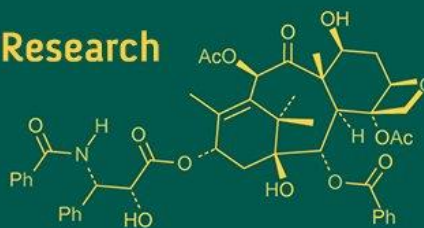


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Rural women entrepreneurship for strengthening livelihood: Evidence from Odisha, India

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Abstract

Rural women's entrepreneurship is a powerful driver of economic growth, contributing to capital formation, balanced regional development, employment generation, and enhanced self-reliance. Micro- and small-scale enterprises (MSEs), due to their affordability and ease of management, present viable pathways for rural women to engage in income-generating activities. However, to effectively realize the transformative potential of entrepreneurship in rural settings, there is a need for context-specific and sustainable development models. In this context, the present study introduces and validates the Gender-Responsive Community Agripreneurship Model (GCAM) as an inclusive framework for fostering agripreneurship among rural women. The model was implemented and evaluated through participatory action research involving women farmers across six districts of Odisha. The interventions focused on enterprise development in value-added fish processing, small-scale poultry farming, and broiler goat rearing. These activities were supported through a comprehensive approach that included technological backstopping, capacity building, formation and strengthening of women's collectives, establishment of community-level resources, and facilitation of access to credit and markets. Enterprise integration was customized for each district based on local resource availability, women's preferences, and the existing entrepreneurial ecosystem. While poultry farming and broiler goat rearing were promoted as individual enterprises, value-added fish processing was undertaken as a group-based activity through women's self-help groups (SHGs). Women engaged in small-scale poultry farming reported a 96% increase in income, attributed to the adoption of improved breeds along with scientific management practices. Goat-rearing units, under the broiler goat model, achieved a 114% increase in income. Additionally, SHG-based fish processing enterprises recorded a 67% rise in income through the production and marketing of hygienic value added products. Overall, the GCAM model demonstrates a practical, scalable, and gender-responsive approach to promoting rural women's agripreneurship. It provides valuable insights and best practices for development practitioners, rural service providers, and policymakers seeking to strengthen women-led enterprise development in agriculture and allied sectors.

Keywords: Rural women agripreneurship, fisheries, livestock, implications

Introduction

Agri-entrepreneurship, the integration of agriculture with entrepreneurial practices, transforms farming into a viable agribusiness. It enables smallholders to enhance productivity and profitability while contributing to accelerated economic growth, income diversification, and the creation of entrepreneurial opportunities in both rural and urban contexts. Women constitute a vital workforce in agriculture and allied sectors, engaging in a wide spectrum of activities such as land preparation, sowing, planting, weeding, pest management, harvesting, threshing, winnowing, livestock and fisheries management, storage, processing, and marketing. With increasing male migration to urban areas in search of employment, women's involvement in less remunerative small and marginal farming has intensified. This underscores the need to equip them with entrepreneurial skills and opportunities, positioning them as agripreneurs. Women agripreneurs are central to advancing sustainable development and promoting economic empowerment in the agricultural sector. However, despite their potential, recent statistics highlight a gender disparity: of the 6.3 crore MSMEs in India, 71% are owned by men, while only 29% are owned by women (SIDBI, 2025) [13]. The limited growth of women's agripreneurship in India can be attributed to persistent challenges, including social barriers, restricted asset ownership, technological constraints, and institutional biases. Addressing these constraints is critical to unleashing the full potential of women in agribusiness.

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Micro-and small-scale enterprises (SME) are affordable and manageable by marginalised resource poor rural women. Rural women surpass urban women in ownership of microenterprises. This points to the scope of development of women entrepreneurship in rural areas. Feminization in agriculture has also led to the growth in the number of women farmers pursuing agripreneurship as a natural progression as well as a strategic choice. These women contribute not only to their families' sustenance but also to the nation's food security. But women entrepreneurship in India is yet to pick up the pace. It is substantiated by the fact that women own only 29% of all enterprises in India. Around ninety eighty percent of these enterprises are micro units which are mostly concentrated in the informal sector (MSME, 2025) ^[13]. Although women face various problems in the process of establishing, developing and running their enterprises, nevertheless, their scope of development is very high in India, especially in rural areas. To support the development of women agripreneurship, high-impact initiatives should be adopted for female entrepreneurs in the agriculture sector.

