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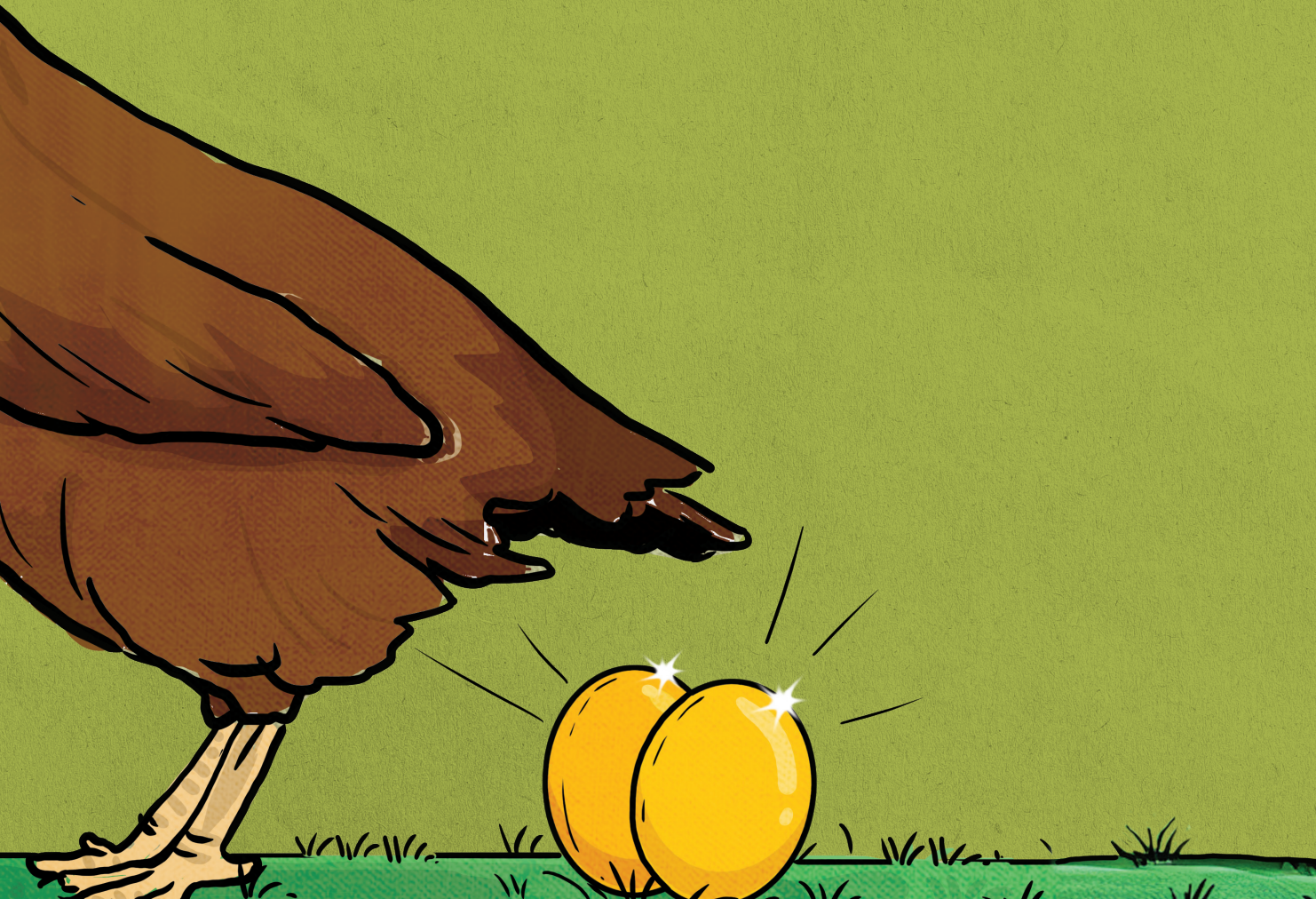

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1. A summary

Backyard and rural farming systems more sustainable than commercial farming systems

Food-animal production sustainability is defined by rearing methods (intensive vs extensive), the breeds used, stocking density and reliance on external inputs. Commercial intensive food-animal systems are fundamentally unsustainable and disease-prone. They rely on high stocking density of non-disease-resilient breeds, necessitating a huge, routine dependence on antibiotics — often medically important, last-resort ones — for growth promotion or non-therapeutic disease prevention. This chemical-intensive approach leads to several profound public health and environmental risks:

- **Antimicrobial resistance (AMR):** Resistant bacteria or residual antibiotics (AMR determinants) are transmitted to humans via the food route. Farm waste further serves as a pathway for the environmental spread of AMR.

- **Disease risk and ecological damage:** Industrial confinement creates potential breeding grounds for resistant pathogens and zoonotic diseases, while being intensive sources of greenhouse gas (GHG) emissions and exerting negative impact on biodiversity.

In contrast, backyard and rural poultry production systems (ranging from 10-15 birds which is adequate for a family's needs to 50-3,000 birds in extensive or shed-based settings) are intrinsically more sustainable. Upscaling these systems offers a long-term solution to address productivity needs while achieving sustainability goals and significant co-benefits across health, economy and environment:

- **Reduced antibiotic use and mitigation of AMR:** The extensive, free-range rearing conditions inherent to these systems are less disease-prone, significantly reducing the need for chemical inputs like antibiotics. This shift ensures safer food with lower chances of residual antibiotics and resistant bacterial pathogens, thereby minimising the spread of AMR determinants into the environment.

- **Improved livelihood and nutrition:** Backyard and rural poultry are vital for rural livelihoods and nutrition. These systems primarily benefit small-holder farmers and rural women. Eggs and meat from resilient breeds often fetch a higher market price due to their chemical-free status, superior taste and nutritional value.

- **Biodiversity conservation and circular economy:** These systems naturally promote biodiversity conservation by relying on native and locally adapted resilient breeds. Furthermore, the utilisation of poultry waste for composting and soil health improvement, supporting vegetable and crop cultivation, and requiring no external commercial feed as the birds forage on the farm, establishes a circular resource use model.

Resilient breeds fundamental to survival, growth and sustainability of backyard and rural poultry

Key advantages of resilient breeds

High adaptability and disease resilience (environmental sustainability): Resilient breeds are naturally suited for extensive, low-impact farming environments, reducing the need for intensive resource management.

- **Adaptation to local conditions:** Many resilient breeds, including Indian native poultry, are grown locally and have higher adaptability to local climatic and environmental variations.

- **Disease resilience:** These breeds are characterised by their disease resilience. This inherent hardiness contrasts with commercial systems, which often require high inputs of medicines and biosecurity measures, and are linked with risks such as zoonoses and pandemics.

Low-input requirement (economic sustainability): Resilient breeds minimise the investment needed for successful rearing, making the systems economically viable for small holders:

- **Minimal investment:** Their requirement for feed, care, and housing does not need much investment compared to the commercial breeds used in intensive industrial settings.

- **Cost-effectiveness and low risk:** Rearing these breeds can be cost-effective and low-risk, and offer good returns on investment.

- **Feed flexibility:** Improved varieties, such as the Kuroiler, are resilient to harsh rural conditions and can thrive on household scraps and waste; they require minimal shelter.

Foundation for small-holder farming and livelihoods: Resilient breeds (both native and improved varieties) form the backbone of small-holder farming systems in rural settings in India**.** This reliance on adaptable breeds allows these systems to offer crucial sustainability benefits:

- **Dual-purpose and nutrition:** Native breeds are often dual-purpose (reared for both meat and eggs). The small-holder rural poultry systems, particularly backyard systems, are sustainable because they offer livelihood and nutrition to rural masses**.**

- **Improved productivity:** Improved varieties address the productivity concerns of native breeds while retaining resilience, boosting sustainability by ensuring better outputs.

Market value and quality: The products of resilient breeds hold an advantage in quality, contributing to their long-term sustainability:

- **Higher market price:** If market access is achieved, the meat and eggs from these resilient breeds can yield a higher market price because they are often chemical free, high in nutritional value, and rich in taste**.**

Promotion of backyard and rural farming — a need to scale up

- **National Livestock Mission (NLM):** This mission promotes the rearing of Low-Input Technology (LIT) birds. It provides a one-time 50 per cent capital subsidy (up to Rs 25 lakh) to entrepreneurs (including SHGs and FPOs) to establish parent farms, hatcheries and brooder-cum-mother units.

- **AICRP on Poultry Breeding (ICAR):** This project focuses on developing location-specific chicken varieties and conserving native germplasm, distributing about 1.18 million (11.8 lakh) chicken germplasm to over 16,000 farmers in 2024.

- **State initiatives:** Many states offer programmes for small and marginal farmers — West Bengal has a scheme that distributes 15 million (1.5 crore) chicks, while Odisha offers 100 per cent subsidy for 50 LIT birds to marginalised farmers.

