Feasibility of Buffalo Rearing on Pasture in Tropical Climate of Andaman and Nicobar Islands

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Introduction

The Andaman and Nicobar group of Islands form the Southern most tip of the Indian subcontinent, located (6-14° N latitude and 92-94°E longitude) in the South Eastern part of the Bay of Bengal .There are 572 Islands of which only 37 are currently inhabited. The Islands are beautiful and unique. The indigenous plants, animals, livestock, and marine life contribute to uniqueness of these Islands. The total livestock population has increased to many fold from meager 38.6 thousand in 1961 to 154.75 thousand in 2012. The buffalo constitute 5.08 per cent of the livestock of Andaman and Nicobar Islands. The buffaloes are of mongrel populations which are inheritance from Murrah, Nagpuri, Bhadawari, Marathwada and nondescript population. They are water buffalo and have very low milk yield. The herd size varies from 4 to 21. The buffalo populations in these groups of islands are recorded to be 7863 as per 2012 livestock census. The milk production from the buffalo is 1.843 thousand tons for the year 2013-14. Standard feeding systems indicate that the feed and fodder available are not sufficient to meet the requirement of the livestock. Severe shortages of both dry and green fodder remain the major concern for production of milk from the present livestock population. It is estimated a shortages of dry and green fodder are 51.80 percent and 99.56 per cent respectively (Kundu *et al*., 2010). However these Island livestock has adapted themselves to the subsistence type of feeding management for production purposes. Due to non availability of regular and ample fodder for the stall feeding of the livestock, owners resort to letting their animals stray for grazing. The grassland or fallow lands available in the area are being used for grazing for the buffalo. The grass land of Andaman has been developed due to the deforestation of virgin forest and consists of under shurbs, shrubs and trees besides the grasses and forbs, either in the isolation and scattered of in large and small patches with variable density.

Climate of these islands have a tropical, maritime climate. The temperature varies from 21.6°C to 32.5° C, the average annual rainfall is about 3100 mm distributed over 8-9 months with range of relative humidity from 74 to 90 per cent throughout the year. Intense solar radiation is observed between February to April.

Out of 37 inhabitant islands, 12 islands have no livestock whatsoever and another 4 islands have populations of less than 200. The cattle, buffalo and goat are the predominant livestock species in Andaman group of Islands where as pig and goat are the predominant species for Nicobar group of Islands. The growth rate of selected categories of livestock as per the quinquenial census of both 1997 and 2003 showed a positive growth. The milk production was also increased from 23.18 thousand tons in 2000-01 to 26.42 thousand tons in 2003-04 registering a growth rate of 13.97 per cent during the period of four years. However the growth rate of cattle, buffalo, goat and pig has decreased due to loss of livestock during tsunami which struck these islands on 26th December 2004. It also caused extensive damage to the agricultural land specially the flat land suitable to paddy cultivation. Around 8068.71 hectare paddy land was assessed to be damaged by tsunami/earth quake out of 12000 ha flat land suitable for paddy cultivation. This caused severe shortages of paddy straw for feeding the livestock. Both decrease in livestock population and the non availability of straw resulted in reduction of total milk to 23.890 thousand tons in 2007-2008 registering decline of 9.57 per cent over the 2003-04. The populations of livestock remain in decreasing trend (19th livestock census report). However the milk production recorded as increasing trend with 25.759 thousand tons in the year 2011-12 over 2007-2008.

Materials and Methods

This study was conducted based on the secondary data collected from the Directorate of Economics and Statistics, Andaman and Nicobar Administration. The primary data collected from the farmers were mostly productive and reproductive performances of the buffalo; constraints in livestock production system, total milk production and related other information. The secondary sources were also used to generate comprehensive database for the study.

Results and Discussion

Unlike mainland India, grazing activity in these islands are not regulated by the pastoral. Normally the farmers allow their livestock for grazing early in the morning either in groups or follow the tethering process. In the evening, all the animals return to the shed for night shelter. Kitchen waste and gruel are offered to the lactating animals. In some places the community gazing land are used for fodder production with introduction of different types of fodder crops like hybrid Napier and sorghum Sudan. Mature grasses are cut and the communities decide to sell the fodder to the members having the lactating animals.

A snapshot survey was conducted to collect some preliminary baseline information. Data were collected in 2014 through individual face to face interviews with four farmers covering a random sample of 22 buffaloes to record productive and reproductive performances. Four buffalo farmers maintained 4-8 lactating buffaloes with their followers are able to maintain on pastures for supporting the milk production. The buffalo farmers have developed a unique system of feeding their buffalo. The buffaloes are taken for grazing early in the morning in a batch after morning milking and allowed them to graze upto 3.00 pm. They return to the herd in the evening for night stay. A little amount of concentrates are given to the lactating buffalo and milked in the evening. The milk production has been recorded to be 2.5 kg / buffalo / day with a lactation length of 350 days. The inter calving periods varies from 8 to 12 months. Age at fist calving varies from 48 months to 56 months.

The results of the present study showed that the buffalo reared on community gazing resources are able to maintain subsistence type of milk production without the external input as reported by Khan and Usmani 2005. Higher inter calving period and age at first calving in the present study indicate the low plain of nutrition.

Strategies for pasture development: The community gazing resources need to be conserved from excessive exploitation so that it should not turn into a wasteland. The following strategies may be followed for maximizing the yield of community gazing resources. The farmers should be made aware about the importance of community grazing resources in their livelihood. The rotational grazing or the deferred rotational grazing proved to be the best rather than continuous grazing in the community land.

Conclusion

Livestock husbandry based on grazing played an important role in rural economy in India. This is also true in case of Andaman and Nicobar group of islands. Common property resources play a crucial role in sustaining and enhancing the livelihood of rural poor. There is drastic shrinkage or total loss of such lands due to encroachment. Agriculture and animal husbandry practices are barely 150 years old in these Islands. In early period, virgin forests were cleared for the settlement of convicts and later for the refugees. The grassland of Andaman and Nicobar has been developed due to the deforestation of virgin forest and consists of under shurbs, shrubs and trees besides the grasses and forbs, either in the isolation and scattered of in large and small patches with variable density. The total livestock populations has increased to many fold from meager 38.6 thousand in 1961 to 154.747 thousand in 2012 along with a similar boon in poultry *vis-a-vis* human population. It is a challenge to maintain the common property resources used for grazing. A study has been reported in this paper related to buffalo milk production using the community grazing resources.

Grazing based buffalo production plays an important role in bay islands and is a livelihood supports for the farmers. The common property resources used for grazing buffaloes need to be restored and managed properly to support the livestock farmers.

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