

Empowering Marginalized Rural Females through Livestock Extension Training Program



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Abstract: *This study analyzed rural females' empowerment through capacity building training offered by the Livestock and Dairy Development Department (L&DD) under the livestock extension education program, Government of the Punjab. In-depth interviews were conducted with 7 trainers and 15 females from two rural union councils of Raiwind Tehsil, District Lahore. Thematic analysis was carried out against capacity building training. Findings indicated that the capacity building training program enhanced decision making of rural females regarding their spending, purchasing power, and investment in dairy/poultry business. These females not only earned and contributed to family income but also commanded respect in family and relatives. Their training attracted other rural females to seek livestock training, implying the sustainability of the program. Married females spent the major proportion of their earnings on the education and health of their children and viewed livestock extension education as an important contributor towards their children's better future. The findings indicated that livestock extension education helped rural females in livestock management activities, usually believed to be the domain of rural males. This implies that livestock extension training develops the capacity of rural females and imparts skills needed to carry out small-scale business activities related to dairy products. The study indicated the significance of the L&DD program in providing latest knowledge about livestock preventative and curative measures to female livestock holders. The initiative was positively received by rural females and rural males. The study recommends livestock capacity building programs in rural parts of other provinces of Pakistan for sustainable rural development.*

Keywords: Livestock Extension Education, Rural Female, Empowerment, Capacity Building

Introduction

Pakistan is an agro-economy, and since independence, the contribution of agriculture to its gross domestic product (GDP) has been predominant. Livestock add 11 percent to its GDP and strengthen the agriculture sector by value adding of more than one half in total GDP of agriculture (Rehman et al., 2017; Shah et al., 2019; Naz et al., 2023). This significant share of livestock in the national economy highlights its crucial role in the country's rural economic development (Sattar, 2021; Iqbal & Sial, 2023).

The livestock sector significantly contributes to the rural economy and socio-economic development of smallholder livestock farmers (Luqman et al., 2014; Hegde, 2019; Naz et al., 2023). Pakistan stands at the fourth position in the world for its milk production (Rehman et al., 2017; Sattar, 2021). An overwhelming number of milk producers are either rural commercial or smallholder livestock farmers. Out of this, a little less than two-thirds are smallholder livestock farmers (Sattar, 2021).

Pakistan has more rural population compared to urban population (Bureau of Statistics Government of the Punjab, 2020) and is directly involved with livestock for their livelihood. Livestock serves as a source of livelihood to more than thirty million people living in rural areas of Pakistan (Rehman et al., 2017; Warriach et al., 2019; Zia, 2018; Naz et al., 2023).

More than one billion people, all over the world, depend on agriculture and livestock for their livelihood. The majority of this world population lives in developing countries (Hegde, 2019; Baltenweck et al., 2024). In Pakistan, the role of Punjab province is vital in meeting the food and dairy demand of the nation (Hashmi

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et al., 2007; Ahmad, 2013), with an overwhelming number of smallholder livestock farmers contributing to milk production. Vending every day, in excess of dairy products like milk, eggs, and desi ghee that families don't consume, is a substantial means of earning money for poor rural families (Ahmad et al., 2012; Sattar, 2021). Traditionally, rural females are involved in informal economic activities such as livestock management on a small scale, livestock farming in their day-to-day routine life (Zia, 2018; Naz et al., 2022; Iqbal & Sial, 2023). Rural females are equally involved in animal husbandry with their male members of the family (Naz et al., 2021). In Punjab, rural females spend almost 60 percent of their daily time in activities related to animal husbandry (Zia, 2018; Iqbal & Sial, 2023).

Livestock not only provides livelihood but is also a source of food security and cash value to be used in emergencies by smallholder farmers (Swanepoel et al., 2010; Baltenweck et al., 2024). Livestock hold an important position in the rural setup of Pakistan. In low-income families, women support their family income by making and selling dairy products, reducing additional labor costs by managing livestock such as cleaning the sheds, milking animals, cutting fodder, and watering animals. However, females have little or no access to formal training related to livestock management and production in developing countries (World Bank, 2011; Luqman et al., 2013; Baltenweck et al., 2024). Research findings published by Iqbal and Sial in 2023 emphasize the crucial need for female capacity building in the livestock sector by providing training programs and loans at affordable markups. They also highlight the important role of government organizations and NGO's in capacity building of rural females in livestock.

Recognizing the significant contribution of rural females in livestock activities, Livestock and Dairy Development Department (L&DD) initiated training programs related to livestock management and production for capacity building of rural livestock farmers, particularly rural females. L&DD training programs act as a bridging agent between the research institutions and rural societies to enhance livestock productivity, leading toward rural development, sustainable livelihood, and empowering rural females (Warriach et al., 2019).

