



Empowering hill women of Uttarakhand

through animal husbandry intervention of Farmer FIRST Programme

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Uttarakhand is a state with diverse agro-climatic features where more than 75% of the population depends upon agriculture for their livelihood and farmers mainly practice subsistence farming. Farming in the state is characterized by mixed cropping and merely 10% of the agricultural land in the state has irrigation facility. Another typical feature of hill farming is the small and scattered land holdings. Animal Husbandry has been identified as a potential source of income for such areas where crop cultivation faces a lot of challenges. In hills of Uttarakhand women farmers are the main workforce engaged in agriculture and animal husbandry. Since last 5 years Farmer FIRST Project is supporting the hill women of Syalikhhet, Jeoli and Dogra village of Uttarakhand in multiple ways. With the successful adoption of backyard poultry and goat farming the women of Syalikhhet became economically empowered. Similarly, the drudgery reduction, fodder production and veterinary assistance activities of project in Jeoli and Dogra village also supporting the women farmers to improve their livelihood. This is a small but significant step toward doubling farmers' income.

Keywords: Animal husbandry, Backyard poultry, Drudgery reduction, Goat farming, Hill women

THE Farmer FIRST Project, a flagship programme of ICAR is in operation since November 2016 in 3 villages of Uttarakhand situated in mid hills at Bhimtal block of Nainital district, viz. Dogra, Syalikhhet and Jeoli. In one of the selected villages named Syalikhhet, 5 years back (before the implementation of project), the situation of women was very poor. The major challenges faced by women in this village were negligible land holding and limited sources of income. Their male counterparts left the village and migrated to cities for earning livelihood and consequently the whole village is now being inhabited almost completely by women, elderly people and children. The youth and men of the village are mainly working as daily wage workers in different cities. At the beginning of project, a benchmark survey was conducted in Syalikhhet village to know the actual socioeconomic condition of the beneficiaries. It was found that about 50% of women were of middle age (22–39 year) with around 35% of them having education up to primary level. Majority of them (around 80%) belongs to schedule caste or schedule tribe, and 88% of families were having an income below ₹15,000/month from all the sources. Around 98% of families were having small land holding in range of 12.33 to 24.66 nali (1 acre = 20.17 nali). The hill women also suffer with a lot of drudgery as the agriculture and animal husbandry related works

are mainly looked after by women in hilly areas. The majority of tasks are being done manually due to non-availability of farm mechanisation in hill agriculture practices. The harsh agro-climatic conditions and the ridges and valleys make agriculture more difficult in hills. The agriculture and animal husbandry in hilly regions are also suffered from destruction caused by wild animals and predators.

Due to challenges discussed above, the possibilities for supporting livelihood of Syalikhhet village were explored and animal husbandry was identified as a potential intervention to improve the income and livelihood of selected families. The following two interventions were done for Syalikhhet village under Farmer FIRST Project:

1. Backyard poultry production using Uttara Fowl breed.
2. Goat farming using Pantja goat for selected innovative women farmers.

Backyard poultry farming

The backyard poultry farming was introduced as a potential source of generating livelihood in Syalikhhet village where the entire households were selected as beneficiaries. All families were given 20 birds with feed, feed-supplements and cages. The first registered breed of Uttarakhand, Uttara fowl was selected due to



Backyard poultry farming at Syalikhet village

its hardy nature and better adaptability in hilly areas. The breed is dual purpose in nature and it can thrive well on the limited resources in terms of feed, health and managerial practices. Uttara fowl was propagated in Syalikhet with comprehensive feeding, health and management practices. As the women of Syalikhet had limited land holding and scarcity of resources so the backyard poultry farming was a suitable enterprise for them. It has incurred no additional cost rather they earned in the form of sale of eggs and live birds. The eggs of Uttara fowl are brownish and well known as desi eggs which has a huge demand and good price at hilly areas. Most of the women beneficiaries worked well with a monthly production of about 15–25 eggs which were being sold in local markets and road side restaurants at the rate of ₹8–10/egg. The profit was also attributed by the sale of live birds. The colour of Uttara fowl is black and in local tradition the black male fowl is used as an offering at temples during religious ceremonies. So, some of the families earned fairly well by selling these black live birds at a price up to ₹1000/bird. Thus outcome of the intervention has resulted into an increase in the monthly income of the women of Syalikhet. Among the beneficiaries, Ganga Bisht, Prema Devi, Vimla Devi and Shabana performed exceptionally well and took the intervention to heights through local innovation and proper management. With growing flock size, the demand of space for poultry also increased. To meet this demand the net was provided to women to construct their own poultry shed. Some women constructed the bigger poultry sheds with the net provided and locally available resources. At present some of the beneficiary families are having more than 40 birds. After the successful implementation of the backyard poultry farming module of the project each beneficiary family is earning an average of ₹2491/month. The poultry farming intervention was also supported by regular health check-up camps, on-site and off-site farmer trainings, scientist-farmer interactions and telemedicine services especially during COVID-19 pandemic. Initially, women farmers were provided with poultry feed but later on they were trained to make the feed at their home with locally available ingredients so that they can make their own feed to reduce the cost of feeding.

