

Socio-Economic Contribution of Donkey and Mule Rearing in Haryana (India) – A Review

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Animal husbandry plays a vital role in growth of agrarian economy in Haryana and role of livestock is very important for livelihood in the state (Haryana). Equine (Equidae) is a major component of livestock having its four sub groups i.e. horse, pony, donkey and mule. Equine is integral part of animal husbandry as well as agriculture found worldwide and equine power is known equal to engine power. Donkey and mule are major parts of equine family and mainly reared for load carrying, cart pulling and are used as pack animals in Haryana. A great decline has been observed in donkey population during last few years in the state. As per census done by DADF (GOI) donkey population was 63000 in 1997, 8000 in 2003, 4838 in 2007, 2903 in 2012 and 800 in 2019 the state. Similarly decline was also observed in mule population and as per census done by DADF (GOI) mule population was 35000 in 1997, 14000 in 2003, 10600 in 2007, 9009 in 2012 and 2499 in 2019 in Haryana. Mechanization, ignorance of policy makers and social taboo are major factors responsible for decline of population of these animals in Haryana.

Keywords: Donkey; mule; socio-economic; aspect; equine and animal husbandry.

ABBREVIATIONS

- ICAR : Indian Council of Agricultural Research, Krishi Bhawan, New Delhi.
- NRCE : National Research Centre on Equines, Sirsa Road, Hisar-125001(Haryana) India.
- DADF,GOI : Department of Animal Husbandry Dairying and Fisheries, Government of India, New Delhi.

1. INTRODUCTION

This review is aimed to identify causes and constraints being faced by donkey and mule farmers in Haryana. While working with equine farmers, it was observed that equine population, especially donkey population, is declining very speedily day by day in Haryana (India). It may be considered as a red alert. There is a question of survival of the farmers whose livelihood is dependent on donkey and mule rearing. If this issue is not addressed in due time, these species will become an endangered species in Haryana. Survival of those farmers will become very difficult who are engaged in this profession since ages. This is to emphasize that equine is not simply an animal for its owner but it is a source of income for whole family. Objective of this review is to assess actual position of donkey and mule rearing in Haryana. This review will help not only researchers, academicians and professionals but also policy makers to address the matter in a new scenario.

Haryana is known for its agrarian economy and it is one of the 29 states of India and situated in north part of the country (India). It was separated from Punjab (one state in India) on 1st November 1966 on linguistic basis. Its area is 44212 square km (17070 square mile [1]. Agriculture and Animal husbandry have been a part of Indian economy since long. Indian has one of the largest populations of livestock and stands first in milk production. Livestock helps in women empowerment and provides livelihood to many marginal farmers [2]. Similarly equine plays a vital role in growth of agrarian economy in Haryana also and role of livestock is vital for livelihood in Haryana. As per livestock census-2019 livestock population of Haryana was 71.26 lakh including 19.29 lakh cattle and 43.68 lakh buffaloes. As per census performed by DADF (GOI) in 2019 total equine population in Haryana was 12982. Being very less in number, Equine

(Equidae) plays very important role in socio-economic aspects of Haryana and is a major component of livestock having its four sub groups i.e. horse and pony (*Equus caballus*), donkey (*Equus asinus*) and mule (*Equus mulus*). Equine has played a vital role not only in Indian continent but it is globally. Equine it is most recurrent animal known as a symbol of speed, courage, integrity, diligence, perseverance, power, energy, leadership, and success [3]. Hence role of donkeys and mules is also noticeable in socio-economic aspects of the state and generally used as pack animals for load carrying, cart pulling and generally reared by other backward class (obc), schedule castes (sc), minority and landless farmers [4]. These are herbivores, monogastric, non-ruminant and sure footed animals. Zebra is also a close relative of donkeys and mules. Mule is offspring of donkey stallion (adult breed-able male donkey) and horse mare and it is sterile and cannot breed further. Donkeys have been commonly used by human in all over the world and their use has been regarded as synonymous with backwardness, under developed and low status. Donkeys are said to be originated in north-east Africa and then spread to other parts of the world. The world donkey population is about 44 million; half is found in Asia and have played an important role in the lives of people who have been marginalized by developmental policies and practice. Donkeys and mules are more intensively used in urban area than rural. Working hours are comparatively more for these animals. These are liked due to low cost, less maintenance and their role in various activities [5]. Majority of donkey and mule keepers belong to middle age, other backward class (obc), schedule caste (sc) and literacy rate observed very low. Majority of keepers are engaged in earthen pots making. Donkeys and mules are generally used for transportation of various goods and are maintained properly but equine dung is not used properly [6]. These animals are generally used to increase income and for all kind of transportation by equine farmers. Equine farmers are socially as well as economically backward and equine plays an important role in up gradation of socio-economic aspects of its owners and equines are reared in order to add in their earning [7].

