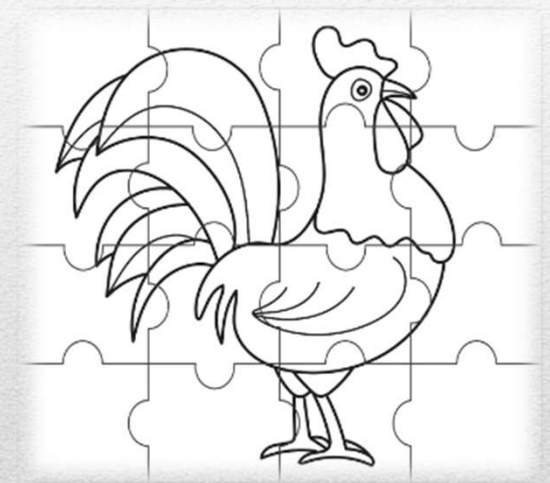


# GROWTH STORY OF SUSTAINABLE POULTRY PRODUCTION IN INDIA

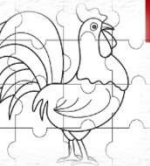
Sameer Agarwal  
Managing Director



# The Poultry Sector – A Silent Sustainer



Always believed that the Poultry sector is a silent sustainer in true sense. When we closely study the SDG's for Developing countries, Zero Hunger and Good Health goals can be directly met with growth in Protein Business. The Chicken and Egg story begins.....



# The relevant SDG's

- Sustainable poultry farming can play a significant role in achieving the Sustainable Development Goals (SDGs). The SDGs are a set of 17 goals that were adopted by the United Nations in 2015. The SDGs aim to end poverty, protect the planet, and ensure prosperity for all by 2030
- The following are some of the SDGs that are most relevant to sustainable poultry farming:
  - **SDG 2 (Zero Hunger):** The FAO states that sustainable poultry farming can help to achieve SDG 2 by providing a reliable source of food for people around the world.
  - **SDG 12 (Responsible Consumption and Production):** The WWF states that sustainable poultry farming can help to achieve SDG 12 by reducing the environmental impact of poultry production.
  - **SDG 15 (Life on Land):** The FAO states that sustainable poultry farming can help to achieve SDG 15 by protecting the environment and conserving biodiversity.
- By practicing sustainable poultry farming, farmers can help to protect the planet and ensure a sustainable food supply for future generations.



# India's agricultural & economic future

- Poultry sector witnessing remarkable growth
  - 3<sup>rd</sup> largest producer of egg (122 billion annually)
  - 5<sup>th</sup> largest producer of broiler meat (4.5 MMT annually)
- Shift towards self – sustainability
  - A model that integrates renewable energy, efficient resource management and innovative farming practices
  - Creates an economically viable, environmentally friendly and socially inclusive dynamic model