Women empowerment is multidimensional, and its major dimension includes decision making, access to resources, freedom to earn and spend money with spatial mobility (Ahmad, 2013). Since L&DD training program is meant to enhance capacity of the rural females across livestock activities, the present study is an attempt to see and evaluate the efficacy of the training program towards female empowerment in rural setting of the province of the Punjab, Pakistan.

Methodology

A qualitative approach was used to accomplish the present paper. In-depth interviews were conducted with 7 trainers of L&DD and 15 female smallholder livestock farmers from two union councils of Tehsil Raiwind, District Lahore. Purposive sampling was used to approach respondents who received L&DD training under the livestock extension education program in rural Punjab, Pakistan. An interview guide was used to gather data from the respondents, and thematic analysis was carried out for an in-depth understanding from the perspective of respondents involved in the capacity building training program. Subjective meanings are important as they are based on experiences; hence, the experiences of individuals are given importance (Creswell, 2017). Themes, dimensions, and elements relevant to the research topic were developed from the policy documents (2015) of the Livestock Dairy & Development Department (L&DD). The responses were transcribed, and categories were developed from the transcriptions. Having developed categories and codes, thematic analysis was done. Codes are the labels that help researchers to further create themes to be used for data analysis (Neuman, 2002). Finally, the data were analyzed as per themes developed from the codes/categories.

Findings

The data from 7 trainers of L&DD and 15 female small livestock farmers provide an in-depth analysis of efficacy of training, capacity enhancement, livestock management, empowerment, productivity-induced respect in families, and likely benefits for neighborhood or relatives.

Efficacy of Training and Capacity Enhancement

The livestock training program is part of extension education services. Its principal work is to give information about current animal husbandry practices to increase animal production and control or forestall sickness of animals. As elaborated by the program head of extension education services, the training is based on *‘provision of veterinary services at the doorstep of the livestock breeder, which includes both male and female for better livestock production and management and ultimately leading to poverty reduction, food security, sustainable economic development of rural population.’* Capacity building is not only limited to knowledge and skill transmission but also includes access to resources, improvement and arrangement of domesticated animals by offering types of assistance with respect to livestock preventive and curative measures. As one of the trainers said, *‘the role of extension education is to build the knowledge of livestock farmers, introducing the new livestock techniques and technologies in such a manner that they adopt and practice them.’* In this regard, L&DD distributed buffaloes, sheep, heifers, and poultry free of cost in rural areas of the Punjab during 2016-2018. Apart from distribution of animals, L&DD started school-based training sessions and mobile training schools to enhance the capacity of rural females under the goal of the 2015 policy to ensure sustainable rural development and reduction of rural poverty. During interviews, one of the L&DD trainers said,

“L&DD arranged different skill training workshops for small holder livestock women at their door step. These trainings focused preventive measures, the right time of giving vaccine to maintain good health of their animals, and animal production through cross breeding”.

In this regard, L&DD recently started the ‘livestock Maddad Gar’ program to provide rural females with free-of-cost animals. In Pakistan, female involvement is high in animal husbandry activities as compared to men (Zia, 2018). The majority are smallholder farmers with 1-4 animals, and females take care of the animal feeding, milking the animals, cleaning of sheds, and men bring ‘Chara’ (a native word for fodder). One of the trainers said,

“It is very important to understand the production system, in rural areas almost 60% women spend their time in taking care of the animals such as ‘chara katana’, ‘chara Dalna’, “milking the animal “making dung cakes from animal waste, and other activities related to animal management. Major focus is to build capacity of the females to better take care animal husbandry practices”.

The majority of the smallholder female livestock beneficiaries of the L&DD training program stated that the capacity-building program was highly beneficial for them. One of them said, *‘Because of extension education, I now know which vacation is given and in which month. I am now aware about animal ailments. I am aware of how to maintain the health of animals and increase their production through Artificial Insemination(AI). I also learned how to increase dairy products.’* The discussion directly above advocates that the role of livestock extension programs is very beneficial for the capacity building of rural females as it is improving their skills, knowledge, and husbandry practices.

Planning, Designing and Selection Criteria

Planning, designing and selection of the interns are very crucial elements for a successful training programs. Nature and need of trainees, allocation of resources, module design, feasibility, and objectives of the training program were taken into consideration to initiate L&DD. Sharing her views, one of the trainers said, *“Training programs and the curriculum were designed according to the needs of the women in the local language, and different visual aids were used to provide hands-on training to the respondents. Result-orientedness was catered to make it a success’.*

This program was designed for rural widows. One of the trainer told, *‘although criteria are usually set according to the nature of the project but in general criteria for this training included: rural widows indulged in livestock activities, had at least one child enrolled in public school, and were interested in attending training program.’*

Majority of the female beneficiaries reported that it was easy for them to understand the provided knowledge about the preventive and curative measures related to animals. One of the respondents shared her opinion *‘they were taught in Punjabi language with video clips. So, it was very easy for them to understand the content.’* Another beneficiary said, *‘selection criteria for the training enabled her to better take care of her livestock activities’*. It indicates that the planning, designing and selection criteria enhanced the capacity building of poor rural women with greater implications for animal productivity and income generation.

