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**Business Proposal Assignment- A Study On Digital
Technology Adaptation And Challenges In Small
Scale Poultry Farm In Venkateshwarapuram, Tamil
Nadu (India)**

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1. INTRODUCTION

The growth of agricultural sector and its associated industries are essential for strengthening the Indian economy for ensuring nation's nutritional security, creating income, and offering various employment opportunities including both direct and indirect. Notably, the poultry farming has seen considerable growth due to surge in domestic demand for protein and products of nutrition's. In addition, it serves as a promising avenue for extra income to help support families.

The agriculture and allied sectors have rebounded, recording a growth rate of 3.5% in the second quarter of FY 2024-25 (Ministry of Statistics & Programme Implementation, 2024). The various initiatives and programs from both state and central governments have played a crucial role in fostering growth and support for this sector throughout the country. In a recent meeting with top poultry exporters, the Secretary of the Department of Animal Husbandry and Dairying stressed the necessity of advancing to next level in Indian poultry exports by highlighting the growth rate for eggs and broilers has been between 8 to 10 percent annually (Department of Animal Husbandry and Dairying, 2023). Additionally, the sector has thrived into a major industry over the last two decades, positioning India as a significant global player in the broiler meat and egg (Department of Animal Husbandry and Dairying, 2023).

1.1 BACKGROUND OF THE STUDY

Considering the present demand for poultry and its products, I have chosen to investigate the possibility of starting a small-scale poultry farm in my hometown or nearby areas. Small-scale farmers often rely on manual methods to document, monitor, the operations of organic farms, family farms, greenhouses, and aquaculture systems. The implementation of digital technologies in poultry farming may lead to facilitate better operational management and contribute to sustained profitability in the long term.

From my knowledge and experiences, three decades ago the domestic birds like country hens, ducks and turkeys were grown up at house, garden or backyard in small numbers range from 5 to 30 for mainly family consumption. However, traditional farming practices lacked the productivity needed to address the rising demands driven by shifts in dietary habits, as well as inefficiencies related to local breeds, prolonged growth times, and reduced egg output. It was recommended to implement a commercial structure for the buying and selling of broiler birds or high-breed poultry to meet the heightened demand. From the year of 2000 onwards, the rise of very small to medium-sized poultry businesses significantly fuelled the demand of poultry products. However, the conversation surrounding farm setups gained traction due to market growth and development, leading to the establishment of several farms in my locality around the year 2000. Subsequently, the rural poultry farm grew from traditional based model, very small-scale operations to more commercialized models across the country. Currently, these poultry farms are meeting the market demands of local, national and global level. These are the

results of an advancements in infrastructure, disease management, market research and expansion, and initiatives from government and private sectors.

There are several stages of poultry farm development in rural India have provided me with a comprehensive perspective on opportunities, challenges, and strategies for mitigating issues related to adaptation digital transformation.

Foundation Step for Development: The early phase was characterized by traditional based methods, as farmers were involved in agriculture and related activities. Subsequently, conventional farming practices were employed, and mostly poultry was raised in residential backyards. Mostly, the existing facilities were insufficient for significant growth, such as the absence of knowledge regarding health management, constraints in sourcing feeds, limited transportation facilities to access markets/areas, financial issues, government initiatives, and other related factors. Subsequently, the establishment of commercialized markets for meat and eggs facilitated further advancement in the poultry sector like from the local market to town then across the nation.

Development on Growth and Commercialization: The perception of high breed and its growing demand observed among rural areas has conveyed the emphasis towards commercialization. Simultaneously, there were slight modifications in dietary practices regarding the enhancement of protein and nutritional consumption, and the increase in urban population has generated substantial demand for eggs and chicken meat. Notably, the high-yielding breeds such as Cobb 500 (broilers) and Leghorn (layers) have attracted considerable interest in rural India due to their disease resistance in comparison to local/traditional varieties and profitability. Additionally, this led to farming was a livelihood source and an additional income with agricultural for farmers. Later, there were many interested individuals came forward and engaged in the business commercially via various farm practices with support of local, government, private, NGO's etc. These steps ensured to develop and run a poultry farm with modern farm management skills. Also, it helped to expand the business network and tie-ups for infrastructure development of farms. Modern, larger-scale operations in the poultry industry have developed integrated and well-structured supply chains with major agribusinesses. Now, the companies extend the support like provide chicks, feed, and technical support to farmers in exchange for products with significant profit margins.

