HOLY COW!
Research insight into dairies in India

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About FIAPO

FIAPO (Federation of Indian Animal Protection Organisations) is India’s leading animal protection body. As a collective voice for the animal protection community in India, FIAPO unites all animal protection organisations nationwide to exchange ideas, build expertise and take action to strengthen the animal rights movement in the country. FIAPO works with over 160 member organisations, 200 supporter organisations and over 1000 activists in more than 70 cities across India. They are the largest Federation in the country and one of the largest movement-building organisations in the world.
From the point of view of the nature of welfare problems, five broad typologies of dairy systems can be derived in the Indian context. These are - large commercial dairies, urban dairies, government breeding farms and research facilities, small holders (both, within the cooperative framework as well as outside it) and Gaushalas (or cattle shelters).

The proposed intervention approach is **preventive** as well as **ameliorative**.

Large commercial dairies are still in the process of coming up in India. Hence the approach with such facilities would be preventive in nature, through standards and legislation.

As far as existing dairy systems are concerned, from a welfare point of view, the order of priority in terms of welfare interventions is the following: urban dairies, small holders, government farms (particularly breeding farms) and Gaushalas. With these typologies, the interventions would mainly be ameliorative. However, such ameliorative work too would benefit from a legislative framework within which dairies can be regulated.

The lack of regulation for dairies is also a significant hindrance in improving welfare in existing dairies, specially the urban ones. Hence the formulation of standards for the husbandry of dairy animals is a key imperative, moving forward. Such standards would have to be based on cross cutting principles that are applicable nationally. Specific standards would then have to be formulated for each typology. Such an exercise would be done in collaboration with a particular partner from within each typology. This would make it possible for these standards to be adopted and implemented. These standards would then find resonance in law through the formulation of legislation at the national and/or state levels. According to the proposed strategy, the central legislation would be brought about by an amendment to an existing rule (The Registration of Cattle Premises Rules, 1978) within the Prevention of Cruelty to Animals Act, 1960. This is a faster and quicker process that precludes the need for a full law making process from being undertaken. Since the power to amend rules is vested with the government, it prevents the matter from having to go through parliamentary approval.

However, it is proposed that even while central legislation is being attempted (which will be applicable nationally), parallel efforts be made with specific states. This will serve as a back-up in case the central legislation is delayed or does not come through. In this context, animal husbandry departments of Andhra Pradesh and Karnataka have evinced interest in considering legislation to regulate upcoming commercial dairies. It turns out that the condition of animals with small holders is a considerable area of concern from a welfare point of view. Contrary to popular belief, these animals, even though largely in free range conditions, suffer from a variety of welfare compromises. This sub sector also accounts for the largest number of animals affected.
The Indian cooperative dairy set up provides the best possible chance to reach out to small holders. The National dairy Development Board (NDDB) could be a possible partner in this enterprise. Standards applicable to small holders would be proposed to NDDB. Upon ratification of the NDDB, these standards would then come into force for state dairy federations that the NDDB works through. Downstream, are the milk unions at the district level and dairy cooperatives at the village level. The standards would therefore percolate through this existing institutional framework. An initial pilot could be attempted in one state and based on experience, scaled up. Incidentally, the cooperative sector, which is also politically quite powerful, serves as an important bulwark against intensification and industrialisation. The NDDB, as a representative of the cooperative sector has critiqued the IFFCO project as well and had underlined the need for a substantial proportion of the country’s milk production to be controlled by small holders that are organised through the cooperative model.

Reforming urban dairies is principally a function of enforcement. Cattle in urban diaries are intensively confined, most often in conditions that permit no movement and certainly no grazing. Hence only limited in situ reform is possible. Much of the reform is predicated upon the dairies moving to locations where it is possible to provide the basic minimum conditions for cattle. Municipal laws of several cities do restrict the holding of cattle within the geographical limits of cities. These would be invoked to move dairies out of cities. It would then be ensured that the units conform to the standards laid out. The enforcement of legislation for urban dairies will be facilitated by FIAPo’s network of member organisations. The intervention will be incubated in a particular city that would serve as a model for other major Indian cities to follow.

Government farms typically have standard operating procedures (SoP) that regulate practices. However, elements of welfare are either absent or under-emphasised in such SoPs. The farms in question are run both by central agencies as well as state ones and hence the approach here, similar to legislation, is to work parallely with the central as well as state animal husbandry departments. The intervention would first build in elements of welfare into the SoPs. The particular department would then be enabled to build capacity of its relevant functionaries.

Gaushala reform will be driven through the respective central and state nodal bodies. In case of the centre, it is the Animal Welfare Board of India and in the states, the state animal welfare board and/or the State cow protection commission. The approach is to formulate standards that are appropriate to Gaushalas and then incentivise the adoption of these standards through the respective nodal body. One manner in which this may be done is to make the funding received by Gaushalas (from the nodal body) conditional upon their meeting the set standards.
The situation with respect to cattle (specifically cows) used in the dairy industry has to be viewed with a somewhat different lens (compared to other animals that are raised for human consumption, either directly or indirectly) owing to the dynamics associated with the cultural and religious significance of cows within Hindu mythology and tradition. In a large majority of Indian states, especially those that have large cow populations, cow slaughter is banned. However, the often repeated statement about cow slaughter being banned in India is technically incorrect, since a number of states have no legislation towards this end. In such states there are no cultural or religious taboos associated with cow meat, which is a routine part of people’s diet.

Buffalos though enjoy no such protection and are slaughtered once they are no longer of use in the milk production cycle. Buffalos are also a significant contributor to the overall supply of milk that the country produces. The absolute number of buffalos in the country is growing as is the rate of growth of their population.

The Government, Social Development agencies, the dairy sector highlight the fact that India holds the world’s largest cattle population and is the world’s largest milk-producing country. The dairy sector is characterized by a smallholder production system of village-based production units often consisting of one to three milking animals. The majority of milk produced is consumed on the farms where it is produced or distributed through informal channels. Formal markets receive milk deliveries from millions of smallholders coordinated through an extensive cooperative structure (Babcock Institute 2006: Introduction). Government policies and budgetary allocations promote a model where dairy is one of the constituents of the farmer’s livelihood basket and most often complements crop production. Government schemes related to dairy have thus focused on improving livelihoods rather than maximizing milk production per se. Milk production though has certainly gone up, though that is more because of the sheer size of the Indian dairy herd (including buffalos) than productivity enhancement. This structure of the dairy sector has welfare implications that are discussed in the report.

The early 1990s saw deregulation of the dairy sector making it possible for private players to set up dairy units fairly easily. Subsequently, the regulatory climate has been further relaxed creating the potential for the private organized sector to participate actively in the dairy arena. This development, viewed in combination with rapidly changing consumption patterns and increases in disposable incomes, particularly in urban areas, implies that there is a huge spurt in demand for dairy products that the existing dairy model may not be able to meet. Projections made by dairy industry watchers predict that the Indian dairy pie may be large enough to allow the cooperative as well as the corporate players to operate in tandem.

