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SUSTAINABLE LIVESTOCK DEVELOPMENT IN KASHMIR FOR BOOMING FARMERS' INCOME

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ABSTRACT

The economic progress of a country is directly proportional to agricultural growth. The livestock sector contributes to 25.6% of the total Indian agricultural GDP and provides a cushion to agricultural growth. To make dairy farming a profitable business in Kashmir, there is a need for upgradation of existing low producing cattle to high yielding and low body weight dairy cattle by persistent crossing with indigenous Red Sindhi and exotic Jersey germplasm. For persistency in milk and mutton production, there is a need for balanced feeding as per scientific requirement and modernization of cold stress management practices at grass root level. To mitigate the demand of mutton consumption, there is a need to disseminate the Ovine Booroola fecundity gene in Kashmiri sheep for twinning to increase the sheep population vertically. To run the broiler farming profitably, there is a need to produce day old chicks and poultry ration formulation within valley to reduce the inputs cost. To boost the growth of livestock sector and employment generation, Mega Dairy processing plants and byproduct processing plants at Divisional level need to be established. Through better coordination between scientists and the developmental departments, it is possible to disseminate the research based technology to enhance farmer's net profit by increasing the production of milk, meat, eggs, dairy product etc.

Key Words: Farmers, Income generation, Kashmir, Livestock, Sustainable development

I. INTRODUCTION

Agriculture sector is the soul of Indian economy. The employment share of agriculture sector was 48.9% of the workforce during 2011-12 [1]. In other words agriculture is the principal source of livelihood for more than 58% population of this country. The share of these sectors was 20.4% of the Gross Value Added (GVA) during 2016-17 at current prices [2]. Livestock sector contributes about 4.11% of GDP and about 25.6% of total agricultural GDP [3]. Output from livestock sector is the fastest growing among agricultural sectors. Its contribution to the total output of the agricultural sector increased from 15% (1981-82) to 26% (2010-11) [4]. The contribution of livestock sector provides a cushion to agricultural growth as well as farmer's income.

India has 299.6 million bovine population, with an average 3.1 kg and 4.9 kg milk production per milking cow and buffalo, respectively [5]. Low yielding dairy animals consume maximum feed and fodder, but farmers do not get cash back rather they get negative profitability. The livestock farmers are taking this sector as a burden

due to non-profitability and thus the future of this sector is gradually reaching towards a dark corner. To return the smile on the faces of farmers, this sector needs to be shifted towards profitable business.

II. ISSUES AND RECOMENDATION IN DAIRY AND ALLIED SECTORS

The cattle population of Jammu and Kashmir is more than 3 million, however production of green fodder is about 64 lakh MT and dry fodder is about 35 lakh MT. Despite availability of huge amount of natural pastures the state is still 67% deficit in green fodder and 27.31% in dry fodder [6]. The per capita availability of milk is very less (378 gm) in this state as compared to Punjab (937 gm). To mitigate the fodder deficit there is a need to develop a high milk yielding breed with less body weight to minimize fodder consumption. To overcome this fodder deficit and per capita milk yield, the indigenous breed- Red Sindhi and exotic breed- Jersey are most suitable for Kashmir Valley as they fulfill both the criteria i.e. high milk yielding capacity and less body weight. Whereas, *Holstein Friesian* (HF) is a giant breed, and needs more feed and fodder as compared to Red Sindhi and Jersey. Specific gravity of milk of HF is less as compared to Jersey having 3.5 v/s 5.5 fat %. It is therefore, suggested that Livestock Development Board of Kashmir needs to initiate and produce more and more frozen semen of Red Sindhi and Jersey breed for AI in Kashmir region to enhance milk production and to ensure milk protein for the people of Kashmir as well as profitability of the animal keepers.

In Kashmir region the farmers are consistently providing unchaffed paddy straw/oat hay without urea-molasses fortification during winter months. Due to provision of unchaffed hay/straw to livestock, 20-30% fodder wastage is mixed with faeces and is not decomposed with farm yard manure. By using this partially decomposed manure in agricultural field, the fertility of soil does not reach upto the satisfactory level. Dairy farmers should establish vermicompost unit with their dairy farming to decompose it completely. Vermicomposting is emerging as a profitable business and without this section, dairy farming alone cannot flourish. The palatability and digestibility of chaffed straw is higher as compared to unchaffed straw. The digestible crude protein in paddy straw is zero and thus needs scientific fortification with urea-molasses to enhance its nutritive value. The farmers are not aware of how to prepare compound mash feed at their own level. So, they are providing only wheat bran and rice bran to their cattle/sheep without mixing other ingredients like mustard oil cake/ground nut cake, maize, de oiled rice bran, molasses, mineral mixture, iodized salt, yeast etc., in a balanced proportion. As a result the productivity of these animals drops to a low level with respect to their genetic potential. Most of the dairy farmers in the valley do not provide the maintenance ration to their cattle from April-September even in lactating animals. This traditional practice needs to be modified scientifically. Similarly in winters, the dairy animals depend only on hay. So, the farmers should be trained or made aware of silage making which is a better source rather than hay. Production of Rabi hay in the month of April is always difficult due to heavy rains. Silage making is a very easy process in which the green fodder is preserved anaerobically by adding minimum of 0.5-1% iodized salt and does not require any extra precautionary measures. All the developed countries have adopted scientific silage feeding to their livestock because of high nutritive value as compared to hay. To maintain persistency of milk production, management of winter stress is important and farmers should be aware of this because during winter months maximum energy is utilized to generate body heat.