Recently whole world witnessed one of the most badly hit pandemics of the lifetime in the form of COVID-19 which is still continuing. Large number of people lost their jobs and faced a lot of challenges to sustain their livelihood. In this time of distress when whole world was panic due to shrinking sources of earning, the women of Syalikhet were creating a new success story. Their poultry farming intervention was either stable or even more profitable during pandemic. The demand of eggs was increased during pandemic in the nearby hills and beneficiaries earned more through sale of eggs which helped them to sustain their livelihood during pandemic when other sources of income were compromised badly. Due to wonderful outcomes of poultry farming intervention in Syalikhet village it is well known as “Poultry village” in the nearby localities.

Goat farming

After success of poultry farming intervention in Syalikhet village goat farming was introduced for selected 15 households to add on the livelihood. Some motivated women farmers purchased their own goats using the money earned through poultry farming intervention. Pantja breed which is the local registered dual-purpose breed of goat from Uttarakhand was distributed as it can survive well at mid hills of Uttarakhand. Goat farming is a low-cost intervention and the cost incurred on feeding, breeding and health management is also comparatively low. The goat farming intervention was also supported by farmer-scientists interface, trainings and veterinary assistance in the form of health and vaccination camps. Although this intervention is in initial phase but some households increased their flock up to 5–6 goats. This shows that the women of Syalikhet adopted goat farming nicely which is adding to their income along with the poultry farming. They also learnt the basic principles of goat farming especially in context of feeding and health management. This leads to low mortality and better productivity in terms of milk production and live weight.

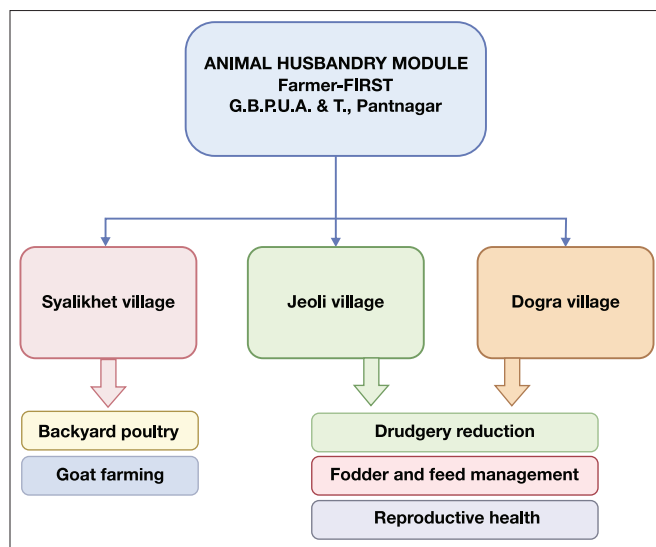
In Jeoli and Dogra villages the needs of farmers were studied by benchmark survey during initial phases of project implementation. By data analysis, it was concluded that the farmers of these two villages were



Goat farming at Syalikhet village



Poultry production training and farmer Scientist interface at Instructional poultry farm GBPUAT Pantnagar, Uttarakhand



Locations and interventions covered under Animal Husbandry module of Farmer-FIRST project

mainly practicing dairy farming and the predominant problems were low milk production, poor reproductive performance of animals, scarcity of fodder and huge drudgery to women farmers. To address these problems the following 3 interventions were introduced under animal husbandry module of Farmer FIRST Project in Jeoli and Dogra villages:

1. Drudgery reduction through drudgery reduction tools.
2. Providing improved fodder and feed.
3. Veterinary assistance for improving reproductive health.