Gaps and challenges limiting promotion of backyard or rural poultry farming systems

- **Disease risk and mortality:** Farmers often skip timely vaccination (crucial in the first six to eight weeks) due to lack of awareness, resources, cost and poor access/availability. This leads to high disease prevalence and mortality.

- **Infrastructure and brooding:** Small farmers lack the necessary resources and facility for adequate brooding and nutrition during the initial six to eight critical weeks, which contributes to high mortality. Proper infrastructure for biosecurity is also lacking.

- **Access to quality stock:** Farmers in remote areas often rely on local agents and may not receive healthy, quality stock of the right breed or variety. Stock from government sources is cheaper but sometimes perceived as of lower quality than that from private players.

- **Veterinary support:** Distribution centers lack adequate follow-up processes, and there is a limited on-the-ground presence of veterinarians to guide farmers or manage diseases like Ranikhet disease.

- **Market access:** Backyard farmers often struggle to travel to markets to sell small quantities of birds, and there are limited vendors or agents to collect stock at a fair price.

Policy avenues and possibilities

- **Risk reduction via mother units:** The most crucial need is to reduce risk and mortality in the first six to eight weeks. This requires establishing and strengthening mother units that can collect DOCs, provide the necessary brooding, management and vaccination, and keep chicks until they are stable (six to eight weeks) before distributing them to farmers.

- **Ensuring sustainable supply and availability of resilient breeds:**
  - **Public-private partnerships** (**PPPs**) should be explored and encouraged to ensure a continuous supply of locally relevant resilient breeds, thereby addressing the demand-supply gap that government institutions alone cannot meet.
  - Incentives should be given to select farmers to set up their own breeder farms and small incubators, fostering self-sustainability.

- **Strengthen coordinated support, capacity and veterinary guidance:**
  - State governments should ensure access to at least basic essential vaccines.
  - Community Animal Health Workers (CAHWs) or para-vets should be utilised and trained to provide vaccination, basic veterinary treatment, and guidance in areas where professional veterinary supervision is limited.

- **Creating dedicated markets and formal structures:** Support is needed for the creation of dedicated Farmer Producer Organisations (FPOs) and cooperatives for backyard and rural poultry. These organisations will ensure appropriate market access, remunerative pricing, and help farmers source essential inputs like vaccines, feed and subsidised veterinary services.

Examples of successful backyard/rural poultry farming improving farmer livelihood and nutrition

Backyard and rural poultry systems, led by resilient breeds, provide crucial livelihood security and nutritional benefits, especially to rural households. If market access is achieved, the meat and eggs from these resilient breeds can yield a higher market price because they are often chemical-free, nutrient-rich, and better tasting.

There are models that demonstrate successful implementation strategies:

- KeggFarms Kuroiler model, Gurugram, Haryana-generating livelihood across value chain
- Community-led backyard poultry farming initiative supported by Aga Khan Rural Support Programme, Khandwa, Madhya Pradesh
- Central Avian Research Institute (CARI)-supported mother units for farmer's livelihood, Uttar Pradesh and Uttarakhand
- Egger Nurseries providing mother unit support to regional government farms, Kerala
- Economic upliftment of tribal community using improved Rajasri breeds, Telangana
- WASSAN's Backyard Poultry Cluster Programme for Small-Holders
- Giri Gram Takniki Park, an integrated backyard poultry farming model using natural feed

2. Introduction

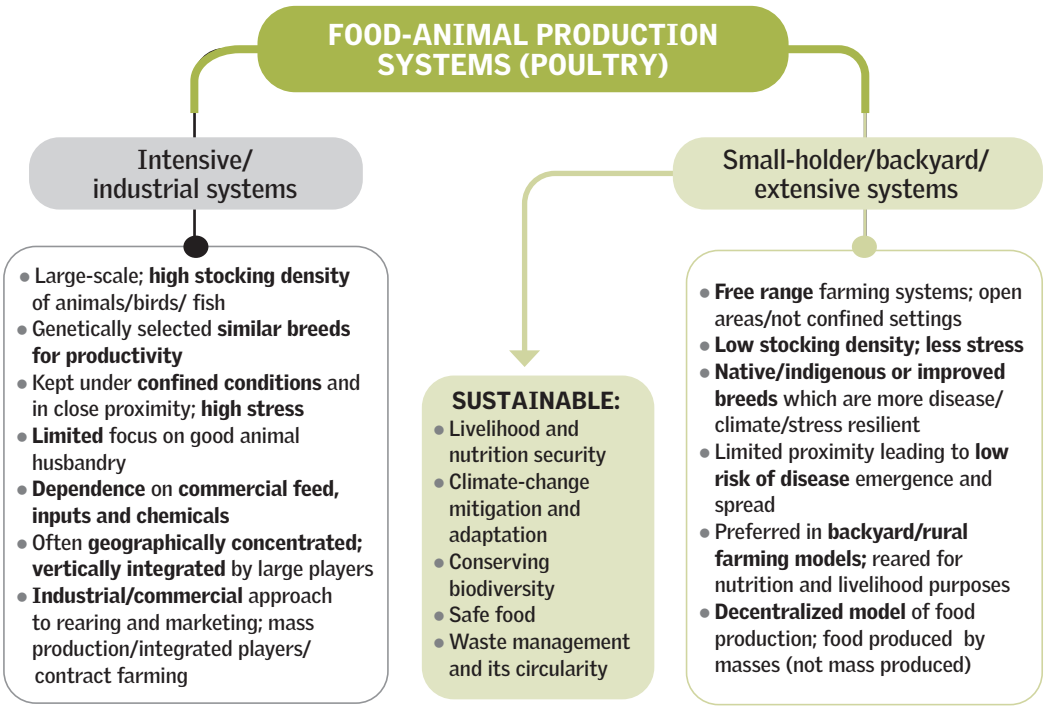
Food-animal production systems such as dairy, poultry and aquaculture can significantly impact environment, ecological health, climate, biodiversity, food safety and food security. Sustainability of such a system depends upon the kind of rearing processes (such as intensive or extensive rearing systems) used to grow food from animals. Each of these systems is characterised by different breeds, use of commercial feed and external inputs like antibiotics, stocking density, management practices etc which determine the impact each of these food systems may have.

Chemical-intensive food-animal rearing systems are unsustainable and disease-prone. This is because these systems are characterised by high stocking density of genetically selected similar — but not disease-resilient — breeds which are kept under confined conditions with limited focus on animal husbandry. As such, there is huge dependence on antibiotics as an easy and economical solution. Apart from therapeutic purposes, antibiotics, in such systems, find routine use for promoting faster growth or preventing diseases despite any clinical signs — which is not real prevention.

Medically important antimicrobials meant for use in humans, including the last-resort ones, have been found to be used in such systems through feed or water. Determinants causing antimicrobial resistance (AMR) such as residual antibiotics or resistant bacteria in poultry products can be transmitted to humans through the food route. Waste from poultry farms is another potential pathway for environmental spread of AMR. Because of the rearing conditions, these industrial systems, therefore, become not just a potential breeding ground for resistant pathogens, zoonotic diseases and pandemics, but also impact biodiversity and are intensive sources of greenhouse gas (GHG) emissions.

In the Indian poultry sector, such misuse and overuse of antibiotics in commercial production settings is well known. However, recognising the importance of this sector with respect to livelihood, nutrition and economy, there is a need to rethink how productivity can be maintained while attaining sustainability. One way is to integrate preventive approaches such as biosecurity, vaccination, alternatives and good farm management in the current intensive systems. But this can only be a short-term approach with limited gains. For example, it may help reduce antibiotic use and misuse, but in the longer term, may not benefit climate, environment, biodiversity conservation, or reduced emergence of zoonoses.

Figure 1: Sustainability of food systems



Source: CSE

The other approach is to upscale the already existing backyard and rural poultry production systems that have long-term benefits as indicated in the paragraphs above. But most importantly, it can help reduce antibiotic use and misuse because the rearing conditions are not disease-prone and there is less need for chemicals like antibiotics. This also means that food will be safe due to lesser chances of residual antibiotics and resistant bacterial pathogens, and there will be less spread of AMR determinants in the environment. In addition, such systems are also more sustainable compared to commercial intensive systems as they reduce the negative impacts of this kind of food production (*see Figure 1: Sustainability of food systems*).

Resilient breeds have a critical role in backyard and rural poultry systems. Many of these, in the case of Indian poultry, are grown locally and have higher adaptability to local climatic and environmental variations. Their need for feed, care and housing does not require much investment for productivity, compared to commercial breeds that are preferred in intensive industrial food production settings. The productivity concerns of resilient native breeds are also addressed

by improved breeds which are not just productive, but also resilient. By virtue of these advantages, both native and improved breeds are a backbone of small-holder farming systems in rural settings in India.

While it is acknowledged that resilient breeds are important for the growth and viability of backyard and rural poultry systems, the existing programmes for propagating such breeds for greater adoption among farmers need more attention; only then can the big opportunity — that backyard and rural systems offer — be leveraged optimally.

