

Knowledge amplification among dairy and poultry farmers: assessing the revolutionary impact of the JEEViKA project

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HIGHLIGHTS

- JEEViKA beneficiaries show higher knowledge in dairy and poultry farming than non-beneficiaries.
- Most beneficiaries have medium to high knowledge levels in farming practices.
- Training programs effectively empower rural women and improve livelihoods.

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ABSTRACT

The Bihar Rural Livelihoods Project (BRLP), also known as the JEEViKA project, was initiated in 2006 with financial support from the World Bank. Its primary objective is to enhance the socio-economic status of women residing in rural areas. The JEEViKA Project has established a novel platform to facilitate the progress of women. The present study carried out in the year 2021-22 which aims to assess and contrast the levels of knowledge between those who are beneficiaries of the JEEViKA project and those who are not. The research was conducted in the Begusarai district of Bihar. A sample of ten individuals classified as beneficiaries and ten as non-beneficiaries was selected from each of the six villages in the Teghra block, which exhibits the greatest concentration of JEEViKA beneficiaries. The poll included a total of 120 respondents, consisting of 60 beneficiaries and 60 non-beneficiaries. The data was collected through personnel interviews, employing a pre-structured interview schedule. Subsequently, a suitable statistical analysis was conducted to generate pertinent findings. Based on the findings of the present study, it was observed that those who were recipients of JEEViKA grants exhibited a higher level of knowledge in comparison to those who did not receive such benefits. A significant proportion of both beneficiaries and non-beneficiaries had a moderate level of comprehension of dairy and poultry operations.

1. INTRODUCTION

The Bihar Rural Livelihoods Project (BRLP), popularly called as JEEViKA, is being led by the Bihar Government through the Bihar Rural Livelihoods

Promotion Society with vast majority of the workforce lives in rural areas. In India, 833 million people (68.84 percent) live in rural areas, whereas 377 million people (31.16 percent) live in urban areas, according to the 2011 Census data. Bihar is the third most populous

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state in India, home to 103 million people. Eighty-nine percent of the population lives in rural areas. Bihar is among the poorest states in India and scores quite poorly on a number of development measures. (Census of India, 2011). BRLPS, an independent organisation under the Department of Rural Development, to empower the social and economic conditions of the rural poor. It sought to create SHGs (self-help groups) for the majority of participating homes, which were self-managed institutions (Suman & Jahanara, 2022). Women from the poorest of the poor families made up the target group. JEEViKA organised them into SHGs of 10 to 15 bankable women. Finally, they were federated into Cluster-Level Federations (CLFs), which included 35–45 VOs and comprised 10–15 SHGs. In six districts, the initiative was first tried in 2006. By 2022, 12.5 million homes in all 38 districts of Bihar are anticipated to be serviced by it (BRLPS, 2016).

The concepts of gender justice, women's empowerment, and women's welfare have gained prominence in the social, economic, and political development perspectives of both developed and developing countries in the twenty-first century (Waghmode and Kalyan, 2014). In terms of women's development, empowerment is a method for recognising, addressing, and eliminating barriers from a woman's life in order to give her greater control over the way her surroundings and life are created (Saha *et al.*, 2024). It is an active, multifaceted process that should help women realise their true selves and their full potential in all aspects of life. It is regrettable that due to years of ignorance and conservatism, women's actual and potential roles in society have been overlooked, preventing them from contributing in the way that is necessary for societal advancement (Longkumer, 2018).

Women have traditionally stayed in the background because they passively participated in decision-making. Due to prevailing patriarchal standards, they are not included in decision-making, even inside their households (Komin, 2021). A completely new platform for women's empowerment was introduced by the JEEViKA Project. To strengthen this community institution, numerous training programs, exposure visits, village immersions, etc., are planned and carried out. It believes in organising the SHGs to work for the good with their initiatives instead than supplying subsidies (Saha *et al.*, 2025). The project gives funds to community institutions but no subsidies at the individual level. By assembling them into community groups, it offers skilled and semi-skilled women in rural Bihar the chance to engage in profitable self-employment, lifting them out of poverty. Numerous livelihood training sessions

were held as part of the JEEViKA project, assisting rural women in achieving socioeconomic empowerment. Agarbatti, textile, handicraft, papad, and other non-agro-based interventions are conducted in the project-covered area, while the agro-based crop intensification system covers dairy, poultry, beekeeping, makhana, and fisheries. Poultry and dairy farming are the main enterprises which is widely practiced in the area. The study examines the knowledge level of dairy and poultry farmers under JEEViKA project comparing with knowledge level of non-beneficiary farmers.

