



Interventions to Empowering Tribal Women through Self-Help Groups for Piggery Production in Rural Village of Meghalaya: Challenges and Opportunities

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Abstract

Livestock is generally considered a key asset for rural livelihood and women constitute a major workforce engaged in livestock rearing. Identifying and supporting women's roles in livestock is one of the keys to promoting women's economic and social empowerment. The interventions to empower the women beneficiaries through Self Help Groups (SHGs) in the rural villages of Meghalaya and impact assessment using the Women's Empowerment in Livestock Index (WELI) indicated the scope and potential to improve women empowerment and livelihood security. There is an improvement in the domain of input into productive decisions, nutrition decisions, access to and control of livestock assets, control over farm income, and access to information, training, and groups. However, the autonomy in nutrition, credit access, and access to non-farm income opportunities was marginal. Therefore, there is a need to address the significance of women in agriculture production including livestock rearing, and empower them for rural development which leads to economic growth.

Keywords: Nutritional Security, Piggery, Self Help Group, Women Empowerment.

Introduction

Women play an important role in livestock management particularly pig rearing in the backyard in the rural areas of northeast India being feed gatherers, primary care providers, and farrowing attendants. While the role of women in small-scale livestock production is well recognized, much less has been documented about the engagement of women in intensive production and the market chains associated with large commercial enterprises (FAO 2011). The increasing demand for livestock products due to a decrease in land holdings and an increase in population creates opportunities for the empowerment of women (Taneja 2013) by using the piggery sector as a tool since the demand for livestock products has grown much faster than the demand for crop staples (FAO 2011). Identifying and supporting women's roles as livestock owners, processors, and users of livestock products while strengthening their decision-making power and capabilities, are key aspects in promoting women's economic and social empowerment and consequently provides a way to enable rural women to break the cycle of poverty (Singh 2020). In Meghalaya, Women have a dominant role in the matrilineal society and contribute a remarkable part of the agricultural production system. Although they contributed to the agrarian sector which is linked to food security and natural resource management, the customary rules and practices prevailing in rural areas create preventive consequences for women which limits their access to key resources such as land and credit (Bordoloi 2021). Therefore, there is a need for measures of empowerment that are robust, inclusive, and comparable over time and space (Alkire 2013). Diverse strategies exist to empower women and one quantitative measure is the Women's Empowerment in Livestock Index (WELI) which is a reliable and adapted means to assess women's empowerment (Galie *et al* 2019). We presented herein the interventions to empower the targeted women beneficiaries based on women Self Help Groups (SHGs) in the rural villages of Meghalaya were identified on a small scale for implementation and follow-up progress monitoring and evaluation.

Objectives

The objective of the interventions was to impart a scientific way of rearing improved varieties of pigs for economic gains and livelihood improvement under the Tribal Sub Plan (TSP) programme. This will also give a platform to identify the beneficiaries who can take up pig rearing for fattening purposes as well as a breeding unit of piggery for establishing the supply chain of piglets in the village.

Methodology

A baseline survey was done, and the participants were identified based on the demographic and biometric Aadhaar number identification and mobile phone number of the women SHGs. Two women SHGs (Fig: 1) comprising of eleven and ten members each from NongTyrlaw Sohkhwai Village (Ialam Lynti Ban-i) and UdenLa village (UTylli) under Umling block (26.09038 °N, 91.92454 °E) in Ri-Bhoi district of Meghalaya were identified and selected for interventions by imparting three days training programme at Piggery demonstration farm, ICAR-RC for NEH on two consecutive years 2021 and 2022, respectively. The basic profile of each participant (age, educational qualification, family size) was recorded along with information on the land holding size, main crops or livestock owned and other material possessions indicating the social status were collected through questionnaires. The scientific methods of housing, feed and feeding, breeding, health, and disease management were taught and hands-on practical demonstrations were also done besides field exposure visits to various scientific housing model and managerial practices. On satisfactory completion of three days of training, each beneficiary was given inputs for the initiation of rearing pig in a scientific way. Regular monitoring and visits to their villages were carried out for general pig rearing management as well as veterinary health assistance as and when required. The Women's Empowerment in Livestock Index (WELI) score (Galie *et al* 2019) was done before and after intervention to assess the impact of interventions in terms of empowerment in livestock rearing. Six domains related to decisions about agricultural production, nutrition, access to and control over resources, control and use of income, access to and control of opportunities and extent and control of work time with sixteen indicators in the score card (table 1) was used to assess each participant.

