

Sahiwal – a policy pointer in Indian context

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Abstract

In livestock sub sector the existing policies in place, have exclusively focused on high yield with adoption of modern technologies and establishment of large commercial units to increase the production and productivity of the breeds. Cross breeding native cattle breeds with exotic high yielding breeds mainly Holstein Friesian and Jersey, which has been the most preferred way to increase milk yield, led to the depletion of several indigenous breeds and also pushed some to extinction. This gets evident from the dwindling numbers of indigenous breeds in the country. The policies for conservation of indigenous breed mainly refer to the identification of utility genes and breeds and utilizing them for breeding and research; such a conservation effort being directed towards individual breed overlooks the ecosystem or the small and marginal farmers or the herders and pastoralists who nurture them and depend on them for livelihood. The emphasis on high yielding exotic breeds has also escalated the maintenance cost for cattle rearing with increased uncertainties. This has mainly impacted the small and marginal farmers, the herders and pastoralists who cannot afford such high maintenance cost, led to the disruption or break in the human-livestock- nature interaction or the crop - livestock system. This article draws an example of Sahiwal- a priced milch cattle, whose numbers are declining in the country, to argue the need for a breeding policy to protect the breed and also the interests of the small and marginal farmers and herders and pastoral community.

Keywords: Livestock; Indigenous breed; Sahiwal; Exotic Breed; Policy

Introduction

With the increase in consumption of milk and milk products, there is also an increasing awareness of the quality of industrially produced animal products, among the urban consumers. Milk and milk products like Ghee (clarified butter), cottage cheese from local/indigenous varieties or breeds are perceived to be better among the consumers in terms of taste, micro nutrients or colour (AESAs, 2014). Among the rural livestock farmers of Haryana (upon personal communication) the milk that they sell and transport to the urban areas are mainly from the high yielding exotic breeds while for their own consumption or feeding their children they prefer the milk from indigenous breeds, which they believe to stimulate mental and physical growth of children. Sahiwal's thicker and sweeter milk is traditionally perceived good for children's growth and is also a preferred choice among the women for the yellow ghee which has richer fragrance and taste. Sahiwal is a Zebu (*Bos indicus*) cattle breed in the northern part of India, which is one of the best known indigenous dairy cattle both in terms of quality and quantity of milk it produces (Joshi et al., 2001). According to the Breed Survey 2013, both pure and graded (with more than 50% phenotypic characteristics) breed of Sahiwal constitutes about 3.23% of the entire indigenous breed in the country (DAHDF, 2013). However, the number of this breed has highly dwindled in the country; mainly due to unregulated crossbreeding with exotic high yielding breeds (Ilatsia, 2011). Now the breed is sparsely distributed in Haryana, Punjab, Madhya Pradesh, Uttar Pradesh and Delhi mainly in government maintained herds, gaushalas and gurudwaras. With increased threat due to changing climatic conditions there is a dire need to protect the indigenous breed not only for sustained milk production but also for their ability to adapt to climatic variations, withstand heat, resist disease and pest outbreak, feed on poor quality roughages and kitchen wastes etc. However, none of these qualities figure while formulating the breeding goals, which are mainly overpowered by high milk yield only. Moreover, adaptation to local condition has never been considered an important breeding goal in the country (Ilatsia, 2011) nor did regional variation or small holder livestock farmers or nomadic pastoralists were taken into consideration while formulating breeding policy (George, 1985) In such a context it is crucial to question the breeding objectives and policies framed for conservation of indigenous breed – Sahiwal, which is known to be the best milch cattle in the country.

Increased productivity goal

In India 'increase productivity' goal within the dairy sector first emerged in 1970's which made India world's largest milk producer and such growth was sourced by increased feed supply and conversion efficiency of milch animal (Nair, 1985). The fundamental anchor of this high productivity goal altogether can be stretched out to the research system mainly the genetic research directed for breed improvement. Crossbreeding native breeds with the exotic ones to increase their output became the potential tool of livestock research. This intensive crossbreeding of both descript and non descript cattle led to steady loss of native germplasm, with increased incidence of diseases among the exotic breed like Foot and Mouth disease, parasitic disease etc., lack of adaptability to the climatic variability, increased dependence on concentrated protein rich feeds, quality of products (milk, meat or egg), antibiotic resistance etc. (Rao and Natchimuthu, 2014). Soon the depleting trend in the number of native breeds was recognized and major emphasis was laid on the conservation aspect. Much responsibility was vested on agencies like National Bureau of Animal Genetic Resources (NBAGR), Indian Council of Agricultural Research (ICAR) and other State Agricultural Universities to serve the purpose of identifying important genetic traits of livestock and conserve them for sustainable utilization. The research orientation of Indian Council of Agricultural Research (ICAR), the premier body of agricultural research in India shifted from cattle centric raising milk production to ecological adaptability and disease resistance in crossbred species (ICAR, 1999). However for a sustainable production system there needs to be a convergence of both the goals of increased production and conservation with wider scope for diversity at the ecosystem level. The National Livestock Policy, 2013 which emphasizes on 'adopting newer breeding and reproductive technologies, including those involving biotechnology and genetic engineering/genetic marker technology developed from time to time for faster implementation of various breed improvement programmes and for increasing production', mainly stresses on high yield only with lesser acknowledgement for the need of diversity not only at the species or genetic level but at the ecosystem level. For conservation of biodiversity it mentions of identifying utility genes and breeds and utilizing them for breeding and research (NLP, 2013). It hardly mentions or acknowledges the complex role different agro ecological settings or the communities have played in the evolution of specific traits in the indigenous breed or for maintaining a pure gene line for more than hundred years. The traditional livestock production system and their contribution to sustainable production and biodiversity conservation finds little mention in the policy document. Here both the objectives of