2. MATERIALS AND METHODS

Ex-post facto research design was used for this study. The Bihar district of Begusarai has been chosen as the study region. Teghra Block was chosen for the study using purposive sampling out of the 18 blocks in the Begusarai district on the grounds that it contains the most trained livelihood training recipients from the JEEViKA project, which is now operating in the block. Six villages within the chosen block were specifically chosen because they have a higher proportion of JEEViKA recipients. Ten beneficiaries and ten non-beneficiaries were chosen for the study from each hamlet. As a result, there were sixty beneficiaries and sixty non-beneficiaries in the overall sample. To analyse the knowledge level of JEEViKA beneficiaries and non-beneficiaries, 24 questions were asked from them about dairy and poultry farming because trainings regarding various income-generating activities were provided to the rural women who joined in JEEViKA SHGs. Poultry and dairy farming are the main enterprises in which maximum rural women are engaged in the study area. To analyze the data, various statistical tools were used, i.e., mean, frequency, percentage and standard deviation.

3. RESULTS

Data presented in Table 1 indicates that JEEViKA beneficiaries had high knowledge about dairy farming. Majority (65%) of the beneficiaries had full knowledge and 35 per cent of them had partial knowledge about gestation period of cow; about correct time of feeding of colostrums to newly born calf 70 per cent had full and 30 per cent had partial knowledge; regarding quantity of milk fed to calves' 60 percent, 30 per cent and 10 per cent beneficiaries had full, partial and no knowledge respectively. 65 per cent of them were fully aware of the symptoms of an animal in heat, followed by 25 per cent who had partial and 10 per cent did not know; about the right time of artificial insemination, 75 per cent and 25 per cent had full and partial knowledge respectively. 61.67

per cent beneficiaries know about the age of de-worming of calf whereas 33.34 per cent had partial knowledge and 5 per cent had no knowledge and 66.67 per cent, 25 per cent and 8.33 per cent beneficiaries had full, partial and no knowledge respectively, regarding quantity of dry fodder given to dairy animals per day. About the weight of a newly born calf, 60 percent had full knowledge followed by 35 percent had partial and 5 per cent did not know. About symptoms of foot and mouth disease, age of

dehorning of newly born calf and type of milking to be followed 50 per cent of beneficiaries had full knowledge and regarding ideal interval between the milking 55 per cent had full knowledge followed by 25 per cent and 20 per cent had partial and no knowledge respectively. In the case of non-beneficiaries data presented here clearly shows that they had less knowledge regarding dairy farming as compared to beneficiaries.

Table 1. Knowledge of the beneficiaries and non-beneficiaries regarding dairy farming

Sl. No.	Components of dairyfarming	Beneficiaries (n=60)			Non-beneficiaries (n=60)		
		FC f (%)	PC f (%)	NC f (%)	FC f (%)	PC f (%)	NC f (%)
1	Gestation period of cow	39 (65)	21 (35)	00	12 (20)	27 (45)	21 (35)
2	Correct time of feeding of colostrums to newly born calf	42 (70)	18 (30)	00	06 (10)	25 (41.66)	29 (48.34)
3	Quantity of milk fed to calves	36 (60)	18 (30)	06 (10)	8 (13.34)	20 (33.34)	32 (53.33)
4	Symptoms of animal in heat	39 (65)	15 (25)	6 (10)	5 (8.33)	32 (53.34)	23 (38.33)
5	Right time of Artificial Insemination	45 (75)	15 (25)	00	06 (10)	30 (50)	24 (40)
6	Age of de-worming of calf	37 (61.67)	20 (33.34)	03 (5)	07 (11.66)	27 (45)	26 (43.34)
7	Quantity of dry fodder given to dairy animals per day.	40 (66.67)	15 (25)	05 (8.33)	5 (8.33)	30 (50)	25 (41.66)
8	Weight of newly born calf	36 (60)	21 (35)	03 (5)	12 (20)	20 (33.34)	28 (46.66)
9	Symptoms of foot and mouth disease	30 (50)	18 (30)	12 (20)	6 (10)	30 (50)	24 (40)
10	Type of milking to be followed	30 (50)	16 (26.67)	14 (23.33)	3 (5)	21 (35)	36 (60)
11	Ideal interval between the milking	33 (55)	15 (25)	12 (20)	8 (13.33)	27 (45)	25 (41.66)
12	Age of dehorning of newly born calf	30 (50)	17 (28.33)	13 (21.67)	12 (20)	30 (50)	18 (30)

