodated in the unit-2000
- Mortality rate of birds from chicks to adult stage-20%
- $2000 * 20\% = 200 = 1800$
- Total No. of birds /batch after 20% mortality-1800
- Production of eggs /batch in -378000
- Transport cost -4/chick

SALEABLE PRODUCE FROM THE FARM

- Egg, Culled adults, Manure.

CONTENT

CHAPTER NO.	PARTICULARS
I	Highlights of the project A. About the promoter B. Project profile
II	Project description
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V	Economics of the project A. Basics & Presumptions B. Total cost of project C. Means of finance D. Projected profitability E. Financial analysis F. Term loan repayment

B. PROJECT PROFILE (FINANCIAL)

PARAMETERS	VALUES
1.Type of birds	Layer Bird
2.Unit size	20000
3.Product	Egg, culled Bird, Manure
4.Cost of the project	11090543
5.Bank loan	8317907
6.Margin money	2772636
7.Financial indicators	
BCR	1.09
NPW	6496388
DSCR	2.10
IRR	37.93
8.Interest rate(% /annum)	10%
9.Repayment period	6

INTRODUCTION

- Poultry industry is the fastest growing sector in Indian agriculture. Egg being an excellent source of proteins is fast becoming a favorite among urban Indians. India today is the fourth largest egg producer in the world. The layer segment in India is all set to grow and is currently estimated at Rs. 10,000 cores (INR 100 billion). According to the Ministry of Agriculture, India's egg production is estimated at 47.3 billion eggs per annum. Today, with more and more 'eggitarians' on the rise, egg consumption is growing at 8% - 10% annually.
- It is an important source of subsidiary income to small/marginal farmers and agricultural laborers. The manure from birds provides a good source of organic matter for improving soil fertility and crop yields. Since agriculture is mostly seasonal, there is a possibility of finding employment throughout the year for many persons through poultry farming. With the adequate infrastructural facilities especially for egg production has become increasingly popular in and around. The present demand in the area is more. It is increasing day by day & the present strength of the flock in the area is not in a position to meet the growing demand. include increased adoption of integrated farming system, contact farming, awareness of people about diet and health, cost effectiveness of poultry meat compared to other meat, its low fat content, superior protein quality and change of life style of the people are also responsible for spectacular development of Poultry Sector.

OBJECTIVE

- To meet the growing demand of eggs, I intended to establish a layer poultry farm.

COMMERCIAL LAYER FARMING

- A layer is a commercially viable egg producing bird.
- Egg is in great demand because of its nutritive value, easy and quick preparation time and as co-ingredient in wide variety of preparation (house-hold and commercial).
- Hence layer farming has gained importance as the fastest growing industry in livestock sector.

BREED:

1. Commercial Layer Breed:



1. White Leghorn
2. Kalinga Brown
3. Cari Gold
4. Coloured Layer

2. Dual Purpose breed:



1. Kuroiler Dual
2. Rhode Island Red
3. Vanaraja

HOUSING & MANAGEMENT OF LAYERS

- A comfortable, easy to clean and manage, providing sufficient area for the comfort of the bird is essential requisite for getting optimum growth and production in layer farming.

Location of Poultry House:

- 1) Away from residential or crowded areas.
- 2) Accessible to the market for eggs and availability of poultry feeds.
- 3) Well connected with roads for transportation.
- 4) Provision of electricity and clean water.

Requirement of a good housing:

- 1) Well ventilated house.
- 2) House built in east to west direction along the long axis of the house for natural light and sun rays.
- 3) Temperature 20°-25° C.
- 4) Floor Concrete, rain proof, crack-free, rat-proof and easy to clean.
- 5) Roof- should be moist proof, and common roofing materials may be asbestos, fiber sheet, thatch/chitra etc.
- 6) Light- Daylight desirable.
- 7) Sanitation Ease in cleaning and spraying disinfectants / sanitizers.
- 8) Height of the house 3 mts from the foundation to the roof.