Drudgery reduction among farm women

Women are considered as the main workforce in animal husbandry practice at hilly areas as the majority of animal husbandry related works are performed by women. All these activities involve varying body postures, fatigue and stress. Therefore, women suffer with a lot of drudgery and health issues. On the long-term this leads to physical injury and permanent damage. Various institutions have designed tools keeping the ergonomic characteristics of women in mind. These tools have been designed for women who are frequently engaged in agriculture and allied activities. Adoption of these tools can significantly reduce the stress faced by women. To address the problem of drudgery, women of Jeoli and Dogra village who are practicing dairy farming were facilitated by drudgery reduction tools which included revolving stool, dung collector and water bag. The impact of this intervention was measured in term of hours saved each day in performing animal husbandry related work. After adoption of drudgery reduction tools women saved around 4 hours per day which they could use in other activities. They also got some extra time to take rest which improved their own health. The revolving stool provided was very helpful in milking activity as it is of appropriate height and rotating which made milking relatively comfortable and easy. Likewise, dung collector reduced the stress involved in cleaning of

shed which made the cleaning activity easier and more efficient.

Availability of quality fodder across the year

The benchmark survey conducted in Jeoli and Dogra revealed that almost all the households in the study area are practicing livestock production. This includes buffalo, cow and draught animals. Goat rearing was rare in the study area. It was found that there was an acute shortage of quality fodder due to low land holding. The farmers were mainly dependent on grazing pastures and unconventional feeds like locally available tree leaves. Under-feeding often results in late maturity, high mortality, poor lifetime performance and infertility in cattle and buffaloes. Cattles are often left to graze in the forest area and only hay was conserved for feeding animals in the lean period. Scarcity of feed and fodder has been reported as one of the major constraints for adapting animal husbandry as a main occupation in the study area. To address this regular interaction meetings with farmers were conducted to educate them regarding the principles of animal nutrition, feed and fodder technology. They were also provided the seeds of multicut variety of sorghum which somewhat ensured the fodder availability for comparatively larger duration. Apart from this, total 10 chaff cutters were also installed at some common places in Jeoli and Dogra. Chaffing improved the palatability of fodder and bioavailability of nutrients which in turn improved the overall health and productivity of animals.

Veterinary assistance for improving reproductive health

The other important problems faced by the dairy farmers of Jeoli and Dogra were poor calving rate and low milk production in cattle. On significant analysis it was reported that there is deficiency of micronutrients in the soil and feed of livestock. Also, the farmers were not well aware of balanced feeding and ration formulation for optimum reproductive performance and milk production. Through regular visits and

interactions farmers were educated about the use of mineral mixtures and balanced ration. The farmers were provided mineral mixture, feed supplements and veterinary assistance. The regular vaccination and deworming schedules were also followed by dairy farmers. The farmers were educated about detection of heat in cattle and appropriate time of artificial insemination so that a better conception rate can be achieved. The overall impact of this intervention was seen in the form of improved reproductive performance and better productivity.

SUMMARY

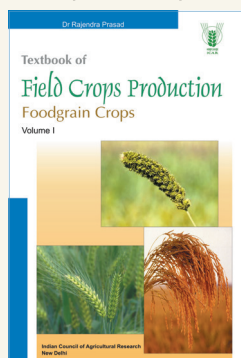
The Farmer FIRST Project supported the hill women of Syalikhet, Jeoli and Dogra village of Uttarakhand in multiple ways and contributed to make them economic

empowered, self-confident and self-reliant. The animal husbandry module of Farmer FIRST offered a group of livelihood opportunities for hill women in the form of backyard poultry farming, goat farming, drudgery reduction in animal husbandry practices, improved fodder production and processing technologies, improved health, and feeding practices. Through adoption of these practices the women of these villages of mid hills of Uttarakhand is adding a good share in their monthly and annual income and also supporting their families to earn livelihood along with their male counterparts.

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(Volume I)



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TECHNICAL SPECIFICATIONS

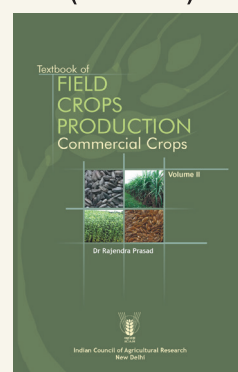
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