

Livelihood transformation through pig farming

among tribal communities of Jharkhand under the Farmer FIRST Programme

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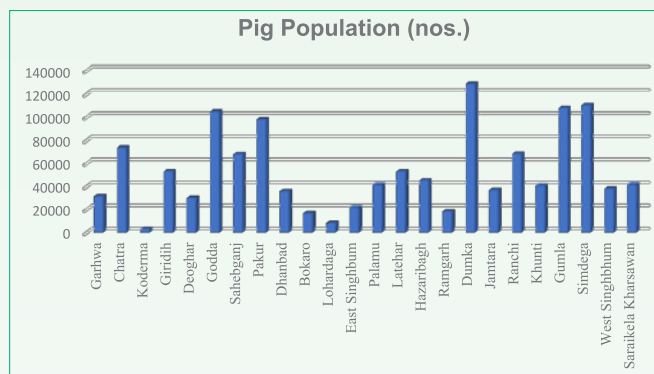
Pig farming is an important livelihood activity for tribal and marginal farmers of Jharkhand, providing a sustainable source of income, employment, and nutrition. Among the livestock systems, pig is more efficient converter of low-quality feed to high quality animal protein and also needs less feed per kg of body weight. In Jharkhand, Farmer FIRST Programme carried out in tribal villages of Ranchi district shown a remarkable growth in pig-based production system towards the sustainable livelihood of the tribes. Scientifically managed pig production system along with crossbreed namely 'Jharsuk' can play an important role in mitigating hunger, providing nutritional security and counteracting environmental degradation in the tribal area.

Keywords: Farmer FIRST Programme, Jharsuk breed, Pig farming, Tribal livelihood

PIG farming stands as a cornerstone livelihood for marginalized rural communities, serving as a financial cushion for economically weaker sections. Pigs are generally known for their superior feed conversion efficiency, rapid growth, short reproductive cycle, and high carcass yield, offer a low-maintenance yet highly rewarding enterprise. Their ability to convert agricultural waste into high-quality protein further enhances their value in sustainable food systems. In return, pigs provide highly nutritious animal protein and fat in the form of pork, a valuable addition to the human diet. With minimal investment in housing, equipment, and labour, pig farming remains an economically viable venture, yielding swift and substantial returns. This makes it a crucial source of livelihood and financial upliftment for rural communities.

Challenges in pig farming in Jharkhand

As per the Livestock Census of 2019, Jharkhand is home to a total of 12,76,973 pigs, out of which 10,08,966 pigs are indigenous, while only 2,68,010 are crossbred or exotic varieties. In the Ranchi district alone, the pig population stands at 68,396, the vast majority of which, 56,347, are indigenous pigs, and just 12,049 are of crossbred or exotic lineage.



Districtwise pig population of Jharkhand as per Livestock Census (2019)

In the state, pig rearing forms an integral part of the livelihood system of tribal and marginal farmers. These farmers predominantly rear desi pigs—non-descript varieties lacking distinct breed characteristics. Over generations, these indigenous pigs have adapted well to local conditions, thriving in environments where scientific breeding practices are largely absent. Traditionally, pig rearing has been practiced under backyard systems using indigenous breeds, with husbandry practices often relying on unscientific breeding methods and suboptimal hygiene standards,

resulting in low productivity. Consequently, poor genetics combined with inadequate management have led to significantly lower returns, limiting the economic potential of pig farming in these communities.

While such traditional systems align with the resource-conserving practices of rural households, they also expose animals to health risks and restrict productivity. The prevalence of unscientific breeding, poor hygiene, and rudimentary management practices has kept the sector stagnant, preventing it from evolving into a more organized and commercially viable enterprise.

Additionally, most tribal farmers cultivate crops such as paddy, maize, and mustard, along with vegetables and small ruminants like goats. However, delayed monsoons and mid-season droughts often lead to reduced productivity, further constraining their livelihood opportunities.

Interventions under Farmer FIRST Programme

Recognizing the potential of pig farming as a means of socio-economic upliftment, the government has actively encouraged rural communities to adopt more scientific and organized approaches to pig rearing. Addressing these challenges, the Farmer FIRST Programme (FFP) of the Indian Council of Agricultural Research (ICAR), through its project centres at Birsa Agricultural University (BAU), Ranchi, and ICAR-RCER, FSRCHPR, Ranchi, has been instrumental in transforming subsistence-driven pig farming into a sustainable and economically rewarding enterprise among tribal communities.

Under the Farmer FIRST Programme, scientific pig farming interventions were introduced in the operational areas by BAU, Ranchi, and ICAR-RCER, FSRCHPR to enhance farmers' income, employment, and nutritional security. For this purpose, an improved pig breed '*Jharsuk*' meaning "pigs of Jharkhand" developed under the AICRP on Pig by BAU, Ranchi, was propagated through the project. This breed exhibits superior economic traits compared to local pigs. '*Jharsuk*' pigs can attain a body weight of around 80 kg at 8–10 months of age and produce 8–12 piglets per farrowing, with two farrowings per year. The breed demonstrates faster

growth, lower maintenance costs, better feed conversion efficiency, and improved reproductive performance compared to other indigenous pig breeds.