3. Indian poultry production systems

The Indian poultry production processes can be broadly understood as three different types of farming systems — backyard, rural and commercial.

Backyard farming entails rearing of 10-15 birds in the backyard, aimed primarily for family nutrition and small supplementary incomes. Rural farming involves 50-100 birds in free-range settings for family nutrition and livelihood, as well as 500-3,000 birds reared in sheds primarily for income generation. Commercial farming is about organised intensive rearing systems with the flock size going up to a lakh (0.1 million) or more.

Each of these systems has different characteristics. But what emerges clearly is that rural and backyard poultry not just offers livelihood and nutrition advantages, it is also more sustainable than commercial systems (*see Figure 2: Poultry production systems in India*).

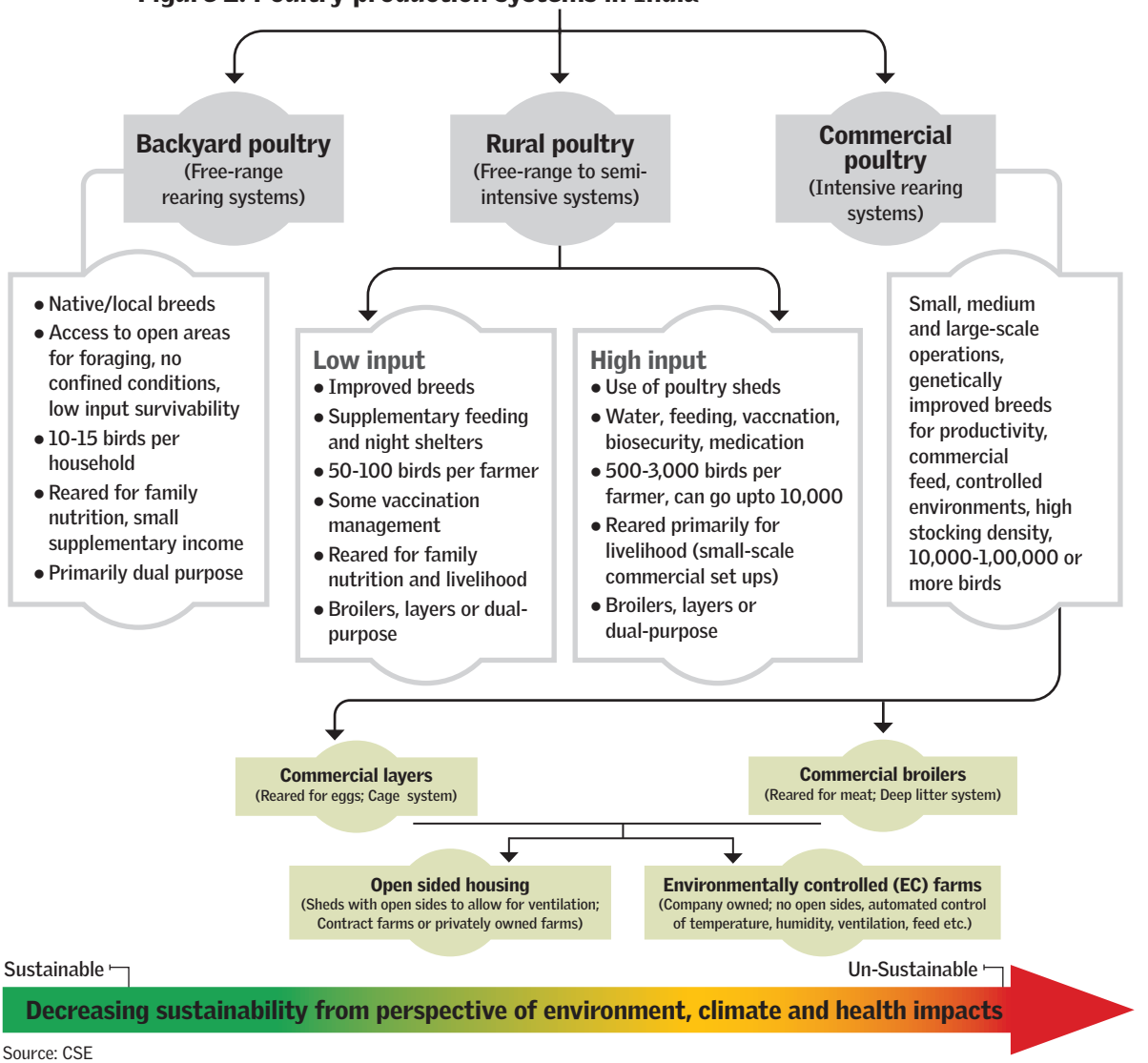
Backyard and rural poultry in India

India's total poultry population — as per the last livestock census of 2019 — was 851.81 million, out of which 95 per cent were fowls (cocks, hens and chicks below five months).[1] Thirty seven per cent (317.07 million) of the total was part of backyard poultry (including rural poultry), which saw about 46 per cent growth from 2012. The remaining — about 535 million – were part of commercial poultry systems.

In 2023-24, over 22 billion eggs were from backyard poultry, which is only 15.4 per cent of the total egg production (142.77 billion) in the country.[2] Ninety three per cent (20.56 billion) of these eggs were from fowls: 68 per cent (15 billion) were from *desi* (native) fowls (<100 eggs produced in a year), and 25 per cent (5.6 billion) were from improved fowls (>100 eggs produced in a year).
The top 10 states collectively producing over 83 per cent of the total number of eggs from backyard poultry (fowls) are:

- West Bengal (7,814.9 million; 48.1 per cent of the state's total egg production)
- Kerala (2,178.5 million; 90.6 per cent of the state's total)
- Maharashtra (1,521.2 million; 19.5 per cent of the total)
- Karnataka (1,339.1 million; 14.2 per cent of the total)
- Tamil Nadu (989 million; 4.4 per cent of the total)

Figure 2: Poultry production systems in India

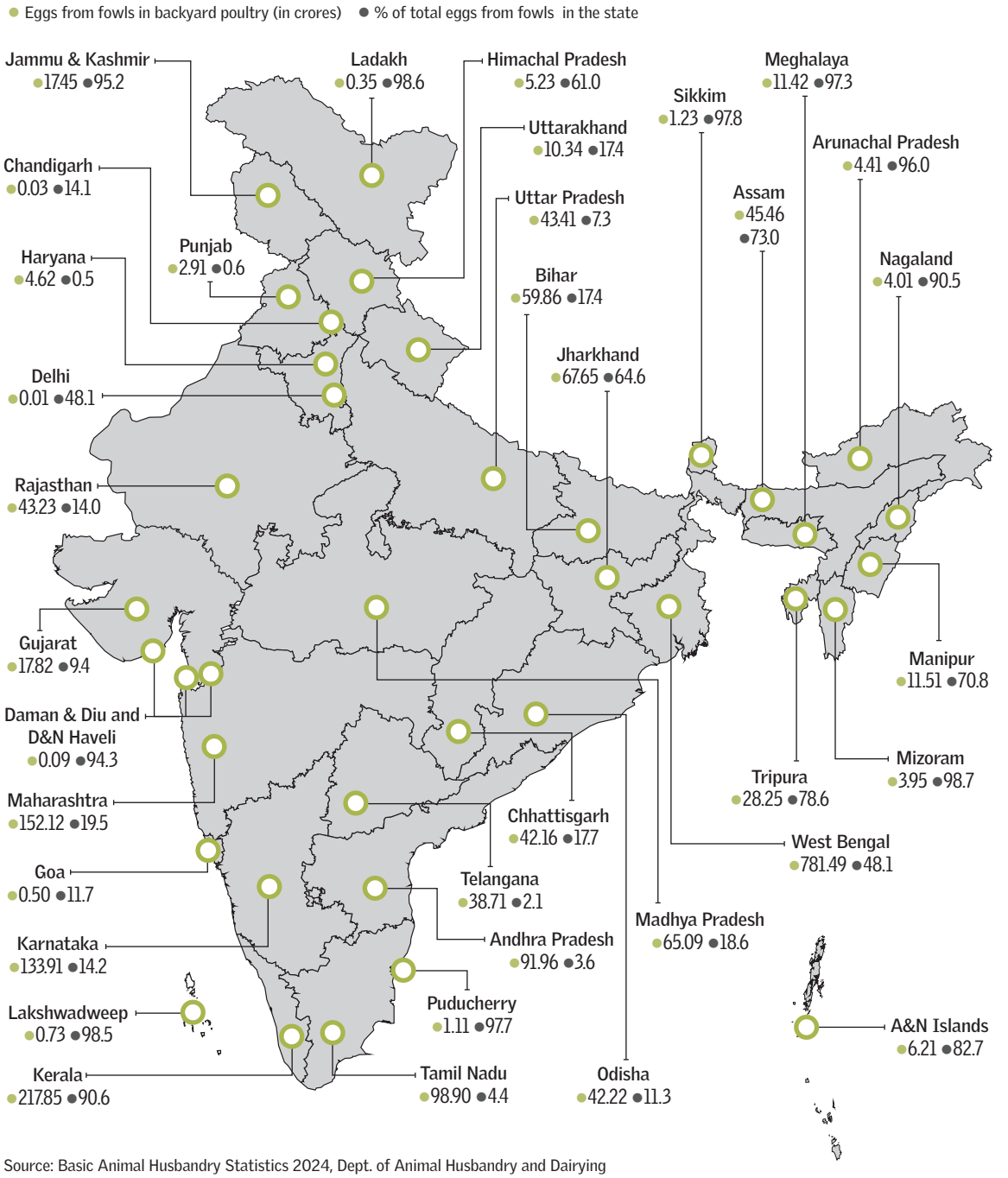


Source: CSE

- Andhra Pradesh (919.6 million; 3.6 per cent of the total)
- Jharkhand (676.5 million; 64.6 per cent of the total)
- Madhya Pradesh (650.9 million; 18.6 per cent of the total)
- Bihar (598.6 million; 17.4 per cent of the total)
- Assam (455.6 million; 73 per cent of the total)

