Causes of Extinction and Decline in India Holy Cows

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Abstract

Though cow is a sacred animal in India, is dying an unnatural death in India. The quest is who is responsible for the unnatural death of cow progeny in India, dairying practices, veterinary services, vaccination with substandard vaccines, veterinary administration involved in vaccine and drug quality monitoring or anyone else. Diseases including foot and mouth disease (FMD), hemorrhagic septicemia (HS), black leg/ black quarter (BQ), anthrax and John's disease (JD) are the common killers prevailing since ages in India despite the availability of vaccines and other measures to control and stamp out these.

Keywords: Diseases, Vaccines, Policies, Medicine, Cattle, Disease Control, Vaccination, Animals

1. Introduction

A cow is holy or unholy, it is not the matter of concern here, but the quest is about the killers, human, subhuman or superhuman. The cow has been worshiped since centuries in India for its motherly virtues to nourish the humanity through its milk. Cow's male progeny has provided draught power for agriculture and transport since time immemorial till the age of mechanization and still today in less developed regions of India and abroad. According to the recent census (PIBGI, 2014) India hosts for about 190.9 million (122.98 million female) cattle (¿45% of whole Asia and about 1/6th of World's cattle) population to claim its positions as the highest milk producing country, contributing ¿132 million tons of milk (1,2) every year. However, the role of she-buffaloes (92.5 million) in granting this number one position is much more important (contributing to ˜55% of the total milk yield) than cows. To acknowledge the contribution of buffalo is incarnated as Mahishi, means queen similar to Gau-Mata for the cow, since ancient time. The cow has never been considered merely a beast in India; it remained the most beloved family pet all over India, irrespective of religion, cast, creed or time. The killing of a cow or its progeny is prohibited in most parts of India through state laws but the killing has never come to an end even in prohibited areas. The question is who are the killers of the holy cow? Diseases fulminating since the dawn of animal husbandry, poor quality of vaccines and medications available for prevention and control of disease, ill-planned vaccination policies (vaccinating the cattle but neither the multiplier nor the maintenance host of diseases, planning for the herds not for the pets), implementers of the policies who are often under stress of enforcement of different programmes and varying priorities from time to time almost every year, farmers who raise the cow for milk and not for worshipping, farmers who are not willing to get their animals vaccinated, veterinarians wishing the spread of diseases or not vaccinating the animals so that diseases may fulminate and their earnings could flourish, the vaccine producers wishing to maintain the disease forever so that their shops can run forever, incoordination among different agencies working for planning, funding, executing, implementing, and monitoring towards disease control, the politician who made the sacred cow a taboo, rewards to those responsible for mass occurrence and spread of diseases, punishment to veterinarians those who try to report diseases, harassment to inspectors who dare to reveal truth of substandard vaccines and medicine or any other factor.

2. Animal versus Human Population

The size of animal holding in India may be appreciated by the fact that almost 100 million people earn their livelihood from animal husbandry (3) i.e., on an average hardly two cattle are reared

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by one farmer. If this small is the holding of a farmer then what development and innovation we can expect from the poor farmers unless the Government comes in a really big way to help them to rear good quality animals in herds. Most of the disease control programmes are based on the development of herd immunity, but where are the herds? Therefore, the planners must think in a different way, instead of planning for herds, planning should be to protect the pets, kept in small numbers, which occasionally congregate to form a herd.

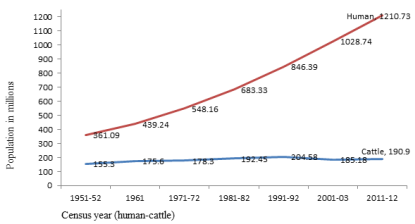

Fig. 1: Fig. 1. Human versus cattle population in India over the years of growth

Pulsing the shrinkage of farming land in the recent decade, Government schemes to promote dairying and increasing the cost of milk again led to a fast gain in female population, mainly exotic/ cross-bred (34.78%) and slight gain (0.17%) in the population of indigenous cows (holy cows). However, a shifting loss of ¿19% in male cow progeny (5) despite cow-slaughter ban was worrisome. The question for a policymaker is, either lifting the ban on cow slaughter may or may not boost the economic dairy industry. The burning question for anyone may be when there is cow (and its progeny) slaughter banned in 24 of the 29 states of India (6) then why the male cattle has declined so fast? Who are the killers of male progeny of the Holy Mother Cow?