Rural poultry production is widely recognized as one of the fastest means to enhance food security, generate employment and income, and advance women's empowerment, particularly because it requires relatively low investment. Poultry farming is not land-intensive, thereby offering resource-poor women viable opportunities to earn a livelihood. Similarly, goat farming in India is predominantly a women-driven enterprise. Approximately 33 million rural households rear goats, and nearly 70% of the country's 135 million goats are maintained by the poor for milk, meat, manure, and as a form of emergency financial security. Despite this, the full potential of goat husbandry remains unrealized due to inadequate veterinary services, limited financial support, and weak market linkages (Hegde & Deo, 2015) ^[4]. Nevertheless, goat rearing remains one of the most suitable livelihood options for resource-constrained rural women. Globally, women play a crucial role in small-scale and industrial fisheries, particularly in post-harvest handling, processing, and marketing. In India, the significance of fish in the national diet is steadily increasing, with consumer preferences shifting toward convenience foods such as ready-to-eat products. To harness this opportunity, it is essential to build the capacity of rural women by equipping them with modern technologies for value addition in fish and shellfish, while simultaneously promoting entrepreneurship as a pathway for livelihood enhancement.

To fully capture the transformative potential of entrepreneurship in rural communities, it is essential to design models that are context-specific and responsive to local needs. Recognizing the crucial role of livestock and fisheries in advancing rural women's agripreneurship, a community-based model was developed and validated. This study examines the impact of adopting the Gender-Sensitive

Community-based Agripreneurship Model (GCAM) through livestock and fisheries technologies on entrepreneurship development and income generation among marginalized, resource-poor women in Odisha.

Methodology

Study area and respondents

The study was carried out in six districts of Odisha—Ganjam, Jagatsinghpur, Puri, Khordha, Cuttack, and Jajpur during the period November 2020-March 2023. The areas were selected on the basis of resource availability for entrepreneurial options and the interests and needs of women farmers in undertaking such activities. A purposive sampling technique was employed to select women farmers from eight blocks across these districts, focusing on their engagement in poultry farming, goat rearing, and value addition of fish. For model validation, five small-scale poultry farmers, twelve goat farmers, and twenty women involved in value-addition of fish were chosen. In addition, a baseline survey of 200 women farmers was conducted using semi-structured interview schedules to identify the constraints and requirements for adopting entrepreneurial activities aimed at livelihood improvement.

Gender-Sensitive Community-based Agripreneurship Model (GCAM)

The GCAM is a practical and replicable model that provides a structured pathway for promoting entrepreneurship among resource-poor rural women. It presents a methodological framework for rural women's entrepreneurship development, taking into account the social, technological, physical, and economic constraints faced by resource-limited farm women. The model clearly outlines the approaches, the key actors involved, the actions to be implemented, and the tools required for effective execution. As a model of practice, GCAM serves as both a decision-making and service delivery framework, guiding implementing agencies in fostering rural women's entrepreneurship.

Key components of the GCAM model include

- Identification and dissemination of women-friendly technologies
- Capacity building of women in technological and entrepreneurial skills
- Assistance in navigating procedural challenges associated with enterprise establishment
- Facilitation of the formation of physical, human, and financial capital
- Creation of marketing opportunities and linkages
- Leveraging a favorable entrepreneurial ecosystem by connecting women with government schemes and programs