**Structure of the Indian Dairy Industry**

Milk production is primarily a supplementary occupation for small landholders or landless laborers in villages. There are no official counts of dairy farms and estimates vary widely among sources. Best estimates indicate that approximately 70 million rural households are engaged in milk production (I). The average herd size is about two milking animals, and average daily milk production per herd is about four litres (I). Women represent about 58 percent of the total workers engaged in the industry, and the majority of dairy workers belong to socially and economically disadvantaged communities.
Approximately 44 percent of the milk is sold in local village level markets; the remainder is marketed in urban areas. Of the percentage that is marketed to urban areas, the bulk is handled by the unorganized sector, and involves loose agreements between farmers, middlemen, and retailers. Only 24 percent of the milk is marketed through the organized sector: half of that by private companies, and the other half through cooperatives, or government programs. In the government/cooperative sector, almost 80 percent of milk is marketed as liquid milk and only 20 percent as milk products. On the contrary, in the private sector only 30 percent is marketed as liquid milk and 70 percent as value-added milk products.

While the cooperative sector only accounts for less than 25 percent of milk production and distribution, it remains the only organised mechanism through which rearing practices can be made animal friendly. As on March 2009, India’s 1,33,349 village dairy cooperatives federated into 177 milk unions and 15 federations procured on an average 25.1 million litres of milk every day. 13.9 million farmers are presently members of village dairy cooperatives (NDDB AR 2010-11).

The history of Indian cooperative dairies

In the years before independence, Polson’s Dairy was a private dairy operating in Kaira district in the western state of Gujarat. The company procured milk from small farmers in the surrounding areas with the help of middlemen, processed the milk, and transported it to the urban center of Bombay. Bombay’s urban consumers constituted a good market and Polsons profited immensely.

By the mid-1940s, milk producers in Kaira began to demand a proportionate share of the profit margins, but Polsons ignored them. The milk producers then went on strike, refusing to supply the company with milk. Then, on the advice of freedom-fighter Sardar Vallabhbhai Patel, the milk producers organized their own marketing cooperative in 1946: Kaira District Cooperative Milk Producers’ Union. The Kaira union procured milk from affiliated village-level milk societies. The Kaira union subsequently became the Gujarat Cooperative Milk Marketing Federation that owns the still favored Amul brand. In 1952, the municipal government of Bombay cancelled its contract to purchase milk from Polsons and handed over the contract to the Gujarat cooperative. The number of farmers involved in the cooperative grew.

However, the Bombay municipality also had a contract with the Aarey Milk Colony (a local urban dairy in Bombay), and this contract required the municipality to purchase all of Aarey’s milk. During the winter months, when milk production was at its peak, all of the municipality’s needs were entirely met by Aarey’s production, they did not purchase any additional milk from the Gujarat cooperative.

Therefore, the Gujarat cooperative had surplus milk during the winter months, forcing it to cut down on purchases from its member societies. This dampened the members’ confidence and willingness to continue with the business. To prevent the loss of members and the decline of its business, the Gujarat cooperative set up a dairy and processing plant in 1955, aimed at producing butter, ghee, and milk powder. A second dairy was built in 1965, and a product manufacturing unit was established in 1971 to cope with increasing milk procurement. In 1993, a fully automatic modern dairy was constructed adjacent to the original Amul dairy plant at Anand, Gujarat.

The success of the Gujarat cooperative attracted attention from decision makers. In 1964, the Government of India decided to introduce the Gujarat cooperative model throughout country; the National Dairy Development Board (NDDB) was established in Anand, Gujarat to facilitate the spread of cooperative dairies. This effort was named Operation Flood.
The NDDB initially financed Operation Flood by converting milk powder, supplies of which were being donated to India as food aid, into drinking milk and introducing it to major cities at normal prices. This establishment of the urban market provided the stability necessary to encourage farmers to invest in increased milk production. The World Food Program provided 126,000 tonnes of skim milk powder and 42,000 tonnes of butter oil to finance Operation Flood in its first year. The funds that this generated were then used to improve the dairy herd and to organise the production, collection, and processing of milk in rural parts of India. The dairy cooperatives were then linked up with the four main cities of Bombay, Calcutta, Delhi, and Madras. Gradually, other national and statelevel dairy-related projects were integrated into the overall program.

Substantial funding from the World Bank and the European Economic Commission (EEC) have allowed for an expansion of dairy processing and marketing facilities, an extended milk procurement infrastructure, and increased technical assistance to farmers. The introduction of modern technology, both at the village level and in the processing of milk and milk-products has been a key component of this program.

Membership in dairy cooperatives is open to all who need the cooperative’s services and who are willing to accept the responsibilities of being a member. Decisions are taken on the basis of one member exercising one vote. No privilege accrues to capital, and the economic returns, whether profit or loss, are divided among the members in proportion to patronage. Each cooperative is expected to carry out the continuing education of its members, elected leaders, and employees. All the milk cooperatives in a district form a union that, ideally, has its own processing facilities. All the unions in a state are normally members of a federation whose prime responsibility is the marketing of milk and milk products outside the state. There is also a fourth tier, the National Cooperative Dairy Federation of India (NCDFI), which is a national-level body that formulates policies and programmes designed to safeguard the interests of all dairy farmers. Each tier of the organizational structure performs a unique function: procurement and services by the cooperative; processing by the union; marketing by the state federation; and advancing the interests of the cooperative dairy industry by the national federation. Thus, the cooperative model has evolved into an integrated approach to systematic dairy development.

**Beef cattle and buffalo meat**

While the thrust of this study is on dairy, it is nevertheless instructive to glance briefly at the scenario with regard to meat from animals reared for dairy.

Most states, including those with large cow populations, restrict cow slaughter and some also restrict the slaughter of buffalo. The populations of a few states have no cultural or religious taboos associated with cow meat, and it constitutes a routine part of people’s diet.

The legal use of cows for the production of beef is restricted to the nine states that do not prohibit cow slaughter. These are West Bengal, Kerala, Assam, Nagaland, Mizoram, Manipur, Meghalaya, Tripura, and Arunachal Pradesh.”
According to the United Nations Food and Agriculture Organization (FAO), 12.45 million cattle were slaughtered for beef in India in 2007\(^\text{vii}\). This constitutes just seven percent of the cattle stocks in the country.\(^\text{vii}\) However, these official numbers are probably much lower than the actual number of cattle slaughtered. As cow slaughter is a contentious issue in much of India, much of it occurs unofficially and goes unreported.

The majority of the cattle in the country are raised for milk and draught purposes only. Aging cattle become very expensive to maintain for subsistence farmers and landless labourers, who constitute over two-thirds of the households owning livestock. These farmers may sell female cows over the age of 14, or males of younger age for slaughterviii. Male calves are also often abandoned or sent to slaughter.

Buffalos, used for dairy production, are also slaughtered for meat. In 2007, there were approximately 98.7 million buffalo in India; 10.85 million buffalo were slaughtered for meat \(^\text{vii}\). India produces half of the world’s buffalo meatix.