3. Reasons of Cattle Population Shift in India

If we consider the cow a commodity of a market, as it is in reality, then only we can understand the truth. The reduced demand of males and non-productive females in the market (as bull power or as beef source) and thus the reduced value of male cattle seem to be the main reason behind the decrease in populations of males. Mechanization and modernization of agriculture have drastically reduced the need for cattle power required in transport and agriculture. It may be a natural phenomenon for any society where the cow is a commodity but not for Indian society where the cow is worshiped as mother and cow slaughter ban was enacted long back. Further, nature has not skewed yet in favor of females. Then what may be reasons for reduced male progeny of cow? In advanced animal husbandry use of sexed semen to produce only female calves might be an appropriate reason for the birth of more females than males but is certainly not the reason in India. Though much needed for profitable dairy husbandry might also be socially accepted to ethically enact the law prohibiting cow slaughter. However, it is still a farfetched dream for the majority of Indian farmers. It may be one of the much-required developments to ward off cruelty against males of cow progeny. Although very late, efforts have been initiated about a year ago for sexed semen in India, and a project is now in developmental stage (7,8).

Export of male cattle may be another option. India export sizable amount of livestock products including meat (9). However, luckily or unluckily there is hardly any buyer of Indian livestock in the world market due to the endemicity of several contagious and communicable infectious diseases; and as per USDA, foot and mouth disease (FMD) is a significant hurdle for export of Indian animal products(10). FMD has not only marred the production leading to direct loss of more than 4.45 Billion US$ annually (11,12) but also prohibits the export of livestock products from India (13). Moreover, one cannot export/ transport beef or cow progeny for beef even among Indian states (6).

Illegal slaughter of males for beef may also be a cause of reduced male population. However, it is certainly not possible in many parts of India, not only due to ban on cow (and its progeny) slaughter in most parts of India (6) but also due to social activists. Scholars expressed their views saying that "though the ban on beef is expected to harm Indian economy farmers have to learn to live with it"(14).

Then? As advised by the theorists, academicians, and wise animal husbandry advisors the farmers of India have evolved the means to solve the problem of un-useful male calves. Having hardly any option and already poverty-stricken farmers of India opted to be cruel to male cattle. Now many of them are the cruel cow worshiping people of India, do not allow males to live for long by depriving them of love of their mothers, forcing them to die through fasting in their infanthood.

It would not have been so cruel if they could have been scientifically slaughtered for meat or they have not been allowed to born through the use of sexed semen. Many of the cruelly killed calves would have turned to be the beautiful bulls, like the one painted on the National symbol of the country.