Sensitization of farmers under the project

The intervention was primarily implemented in tribal villages of Ranchi district, namely Chipra, Jhabutoli, Panchdiha, Kutiyatu, Malti, and Tetri, which are predominantly vegetable-growing areas where farmers also rear small livestock such as pigs, poultry, and goats for domestic use. A survey using the Participatory Rural Appraisal (PRA) approach was conducted to assess the prevailing situation in the operational area. Beneficiary farmers were selected based on a baseline survey, prioritizing those with prior experience in pig rearing and ownership of a few animals.

The selected farmers were initially sensitized to the importance of scientific pig farming and its role in improving livelihood and income security through group discussions and awareness programmes. Subsequently, interested farmer groups received specialized training on scientific piggery, covering aspects such as housing, feeding, breeding, and health management, including vaccination, deworming, and disease prevention. Demonstrations on balanced feed formulation using locally available resources were conducted, and one-month-old piglets, along with essential inputs such as pig mineral mixtures and medicines, were distributed to the beneficiaries.

In addition, farmers were advised to diversify their cropping systems by introducing high-value crops and improved technologies during the *kharif* and *rabi* seasons. This integration of livestock and crop interventions resulted in higher yields and substantial increases in income.

Impact

Economic impact: Since the inception of the Farmer FIRST Programme, pig farming in the project areas has made a substantial contribution to enhancing the overall household income of tribal farmers. The introduction of the *Jharsuk* breed, coupled with scientific management practices, has resulted in remarkable income improvements. In most cases, annual household



Traditional way of free-range rearing of pigs

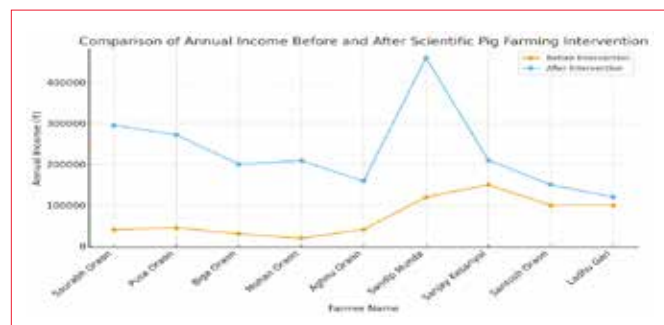


Intensive pig production system

income increased from ₹27,000–55,000 to ₹55,000–85,000, representing a 200–900% rise in some instances. A few progressive farmers, who expanded their piggery from 1–2 pigs to 10 pigs, are now earning net incomes of ₹3–4 lakh annually. The sale of piglets and pork has ensured a steady cash flow, while improved feeding and healthcare practices have reduced mortality rates.

Table 1. Impact of intervention on different enterprises

Enterprise	Name of Crop/ Livestock	Area (acre)	Before Net Income (₹)	After Net Income (₹)
Field Crop	Rice/Maize/ Wheat/Mustard	1.0-4	20,000– 25,000	25,000–35,000
Horticultural Crop	Elephant foot yam/ Bitter gourd/ Cucumber/Pea/ Okra/Tomato Cauliflower	0.5–1.0	10,000– 20,000	15,000–25,000
Livestock	Desi Pig/Goat/ Poultry	2–10	7,000– 10,000	15,000–25,000
Total Annual Net Income (₹)		0.5–4	27,000– 55,000	55,000–85,000



Moreover, diversification of livelihood activities through pig farming has reduced dependence on rainfed agriculture, providing resilience against climatic and seasonal uncertainties. This integration of piggery

with other farming practices has strengthened financial stability and enhanced overall livelihood security for the tribal households.

Social and environmental impact: Pig farming has also generated notable social and environmental benefits. The regular availability of pork has improved household nutritional security and dietary diversity. Employment opportunities within families, particularly for women, have increased as pig rearing developed into a household-level enterprise. Additionally, the effective utilization of pig manure as organic fertilizer has contributed to soil health and promoted eco-friendly farming practices.

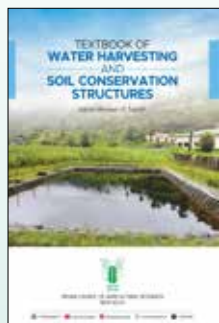
The graphical representation of annual income before and after the adoption of scientific pig farming interventions clearly demonstrates substantial income increases among nearly all progressive farmers, highlighting the positive impact of improved piggery management practices on livelihoods. Farmer-to-farmer extension, led by progressive farmers trained under the programme, has emerged as a local resource network, guiding and motivating other community members to adopt pig farming as a sustainable livelihood option. The success stories of farmers such as Shri Saurabh Oraon, Shri Pusa Oraon, and Shri Biga Oraon underscore the potential of livestock-based diversification for promoting sustainable rural development.

SUMMARY

The adoption of scientific pig farming practices under the Farmer FIRST Programme has transformed traditional subsistence systems into profitable enterprises, ensuring livelihood security, increasing income levels, and strengthening the rural economy of Jharkhand.

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