Results

The basic information of the participants gathered through questionnaires revealed the women SHGs groups comprises of married women in the age group of 23 to 60 years having education of basic primary level. Most of them has large family size ranging from 3 to 10 members. The lands were inherited with the division of land amongst

the siblings down the generations and therefore the land holding of the families was small (an average of 0.5 hectares/household). Their main occupation is mostly agriculture (paddy) and horticultural (pineapple, banana, betel nut, black pepper, broom, etc.) cultivation with an average annual income between thirty to forty thousand. Most of them practiced backyard pig and poultry rearing with non-descript breeds for household consumption. With the knowledge of scientific training imparted and input provided - 03 numbers (01 male and 02 female) of improved varieties of weaned piglets for each beneficiary, all the participants made a new housing made with bamboo, wooden or concrete as per scientific space requirement for pig (Fig: 2). The piglet distributed were reared following regular managerial practices. Other supporting inputs such as formulated pig feeds, mineral mixture, deworming tablets and liver tonic were integrated into the feeding system. The feed formulation was also improvised by integrating locally available feeds. The health management practices were implemented with regular monitoring and vaccination against common infectious diseases like Classical Swine Fever. The performance of the piglets in terms of growth and body weight gained were monitored and found satisfactory. However, there has been mortality of piglets (06 numbers in NongTrylaw Sohkhwai and 07 numbers in UdenLa) and the investigation into the deaths indicated the viral disease outbreak which affected a large number of pig populations in both villages. The animals attained maturity and piglet production started after a year (Fig: 3). The weaned piglets were re-distributed amongst the women SHGs rearing pigs for fattening purposes. The fattened pigs were sold to the local vendor for cut meat as there was no regulated market. However, the prices vary based on the size of the pig and bargaining skills. It has been observed that the feeding of piglets and pigs with only locally available feed sources compromised the body weight gain as compared to feeding with locally available feeds incorporating commercially formulated feeds.

Table 1: Percentage of Women participants achieving adequacy at WELI in the study group

Sl no	Domain	Indicators	% achieving adequacy by participants	
			NongTrylaw Sohkhwai	Umdenla Ang
1	Decisions about agricultural production	a. Input into productive decisions	100	60
		b. Autonomy in production	59.09	55
2	Decisions related to nutrition	a. Input into nutrition decisions	81.82	70
		b. Autonomy in nutrition	59.09	55
3	Access to and control over resources	a. Access to and control of livestock assets	95.45	70
		b. Access to and control of land and crop assets	86.36	40
		c. Credit access	45.45	70
4	Control and use of income	a. Control over farm income	90.91	55
		b. Control over non-farm income	63.64	55
		c. Control over expenses	68.18	70
5	Access to and control of opportunities	a. Access to markets	95.45	25
		b. Access to non-farm income opportunities	63.64	40
		c. Access to information, training, groups	81.82	60
6	Extent and control of work time	a. Total workload	86.36	80
		b. Proportion of revenue generating workload	72.73	70
		c. Control over own time	86.36	100



Fig. 1: Selected Women Self-Help Groups (SHGs) members from NongTrylaw Sohkhwai (11 participants) and UmdenLa Ang (10 participants) participated in the three-day training at ICAR-RC for NEHR.



Fig. 2: Representative pictures of the women participants with their pig housing structure during the on-site visit to assess the existing or new housing for pig. Various locally accessible materials like bamboo, wood, bricks, and concrete blocks were used for pig housing.



Fig. 3: Representative pictures of Piglet produced by the participants with the input (Pig) distributed. The recorded litter size of the first parity varies from 5 to 10 piglets per sow.

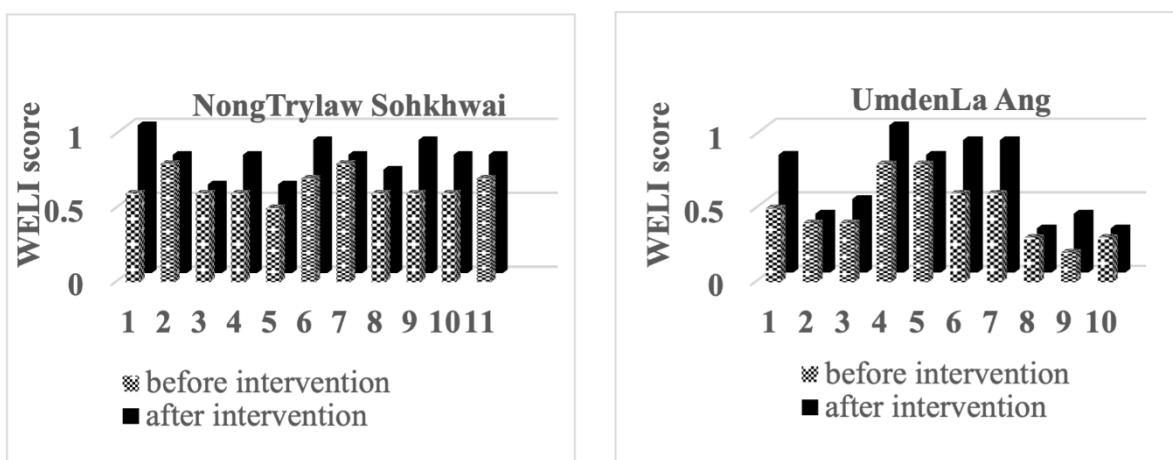


Fig. 4: Women empowerment in livestock index (WELI) score before and after intervention on participants of women SHGs in NongTrylaw Sohkhwai (11 women participants) and UmdenLa Ang (10 women participants) villages in Ri-Bhoi district of Meghalaya for impact assessment in terms of empowerment