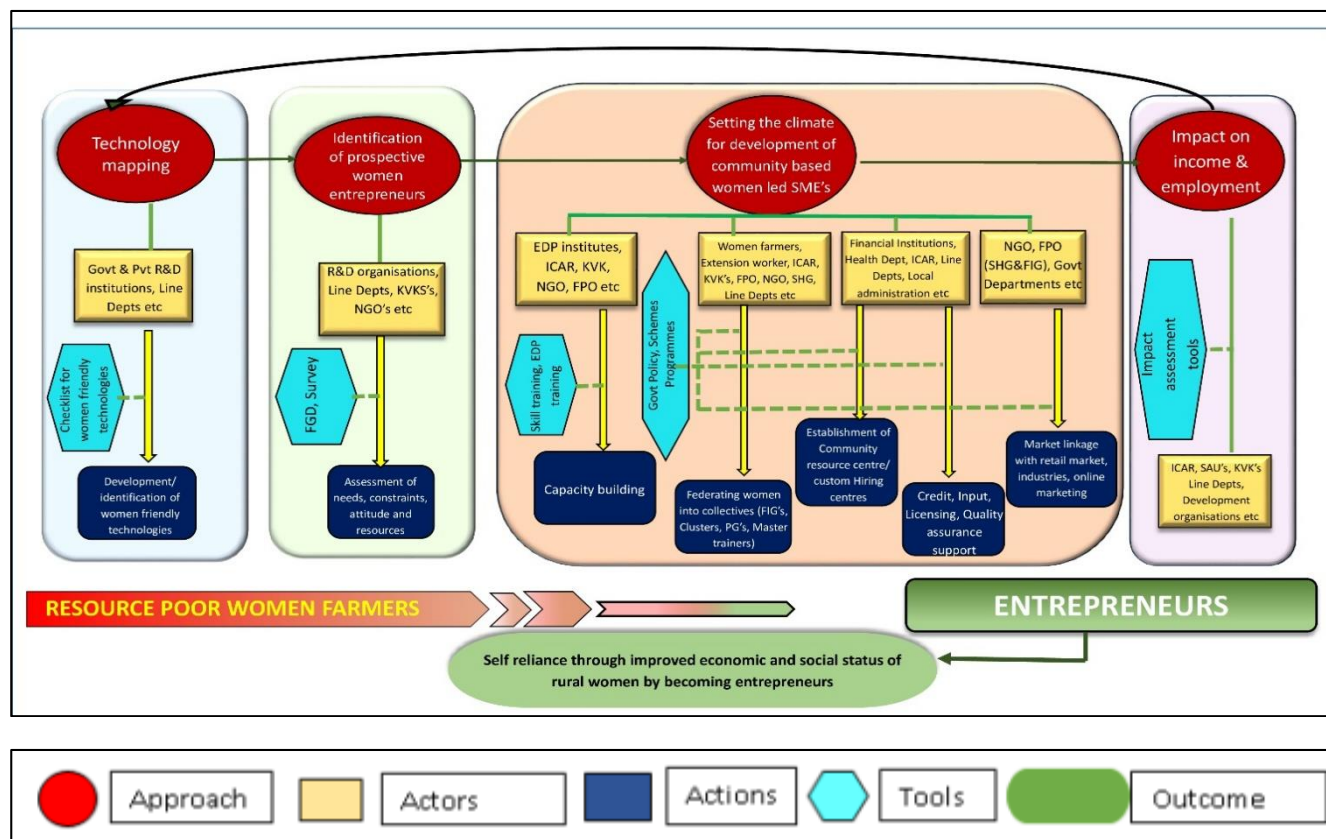


Fig 1: Gender-Sensitive Community-based Agripreneurship Model (GCAM)

The model illustrates a comprehensive pathway for transforming resource-poor rural women farmers into successful entrepreneurs through community-based women-led small and medium enterprises (SMEs). It begins with technology mapping, where government and private R&D institutions and line departments identify and validate women-friendly technologies suitable for adoption with the checklist for women friendly technologies as a tool. This is followed by the identification of prospective women entrepreneurs through surveys and focus group discussions conducted by organizations such as R&D institutions, KVKs, and NGOs, assessing their needs, constraints, attitudes, and available resources. The core stage involves creating an enabling ecosystem by engaging multiple stakeholders, including ICAR, training institutes, SHGs, financial institutions, and government departments, to provide skill training, capacity building, policy support, and access to credit, inputs, licensing, and quality assurance. Women are organized into groups and federations such as SHGs, clusters, and producer groups, while infrastructure like community resource and custom hiring centres is established. Market linkages are developed with retail markets, industries, and online platforms to ensure sustainability. Finally, the impact is assessed in terms of increased income and employment opportunities, leading to enhanced economic and social status of rural women and their transformation into self-reliant entrepreneurs.

Technological interventions integrated in the model

For small-scale poultry production, the technological interventions included an intensive rearing system of 200 birds using improved varieties such as Vanaraja and Kadaknath. Prospective women entrepreneurs were trained in the scientific management practices of poultry farming and provided with essential inputs to establish their

enterprises. In goat farming, technological interventions comprised broiler Black Bengal goat rearing (20 + 1 goats per unit), formulation of total mixed rations (concentrate: roughage ratio of 30:70) with bypass protein supplementation and adoption of women-friendly goat feeding systems. Broiler goat production is particularly suitable in areas with limited grazing land or low availability of green fodder and has been shown to be more remunerative than rearing other farm animals, making it a viable livelihood option for rural households. While small-scale poultry and goat farming were implemented as individual enterprises, value-added fish production was promoted as a group enterprise through Women Farmer Interest Groups (WFIGs), each consisting of a minimum of ten members. For women-led enterprises in value-added fish products, the selected products included: (a) fermented products such as fish and prawn pickles, (b) dry-cured products like solar-dried fish/prawn, (c) ready-to-eat snacks such as prawn sev, and (d) ready-to-cook snacks like fish/prawn papad. Product selection was based on criteria including shelf life, nutritional value, ease of availability of raw materials, marketability, and ease of preparation. A consumer survey was conducted to assess the market potential of these products, and a business plan for the small-scale enterprise in value-added fish products was developed (Table 4). Integration of these enterprises was implemented based on the existing entrepreneurial ecosystem in each district and the interests of the women farmers. Women entrepreneurs opted for goat farming as an enterprise in Ganjam and Cuttack districts. Integration of small scale poultry and goat farming enterprises was opted in districts like Jagatsinghpur and Jajpur. Entrepreneurship in small scale poultry and value added fish products was selected by women entrepreneurs of Puri. Whereas all the three enterprises were integrated by women entrepreneurs of

Khordha district, Odisha, India.

Grooming of potential women entrepreneurs

Potential women entrepreneurs were identified based on their needs, interests, and perceptions. To strengthen local capacities, targeted training programs and hands-on demonstrations were conducted, emphasizing scientific practices in small-scale poultry farming, goat rearing, and the preparation of value-added fish products. Additionally, a pool of 40 master trainers was developed from various self-help groups (SHGs) across the different districts to support and sustain the capacity-building efforts.