4. Role of Diseases in Killing the Cow in India

It is not only FMD, one of the most contagious diseases leading to the huge loss in livestock but other diseases including hemorrhagic septicemia (HS), the black quarter (BQ), Johne's diseases (JD) and anthrax affecting mostly production stocks leads to unaccountable direct losses and indirect losses. According to more than a decade old estimates, FMD and HS lead to loss of more than 20 billion and 1 billion IR, respectively (11,15). Losses due to FMD per animals have been estimated around 12,532 IR per animal, for HS losses may reach to even as high as ¿37,000 IR per animal due to high mortality(16). The figures may not be alarming for developed word but for India where three in four rural households (real dairy farmers) earn less than Rs.5, 000 in a month (17) it is not less than a death warrant. The pain of animal disease can be felt only putting one in place of poor farmers. According to official data from the department of Animal Husbandry, Dairying and Fisheries, India, and Project Directorate (18) on FMD, Mukteshwar (19), India, we still see these diseases haunting cattle and other bovines in India at a regular interval (Fig. 2). Besides FMD, HS, BQ and JD, there are several infectious and non-infectious diseases in India in bovines including anthrax, brucellosis, mastitis, surra (trypanosomiasis), theileriosis, babesiosis, gastrointestinal parasites, infertility, and repeat breeding adding to drudgery to dairy farmers of the country. Among the infectious diseases, major killers of cattle in India include FMD, HS, BQ, anthrax, fascioliasis and amphistomiasis, babesiosis and trypanosomiasis (Table 1). More to add in problems of dairy farmers are; the ever increasing pollution making drinkable water and breathable air scarce and eloping of grazing lands. After all, ever swelling human population in India is competing for concentrate ration available earlier to animals and need for grains, vegetables, fruits, and pulses created non-availability of land to grow fodder for animals.

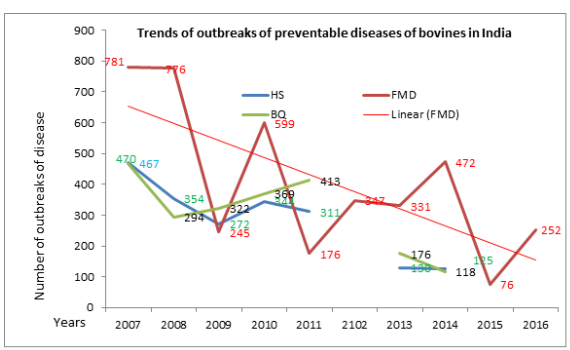

Fig. 2: Fig. 2. Trends in outbreaks of preventable diseases of bovines in India (18,19)

Diseases	Years of report										
	2000	2002	2003	2005	2007	2008	2009	2010	2011	2013	2014
FMD	237	1204	1956	2232	1005	256	340	305	218	7736	1582
HS	1270	853	1970	1395	757	631	1081	448	712	278	304
BQ	738	1273	1370	915	742	356	480	460	899	370	288
Anthrax	163	235	238	238	186	229	180	193	190	70	1878
Fascioliasis	5	97	10	00	2	6	27	74	36	11	4
Babesiosis	47	47	4	10	13	33	28	30	30	4	8
Trypanosomiasis	0	0	2	7	7	207	43	18	20	34	15

Data for 2001, 2004, 2006 and 2012 could not be retrieved (DAHDF)[18].

Fig. 3: Table. 1. Infectious diseases causing cattle mortality in India

For the control of infectious disease in cattle in India, many millions are invested every year without a reasonable gain, reasons may be many but it is only the policy lapse for the poor. Policy makers are not ready to accept the mistakes, review their mistakes, or involve those who can honestly input. The system is so that day by day it is getting thicker darkness for innovators, thinkers, and workers.

5. Real and Non-real Hurdles in Cattle Disease Control in India

It is always a plea of authorities engaged in animal disease control that our socioeconomic conditions and regulations are the major hindrances for effective disease control. Due to the high endemicity of many of the infections, large population and marginal resources, India cannot opt for the disease stamping out (eradication) policy and is left with only one option to control the diseases through vaccination in phased manner (20). Several insufficiencies have been enlisted by agencies

engaged in animal diseases control (21,22) including lack of a sufficient number of trained personnel in epidemiology, lack of trained technical support, lack of physical infrastructure, lack of coordination among state and central agencies, gross under-reporting of diseases and lack of economical diagnostics etc. To meet out several of the deficiencies Government of India allocated (22) 13.17 billion IR for National Project on Cattle and Buffalo Breeding to strengthen semen centres and artificial insemination (AI) services and 17.6 billion IR for National Dairy Plan for balanced feeding practices and to strengthen veterinary and animal health services (¿55000 facilities). Besides, the huge investment with 100% Central Govt funding on National control program on Brucellosis was initiated in the year 2010 and FMD control program (FMD-CP) started in 10th Plan (investing about 40 billion IR/per year) to attain the freedom from the disease with vaccination status by 2020 (22). Though the ban on cow slaughter is often cited by the authorities as the hindrance in control of contagious diseases of cows including FMD, brucellosis, JD etc. However, as per FAO (20) to eradicate you need a stamping out policy but for control of such disease, only effective vaccination policy is sufficient. Moreover, the cow slaughter ban legislations hardly prevent judicious stamping out of animals having contagious diseases and its provisions are not to apply to diseased, or under experimentation cows6.