2. DONKEY AND MULE POPULATION ON STATE LEVEL (HARYANA)

In Haryana and as per the DADF (GOI) census donkey population was 63000 in 1997, 8000 in

2003, 4838 in 2007, 2903 in 2012 and 800 in 2019. In this way there is a great decline in donkey and mule population during last few years. Mule population was 35000 in 1997, 14000 in 2003, 10600 in 2007, 9009 in 2012 and 2499 in 2019.

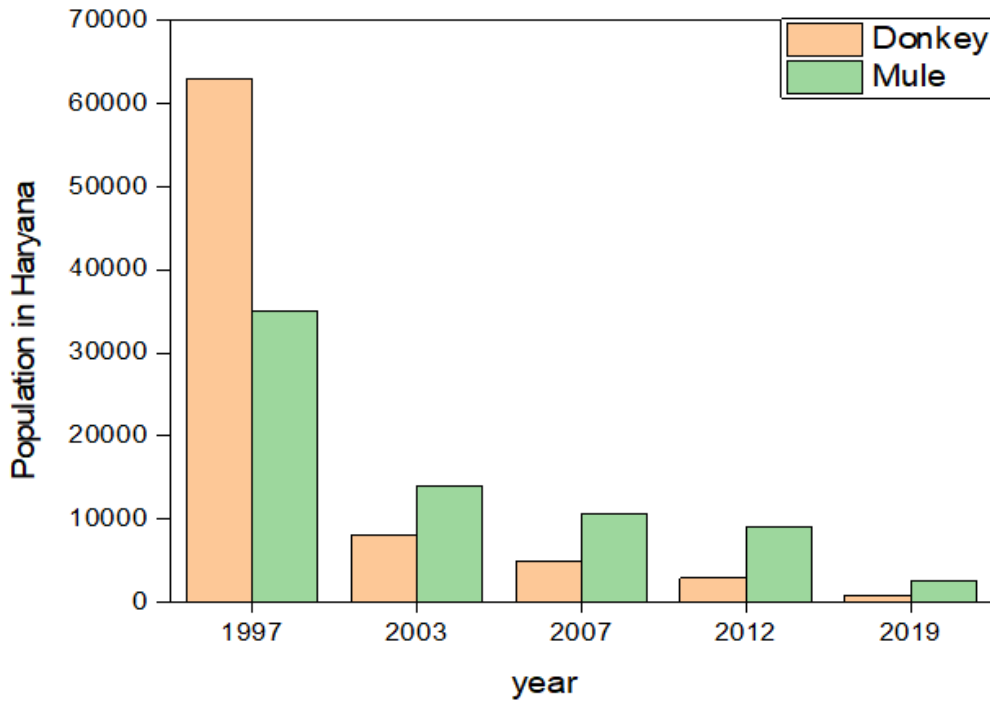


Fig. 1. Graphic presentation showing donkey and mule population in Haryana

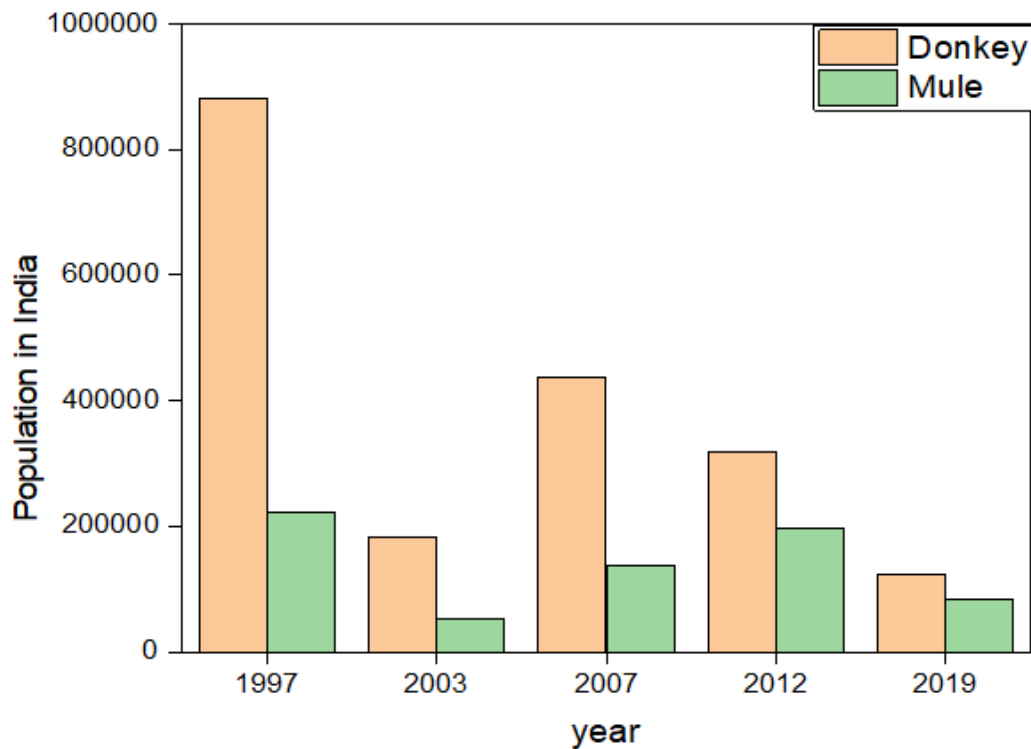


Fig. 2. Graphic presentation showing donkey and mule population on national level

Donkey and mule population on national level (India): On national level and as per the DADF (GOI) census donkey population was 882000 in 1997, 18200 in 2003, 437937 in 2007, 318787 in 2012 and 123587 in 2019. Mule population was 221000 in 1997, 52000 in 2003, 137123 in 2007, 196378 in 2012 and 84261 in 2019. In this way there is a great decline in donkey and mule population during last few years.

Utility and management of donkeys and mules: Mules and donkeys are mostly used for load carrying on its back and carrying various types of luggage, building material and agricultural products by pulling carts. In future, donkeys and mules can be used as meat animals also. Donkeys and mules play an important role in socio-economic matters of small stakeholders. These animals are used as pack animals. Being light weight donkeys and mules can be promoted for agricultural operation. Some social and political issues are to be addressed to familiarize donkeys and mules in agricultural operation. In Bangladesh 54% equine farmers are landless, 22.5% marginal, 12.5% small, 8% medium and 3% are large horse farmers. 88% horse owners having cart pulling as a main occupation. Income from cart pulling varies from season to season [8]. Donkeys and mules can be used in urban as well as in rural area. Working hours can also be comparatively more for these animals as these animals have the capacity to work for longer time. Donkeys and mules are considered better than other draught animals because of inherent tolerance for dehydration and ability to work in varying climatic conditions in different terrains [9]. Average monthly income of a donkey and mule farmer is Rs.15000/-.