Overview on Digitalisation: The current growth in the Indian poultry sector provides a platform to develop future business strategy, business sustainability, resilience, and adaptability with the changed trend in consumer behaviour. Because, the nature of poultry production brings many challenges such as impact of animal welfare, environmental and economic sustainability. However, the digital technologies may assist in streamlining processes, managing concerns of health and environment, and enhancing revenue by fostering the growth and scalability of businesses as feasible.

1.2 OBJECTIVES

- To assess the current technologies at the poultry farm.
- To explore new technology availability in the market.
- To identify key benefits of adopting new technologies.
- To identify the barriers on adapting new technologies and its mitigation.

1.3 CURRENT TECHNOLOGIES IN POULTRY FARM

The existing technologies and their applications differ among farmers with a variety of business operating spheres. Mostly, there are few common pieces of equipment observable at the poultry farm, which have transitioned from analog to digitalization.

Growth and Weigh Measurement: It is one of utmost importance to monitor various factors from the moment chicks arrive at the farm until they are sent to market, including measuring their weight during initial stage, continuously observing their growth over a specified period, etc. Formerly, the small or remote farms utilized analog weighing machines; these machines were heavy in nature, employing a spring mechanism, etc. However, the recent advancements in measuring weight are facilitated by digital platform scales, tabletop digital scales, and hanging digital weighing scales. Moreover, these devices are notably portable, user-friendly, precise, and capable of handling varying weights.

Climate Control Setup: Maintaining the appropriate temperature and humidity constitutes a vital aspect of farm management owing to its influence on broiler growth, environmental conditions such as the regulation of ammonia levels, respiratory health, and litter quality. The most dominant instruments for assessing the room temperature are utilized by both analog and digital devices. The infrared thermometer is prevalent in contemporary rural settings because of its immediate readings and contactless functionality. There might be a several additional features assist the farmer in effortlessly recording the readings. Nevertheless, the records are primarily maintained in registers, which can be somewhat challenging to manage over time. The advanced technology of digital room thermometer can be observed in numerous medium and large farms that are installed in a fixed location for the purpose of monitoring the current humidity and temperature.

Integrated Health Management: It is a vital element for operating the farm effectively, such as minimizing the incidence of diseases, mostly during seasonal disease outbreaks. It assures a diminished disease risk, with an stress on sustaining the well-being of the birds. Furthermore, farmers receive regular updates regarding health guidance from Krishi Vigyan Kendras, TANUVAS, or local poultry vets or other apps which are available in the market. The essential vaccination equipment

employed at medium and large-scale farms for mass vaccination, as well as eye or nasal drop vaccination, is utilized to address respiratory diseases. The vaccination or doses information or records, along with storage facilities, greatly assists the farmers. However, small-scale farms continue to utilize traditional methods for administering injections to chicks, observation on behaviours of chicks etc.

Record Management System: In order for an organization to succeed, maintaining proper records is vital because it impacts business operations, such as measurement of performance, analysis, compliance with local / government laws, etc. It is quite challenging today to maintain a large collection of hard copies in a farm or office due to space constraints, as well as to protect confidential information and keep employees safe. By taking these issues into account, the management of records through digitalized applications, Excel spreadsheets, or cloud-based systems may provide high-quality access with security. Primarily, there are common records that must be maintained, and particularly, data such as health management plays vital in tracking the relapse of diseases and their mitigation. Additionally, sharing data with governmental authorities and subject matter experts is essential for improving the management of outbreaks. Generally, a small-scale poultry operation may have fundamental records, including information on the flock, feed production and consumption, vaccination and treatment plans, health officials' visits and recommendations, financial matters, compliance with legal requirements, and employee records.