Creating an Enabling Environment for Enterprise Development

Custom Hiring Centres (CHCs) were established to support women farmers in implementing entrepreneurial activities related to poultry, goat rearing, and value-added fish products. These centres were equipped with processing and packaging machinery, along with other essential inputs, and are managed by Women Farmer Interest Groups (WFIGs). Continuous handholding support was provided to assist entrepreneurs in obtaining necessary production and marketing licenses, such as FSSAI and trade licenses. To ensure seamless supply and sale of inputs and livestock, backward linkages with Farmer Producer Organizations (FPOs) were established. Recognizing that marketing is a major challenge for sustaining women-led enterprises, linkages were developed with retail fish supply chains, including Falcon Chilika Fresh, OPOLFED, ORMAS, and Mission Shakti, to facilitate product marketing. Additionally, connections with the District Industries Centre, Bhubaneswar, were created to enable women entrepreneurs to access schemes promoting women-led enterprise development.

Results and Discussion

Needs and Constraints of Women Farmers in Poultry, Goat, and Value-Added Fish Enterprises

Women farmers identified several constraints affecting their participation in small-scale poultry production. Limited participation in training programs (76%) and restricted access to resources and services (75%) were reported as major barriers (Table 1). Additional technological challenges included low production potential of birds, inadequate supplementary feeding, limited access to veterinary services (vaccines and quality chicks), insufficient knowledge of improved practices, and restricted access to extension services, including market information and credit. Yadav *et al.* (2025) ^[17] has reported additional constraints like predator attacks, seasonal fluctuations in egg prices, high feed costs, labor constraints, market instability, chick mortality, cannibalistic behavior, crop damage, disease outbreaks and theft faced by women poultry farmers of In goat rearing, farmers highlighted low animal prices due to middlemen exploitation, high disease and parasite prevalence, fodder scarcity, limited technical training, poor market information, and inadequate holding capacity as significant constraints (Figure 2). Women engaged in value-added fish production reported key challenges, including lack of market linkages for value-added and hygienically dried fish (92%), short shelf life of dried fish (10-15 days) (90%), limited knowledge of scientific curing and hygienic drying techniques (76%), insufficient awareness of improved packaging methods (75%), and lack of familiarity with government programs and schemes for women's empowerment in fisheries (67%). To address these challenges, women farmers expressed critical needs, including access to credit and subsidies (100%), skill development in hygienic fish processing and value addition, and marketing linkages for hygienic and value-added fish products (Figure 3).

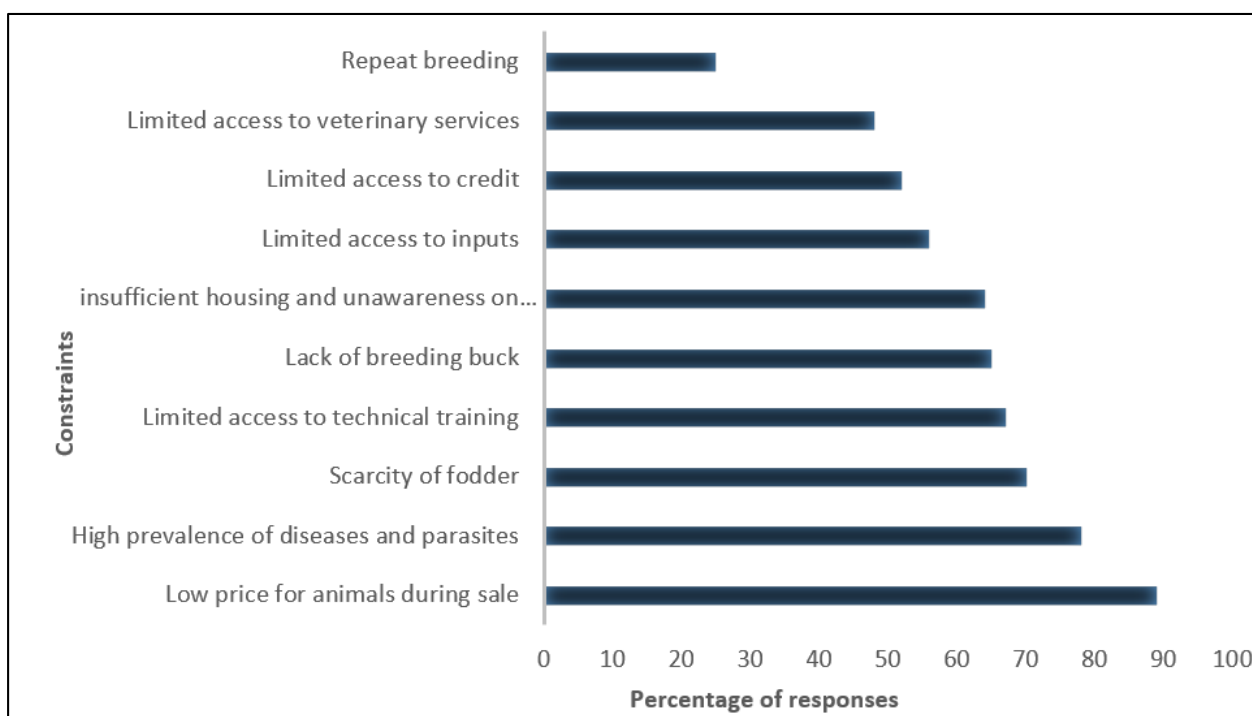


Fig 2: Constraints in adopting goat farming as perceived by women (N=200)

