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Women empowerment initiatives under the

Farmer FIRST programme for the livelihood development of tribal farm women in Chhattisgarh

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The Farmer FIRST Programme (FFP), implemented by ICAR-NIBSM, Raipur, aimed to enhance the livelihoods and empowerment of tribal farm women in Chhattisgarh through diversified agricultural enterprises. The project was undertaken in five tribal villages, namely Bakla, Kharaha, Bamhani, Kurraha, and Kharri of Kasdol block in Baloda Bazar district. Five key interventions were introduced: mushroom production, nutritional home gardens, agro-processing centres, goat farming, and Kadaknath poultry farming. These initiatives provided farm women with training, resources, and technology for skill development and income generation. Mushroom production benefitted three SHGs and 30 farm families, generating an annual income of ₹1,44,000; nutritional home gardens improved family nutrition and saved over ₹2,400 per household annually; agro-processing centres supported 152 farm families with an annual income of ₹4,78,200; goat farming engaged 83 women and generated a net income of ₹3,95,270; and Kadaknath poultry farming benefitted 20 women with an income of ₹2,10,000. Overall, more than 485 farm women were empowered, collectively earning over ₹12,29,870 annually. The FFP interventions effectively promoted economic independence, entrepreneurship, and sustainable livelihood opportunities among tribal farm women, contributing to their social and economic empowerment.

Keywords: Capacity building, Income generation, Rural entrepreneurship, Self-help groups, Skill development, Sustainable agriculture

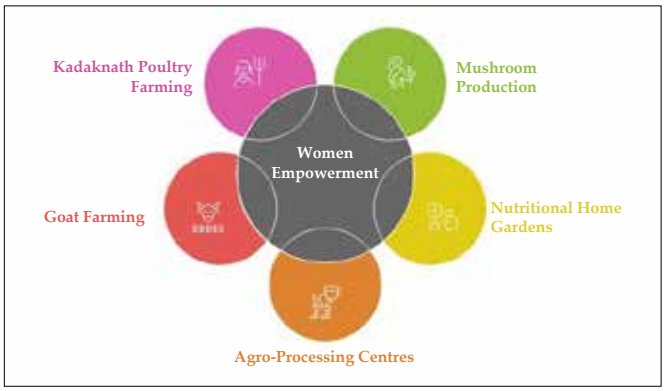
RURAL women are essential drivers of social, economic, and environmental transformation in 'New India.' With approximately 80% of rural women engaged in agriculture, empowering them is crucial for fostering inclusive economic growth. Integrating rural women into the agricultural workforce can significantly enhance food security and effectively combat poverty. This strategy is imperative for achieving the Sustainable Development Goals (SDGs) by 2030.

The Farmer FIRST initiative was launched at ICAR-NIBSM in 2016 to enhance the livelihoods of tribal farmers by integrating agricultural enterprises into fallow rice fields. The programme was centred on a cluster of five tribal villages—Bakla, Kharaha, Bamhani, Kurraha, and Kharri—situated in the Kasdol block of Baloda Bazar district, Chhattisgarh. A total of five modules were identified and implemented under this project i.e. crop-based, livestock-based, enterprise-based, horticulture-based, and natural resource management (NRM)-based modules.

Since 2016, several interventions have been initiated to improve the status of rural women in society by creating livelihood opportunities, and FFP initiatives have attracted the participation of about 34% of farm women. Farm women in tribal areas face significant drudgery due to the manual handling of agricultural and animal husbandry tasks, largely because of limited farm mechanization.