1.4 NEW TECHNOLOGIES AVAILABILITY IN MARKET & KEY BENEFITS

Different factors determine the number of technologies and the way they are utilized, including the size of a farm, the type of farm, such as egg or meat production, feed production, and knowledge exchange and services. Here are a few of the latest advancements the poultry industry may adopt to enhance the welfare of birds and animals, improve productivity, and ensure sustainability. Below are some of the latest advancements in farm management that could lead to a significant change in how small-scale businesses manage their farms.

Resource Management: As a result of automated resource management, significant amounts of waste can be reduced, such as watering and feeding in precisely measured amounts, which may ensure optimum growth and health for animals.

Climate-Controlled Housing: Advanced climate control systems are crucial to ensuring bird health and productivity by regulating temperature, humidity, ventilation, and other favourable environmental conditions.

Artificial Intelligence (AI) and Machine Learning: The projected rapid growth of artificial intelligence, machine learning, and robotics may bring about a revolution in the poultry industry. This

advancement may help to manage flock performance and welfare well in advance. Technology allows the farm management to analyse data via enhanced cameras and sensors that detect flock health, behavioural signs, regulate environmental conditions, and perform the repetitive task without compromising health and safety, health related symptoms of stress or illness among the birds.

Sustainability and Energy Solutions: It is more challenging to control the expenses associated with energy systems, but adopting renewable energy technologies like solar, wind, and biogas can help reduce those expenses. These technologies might lessen poultry farming's operational costs. Specifically, the cost of lighting, heating, production units, and vehicle fuels. They will also ensure the sustainability of poultry farming, as well as ensure that it is safe for the environment and has a smaller carbon footprint.

Innovations and Cutting-Edge Research: In the poultry farming industry, technologies are increasingly being developed to facilitate innovation in farming tasks. This leads to higher productivity and performance. There is various innovation brought by tie-up of government, private, industries experts and NGO's. As advanced imaging techniques are developed for non-invasive sex determination of eggs, breeding processes can be streamlined, nano biosensors can detect avian diseases and enable timely intervention, reducing their spread of infections.

1.5 BARRIERS ON ADAPTING NEW TECHNOLOGIES AND ITS MITIGATION

The adaptation, operation, and maintenance of technology-driven information systems would be regarded as a significant challenge for small-scale poultry farms in rural areas due to socio-economic and infrastructural obstacles. Typically, the conventional setup of small-scale farms predominantly employs traditional methods, with farmers being well-versed in utilizing local resources to manage the operations. The absence of progress is clearly evident in the development of IT infrastructure for poultry farms and their operations, market research, forecasting analysis, consumer behaviour analysis, and so forth. The primary industry associations that foster resilience and growth among poultry farmers include the Poultry Federation of India (PFI), and Vets in Poultry (VIP).

Resource Management: The automated resource management for the precise provision of basic amenities to the birds constitutes a waste of investment. This is due to the fact that the products derived from agricultural land and its associated outputs are abundant in nature and do not necessitate financial investment in this regard. Furthermore, the feeds obtained from agricultural land are regarded as healthier and may promote disease resistance. The resources that are available and the quality feed provided by the reliable manufacturer ought to be utilized in the correct proportions to guarantee the well-being of the birds in accordance with the growth plan. The uncomplicated schedule, mixture ratio, and quantity measurement can be input into straightforward control systems to present information in a

comprehensible manner, including pictorial or image representation. This may gradually educate the farmers to adopt advanced control systems.

Climate-Controlled Housing: The high cost of the control systems basically with multiple sensors are high in prices, need to depend authorised dealers or service partners for operations and maintenances, and lack of knowledges to operating etc. To ascertain the readily accessible control mechanism and to improve the features or development of the existing systems may assist farmers in comprehending the technologies thoroughly. The investment in these systems must be regulated, and the provision of sufficient training support and services may facilitate gradual adoption on the farms.