In order to **Change**, we  
must transform our  
**mindset & skillset...**

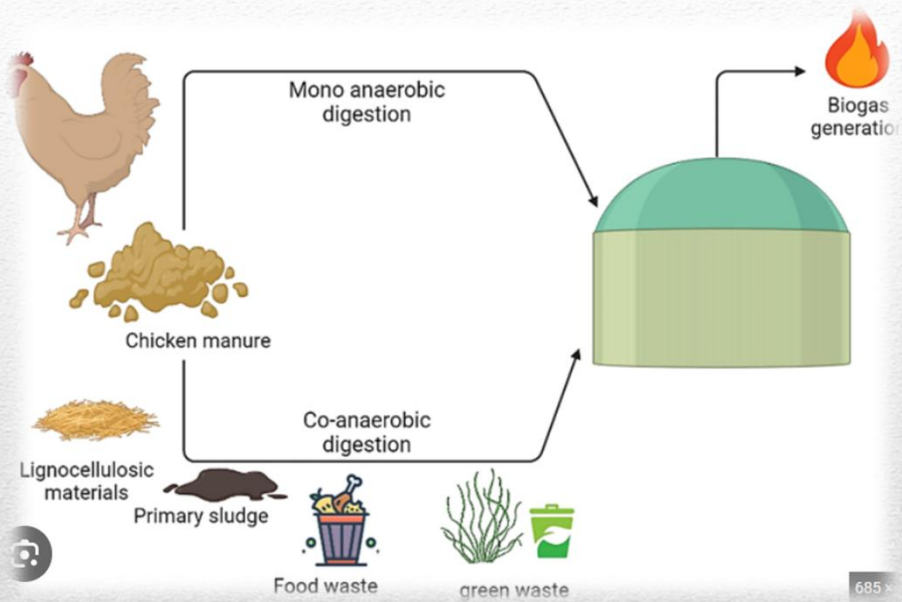


## Embracing Technology Advancements

# Pillars of the growth story

- Harnessing solar energy
- Biogas – turning waste to wealth
- Wind Energy
- Water harvesting
- Integrated farming systems
- Government initiatives and policy support





## Adoption to Green technology

# Harnessing solar energy



- One of the most significant advancements in self-sustainable poultry farming is the adoption of solar energy. Poultry farms require a constant supply of energy for lighting, ventilation, and heating, especially in broiler and layer farming. Traditionally, this has been a major operational cost and a source of carbon emissions
  - Technical insight – 15-20 kWh of electricity demand per day can be met with 5-10 kW of PV (Photovoltaic) systems
  - Data - According to the Ministry of New and Renewable Energy (MNRE), India has installed over 70 GW of solar capacity as of 2023, with a significant portion being utilized in the agricultural sector. States like Tamil Nadu, Rajasthan, and Gujarat are leading the way in solar adoption for poultry farming.
  - Impact – Solar energy reduces electricity bills by 30-40% and ensures uninterrupted power supply, even in remote areas. For example, a poultry farm in Coimbatore, Tamil Nadu, reduced its energy costs by 50% after installing a 10 kW solar PV system.
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# Shalimar Nutrients Private Limited





# Biogas – turning waste into wealth



- Poultry farms generate a substantial amount of waste, including manure and litter, which, if not managed properly, can lead to environmental pollution.
  - Technical insight – 1 MT of poultry manure can produce approximately 80-100 cu.m of biogas, which has 60-70% methane. This can generate 200-250 kWh of electricity or provide 6-8 hrs of cooking gas daily
  - Data - Under the National Biogas and Manure Management Programme (NBMMP), over 5 million biogas plants have been installed across India, with a significant number in poultry-intensive states like Maharashtra, Karnataka, and Andhra Pradesh
  - Impact – Farmers using biogas plants have reported savings of ₹10,000-₹15,000 annually on LPG costs, while also reducing greenhouse gas emissions by 1-2 tons of CO<sub>2</sub> equivalent per year
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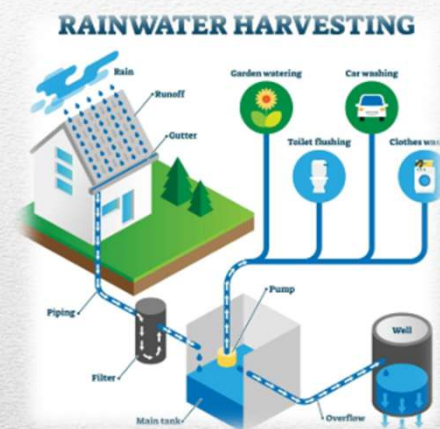
# Shalimar Hatcheries





# Water harvesting

- A Lifeline for Poultry Farms Water is a critical resource in poultry farming, required for drinking, cleaning, and cooling purposes. However, water scarcity is a growing concern in many parts of India. To address this, farmers are increasingly adopting water harvesting techniques.
- Technical insight – A poultry farm with 10,000 birds requires approximately 5,000-7,000 liters of water daily. Rainwater harvesting systems with a storage capacity of 50,000-100,000 liters can meet this demand for 3-4 months during dry periods.
- Data - States like Andhra Pradesh, Telangana, and Rajasthan have implemented large-scale rainwater harvesting projects, with over 1 million farms adopting these systems. For example, a poultry farm in Anantapur, Andhra Pradesh, installed a 100,000-liter rainwater harvesting tank and reduced its water procurement costs by 60%.
- Impact – Water harvesting not only ensures a sustainable water supply but also reduces the farm's reliance on groundwater, preserving this precious resource for future generations.



