

Promotion of Backyard Poultry in clusters

Introduction: Backyard poultry is defined as small-scale rearing of poultry birds (chicken) by womenfolk in poor households for dietary improvement, cash income, investment and security against risk. Here, the poultry birds may range freely in the household compound and find much of their food, get additional amounts from the household. The birds are fed with locally available feed sources mostly household and farm by-products. Backyard poultry is rarely the sole means of livelihood for a family but is



one of the numbers of integrated and complementary farming activities contributing to the overall well-being of the household. It generates income from the sale of poultry birds and eggs. Eggs can provide a regular, albeit small, income while the sale of live birds provides a more flexible source of cash. Occasional consumption of chicken meat and egg offers a valuable source of protein in the household diet. Poultry also plays an essential socio-cultural role in many societies. Backyard poultry is the smallest livestock investment a rural household can make.

Objective: The objectives of backyard poultry may be any or more of the following:

- I. Income generation only.
- II. Income and home consumption;
- III. Home consumption and cultural reasons
- IV. Home consumption only

Production Systems: Backyard poultry is kept under a wide range of conditions, which can be classified as mentioned below:

- Free-range extensive
- Backyard

Free-Range Extensive: Under free-range conditions, the birds are not confined and can scavenge for food over a wide area. Rudimentary night shelters may be provided, and these may or may not be used. The birds may roost outside, usually in trees, and nest in the bush. The flock contains birds of different species and varying ages. In free-range production systems, non-descript native breeds are usually reared. These birds possess genes that are well adapted to local conditions, that is well resistant to diseases and stress conditions, but their production performance is low (for example, they lay about 40-60 brown eggs per year).

Backyard Poultry: In this system, poultry is housed at night, but allowed free-range during the day in and around the house / farm. They are usually fed a handful of grains / farm by-products in the morning and evening to supplement scavenging. Apart from local breeds, indigenous pure breeds such as *Kadakhnath*, *Aseel*, *naked necks*, etc. are also raised in backyard production systems and are relatively well resistant to diseases. Pure breeds are reasonably productive breeds and are raised because they fetch a higher market price than local birds (the meat is about better texture and the eggs are tastier) as well as for socio-

cultural reasons like cockfights. Hybrid varieties like *Kurolier* and *Vanraja* etc are also grown as backyard poultry and are more productive in terms of egg production than pure breeds.

Comparative analysis (commercial/ backyard; exotic / indigenous breeds)

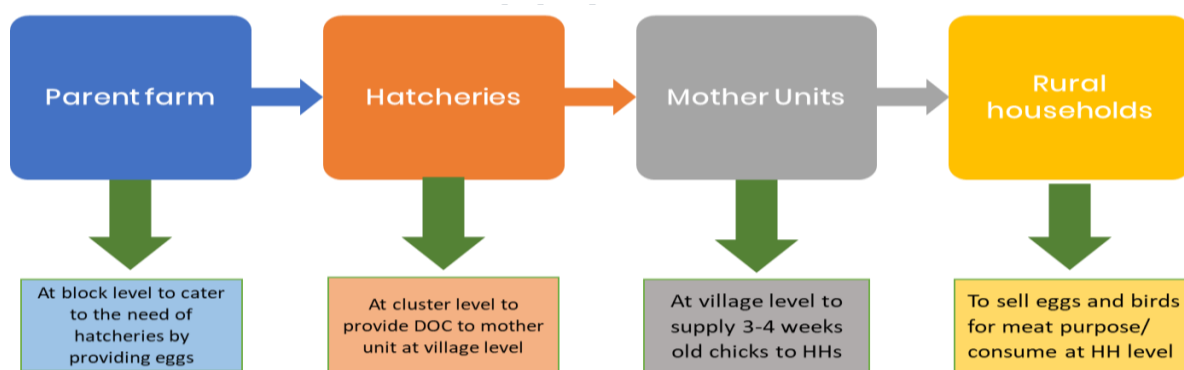
- In backyard poultry production systems, investment in non-descript and indigenous birds, such as Aseel and Kadaknath, provide a higher return than investment in exotic ones because of the high cost of feed of exotic breeds (Not excellent scavengers) and the lower market price of exotic meat and eggs.
- In case of commercial farming with exotic breed the larger the flock size, the smaller the return on investments and the profit per bird, most likely because of the growing feed and animal health costs, which are minimal if anyone is in a backyard poultry farming system. Backyard and small-scale poultry farms with indigenous birds are viable enterprises only as far as the scavenging base is efficient to feed the birds.
- Keeping a few exotic birds makes little economic sense because it is more profitable to raise a few non-descript or indigenous breeds of birds that can thrive almost on their own. At the same time, when the scavenging base is limited, it is better to keep just one or a few local birds rather than a flock of saying local hens because the cost of additional feed will be higher than the returns from the hens.