Artificial Intelligence (AI), Robotics and Machine Learning: The term is unfamiliar to the village farmers or small-scale poultry farming entities due to insufficient knowledge. There is no utility in analysing the data for performance and productivity, as the small-scale farms do not rely on these methodologies or strategies. Primarily, family members or acquaintances are employed on the farm and provide expert advice and guidance in managing the operations. For instance, they could identify the sickness among the birds by feeding and observing them on daily basis. The adaptation of AI, robotics and machine learning may take time since its requirement are less at the small-scale farm, lack of knowledge and development etc.

Sustainability and Energy Solutions: The switching to renewable energies is relatively easy nowadays, as solar panels can be seen at a few farms where they are being used for lighting, recharging battery vehicles, and operating small machinery. The biogas generated from one's own household or farm setup supplies heating, facilitates feed preparation, and performs other functions. The progressions in technology may boost the efficiency and profitability. This might consider as one-time investments for long-time benefits.

Innovations and Cutting-Edge Research: The huge investment and infrastructure are not adequate to carry out the innovation at this point, but facilities run by government, private, industries forums, and non-profits may extend support to nanotechnology research, advancement on breeding, detection of avian diseases and mitigation. It is like availing the resources which are connected among the local, district and state level facilities.

Consultation on Veterinary Care and Disease Management: The essential function of the care of birds and animals on the farm is regarded as critical for business prosperity. It signifies the proactive measures in disease management and care, such as upholding the health and welfare of poultry flocks. The current practices of veterinary doctor visits to farm take time and hard to manage during the business operation. However, the telemedicine concept may bring veterinarians and farmers closer like remotely monitor bird health and provide timely guidance to farmers.

2. REVIEW OF LITERATURE

It is a crucial component in research process and examined by reviewing both former research works/ reports and empirical reports related to poultry farm's digital technology, adaptation and challenges. There were studies have indicated features of the digitalisation at poultry farm such as growth monitoring, identifying the sickness, health of the broilers and so on. However, there are no of studies have identified issue on digital technology adaptation, challenges and suggested knowledge to progress in the field. Here, there are important reviews which have guided me to understand the research topic in details, the focus needed to carry out the research and its related activity.

Title: Positive Features of Technology to Farmers

According to (Misaki, Apiola and Gaiani, 2016, pp: 1-15) the possibility for information technology to enhance the livelihoods of small-scale farmers. Although it may not address every issue comprehensively, technology has the potential to create a significant impact.

(Balogun et al., 2022, pp:17-37) highlighted that technology addresses the informational requirements of urban agriculturalists by providing prompt agricultural data via information services training and education, advisory support, etc. It fosters communication among farmers, researchers, extension agents and this interaction holds the promise of facilitating sustainable farming practices as well.

Title: Technology advancement, Issues and Suggestions

(Syauqi, Zaffrie and Hasnul, 2021) emphasized that the poultry business imports a lot of cutting-edge technology, such as superior feed and breeds, medications and biologicals created to prevent illness, and poultry housing and production systems.

(Abdanan Mehdizadeh et al., 2015, pp:88-95) mentioned that computer vision has been extensively utilized in numerous operations of diverse poultry production systems, including house management, behaviours, and welfare.

The computer vision has been utilized for identification of diseases among poultry sectors (Zhuang and Zhang, 2019, pp:106-116).

(Narin et al., 2018, pp.226–231) reveals the computer vision is widely used in various processes of poultry production systems, including the examination of eggs.

(Puma et al., 2001, pp: 365-374) reveals that computers technologies have been employed to observe broiler chicken's body weight, feed intake and feed conversion ratio. Additionally, indicated that individual birds could modify their eating and drinking behaviours quite distinctly under the same thermal treatment.

