IJCRT.ORG

ISSN: 2320-2882



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Role Of Self-Help Groups Under Jeevika In Livelihood Promotion

Atiya Khatoon Research Scholar, University Department of Economics, Patna University Prof. Dr. Saroj Sinha Professor, University Department of Economics, Patna University

Abstract:

The Jeevika initiatives, implemented under the Bihar Rural Livelihoods Promotion Society, has emerged as a transformative model for rural development by leveraging the collective strength of Self-Help Groups (SHGs). These women-led SHGs function as grassroots institutions that drive socio-economic change through financial inclusion, livelihood diversification and social empowerment. This paper explores the pivotal role played by SHGs under Jeevika in enhancing households income ,promoting entrepreneurship and fostering socio-economic resilience among marginalized communities. Based on the Jeevika Annual report 2017-22, this study conducts a comparative analysis of three key livelihood interventions i.e. farm intervention, livestock intervention and non-farm intervention through SHGs under the Jeevika initiative in Bihar livelihood promotion. The study finds that while all three interventions have unique strengths, livestock and non-farm intervention offer quicker income turnaround, where farm-based intervention ensure long term food and income stability. Integrating all three through community institutions like SHGs leads to a more resilient, inclusive, and sustainable rural livelihood ecosystem.

Keyword: Jeevika, (SHGs), Livelihood Interventions, Sustainable Rural Livelihoods

Introduction:

Rural poverty and unemployment continue to challenge India's socio-economic development, particularly in states like Bihar where the majority of the population relies on agriculture and informal labour. In this context, the Government of Bihar, with support from the World Bank, initiated the Bihar Rural Livelihoods Project (BRLP), popularly known as JEEViKA, with the aim of enhancing the livelihoods of the rural poor, especially women. At the heart of this mission lie Self-Help Groups (SHGs) community-based institutions that have proven to be effective platforms for financial inclusion, social empowerment and sustainable livelihood promotion. JEEViKA's SHG-centric model enables women to collectively save, access credit, and engage in income-generating activities, thereby reducing dependence on informal moneylenders and creating pathways out of poverty. Through strategic interventions in agriculture, livestock, skill development, and enterprise promotion, SHGs have evolved into engines of economic empowerment and social change in rural Bihar. The objective of the livelihood initiatives is to enhance sectoral size and productivity growth in key livelihood sectors for employment generation of the poor .The aim of this research paper is to analyse the role of Self-Help Groups (SHGs) under the JEEViKA program in promoting sustainable livelihoods among rural women in Bihar, with a specific focus on three key livelihood interventions: agriculture, livestock, and non-farm enterprises.

Intervention under Jeevika for livelihood Promotion Farm Interventions

Farm interventions under JEEViKA are designed to enhance rural livelihoods by improving agricultural productivity, sustainability, and market access. Grounded in the livelihood promotion framework, the approach focuses on building community institutions such as Self- Help Groups (SHGs), Farmer Producer Groups (FPGs), and Farmer Producer Organizations (FPOs) to enable collective farming, input procurement, and value chain integration. The interventions promote sustainable practices like the System of Rice Intensification (SRI), organic farming, and crop diversification to ensure low-cost, climate-resilient agriculture. Capacity building through trained community resource persons (CRPs) and Krishi Salahkars ensures knowledge dissemination at the grassroots level.

Livestock Interventions

Livestock intervention under JEEViKA is a strategic livelihood enhancement approach aimed at improving rural income, nutrition, and women's empowerment. Rooted in the asset-based livelihood promotion model, the intervention focuses on developing livestock-based enterprises—such as goat rearing, backyard poultry, and dairy—among Self-Help Group (SHG) members. The model emphasizes community-based service delivery through trained local cadres like Pashu Sakhis and Poultry Resource Persons (PRP), who provide animal health services, vaccination, and capacity building. Infrastructure support like poultry mother units and Automated Milk Chilling Units (AMCUs) enables production scalability and market integration.

