

Effectiveness Of Cow-based Organic Farming As A Solution To Harmful Effects Of Agrochemicals Under SROFR&TC (GGVS) In Ladpura, Kota, Rajasthan.

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GOYAL PROTEINS LIMITED (GPL)

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GOYAL PROTEINS LIMITED (GPL)

Goyal Proteins Limited (GPL) is a flagship company of the Goyal Group, specializing in the production of mustard oil, refined soybean oil, and other agro-based products. It is widely recognized for its consumer brands like **Deep Jyoti** and **Jyoti Kiran**, and for using advanced technologies in oil processing.

Vision: To be a leading provider of high-quality edible oils and agro-based products, ensuring customer satisfaction through innovation and excellence.

Mission: To deliver premium quality products consistently to our customers while maintaining reasonable pricing.

Company Overview

- **Name:** Goyal Proteins Limited
- **Incorporation Date:** June 16, 1999
- **Company Type:** Public Limited Company (Unlisted)
- **The Registered Office-** N.H.52, Village Kasar, Tehsil Ladpura, Kota, Rajasthan – 325003.

Core Values: Goyal Proteins Limited is committed to **quality first**, ensuring **hygiene and purity** in every process, driven by **technological advancement**, maintaining **transparency**, and delivering with a strong focus on **customer-centricity**.



GOYAL GROUP

- **Goyal Group** is a renowned industrial group based in Rajasthan, established in 1970 by Late Shri Ramawatar Goyal. With diversified operations in agro-processing, edible oils, and soy-based products, the group is known for its commitment to quality, innovation, and sustainable practices.
- Goyal Proteins Limited and Goyal Vegoils Limited are part of the renowned Goyal Group, a well-known brand in Western India with a wide range of commercial operations, such as the production of industrial soya bi-products, soy processing, and agro-edible oil.
- **Mission:** To lead in agro-processing and sustainable development by delivering high-quality products and services that enhance health, nutrition, and rural livelihoods.
- **Vision:** To be a trusted and innovative industrial group committed to quality, integrity, and inclusive growth in India's agro-based economy.
- **Core Values :-** Goyal Group believes in **continuous innovation and excellence**, ensures **customer satisfaction**, promotes **sustainability and eco-conscious practices**, adheres to **ethical governance**, and remains devoted to **social responsibility and rural development**.



GOYAL GRAMIN VIKAS SANSTHAN (GGVS)

Goyal Gramin Vikas Sansthan (GGVS), the CSR arm of the group, was established in 2010 to promote rural development and sustainable agriculture. It actively collaborates with universities and NGOs to empower farmers through organic and eco-friendly farming practices.

Mission:

To promote sustainable agriculture, organic farming, and rural development through capacity building, research, and community empowerment.

Vision:

To empower rural India through eco-friendly practices and inclusive development models that benefit farmers, communities, and ecosystems.

Established: 2010



Location: Khanpur, Jhalawar, Rajasthan



Core Focus Areas:

- **Promotion of Cow-Based Organic Farming**
- Stakeholder training via **SROFR&TC (est. 2016)**
- Collaborates with 36 NGOs, 5 agricultural universities, 2 research institutes
- Over **21,000 individuals trained** in sustainable farming



Key Facilities at SROFR&TC:



SHRI RAM SHANTAYE ORGANIC FARMING RESEARCH & TRAINING CENTRE (SROFR&TC),

founded in 2016 under GGVS, is a pioneering initiative dedicated to **cow-based organic farming**. Located in Ladpura Tehsil, Kota, the center offers training, research, and demonstrations to promote sustainable and holistic agricultural methods.

Key Facilities at SROFR&TC:

- Soil testing lab, pest/pathology lab
- Renewable energy (biogas, solar)
- Bamboo nursery, gaushala, herbal garden
- Integrated Farming System (IFS) demo model

Mission:

To promote and propagate cow-based organic farming by integrating traditional knowledge with scientific innovations through research, training, and demonstrations.

Vision:

To become a national center of excellence in organic agriculture, fostering self-reliant, healthy, and sustainable farming communities.

Core Values:

- Organic Integrity
- Farmer-Centric Training
- Scientific Rigor
- Respect for Traditional Wisdom
- Ecological Harmony



RESEARCH PURPOSE

This research aims to evaluate the effectiveness of cow-based organic farming in addressing agrochemical-related issues and its feasibility as an alternative to conventional farming.