Capacity Building and Impact on Production and Productivity of Animals

Animals not only provide food security to the families, but also surplus amounts are sold in order to make income. Globally, Pakistan stands at fourth place in milk production (Rehman, Jingdong, Chandio & Hussain, 2017). Animal production and productivity are directly associated with their good health and clean living environment. Another component of the training program focused on a clean environment and animal health. Respondents were trained to enhance a clean environment and take care of the health of their animals for animal production and productivity. This training helped them prevent and control animal diseases, which in turn led to animal production and productivity. The majority of female beneficiaries were very positive in terms of training outcomes. One of them stated in her interview, *‘Improved health of animals (cows and buffalo) increased milk productivity. Increased production of small animals was an important source of earning’*. Regarding the learning outcome of the training program, one of the beneficiaries said, *‘We were told about the general management of the animal, their vaccination and timing of the vaccination. We were trained how to increase milk, meat and egg production of animals. We were trained how to identify any health problem in our animal, for example fever, Foot and Mouth Disease (FMD).’* It indicated that combining the latest knowledge and practices in livestock along with the indigenous practices can be very helpful to increase animal production and productivity.

Contribution of Livestock in Family income

In rural areas of Pakistan livestock has many social and economic benefits for females engaged in livestock farming. The majority of female beneficiaries stated that the purpose of livestock rearing was food security, a source of additional income, and savings. One of the female respondents said, *‘Almost after excluding the expenses, around R 12000 per month is earned from the sale of milk and eggs. My son earns around Rs10,000 from his job, so almost 30-40% contribution in income comes from livestock.’* Another female beneficiary shared during her interview, *‘I earn around 6-7 thousand rupees per month from milk sale, and it contributes 50% to my family income.’* Milk and eggs were most sold livestock products. Some of the female respondents sold small animals like hens, sheep, and goats for urgent financial needs. One of the female participants said, *‘I sell milk, and sometimes male calves when needed to cater to urgent needs’*.

The majority of rural households keep and rear livestock for economic security, food security, and social benefits, such as selling large animals to meet the expenses of weddings and the education of their children, and even in times of any medical emergency. One of the trainers stated in his interview, *‘With the increase in animal production, family income is positively contributes to social benefits as well as food security. Although family do not totally depend on the income from livestock but its contribution does increase through livestock production and L&DD training significantly improved rural females’ skills.’*

Most of the L&DD trainers reported that because of capacity building training programs rural females were able to improve the general preventive and curative practices related to livestock farming. This resulted in good animal health and increased milk, meat, and egg production, in turn increasing family income. Although livestock is not the only source of income for smallholder livestock farmers, it serves as an additional source of income for the majority of rural households. It indicates that access to capacity-building programs can uplift marginalized groups in rural communities, particularly female smallholder livestock farmers. Their capacity building can bring economic stability at the micro-level and uplift livestock production at the national level.

Capacity Building and Female Empowerment

Empowerment is a multidimensional concept, including different aspects of life such as the authority to make a decision, access to resources, freedom to make a living, as well as the liberty to spend that money. The role of capacity building in the livestock sector for female livestock farmers empowers them economically as well as socially. The majority of the L&DD trainers reported during their interview that extension education was playing a very important role in providing the latest knowledge about livestock preventive and curative measures to female livestock holders. Different livestock-related services like Artificial Insemination (AI), vaccinations, and follow-up checkups of animals are provided at their doorstep. Providing livestock services at the doorstep to rural females is one of the major goals of L&DD programs on capacity building under extension education. Similarly, smallholder female livestock farmers have been provided with free animals so that they can make living through livestock and livestock products. One of the trainers stated in his interview, *'capacity building of female livestock farmers is a way to shift from conventional to modern practices, it also brings economic benefits, food security, poverty reduction and increase in animal production.'* Most of the female beneficiaries said in their interview that after attending the capacity building trainings, their knowledge significantly improved regarding husbandry practices, preventive and curative measures, which resulted in better animal health and increased income from the sale of animal products. One of the respondents stated, *'Mostly I use the money, it's my income. I am a widow and because of this source of money from animal production I don't have to depend on my in-laws. I spend my money on my children's education and for personal needs.'* Another female beneficiary said, *'I use the money, to meet the household expenses.'* The initiative of empowering female smallholder livestock farmers through capacity building trainings were taken very positively by all the participants. The majority of the beneficiaries were willing to attend the capacity building trainings in the future as well.