Non -Farm Interventions

JEEViKA's non-farm interventions diversify rural incomes by promoting micro-enterprises through SHGs and federations. Key activities include tailoring, handicrafts (such as Madhubani painting), art and craft, and food processing initiatives like Didi ki Rasoi (community kitchens). Didi ki Rasoi provides food service for patient and also visitors. The approach emphasizes social mobilization, skill development, and collective action, supported by access to finance, infrastructure, and market linkages through schemes like PMFME. Digital financial inclusion via Bank Sakhis further strengthens enterprise sustainability. This integrated model enhances economic resilience, women's empowerment, and inclusive rural development. Rural Retail Shop(RRS) providing wholesale market for all consumable goods at affordable price. Shilpgram Mahila Producer Company Ltd ,Bihar Saras Mela all are included in art & craft Saras Mela occasion provide platform to the traditional and rural artisans to showcase, sell their artifacts and also keep their traditional culture alive.

Literature Review:

Kumari Neelam (2020) emphasis on his study "A Study on impact of economic Self-Help Groups programs on women's empowerment" states that microfinance programme for the rural empowerment has resulted in improving the socio -economic status of rural women. Through SHGs microfinance is significant in bringing rural women empowerment confidence building courage and skill development among the financially excluded section of society.

Faridagani (2019) states role of women self-help groups for the improvement of economic status of the women in the society has contributing to increase income, employment opportunities, makes women selfhelp group members economically self reliant and more self confident and the sole aim of promoting the interest of the rural women-folk.

Tamilselvi (2018) emphasis on his study the reason of success of SHGs are linked with the poor people, its innovation practices, its capacity to enable people's participation in development and trust building at different level between stakeholders. SHGs also increase the financial status of the household, self confidence and independence among rural women which turn increased the livelihood of the women.

N.V Suresh et.al (2024) in his work found that SHGs empower women through various income-generating activities and saving initiatives. Women can become financially self reliant. SHGs often involves savings and access to financial services, its secure financial future and also contributes to the banking sector's growth and stability by increasing the numbers of savers and borrowers. SHGs play a vital role in capital formation at the grassroots level. Women involvement in SHGs fosters the development of social networks.

Those networks can be instrumental in providing support, sharing knowledge and creating a sense of community among women.

Bidisha Bora, Barman et.al (2022) the study suggested improving Jeevika Sakhis performance through a proper capacity building programme. The positive changes in the SHGs members income had also been observed under DAY-NRLM. SHGs members also perceived positive development in some dimension. The study revealed a need for capacity building of Jeevika Sakhis which will improve the performance of the Jeevika Sakhis.

Rupam Soti (2023) in her work critical factors affecting participation of women in NRLM Self- Help Groups suggest that NRLM effective by learning from the field, taking experts opinions, improve policies and strategies. Similar studies from other study areas are desired to create local areas specific solutions.

Bhargavanath, Padmaja et.al (2023) find in his study and justify the greater role played by the SHGs in increasing empowerment of women by making them financially strong as well as it helped them to save amount of money and invest it further development. It is also found that the SHGs created confidence for social and economic self-reliance among the members in selected village. It develops the awareness programmes and schemes, loan policies etc. There is a positive impact of Self -Help Groups on women empowerment.

Upamanya Dutta (2015) study on socio-economic effects of a self-help group intervention. The Jeevika programme has brought about some definite changes on a variety of a dimensions in the lives of the socially and economically marginalized castes in Bihar. For further study the result from allied research agendas would jointly contribute to understanding the quality of service delivery by community driven development projects that work via institutional platforms and multi-pronged interventions to address poverty

Pradip Ram Tulika (2022) found that Jeevika works efficiently in only farm intervention not in livestock and non farm intervention. Jeevika introduces various interventions for the livelihood promotion and for the income generation through these interventions but less enrolment shows a negative result towards the proper implementation of these schemes and interventions. Further research to find out the factors affecting the less enrolment of rural people in intervention of Jeevika.institutional platforms and multi-pronged interventions to address poverty.

Jyotish Kumar (2021) found that Jeevika has been changing the economic and socio culture scenario .of rural Bihar through SHGs but it should provide adequate fund, local resources, capacity building resources & quality of life of SHGs members. He suggested education is very important for development of any society. There is a need to improve the eduction of women in rural area, adequate financial support is required, develop and utilise local resources in rural area, social audit is required, target should be more futuristic, involvement of aspirations, knowledge and ideas of natives will be very productive.