Note: FC= Fully Correct; PC= Partially Correct; NC=Not Correct

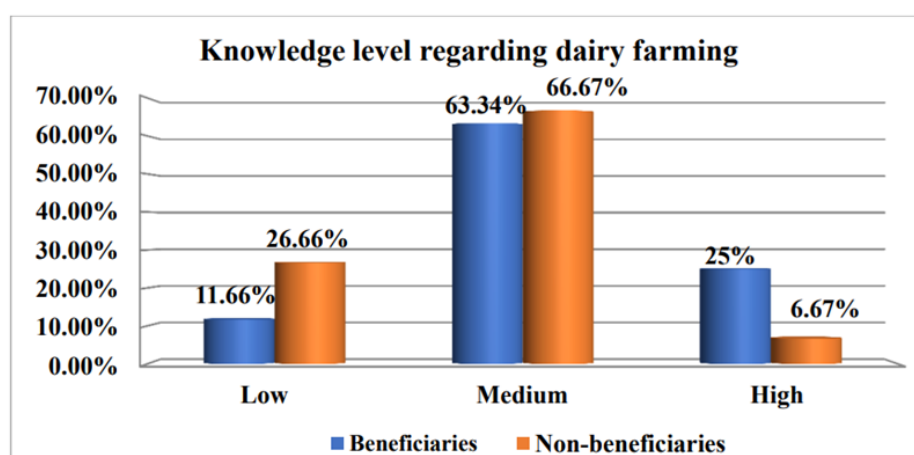


Figure 1. Distribution of beneficiaries and non-beneficiaries as per their knowledge of dairy farming

Data presented in Figure 1 revealed that the majority (63.34%) of JEEViKA beneficiaries had a medium level of knowledge regarding dairy farming, followed by 25 percent who had a high knowledge level, whereas only 11.66 percent had a low knowledge level. In the case of non-beneficiaries

majority (66.67%) had medium knowledge level followed by 26.66 percent who had low knowledge level, whereas only 6.67 percent had high knowledge level regarding dairy farming. This clearly shows that the knowledge level of JEEViKA beneficiaries was higher than non-JEEViKA beneficiaries.

From table 2 it was reported that 70 percent of the beneficiaries had full knowledge followed by 30 percent of them had partial knowledge about optimum weight of one day old chick; 65 percent had full knowledge followed by 35 percent had partial knowledge about types of brooding system; regarding basic qualities of litter 66.67 percent had full knowledge followed by 30 percent of them had partial knowledge followed by 3.33 percent had no knowledge; 63.33 percent, 33.34 percent, and 3.33 percent had full, partial and no knowledge respectively, regarding source of lighting for birds; 75 percent of beneficiaries had full knowledge followed by 20 percent partial followed by 5 percent had no knowledge about feed requirement of a day old chick; regarding basic qualities of water for poultry 70% had

full knowledge followed by 25 percent and 5 percent had partial and no knowledge respectively, in case of method of watering for birds 58.33 percent had full knowledge, regarding common disease in poultry 70 percent beneficiaries had full knowledge followed by 20 percent had partial and 10 percent of them had no knowledge, knowledge of common endo- parasites in poultry 60 percent fully aware of that followed by 15 of them had no knowledge, the main vaccine used in poultry 65 percent had full knowledge while 6.67 percent had no knowledge, regarding control measures taken to minimize the incidence of disease and the timing of vaccination of poultry birds 50 percent of the beneficiaries had full knowledge. From table 2 it is clearly shows that non-beneficiaries had a low level of knowledge about poultry farming.