Backyard poultry intervention in Livelihood Cluster:

Backyard system: Backyard poultry is a vital livelihood intervention for poor rural households, including landless or small landholders. It is more suited for poor households as it requires a low level of investment and skill. Under this system, the pure indigenous breed/ hybrid varieties are promoted as a source of livelihood for the poor. The system consists of the following supply chain:

Supply chain system under backyard poultry: The functional smallholder supply chain can be established to supply chicks/pullets to small rural households even in the remote area through “mother units.” The units which raise the birds for 3-4 weeks and sell the grown-up birds to the rural households. There are some critical element/Hybrid varieties in such a supply chain:

A typical supply chain under the backyard poultry system: The supply chain can be represented as below:



The above model can be explained in a tabular form also for better understanding:

LH services	Service area	Particulars	Ownership
Parent farm	Block	At parent farm pullet and cockerels are kept for supplying eggs to hatcheries.	An individual entrepreneur at the block level
Hatcheries	Cluster	At cluster level hatcheries are units for supplying day-old chicks to the mother unit	Producers Group at cluster level attached with LSC / Individual entrepreneur / Pashu Sakhi can be promoted.
Mother unit	Village	The existence of a small scale "mother unit" spread at the village level serves as a brooding unit where DOCs are kept for 3-4 weeks under good heat and light conditions and are appropriately fed and vaccinated. This is critical because after three weeks the brooded chicks weigh around 250 grams and can live and thrive in the open range, scavenging rearing system	Individual entrepreneur / Pashu Sakhi

Economics: An indicative economics has been calculated based on the experiences of Jharkhand SRLM for each of the above.

Parent farm: For a 960 birds' capacity parent farm unit for backyard poultry, an initial investment of about Rs 7.3 lac will be required. In addition to this for a 55 weeks' cycle a recurring cost of about Rs 14 lac will be required. This will generate a net income of about Rs 3.3 lac after depreciation and interest payment. The details are in annexure-1.

Economics of Mini hatchery (2080 eggs): The economics of a hatchery of 2080 eggs capacity under backyard poultry system found that an estimated Rs 6 lac initial investment will be required. In addition to this an operational cost Rs 5.6 lac per year will be required and this will generate a net income of Rs 77 thousand per annum. The details of the economics is shown in annexure-2.

Economics of a Mother unit/ Hardening centre of Chicks (Unit: 2000 birds): The economics of a mother unit of 2000 birds capacity under backyard poultry system found that an estimated Rs 2 lac initial investment will be required. In addition to this an operational cost Rs 0.94 lac per cycle (1 month) will be required. In a year 12 cycles are possible that will generate a net income of Rs 1.2 lac after deduction of depreciation. The details of the economics is shown in annexure-3

Income at HH level: A total of 50 birds can be reared per household, and per year six cycles can be completed. The economics of a backyard poultry household mother unit of 50 birds capacity under backyard poultry system found that with a nominal initial investment, the cost of production per bird will come Rs 171 (Vanaraj / Kroiler) and Rs 129 (indigenous breed) and the activity generates a net annual income of Rs 36,000 (Vanaraj / Kroiler) and Rs 55,000 (indigenous breed). The details of the economics is shown in annexure-4.

It is pertinent to emphasise here that the cost of investment can be minimised with local customization (without compromising the science behind it) and the uses of locally available materials, own contribution (labour and material).