Systems of Housing

A. Intensive system (commercial)of housing includes:

1. Cage system:



2. **Deep litter system:** Covering of floor with litter materials like saw-dust, rice-husk, and chopped wheat straw (Depending upon the availability).



For building a Low cost housing system, locally available material like bamboo and mud (for walls) can be used .For layers, cages made out of bamboo can be made to house the bird

3. Back-Yard



MANAGEMENT

Brooding: is the caring of the chicks from day old till 88 weeks of age. It is done in order to prevent chick mortality and achieve maximum growth by providing warmth to the chicks.

Natural Brooding:

Under normal condition, the mother hen provides the chicks with the warmth of the body and looks after the feeding too.

Artificial Brooding:

Under artificial brooding, a temperature controlled artificial brooder is used in place of mother hen.

Following points must be followed when brooding artificially:

BROODING IN DEEP LITTER SYSTEM

Preparation before the arrival of chicks:

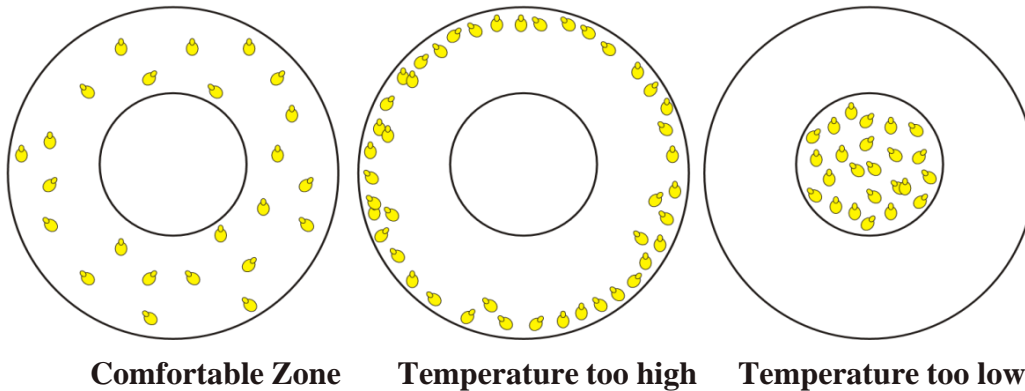
- Sheds should be vacant for at least 3-4 weeks.
- Thoroughly wash and disinfect all the walls , ceilings, floors, crevices and equipment's.
- Clean all the water lines and channels.
- White washes the walls of the house.
- Set heating system 90°-95° F in floor brooding.
- Brooder should be provided in circular fashion.
- Provide clean litter material(2-4 inches deep) inside the brooder guard.

MANAGEMENT OF CHICKS IN THE BROODER (0-8WKS)

- Provide 6 sq inches per chicks under the brooder.
- Brooding should be started at 95° F temperature and be reduced by 5° F every week until 70°F is attained.
- De-breaking may be done at 3rd week of age.
- Provide continuous light during brooding period.
- Provision of clean fresh water.
- Daily inspect the condition of birds for any abnormalities.
- Height of the feeder should be adjusted to the convenience of the chicks.
- Keep a standby in case of emergency electricity failure.

Brooding Temperature:

Patterns of chick distribution under electric brooder-



Management of Growers (9-20 weeks)

- Birds should be transferred to grower house at 9 weeks of age.
- Watered and feeders should be adjusted as per the need of the birds.
- Grower mash should be fed to the birds.
- Keep provision for cross ventilation.
- De-breaking may be done if necessary.
- Vaccinate birds as per schedule.
- Check feed intake and body weight at regular interval.
- Provide light 12 hrs. a day.
- Culling of underdeveloped, diseased type of undesirable pullets as early as possible.

Management of Layers (21-72 weeks)

- Ventilation in the layer house should be adequate without drafts.
- Feed layer mash to the birds.
- Provide laying nest/box to the birds, use clean bedding material in the laying nest.
- Replace nesting material at regular intervals.
- Eggs should be collected 3-4 times a day in deep litter system of housing.
- Treatment may be made against external parasites like ticks, mites and lice periodically.
- Remove dead birds promptly and dispose them properly.
- Light should start from 12 hrs. A day & increased by 15-30 minutes every week until 16 hrs. of light is reached.