The farmers normally make hay from oat which is a source of energy and has limited production potential. So, there is a need to adopt multicut grass association like oat and vetch combination to enhance productivity. Normally, farmers do not adopt multicut legume crops like berseem and bajra. They also do not adopt scientific perennial energy and legume combination fodder cultivation in their fruit garden for livestock. There is an ample scope for the development of horti-pastoral (Fruit + Fodder crops) systems in Kashmir valley by adopting high biomass perennial legumes like red clover and alfalfa in association with perennial high biomass energy sources like *Tall fescue* and orchard grasses. The sorghum (M.P. Chari variety) in combination with cowpea fodder cultivation have been neglected which otherwise is the most suitable combination for valley. Further, sorghum is more drought resistant as compared to maize and it remains green upto ending October.

The mutton production in the valley is much lower than the consumption. It is therefore important to mitigate the demand of mutton consumption. On daily basis about 3000-3500 sheep are being procured mainly from Rajasthan due to a deficit of mutton production in valley which is about 73.20% [6]. To fulfill the demand of mutton consumption, a sustainable mutton production is warranted and there is a need to disseminate the Ovine Booroola fecundity gene in Kashmiri sheep for twinning to increase the sheep population vertically. Australia imported the Garole sheep (ovine Booroola fecundity gene carrier) during 18th Century from South 24 Parganas, West Bengal and since then the twinning has been maintained in Australian sheep scientifically without affecting the wool quality and mutton production.

On a daily basis, the valley is procuring about 1.5-2 lakh broilers from Punjab, Haryana and other neighboring states to mitigate the demand of chicken consumption [6]. There is a huge economic loss in the valley because the business market is mainly captured by Punjab and Haryana based enterprises. Broiler industry has a tremendous potential to generate employment. In Kashmir there is a very limited organized broiler sector where the parent broiler stock is maintained. The small scale farmers are procuring day old chicks mainly from outside of the valley and at a very high cost @Rs. 55-58/chick. The readymade poultry feed procured from outside are also costly. To make it cost effective, government organizations may take initiative to maintain parent broiler stock at sub-divisional level with hatching facilities to supply day old chicks to needy farmers. The higher feed cost may be substantiated with self formulated poultry rations and may be taken as entrepreneurship. The European countries, USA and Canada are facing more sub-normal temperatures than Kashmir valley even though they flourish in dairy sectors, sheep farming and broiler industries. In contrast these sectors in Kashmir valley are paralyzed in winter season and are facing huge economic losses. Such losses can be resolved by fulfilling all lacunas through concrete steps on priority basis. On one hand, the valley is earning money by exporting fruits to other states but at the same time all the money earned is being spent to procure sheep, chicken and eggs from outside states. To mitigate the demand of mutton and chicken, the sheep and broiler are procured from other states covering a distance of 500-1000 km. Due to the transportation stress, toxic metabolites and cytokines get accumulated in their bodies which are detrimental to human health with possibilities of depression, anxiety, blood pressure, gout, cancerous diseases etc.

In Kashmir valley there are only small scale milk processing plants that produce insufficient amount of pasteurized milk and curd to nourish the local population. Dairy processing units have tremendous future and have a great scope for employment generation. There is need of mega dairy processing plants at Divisional level

that can encourage the farmers to rear high producing dairy cows due to heavy demand of milk and milk products in the market. Gradually, the dairy sector in valley will be organized and the Kashmiri Dairy products including milk powder shall flourish like AMUL in Gujarat.

In valley about 2.5-3 lakh broiler and about 8000 small and large ruminants are being slaughtered every day and huge quantities of by-products are generated. These are responsible for environmental pollution, attract flies and harbor pathogenic microbes that can cause human health hazards. These by-products can be utilized as a source of energy, livestock feed, fertilizer, liming components for soil collagen, gelatin and calcium. After scientific processing of poultry by-products, these can be converted to feather meal, hydrolyzed feather meal and poultry by-product meal. There are no well developed leather industries in the valley though huge numbers of hides are collected on daily basis. These hides are transported to different tanneries and leather factories outside the state for making different products like jackets, shoes, wallets, purses, belts etc. This is another important economic loss in the valley.

All these sectors require scientific intervention, but oriented research can increase farmers' income and employment in youth. The outcome of research is not farmer-friendly rather academic and career centric. The State Agricultural Universities, ICAR research centers need to concentrate on carrying out the applied research so that the outcome can practically improve these sectors at grass root level. The Research centers need to develop the elite breeder germplasm of livestock and poultry and these will reach to the developmental departments and entrepreneurs for further multiplication for farmer's availability. Moreover, technologies developed in the research centers should be transferred to the farmers' level. To streamline the traditional practices and shift towards modernization, the developmental departments need to involve field Veterinarians to guide the progressive farmers to open livestock and poultry farms through Government entrepreneurship scheme scientifically and keep in touch with the farmers for balanced livestock feeding and managemental practices, treatment, vaccination and artificial insemination etc.

III. CONCLUSION

Through better coordination between scientists and the developmental departments, it is possible to disseminate the research based technology to enhance farmer's net profit by increasing the production of milk, meat, eggs, dairy product etc. It is the moral responsibility of politicians, bureaucrats, scientific communities and field technical staff to generate progressive income of farmers and always keep them in right track with maximum support.

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