The beef and buffalo meat sectors have not experienced the same rates of growth as other animal products. However, the Agriculture and Processed Food Products Export Development Authority (APEDA), within the Ministry of Food Processing Industries, has placed significant emphasis on the development of this sector. The export of meat, especially buffalo meat, accounts for an important source of foreign exchange. Between 2001 and 2006, 15 export-oriented mechanized slaughter and meat processing plants have been set up by this agency. During the last decade, 12 modern private-sector slaughterhouses have been set up and another 15 are currently in the pipeline. In addition there are about 35 meat processing and packaging units (including 12 registered with APEDA), which receive dressed carcasses from the approved municipal slaughterhouses for export of meat.\(^\text{x}\).

Beef is on the negative list of exports under the Export Import Policy of the Government of India. Therefore formal export of beef does not exist, though there are anecdotal reports of beef being clandestinely exported, stamped as buffalo meat\.\(^\text{xi}\).

\(^1\)The Babcock Institute for International Dairy Research and Development. The Dairy Sector of India: A Country Study. 2006
\(^8\)Rahman, Abdul. Status report on India, Pakistan and Bangladesh. s.l. : Global Campaign Against the Long Distance Transport of Animals for Slaughter, 2007.
This chapter is devoted to presenting a conceptual framework for understanding the Indian dairy situation from an animal welfare standpoint. This framework has been derived after considering several systems of classification/characterisation of Indian dairy. Some of the commonly used methods of classification/characterisation are:

- Using biogeographical zones;
- Milk production volume;
- Cattle population;
- Cattle breeds;
- Milk production systems i.e. buffalo based, cross bred based, indigenous cattle based, mixed cattle based.

When considering dairies from an animal welfare standpoint, the above categories suffer from the following limitations:

i. The nature of animal welfare problems overlap between various classes/categories;

ii. These categories have been drawn up mainly from a production standpoint. Therefore, while these may reflect the broad classes that occur in terms of production volume and productivity of the animals, these do not provide us an insight into the state of animals themselves;

In light of these, we offer the following conceptual framework to consider India’s dairy sector while looking at animal welfare and considering welfare interventions. The criteria that we have used in drawing up this framework is:

i. The nature of animal welfare problems that occur across the country;

ii. The manner in which these can be addressed i.e. welfare based interventions that are possible.

Based on this criteria, the typologies that emerge are the following:

1. Large commercial dairies:

These are relatively recent in vintage and are a means of investment for entrepreneurs looking for “sunrise” sectors that have a potential of high rates of return. Such dairies are coming up in traditional milk powerhouses like Haryana, Punjab, Andhra Pradesh. This is a rapidly growing sector and progressively a number of established businesses are examining the feasibility of entering the dairy industry through large commercial farms. It has been observed that there are a number of fence sitters that are waiting to see the performance of enterprises that have already invested in commercial farms. In this context, the state of play with the IFFCO dairy is important. It is the first project of this scale in the country and is being keenly watched by the industry. Interestingly animal husbandry departments of certain states also run “model” dairies, that fall within this category insofar as they raise animals in a manner similar to commercial dairies.
There is a new trend where some dairy owners have started specialising in breeding and selling high yielding HF animals. Such entrepreneurs buy heifers from various auctions, rear and breed them on their farms. The animals are milked but only surplus is sold off in the market. These farmers maintain the animals really well so that these can be sold to dairy farms on the basis of their high productivity. There is information from Haryana about some dairy farmers shifting from milking operations to breeding. Due to less input of labour and high returns – as the animals can be sold at a very high price; this ‘business’ is considered less laborious and more profitable than dairying.

Key characteristics:

a. Typically set up as business ventures.

b. Typically in semi rural areas or on the edge of cities. Not in remote areas.

c. Largely cross breeds

d. Relatively mechanised

e. Quality control – Rudimentary to high

f. Some investment in animal health

g. System of replacement stock.

h. Environmental management system – rudimentary to high.

i. Average herd size 400 and upwards

2. Urban and peri urban dairies:

Mainly concentrated in and around cities and are oriented towards meeting the high milk demand of urban centres. These facilities vary in size and are often limited because of space constrains in urban areas. There are overlaps between dairies classified as large commercial dairies and these. The essential difference between the two is the nature of entrepreneurial outlook. The urban dairies typically are focussed on quick short term profit and hence severely compromise not only animal welfare and health but also environment pollution and milk quality. In fact these dairies are the progenitors of “synthetic milk” and food safety is a key area of concern with their operations. Key characteristics of such dairies are:

a. Typically setup to make short term profit

b. Located in and around urban areas that have a large market for milk.

c. High yielding animals, including buffalos.

d. Some mechanisation may be seen. However, in order to keep input costs extremely low, by and large, mechanisation will, at best, be rudimentary.

e. Poor or no quality control

f. Little investment in animal health

g. Lactating animals purchased and sold off after a lactation ends

h. Poor environmental management

I. Average herd size 20 upwards
3. Smallholder backyard:
This is possibly the largest category of cattle holders in India. Given India’s history of dairy development, a large number of small holders are collectivised through cooperatives. However, many still operate outside of the cooperative framework. We have also found a number of cases of hybrid operations where small holders would opportunistically sell to cooperatives or to the unorganised sector depending upon the returns available.

a. Mainly as a livelihood support activity. This often complements the basket of livelihood options of the family.
b. Almost exclusively rural
c. Mainly indigenous breeds. Often buffalos.
d. No mechanisation, other than at cooperative collection centres.
e. No quality control by individuals. However, cooperatives may impose some form of quality control upon individual members.
f. Little or no veterinary support. Again, cooperative members will be an exception and may have access to animal health services.
g. Replacement usually through progeny of existing animals.
h. Waste management does not pose a challenge because of small herd size and free grazing regimes.
i. Small herd size. 2-6 animals

4. Government breeding farms:
Government breeding farms, research stations and agriculture universities. The central and state governments operate a number of institutions that supply frozen semen for artificial insemination programmes. These hold bulls as well as bull mothers. After calving, the milk is measured to test the quality of the male progeny of that cow. The “proven” bulls are retained on the farm and those whose genetic potential is not up to set standards, are sold off to private farmers. In addition state and central agricultural universities hold animals, in varying numbers, that are used for the purpose of training farmers as well as conducting research – mostly on improving productivity.

5. Gaushala:
Since cows would not be slaughtered (for religious reasons, in large parts of India), there has been a tradition of setting up retirement homes for cows that have outlived their productive period. These still exist in large numbers throughout the country, often supported by and on lands that are owned by religious institutions and temples. These facilities receive not only spent cattle, but also cattle rescued from slaughter, as well as injured animals. These facilities also breed animals (for milk) and it is not unusual to find high yielding cattle on their premises. Since gaushalas are not regulated in any manner, a number of them function as dairies. Because of their peculiar characteristics, these form a distinct category in this and hence have been own
a. Often part of tradition of setting up cattle rescue homes. Almost universally, these engage in sale of animal products – mainly milk, but also dung.

b. Well distributed through the country in urban as well as rural areas.

c. Almost only cows. Buffalos are slaughtered. Therefore by and large, one does not expect to see buffalos in gaushalas.

d. Mechanisation rare.

e. No quality control.

f. With few exceptions, most Gaushalas will have little or no veterinary support. Widespread use of indigenous practices.

g. Reproduction is common in Gaushalas. Very rarely will there be an effort to prevent reproduction (through segregation of sexes).

h. The dung is, almost always, collected and sold.

i. The holdings of gaushalas would vary from upto 10 animals running into hundreds. On an average it would not be unusual to find 20-25 animals on a typical gaushala.
Welfare of dairy cows is defined as degree of their adjustment to conditions which ensure quality living in regard to nutrition and water access, housing facilities, physical, psychic and thermal comfort, safety, expression of main forms of behaviour, social contacts with animals of the same species, absence of unpleasant emotional and physical experiences such as pain, suffering, fear, stress, disease and injuries.xii

Housing system

Tie stalls¹ are the most common system of housing at many commercial dairy farms in India. Cows and buffalos are kept tied at the neck round the clock with little space for movement. This helps in managing a large herd. There is no prescribed standard for the length of the rope, type of rope or chain to be used to tether animals. As tethering restricts the movement of cows, tie stalls do not provide an opportunity to animals to move around to socialize, walk or groom themselves.