FLOOR SPACE REQUIREMENT

	Deep Litter System	Cage System
BROODER HOUSE	0.7 sqft/bird	0.5 sqft/bird
GROWER HOUSE	1 sqft/bird	0.6 sqft/bird
LAYER HOUSE	2 sqft/bird	0.7 sqft/bird

Litter Management:

Total height of the litter should be 5 cms, maintained dry, turned frequently and treated with hydrated lime.



POULTRY FEED

- As feed is the major cost of poultry production and which significantly affects the production performance of the birds. So feed and feeding is the most important consideration for efficient poultry farming. Improper feeding not only affects the production performance but also causes several deficiency diseases.
- Also, the feed needs to have all the nutrients (carbohydrates, protein , fats, minerals & vitamins) in right proportion. In addition some additives to facilitate digestion and growth are often added in reputed commercial feed.

ESTIMATED FEED CONSUMPTION OF LAYERS:

FEEDING SCHEDULE OF LAYER BIRDS AT CHUJACHEN LIVESTOCK FARM

Age in weeks	Weight in grams
1st week	Full feed (Adlibitum)
2nd week	Full feed (Adlibitum)
3rd week	35gm/bird/day
4th week	40gm/bird/day
5th week	43gm/bird/day
6th week	46gm/bird/day
7th week	49gm/bird/day
8th week	52gm/bird/day
9th week	55gm/bird/day
10th week	59gm/bird/day
11th week	62gm/bird/day
12th week	65gm/bird/day
13th week	68gm/bird/day
14th week	71gm/bird/day
15th week	74gm/bird/day
16th week	77gm/bird/day
17th week	80gm/bird/day
18th week	85gm/bird/day
19th week	90gm/bird/day
20th week	95gm/bird/day
21st week	108gm/bird/day
22nd week	116gm/bird/day
23rd week	125gm/bird/day

EFFECTIVE MICRO-ORGANISM LIQUID (E.M.)APPLICATION IN LAYER PRODUCTION

- *E.M. Is a brown concentrated liquid produced from the cultivation of 80 strains of beneficial micro-organisms collected from natural environment of India.*



Advantages of E.M. Technology in Livestock Production:

- *Reduces cost inputs more efficiently.*
- *Improves egg production.*
- *Clean shed, less flies, ticks and less disease incidence. Maintains better health condition of birds.*

E.M. solution as additive in drinking water on daily basis :

Age of bird(day)	E.M. Solution
01- 14 days	1 ml / liter of water
15 onwards	0.5 ml / liter of water

Caution:

E.M. Solution should not be mixed with anti-biotic, chlorinated water / any disinfectants.

SOME OF THE COMMON DISEASES AFFECTING LAYERS ARE AS FOLLOWS-

Layers are affected by different diseases which may be caused by virus, bacteria , fungi etc.

A - Viral-

1. Ranikhet/New Castle Disease Symptoms:

- Affects all the birds of the farm.
- Difficulty in breathing.
- Nasal discharge.
- Anorexia
- Greenish diarrhoea.

Prevention: *early vaccination with F1 followed by R₂B vaccines.*

2. Marek's Disease Symptoms:

- Affects all the birds
- Droopy wings, lameness, paralysis.
- 60- 70% mortality

Treatment : No treatment, only early vaccination.

B - Bacterial Diseases

1. Salmonellisis) Symptoms:

- Chalky w hite diarrhoea.
- Sudden death.
- Depression and loss of weight.

Treatment:

- I. Use effective antibiotic (contact nearest veterinary center).
- ii. Recovered birds act as a source of disease and thus better to cull.

2. Colybacillosis Symptoms:

- Affects all age groups.
- Diarrhoea.
- Dizziness.
- Swelling of joints.
- Oedematous comb and wattle.
- Mortality rate - 90%.