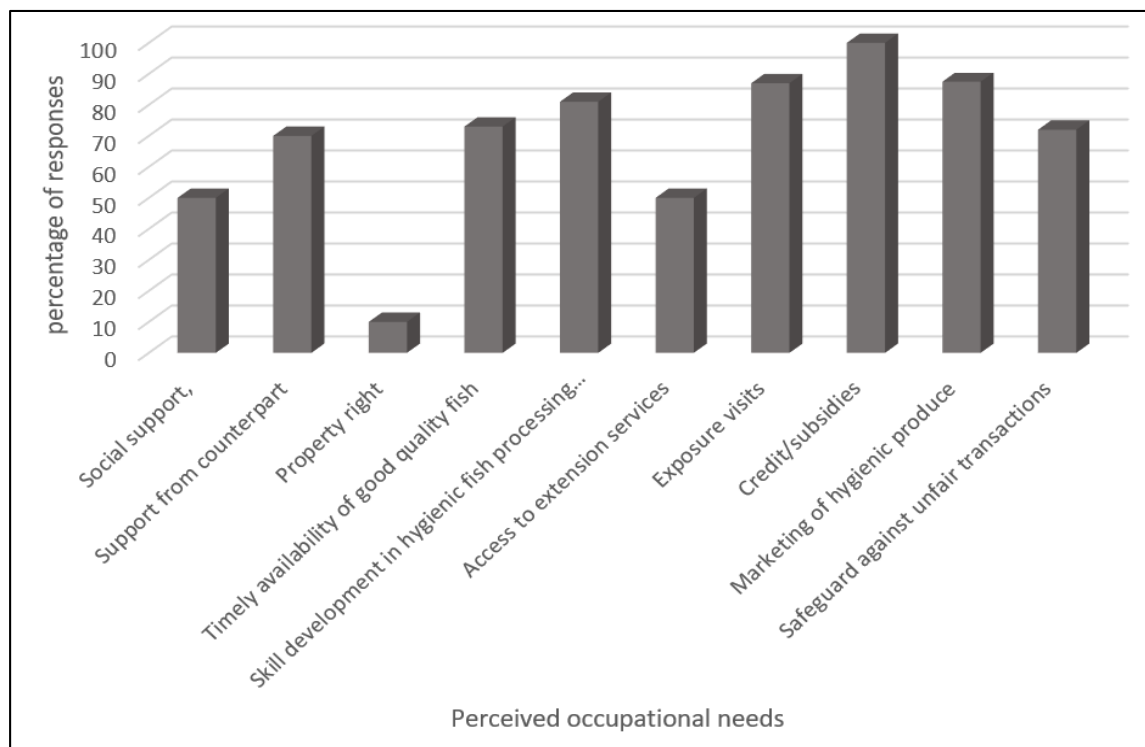


Fig 3: Perceived occupational needs of women farmers involved in value addition of fish (N=200)

Impact of adoption of GCAM on the livelihood of women farmers

The GCAM model depicts the approaches to be adopted, tools to be used for the approaches, actions to be carried out and the actors responsible for carrying out the actions that lead to women entrepreneurship. In the validation of the GCAM model assessment of needs and constraints, technological backstopping with women friendly technologies, capacity building of prospective women entrepreneurs, formation of women's collectives, establishment of community resources, and facilitation of credit and market linkages were the approaches adopted. Assessing the constraints and needs of rural women entrepreneurs is a crucial approach to be adopted by implementing agencies for designing effective and targeted support systems, unlocking significant economic potential, and achieving broader social development goals (Ahad, 2024). The selection of technology as per their needs and comfort is crucial for rural women entrepreneurs because it ensures the resources are relevant to their specific needs and accessible within their socio-cultural context, thereby directly enabling them to overcome traditional barriers like limited mobility, lack of financial access, and social constraints. Checklist for women friendly technologies need to be put use as a tool for selection of technologies for promoting women entrepreneurship. Capacity building for women entrepreneurs through skill training & Entrepreneurship Development Programs (EDPs) is vital for boosting confidence, providing business skills (planning, finance, marketing), improving market access, fostering innovation, and driving economic growth (Karnavat *et al.*, 2024) ^[5]. Amalgamating women into collectives is a crucial strategy for promoting entrepreneurship because it directly addresses the unique systemic barriers women face by providing mutual support, shared resources, and collective bargaining power. These groups foster economic empowerment, skill development, and social inclusion, which are often difficult to achieve individually in male-