It is clear from above that states like Tamil Nadu and Andhra Pradesh are primarily producing eggs from commercial poultry production systems. On the other hand, states like Kerala and Assam produce a lot of eggs from backyard poultry (*see Map 1: Egg production from backyard poultry (fowls) in states/UTs*).

Map 1: Egg production from backyard poultry (fowls) in states/UTs



Source: Basic Animal Husbandry Statistics 2024, Dept. of Animal Husbandry and Dairying

Other states/UTs which also produce a high proportion of eggs from backyard poultry (fowls) are Jammu & Kashmir, Meghalaya, Arunachal Pradesh, Nagaland, Mizoram, Sikkim, Puducherry, Lakshadweep and Ladakh.

4. Importance of resilient breeds in backyard and rural poultry production systems

Resilient breeds have enabled the survival and growth of backyard and rural poultry production systems, thereby improving livelihood and nutrition of rural households and small-holder farmers. The breeds typically reared in these settings are indigenous/native/*desi* poultry breeds or their improved varieties, characterised by high adaptability to harsher conditions and local climate, disease resilience and survivability in low-input settings. If market access is possible, their eggs and meat can also yield a higher market price as they are often chemical-free, high in nutritional value and rich in taste. Rearing these resilient breeds can be cost-effective, carry low risk and offer good returns on investment.

Native breeds for backyard poultry

Native/indigenous/*desi* breeds are known to have evolved and adapted to local environmental conditions through many generations. Native to a particular region or location across different parts of the country, these breeds are often dual-purpose (reared for both meat and eggs) and slow-growing, compared to commercial chicken varieties. These are commonly reared in flocks of 10-15 birds in the backyard. India has 20 such chicken breeds registered the under ICAR-National Bureau of Animal Genetic Resources (NABGR)[3] (*see Table 1: Native breeds in India registered with NABGR*). Apart from the registered breeds, there are other indigenous chicken breeds as well.

Improved varieties for rural poultry

In order to improve productivity (weight gain, eggs etc) or select characteristics (better growth rate, heat dissipation etc) and yet retain the native traits of the parent breed, improved chicken varieties were developed. This has been done either by selection of pure lines or crossing of breeds. These varieties can be low-input or Low-input Technology (LIT) varieties reared in flocks of 50-100 in free-range settings for providing nutrition and livelihood to small farmers or high-input intensive varieties reared in flocks of 500-10,000 in poultry sheds for modest commercial purposes. Sometimes, LIT varieties are considered for backyard farming as well.

Table 1: Native breeds in India registered with NABGR

Breed	Native location	Breed	Native location	Breed	Native location
Ankaleshwar	Gujarat	Nicobari	Andaman and Nicobar	Aravali	Gujarat
Aseel	Chhattisgarh, Odisha, Andhra Pradesh	Punjab Brown	Punjab, Haryana	Harringhata Black	West Bengal
Busra	Gujarat, Maharashtra	Tellichery	Kerala	Kadaknath	Madhya Pradesh
Chittagong	Meghalaya, Tripura	Mewari	Rajasthan	Kalasthi	Andhra Pradesh
Danki	Andhra Pradesh	Kaunayen	Manipur	Kashmir Favorolla	Jammu and Kashmir
Daothigir	Assam	Hansli	Odisha	Miri	Assam
Ghagus	Andhra Pradesh, Karnataka	Uttara	Uttarakhand		

Source: National Bureau of Animal Genetic Resources; Note: Naked Neck and Frizzle Fowl are other indigenous breeds not registered with NABGR

Table 2: Productivity of select improved varieties compared to native breeds

Improved variety	Purpose	Native breed used in crossing	No. of eggs produced by native breed	No. of eggs produced by improved variety	Avg body weight of native breed (kg)	Avg. body weight of improved variety (Kg)
Krishibro	Broiler	Punjab Brown	-	-	0.65 (8 wks)	2.0 (7 wks)
Indbro Aseel	Broiler	Aseel	50-60 (annual)	160 (annual)	1.5 (22 wks)	1.7 (maturity; ~20 wks)
Thriveni	Layer	Tellicherry	60-80 (annual)	180-200 (annual)	1.6 (M), 1.2 (F)	-
CARI Nirbheek	Dual	Aseel	50-60 (annual)	198 (annual)	1.2 (20 wks)	1.8 (M), 1.3 (F) (20 wks)
CARI Shyama	Dual	Kadaknath	80 (annual)	210 (annual)	0.9 (20 wks)	1.46 (M), 1.12 (F) (20 wks)
Hitcari	Dual	Naked Neck	75-90 (annual)	200 (annual)	1.0 (20 wks)	1.75 (M), 1.32 (F) (20 wks)
Gramasree	Dual	Naked Neck	75-90 (annual)	180-200 (annual)	1.0 (20 wks)	1.8 (M), 1.4 (F) (16 wks)
Chann	Dual	Naked Neck	75-90 (annual)	150-170 (72wks)	1.0 (20 wks)	2.0-2.2 (20 wks)

Source: CSE research

A large number of improved varieties have been developed by public sector organisations such as ICAR-Central Avian Research Institute, ICAR-Directorate of Poultry Research, Central Poultry Development Organization, state agricultural universities and diverse private players (*see Table in Annexure: Improved low-input, high-input and dual purpose poultry varieties for rural poultry farming*).

Compared to native breeds, improved varieties are a good alternative (because of better productivity with respect to number of eggs, weight gain etc); they also have a relatively comparable productivity with commercial poultry varieties which, for example, are known to lay about 250-350 eggs annually (*see Table 2: Productivity of select improved varieties compared to native breeds*).

5. Government programmes to promote backyard and rural poultry

Programmes initiated by the Central government

All India Coordinated Research Project (AICRP) on poultry breeding

Led by the ICAR-Directorate of Poultry Research, this national project aims to develop location-specific chicken breed varieties and disseminate them for village poultry farming.[4] It also works towards conservation, improvement, characterisation and application of germplasm belonging to local native breeds, among other things.

The AICRP on poultry breeding is currently operational in 20 centres across different agricultural/veterinary universities and ICAR (Indian Council of Agricultural Research) institutes in India. Twelve centres of the Poultry Seed Project, which aimed to increase the availability of rural chicken germplasm in remote areas, have been merged with the AICRP.

During 2024, about 1.18 million (11.8 lakh) chicken germplasm were distributed to over 16,000 farmers. The number of germplasm given to farmers by a centre ranged from 14,000 to 0.15 million (1.5 lakh). The number of farmers who benefitted ranged from 23-2,306. The budget utilised was Rs 1,354.73 lakh; total revenue was Rs 353.45 lakh.[5]

Farmers are provided germplasm free or at a minimal price, after necessary vaccination. Out of the 20 centres, the three that have the highest supply of germplasms are the Kerala Veterinary and Animal Sciences University (about 0.15 million or 1.5 lakh), Karnataka Veterinary Animal and Fisheries Sciences University (about 0.15 million or 1.5 lakh), and Bihar Animal Sciences University (about 93,000).[6]

Sub-Mission on Breed Development of Livestock and Poultry, National Livestock Mission

One of the focus areas of this Sub-Mission is breed improvement through rearing of LIT birds in rural areas and providing support to farmer's nutrition and livelihood.[7] The Central government, through NLM, provides incentives to

Table 3: Low-input technology birds popularized under National Livestock Mission

TYPE OF STOCK	ORGANIZATION
	Public sector organizations
Cha Bro, Kalinga Brown, Kaveri, Kadaknath	Central Poultry Development Organization
Gramapriya, Vanaraja	Project Directorate on Poultry
CARI-Gold, Nirbheek, Hitcari, CARI-Debendra, Upcari	Central Avian Research Institute
Giriraja, Girirani, Swarnadhara	Karnataka Veterinary, Animal and Fisheries Sciences University
Nandanam 99	Poultry Research Station, Nandnam, Chennai Tamil Nadu
Gramalakshmi, Gramashree, Krishipriya	Kerala Veterinary University, Mannuthy
Rajasri	Sri Venkateshwara Veterinary University, Hyderabad
	Private sector organizations
Satpuda-desi	Dr. Yashvant Agritech Pvt. Ltd, Jalgaon, Maharashtra
Rainbow rooster	Indbro Research and Breeding Farm Pvt. Ltd., Hyderabad
Kuroiler	Kegg Farms, New Delhi
Shipra	Shipra Hatcheries, Patna, Bihar

Source: DAHD; Note: This list can be updated as and when required.

potential entrepreneurs (individual farmers, self-help groups, farmer producer organisations or farmer's cooperatives) to establish parent farms, rural hatcheries and brooder-cum-mother units to produce hatching eggs or chicks, and rearing them for four weeks.