Treatment: Antimicrobials (contact nearest veterinary center).

3. Fungal Diseases-

1. Brooder pneumonia / aspergillosis Symptoms:

- Affects chicks.
- High mortality.
- Respiratory problem.
- Swollen eye and head.

Treatment: Use antifungal (contact nearest veterinary center).

4. Helminthic Diseases Symptoms:

- Affects mostly layer birds.
- In appetence.
- Poor body growth.
- Ruffled feather.
- Diarrhoea.

Treatment: Use anthelmintic every two months (contact nearest veterinary center).

5. Protozoan Diseases1) Coccidiosis Symptoms:

- Decrease in egg production.
- Bloody diarrhoea.
- High mortality rate.

Treatment: *Proper management and Use anti-coccidiosis (contact nearest veterinary center).*

VACCINATION SCHEDULE

Disease	Age
Marek's 1 st day	(generally given in hatchery) 0.2ml s/c
Ranikhet	3-4 th day (f-strain)
Ranikhet	5-6 th wk (f-strain)
Ranikhet	10-12 th wk (R2B)
Fowl Pox	3 rd wk P.P.V.L.
Fowl Pox	8 th wk (P.P.C.E.D.L.)
Gumboro / IBD	15 th -18 th day (on advice by vet)

BIO-SECURITY MEASURES IN A LAYER FARM

Bio-security is a practice designed to prevent the spread of disease onto our farm.

Bio-security has three major components:

1. Isolation.
2. Traffic Control.
3. Sanitation.

Bio-security Measures

- Fencing.
- Keep visitors to a minimum.
- Limit visits to other poultry farms.
- Keep all animals and wild birds out of poultry houses.
- Practice sound rodent and pest control program.
- Inspect flocks daily and recognize disease symptoms.
- Good ventilation and relatively dry litter.
- Keep areas around houses and feed bins clean.
- No exchange of feed and equipment's.
- Disinfection and sanitization of poultry house & equipment's.

MARKET ANALYSIS

- India is the third-largest egg producer after China and USA. The overall global demand for eggs is growing, more in India. With rapidly changing lifestyles, affluent culture, and a conscious need for general wellness, Indian consumers are now opting for a more protein-rich diet. The changing trends are definitely a boon for the layer sector in India.
- Today, India's per capita egg consumption is at 41 eggs per annum. Over the last couple of years, the per capita consumption of eggs has increased at an aggregate of 4% with a majority consumption recorded in the urban areas. Efforts to promote egg consumption are in place by layer farming community in India to achieve 180 eggs per annum in the coming years. Keeping this target in mind, the requirement for production is estimated at 18,000 cores (180 billion) eggs, while the current rate is capable of achieving only 46.2 billion eggs. This provides for a huge opportunity to tap into. With rapid urbanization, and increasing demand from the present 250 million economically strong, consumer market base, the future is only bright for the layer sector in India.
- Affluent lifestyles and rapid development in the retail and food service industries is expected to fuel the growth as targeted by The National Committee on Human Nutrition in India. Adding to this is the health conscious Indian shifting from a carbohydrate to a protein-rich diet.
- In addition, the Indian consumers' preference is increasing for clean, safe, hygienic nutritious and properly packed, labeled and presentable food products including eggs. Introduction of modern state-of-the-art technology in processing, packaging, labeling, preservation of eggs is required to improve 'quality' for domestic and export markets. With economic liberalization and free trade under WTO, the domestic products have to maintain 'quality' to face the stiff competition from imported foreign poultry food products. Also, the demand for branded or specialty eggs is fast growing at an estimated rate of 40 – 50% per annum.

EXTENSION ACTIVITIES

- Starting a Poultry farming business requires planning and preparation. Before starting a Poultry farm the entrepreneurs/ farmers are generally advised to undergo training. They can contact Local Animal Husbandry Department staffs/Veterinary College/agriculture University etc. for the purpose. However availability of training facilities & resources are inadequate.
- Hence I will provide training on Poultry farming to farmers both onsite and offsite. During training program special thrust feed management & birds health (medications and vaccinations used) & kind of records to be kept in the farm will be also given
- For the farmers of nearby locality, visits will be arranged on my poultry farm & they will be educated on scientific lines regarding various aspects of poultry farm management. It will help them to improve their knowledge and skill regarding scientific Poultry farming practices so as to enable them to adopt the same
- Consultancy will be provided for setting up of model units of poultry farm.