RESEARCH QUESTION:

1. How does cow-based organic farming function effectively as a sustainable solution?

OBJECTIVES

1. To assess the adoption of cow-based organic farming by farmers under SROFR&TC, Ladpura tehsil, Kota.
2. To evaluate the extent to which conventional farming is being replaced by cow-based organic farming.
3. To analyze the reduction of harmful side effects caused by agrochemicals through organic farming methods.
4. To assess the production cost and economic feasibility of cow-based organic farming.
5. To evaluate the cost-benefit ratio of cow-based organic farming compared to conventional methods.



LITERATURE REVIEW

2.1 Organic Farming Practices

- Emphasizes **natural inputs** (cow dung, Panchagavya, Jeevamrit) for **soil fertility** and **crop productivity**.
- Boosts **microbial activity**, improves **soil structure**, and reduces **chemical dependency**.
- Challenges: **Lower initial yields, labor-intensive, knowledge barriers**.

(Tripathi & Kumar, 2019; Kumar et al., 2020)

2.2 Impact of Agrochemicals

- Causes **soil degradation, water pollution, biodiversity loss, and health issues**.
- Health risks: **Respiratory issues, cancers, neurological & reproductive disorders**.
- Long-term **environmental costs outweigh short-term gains**.

(Sharma & Tiwari, 2017; Gupta et al., 2019; Rao et al., 2020)

2.3 Policy Support for Organic Farming

- Government Initiatives:** PKVY, NMSA, Organic Farming Scheme (subsidies & training).
- Institutions like SROFR&TC** offer **hands-on training and technical support**.
- Adoption remains low due to **awareness gaps, market issues, and financial barriers**.

(Govt. of India, 2022; Sharma et al., 2021; Singh & Patel, 2020)

METHODOLOGY

Research Design

- **Mixed-method** approach: Quantitative (cost-benefit) + Qualitative (interviews/field insights)

Objectives

- Assess **economic & environmental** impact of cow-based organic farming
- Analyze **adoption rate, benefits, and challenges**
- Compare with **conventional farming**

Study Duration

- **10 March – 10 June 2025**

Type of Study

- **Descriptive + Analytical**, includes **case study** elements

Sample Size & Sampling

- **40 farmers** from **Ladpura Tehsil, Kota**
- **Purposive sampling**: Only trained/adopting farmers (via SROFR&TC)

Data Collection Tools

- **Primary**: Structured questionnaires, field observations, interviews
- **Secondary**: Govt. reports, research papers, GGVS/SROFR&TC data

Data Analysis

- **MS Excel**: Stats, cost-benefit, comparative graphs
- **Thematic analysis** of qualitative feedback

Ethical Considerations

- **Informed consent, confidentiality, voluntary participation**
- Guidelines followed per **IIHMR University**

FINDING AND ANALYSIS

1. General Profile of the Respondents

The study covered 40 male farmers from various villages across Ladpura Tehsil, Kota district, Rajasthan. Most had small to medium landholdings and were traditionally engaged in conventional farming, with all 40 farmers transitioning to cow-based organic farming in the past 1–5 years. The average family size was 6–7 members, with a higher number of females than males in households. Nearly all respondents owned cattle and practiced both conventional and organic farming. Number of year in organic farming experience – Average of 40 farmers = 2.125.

Type of Farming	Average land in Bigha
Organic Farming	24.71
Conventional Farming	28.06

Table 1: Distribution of land according to farming type (in Bigha; 1 Acre = 1.5 Bigha)

Distribution of land according to farming type: Farmers practiced two types of farming namely organic and conventional. Average land under organic faming per farmer was found to be 24.71 bigha and for conventional was 28.06 bigha (Table 4.1).

2. The Adoption & use of cow-based organic farming under SROFR&TC, Ladpura Tehsil, Kota, Rajasthan

- Average organic farming experience was 2.13 years.
- Majority (65%) had 1–2 years' experience; 35% had 3–5 years.
- 82.5% farmers reported being very satisfied due to better food quality, soil fertility, and family health.
- Adoption drivers included health, economic, and environmental concerns.
- 90% credited SROFR&TC for training and motivation.
- All farmers received institutional support such as seeds, lab testing, and field guidance.