A one-time 50 per cent capital subsidy (up to a maximum of Rs 25 lakh per unit) is provided while the remaining amount is to be arranged by the entrepreneur (through a loan or by self-financing). There are 23 identified LIT chicken varieties for supply to famers (*see Table 3: Low-Input Technology birds popularised under National Livestock Mission*).[8]

There are other programmes such as the Rashtriya Krishi Vikas Yojana which are typically associated with establishment of smaller poultry units (10-50 birds) in states. They also coordinate with NLM and other state-level programmes to deliver chicks, vaccination and training.

Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)

The DAY-NRLM, through its Mahila Kisan Shashaktikaran Pariyojana (MKSP), is focusing on promoting backyard poultry for the farm livelihoods promotion component under the State Rural Livelihood Missions implementing the NRLM.[9] The emphasis is on community-led delivery of services through self-help groups and capacity building, focusing on better nutrition, women's empowerment and

livelihood generation. Both native and improved breeds are promoted. Backyard poultry models in states such as Bihar, Rajasthan and Jharkhand have been supported under this.

State-level initiatives for promoting backyard and rural poultry

Many states have their own programmes to promote backyard or rural poultry; under these programmes, small and marginal farmers are encouraged to rear LIT birds for self-sufficiency (*see Table 4: State programmes to promote backyard and rural poultry*).

Table 4: State programmes to promote backyard and rural poultry

State/Department	Scheme/Programme
Animal Resources Development Department, West Bengal	• *Special Backyard Poultry Farming Programme through Distribution of Chicks and Ducklings among Individual Beneficiaries under State Plan 2021-2022* planned to distribute 1.5 crore 28-day old birds and mother brooding units among 25 lakh beneficiaries during 2023-24.[10]
Directorate of Animal Husbandry and Veterinary Services, Odisha	• *The Livelihood Support to Farmers through Rural Backyard Poultry Rearing under State Plan (2023–24)* scheme aims to assist 31,377 individual farmers by providing 50 unsexed LIT poultry birds each, with 100 per cent subsidy support.[11] Farmers can be from SC/ST community, transgenders, poor or differently-abled. • *Establishment of Chick Rearing Unit under the State Plan Scheme (2024-25)* aims to chick rearing units (1,000 chick capacity per batch) with seven batches in the year to promote backyard poultry and enhance marketing of LIT birds.[12]
Department of Animal Husbandry, Maharashtra	• *Integrated Poultry Development Program under District Annual* scheme aims for the distribution of 100 day-old-chicks or about 25 pullets to farmers who are below poverty line, landless agricultural labourers, belonging to backward classes, or are marginal land holders. Fifty per cent subsidy for all categories.[13,14]
Department of Animal Husbandry and Dairying, Haryana	• *Scheme for the Establishment of Backyard Poultry Units (2025-26)* targets setting up 1,500 backyard poultry units. Each beneficiary availing this scheme is to get 50 (10-day old) chicks, free of cost along with two drinkers and two feeders.[15]
Karnataka Cooperative Poultry Federation	• *Scheme on Distribution of Poultry Birds (2023-24)* plans to distribute 20 local poultry birds reared for five weeks to each rural farmer women/members of Mahila SHGs.[16]
Animal Husbandry Department, Uttar Pradesh	• *Backyard Poultry Farming Scheme* aims to establish poultry units for its beneficiaries, with a price of Rs 3,000 fixed for each. Fifty day-old chicks of LIT birds are given to each beneficiary, particularly SC women. Overall 15,000 beneficiaries were to be benefitted in 2022–23.[17]
Directorate of Animal Husbandry and Veterinary, Assam	• *Rural Backyard Poultry Development (RBPD) Programme* provides one-time assistance to strengthen farms w.r.t. hatching, brooding and rearing of birds.[18]
Directorate of Animal Husbandry and Veterinary Services, Tamil Nadu	• Scheme for upliftment of 38,700 rural backyard poultry units (2024-2025) which have capacity of 40 Aseel birds. Fifty per cent subsidy is given to the select beneficiary (e.g., poor women, preferably widow, destitute and physically challenged, or belonging to SHGs) who can bear remaining 50 per cent.[19] • Scheme for upliftment of 100 rural farmers through establishment of native chicken poultry farms, with 250 birds per unit. Here also, 50 per cent subsidy will be given to beneficiary for shed construction, equipment purchase, feed cost for four months. Beneficiaries to have at least 625 sq. ft land to construct poultry shed and bear 50 per cent of total cost.[20]

6. Case studies: scaling up backyard poultry for improved livelihood and nutrition

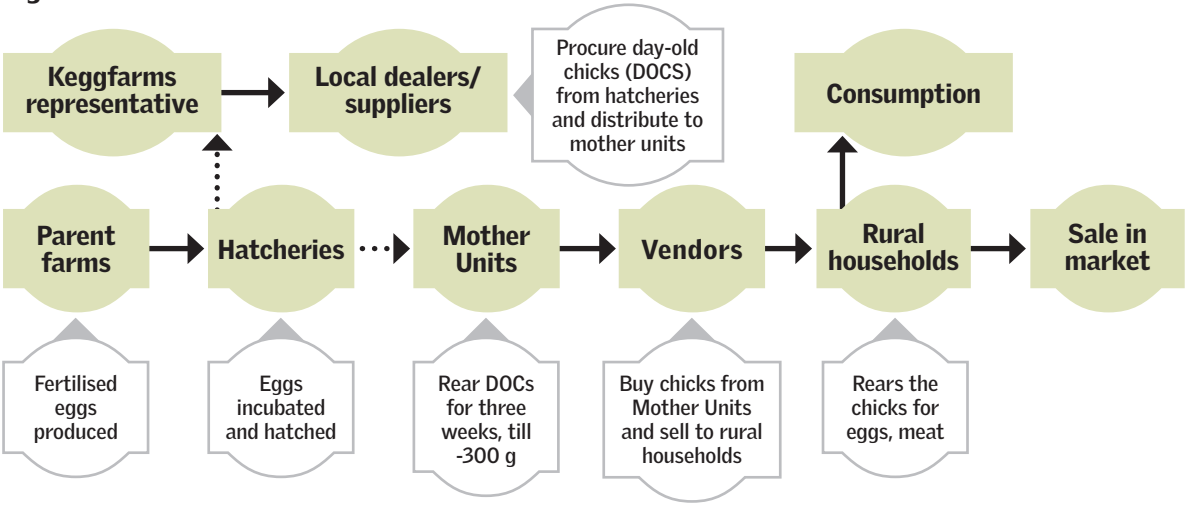
KeggFarms Kuroiler model, Gurugram, Haryana- generating livelihood across value chain

The Kuroiler model aims to improve the nutrition and livelihood status of rural women, as well as create micro-entrepreneurs (dealers, mother units and vendors). Kuroiler is a dual-purpose chicken variety introduced in 1990 by KeggFarms Pvt Ltd, based in Gurugram, Haryana. The variety is resilient to harsh rural conditions, can thrive on household scraps and waste, requires minimal shelter, and is disease-resistant. It has a prolific egg-laying capacity (220-230 eggs over a 12-16 month period) and exhibits more rapid growth than native breeds.

The distribution model employed by KeggFarms to reach remote villages is multi-tiered (*see Figure 3: Kuroiler distribution model*).

Fertilised eggs of Kuroiler from parent farms are transferred to hatcheries. After 24-36 hours of hatching, the day-old chicks (DOCs) are bought at Rs 25 per chick

Figure 3: Kuroiler distribution model



Source: Information from KeggFarms Pvt. Ltd.

by local dealers and delivered to rural 'mother units' at ~Rs 26 per chick. At the mother units, the chicks are reared for three weeks with adequate nutrition and necessary vaccination until they attain a weight of 300 gram – the total investment amounts to Rs 45-46 per chick.