Source of Funds: The source of funding for the setting up of Parent farm, Hatchery and mother unit can be (a) own contribution, (b) CIF loan (c) Bank linkages and (d) Convergence

with DAHD schemes (state government and central government). Possible convergence opportunities has been shown below:

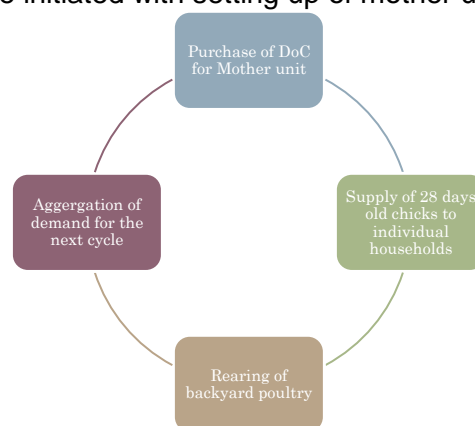
Purpose	Extend support through the Program / Scheme	Benefits and targeted segment
Promotion of mother unit, hatchery and parent farm for poultry	Sub-Mission on rural poultry entrepreneurship program	Support the identified PGs/SHGs/Mahila Kisan /CRPs identified by SRLM for the program. Under this scheme, the beneficiary is entitled to a 50% subsidy of the project cost
Meat Processing	Animal Husbandry Infrastructure Development Fund	Under this activity, private companies, individual private entrepreneurs, FPOs, Section 8 companies, can take 90% loan from the scheduled bank for the establishment of small, medium, large integrated mechanized meat processing plant for sheep, goat, pig and poultry for hygienic handling, establishment of value addition chain for the manufacturing of meat products, transportation of meat through cold chain establishment.

The Central Government will provide interest subvention up to 3% (including 0.6% of the corpus handling and risk management charge by the market borrower). The beneficiary will get a two-year moratorium during which the beneficiary not to re-pay any loan amount. The entire loan amount needs to be paid within five years after the moratorium period.

Besides, under the National Livestock Program of Animal Husbandry Department there is provision of providing loan for the setting up of Parent farm, Hatchery and Mother Unit which is further subsidized by the government

Intervention strategy: Initially, the intervention can be initiated with setting up of mother unit in the village through Pashu sakhi / Entrepreneur with day old chicks out sourced from different agencies. The chicks depending upon the availability and local demand may vary from indigenous breeds to hybrid varieties (*Vanraja, Kuroiler* etc.). The supply of other inputs like medicines vaccine can also be ensured through various agencies if purchased in bulk.

Thus, the flow chart of the model will be as follows:



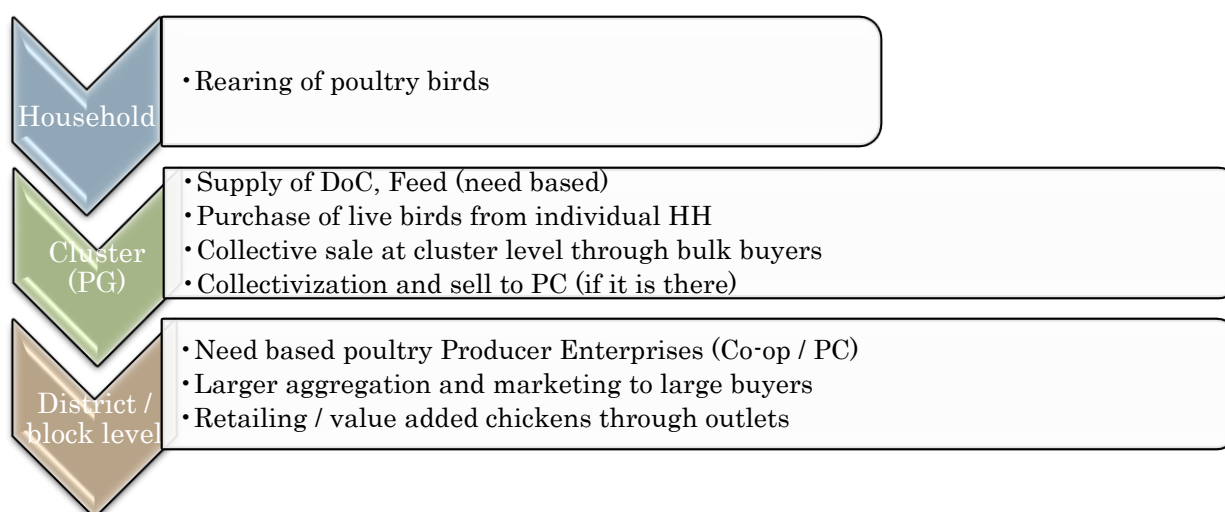
LH services	Service area	Particulars	Ownership
Mother unit	Village	<p>The existence of a small scale “mother unit” established at the village level serves as a brooding unit where DOCs are kept for 3-4 weeks under good heat and light conditions and are appropriately fed and vaccinated. This is critical because after three weeks the brooded chicks weigh around 250 grams which can live and thrive in the open range, scavenging rearing system.</p> <p>The mother unit owner will also provide the back end supports to the poultry rearers in terms of vaccination, general management to show-case his/er mother unit. A number of such mother units in each village in a cluster will create healthy competition among the mother units.</p>	Individual entrepreneur / Pashu Sakhi