Experience	No. of Farmers	Percentage
1–2 years	26	65%
3–5 years	14	35%

Table 2: Organic farming experience of farmers

Satisfaction Level	No. of Farmers	Percentage
Very Satisfied	33	82.5%
Moderately Satisfied	7	17.5%

Table 3: Satisfaction Levels

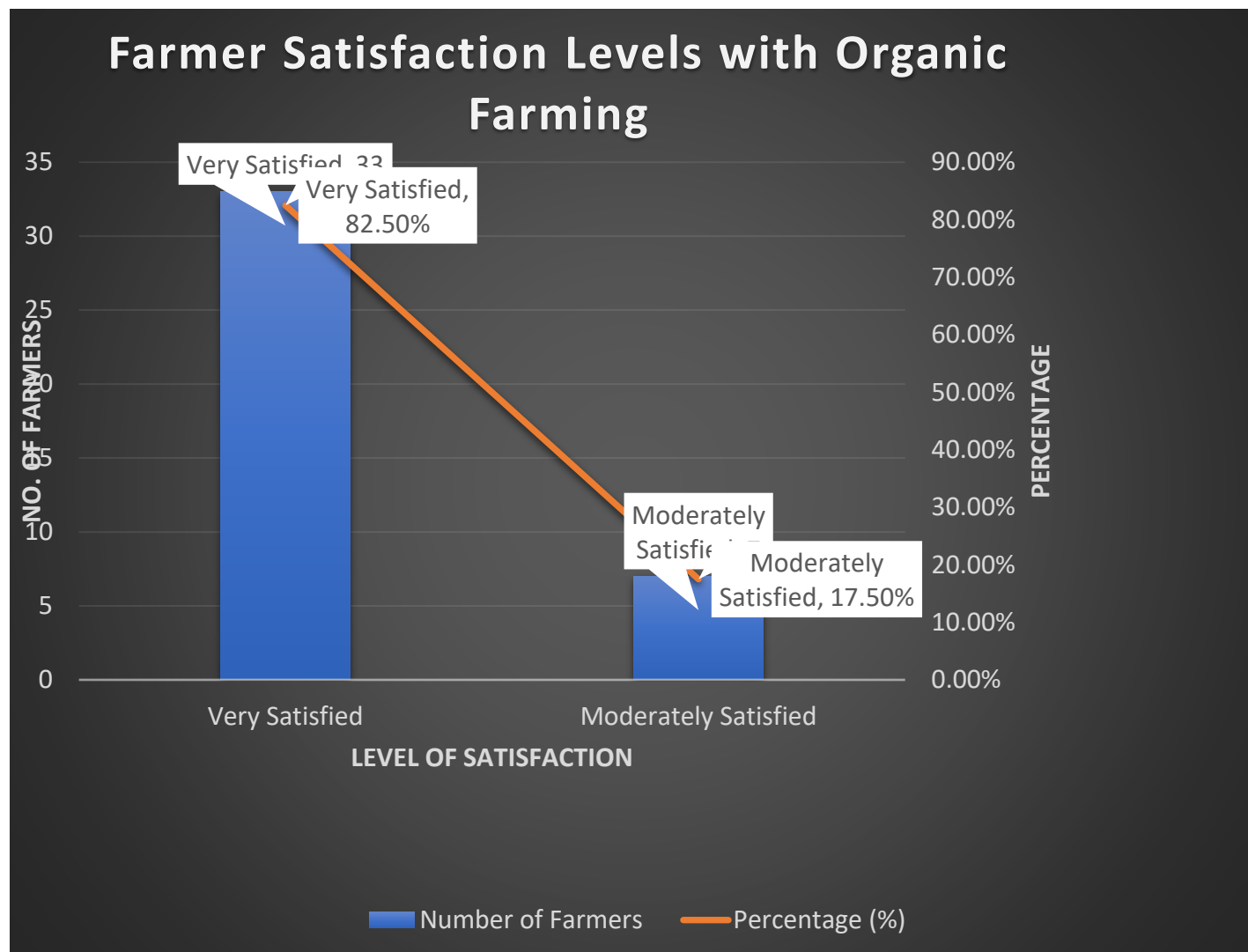


Figure 1: Farmer Satisfaction Levels with Organic Farming Outcomes

Source	No. of Farmers	Percentage
SROFR&TC / GGVS	36	90%
Self-motivated	4	10%

Table 4: Motivation Sources for Adoption

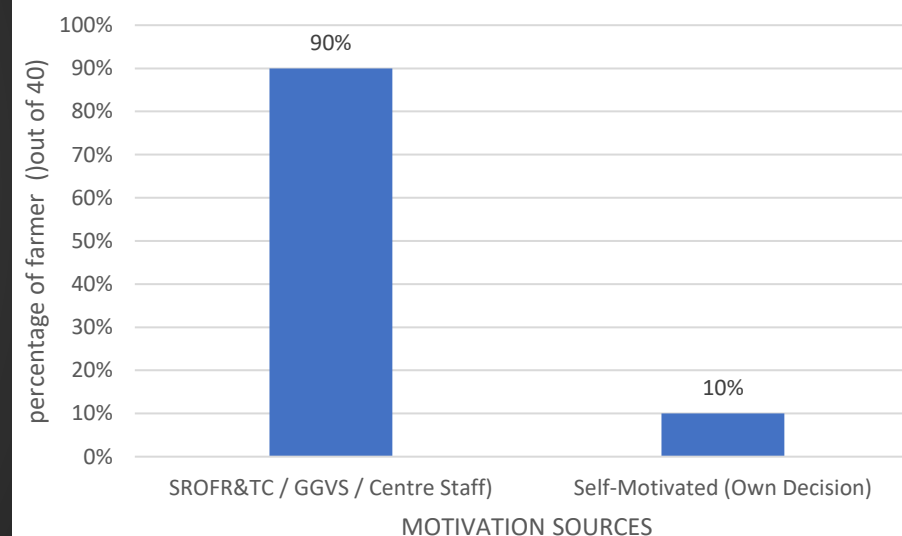


Figure 2: Farmers' Motivation Source for Adopting Organic Farming (in %)

3. The extent to which conventional farming is being replaced by cow-based organic farming

- 100% farmers stopped using chemical inputs, switching to natural alternatives.
- Inputs used: Saral compost (60%), fresh cow dung/urine (40%).
- Multiple uses of dung/urine: Jeevamrit (55%), pest spray (35%), wheat growth (10%).
- All practiced dual farming, with growing preference for organic on cereals & vegetables.
- Crops: 80% grew wheat-mustard, 20% paddy-gram.
- Challenges: labor intensity, limited organic markets, training gaps.