This severely compromises welfare of the animals as it predisposes the animals to development of stereotypies and abnormal behaviour. Tie stalls have also been found to affect health and productivity of animals.xiii Mammary infections and/or teat injuries have been found to be more common in cows kept in tie barns compared to cows kept in free stalls or straw yardsxiv Tie barns are the preferred housing system amongst commercial facilities in states like Kerala, Karnataka and Tamil Nadu It is considered to be low on investment as compared to loose housing system, it requires less number of labourers to work and it can accommodate a larger number of animals in limited space. In states like Punjab, loose housing system is found and large plots of land are utilized to run mega dairy operations. Due to the presence of agricultural lands in these areas, usually finding labourers to work at dairies is not a restricting factor. Cows are reared in loose housing system or free stalls where movement is not restricted within the barn.
The height of roofs of barns varies from very high to medium high to low ceiling. The roofing is of different material like tin, brick, asbestos, straw. In the absence of enforcement of housing standards, the roof height may be lower than recommended and the roofing material may not be suitable. In such situations the animals are often under heat stress during summers.\textsuperscript{xv}

Presence of natural vegetation like trees, pasture or stream of water is absent in a typical commercial dairy farm. Protection from heat and extreme weather situations is through semi covered roofs of barns. In summers, fans, showers or mist sprinklers were installed in places to help animals beat the heat.

**Lying space:**

Lying behavior plays a critical role in the production potential, profitability and welfare status of intensively managed dairy cattle. When cows are deprived of adequate lying time, their welfare may be reduced. Many of the intensively managed herds may be overcrowded depriving the subordinate cows in the group proper resting place.\textsuperscript{xvi} Research shows that an average lactating cow needs 12-14 hours of rest in a day. Lower resting time puts strain on the hooves and legs specially on the high producing cows and is one of the major reasons for development of lameness\textsuperscript{xvii}

**Flooring**

In loose system of housing at many commercial dairy farms the floor space required is less than recommended. Many of the farms do not give open space for the cows for loafing, exercise and socializing. In indoor housing systems, flooring is customarily concrete as it is easy to clean and maintain. However, it can cause harm to cows as it is hard, abrasive and slippery. Such concrete floors are cold in winters and hot in summers and hence discourage the cows from lying down.

This results in lameness. Lame cows typically walk at the back of the herd they are more affected by an impatient handler; they are crowded together and cannot see where to place their feet.\textsuperscript{xviii}

Research is unequivocal on the negative impact of lameness for the production potential as well as reproduction of lame cows.
Feeding system

Many farms have limited availability of good quality green fodders and depend largely on concentrate and dry fodders. Long term feeding of cows with concentrates feeds and dry fodders and with limited or no supply of green fodders leads to vitamin and mineral deficiencies which are the root cause of many reproductive problems in later age and many deficiency diseases. Some commercial farmers may be tempted to challenge the cows to produce at their maximum potential in early period of its lactation. In this process the cows are fed increasing amounts of concentrate mixture which puts undue stress on the digestive and metabolic system of the cows. This phenomenon is popularly known a challenge feeding.xx

To meet the water requirement, concrete water troughs are built inside the barns. There is no restriction on water intake for animals in a loose housing system. In case of tie stall feeding, cows are provided with water twice in a day.

Cows are often fed on the fence line outside the lying area.

Feeding practices are varied and based on the local availability of various feed components. The case of a dairy owner in Ernakulum district, Kerala is illustrative. In this case, the dairy owner fed his 170 cows a mixture of maize, barley waste [sourced from a neighbourhood beer factory], tapioca waste, crushed lime shell and soya. The dairy owner described that even if the ingredients of the self manufactured feed are sourced from outside the state, still the cost works out to be lesser than feed distributed by government and commercial feed companies!
Milking practices
All large commercial dairies house high yielding milk producing cows. Milking is done twice in a day at morning and evening. Automatic portable milking machines and milking parlour is installed at many dairies. Cows are hoarded inside large fenced area before milking. They are then washed with clean water to let any impurity wash off their body. Before and after milking, teats are dipped into an anti bacterial solution to prevent germs from attacking he udders by their entry through teats.

Expression of natural behaviour
Due to absence of natural objects like- tree, grazing land etc, the scope of expressing natural behaviour is limited.

Calf rearing practices
Day old weaning: the calf is separated from mother as soon as it is born and is not allowed to suckle from the mother. The colostrum is fed using pail/bottle. This deprives the calf of its natural suckling instinct and leads to the development of cross-sucking, inter sucking, bar biting, tail biting and many other behavioural problems. This eventually impairs calf’s immune status, growth and wellbeing.

Calves are housed in individual cubicles and allowed to mingle only after 6 months. However, this is the preferred method of segregation of calves being reared as replacement stock.

Biased feeding and care of male vs female calves: Male calves are typically not of any use to the dairy industry. However, the treatment of male & female calves differs according to the type of dairy animal

In case of buffalo, male calves have to be kept with the mother so that milk is let down by the mother. Male calves of buffalos are fed minimally – adequate only to ensure basic sustenance. Once the utility of calves for milk let down ends (usually at about 6 months into the milking cycle), a majority of male calves are sold for meat. A few may be retained for draft purposes.
In case of cows, interestingly the females of draught breeds are discriminated against, as the principal interest is in the males for draught purposes. Also, the females do not produce large quantities of milk. Therefore, they are often fed poorly in comparison to the male of the draught breed.

In crossbred and high milk yielding indigenous dairy cows, the male calves do not have any role to play and thus are culled from the system.

**Veterinary care**

Large commercial farms often have full time in-house veterinarians. The role of the veterinarian is to ensure productivity and reproductive health of animals. Farms have also been found to following strict quarantine protocols prior to the introducing new members to the herd.

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"^2 2010, PhD synopsis, Studies on performance and behaviour of high producing crossbred cows under a model loose housing system, NDR
" ^ Personal correspondence with Dr.M.L.Kamboj, Pincipal scientist, National Dairy research Institute, Karnal, November 2011
" ^ Grant & Albright, 2004; Kamboj, S.Kumar 2009
" ^ Grant & Albright, 2004; Kamboj, S.Kumar 2009
" ^ Personal correspondence with Dr. Chandan Kumar, National Dairy research Institute, November 2011.
" ^ Personal correspondence with Dr.M.L.Kamboj, Principal scientist, National Dairy research Institute, Karnal, November 2011
(ii) URBAN & PERI URBAN DAIRIES

The rapid growth in the demand for milk in urban India has spawned the growth of a large number of animal facilities within and on the periphery of towns and cities. These are minimally regulated through municipal legislation as far as their citing is concerned. However, there is no regulation on the number of animals that these facilities can hold or the conditions under which they have to be kept. Described below are the general conditions that can be found in urban dairies in the country.