In the vision plan of India's animal disease monitoring agency (21), deficiency of trained people in epidemiology has been cited as the major hurdle. To address the problem the ICAR-National Institute of Veterinary Epidemiology and Disease Informatics has been created and is functional since October 2013 at Bengaluru, however its role in training can be perceived by the fact that even up to date none of the specialists posted in the Institute has opted to be the faculty of the Epidemiology in the same organization and the faculty of Epidemiology (stationed at ICAR-Indian Veterinary Research Institute, Izatnagar) is still struggling to increase their numbers above three since last several years. Though we need trained personnel in epidemiology there are only two seats for post-graduation and none for Ph.D. in the leading institute of veterinary sciences in India (http://www.ivri.nic.in/). The apathy of the officials reveals that either the weakness pointed out was not real or will power to control the diseases is lacking or diseases are needed to be maintained to fetch the government funding year after year.

Gross under-reporting of diseases and lack of economical diagnostics (21) was proposed to be another hurdle in animal disease control. It might be true for the diseases difficult to be clinically diagnosed as brucellosis but not for the HS and FMD (could be diagnosed even by the animal owners). The question is now who is responsible for under-reporting of the diseases? Farmers or veterinarians in the field or the authorities. In Karnataka in the 2012-13 target of more than 80% vaccination for FMD was achieved but the number of outbreaks of FMD was almost 5 times more than reordered in 2008-09 when about 50% animals were vaccinated (23). The whole responsibility of the occurrence of FMD outbreaks in 2013 all over the FMD control program (FMDCP) regions was bowed on the shoulders of veterinarians and many of them were harshly punished by the animal husbandry departments of different states for not vaccinating the animals. However, the undulating trends of FMD occurrence year after year even on the implementation of FMDCP (Fig. 2) tells an altogether different story of the ineffectiveness of the vaccination or the vaccine. Similar trends have been reported from non-vaccinated populations or populations under non-compulsory vaccination in several countries (24). Protection observed against FMD in animals in FMDCP areas in different years might be just the result of natural infection only, leading to immunity for about 18 months (24) and may not be the outcome of the vaccination done. At one hand vaccinators and veterinarians reporting the disease were and still being punished in many parts of India forgetting the success story of eradication of FMD from Japan where the veterinarian who reported the first case was nationally awarded (25).

It is the fact that all the vaccines used in FMDCP are produced in the private sector and vaccine batches are released even without testing for the primary qualities of the vaccine (25,26). Many of the batches of FMD vaccine tested and used in FMDCP were reported substandard (27). The report establishing substandard of the vaccine batches was condemned by some of the authorities (black sheep) in India even without testing a single batch to protect the Indian vaccine industry (24, 26-30). Punishing the vaccinators for the wrong cause and protecting the vaccine producers for supplying the substandard vaccine (29) may not be the policy of India Government but of a few black sheep in the system operating to keep India to toil. However, those black sheep are not black in scientific circles, they are the most shining one getting all the benefits, perks and facilities, before time promotions, an extension of services even after retirement and top governing

posts in the Country.

Sometimes it is said that there is a change in virus but it has never been proved so great to make the vaccines ineffective. It might have been earlier when the FMD vaccines were less pure. Using those earlier vaccines most of the European and many Asian countries controlled FMD and then eradicated FMD. Nowadays FMD vaccines are purer and more potent than their forerunners and give at least partial protection even if the virus match is not perfect. In cattle, a single dose begins to protect from the disease by the 4th day of vaccination, although in pigs it takes longer, about 21 days (31).