Livestock Extension Education as Bridging Agent

Livestock extension education is a way to communicate the latest livestock research to smallholder livestock farmers. It helps educate rural livestock farmers about the latest use of technology and techniques. One of the trainers said, *'L&DD has tried to bridge the research and practice gap through livestock extension training program. The most effective and acceptable way of communicating the latest research in livestock to smallholder women livestock owner is to impart training in local language at the door step.'* Majority of female beneficiaries preferred male members of the family and female veterinary doctors of extension education as a source of livestock information. Most of them were familiarized with new technologies and services/resources for livestock production and productivity. It included facilities for free animals, animal insurance, AI vaccination, health service of 9211, and free treatment of animals, along with *Vanda* (local concept for straw hay), salt, and minerals for animal diet. It indicates that livestock extension education helped bridge the research-practice gap and imparted the latest research to the grassroots level to increase livestock production to uplift the rural economy and contribute towards sustainable livelihood for smallholder livestock farmers.

Livestock Products and Marketing

Availability of proper market structure is important in livestock value chain. Traditional market infrastructure exists for livestock and related products in rural areas. For instance, milk is the main livestock product that is sold by majority of the smallholder livestock farmers. The female beneficiaries said that they sell milk to the *'Dhodi'* (milk man) who further sells it in the market. They do not have proper and direct access to market where they can sell milk, eggs, butter, yogurt, *desi ghee* (native concept for brown butter), and large animals. They usually sell large animals through the reference of family members or friends, and rarely are other dairy products sold. The majority of the L&DD trainers agreed that government should make a regulatory framework and must try to overcome the missing linkage of a market for livestock products. A good and well established marketing system can give more profit to smallholder livestock farmers. One of them stated, *'This is a missing link; there is a need to develop better system to connect these women with the livestock value chain and with local market so that they sell the livestock product at a good price.'* L&DD is trying to maximize the

profits of smallholder livestock farmers through effective training programs. It has designed all the livestock-related training courses, either short- or long-term, according to the demand from both sides, i.e., livestock farmers and the market. Findings show that proper infrastructure for the livestock market is missing in Raiwind Tehsil. This missing link has limited the profitable sale of milk and other dairy products. Establishing proper market infrastructure and enhancing the access of female livestock farmers can increase the income of marginalized rural group, particularly female livestock farmers.

Discussion

The findings of the research validated that capacity building through livestock extension programs can strengthen and improve female smallholder livestock farmers in terms of knowledge and practice related to husbandry practices and preventative and curative measures for animal health. Rural females are equally involved in animal husbandry activities along with their male members of the family. In Pakistan, rural women play an important role in agricultural development, and their socioeconomic status has a considerable impact on their engagement in livestock management (Awan, Akhtar, Khan, Javeed, 2024). In Punjab, almost 60 percent of rural women spend their time in animal husbandry related activities (Zia, 2018). Training programs under Livestock extension education significantly contributed to the capacity building of rural females. Trainee needs, allocation of resources, and modular structure were carefully planned and designed to serve the purpose of animal production and productivity. Most of the female beneficiaries appreciated the training program, which enhanced their knowledge with regard to preventive and curative measures for animals. It not only increased milk supply but also provided with food security. This finding corroborates with Rehman et al. (2017). Others, for example Awan et al. (2021), highlighted that production & productivity do have a close correlation with good health conditions, neat & clean living standards of animals, including a disease-free environment. Awareness and coaching for rural females can increase animal production, better control over disease, timely understanding of symptoms of abnormalities, food security, quality of the environment, climate change effects, quality of fodder and income (Zia, 2021).

Empowering females through the capacity building will not only improve their satisfaction and quality of life but also benefit the rural economy. Empirical evidence suggests livestock extension education is the source of empowering rural females, in turn, sustainable rural development (Warriach et al., 2019). Better understanding can uplift rural families from the micro level to their contribution and involvement in the national economy (Zia, 2018). However, establishment of a proper systematic market with a proper chain of supply and custody can replicate more benefits to the producers instead of vendors.

Conclusion

Proper planning, design, and training significantly contribute towards capacity building of marginalized segments of the informal rural economy. Knowledge and awareness about preventive and curative measures relating to the health of animals contributes in animal production and productivity. Animal husbandry-related training results in increased dairy products and animals, which not only provides food security but also empowers rural women through increased income levels.

Recommendations

- The findings highlight the need for introducing short-term training programs in the livestock sector of the informal rural economy of Pakistan.
- Recognize and value informal learning in educational programs and international policy related to livestock farming for rural female smallholders.
- Soft credit facilities for rural females should be made available to boost their productive capacity and break the vicious cycle of poverty in the area, as well as to increase incomes, savings, and investment.
- In addition, the livestock marketing structure and value chain were the missing components in this study, which need further research.

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