Table 2. Knowledge of the beneficiaries and non-beneficiaries regarding poultry farming

Sl. No.	Components of dairyfarming	Beneficiaries (n=60)			Non-beneficiaries (n=60)		
		FC f (%)	PC f (%)	NC f (%)	FC f (%)	PC f (%)	NC f (%)
1	Optimum weight of one day old chick	42 (70)	18 (30)	0	3 (5)	30 (50)	27 (45)
2	Types of brooding system	39 (65)	21 (35)	0	2 (3.33)	27 (45)	31 (51.66)
3	Basic qualities of litter material	40 (66.67)	18 (30)	2 (3.33)	0	37 (61.66)	23 (38.33)
4	Source of lighting for birds	38 (63.33)	20 (33.34)	2 (3.33)	4 (6.67)	30 (50)	26 (43.33)
5	Feed requirement of a day-old chick	45 (75)	12 (20)	3 (5)	6 (10)	27 (45)	27 (45)
6	Basic quality of water for poultry	42 (70)	15 (25)	3 (5)	3 (5)	30 (50)	27 (45)
7	Method of watering for birds	35 (58.33)	20 (33.33)	5 (8.33)	10 (16.67)	32 (53.33)	18 (30)
8	Common disease in poultry	42 (70)	12 (20)	6 (10)	6 (10)	29 (48.33)	25 (41.67)
9	Common endo-parasites in poultry	36 (60)	15 (25)	9 (15)	3 (5)	35 (58.33)	22 (36.66)
10	The main vaccine used in poultry	39 (65)	17 (28.33)	4 (6.67)	1 (1.66)	30 (50)	29 (48.33)
11	The timing of vaccination of poultry birds	30 (50)	18 (30)	12 (20)	6 (10)	32 (53.33)	22 (36.66)
12	Control measures taken to minimize the incidence of disease	30 (50)	15 (25)	15 (25)	7 (11.66)	31 (51.66)	22 (36.66)

Note: FC= Fully Correct; PC= Partially Correct; NC=Not Correct

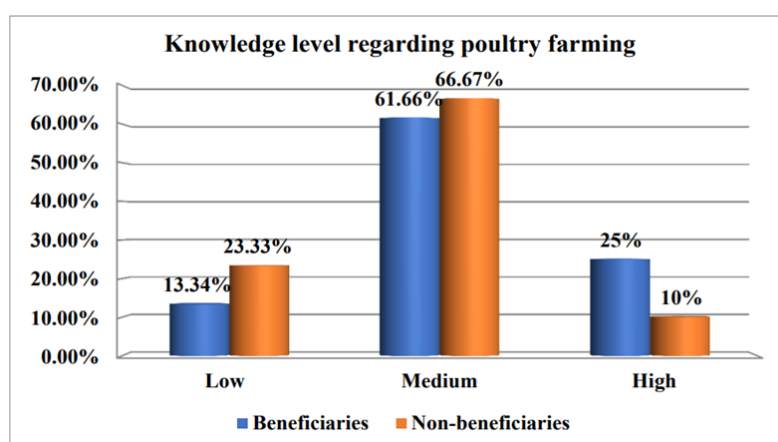


Figure 2. Distribution of beneficiaries and non-beneficiaries as per their knowledge of poultry farming

Data presented in Figure 2 revealed that the majority (61.66%) of JEEViKA beneficiaries had a medium knowledge level regarding poultry farming,

followed by 25% who had a high knowledge level, whereas only 13.34 percent had a low knowledge level. Whereas the case of non-beneficiaries' majority

(66.67%) had medium knowledge level followed by 23.33 percent had low knowledge level and only 10 percent had high knowledge level regarding poultry farming. This demonstrates unequivocally that JEEViKA grantees had a greater degree of knowledge than non-beneficiaries.