- I will take Initiatives to strengthen linkages between State Departments, Poultry Development agencies, NGO's and farmers.
- For farmers who have decided to avail loan from bank for Poultry farming, assistance will be provided to prepare their bankable project report.
- For the marketing of poultry birds, farmers will be provided necessary support & guidance.
- Visits of Poultry farmers will be arranged to Poultry exhibitions with the prime objective of exposing them the technological innovations.

SWOT ANALYSIS

Strengths:

- Poultry has the potential to meet the protein requirements of a nation where malnutrition is rampant- since both eggs/broilers are a good source of protein.
- Helps to augment the income of the rural masses. Thus improve the socio-economic status of rural population.
- Poultry is one of the most efficient converters of plant products / waste into edible food that can in some measure tackle the problem of malnutrition especially in a country like India.
- Unlike other meat (beef, pork) which have religious taboos-chicken is widely accepted in India and is cheaper than goat meat.
- Poultry litter has high manure value and can be used in agriculture activities.
- It has tremendous potential to create non – farm employment and check migration from rural to urban areas.
- Generates relatively quick returns with low investment requirements.

Opportunities:

- Present per capita unlike other meat (beef, pork) which have religious taboos-chicken is widely accepted in India and is cheaper than goat meat. Consumption in India is increasing day by day, therefore there is large scope for poultry farming.
- Besides this, India has also great potential to exploit the international market.
- The increasing awareness of the need for balanced nutrition has led to changes in the eating habits with vegetarians accepting eggs as a part of their diet compared to all other

Weakness

- Poultry farming is labor intensive.
- A peculiar feature of the poultry industry is that it is highly fragmented

- Poor transport, infrastructure and lack of cold chain facilities currently limit the feasibility of handling significant volumes of chilled or frozen products.
- Low growing charges coupled with the cost of making investments in the infrastructure such as sheds, feeders, breeders, heating and cooling systems result in a low income for farmers.
- The stringent mortality norms (only a 5% mortality is permitted in most integration contracts-else the farmer gets penalized and is offered a lower rate) leaves the farmers in a vulnerable position and with no avenue to voice their grievances.

Threats

- Natural calamities
- If adequate health precautions are not taken infectious/ contagious diseases can be spread. The recent avian flu has spread a wave of panic across the globe. The other aspects that have dragged the poultry industry are the recent SARS and Ebola and also the older diseases like tuberculosis and malaria.
- Shortage in major feed ingredient i.e., maize, which constitutes more than 50 percent of feed rations. Therefore, even a small increase in costs can wipe out the profits.

ECONOMICS OF THE PROJECTS

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

I. Capital Cost	Amount Rs.
Construction of brooder cum grower house	2000000
Construction of layer house	3400000
Purchase of brooder cum grower equipment	204000
Purchase of layer equipment	1000000
Total (I)	6604000
II. Recurring Expenditure	
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
Total (II)	4486543
Grand Total (I+II)	11090543
Margin (25%)	2772636
Bank Loan	8317907

**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
Income									
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
Total	72795 36	186364 97	197712 42	180893 57	186293 57	186341 17	193929 94	184699 86	186293 57
Expenditure									
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
Total	88419 27	156957 73	159524 12	151908 73	151908 73	152177 23	158668 66	154447 19	151908 73
Gross Surplus*	29241 51	294072 4	381883 0	289848 4	343848 4	341639 4	352612 8	302526 6	343848 4

**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

Years	1	2	3	4	5	6	7	8	9
Capital Cost	660400								
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									2558525
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								
NPV	6496388								
BCR	1.09								
IRR	37.93%								

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

Thank you!