The information technologies have been utilized to monitor feed consumption, body weight, and growth trends. Additionally, it has been indicated that animals employ vocalization to convey various internal states elicited by either internal or external events, as well as to express some of their behavioural needs (Aydin et al., 2014, pp: 17-23).

(Fontana et al., 2014, pp:1-13) expressed that manual weight measure of a significant number of broilers could be eliminated due to workforce and deprives the farmer of useful time. The automatic collection on the growth trajectory may help to identify deviations from the expected homogeneous growth trend inside the flock such as highlighted the health and welfare status of the animals.

(Tullo, Fontana and Guarino, 2013, pp: 30-38) have provided an outlook on precision livestock farming may also be utilized to assist in the management of certain complex biological production processes, to assess the growth trend, and to observe the animal activity.

(White et al., 2004, pp:409-418) have evaluated the advancement of computer and digital imaging systems provides an alternative method to estimate the weight of live animals indirectly through their dimensions using image analysis techniques.

(Mollah et al., 2010, pp:48-52) highlights the current practices of diagnosing avian illness primarily relies on the observation of movements, wattles, excrement, and vocalizations by veterinarians.

(Mortensen, Lisouski and Ahrendt, 2016, pp:319-326) indicating that the process of manual observation is both time-consuming and labour-intensive, and it may also be ineffective in identifying the diseases like failure to achieve 100%.

(Abdanan Mehdizadeh et al., 2015, pp: 88-95) has introduced a machine vision methodology that visually recognized the pertinent biomechanical variables related to broiler feeding behaviors by employing high-speed video recordings.

(Oliveira et al., 2018, pp:1664-1677) reveals that there are certain demanding responsibilities, including the evaluation of the health and welfare of chickens and the optimization of entire poultry house management, continue to require human caregivers to perform inspections of the premises on an hourly or daily basis in order to evaluate the conditions.

(Norton et al., 2019, pp:3009-3017) discuss the utilization of advanced technology is frequently observed in poultry houses, including animal inspections employing sensing technologies such as image and sound analysis, as well as the evaluation of the correlation between chicken behaviours, welfare, and environmental impacts through preference testing.

(Dawkins, Donnelly and Jones, 2004, p:342) mentioned the crucial factor of understanding as well as enhancing the physiological condition of chickens through chicken health, environmental conditions such as air quality, temperature, humidity, light intensity, and diet, stress etc.

(Zhuang et al., 2018, pp:102-113) developed a digital imaging system in real-time that can examine the movement of broilers to assess poultry health and automatically identify the sick animals from the group.

The degenerative muscle disease in chickens may be identified online through dielectric spectroscopy (Traffano-Schiffo et al., 2018, pp:137-145).

(Mollo, Vendrametto & Okano, 2009, pp:211-218) reveals some specialized knowledge has been digitized to provide a reliable, cost-effective, rapid, and stable decision-making assistance tool grounded in reproducible and accessible information, lacking of any external influences.

(Alikhanov et al., 2018, p. 88) has measured the egg mass indirectly by using the computer vision.

(Chen et al., 2016, p. 106) has used digital signal processor basis for developing a dynamic weighing system characterized by low error rates and high speed.

(Soltani et al., 2015, pp: 3065-3071) suggested two models for predicting egg volume to ascertain egg size using a mathematical model and an artificial neural network model.

(Liu et al., 2007, pp: 18-22) has employed transmittance spectroscopy technology as a method for assessing the internal quality of chicken eggs, including their freshness.

(Archer et al., 2009, pp:29-37) has suggested animal behaviours may be utilized as a potential approach to evaluate the broiler breeder's welfare in commercial production systems.

(María et al., 2004, pp:93-104) highlighted that the video cameras play a crucial role in the assessment of animal behavioural expressions because they are likely to yield more reliable data due to their unobtrusive approach to data collection.

(Yahav et al., 2001, pp:724-726) mentioned types of sensing devices may assist in monitoring animal behaviours and can be utilized to enhance broiler breeder management such as oviposition, egg quality, hatching rate, and the thermotolerance of chicks.