4. DISCUSSION

The findings demonstrate that the JEEViKA project produced extensive effects on dairy and poultry farmer knowledge acquisition in Bihar's Begusarai district. JEEViKA beneficiaries demonstrated superior knowledge in dairy and poultry management than farmer groups who did not participate in the project. Results from Tables 1 and 2 show that the majority of beneficiaries under JEEViKA possessed medium through high understanding of dairy and poultry farming components. Results showed that 65% of the beneficiaries understood the natural gestational span of cattle and 70% knew the perfect weight of one-day-old chicks. Non-beneficiaries demonstrated reduced knowledge in dairy and poultry subject matter since only 20% had complete knowledge about the gestation period and only 5% had full knowledge about optimum weight. The implementation of the JEEViKA project demonstrates its efficacy by providing specific knowledge training to increase beneficiary knowledge sharing.

Most JEEViKA beneficiaries displayed medium knowledge regarding dairy and poultry farming but a substantial number reached high knowledge levels according to research results. A majority of 63.34% beneficiaries demonstrated medium knowledge regarding dairy farming, together with 61.66% who displayed medium knowledge in poultry farming. Non-beneficiaries displayed a dominance of medium knowledge levels although their percentage of low knowledge rates was higher than their high knowledge achievement rates. The findings match Khode *et al.* (2018) and Bharti *et al.* (2019) who discovered comparable patterns in knowledge spread between trained versus untrained farmers. JEEViKA training programs run by the project function as a crucial instrument which leads to enhanced knowledge and skill acquisition among rural women. Through its community mobilization activities and self-help groups (SHGs) structure the JEEViKA project helps beneficiaries gain profits from self-employment while creating socioeconomic power. The distribution of grants to institutions through JEEViKA has created dedicated ownership among participants who drive sustainable improvements for their livelihoods (BRLPS, 2016).

Continued training sessions coupled with exposure visits serve as essential commitments to develop the capabilities of beneficiaries according to the study findings. Through its combination of livelihood training sessions and village visits and many exposure trips the JEEViKA program effectively trains women in rural areas for efficient management of dairy and poultry operations. Research by Pralhad *et al.* (2020), Prusty *et al.* (2020) along with Thakur *et al.* (2021) confirms skill development trainings create substantial effects on poultry production together with backyard poultry farming.

The research results demonstrate that JEEViKA project has made a substantial difference in improving dairy and poultry farming knowledge levels among Begusarai district farmers in Bihar. The better performance of individuals receiving training through JEEViKA shows that specific skills development approaches with grassroots community outreach effectively teach rural female farmers while increasing their capabilities in their chosen professions. The research indicates similar researches can expand throughout different regions as well as income sectors to achieve the best impact. Sustained knowledge acquisition and skill development among beneficiaries needs to be supported through emergency and mobilization training together with local exposure opportunities. Future research needs to measure how these interventions affect income generation stability in the long term. Development organizations and policymakers can establish digital and e-learning systems alongside established training approaches to create easier and more efficient ways of sharing information. Sustainable rural development along with enhanced socio-economic empowerment of rural communities can be achieved by implementing these recommendations.

5. CONCLUSIONS

The study concluded that the knowledge levels of JEEViKA beneficiaries are significantly higher compared to non-beneficiaries in both dairy and poultry farming. Among JEEViKA beneficiaries, the majority demonstrated a medium level of knowledge in dairy farming, followed by high and low levels, respectively. In contrast, while a majority of non-beneficiaries also exhibited a medium knowledge level, a substantial proportion fell into the low knowledge category, with only 6.67 percent attaining a high level of knowledge. In the domain of poultry farming, a similar trend was observed. Most JEEViKA beneficiaries possessed medium knowledge, followed by those with high knowledge, and only 13.34 percent were categorized as having low knowledge. Conversely, among non-beneficiaries, the

majority had medium knowledge, followed by low, and only 10 percent demonstrated high knowledge. These findings indicate that the livelihood training interventions under the JEEViKA initiative have had a statistically significant and positive impact on improving the knowledge base of beneficiaries in key livelihood activities such as dairy and poultry farming. The results underscore the effectiveness of targeted capacity-building efforts in enhancing rural livelihoods. The study highlighted the potential for scaling up JEEViKA's training interventions to other regions and livelihood sectors, with further research needed to assess their long-term impact on income generation and livelihood sustainability.