dominated business environments (Shree and Murali, 2025) ^[12]. Establishment of community resource centres/custom hiring centres facilitates access to essential resources, technology, and knowledge, creating an enabling ecosystem for rural women to transition from laborers to confident and independent entrepreneurs. Among the entrepreneurial requirements by rural women, market linkage continues to be an important factor for the sustainability and success (Singh *et al.*, 2014) ^[14]. The approaches could be adopted by using the tools such as checklist for selection for women friendly technologies, FGD's, surveys, interviews for assessment of needs and constraints, skill training/EDP training for capacity building of prospective women entrepreneurs, facilitation of credit, licences and community resource centres through awareness on Government schemes or programmes, facilitation for obtaining business licences and facilitation of market linkage.

Globally, it is estimated that nearly 80 percent of poultry are reared within traditional family-based systems, which account for up to 90 percent of total poultry products. Consumer preference often favors local chicken meat owing to its desirable taste and texture, as well as the minimal use of antibiotics/medicines during production. Consequently, small-scale poultry farming with birds like Vanraja, Gramapriya etc emerges as one of the most viable entrepreneurial opportunities for rural women. Under the GCAM model, five small-scale poultry enterprises managed by rural women were successfully established. Each enterprise generated an average gross income of about Rs. 25,000 per month from the rearing of 200 birds. In resource-constrained contexts, poultry represents one of the most affordable and accessible livestock species, providing households with a readily exchangeable asset that can be sold or utilized in times of financial need (Wong *et al.*, 2017) ^[16]. Income from poultry sales not only enhances household food security by enabling access to a more diverse diet, but also supports the education of children and covers healthcare expenses (Alam, 1997; Mapiye *et al.*,

2008) [2, 6]. Furthermore, women's ownership and control of poultry enterprises enhance their self-confidence and strengthen their roles as producers and income earners both within the household and in the wider community (Panda *et al.*, 2022) [8]. The economics of small scale poultry production is given in table 2.

Twelve women established goat-rearing units of broiler Black Bengal goats, with each unit comprising 20 + 1 goats, generating an average monthly income of approximately Rs. 15,000. The economics of goat rearing with a 20 (female) + 1(male) unit is given in table 3. The adoption of technological interventions led to notable improvements in productive performance, particularly in growth rate and feed efficiency, which contributed to a 15-20% increase in income for women farmers. Enhanced feeding practices further boosted growth rate and milk yield by 15% and 13%, respectively, resulting in a 25% higher net return over feed cost. Similar findings have been reported by Sharma *et al.* (2018) [11], who highlighted the positive impact of balanced rations on goat milk yield, quality, and daily income. Goat rearing is particularly well-suited for resource-poor households due to its short gestation period, low initial investment requirements, and minimal maintenance costs (Gopala *et al.*, 2010) [3].

Women's participation in fisheries is prominent in the value addition or post harvest processing of fish. Consumer preference studies indicate promising opportunities for value added fish products enterprises. Tanuja *et al.* (2022) [5] reported that about 35% of peri-urban consumers in Odisha expressed willingness to purchase value-added fish products, provided they are safe, locally available, and reasonably priced. This demonstrates the potential for rural women to leverage emerging consumer demand to strengthen and diversify their livelihood base. Similar trends have been observed elsewhere: Selvaganapathy and Krishnan (2015) [10] highlighted that value-added fish production significantly contributed to the livelihood enhancement of fisherwomen in Nagapattinam District, Tamil Nadu. Likewise, in Kerala, women engaged in fish value-addition reported higher empowerment levels (46.78%) compared to retailers (45.09%), vendors (43.92%), and dry fish makers (43.42%) (Salim & Geetha,

2013) [9]. Through the establishment of value-added fish product units, women FIG groups have been able to generate a profit of approximately Rs. 150 per kilogram of prawn pickle and Rs. 170 per kilogram of fish pickle. Their products have gained recognition, with regular invitations from the State Fisheries Department, Mission Shakti, and Local Self-Government institutions to participate in exhibitions. The pickles are marketed under the brand name "Fishlikes" through retail fish supply chains. In addition, the groups produce and sell fish silage manure at Rs.40 per kilogram. Diversification into other value-added items such as prawn badi, hygienically dried prawn, and prawn papad has enabled the women to earn around Rs. 50,000 per month. The business plan for a small scale value added fish products unit is given in table 4.

The interventions led to substantial income enhancement among participating women farmers across multiple livelihood activities. Small-scale poultry units recorded a 96% increase in women's income, achieved through the adoption of improved breeds such as *Vanaraja* and *Kadakhnath* along with adherence to recommended production practices. Goat-rearing enterprises that implemented broiler goat technology, using units of 20 + 1 Black Bengal goats, reported an even higher 114% rise in income. Additionally, women's SHG groups engaged in value-added enterprises—such as the production of hygienic dry fish, pickles, and papads—realised a 67% increase in their earnings (Table 5). Collectively, these outcomes illustrate how the GCAM model provides effective, scalable strategies for advancing rural women's agripreneurship. The model offers actionable lessons and proven best practices for rural service providers, development practitioners, and policymakers committed to strengthening women-led enterprise development.