To address these challenges, various livelihood-support options were explored in the adopted villages, leading to the identification of suitable interventions aimed at enhancing the income and standard of living of selected farm families. The following five interventions were implemented under the Farmer FIRST Programme

- Mushroom production
- Nutritional home gardens
- Agro processing centers
- Goat farming
- Kadaknath poultry farming



Mushroom production

Farmwomen face several challenges, including mono-cropping, limited investment capacity, lack of alternative livelihood options, resource scarcity, inadequate marketing networks, and low awareness. Mushroom farming has emerged as a profitable enterprise that can support rural development by enhancing income and promoting self-employment. Under the FFP, economic empowerment of farmwomen was facilitated through skill-oriented training and the establishment of small enterprises. Oyster and paddy straw mushroom production units were set up, and farmwomen were trained to generate additional income and improve nutritional security using waste paddy straw. Demonstrations of paddy straw mushroom *(Volvariella volvacea)* and oyster mushroom *(Pleurotus florida)* production were conducted in all adopted villages, resulting in the establishment of four mushroom production units. A total of three Self-Help Groups (SHGs) and 30 farm families directly benefited, generating an aggregate annual income of ₹1,44,000 through this enterprise.

Table 1. Economic analysis of mushroom production

No. of Bags	Weight per Bag (kg)	Total Weight (kg)	Rate per kg (₹)	Total Income for one Group (₹)	No. of SHG Groups	Total Income for 3 SHGs (₹)
20	1	20	200	48,000	3	1,44,000

Nutritional home gardening

A kitchen garden or home garden is primarily intended to provide a continuous supply of fresh vegetables for family use. Several vegetables are grown on available land, offering a variety of produce rich in nutritional bioactive compounds. They are also important sources of protective nutrients such as vitamins, minerals, antioxidants, folic acid, and dietary fibres. Farmwomen were previously fully dependent on the market to procure vegetables for day-to-day consumption. Considering this, improved vegetable seeds from ICAR-IIHR (Arka Mega Seed Kit) were introduced, along with other inputs, modern equipment, and tools for vegetable cultivation. Training and demonstrations were conducted on nursery-raising techniques, crop management, and plant protection. Farmers now have access to fresh vegetables at their homes. This technology is highly effective, requiring minimal water, nutrients, labour, time, and cost, and


Mushroom production unit


Distribution of improved vegetable seeds


Harvesting of mushroom


Distribution of Arka Mega seed kit

can be easily managed by women alongside household activities. More than 200 farmwomen were covered and achieved very good yields. Each household saved over ₹2,400 annually in vegetable purchases from the market.

Agro-processing centres

Agro-processing centres are enterprises that process agricultural commodities post-harvest to enhance their storability and marketability. Women in this sector significantly improve agricultural output, making it more marketable and profitable, thereby contributing to the sustainability of agricultural systems. The initiative involves participatory resource sharing, technology development, value addition of cereals and spices, supply chain management, entrepreneurship development, increased family income, and alternative livelihood options for farmwomen. Four small-scale agro-processing centres (APCs) were established in the adopted villages, equipped with machines such as PKV dal mills, mini flour mills, mini rice mills, rice-cum-flour mills, pulverizers, and mini oil expellers. Farmwomen operate these machines easily, generating additional income and livelihood options at the village level. Marketing networks were also provided to support these centres. The establishment of APCs under the Farmer FIRST Programme benefitted a total of 152 farm families, resulting in an aggregate annual income of ₹4,78,200 through value addition and processing-based interventions.

APC of flour mill

APC of pulse milling

Table 2. Economic analysis of Agro-processing centres

Material Processed	Quantity Processed (kg)	Processing Charge per kg (₹)	Total Processing Cost (₹)
Flour	9,800	5	49,000
Pulses	300	5	1,500
Oilseeds	1,500	10	15,000
Rice Milling	78,300	5	3,91,500
Spice Grinding	1,060	20	21,200
Total			4,78,200

Goat farming

Due to the various challenges faced by villagers in remote areas, goat farming was suggested as an alternative livelihood option. Groups of 15–20 farmwomen were formed, with a total of five groups established across the five villages. They were provided with improved breeds of goats—*Sirohi, Jamunapari,* and *Barbari*—from Itarsi (Madhya Pradesh). A total of 83 goats (5 males and 78 females) were distributed among the farmwomen. Vaccination, healthcare activities, and other capacity-building programmes were organized in collaboration with the local veterinary department. All 83 farmwomen were covered under this intervention, generating additional income through livestock-based enterprises. The total cost of rearing was ₹1,72,330, while the gross return amounted to ₹5,67,600, resulting in a net income of ₹3,95,270 through goat rearing.