## Shalimar Poultry – Broiler EC



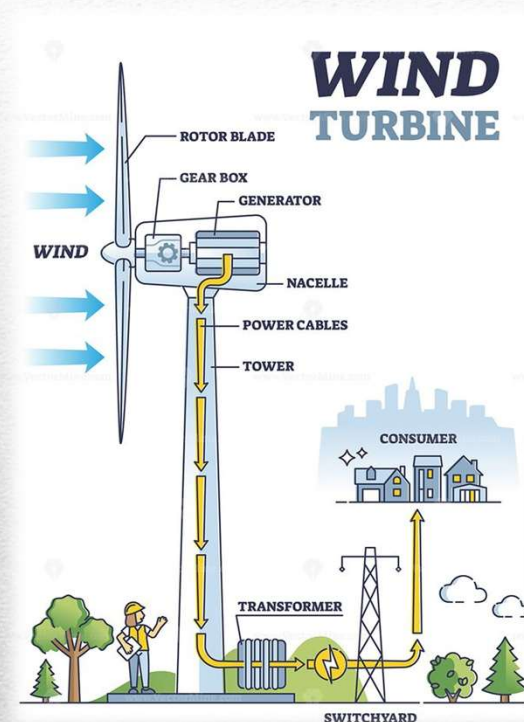
## Nippai Shalimar Feeds – WTP





# Wind energy

- A Complementary Renewable Source In regions with consistent wind patterns, wind energy has emerged as a complementary renewable energy source for poultry farms. Wind turbines can generate electricity to supplement solar power, ensuring a steady energy supply throughout the year.
- Technical insight – Small wind turbines with a capacity of 1-5 kW can generate 10-20 kWh per day, depending on wind speed. These turbines are ideal for poultry farms located in coastal or hilly regions.
- Data – India has an installed wind energy capacity of 42 GW as of 2023, with states like Tamil Nadu, Gujarat, and Maharashtra leading in wind energy adoption. For instance, a poultry farm in Kanyakumari, Tamil Nadu, installed a 3 kW wind turbine and reduced its grid dependency by 40%.
- Impact – Wind energy complements solar power, ensuring a 24/7 renewable energy supply and reducing the farm's carbon footprint by 1-1.5 tons of CO<sub>2</sub> annually.





# Integrated farming systems

- A Holistic Approach Self-sustainable poultry production is not just about energy and water; it's about creating a holistic farming ecosystem. Many farmers are now adopting integrated farming systems, where poultry farming is combined with crop cultivation, aquaculture, or dairy farming.
  - Technical Insight - In an integrated system, poultry manure is used to produce vermicompost or fish feed, while crop residues like maize and soybean are used as poultry feed. This creates a closed-loop system with minimal waste.
  - Data - A study by the Indian Council of Agricultural Research (ICAR) found that integrated farming systems can increase farm income by 30-40% while reducing input costs by 20-25%. For example, a farmer in Maharashtra integrated poultry farming with fish farming and reported a 50% increase in annual income.
  - Impact - Integrated farming systems maximize resource efficiency, diversify income sources, and enhance resilience to climate change.
-

# Government initiatives and policy support

- The growth of self-sustainable poultry production in India would not have been possible without the support of government policies and initiatives. Schemes like the National Livestock Mission, Rashtriya Krishi Vikas Yojana (RKVY), and Sub-Mission on Agricultural Mechanization have provided financial assistance, training, and infrastructure support to farmers adopting sustainable practices.
- Data - Under the National Livestock Mission, over 200,000 farmers have received subsidies for renewable energy systems, biogas plants, and water harvesting structures. Additionally, the promotion of indigenous poultry breeds like Kadaknath, Aseel, and Vanaraja has encouraged farmers to move away from resource-intensive exotic breeds, further enhancing sustainability.