The primary challenge of poultry disease is common and it's impacting the business of poultry farm (Huang et al., 2019, pp:16-24).

(Rushton et al., 2005, pp:491-514) highlighted the significant losses within a flock or the total loss of entire flocks caused by repeated occurrence of avian diseases.

The poultry diseases pose a considerable threat to food safety if contaminated meat and products are ingested (Friel and Ford, 2015, pp:437-451).

Poultry diseases such as the avian influenza virus are zoonotic and have resulted in multiple global pandemics (Peiris et al., 2016, pp:252-258).

(Kristensen and Cornou, 2011, pp: 369-376) developed an automated system capable of identifying deviations in activity levels within a group of broiler chickens. The study characterized the undisturbed activity levels by age and could issue notifications regarding any activity deviation to detect potential issues within the flock.

(Zhuang and Zhang, 2019, pp:106-116) found an illness detection system for broilers utilizing a deep learning technique, which incorporated the B1 broiler and PASCAL VOC2012 databases. Both systems effectively categorized broilers as either sick or healthy.

(Pereira et al., 2013, pp:194-199) Aerial posture analysis is conducted to evaluate the welfare condition of broilers through the utilization of an overhead video camera, with the aim of establishing a complete assessment system for broiler behavioural languages.

The management of poultry farming is shifting from reliance on human labour to the implementation of smart systems supported by machines, including robotics for both economic and practical considerations (Ren et al., 2020, pp: 105-216).

(Sharma and Patil, 2018, pp:1906-1910) indicates that the implementation of smart technologies in poultry farming is anticipated to facilitate more rapid and efficient monitoring of farms and animals. It may enhance decision-making processes through the analysis of comprehensive data sets.

(Sahoo et al., 2022, pp:60-76) highlighted that robots are becoming a significant solution in poultry farming though numerous technological instruments existing, because it is fulfilling a variety of roles including phenotyping, monitoring, management, and environmental control.

(Raj and Jayanthi, 2018, pp:1-7) suggested that AI-driven Internet of Things (IoT) systems have the potential to assist poultry farm operators in improving production efficiency while significantly reducing operational costs.

(Fang et al., 2021, pp: 165-863) highlighted the integration of internet of things and machine learning has emerged as a promising avenue for enhancing intelligent poultry farming, facilitating ongoing data monitoring and prescriptive analytics concerning feed, water, and energy consumption.

(Ribeiro et al., 2019, pp:139-140) exposes the poultry feeding and watering systems may integrate with internet of things for optimal management including enhance safety, and improve profitability.

3. RESEARCH METHODS

The research chapter explains the concept of identified methods to carry out my research for achieve the objectives. The methodical process may drive investigation such as uncovering, interpreting, and analysing facts, procedures, behaviours, or theories, as well as in developing practical applications

utilizing such facts, laws, or theories. Furthermore, it involves the gathering of information pertaining to a specific subject.

3.1 METHODOLOGY

A study is to be conducted among the owners of small-scale poultry farms in Venkateshwarapuram (India). This locality is rural in nature and possesses adequate facilities compared to neighbouring villages, including transportation options, shops, and a range of business operations, from general merchants to building contractors. Furthermore, numerous individuals participate in the breeding of domestic birds and animals and engage in commercial activities regularly, such as weekly gatherings in a small market. Moreover, the data collection would be easy during this business operation day.

3.2 DATA COLLECTION METHODS

The data may be collected utilizing both primary data and secondary sources. The collection of primary data may enhance knowledge, illuminate current practices, identify issues, and establish expectations to mitigate those issues. Undoubtedly, secondary data fosters enthusiasm to achieve the objectives of the chosen topic by providing supplementary information, including perspectives, experimental statuses, current advancements, and future developments, and so on.