Impact Assessment

The Women's Empowerment in Livestock Index (WELI) score (Galie *et al* 2019) was done to assess the impact of interventions in terms of empowerment of women in pig rearing after one year. There are six domains with sixteen indicators with equal weightage in the score card which ranges from 0 for the least empowered to 1 for the most empowered women in livestock. As per the WELI, the individual score of 0.8 and above is indicative of empowerment (Fig: 4). Though few participants scored 0.8 in both the group before interventions, there is marginal increase in the scores with 72 % of participants in NongTrylaw Sohkhwai scored 0.8 and above while 50 % of participants in Umdenla Ang scored 0.8 and above after the interventions as shown in Table1 suggesting the potential impact and possibility of livelihood improvement. This preliminary assessment, however, needs further time point collection of data to collate the performance and production of the beneficiaries to give conclusive quantitative report.

Challenges

One of the major practical challenges was disease outbreak and mortality of pigs. There is a practice of introducing piglet into the village from the local market for rearing which is a threat for disease outbreak due to the introduction of pig of unknown health status harbouring infectious diseases that can spread the disease in the locality resulting in mortality of some piglets. Another major factor is the availability of feed for balanced feeding. Locally available unconventional feeds were incorporated into feeding system but there is a concern for presence of anti-nutritional factors or imbalance essential minerals and nutrients. Lack of economic freedom by the women to purchase commercial feeds also hinders the nutritional requirements of the pigs besides lack of access to the market to sell the produce makes them vulnerable to the exploitation of middleman who buys at a lower price for their own profits.

Opportunities

The pig farming is considered a good investment since it brings economic returns by selling as well as ensures nutritional security in terms of availability of meat. Pork is always preferred choice of the indigenous people and it is an age-old practice for a household to keep few animals in scavenging system for its domestic consumption. Hence it is an attractive enterprise to be taken up in larger scale with scientific way of production for its better returns and enhance economic growth. It also offers an opportunity for the empowerment of rural women, who are more likely to access and control livestock and their products than other productive resources such as land and machinery. Moreover, it provides a sense of accomplishment to the women folk to be involved in pork production system that brings monetary benefits.

Discussion

The increase in the consumption of livestock products due to increase in population and decrease in land holding, resulted into price surge and provide new opportunities to enhanced economic condition and livelihood improvement. The livestock sector can provide protein-rich food, generation of income, and employment that provide livelihood opportunities to millions of livestock keepers (ILRI 2012) making livestock production system, an appealing vehicle for pro-poor development. In the rural village of Meghalaya, the practice of pig rearing in the backyard or scavenging is in existence but without proper housing or management system. Scientific training for feeding, housing health management etc. has been done with two women SHGs in a rural village in Ri-bhoi district to strengthen their knowledge of rearing pigs. Despite the significant contribution of women in livestock farming, the share of women in income from the livestock sector is negligible (Chayal *et al* 2009) and considerable gender inequalities also exist in access to technologies, credit facilities, information, inputs, and services due to various reasons (Saini and Saini 2021). Women's Empowerment in Livestock Index (WELI) was used to assess the empowerment of women quantitatively in the livestock sector (Galie *et al* 2019) before and after the intervention was made, it was found that there is a marginal increase in the score after intervention though the scores were variable amongst the participants in both the SHGs. The participants from NongTrylaw Sohkhwai village have full scores on the indicators like the input into productive decisions about agricultural production and on extent and control of work time by participants from Umdenla Ang village. However, the control and use of income (credit access) in NongTrylaw Sohkhwai village and market access in Umdenla Ang village is lower as compared to other indicators. Women are not confident in decision-making related to marketing because they have less contact with progressive farmers, officials' banks, less women farmer's organizations (Upadhyay and Desai 2011). Ensuring

women's access to extension services, knowledge, credit facilities, and technologies is very important for their empowerment in the livestock sector (Saini and Saini 2021). It will be beneficial to sustain the efforts for piggery production in the same line that will increase household productivity and improve health and nutrition at the same time boost women's decision-making and economic power within both the household and in the community.

Conclusion

Ending poverty and other deprivations including gender inequality across the globe is one of the sustainable development goals of the UN. Women play a primary role for animal care and income generated from the livestock sector is an important component for rural households with improvement in the economic, social and nutritional condition of household. Improving the status of the domain involving access to and control of opportunities, resources etc. could bring more equity to women as they make a significant contribution in livestock rearing. Also more autonomy related to decisions about production, nutrition may benefit the family as well as improve the WELI scores for women empowerment. However, this study is limited and preliminary in nature. Hence, an in-depth study is needed to understand constraints for women farmers and explore possibilities of empowering women in different parts of India.

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Contribution by Authors

Each co-author contributes equally.

Conflict of Interests

There is no conflict of interest.

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