Input Type	% of Farmers
Saral Compost	60%
Fresh Cow Dung/Urine	40%

Table 5: Type of Organic Inputs Used

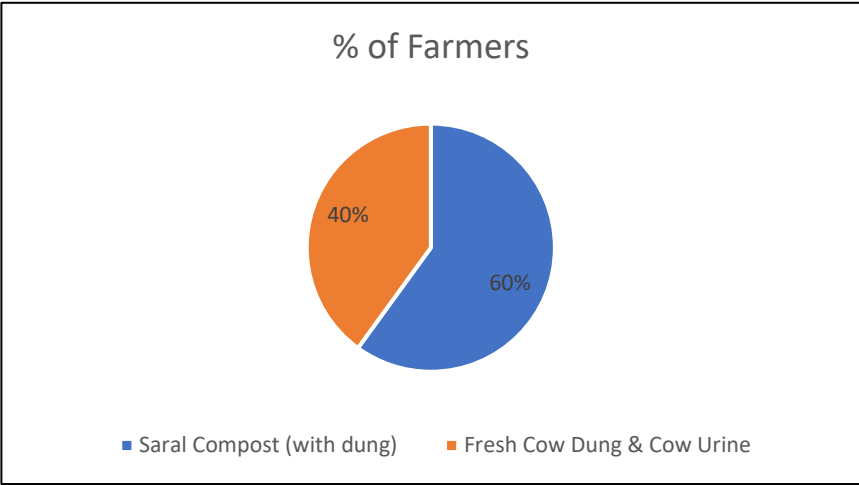


Figure 3: Type of Organic Inputs Used by Farmers

Usage	% of Farmers
Spray / Medicine	35%
Wheat Growth	10%
Jeevamrit / Khaad	55%

Table 6: Purpose of Cow Dung/Urine Use % of Farmers

Purpose of Cow Dung/Urine Use % of Farmers

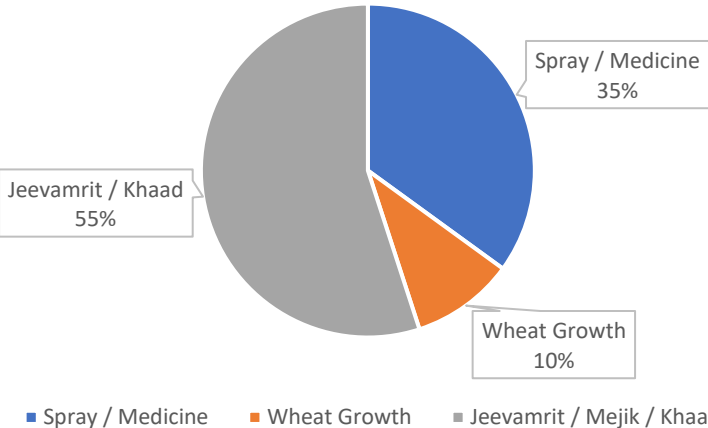


Figure 4: Purpose of Cow Dung/Urine Use % of Farmers

Table 7: Crop types cultivated by farmers

Crop Type	% of Farmers
Rapeseed -Wheat	80%
Rice – Chickpea/Gram	20%

Crop grown % of Farmers

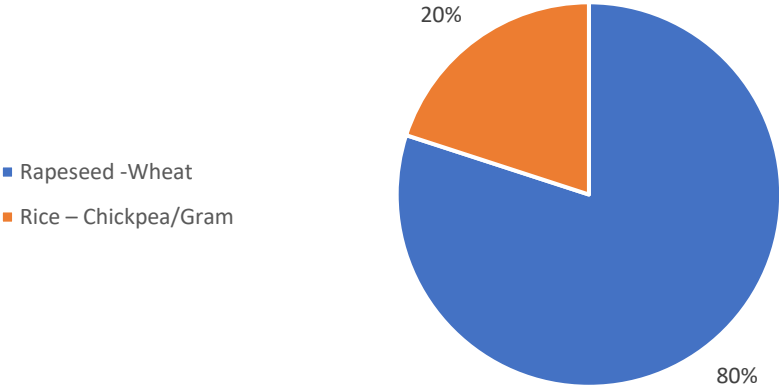


Figure- 5: Crop Types Cultivated by Farmers

4. The reduction of harmful side effects caused by agrochemicals

- 100% eliminated chemical pesticides, using neem-based and traditional methods.
- Farmers noticed improved family health, better soil. All respondents agreed organic farming is more eco-friendly.
- Transition challenges: initial yield drop due to soil adjustment, high labor in input preparation.

5. To assess the production cost and economic feasibility of cow-based organic farming

- 60% of farmers saw increased yield, 40% faced short-term drop but stabilized later.
- Yield comparison: Organic: 1000–1700 kg, Conventional: 1700–2000 kg.
- Cost-benefit: Organic farming cost: ₹15,900/bigha vs ₹19,875 in conventional.
- Income: ₹39,875 in organic vs ₹32,500 in conventional (↑ 22.7%).

Table 8: Perceived Yield Change After Adopting Organic Farming

Yield Change Category	Percentage of Farmers
Increased Yield	60%
Decreased Yield (Initially)	40%

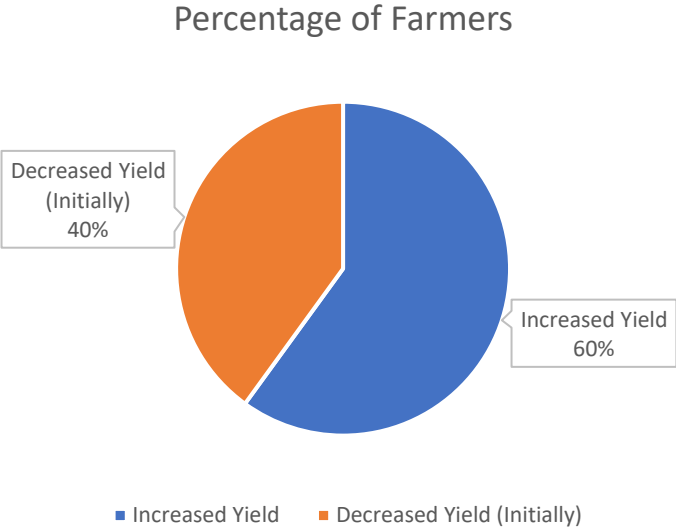


Figure 6: Perceived Yield Change After Adopting Organic Farming

Farming Method	Min Yield	Max Yield
Organic Farming	1000	1700
Conventional Farming	1700	2000