Objectives of the study:

- 1. To analyse the role of Self-Help Groups under Jeevika in enhancing livelihood opportunities.
- 2. To assess the scale and impact of livelihood intervention.
- 3. To analyse the role of institutional support mechanism.

Research Methodology:

The study is descriptive in nature and based on secondary data. Data has been collected from various source like journals, Jeevika official site and the annual report from 2017 to 2022 is used to examine the effect of Jeevika in the promotion of livelihood in rural Bihar. In this paper, five years of data have been analysed to examine the role of Jeevika in livelihood promotion through farm interventions, livestock interventions, and non-farm interventions in Bihar. Measures such as mean and standard deviation have been used to identify patterns, compare data across years, and interpret variations in outcomes across different types of livelihood interventions. The quantitative analysis is supported by visual tools such as graphs to facilitate better understanding. Furthermore, the study aspires to offer meaningful recommendations that can assist policy

makers and implementers in strengthening the design and delivery of livelihood programs for the socioeconomic development of poor and marginalized communities in Bihar.

Data Analysis and Interpretation:

The table no.1 provides a five-year overview (2017–18 to 2021–22) of SHG households enrolled in various farm-based interventions under the JEEViKA program. The interventions include SRI (System of Rice Intensification), SWI (System of Wheat Intensification), kitchen gardening, vegetable cultivation, and organic farming. This consistent growth suggests increasing awareness and adoption of improved paddy cultivation practices among SHG farmers. Participation in the System of Rice Intensification (SRI) shows a consistent upward trend, rising from 278,860 in 2017–18 to 807,899 in 2021–22. The average enrolment over the period was 584,933.8, with a standard deviation of 168,357.27, indicating moderate variability. Similarly, enrolment in the System of Wheat Intensification (SWI) increased significantly, averaging 559,031, though it displayed higher fluctuation, as reflected in its standard deviation of 206,205.93. Kitchen garden activities were inconsistent, possibly due to seasonal challenges, input access, or focus shift in program delivery. The numbers rose from 2,20,838 in 2017–18 to a peak of 5,34,013 in 2020–21, followed by a slight decline. There is a visible increasing trend, reflecting gradual diversification of livelihoods into horticulture. Organic farming witnessed limited and inconsistent participation, with enrolment figures ranging between 1,832 and 6,317 SHGs, averaging 3,530.7 and reflecting minimal spread with a standard deviation of 1,985.96. The total number of SHG households enrolled in all interventions rose substantially

Table 1: Five -Year Data of SHG HHs enrolled in farm interventions of Jeevika

Year/Area	2017-18	2018-19	2019-20	2020-21	2021-22	Average Enrolment In Intervention	Standard Deviation
Number of SHGs Farmers taken SRI	278860	<mark>46412</mark> 6	625517	748267	807899	584933.8	168357.27
Number of SHGs Farmers taken SWI	300113	517711	404599	695133	877599	559031	206205.93
Number of SHGs Household involved in Kitchen Garden	170966	559375	720078	103700	661256	443075	255764.73
Number of SHGs Involved in Vegetable Cultivation	220838	312626	383953	488960	534013	388078	114152.03
Number of SHGs involved in organic farming	-	2443	-	1832	6317	3530.7	1985.96
Total	970777	1854082	2134147	2037892	2887084	-	-

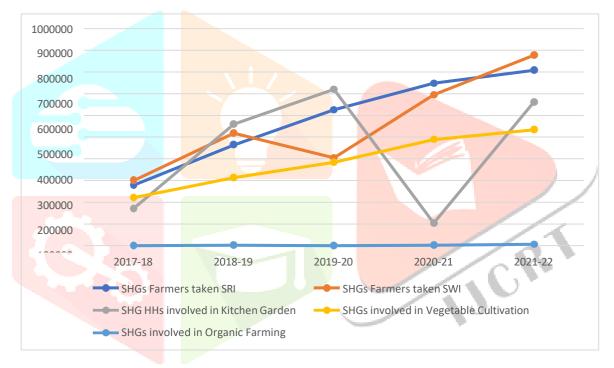
www.ijcrt.org	© 2025 IJCRT Volume 13, Iss	sue 9 September 2025	ISSN: 2320-2882