Goat rearing by farmwomen

Kadaknath poultry farming

Kadaknath chickens are a nutritious and easy-to-raise option for women, providing both financial and social empowerment. Supporting women's roles as livestock owners and enhancing their decision-making power is crucial for promoting economic and social empowerment. *Kadaknath*, a high-value chicken with medicinal properties, offers a viable livelihood option for tribal farmwomen, improving their financial condition and supporting resource-poor and landless farmers. The women maintain the poultry, generating cash revenue while providing eggs and meat for their families. The Farmer FIRST Programme has significantly enhanced the financial stability of tribal village farmers by providing timely assistance in inputs and capacity-building programmes. Under the *Kadaknath* poultry

Kadaknath poultry farming

Table 3. Comparison between before and after interventions

Interventions	Before	After
Mushroom production	• Limited technical knowledge • Non-availability of quality spawn • Low confidence in commercial production	• Skill enhancement through training • Mushroom production at the village level • Improved nutrition and household income • Collective enterprise through SHGs
Nutritional home gardens	• Lack of awareness about a balanced diet • Dependence on the market for vegetables • Small landholdings and input scarcity	• Year-round access to vegetables • Improved family nutrition • Surplus produce for sale
Agro processing centres (APCs)	• Unorganized home-based processing • No access to modern equipment • Limited market linkages • Low bargaining power	• Establishment of women-led APCs • Value addition (Flour, pulses, oilseed, spice grinding, etc.) • Rural women employment generation • Branding and collective marketing • Increased income and decision-making power
Goat farming	• Lack of improved breeds • High mortality due to diseases • Low productivity from traditional practices	• Improved breeds and vaccination • Reduced mortality and higher herd size • Women organized in SHGs/goat producer groups
Kadaknath poultry farming	• Limited availability of chicks • Lack of scientific rearing knowledge • High chick mortality	• Training in scientific rearing and vaccination • Access to Kadaknath chicks via low-cost hatchery units • Higher income from premium market demand • Direct marketing by women groups

farming intervention, a total of 500 chicks were distributed among 20 farmwomen, generating an annual income of ₹2,10,000 from the enterprise.

SUMMARY

The Farmer FIRST Programme in Chhattisgarh has played a pivotal role in promoting economic empowerment, self-confidence, and self-reliance among tribal farmwomen in Kharaha, Kharri, Bakla, Bamhani, and Kurraha villages. By providing targeted livelihood opportunities through mushroom production, nutritional home gardens, Agro-Processing Centres (APCs), goat farming, and *Kadaknath* poultry farming, the project enabled women to actively contribute to their household income while strengthening their role in community development.

The diversified interventions under the Farmer FIRST Programme (FFP) significantly enhanced the technical skills, knowledge, and entrepreneurial capacity of farmwomen. Mushroom production benefitted three Self-Help Groups (SHGs) and 30 farm families, generating an aggregate annual income of ₹1,44,000. Nutritional home gardens covered over 200 farmwomen, resulting in improved household nutrition and annual savings of more than ₹2,400/family on vegetable purchases. The establishment of Agro-Processing Centres supported 152 farm families, contributing to a total annual income of ₹4,78,200 through value-added processing activities. Goat farming interventions engaged 83 farmwomen, achieving a net income of ₹2,95,270, while *Kadaknath* poultry farming benefitted 20 farmwomen with the distribution of 500 chicks, collectively generating ₹2,10,000 annually.

In total, more than 485 farmwomen directly benefited from these initiatives, collectively earning an annual income exceeding ₹12,29,870. Beyond the financial gains, these interventions fostered entrepreneurship, strengthened women's decision-making capacity, reduced household vulnerability, and promoted sustainable livelihood practices. The FFP model demonstrates that with appropriate technological, capacity-building, and institutional support, tribal women can become active drivers of rural economic development, thereby contributing to both social and economic resilience in resource-constrained communities.

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