livestock production and livestock biodiversity are seen as divergent goals rather than a single goal. Many studies have shown how the traditional livestock production system and their method of breeding and selection of animals over the years have led to generation of diverse breeds and secured the means of income generation with health and nutritional securities (FAO, 2009; Köhler-Rollefson and LIFE Network, 2007).

Indigenous breed - Sahiwal

Scientific evidence suggests that milk from Sahiwal cows contains A2 variant of beta casein protein which is considered to be safer than the A1 variety which is found in the milk of exotic high yielding varieties (Holstein Friesian) and are known to relate to allergic and serious health conditions (Mishra, 2009; Pallavi, 2014). Apart from the quality of milk, certain traits like heat-tolerance, tick resistance, high resistance to internal and external parasites, and yield consistency makes the Sahiwal breed even more distinct from other high yielding varieties. So, be it quality of milk or the ability to tolerate high temperature regimes, or ease in maintenance, it is the Sahiwal that accomplishes over exotic breeds used in the state schemes and programmes for breed improvement (Raina and Dey, 2016).

What is striking is that none of the scientifically proven nutritional qualities of the Sahiwal milk or their ability to withstand diseases and pest attack (meaning minimal healthcare efforts required per animal) are enough to convince the state's cattle breed improvement programmes. It is only the increased production goals or milk yield per animal that matter (Raina and Dey, 2016). The 19th Livestock Census (India) statistics has shown that the number of indigenous cattle breeds in India has greatly declined over the years while that of exotic cattle breeds are on a steady increase. Recent estimates show that about 87.7% of India's livestock, especially milch animals are reared by marginal and small farmers with operational holding less than 4ha (DAHD, 2015). In India, the major social context for livestock, especially the indigenous cattle breeds, is the relative policy neglect of herders and pastoralists, and the small and marginal farmers. That the survival of India's indigenous cattle is tied to the wellbeing of these communities of small farmers, herders and pastoralists is still to be acknowledged in livestock policy decisions and livestock breeding policies.

Discussion

Can there be a convergence between the twin goals of livestock (cattle) breeding and livestock biodiversity? Though the Global Plan of Action for Animal Genetic Resources acknowledged the contribution of livestock keepers in indigenous and local production systems to the domestication, development, maintenance and conservation of animal genetic diversity; in India livestock biodiversity is restricted to identification of utility genes and their conservation. It is not realized that if a breed is lost several sets of valuable information may be lost; a breed and its ecosystem along with the communities that have lived and nurtured both, hold information which may not be of value today when measured only in terms of milk yield per animal, but may of immense value in future for dealing with climate change etc. So it is high time to question, whether milch animals are to be valued only in terms of their milk yield or in much larger socio-cultural contexts involving diverse ecosystems and several rural communities with their location specific knowledge and skills. In India, the Watershed Support Services and Activity Network (WASSAN), Rainfed Livestock Network (RLN) and Revitalization of Rainfed Agriculture (RRA) Network are spearheading the call for a paradigm shift from the obsession with production goals (based on a few exotic breeds in energy intensive production systems) to combinations of sustainable and equitable production goals (involving a wide range of local indigenous breeds in extensive production systems). WASSAN's work on indigenous cattle breeds has led Telangana Government to ban cross breeding of Thurupu Cattle - the Telangana State's indigenous cattle variety (Hindu, 2016).

A breed like Sahiwal is being displaced from their original breeding tracts (Montgomery district of present Pakistan) and their ecosystem qualified by human-livestock-nature interaction is being erased by livestock breed improvement policies. Sahiwal is thus a policy pointer; of local breeds with high climate adaptation and disease resistance capabilities, consistency of milk yield, and minimum maintenance cost, a big attraction for India's rural livestock keepers. There is a need for a breeding policy to be developed with extended inputs from the rural livestock keepers, herders and pastoralists to protect several indigenous breeds like Sahiwal in their native breeding tracts with recognition of the herders and pastoralists and their indigenous breeding knowledge.

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