Housing system

The type of sheds in this typology range from – concrete closed rooms, open roadside sheds to stalls without any sheds. Often there is no ventilation in the closed premises and neither is there any circulation of air through fans etc.

Like in most of the commercial dairy farms, tie stalls are found to be the most preferred system of housing in urban and peri urban dairies. The main reason here for using tie stalls is space constraint. In such dairies, it is common to find animals tied closely packed with each other, with little scope for movement and expression of natural behaviour.

Animals are tethered round the clock with short ropes or chains connected to a hook at the ground level or at the level of the animal’s neck leaving little scope for movement of the neck. There is absolutely no opportunity for the animal to move around, groom itself, take a walk or express its natural behaviour.

The word "peri" has been derived from periphery. Several urban dairies are on the periphery of towns and cities and hence are referred to as peri urban dairies.
Flooring

The flooring at these dairies is generally concrete. Lameness is common in this type of dairy operations as cows are tethered and forced to stand and rest on concrete floor day and night. Literature also supports the `Cows clearly prefer to stand on softer flooring surfaces than concrete, and providing softer surfaces such as rubber mats near the feed bunk may increase the time cows spend in the area, including time spent eating, and may be beneficial for hoof health and lameness. `xxi

Mastitis and lameness are the two most important welfare, health problems affecting the welfare of dairy cows`xxi

Feeding practices

These dairies have limited or no green fodder for animals as it is very expensive in cities. Predominantly dry fodder and commercial feed is fed to animals. At some dairies, buffaloes are fed with wheat bran, rice husk and bread mixed and soaked together in water. Calculated amount of feed and water is served to each animal.

There is a common manger for food and water. First food is served followed by water twice in a day. At some dairies, dairy farmers give food as well as water to the animals from bucket. In this kind of set up, animals are taken turn by turn to the water trough where they are allowed to drink water for a limited time. Since animals are tethered all the time, it is probable that there food and water requirements are not met when required by the animal.
Milking practices

Typically, urban and peri urban dairies do not have large herd sizes and animals are milked twice a day. Milking practices are different for cow and buffalo herds. In recent times, dairy farmers have shifted to portable milking machines to milk cows which allow them to save time compared to hand milking. Also, milking machines require less number of people to be employed for milking cows. The predominant mode of milking however, continues to be manual milking.

There is no certification or mandatory training required to operate these machines and anyone can use these machines on animals with functional knowledge of using the equipment. This has a direct welfare implication for cows leading to discomfort and stress due to mishandling.

Buffaloes on urban and peri urban dairies still continue to be milked manually only instead of machines. The present model of milking machines is ideal for the teats of cow and has not been found successful for milking buffalo.

The use of Oxytocin drug is very common in urban milk operations. This is done to induce let down of milk. Oxytocin is used for both cows and buffaloes but its use is recorded to be higher amongst buffalo herds. The experience of the dairy practitioners we encountered suggests that cows let down milk easily compared to buffalos. It appears that the maternal instinct is much stronger in buffalos and hence only about 10% of the milk is let down upon stimulation of the udders – in the absence of the calf. In case of calf mortality or removal of the calf from buffalo, it is difficult for the dairy farmers to get milk. As a solution to this, dairy farmers regularly inject oxytocin in buffaloes. Oxytocin has uterine contracting properties which enables let down of the milk. There are several opinions on the impact of extensive use of oxytocin. However, it has not been possible to come to an informed view on this subject.
Expression of natural behaviour

Due to absence of natural surroundings like trees and vegetation, grazing land etc, there is no scope for animals to express natural behaviour. However, styreotypies such as tongue rolling, air sucking and eye rolling can be commonly observed in animals at urban and peri urban dairies. Literature also supports the contention that these are abnormal behaviours and in cattle mainly abnormal oral behaviours such as tongue playing/tongue rolling, sucking at objects or cross-sucking have been described.

Calf rearing practices

At urban and peri urban dairies, usually pregnant heifers are purchased but there is no space to house or rear calves. Therefore, as soon as calves are born they are immediately weaned from mothers. Often colostrum is also denied to them. Instead it is sold as it is used to prepare a traditional sweet called kharvas. This practice is popular all over the country and kharvas is sold commercially in many states like Maharashtra.

In already crammed surroundings, calves are tethered in a row within the same room where cows are tied. In case of open dairies, calves would usually be found hoarded and tethered at one side. In case of a cow’s calf, it is straight away sent for slaughter. Whereas, in case of buffalo, the calf is kept with the mother, often tied at a distance to induce maternal feelings of buffalo and to ensure smooth let down of the milk. The male buffalo calf is fed with minimum fodder, required for its sustenance. Often, calves resort to chewing each other’s body hair to fulfil their nutritional requirement. Since there is no system of replacement stock at these dairies, female calves are sold off. If it is a male calf then it is either sold to Gaushalas or for slaughter.

Dummy calves: In order to save costs and effort, dairy farmers are using dummy calves instead of live calves at dairies. Immediately after calving, the live calf is removed from mother and dummy is introduced to the freshly calved buffalo. This is done in order to ensure milk let down and to avoid expenses which would have to be spent on sustaining that calf!
Veterinary care

Lameness is the most common disease observed in cows and buffaloes at these dairies. However, in buffalo farms body hair fall was also observed. There is widespread use of indigenous practices to treat animals. For example- mustard oil is applied to the hooves to treat lameness. Veterinarians are approached only in special circumstances in order to minimise the input cost.
On-site treatment being given to a freshly calved cow at an urban dairy

A diseased cow being milked at a dairy farm in urban area in Bangalore, India


**Personal correspondence with Dr. M.L. Kamboj, Principal Scientist, National Dairy Research Institute, Karnal, Haryana, November 2011**

**Abnormal Behaviour in Dairy Cattle and Buffaloes: causes and their management; M.L. Kamboj & V.K. Vishwakarma, National Dairy Research Institute**

**Scientific Veterinary Committee, 1995**
(iii) SMALLHOLDER BACKYARD

As the name of this typology suggests, the small holder backyard system of dairying involves holding a small number of animals in the backyard of a farmer residing, primarily in rural India. Small holder backyard dairying is the traditional way of rearing cows and buffaloes. Over the years, with changes in farming systems, traditional husbandry practices of dairying have also changed. Backyard systems mirror this transition and are the watershed between the traditional and the modern.

**Housing system**

Major changes in systems of housing, feeding and management have taken place due to changes in external factors such as environment, land holding pattern, and commercialization. For example, earlier animals used to regularly graze on community lands and this would also provide them an opportunity to express their natural behaviour to forage in fields, explore and graze. Now, community lands are practically nonexistent. With deceasing land size and increasing cost of land, the farmer has no option but to keep animals tethered or share his living space with the cow/buffalo in the family.