The mother unit owners then sell the chicks to vendors at about Rs 50 per chick. With a profit of Rs 4-5 on each, a mother unit with 1,000 DOCs can earn Rs 4,000-5,000 per month. Village vendors who buy brooded birds, load baskets with chicks and peddle them on bicycles in small flocks (five-10) – they make a profit of Rs 10-15 per chick by selling them at Rs 60. Women in villages rear the birds, mainly on household and agricultural waste, for nearly two months. During this time, there is availability of high-quality nutritional food for household consumption. The bird is typically sold after about two months at Rs 250 per kg. Average supplementary household income from Kuroiler is Rs 300-500 per month.

The model currently caters to more than 1,500 dealers, over 5,000 mother units, and more than 7,500 village vendors; it services about 1.5 million (15 lakh) rural households. Operational in about 20 Indian states, the model is helping generate an estimated additional income of more than Rs 500 crore and has helped establish over 5,000 micro-entrepreneurs. Kuroiler is also distributed as part of the National Livestock Mission.

Village vendors collecting chicks from mother units and transporting them to villages for selling

Women buying chicks from village vendors

Kuroiler reared by women in rural household

Community-led backyard poultry farming initiative supported by Aga Khan Rural Support Programme (India)

Since 2020, the Aga Khan Rural Support Programme (India) (AGRSP (I)) is working with landless farmers to improve their livelihoods and reduce migration through poultry farming. In Khandwa district of Madhya Pradesh, this initiative began by forming a cluster of 10-15 interested and enthusiastic farmers and training them. Currently, there are 1,000 farmers in the cluster.

The programme, in parallel, developed a cadre of about 235 Pashusakhis (women animal health workers) by identifying them, providing training on different poultry farming aspects (such as health, management and breed selection), and enabling them to independently provide services to farmers (vaccination, deworming, shed design, first aid administration and azolla-based feed preparation). These women are provided with a one-time kit that includes vaccines, herbal medicines, medical equipment, manuals etc. Pashusakhis can also reach out to district animal husbandry departments for seeking guidance if required.

Training of Pashusakhis at Pashusakhi Development Centre

Vaccination of chicks by a Pashusakhi

Azolla culture in a poultry farmer household

There are two farmer producer organisations (FPOs) in the district which have hatcheries and feed mills to support farmers who want to procure chicks/feed for poultry farming. Typically, the poultry varieties provided are CARI Sonali and Vanaraja. Sometimes, private companies also provide chicks directly to farmers. AGRSP also connects FPOs directly to vaccine manufacturers to ensure timely supply of vaccines based on prior planning and vaccination schedules provided to the manufacturers. Pashusakhis collect vaccines from the FPOs and vaccinate the birds while ensuring that cold chain does not break.

To address the issue of DOC mortality, the programme has helped certain well-performing farmers establish mother units to keep and rear DOCs (procured from FPOs) for 15-20 days before distribution to farmers. AGRSP (I) provides a one-time capital support and some infrastructural help to mother unit owners. The investment cost per chick is Rs 42-45 for 15-day rearing, after which the owner can sell the chicks at Rs 50 per chick, earning Rs 5-8 on every chick. The FPOs also provide market access to the farmers by buying the birds from them and selling them at a pre-decided price. Farmer can earn in the range of Rs 25,000-30,000 per annum.

Central Avian Research Institute (CARI)-supported mother units for farmer's livelihood

The Backyard Poultry Hubs Project being implemented by ICAR-CARI focuses on developing and disseminating climate-resilient backyard poultry varieties to improve nutrition and livelihoods of farmers from the SC/ST community. Operational in select districts of Uttar Pradesh and Uttarakhand, CARI provides training, DOCs and utensils (water, feeder) for poultry farming to farmers.

To address initial challenges of brooding DOCs and subsequent chick mortality, CARI selected certain passionate and innovative farmers from the community and signed an MoU with them, under which they were trained for brooding and positioned as mother unit in-charges.

The in-charge buys 2,000-3,000 DOCs from CARI at the same price which they were being sold to farmers (~Rs 20-22/DOC), and broods them. After 40 days of brooding, CARI buys back these chicks at a pre-decided price (Rs 95-110), based on an evaluation criteria (body weight of chicks etc). The birds are then sold to farmers or state animal husbandry departments by CARI. Along with about 5 per cent mortality, a few chicks are also liable to be discarded based on quality.

The model addresses concerns with respect to limited infrastructure and humanpower for brooding. It also provides an additional source of income to the

mother unit in-charge, who is able to make a profit of Rs 10-20 per bird, and who also gets a direct and guaranteed buy-back. Currently, there are 11 mother unit in-charges associated with CARI. The farmer, in turn, is able to receive good quality 40-day old brooded chicks with no additional effort or investment for brooding.

Egger Nurseries providing mother unit support to regional government farms in Kerala

Egger Nurseries are run by private farmers in Kerala who have tied up with regional poultry farms under the state's animal husbandry department. They procure the day-old chicks from the regional farms of breeds like Gramasree and Thriveni, and rear them for about eight weeks, serving as mother units for the young chicks. During this period, necessary brooding practices are followed and all vaccinations are given to the chicks, including for Newcastle disease which often causes chick mortality.

Through these Egger Nurseries, farmers are also able to generate some income. Once stable, the two-month old chicks are sold to small farmers through veterinary dispensaries at a price of Rs 150 per chick. Small farmers, who buy about 5-10 chicks at one go, are ready to pay this price since they get fully vaccinated chicks which have been raised to a certain age with necessary nutrition and environment. Farmers are assured of the chick's longer survivability and prefer buying from Egger Nurseries, instead of buying them at cheaper rate (Rs 30-40) and suffering major losses.

The district animal husbandry officer registers the Egger Nurseries. There are more than 200 nurseries in Kerala — about 15-20 in each district. These Nurseries even supply to state government schemes at the same fixed price.

Economic upliftment of tribal community using improved Rajasri breeds, Telangana

Particularly Vulnerable Tribal Groups (PVTGs) are a less developed category among tribal communities in India. One of the major challenges faced by PVTGs in Hyderabad (Telangana) was high malnutrition, particularly among pregnant women, nursing mothers and growing children. There was also high mortality in children.

In the last few years, poultry farming with Rajasri, an improved variety developed by the P V Narsimha Rao Telangana Veterinary University, has helped PVTGs to overcome the challenge of malnutrition. Rajasri is a dual purpose synthetic variety that thrives well under backyard conditions and in a low-input or scavenging

system. The birds can be fed on kitchen waste, animal dung, faecal matter, worms, agricultural waste, insects etc. They are hardy, known for disease resistance and survivability, and can lay up to 170 eggs a year under intensive systems or 110-120 under free range.

The birds are reared until five weeks in nurseries, vaccinated and then supplied primarily in tribal areas through state-supported programmes and cost-basis sales. Other than small scale farmers, the day-old chicks are also supplied to young entrepreneurs. Some of the schemes under which these supplies are done include the high impact programme of ICAR-Agricultural Technology Application Research Institute Zone X, the ICAR-Scheduled Caste Sub-Plan, and the ICAR-Tribal Sub-Plan.

Farmers are given about 20 birds which can produce 10 eggs daily. After consumption, remaining eggs can be sold at about Rs 15 per egg. The meat is sold at a rate of Rs 350-400 per kg. Since the variety has been introduced in the market, there is now an increased consumer preference for Rajasri over the commercial broiler meat. Overall, the breed has helped augment the market, generate incomes and has provided nutritional security as well as better taste for poor poultry farmers.

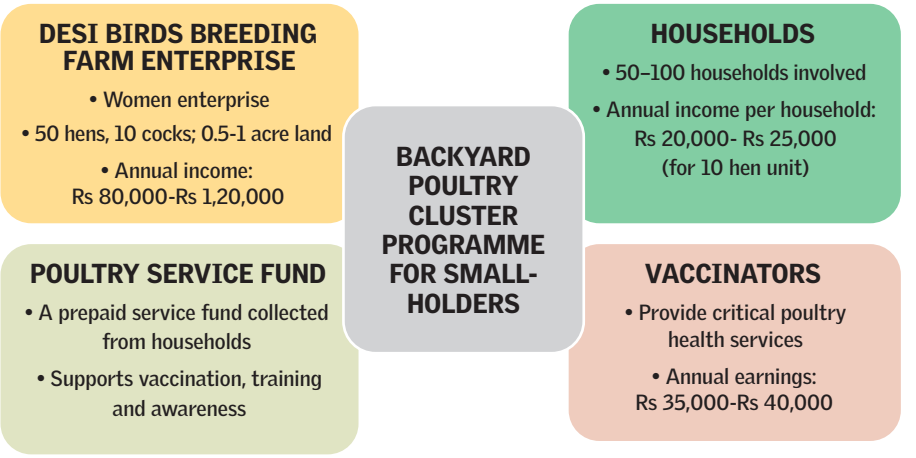
WASSAN's Backyard Poultry Cluster Programme for Small-holders

The Watershed Support Services and Activities Network (WASSAN) began working on promotion of rural *desi* poultry production systems in 2015-16. Initial pilot interventions and knowledge exchange with support of other NGOs and institutions have later been mainstreamed through government support. The programme is being implemented in 30 districts and 61 blocks across nine states, with major operations in Odisha, Telangana and Andhra Pradesh, ultimately covering 70,560 integrated *desi* backyard households.