Table 9: Comparison of Yield Ranges: Organic vs. Conventional Farming

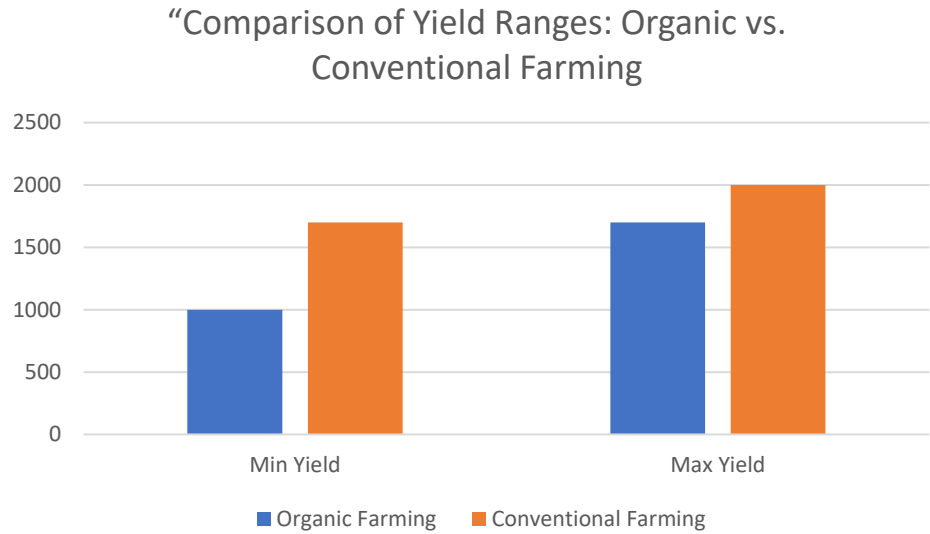


Figure 7: Comparison of Yield Ranges: Organic vs. Conventional Farming

Table 10: Comparative Average Cost and Income per Bigha (40 Farmers): Organic vs. Conventional Farming

	Organic:	Conventional
Average Cost per Bigha of 40 farmers	15,900	19,875
Average Income per Bigha of 40 farmers	39875	32500

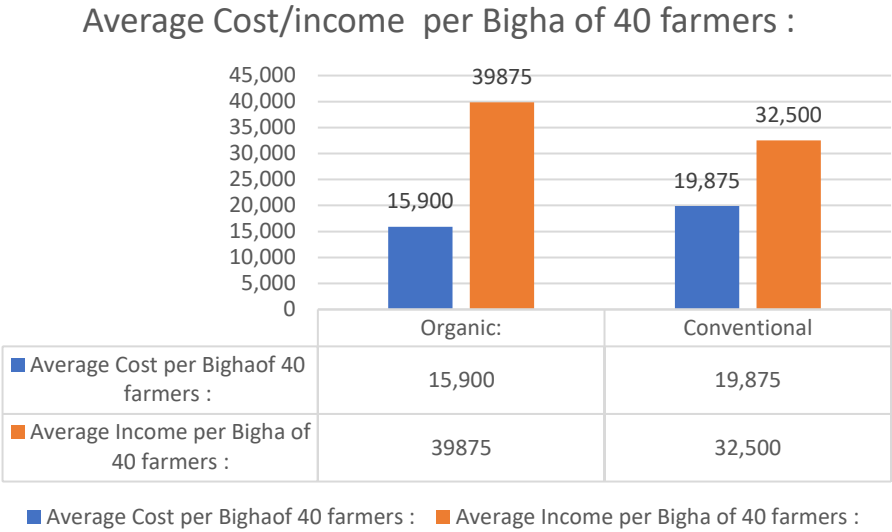


Figure 8: Comparative Average Cost and Income per Bigha (40 Farmers): Organic vs. Conventional Farming

6. To evaluate the cost-benefit ratio compared to conventional methods

- Organic farming outperformed in sustainability, health, and biodiversity.
- Major finding: reduced water usage – only 12.2% farmers felt organic farming used more water vs 87.8% for conventional.
- Farmers described organic farming as climate-resilient, self-reliant, and more suitable for long-term gains.