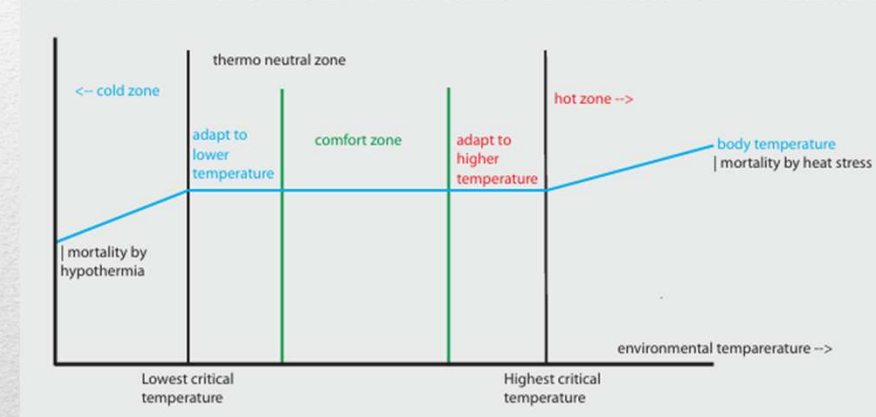




**PAIN POINT**

## Conventional poultry farming

- Disease migration / biosecurity hazard
- Climate resilience – heat waves/cold waves/rains/dust storm
- Unrealized Phenotypic expressions –  $P = G \times E$  interactions
- Higher manpower demand
- Fluctuating water consumption
- Waste generation and disposal
- Variable humidity leading to higher respiratory challenges
- Higher carcass condemnations (ill managed open farms)



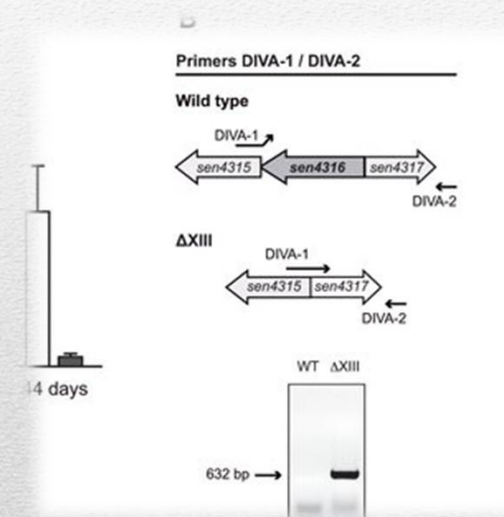


## Commercialization of poultry demands sustainability

- We must aim towards reducing the environmental impact of poultry production, while ensuring
    - Economic viability
    - Social equity
  - Primary objectives
    - Reduce resource consumption – use less water, energy and feed
    - Manage waste and emissions – use of poultry manure and automated feeding systems to prevent feed wastage
-

# Input sustainability – the role of stake holders

- The optimized usage of unconventional ingredients
- Implementing advanced genetic & nutritional guidelines
- Automation to improve efficiency
- Disease prevention strategy – biotechnological test and relevant vaccines
- Business process – Data , Finance & Human resource



# Output sustainability – the role of stake holders

- Measuring outputs and outcomes as sustainability performance
- Adopting food traceability
- Antibiotic free production
- Managing hatchery waste – Hatchery by-product meal (HBPM)
- Dead bird disposal
- Rendering - Poultry by-product meal (PBPM), Hydrolysed feather meal (HFM)
- WTP, STP and ETP



# The road ahead

- While the growth story of self-sustainable poultry production in India is inspiring, there is still much to be done. We need to:
  - Scale up renewable energy adoption by making solar panels, biogas plants, and wind turbines more accessible and affordable.
  - Promote awareness and training among farmers about sustainable practices and technologies.
  - Strengthen market linkages to ensure that sustainably produced poultry products receive fair prices.
  - Encourage research and innovation to develop new solutions for feed, waste management, and disease control.





## Conclusion

- The growth story of self-sustainable poultry production in India is a testament to the resilience, innovation, and determination of our farmers. By harnessing solar energy, biogas, wind energy, and water harvesting, they are not only improving their livelihoods but also contributing to a greener and more sustainable future.
- As we move forward, let us remember that sustainability is not just a choice; it is a responsibility. Together, we can ensure that India's poultry sector continues to thrive while protecting our planet for future generations.