Role of Pashu Sakhi: The role of Pashu sakhi is of significant importance as they have multi-fold jobs of (a) training the farmers, (b) vaccinating and deworming the poultry and also of (c) setting up of poultry mother unit which will enable them to have sustainable means of livelihoods.

Training and Capacity Building: The training and capacity building of the mother unit owner can be done through:

- National Resource Persons
- Supplier of Day Old Chicks
- Hand holding can be done by CRP rounds by the experienced CRPs/PRPs of some pioneer states like Jharkhand, Maharashtra where they have been practicing it for quite some times.

Marketing: Marketing is not an issue for backyard poultry producers. Non-descript and indigenous birds have a ready market available locally, and both live birds and eggs receive a higher price than exotic eggs and broilers.



For improved breeds like Vanraja and Kuroiler, market availability is an issue if production suddenly increases in a particular geography. Thus the following marketing channel is proposed.

Risks and its mitigation: Disease outbreak, lack of access to medication, vaccines, supply of quality chicks, lack of quality feed, transparent method of poultry bird purchase are some of the risk situations in backyard farming. Creation of strong Pashu Sakhi network, promotion of the activity in cluster, establishment of LSC, collective marketing are the risk mitigation strategies proposed. For disease control, the focus should be on timely vaccination and hygienic practices through proper training and capacity building of rearers through Pashu Sakhi network.

Annexure-1 (Economics of a Mother Unit – 960 bird capacity)

Sl	Particulars	Unit description	Unit cost (Rs)	No of units	Cost (Rs)
A.	Fixed cost				
A1.	Poultry Shed	Sq. Ft	300	2,400	720,000
A2.	Drinker, Feeder, Nest and other accessories	Lump sum	510	19.2	9,792
	Total A				729,792
B.	Recurring cost				
B1.	Cost of 16-week old pullets & Cockerel	No.	300	960	288,000
B2.	Feed cost (for 16 to 19 weeks)	Kg	30	2,419	72,576
	Feed cost (for 20 weeks to 72-week age)	Kg	25	42,739	1,068,480
B3.	Vaccination, Deworming & other Medicine	Lump sum	50	960	48,000
	Packaging & transportation	No.	0.5	148,400	74,200
	Labour cost	Month	13	10,000	130,000
	Total B				1,393,256
C.	Other costs				
C1.	Depreciation on the fixed cost	10% per annum			72,979
	Interest on Capital cost	10% per annum			109,517
	Total C				182,496
	Total recurring cost / annum (B+C)				15,75,752
D	Receipts				
D1.	Sale of eggs	No.	12	148,400	1,780,800
	Sale of culled birds	Kg	130	960	124,800
	Gross Receipts				1,905,600
	Gross profit per cycle (D-B)				512,344
	Net profit after deduction of depreciation and interest				329,848
	Return on Investment				15.54%
	Egg production in 25 days			10,000	
	Initial investment required	Per unit			10,95,168

Source: Jharkhand SRLM

Annexure-2 (Economics of a Mini Hatchery – 2080 eggs capacity)

Particulars	Unit	No. of Units	Year 1		
			Unit Cost (INR)	Value (INR)	
Capital Expenditure					
Hatchery unit with other machinery & accessories (2080 eggs)	Number	1	200,000	200,000	
2 KVA inverter with solar support	Number	1	150,000	150,000	
Platform & Platform & another establishment	Number	1	50,000	50,000	
Construction of Building for Hatchery (20X10 Sq. ft)	Number	200	1,000	200,000	
	Total capital expenditure			6,00,000	
Output (Revenue)					
	Sale of chicks	Number	23,296	30.0	6,98,880
Total Revenue					6,98,880
Expenditure					
1. HR Costs					
	Hatchery Operator	Person months	12	7,000	84,000
	Hatchery assistant	Person months	12	4,000	48,000
2. Recurring Costs					
	Rent/ Maintenance	Months	12	2,000	24,000
	Electricity	Months	12	1,000	12,000
	Purchase of eggs	Number	29,120	12.0	3,49,440
	Transportation	Number	23,296	1.5	34,944
	Cartoon for packaging	Number	466	20.0	9,318
	Total Expenditure Costs				5,61,702
Gross Profit					1,37,178
	Depreciation (machinery/equipment/tools)				60,000
Net Profit					77,178