Usually, there is no resource or land with the farmer to construct a separate shed for livestock. During the research, at a majority of places, animals were housed in both open as well as covered areas. Some farmers just tied animals to a tree in front of their house or in the backyard. Therefore, another major change in the backyard system is the prevalence of practice of round the clock tethering. There is no prescribed standard for the length of the rope in order to ensure comfort to the animal. The decision on this highly depends on the availability of circumference around animal on the land owned by the farmer.

In case of buffaloes, a special consideration like the need to wallow in water is met by a trip to the nearby pond or giving the animal a bath twice a day or as and when water is available.
Flooring

Flooring is predominantly loose natural earth but increasing trend of concrete floors is recorded. Concrete floors are considered to be easy to clean and manage. Some farmers also using recycled manure bedding. The incidence of lameness in small holder backyard system as compared to other systems is low3.

Feeding system

Dairy owners with small number of animals practice different methods of feeding. These are farmers who are predominantly agriculturalists and for whom dairying is a complement to the livelihood basket. Free grazing regimes are therefore prevalent in a large proportion of the Indian dairy herd. This is where their animals are let loose and allowed to graze either on scrubland, which is not owned by anybody and free movement is allowed. Grazing is also done on crop residue after the crops of other farmers have been harvested.

With community grazing land increasingly shrinking, more and more farmers are gradually shifting to stall feeding of animals. In such situations there are no proper mangers for feed and water. At some places, fixed mangers (made of concrete and fixed at one place) were observed. Feed will be generally fed on the ground with green fodder, dry fodder, wheat husk, rice bran and mustard seed cake as its main ingredients. However, commercial cattle feed manufactures have considerable impact on the choice of feed for the farmer.

In a small number of cases, where the farmer is economically capable, feed may be purchased. This would include dry fodder and commercial feed.

Milking practices

The milking of animals is generally done twice in a day. The animal is milked with hands.

Expression of natural behaviour

By and large there is ample scope of expression of natural behaviour in small holder systems. There have however, been a small number fo cases recorded where animals have been in continuous tether.

Calf rearing practices

As far as restocking is concerned, in small holder backyard systems, an animal is usually replaced by its progeny. The female calves continue to give milk whereas the male calves are often utilised on agricultural land for their draught power.

Biased feeding and care of male vs female calves: Male calves are typically not of any use as far as milk production is concerned. However, the treatment of male and female calves differs according to the type of dairy animal.

In case of buffalo: the male calf has to be kept with the mother so that milk is let down by the mother. In order to ensure milk let down, male calf of buffalo is fed minimally, just enough to ensure sustenance. After some time majority of these male calves are sold for slaughter. A few are retained for draught purpose also.

In case of cows: the female of draught breeds is discriminated as their draught power is less than the male. Also, they do not produce very large quantity of milk. Therefore, they are often fed poorly in comparison to the male of the draught breed.

3 Personal correspondence with Dr. Shiv Kumar, National Dairy Research Institute, November 2011
Mutilations
Hot branding remains a widely prevalent practice in this typology. There is no record of use of analgesics or pain management.

Veterinary care
The dairy farmers having 2-3 animals in backyard are dependent on the veterinary services from a veterinary officer appointed by the state animal husbandry department. However, in practice the availability of veterinary services to animals is virtually non-existent. There are a variety of reasons for this ranging for poor governance to inadequate staffing. Effectively the small holder backyard system is un-serviced by the government veterinary set up. For this reason, private vets are in business, especially in states like Punjab and Haryana, where small holders have the capacity to pay for such services. However, the recourse most often taken by small holders is indigenous methods. In many areas, presence of quacks in the system was also reported. Farmers often fall for the quacks which results in poor welfare of animals.

References:
The central and state governments run cattle breeding farms that produce frozen semen for artificial insemination. The central aim of these farms is to increase the production of milk in the state. For this purpose the following procedures are followed: cows are regularly inseminated artificially. Milk from each mother is measured to speculate quality or capacity of its male calf to produce semen which can produce high quality calves in future. Calves are weaned immediately after birth and fed from buckets. The female calves are reared as replacement stock whereas good male calves are maintained in the farm. The ones that do not pass the quality test are given away to the local people. The bulls that remain at the farm are kept confined in individual barns. These barns are covered from 2 sides with 2 gates for entry. During visit to a breeding farm in Haryana, the care taker mentioned that the bulls are very aggressive. They also show some signs of abnormal behaviour such as head butting. Such animals routinely have nose rings inserted to enable handlers to control them.

These breeding centres act as semen reservoirs to fulfil artificial insemination needs of cattle within the state. Some breeding centres which have very good quality proven bulls; also get demand from other states.

Some government research facilities have also been established in order to preserve indigenous breeds of cattle and their development by cross breeding. In addition to the indigenous cows, these institutes also have various cross bred animals which are used for research purposes. These cows are also milked and artificially inseminated.

Most of the institutes practice day old weaning. Female calves are retained on farm while male calves of cows with high milk productivity are sent to bull rearing centres. Others are sold off to buyers through auctions. Welfare conditions in these institutions are variable with behaviour such as head shaking, eye rolling, self sucking being observed. There is no welfare oriented regulation or code of practices to standardize operation in such state government operated farms.

Government farms usually have vast land area designated for their activities. However, the animal house is a very small part of the entire institution. The housing systems in these government farms is either loose housing or tie stalls. The choice of housing entirely depends on the decision of the core management group of the farm. A noticeable continuing problem at government farms is ‘concrete floors’ in loose as well as tie stall housing facility.

The cows at farm are milked twice in a day. They are washed before each milking and anti bacterial solution is applied to their teats before and after milking. This is a common practise observed at all government farms which is also considered as one of the good on farm practices by the farm managers.

*This section is based on personal observations during the course of the research as well as interactions with dairy scientists from various dairy research institutions.*
Housing condition of bulls at breeding centres:

Bulls are confined to cubicles at breeding centres resulting in occurrence of stereotypies such as head banging, eye rolling and bar biting.

Lying area for bulls at another bull breeding station in India

Housing facility of bulls at breeding centres
GAUSHALA

Cattle roaming the city streets form the quintessential image of India in the minds of many. Stray cattle are a ready sight in nearly all Indian cities and a disconcerting one for people sympathetic to animals. While control of stray dogs has attracted considerable attention from the Indian animal welfare community (and indeed even from international groups), the stray cattle issue is rather more complex than abandoned, ownerless cattle that require housing and care.

At the outset, it is important to understand that stray cattle do not exist throughout India. Specially, in North East Indian states where eating cow meat is culturally and religiously sanctioned, there are no stray cattle. Further, nowhere in the country does one encounter stray buffalos. This is because buffalos are raised for milk and spent animals are promptly sent to slaughter. While a small number of males are used for draught purposes, male buffalos are by and large slaughtered at a very young age or starved to death.

An understanding of the origin of stray cattle—different as it is in rural and urban areas—is a prerequisite to any discussion on the management of such animals.