Constrains in Donkey and mule rearing: Some social taboo and cultural constrains are responsible for not accepting equines as an animal for use in agricultural operation. Mechanization and excessive use of automobile are major constrains for donkey and mule rearing. Road linkages from village to village, disliking by younger generations, non availability of locally bred mules and advancement in education have been observed major threats to equine rearing activities [10]. Donkeys and mules are underutilized. Presently, donkeys and mules are not used as meat animals. Low literacy rate and lack of information on donkey and mule rearing, scarcity of feed, lack of money to expand donkey and mule business and

poverty are also constraints in donkey and mule husbandry. Their owners are facing problems in maintaining these animals due to indifference of policy makers as no provision has been made in budget allocation for welfare of these animals [11]. Non availability of good quality stallions, AI (Artificial Insemination) facilities at doorstep and lack of adequate veterinary facilities are some major constrains in rearing of these animals. Donkey and mule farmers are not getting sufficient attention and further very scarce information is available on rearing of these animals. Similar donkey and mule husbandry practices and constraints have been reported in Ethiopia i.e. lack of information on donkey keeping, scarcity of feed and water, lack of money to expand donkey business and poverty are main constraints in donkey husbandry [12]. Some misconceptions are also responsible for keeping mule as due to that mule farmers don't allow mule foal (new born baby of a horse mare born by crossing male donkey) to suckle colostrums (watery milk within 24 hours after delivery) from mare, they use to sale mule foal at an early age, mostly mares are maintained on sharing basis for mule production, profit is distributed after sale of the foal born, generally mules are kept in open space, if required kucha houses are used for keeping mules and mostly mule producers are migratory and landless [13]. Poor veterinary services for these animals and not giving special emphasis on education for rearing of these animals on school as well as on university level is also major constrains.

3. SUGGESTION TO ENHANCE DONKEY AND MULE REARING

These animals are generally reared by poor and landless farmers and are vital source of income for them and if an animal falls ill it become unproductive and also a mean of expenditure. At this time free veterinary care and treatment facilities should be provided at doorstep as it is difficult and expensive to transport sick and large animal and not possible to afford by poor donkey and mule owner. Focus should be given to improve veterinary services for these animals. Special provision for financial package for loan and insurance of donkey and mule should be made by policy makers of Haryana government. It has also been suggested to implement effective and affordable technology at village level for betterment of equines and its keepers. Vehicular use should be minimized in deep forest area. Equine courses should be made essential in veterinary education with practical

exposes [14]. Breeding should be taken care at government level as well as private level. Good quality donkey stallion should be made available at every veterinary hospital and it is suggested to increase supply of stallions to local breeders and adoption of systematic breeding policy at both private as well as public level. If not possible to maintain donkey stallion at every veterinary hospital, AI (Artificial Insemination) facilities should be made available at every veterinary hospital. More focus should be given on AI by providing superior quality germ-plasm as mule farmer gets good price from sale of mule produced through AI. Government should include donkey and mule husbandry in future livestock policies in Haryana. Special training session should be started for farmers willing in donkey and mule rearing. Dung of these animals should be utilized for vermi-composting to enhance income by saling it. Donkey milk should be promoted for cosmetic use as it is more fabulous and has moisturizer properties. Similarly donkey milk can also be suggested for human consumption as it is a dietetic and a good alternative for infant's nutrition in the case of allergy from milk from other dairy animals. Composition of donkey milk differs from the milk of other milch animals as it contains less fat, less protein and less inorganic salt but more lactose [15].

4. CONCLUSIONS

Donkey and mule rearing is an essential part of agrarian economy in Haryana since ages. Donkey and mule farmers are either landless or marginal farmers and livelihood of these farmers depends only on rearing of these animals. Poverty eradication programs of the government will not be successful unless and until focus is not given on development of these farmers. Special emphasis should be given for promotion of equine sector. Awareness campaigns should be organized at private as well government level regarding contribution of donkeys and mules in improvement of socio-economic status of equine farmers through utilizing equine draught power and utility of equine by-products (milk, dung, etc.). People participation should be promoted at every stage for welfare of these animals. Special financial provision in budget allocation should be made by policy makers. If donkey and mule farmers will not get proper help for rearing of these animals, it will adversely affect their socio-economic condition. It is concluded that contribution of donkey and mule rearing plays an important role in improving socio-economic

status of the farmers in Haryana and their contribution is remarkable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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