6. In-coordination among Different Agencies Implementing and Monitoring Disease Control Programmes

Lack of coordination is a long-standing problem leading to failure of many policies in India. The fact can be appreciated by the reporting of different numbers of the outbreak of FMD for the same year by the two agencies of the Central Government (18, 19) (Fig. 3). The major setback may be anticipated on trying to correlate the data from different states and the central agencies.

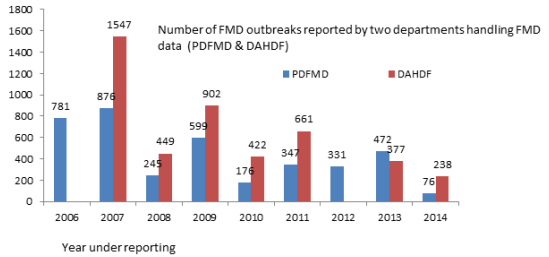

Fig. 4: Fig. 3. FMD outbreaks in India indicating in-coordination among different agencies(18,19)

Volumes of praise have been written for veterinarians and veterinary scientists and at least something has been done too. However, general conception is a bit different. Dalal and co-workers (32) while narrating about the implementation of the livestock insurance schemes in India write "veterinarians also pose a threat to the viability of the scheme ——". The picture is very gloomy, if vaccination fails it is the only veterinarian who suffers at the hand of not only animal owners but also through departmental punishment for not keeping the vaccine properly or not vaccinating the animals on time and in proper manner despite the fact that most of the vaccine batches are substandard (26-28) but enquiry committees always favour the vaccine producers for one or other reasons (29). Then what is the real role of an educated veterinarian in the development of animal husbandry?

7. Vaccine Quality Control and Quality Monitoring

Though there are all the concerned agencies to monitor the quality of vaccine and drugs in India for human as well as animals, more than 25% available in India are fake and India has been found as the producer of ¿75% of word's counterfeit drugs (33). Therefore, it is not surprising to witness no cure after treatment and no protection after vaccination in India. At almost every instance of seizing of counterfeit and substandard medicine and vaccines the safe way is granted to culprits after testing and retesting and lengthy tortuous legal procedures. The monopoly in vaccine testing for animals granted to one man in India may also be interesting to observe. Despite the suggestions and requests from several corners (26-30, 34) the monopoly has been maintained. The drug controller general of India (DCGI) has hardly any foolproof system to monitor the quality of medicine and vaccine flooded in the Indian market. It might be either lack of will to ensure quality medicines and vaccines to Indians, or it may be its inability to maintain its integrity and ability for monitoring the quality or may be something else as pointed in earlier discussions (26-30). Further, an undercover policy of some of the ill-motivated groups in India for rewarding the traitors, who advocate and ensure protection for the firms producing substandard vaccines, with extension in services, appointing them at the helm of academic and administrative affairs, Vice-chancellors, and punishing to truthful vaccine quality inspectors (30) is certain to ruin poor farmers of India. It is a known fact that power corrupts, what will happen when power is showered on corrupt people, only an alien can save

Indian farmers. In wait of an alien Indians believe in the incarnation of God in every era to curb the corruption or to redefine the corruption and truth. Still, the answer to the question "who is the killer of the holy cow in India" is obscure. It might be due to our failure at many fronts to protect the cow and its health, to make the dairy farming a profitable venture, and after all failure to love the cow and our nation. The love flourishes in the hearts residing in bodies with the full stomach, where masses are deprived of education, food, health and other basic amenities due to skewed policies we cannot pulse the love, the justice, and even the conscience. Deprivation of humanity from basic amenities convert populations into masses of criminals, the poor Indian farmer has no other way then to cruelly kill the male calves of a cow to get rid of them. The Indian farmer is waiting for the opportunity (O), people say it is one in "Today" and three in "Tomorrow".

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