Table 1: Constraints in adopting small scale poultry production as an entrepreneurial option (N=200)

Parameters	High (%)	Low (%)
Participation in Training	24	76
Participation in decision Making	42	58
Access to Resources and Services	25	75
Access to Market	40	60

Table 2: Economics of Small Scale Poultry farming (200 birds layer type)

Particulars	Unit Cost (Rs)	Units/Kg	Cost in Rs.
Expenditure			
Cost of 28 day Old sexed Chicks(Layer) @ Rs. 74/-each for 200 birds	70	200	14000
Cost of poultry Shed 400Sq. Ft @ Rs. 250/-per Sq. ft.			100000
Cost of Feeding			
Grower mash @ 7 Kg/bird for 200 birds (Cost of feed Rs.30/-kg)-80 gm/bird for 84 days (5 to 16 weeks)	30	1400	42000
Layer mash @ 6 kg/bird for 180 birds (Cost of feed Rs. 30/-kg) from 17 to24 weeks (110 gm/bird for 7 weeks)	30	1080	32400
Layer mash @ 40 kg/bird for 180 birds (Cost of feed Rs. 30/-kg) from 25 to 72 weeks (110 gm/bird for 7 weeks)	30	7200	216000
Cost of Equipment @ Rs. 20/-per bird	20	200	4000
Cost of Medication, Vaccine, Electricity charges @ Rs. 25/-bird	25	200	5000
Cost of litter materials (8/kg @ 250 kg)	8	250	2000
Total Expenditure			415400
Income			
By sale of eggs @ 250 egg/bird with 10% mortality (Cost of egg Rs.8.00/egg).	9	45000	405000
By sale of spent hens 180 hens after 72wks (Receipt by sale of bird @ Rs 250/bird	250	180	45000
Manure			3000
Gross Income (18 months)			453000
Gross Income Per Month			25166
Net income	-		151600/-

Table 3: Economics of goat rearing with 20 + 1 goats per unit

Particulars	Cost/unit (Rs)	Quantity	Total (Rs.)
Expenditure			
Female doe (7-8 m +)	3000	20 nos	60000
Buck (1 yr)	5000	1no	5000
Rearing cost of goats with followers (Feed, medicine, feeders & miscellaneous)		LS	60000
Medicine/vaccine/Labour		LS	10000
Total expenditure			135000
Income			
Sale of parental stock	4000	20 nos	80000
Sale of goats	3500	60 nos	210000
Sale of goat	2500	40 nos	100000
Sale of goat litter	200	10 Qt	20000
Gross income			410000
Profit (Income-Expenditure) (18 months)			275000
Income/month (Rs.)			15280

Table 4: Business plan for small scale value added fish products

4.a. Machinery details

Machinery/equipments/utensils	Quantity	Amount (Rs)
Solar Dryer	1	200000
Meat Mincer	1	25000
Papad rolling machine	1	25000
Jar sealing Machine	1	25000
heat sealing machine	2	6000
Deep freezer	1	50000
Weighing balances	2	20000
Cartons & Storage containers	LS	10000
Utensils	LS	10000
Total		371000

4.b. Other financial details

Particulars	Amount (Rs)
Preliminary and pre operative expenditure	10000
Furniture and Fixtures	10000
Contingency	10000
Total Capital expenditure	401000
Working capital	94479
Total cost of project	495479

4.c. Details of sales

Product	Rate/unit	No of units	Amount
Prawn pickle	1000	275	275000
Fish pickle	800	275	220000
Prawn papad	600	150	90000
Dry prawn	600	150	90000
Dry fish	500	300	150000
Manure	40	250	10000
Total			835000

4.d. Break even point and ratio analysis

Particulars	1 st yr	2 nd yr	3 rd yr	4 th yr
Fixed cost	236538	240945	240286	234056
Variable cost	347273	360819	392507	405485
Total Cost	583811	601764	632793	639540
Sales	626250	668000	751500	793250
Contribution (Sales-VC)	278977	307181	358993	387766
BEP in% =Fixed cost/contribution	84.79	78.44	66.93	60.36
BE in sales	530983	523961	503004	478806
Break even units	531	524	503	479
Current ratio	1.73	0.62	0.53	0.43
Net Profit ratio				
	1 st yr	2 nd yr	3 rd yr	4 th yr
Net Profit	90559	108582	155971	186502
Sales	626250	668000	751500	793250
NPR	14.46	16.25	20.75	23.51

Table 5: Enhancement of income realised through adoption of the livestock and fisheries technologies