Aseel

Rencha Kodi

Figure 4: Components of Backyard Poultry Cluster Programme for Small-holders



Source: WASSAN

WASSAN's Backyard Poultry (BYP) Cluster Programme for Small-holders is often managed as a women-led micro-enterprise. This integrated system promotes sustainable livelihoods by pairing *desi* poultry with a multi-layered eco-farm. This involves utilising poultry waste for soil health improvement, composting and vegetable cultivation, creating a circular resource use model. *Desi* breeds such as Aseel and Rencha Kodi are favored because they exhibit more disease resistance and are compatible with natural farming systems, requiring no external commercial feed as they forage and consume raw materials grown on the farm (crops, vegetable waste and fruits).

Economically, the model is highly lucrative for small-holders. A standard unit comprising 50 hens and 10 cocks using up half to one acre of land can generate an annual income ranging from Rs 80,000-Rs 1,20,000. Even smaller units (10-hen units) achieve annual earnings of Rs 35,000-Rs 40,000.

The programme also incorporates decentralised infrastructure, including a decentralised breeding farm established on 0.5 acre of fenced land, designed to serve 50-100 households. Another critical component is the decentralised healthcare service supported by a pre-paid Poultry Service Fund. This Fund, managed by common interest groups, ensures scheduled vaccination services are delivered by trained para-workers linked to the state's animal husbandry department.

Furthermore, the programme extensively utilises ethno-veterinary practices (EVP) for flock immunity. EVPs include using turmeric for respiratory problems,

preparations from herbs like *Pergularia daemia* and *Momordica charantia* (bitter gourd) for colds, and sun-dried papaya seed powder or *Andrographis paniculata* (green *chiretta*) for intestinal worms. Red onions and garlic are used seasonally as growth promoters and immunity builders.

Giri Gram Takniki Park: Integrated backyard poultry farming model using natural feed

The Giri Gram Takniki Park is an integrated backyard poultry farming initiative of the ICAR-Central Avian Research Institute (CARI), with an aim to increase farmers' incomes. Spread over an acre of land in CARI campus in Bareilly (Uttar Pradesh), the model rears dual-purpose pure poultry breeds such as Kadaknath, Aseel Peela, and improved varieties like CARI-Shyama, Saloni and CARI-Nirbheek.

The model employs a free-range setup where birds roam during the day and return to designated housing whenever they wish, minimising stress and disease. Biosecurity is ensured through appropriate hygiene protocols and controlled access, while birds are vaccinated primarily against three diseases-Newcastle disease, pox disease and Infectious Bursal Disease. Antibiotics are not used, except for therapeutic purposes.

Natural feed is mixed with compound feed and includes seasonal green fodder and *moringa*, earthworms and maggots (larvae of the Black Soldier Fly or BSF). These are either grown or sourced from within the farm/park itself. For instance, *moringa* trees have been planted around the model farm. Seasonal fodder is grown by rotational cropping of *berseem* (winter) or cowpea (summer). Maggots are produced by creating a suitable environment for rearing BSF in old water tanks. Earthworms are raised using vermiculture.

The birds feed two times a day. Overall, the cost of feed is lower than commercial feed by at least 30-40 per cent depending upon season/climate. The model also has vermi-beds for decomposition of organic matter with earthworms to produce nutrient-rich vermicompost that serves as a fertiliser for plants and crops.

Presently, there are five vermicomposting pits, eight maggot production units (four bins and four ground pits) and about half an acre of land dedicated for fodder production. The model houses six low-cost huts (20 feet x 15 feet) which can be easily built with available resources — bamboo, thatch, polythene or fiber sheets.

The model can be profitable for farmers who are innovative and willing to adopt the system. The overall benefit-cost ratio is 2.2:1. The cost of setting up such a

CARI-Shyama birds at Giri Gram Takniki Park

Vermiculture being used as feed component

Kadaknath

CARI Nirbheek

CARI Shyama

farm – a one-time investment — is also quite low. Farmers can easily propagate a specific breed using low-cost infrastructure as well as readily available feed like rice, vegetable waste, fish skeletons, or kitchen waste. Land requirement is flexible, allowing farmers to adjust based on the available space. The model has been adopted by 20 farmers presently across India. Out of 4000 birds in Giri Gram Takniki Park, 60 percent on an average (2400 birds) lay eggs daily.

7. Challenges in and opportunities for scaling up backyard and rural poultry production systems

Based on interactions with stakeholders from Central and state governments, the scientific community, civil society, the poultry industry as well as farmers, the following challenges and opportunities have been identified as far as scaling up backyard and rural poultry production systems is concerned.

Challenges

- **Farmers are often unable to provide necessary vaccines to chicks**. Timely vaccination of chicks during the first six to eight weeks is considered crucial in backyard and rural poultry. However, farmers are unable to provide required vaccination due to lack of awareness and/or resources. Those who are aware, face issues related to vaccine availability, costs and access. As a result, vaccinations are often skipped, leading to disease and higher mortality.

- **Adequate nutrition and brooding infrastructure is not always available.** Small farmers in villages lack the resources and facility to brood the DOCs and provide right nutrition, both of which are crucial for at least the initial weeks. Proper infrastructure for biosecurity or waste management is also lacking. This contributes to high disease prevalence or mortality.

- **New farmers struggle due to dearth of right information and training**. Information on where to source chicks, equipment or support services needed to begin or run a farm successfully is not always available to the farmer. Trainings conducted by government agencies are limited in number and not practical enough to cover all aspects (such as breed selection, bird handling during transportation, type of housing, addressing temperature, nutritional and vaccine needs, and financial viability of the business). Farmers, therefore, adopt a hit-and-trial approach, and end up losing interest and motivation if things do not work.

- **Access to right breeds and good quality chicks is a concern.** Farmers in rural/remote areas rely on local hatcheries/agents for getting chicks or birds of

native breeds or improved varieties. They may also not always get the right or best quality stock. Birds may not be healthy — or at times, the breed or variety is unknown. To avoid difficulties of travel to urban distribution centres from remote areas, farmers rely on whatever is available to them locally, irrespective of breeds. Moreover, the breeds from government sources are considered cheaper but of low quality compared to those raised by private players.

- **There is limited veterinary guidance or follow-up support from distribution centres.** There are inadequacies in the follow-up processes by distribution centers with farmers. Farmers also face difficulties with managing diseases like avian influenza or Ranikhet disease owing to limited on-ground presence of veterinarians. This negatively impacts the way the chicks or birds are taken care of, and farmers become unwilling to continue farming.

- **Access to a formal market and fair pricing is a challenge for the backyard farmer.** In rural village settings, a small backyard farmer will have to travel all the way to the market to sell a few reared birds, but still may not be able to sell any. There are also limited agents or vendors to collect birds at a price from farmers and sell them in the market. In cases where they are available, their requirements of specific birds with respect to weight, age etc may not be met, which can reduce a farmer's income potential.

Opportunities

There is a need to create a favorable ecosystem so that backyard and rural poultry production systems are scaled up – the opportunity exists for doing that:

Reducing risk and mortality by effective bird management in the first six-eight weeks by:

- **Establishing and strengthening mother units,** which can act as a link between distribution centres and farmers. The units could collect fertile eggs or DOCs from the distribution centres, hatch eggs, provide right brooding conditions to DOCs, give necessary vaccines and keep the chicks for about six to eight weeks with proper management. Once the birds have grown and are stable, these can be given to farmers. This will bring down the mortality rates.

- **Promoting and incentivising development of breeder farms at the farm level.** Select small farmers can be encouraged to set up their own breeder farms, which can become a sustainable business model for them in the long term and add to livelihood generation and nutrition. When chicks mature,

interested farmers can maintain their own breeding flocks. A group of four-five farmers can come together to arrange a small incubator for 100-200 eggs and procure hatching eggs for incubating on their own.

Supporting the developers (such as scientific institutes or state agriculture universities) of LIT birds:

- **Public-private partnership models should be explored to ensure continuous availability and supply of locally relevant, resilient breeds to backyard farmers.** This will help address the demand-supply gap in view of the limited extent to which government institutions can develop and distribute improved varieties to farmers. Private players can include industry, civil society or community (through cooperatives, self-help groups or farmer producer organisations).

- **Strengthening in-house infrastructure and capacity building.** Greater investments are needed for infrastructure at the research/distribution centers for rearing chicks until six to eight weeks and for vaccination and trained resources.