Urban Cattle

Unlike popular perception, not all “stray” cattle seen on streets of Indian cities are ownerless. In urban areas, there are several dairies that supply milk either directly to consumers or to street side sweet shops, popularly known as halwais. These dairies are situated within city municipal limits or on their peripheries. Often, these dairies, such as in the case of Delhi, have traditionally existed as part of villages (that have now been encapsulated by large cities due to urban sprawl). In urban areas, there are typically three types of cattle that can be encountered on the streets.

1) **Males who have been abandoned** soon after birth. Male calves are an unwanted by-product of the dairy industry. In places where the industry is organised, such animals are either sent for slaughter immediately or raised for veal. In urban India, the males usually end up on streets. Some males are castrated and used as draught animals. However, increasing mechanisation and traffic restrictions has severely limited the use of draught animal power in cities and hence the large number of stray male cattle in cities.

2) **Productive females**—these animals are essentially let out to forage in the garbage, thus cutting down the cost of their maintenance and reducing need for housing space. Lactating animals are regularly rounded up and milked once or twice a day. These animals usually have some identification and have a definite range within which they forage. Along with males, this is the largest category of stray cattle.

3) **Spent females**—these females are abandoned once they are unable to lactate. Usually by the time animals reach such an age, they are quite weak and cannot survive very long on the streets.

All municipal authorities have laws to regulate dairies within municipal limits. However, these laws remain unimplemented because urban cattle are of significant commercial value. Prompted by judicial orders, there have been several attempts by the Municipal Corporation of Delhi to remove cattle from the streets of the national capital. However, all these attempts have been stymied by cattle owners who have often resorted to violence in order to prevent municipal cow catchers from rounding up stray cattle.

There is also nearly infinite public tolerance for cattle in urban spaces. Much of this stems for the cultural and religious place that cattle have within Hindu society. Hence urban dairies continue to exist, maintaining and adding to the population of stray cattle.
Rural Cattle

Most cattle in rural India are raised on free grazing regimes. Under such grazing regimes, productive cattle are grazed in village common lands or in forests – almost entirely unregulated. Farmers under such regimes have no incentive or need to regulate herd size.

Males and spent females have traditionally continued to be a part of the herd until they naturally die. However, this scenario is becoming increasingly rare due to the shrinking availability of grazing land as well as reduced availability of forage due to environmental stress and overgrazing. Thus many more cattle are being sold for slaughter than ever before. Further economic stress is driving farmers to sell their cattle (male as well as female) to butchers for slaughter. Most buffalos are sent for slaughter upon the end of their productive life.

In several parts of the country, bullocks continue to be used for ploughing and other draught duties. Hence not all males end up swelling herd size or getting sold for slaughter.

Gaushalas and Panjrapoles

Traditionally, gaushalas and panjrapoles were set up to tend to cattle who had reached an end of their “productive” life until they died a natural death. This would also have included some animals that were sick or wounded. Hence in many ways these institutions prevented cattle from becoming “stray”. However, these institutions have been unable to keep pace with the sheer size of the Indian cattle herd.

Animal Welfare in Gaushalas

There are approximately 3,085 gaushalas in India with 4,93,351 animals with them. While they receive varying degrees of financial support from the Animal Welfare Board of India as well as some state governments, this support is inadequate for the functioning even of the existing institutions. The capacity of gaushalas to function as effective institutions is constrained by the near absence of any professional capacity for their management and almost no regular veterinary care. There have been reports of neglect and poor care at these facilities. Nearly all gaushalas face overcrowding of animals. For convenient management and cleaning, gaushalas have resorted to concrete floors, which is detrimental to the hoof health of cows.

A majority of cows in gaushalas need special care and management. Gaushals often do not have full time veterinarians to cater to the medical needs of the animals. In absence of adequate medical attention and a large number of sick animals, it is often a challenge to maintain a healthy herd at Gaushalas.

Animal health care is a major challenge before the Gaushala managements constrained by meagre resources, lack of trained manpower and field veterinarians. Besides common prevalent diseases, major reproductive problems at Gaushalas are anoestrous, repeat breeding, uterine infection, cervicitis, pre and postpartum vaginal prolapse, retention of placenta, dystocia and mastitis. Lack of adequate balanced and proper nutrition is the major cause of these problems, but non-availability of timely expert veterinary help, irreversible/untreatable conditions of these animals and lastly indiscriminate treatment given by lay help hired / resourced by these Gaushalas are the other contributing factors that worsen animal welfare conditions in gaushalas.
There is also considerable variation in the objectives of different gaushalas. Objectives vary from the conservation of traditional breeds of Indian cattle, housing non-productive animals, looking after sick and injured animals, or a combination of all of these. Some gaushalas actually breed cattle and sell milk. Often preferential treatment is given to the milking and fertile cattle as these animals provide economic gains to gaushalas. Milk is not the only economic activity pursued at gaushalas. Many gaushalas, are into business of supplying by-products such as cow excreta and urine which is considered to be of high medicinal value in ayurveda. These gaushalas have some ayurveda medicine manufacturing companies as well as local doctors as their clients. In order to meet the demand of these by-products, cows are kept tethered to one place for long hours so that urine and excreta can be collected in a tray placed behind them.

The major hindrances observed in smooth functioning of majority of gaushalas in India are- poor management, overcrowding, poor medical service and limited resources which often lead them to deviate from their original goal of serving as ‘retirement homes for cows’.

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Section 4
STRATEGY FOR REFORMING AND REGULATING DAIRYING IN INDIA FOR ANIMAL WELFARE

Actions as applicable to various typologies of dairies in India

The principal for introducing welfare practices across the four typologies of dairies is based on development of good practices/standards for all 5 typologies and their implementation through different channels appropriate to each typology. Please read this chapter in conjunction with the chapter on the conceptual framework.

TYPE I- Large Commercial Dairies (including model government farms)

Desired output – Set up a framework to regulate the establishment of large commercial dairies in India.

a. An early warning system will be set up that will identify proposals for large commercial dairies at the inception stage. This will be mainly through

- Media monitoring
- FIAPO’s network of member organisations throughout the country.

Currently the setting up of a dairy facility (as defined in terms of a milk production facility as against a milk processing unit) does not require any regulatory clearances. However, large projects are typically highlighted in the media and hence this appears to be the only available recourse at this point.

b. Specific campaigns along the lines of the IFFCO campaign to counter the establishment of large commercial dairies, even as a preventive framework is being set up. It is expected that even as the preventive measures envisaged in this strategy are being set up, proposals for large commercial dairies will continue to come up. These will require project specific campaigns in order to block the establishment of such dairies. Typically a campaign would have elements of legislative lobbying, internet outreach, mobilising local animal welfare, particularly cow protection ones and media work.

c. Development of a national code of dairy standards Based on international best practices, a code of standards will be developed for welfare of animals in large dairies. This will be done by adapting existing international standards to Indian conditions. The adherence to these good practices or standards will preclude intensive confinement and its associated problems.

d. Incorporation of dairy standards in the Bureau of Indian Standards FIAPO is now a member of FAD 5, the Bureau of Indian Standards (BIS) sectional committee charged with setting standards for livestock husbandry and management. Through this committee, a proposal will be presented and pursued to adopt the dairy standard developed above, as part of the BIS standard in India. This will establish a voluntary standard for large dairies in India.