Enterprise	Income Enhancement (%)	Impact
Goat rearing enterprise	114	The monthly income of women farmers increased from Rs 12750/-to Rs 25000/-through adoption of small scale poultry production of 200 Vanraja birds. A goat rearing unit of broiler black Bengal goats (20 + 1goats) increased their profit from Rs 7000 to Rs 15000/-. The production of value added fish products is helping Women SHG groups enhance their per month income from Rs 30000/-to Rs 50000/-.
Small scale poultry enterprise	96	
Value added fish products enterprise	67	

Conclusion

With the evolving entrepreneurial ecosystem, numerous opportunities have emerged for rural women to contribute to household food and nutrition security. Agripreneurship in livestock and fisheries technologies offers a transformative pathway for strengthening livelihoods, improving food and nutrition outcomes, and advancing gender equity. These sectors are particularly suitable for women as they provide accessible, small-scale, and low-investment ventures that build upon women's traditional skills and responsibilities, while simultaneously enabling them to transition from subsistence activities to value-added enterprises. The findings indicate that adoption of the GCAM model can serve as a practical tool for practitioners and implementing agencies to promote agripreneurship among rural women, thereby fostering greater equity and empowerment.

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References

- Ahad A. Issues and challenges faced by rural women entrepreneurs. *Asian J Mgt Comm*. 2024;5(2):661-663.
- Alam J. Impact of smallholder livestock development project in some selected areas of rural Bangladesh. *Livest Res Rural Dev*. 1997;9(3):1-14.
- Gopala GT, Veeranna KC, Shivakumar KR. Constraints in goat farming in Bidar district of Karnataka state. *Res J Anim Husb Dairy Sci*. 2010;1(2):80-82.
- Hegde NG, Deo AD. Goat value chain development for empowering rural women in India. *Ind J Anim Sci*. 2015;85(9):935-940. Available from: <https://doi.org/10.56093/ijans.v85i9.51666>
- Karnavat B, Rathod C, Patel C, Patel CP. A Study on Women Empowerment through Entrepreneurship Development Program in Gujarat. *ITM Web Conf*. 2024;65:05001. Available from: <https://doi.org/10.1051/itmconf/20246505001>
- Mapiye C, Mwale M, Mupangwa JF, Chimonyo M, Foti R, Mutenje MJ. A research review of village chicken production constraints and opportunities in Zimbabwe. *Asian-Australas J Anim Sci*. 2008;21(11):1680-1688.
- MSME. Annual report 2024-25. Ministry of Micro, Small and Medium Enterprises, Government of India, New Delhi, India. 2025. 158p.
- Panda AK, Sahoo B, Pattanaik S, Sahoo T. Women Entrepreneurship Development through Small Scale Poultry Production. *Vigyan Varta*. 2022;3(3):68-73.
- Salim SS, Geetha R. Empowerment of fisherwomen in Kerala-an assessment. *Indian J Fish*. 2013;60(3):73-80.
- Selvaganapathy E, Krishnan L. Production of fish value added items helping on livelihood enhancement of fisherwomen of Poompuhar, Sirkazhi Taluk, Nagapattinam District in Tamil Nadu, India. *Res J Anim Vet Fish Sci*. 2015;3(6):1-4.
- Sharma B, Patidar J, Pachauri DR, Tripathy S. Goat Rearing: A Pathway for Livelihood Security of Farm Women. *Int J Curr Microbiol Appl Sci*. 2018;7(12):439-446. Available from: <https://doi.org/10.20546/ijcmas.2018.712.055>
- Shree M, Murali S. Empowering women through collective action: a review of group enterprises formed from self-help groups (SHGs). Insights from an exploratory study in Bhatapara, Chhattisgarh, LEAD at Krea University (IFMR). 2025;44p.
- SIDBI. Understanding Indian MSME sector: progress and challenges. Small Industries Development Bank of India, Mumbai, India. 2025:51p. Available from: https://www.sidbi.in/uploads/Understanding_Indian_MSME_sector_Progress_and_Challenges_13_05_25_Final.pdf
- Singh AS, Venkataramani B, Ambarkhane D. Market Linkage for Sustainable Empowerment of Women Entrepreneurs. *J Comm Mgt Thought*. 2014;5(4):545-556.
- Tanuja S, Jeeva JC, Rout E. Rural Women Entrepreneurship through Value Addition of Fish: A Case Study. *Fish Technol*. 2022;59:64-67.
- Wong JT, de Bruyn J, Bagnol B, Grieve H, Li M, Pym R, Alders RG. Small-scale poultry and food security in resource-poor settings: A review. *Global Food Secur*. 2017;15:43-52. Available from: <https://doi.org/10.1016/j.gfs.2017.04.003>
- Yadav HS, Sadaphal SS, Kharde PB, Deshmukh BA, Shinde SD. Entrepreneurial challenges and solutions in backyard poultry farming among rural women: A study under the ICAR farmer first. *Jnt J Agric Food Sci*. 2025;7(9):121-123.