Generating a coordinated responses to challenges faced by backyard farmers: Farmers need to be supported and incentivised by ensuring access to good quality chicks, better vaccines, veterinary guidance and awareness and training. For example, state governments can help ensure access to at least the basic essential vaccines for chicks. In case of limited veterinary supervision, Community Animal Health Workers (CAHWs) or para-vets can be trained for vaccination, basic veterinary treatment and guidance.

Supporting creation of markets and dedicated farmer producer organisations and cooperatives for backyard and rural poultry: Such arrangements will not just provide appropriate access to markets and remunerative pricing to rural households and farmers, but will also help them in sourcing vaccines, feed and other inputs along with veterinary services at subsidised rates.

8. Annexure

Table: Improved low-input, high-input and dual purpose poultry varieties for rural poultry farming

Developer	Low-input broiler and layer varieties for rural poultry	Low-input dual purpose for rural poultry	High-input varieties for small-scale commercial rural poultry
Central Avian Research Institute (CARI)	Broiler: CARIBRO Samrudhi	CARI Debendra, CARI Nirbheek, CARI Shyama, Upkari, Hitcari	Broiler: CARIBRO Vishal, CARIBRO Dhanraja, CARIBRO Mrityunjay, CARIBRO Tropicana Layer: CARI Priya
Directorate of Poultry Research (DPR)	Broiler: Krishibro, Asli Bro Layer: Gramapriya, Swetasri	Vanaraja, Srinidhi, Vanashree, Janapriya	Layer: Krishilayer
Central Poultry Development Organization (CPDO)	Layer: ChaBrown, Kalinga Brown	Chann, Aseel cross, Kadaknath Cross, Kaveri, Chabro	
Tamil Nadu University of Veterinary and Animal Sciences, Tamil Nadu	Broiler: Namdanam chicken III	Nandanam chicken I and IV	
Lala Lajpat Rai University of Veterinary and Animal Sciences, Haryana	Layer: Harlay		
Kerala Veterinary and Animal Sciences University, Kerala	Layer: Grama Lakshmi, Thriveni	Gramasree	Layer: Athulya (ILM 90)
Guru Angad Dev Veterinary and Animal Sciences University, Punjab			Broiler: IBL80
Anand Agricultural University, Gujarat			Layer: Anand
Sri Venkateswara Veterinary University, Andhra Pradesh			Layer: ILR-90
Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya, Himachal Pradesh		Himsamridhi	
Birsa Agricultural University, Jharkhand		Jharism	
Assam Agricultural University, Assam		Kamrupa	
Nanaji Deshmukh Veterinary Science University, Madhya Pradesh		Narmananidhi	
Maharana Pratap University of Agriculture and Technology, Rajasthan		Pratapdhan	
Karnataka Veterinary Animal and Fisheries Sciences University, karnataka		Giriraja, Swarnadhara	
P.V. Narsimha Rao Telangana Veterinary University, Telangana		Rajasri	
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Madhya Pradesh		Krishna J	
IndBro Research & Breeding Farms Pvt. Ltd*	Broiler: Indbro Aseel	Indbro Rainbow Rooster	Broiler: Indbro Coloured Broiler Layer: Indbro Brown Layer
KeggFarms Pvt. Ltd.*	Layer: Keystone Golden Layer, Saurangi	Kuroiler	

Note: Table is not exhaustive; *Private players

9. References

1. Ministry of Fisheries, Animal Husbandry & Dairying, Government of India. 2019. Press release on 'Department of Animal Husbandry & Dairying releases 20th Livestock Census; Total Livestock population increases 4.6% over Census-2012, Increases to 535.78 million'. https://www.pib.gov.in/PressReleasePage.aspx?PRID=1588304, accessed on 21 October, 2025

2. Department of Animal Husbandry & Dairying, Ministry of Fisheries Animal Husbandry & Dairying, Government of India. 2024. Basic Animal Husbandry Statistics 2024. https://dahd.gov.in/sites/default/files/2025-01%20FinalBAHS2024Book14012025.pdf, accessed on 21 October, 2025

3. ICAR-National Bureau of Animal Genetic Resources. Chicken Breeds in India. https://nbagr.res.in/chicken-breeds, accessed on 21 October, 2025

4. ICAR-Directorate of Poultry Research. AICRP on Poultry Breeding. https://pdonpoultry.org/research/aicrp-on-poultry-breeding/, accessed on 21 October, 2025

5. ICAR-Directorate of Poultry Research. 2024. Annual Report 2024. https://pdonpoultry.org/wp-content/uploads/2025/07/DPR_AR_2024_Eng.pdf, accessed 21 October, 2025

6. Ibid.

7. Department of Animal Husbandry & Dairying, Ministry of Fisheries Animal Husbandry & Dairying,Government of India. 2021. Operational Guidelines For National Livestock Mission. https://www.dahd.gov.in/sites/default/files/2023-11/NLMGuidelinesFinalApprovedByEC.pdf, accessed on 21 October, 2025

8. Department of Animal Husbandry & Dairying, Ministry of Fisheries Animal Husbandry and Dairying, Government of India. *Indicative list of low-input technology day old chick suppliers.*https://nlm.udyamimitra.in/Home/ListOfSuppliers, accessed on 21 October, 2025

9. Ministry of Rural Development, Government of India. 2020. F*arm Livelihoods Interventions under DAY-NRLM (Strategy, Convergence Framework, Models).* https://himaajeevika.com/storage/files/4/Farm/Farm%20Livelihoods%20Interventions%20Under%20DAY%20NRLM.pdf, accessed on 21 October, 2025

10. Animal Resources Development Department, Government of West Bengal. *Augmentation of Egg Production by Special Backyard Poultry Farming Programme through Distribution of Chicks and Ducklings among Individual*

Beneficiaries under State Plan (SP) in 2021-22. https://ard.wb.gov.in/documents/whats_new/Augmentation_of_Egg_Production_by_Specia_Backyard_Poultry_Farming_Programme_through_Distribution_of_Chicks.pdf, accessed on 21 October, 2025

11. Directorate of Animal Husbandry & Veterinary Services, Government of Odisha. Livelihood support to farmers through Rural Backyard Poultry rearing under State Plan during the year 2023-24. https://dahvs.odisha.gov.in/dahvsodisha/wp-content/uploads/2023/10/RBYP.pdf, accessed on 21 October, 2025

12. Directorate of Animal Husbandry & Veterinary Services, Government of Odisha. 2024-25. Establishment of Chick Rearing Unit Under State plan during the year 2024-25. https://fard.odisha.gov.in/sites/default/files/2024-12/84.pdf, accessed on 21 October, 2025

13. Department of Animal Husbandry & Dairying, Government of Maharashtra. Integrated Poultry Development Program under District Annual scheme: 100 Day old chicks distribution scheme. https://dahd.maharashtra.gov.in/en/scheme/district-level-schemes/, accessed on 21 October, 2025

14. Department of Animal Husbandry & Dairying, Government of Maharashtra. Integrated Poultry Development Program under District Annual scheme: 25+3 Pullet distribution scheme. https://dahd.maharashtra.gov.in/en/scheme/district-level-schemes/, accessed on 21 October, 2025

15. Animal Husbandry & Dairying Department, Government of Haryana. Scheme for the establishment of Backyard Poultry units for the year 2025-26. https://pashudhanharyana.gov.in/schemes, accessed on 21 October, 2025

16. Department of Animal Husbandry & Veterinary Services, Government of Karnataka. Schemes and Benefits. https://ahvs.karnataka.gov.in/29/schemes-&-benefits/en, accessed on 21 October, 2025

17. Uttar Pradesh Poultry Development Portal. Major Activities. https://poultrynivesh.in/major-activities.aspx, accessed on 21 October, 2025

18. Directorate of Animal Husbandry & Veterinary, Government of Assam. Rural Backyard Poultry Development (RBPD) Programme. https://animalhusbandry.assam.gov.in/frontimpotentdata/rural-backyard-poultry-development-rbpd-programme, accessed on 21 October, 2025

19. Animal Husbandry, Dairying, Fisheries & Fishermen Welfare Department, Government of Tamil Nadu. 2025. Animal Husbandry Policy Note 2025-26. https://cms.tn.gov.in/cms_migrated/document/docfiles/ah_e_pn_2025_26.pdf, accessed on 21 October, 2025

20. Ibid

In addition to pointing towards the unsustainable nature of intensive rearing systems, this report highlights the benefits of scaling up backyard and rural poultry systems in India. Such systems are an opportunity in the long-term to reduce antibiotic misuse and antimicrobial resistance (AMR), in addition to offering co-benefits such as improved livelihood, nutrition and biodiversity conservation. The viability of such systems is led by resilient breeds, which are resilient and have low cost and input needs, as also evident through best practice case studies presented in the report. Based on stakeholder engagement and field research, the report highlights key challenges in and opportunities for scaling up backyard and rural poultry systems through policy and programmatic support.

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