Table 11: Perceived Water Demand

Method	% of Farmers
Conventional	87.8%
Cow-based Organic	12.2%

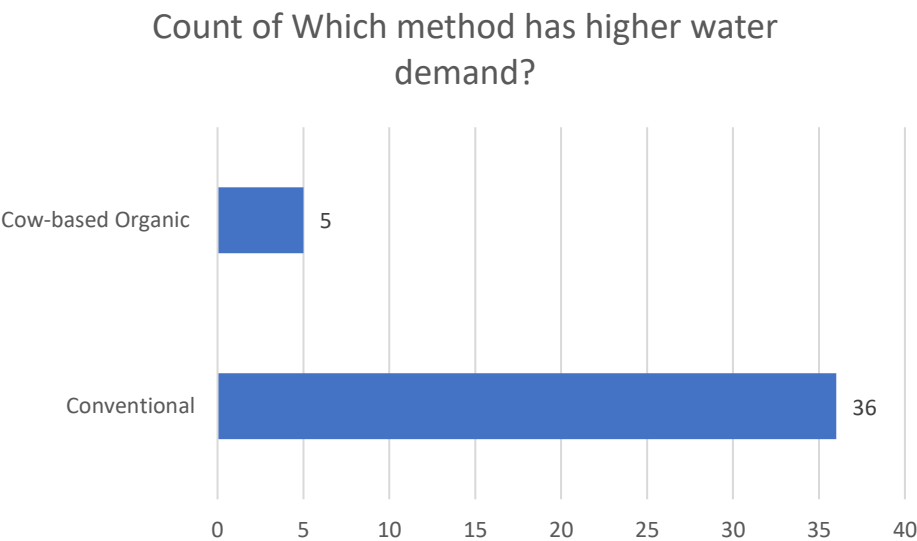


Figure 9: Perceived Water Demand by Farming Method

CASE STUDY: NARENDRA SINGH – BARODIYA VILLAGE, KOTA, RAJASTHAN.



Farmer Profile:

- 10-member family (7F, 3M), 1.5 bigha organic, 40 bigha conventional (all irrigated), owns 5 cows



Transition to Organic:

- Practicing cow-based organic farming for 5 years
- Trained by SROFR&TC (4 months), received seeds, field & lab support



Farming Practices:

- Uses Jeevamrit, Dash Parni Ark, saral compost
- Crops: Wheat & Mustard (100% organic input, no chemicals)



Economic Comparison (per bigha):

- **Organic:** ₹20,000 cost → ₹45,000 income → ₹25,000 profit
- **Conventional:** ₹25,000 cost → ₹30,000 income → ₹5,000 profit



Challenges:

- Labor & khaad shortage, market access issues



Impact:

- Improved soil, food, and animal health
- Fully satisfied & recommends organic farming
- Believes cow-based is more sustainable, with lower water demand



Support:

- Complete institutional support from SROFR&TC



CONCLUSION

1: The Adoption of Cow-Based Organic Farming

Avg. experience: 2.13 years; 65% with 1–2 years

82.5% highly satisfied – better soil, food quality, health

Institutional support from SROFR&TC and GGVS was key

2: The Extent to Which Conventional Farming is Being Replaced

Gradual shift to organic, esp. for wheat & vegetables

100% stopped chemical use; natural inputs like compost, Jeevamrit

Barriers: labor intensity, limited markets, training gaps

3: The Reduction of Harmful Effects Caused by Agrochemicals

Neem-based pest control used by all farmers

Improved environmental, soil, and family health

4: To Assess Production Cost and Economic Feasibility

Cost per bigha: ₹15,900 (organic) vs ₹19,875 (conventional)

Income: ₹39,875 (organic) vs ₹32,500 (conventional)

60% reported yield increase or stabilization

5: Conventional Methods

Organic farming uses **less water** (12.2% vs 87.8%)

Better in sustainability, biodiversity, and climate resilience

Overall Conclusion:

Cow-based organic farming is a **sustainable, eco-friendly, and economically viable** alternative. With **institutional and policy support**, it can transform rural agriculture, reduce chemical dependency, and improve farmer livelihoods.



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