Source: Jharkhand SRLM

Annexure-3 (Economics of a Mother Unit – 2000 Chicks)

Sr. No.	Particulars	Unit description	Unit Cost	No. of Units	Total Cost
A.	Fixed cost				
A1.	New building construction	Sq. Ft	300	667	2,00,000
A2.	Drinker, Feeder and other accessories	Lump sum	180	40	7,200
	Total A				2,07,200
B.	Recurring cost				
B1.	Cost of day-old chicks	No.	30	2,000	60,000
B2.	Feed Cost	Kg	32	500	16,000
B3.	Vaccination & other medicine etc.	Lump sum	1	2,000	2,000
B4.	Cost of In-charge- Mother Unit	Per cycle/ Month	1	7,000	7,000
B5.	Incentive to APS	per bird	5	1,800	9,000
	Total B				94,000
C.	C. Other costs				
C1.	C1. Depreciation on the fixed cost	25% per annum			51,800
	Total C				51,800
	Total cost including depreciation				1,45,800
D	Receipts				
D1.	Sale of 25 days old birds	Kg	60	1,800	108,000
	Gross Receipts				108,000
	Gross profit per cycle (D-B)				14,000
	Gross profit for 1 year	12 cycle in year			168,000
	Net profit after deduction of depreciation				1,16,200

Source: Jharkhand SRLM

Anexure-4 (Economics of 50 Vanaraja / Kuroiler and 50 Kadaknath under backyard poultry system)

Sl	Particulars	Vanaraja/ kuroiler	Indigenous breed
I	Variable cost		
A	Cost of a day-old chicks @Rs. 40/- for Vanaraja and @Rs. 25/- for local chicken	2,000	1,250
II	Cost of feed up to 42 days of age		
A	For Vanaraja/Kuroiler chick 1.2 kg of broiler starter/bird i.e. 60 kg @ Rs 40 per kg	2,400	
B	For local chicks, 10 kg of broken rice @ Rs. 25/- per kg for 50 nos. chicks		1125
ii	Cost of vaccine @ Rs. 1.60/ chick	80	80
C	For Vanaraja chick cost of medicine, feed supplement @ Rs.3.75 per chick	187.5	
D	For the local chicken cost of medicine, feed supplement @ Rs. 2.40 per chicks		120
E	For both the flock (Kuroiler and local) cost of labour @ 20 hrs. / month = 2.5 Man-days x 18 months = 45 man-days x Rs. 150/- per Man-day = Rs. 6750.00	3,375	3,375
	Total variable cost	8042.5	5,950
III	Fixed cost		
A	Land	with farmer	with farmer
B	Low-cost poultry shed made with locally available material	1,000	1,000
	Depreciation	500	500
K	Drinker/ Feeder	Local made	local made
L	Total fixed cost		
M	Total cost/value of production	8,543	6450
N	Cost of production per bird	170.85	129
IV	Income		
A	105 eggs per bird @ Rs 8 each		42,000
B	120 eggs per bird @ Rs. 5 each	30,000	
C	Sale of birds @ Rs 400 per birds		20,000
D	Sale of birds@ Rs 300 per birds	15,000	
E	Total income	45,000	62,000
	Net income	36,458	55,550

Source: *Jharkhand and Bihar SRLM*

Reference:

- I. *Jharkhand SRLM*
- II. *Bihar SRLM*
- III. *Maharashtra SRLM*
- IV. <https://krishijagran.com/featured/backyard-poultry-farming-a-low-input-business-with-high-economic-returns/#:~:text=Backyard%20Poultry%20Farming%3B%20a%20low%20input%20business%20wit>

*h%20high%20economic%20returns,-
Balwinder%20Singh%20Dhillon&text=Rural%20population%20living%20in%20India,of%20rural%
20families%20of%20India*

V. <http://www.fao.org/3/a-y5169e.pdf>

VI. <http://www.sapppp.org/files-repository/smallscalepoultryfarmingandpovertyreductioninsa>