Average enrolment in interventions per year	242694.25	370816.4	426829.4	407578.4	577416.8	-	•
Standard Deviation	50565.58	202447.09	178748.48	304089.31	309289.27	-	-

Source: Compiled from the Jeevika Annual Report (2017-2022)

from 970,777 in 2017–18 to 2,887,084 in 2021–22, highlighting the expanding scale and reach of JEEViKA's farm-based initiatives. While the overall trend suggests significant progress, the growing standard deviations in recent years also indicate increasing variability, possibly due to contextual or implementation-level challenges.

Figure:1 Five Year Trend of SHG HHs enrolled in farm interventions of Jeevika



Source: Construct from table no.1

Figure 1 shows a five-year trend of SHG household participation in JEEViKA's farm interventions. SRI and SWI saw steady growth, with SWI slightly surpassing SRI in 2021–22. Vegetable cultivation increased until 2020–21, then slightly declined. Kitchen gardening showed fluctuation, with a sharp drop in 2020–21 and partial recovery later. Organic farming remained consistently low, indicating limited adoption. Overall, core interventions expanded significantly, while others showed instability or low uptake.

Table 2: Five-Year Data of SHG HHs enrolled in Livestock Interventions of Jeevika

						Average	
Year/Area	2017- 18	2018 -19	2019 - 20	2020 - 21	2021 -22	Enrolment in Intervent ion	
Number of SHGs households benefitted from Poultry Intervention	181392	131666	132676	131363	13310	118081.4	55783.90
Number of SHGs households benefitted from Diary Intervention DCS/COMFED/KMMPC	-	4562	57422	82482	104238	49740.8	34343.85
Number of SHGs benefitted under Goatry Intervention	4003	3849	12883	11598	-	8083.25	8312.00
Total	185395	140077	202981	225443	117548	-	-
Average enrolment in interventions per year	92697.5	46692.33	67660.33	75147.6	58774		
Standard Deviation	88601.43	60086.16	316287.47	38333.45	45464		

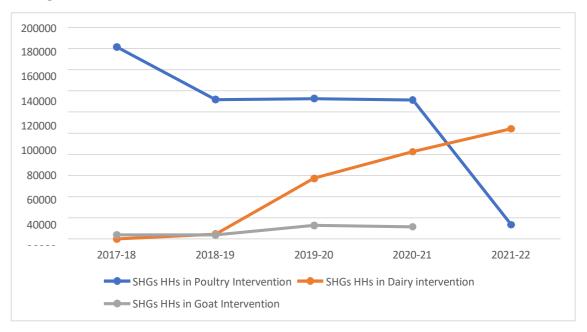
Source: Compiled from the Jeevika Annual Report 2017-2022

The data represents the five-year participation of SHG households in poultry, dairy, and goatry interventions under the JEEViKA program. Poultry intervention had the highest enrolment in 2017–18 with 1,81,392 households, but consistently declined over the years, reaching just 13,310 in 2021–22. The average participation was 1,18,081.4 with a standard deviation of 55,783.90, indicating high variability and a sharp fall in the final year. Dairy intervention (COMFED/DCS/KMMPC) began in 2018–19 and showed a strong upward trend, growing from 4,562 to 1,04,238 by 2021–22. The average enrolment stood at 49,740.8, with a standard deviation of 34,343.85, reflecting significant growth with moderate fluctuation.

Goatry intervention remained comparatively low and uneven, peaking at 12,883 in 2019–20, but showing no reported data in 2021–22. Its average participation was 8,083.25, with a standard deviation of 8,312, reflecting low and inconsistent uptake.

Overall, the total number of SHG households benefitting from livestock-based interventions increased until 2020–21 but declined sharply in 2021–22. The highest average enrolment was observed in 2019–20 (67,660.33), followed by a decline to 58,774 in 2021–22. This trend suggests that while livestock interventions initially gained momentum, external factors such as the COVID-19 pandemic, resource constraints, or operational gaps may have contributed to the recent decline.