3.2.1 PRIMARY DATA

The structured questionnaire may be distributed to the respondents, which requests information regarding the current utilization of poultry farm technologies, awareness of technologies available in the market, technology adoption, and associated challenges.

3.2.2 SECONDARY DATA

Secondary data refers to data that already exists. It will primarily be collected via the internet, and assistance will also be sought from books, magazines, journals, websites and articles.

3.2.3 SAMPLING TECHNIQUE

Sampling may be defined as the procedure of acquiring information regarding an entire population by randomly examining portions of it. The stratified sampling identified for selecting the sample size, which is intended to be between 150 and 200.

3.2.4 TOOLS FOR DATA COLLECTION

The self-designed questionnaire may use as primary instrument for data collection, encompassing a series of questions aimed at investigating the chosen subject, including demographic information, business experiences, automation characteristics, challenges in addressing issues that span from health to finance, and others. The questionnaire will be directly administered to the owners, and a discussion is also scheduled.

3.2.5 STATISTICAL TOOLS

The following are the statistical tools are intended to be utilized in order to achieve specific results including presenting the project, pictorial representations, charts and tables.

3.2.6 METHOD USE TO PRESENT DATA

The gathered raw data obtained through the questionnaire will be organized and compiled for the purpose of data analysis and interpretation. It provides clear and structured statistics utilized to represent the data, such as straightforward tabulation of data to categorize, as well as calculating percentages using basic formulas.

3.2.7 RESEARCH PERIOD

The research work aimed to complete between 60 and 75 days.

3.2.8 LIMITATIONS OF THE STUDY

The study limitation, such as the samples taken, may not accurately reflect the results for the entire area, which may have missed potential respondents for various reasons. Furthermore, the results may not be representative of all poultry farms in other locations.

3.2.9 ETHICAL CONSIDERATIONS

This proposal gave the opportunity to explore a range of ethical challenges and responsibilities on the selected subject. These essential ethical considerations may serve as a framework for the planning, execution, and evaluation of project activities to ensure outcomes that are equitable, sustainable, and culturally sensitive.

Informed Consent and Community Participation: The necessary steps laid down to bring the best from the farmers to support this project like consent will be obtained through local language (Tamil) to ensure full understanding and participation. The project will ensure that all small-scale poultry farmers

included and voluntarily basis. Additionally, the efforts will be made to avoid any physical, psychological, or emotional harm to participants or stakeholders. However, the potential risks will be assessed and mitigated through a risk management plan before carrying out the project.

The participants experiences concerning technological adaptation, the challenges encountered in adopting new technologies, and the strategies for mitigation will be systematically collected, analysed, and presented. The farmers will be ensured that collected data not be shared or commercialized without explicit permission from them.

Respect for Tradition, Knowledge Sharing & Sustainability: Traditional poultry farming methods will be acknowledged, respected and understood that they are effective till date. The study may propose a way to integrate modern technologies with traditional practices where appropriate through proper knowledge sharing in local language, continuous access to local support, advisory services to build long-term capacity within the community.

The project may encourage environmentally sustainable practices where suitable, including resource utilization (water, energy), waste production, low-emission, energy-efficient, and non-polluting technologies.

4. CONCLUSION

The project proposal has opened the door to explore business opportunities around my native place such as gathering information from experienced business owners and entities too. It has broadened the knowledge like understanding the business plan, selection of breed, supply and logistics options, traditional methods of feed production, care and support from initial stage to market selling, vaccination, identifying the sickness and initial treatment procedures etc. There are numerous opportunities to enhance the poultry business; however, it appears that socio-economic diversity and infrastructural limitations play a significant role in presenting notable challenges. The technology adaptation is a big concern due to limited business operation among the local or surrounding areas like less required at the time, financial constraints and return on investment, lack of technical knowledge and cultural resistance to change from traditional etc. However, while the advantages of modern technologies, such as enhanced productivity, improved biosecurity, and better economic outcomes, are clarified, the success of such initiatives is largely contingent upon the degree to which the challenges are anticipated and addressed.

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