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REFERENCES

- Bharti, R., Singh, D., Sagar, M. P., Kumari, M., & Vishwakarma, R. (2019). Knowledge level of rural women about scientific backyard poultry farming in Bundelkhand region of Uttar Pradesh. *International Journal of Pure & Applied Bioscience*, 7(3), 525–528. <http://www.ijpab.com/vol7-iss3a73.php>
- BRLPS. (2016). *How JEEViKA, a CDD project in Bihar, India was able to change cultural norms and empower women: A policy note*. JEEViKA Learning Note Series No. 3. Bihar Rural Livelihoods Promotion Society.
- BRLPS. (2016). *Socio-economic effects of JEEViKA program: Addressing social and economic segregation through women*. Bihar Rural Livelihoods Promotion Society.
- Khode, N., Singh, B. P., Chandra, M., Bardhan, D., Verma, M. R., & Singh, Y. (2018). Impact of training intervention on knowledge level of trained dairy animal owners: An application of propensity score matching method. *International Journal of Agricultural Statistics and Science*, 14(1), 285–291.
- Komin, S. (2021). *To study on empowerment of rural women through Self Help Group in Rajnandgaon district of Chhattisgarh* (Unpublished master's thesis). Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh.
- Kshandakar, S., Singh, K. N., & Nishashree, N. (2018). Impact of training on livelihood of rural poultry farmers. *International Journal of Current Microbiology and Applied Sciences*, 7(5), 241–245. <https://doi.org/10.20546/ijcmas.2018.705.031>
- Longkumer, M. (2018). Study on the features of women empowerment through SHGs (Self Help Group) with references to Medziphema R.D Block of Nagaland. *International Journal of Science and Research*, 7(6), 428–432. <https://doi.org/10.21275/ART20198399>
- Patel, R. K., Kadian, K. S., & Phand, S. (2014). Knowledge level of the KVK trainee dairy farmers and non-trainee dairy farmers in Satna District of Madhya Pradesh. *Global Journal for Research Analysis*, 3(9), 1–2.
- Pralhad, G. S. Y., Nagaraj, J. N. S., Anupama, C., Shreevani, G. N., & Patil, M. C. (2020). Impact of KVK trainings on promotion of backyard poultry farming in Kalyan Karnataka, India. *International Journal of Current Microbiology and Applied Sciences*, 9(6), 407–411. <https://doi.org/10.20546/ijcmas.2020.906.053>
- Prusty, A. K., Panigrahi, R. S., Padhy, C., & Rout, S. (2020). Knowledge level of farmers regarding system of rice intensification (SRI) method in Puri district of Odisha. *Indian Journal of Pure and Applied Biosciences*, 8(3), 270–277. <http://dx.doi.org/10.18782/2582-2845.8131>
- Registrar General & Census Commissioner, India. (2014). *Census of India 2011: Report on post enumeration survey*. Government of India.
- Saha, P., Prusty, A. K., & Nanda, C. (2024). Extension strategies for bridging gender digital divide. *Journal of Applied Biology & Biotechnology*, 12(4), 76–80. <https://dx.doi.org/10.7324/JABB.2024.159452>
- Saha, P., Prusty, A. K., & Nanda, C. (2025). An overview of pluralism in agricultural extension and advisory services. *International Research Journal of Multidisciplinary Scope*, 6(1), 131–138. <https://doi.org/10.47857/irjms.2025.v06i01.02074>
- Suman, S., & Jahanara. (2022). A study on socio-economic upliftment of women JEEViKA beneficiaries and to analyse the constraints faced by them in Begusarai District of Bihar. *Asian Journal of Agricultural Extension, Economics & Sociology*, 40(7), 109–114. <https://doi.org/10.9734/ajaees/2022/v40i730924>
- Thakur, R., Sharma, N., & Mankotia, B. (2021). Impact of skill development trainings on poultry production. *International Journal of Livestock Research*, 11(1), 119–124. <https://doi.org/10.5455/ijlr.20200922062429>
- Waghmode, R. H., & Kalyan, J. L. (2014). Women empowerment in India: A study. *Reviews of Literature*, 1(7), 1–8.