Figure 2:Five Year Trend of SHG HHs enrolled Livestock Interventions of Jeevika



Source: Construct from table no.2

Figure 2 shows the changing trend of SHG household participation in livestock interventions under JEEViKA. Poultry intervention, initially the highest in 2017–18, declined sharply by 2021–22. In contrast, dairy intervention rose steadily and overtook poultry by the final year, indicating a shift in preference or program success. Goatry intervention remained low and inconsistent throughout. Overall, the graph reflects a move from poultry to dairy-based livelihoods.

The table 3 data reflects SHG household participation in selected non-farm and enterprise-based interventions promoted under JEEViKA between 2017–18 and 2021–22. Participation in Didi Ki Rasoi emerged only in the later years, beginning with 220 SHGs in 2020–21 and increasing to 700 in 2021–22, indicating a growing institutional food-based livelihood opportunity for women .Bee Keeping showed notable engagement in 2018–19 with 19,383 SHGs, followed by a drop in 2020–21 and 2021–22. The average enrolment across the recorded years stood at 10,407, with a standard deviation of 6,510.17, reflecting moderate variation. Similarly, the Grameen Bazaar initiative started slowly with only 30 SHGs in 2018–19, but gained momentum, reaching 2,996 SHGs by 2021–22, suggesting increased interest in rural marketing and micro-enterprise linkages .Participation under SVEP (Start-Up Village Entrepreneurship Program) began in 2019–20 and consistently increased, peaking at 20,000 SHGs in 2021–22. Its average participation across three years was 38,605.66, with a relatively high standard deviation (21,564.35), pointing to expanding entrepreneurial support across project areas.

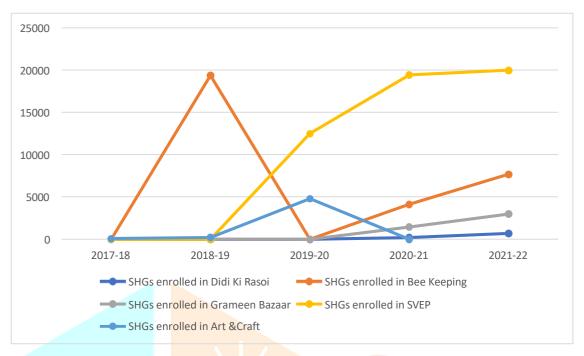
Table:3 Five Year data of SHGs HHs enrolled in Non-Farm Interventions o fJeevika

_	1	1	1	,	1	T	1
Year/Area	2017-18	2018-19	2019-20	2020-21	2021-22	Average enrolment in intervention s per year	Standard Deviation
Number of SHGs enrolled in Didi Ki Rasoi	-	-	-	220	700	460	240
Number of SHGs enrolled in Bee Keeping		19383	-	4145	7693	10407	6510.17
Number of SHGs enrolled in Grameen Bazaar	4	30	-	1473	2996	1499.66	1211.011
Number of SHGs enrolled in SVEP			12498	19441	20000	38605.66	21564.35
& Craft/ Saras Mela	84	-	4814 17313	25279	31389	1702.66	179637.79
Average enrolment in intervention s per year					7847.27	-	-
Standard Deviation	-	5878.27	3842.00	7707.05	14917.9	-	-

Source: Compiled from the Jeevika Annual Report 2017-2022

In contrast, Art & Craft/Saras Mela participation was only recorded between 2017–18 and 2019–20, starting with 84 SHGs and rising to 4,814 in 2019–20. No data was reported in the last two years, possibly due to COVID-19 restrictions on public gatherings and fairs. The average for this intervention was 1,702.66, but a very high standard deviation of 1,79,637.79 reflects inconsistent implementation or event-specific participation .Overall, the trends highlight an increasing diversification of SHG livelihoods beyond agriculture, especially in enterprise and service-based models. However, the inconsistencies in participation across years and interventions suggest operational, funding, or external factors influencing outreach and uptake.

Figure 3: Five Year Trend of SHG HHs enrolled Non-Farm Interventions of Jeevika



Source: Construct from table no.3

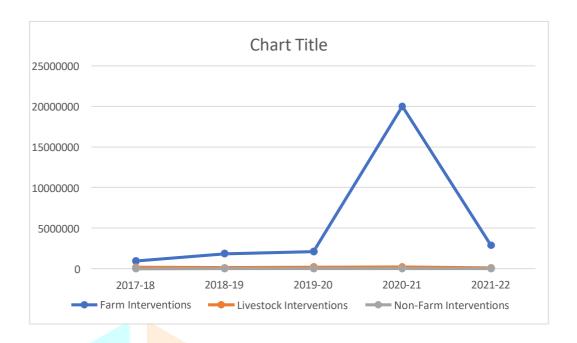
Figure 3 illustrates year-wise enrolment trends of SHG households in various non-farm interventions under JEEViKA from 2017–18 to 2021–22. A sharp rise is seen in bee-keeping during 2018–19, where participation peaked, followed by a significant decline in the following years. In contrast, SVEP (Start-up Village Entrepreneurship Programme) shows a consistent and steep upward trend beginning from 2019–20, eventually stabilizing around 20,000 SHG households by 2021–22—indicating growing focus on entrepreneurship promotion. Didi Ki Rasoi which entered the dataset only in 2020–21, shows a gradual increase, suggesting new but expanding engagement in institutional kitchen enterprises. Grameen Bazaar witnessed a slow but steady rise in enrolment from 2018–19 onwards. Meanwhile, Art & Craft/Saras Mela displays a short-lived spike in 2019–20 and disappears thereafter, likely due to COVID-19 disruptions affecting public events. Overall, the graph reflects a diversification of SHG livelihood options beyond agriculture, with entrepreneurship-based and service-oriented models (like SVEP and Didi Ki Rasoi) showing stronger and more consistent growth in recent years.

Table 4: Comparative analysis of enrolment of SHG HHs in the Three Intervention of Jeevika

Years	Farm Interventions	Livestock Interventions	Non-Farm Interventions
2017-18	970777	185395	84
2018-19	1854082	140077	19623
2019-20	2134147	202981	17313
2020-21	2037892	225443	25279
2021-22	2887084	117548	31389

Source: Compiled from the Jeevika Annual Report 2017-2022

Figure 4: Comparative analysis of enrolment of SHG HHs in the Three Intervention of Jeevika



Source: Construct from table no.4

The table 4 and figure 4 show that farm interventions have consistently attracted the largest number of households. Enrolment rose from 970,777 in 2017–18 to 2,887,084 in 2021–22, nearly tripling over five years. This demonstrates that agriculture remains the primary livelihood focus under Jeevika. Livestock enrolment fluctuated notably:

(2017–18) 185,395, (2018–19) Dropped to 140,077(2020–21): Peaked at 225,443 (2021–22) : Fell again to 117,548. These fluctuations indicate seasonal or disease-related impacts (e.g., livestock health issues) changes in program emphasis or funding priorities variable adoption by communities2017–18: Only 84 households enrolled.(2021–22) Rose to 31,389 households. Though still a smaller share, the consistent upward trend shows growing acceptance of non-farm livelihoods (micro-enterprises, skills training, small businesses). In nutshell Farm Interventions Dominate Overall Enrolment ,Livestock Interventions Show Volatility and Non-Farm Interventions Grew from Negligible to Significant.

Conclusion:

The data highlights the significance of Jeevika's livelihood interventions in engaging Self Help Group (SHG) households across various sectors. Farm-based activities have received the highest level of participation, indicating a strong alignment with the rural population's existing skills and resources. Livestock-based activities have also played a vital role, though they reflect the need for more consistent support and infrastructure. Non-farm interventions have created emerging opportunities for income diversification, reflecting a gradual shift toward alternative livelihoods.

Key points that need to be addressed. Strengthen Livestock Interventions, develop targeted programs to address the decline and volatility in livestock enrolment. Improve veterinary services, disease control measures, and access to fodder and feed. Provide training on livestock management and market linkages to enhance profitability and participation. Consolidate Farm Intervention Gains supporting farm-based Continue livelihoods, given their consistent and high enrolment. Introduce advanced practices like precision farming, climate-resilient agriculture, and organic cultivation to sustain interest. Strengthen input supply chains and ensure timely credit access for SHG households. Scale Up Non-Farm Livelihood Promotion, allocate more resources and technical support to non-farm activities, which have shown promising growth, expand skill development programs in areas like handicrafts, tailoring, food processing, and small enterprises. Facilitate

marketing support and digital platforms for non-farm products to improve income potential. Promote Livelihood Diversification, encourage households to adopt multi-intervention strategies (combining farm ,livestock, and non-farm options) to spread risk and enhance resilience .Design integrated livelihood packages tailored to local contexts and preferences. Overall, the enrolment figures demonstrate the deepening engagement of rural communities in livelihood development programs under Jeevika. These interventions contribute not only to economic empowerment but also to the social and institutional strengthening of SHGs at the grassroots level. Continued support, innovation, and adaptability in these programs are essential to sustaining rural livelihoods and improving quality of life.

Reference:

- 1. Kumari. N.(2020). A study on impact of economic self-help group programs on women's empowerment, IJFME
- https://www.theeconomicsjournal.com/article/view/69/4-1-5
- 2. A.Faridagani. (2019). Women Self- Help Groups in the Empowerment of Women. Zenodo. https://doi.org/10.5281/ZENODO.2586416
- 3. Dr. S. Tamilselvi. (2018). Effectiveness Of Government Initiative Regarding Self Help Groups For Women Empowerment In Tirupur District. Zenodo. https://doi.org/10.5281/ZENODO.1466633
- 4. Suresh, N. V., Rexy, V. A. M., & Vijayalakshmi. (2024). An Empirical Study on Empowering Women through Self Help Groups. In Advances in Economics, Business and Management Research (pp. 957–964). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-374-0_83
- 5. Bora, B., Barman, U., & Saikia, H. (2022). Performance of Jeevika Sakhi of Deendayal Antyodaya Yojana National Rural Livelihood Mission on Improving Livelihoods of Rural Poor in Assam, India. Asian Journal of Agricultural Extension, Economics & Sociology, 40(12), 416–423. https://doi.org/10.9734/ajaees/2022/v40i121811
- 6. Dr. Rupam Soti. (2023). Critical Factors Affecting Participation of Women in NRLM Self-Help Groups. Zenodo. https://doi.org/10.5281/ZENODO.7976366
- 7. Bhargavanath , Padmaja et.al.(2023) Self Help Groups and Microfinance: A study on Livelihood And Empowerment of the Pulla Yerukula Tribe in SPSR Nellore District of Andhra

 https://www.paperpublications.org/upload/book/SELF%20HELP%20GROUPS%20A

 ND%20MICROFINANCE-28022023-3.pdf
- 8. Dutta, U. (2015). Socio-economic impacts of Jeevika: A large scale self-help group
- 9. project in Bihar, India, World Development volume 68
- 10. Pradip Ram, & Tulika.(2022). Livelihood Promotion and Intervention of Jeevika: A
- 11. Trend Analysis. Management Insight, 18(01),14-24. https://doi.org/10.21844/mijia.18.1.2
- 12. Kumar, J.(2021) Rural livelihood programme in India a case study of Jeevika in Bihar,
- 13. Sodhganga BRLP(2018-19) Annual audit reports. http://hdl.handle.net/ 10603/457203
- 14. https://brlps.in/overview
- 15. Annual Report (2017-18) "JEEVIKA https://brlps.in/overview
- 16. Annual Report (2018-19) ,JEEVIKA https://brlps.in/overview
- 17. Annual Report (2019-20) ,JEEVIKA https://brlps.in/overview
- 18. Annual Report (2020-21) "JEEVIKA https://brlps.in/overview
- 19. Annual Report (2021-22) ,JEEVIKA https://brlps.in/overview
- 20. https://www.researchgate.net
- 21. https://nrlm.gov.in/