e. Up gradation of Registration of cattle premises rules A proposal will be presented to the Ministry of Environment and Forests to have the dairy standards incorporated within the Indian legislative system through the amendment of the existing “Registration of cattle premises Rules 1978”. These rules regulate the establishment of dairy animal housing facilities and currently carry no specific guidance on the conditions that such facilities have to fulfil.
f. Bring large dairies under the purview of national environment protection regulation. Representation to the Ministry of Environment and Forests will be made for extending provisions of Environment Protection Act to large cattle farms. This will be done by showing precedence of pollution caused by such facilities (in other countries) and why these should be brought under the purview of environmental regulation.

g. Encourage and lobby specific state animal husbandry departments to adopt code of dairy standards. This will regulate the setting up of large commercial dairies in different states. Contact has been established with state animal husbandry departments during the course of the national dairy scoping research and this will be leveraged for the purpose of introducing regulation at the state level. Such an effort will complement the move to formulate national legislation for regulating dairies.

h. Invite India’s commitment to international covenants and treaties. Specifically India’s membership of the OIE will be invoked to encourage the adoption of a welfare friendly code of standards for dairies in India.

i. Influence the Foreign Direct Investment (FDI) policy away from intensive dairying. The liberalisation of the foreign investment regime in India has opened up the possibility of foreign investment in intensive dairy systems. The strategy will influence the FDI policy away from intensive systems and also establish a filter of seeking approval from the Animal Welfare Board of India prior to the clearance of any proposal for large dairies through foreign investment.

j. Encourage consulates and embassies of countries (such as New Zealand and France) that promote the enterprises of their respective countries to establish dairies in India to follow the code of standards.

k. Partnerships with international animal welfare organisations to influence international dairy companies keen on investing in Indian dairy to follow high standards of animal welfare.

l. The Indian cooperative sector is potentially the strongest bulwark against unregulated expansion of commercial dairies. The National Dairy development Board (NDDB) is the national nodal agency set up with the purpose of promoting dairy cooperatives and to replicate the Amul model in the rest of the country. The private sector, large MNCs and retail chains are rapidly expanding their operations in the dairy business. It is estimated that the capacity created by them in the last 15 years equals that set up by cooperatives in over 30 years. The NDDB is keen to retain its existing 50 per cent share of the milk handled by the organised sector to ensure inclusiveness and livelihoods for small holder milk producers. The strong positioning of the NDDB with regard to state and national governments, particularly the departments of animal husbandry and dairying makes it an effective platform for promoting regulation of large commercial dairies.

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5 The Bureau of Indian Standards (BIS) is the national standard setting body in India covering product quality certification, consumer affairs and development of technical standards.
TYPE II- Urban and Peri Urban Dairies

2. a. Incorporation of standards (as developed in component 1, above) in municipal regulations in select cities;

b. Enforcement of welfare conditions will be brought about through animal welfare organisations (that are themselves based largely in urban areas) as well as through respective state animal husbandry departments (see point 8, below) and municipal authorities.

TYPE III- Smallholder backyard dairy farmers (mainly rural)

3. Within smallholders, the promotion of welfare using the NDDB platform and more generally building relationships with particular cooperatives and milk unions and state milk federations will be prioritised. This will multiply the outreach as well as create an institutional framework (that of the cooperative, the union or the federation) within which the welfare reforms will be rooted. Thus the reforms are likely to be sustainable and also appropriate to the local conditions.

a. Smallholders feeding into a cooperative milk grid

i. Enable select cooperatives to develop welfare good practices for small holders;

ii. Awareness and dissemination of these best practices among small holders.

iii. Capacity building of cooperative functionaries to ensure compliance of these practices by their members.

This component can be undertaken collaboratively with NDDB as that functions as a nodal agency for the promotion of dairy cooperatives in India. The NDDB has projects such as the National Dairy Plan (phase 1) that already has components of outreach that can be platforms for welfare reforms in various animal husbandry practices.

As a pilot, one particular geographical region would be picked and a detailed welfare pilot plan will be drawn up.

The primary reason such an approach is likely to succeed is because the Indian cooperative sector has a strong affinity to its USP – of farmer’s having an individual relationship with their animals and of dairy being a livelihood support system as opposed to only being a means of multiplying profit for a few. In fact the model is strongly predicated upon each individual dairy farmer having an equal vote in the running of the village cooperative society irrespective of his/her economic clout. Thus the concept of animal welfare is likely to be most acceptable, digestible and implementable in this climate.

b. Smallholders operating outside the cooperative network

Dairying (and animal husbandry in general) is viewed by the government and non government rural development organisations as a means of livelihood support for small farmers. These organisations extensively promote dairy among small holders.

i. As part of this sub component, partnerships will be established with rural development NGOs (like BAIF, PRADAN, SRIJAN) and animal welfare groups to mainstream welfare in their dairy promotion programmes. This will be based on the welfare good practices for small holders developed at a.i. above.

ii. Animal husbandry departments incorporate welfare in their dairy promotion programmes (also see point 6, below).
TYPE IV- Gaushalas

a. Enable Animal Welfare Board of India to develop a manual of operations for Gaushalas. This will draw from welfare principles and practices enunciated in the code of standards developed in component 1 as well as the welfare practices for small holders developed in component 3.

b. Enable National Institute of Animal Welfare (NIAW) to run training programmes for Gaushala personnel in keeping with practices detailed in the manual.

An incentive will be built into this component by linking the grants that Gaushalas receive from the ABWI with the welfare improvements that they make. In addition, a certification mechanism will also be designed that makes it possible for donors to identify Gaushalas that follow high welfare standards.

CROSS CUTTING ACTIONS

5. Engagement with dairy farmers associations (eg. Progressive Dairy Farmers’ Associations, Indian Dairy Association) and industry associations (eg. Compound Livestock Feed Manufacturers Association)

a. Enable associations to introduce welfare in events organised by these associations for their members.

b. Influence industry associations to carry information on welfare during industry expos.

6. Capacity building of central and state animal husbandry (AH) departments

Enable Animal Husbandry department personnel to implement the code of dairy standards (in large dairies, urban and peri urban ones as well as in rural development programmes), ensure welfare practices in smallholder dairying and in government run farms.

This will mainstream Animal Welfare in the programmes and schemes of the government run dairy promotion programmes and will also harness the existing state machinery to promote welfare. However, it is recognised that this action is limited by the quality of extension service of the AH departments.

7. Consumer outreach and public awareness

In order to make consumers a force for change, the following themes will be highlighted as part of public awareness/consumer outreach:

a. In light of the religious and cultural importance of cows, the condition of animals, particular in urban and peri urban dairies, fate of male calves, as well as the condition of intensively confined animals.

b. Food safety concerns about consuming milk from animals that are reared in insanitary conditions.
8. Forming strategic coalitions

Two complementary approaches are proposed:

a. **NGO coalition against factory farming** (including dairy) in India

It is clear that the problems caused by intensive facilities cut across sectors. Physicians, epidemiologists, development NGOs, nutritionists, environmentalists, and animal protection groups all have a role to play in stopping the spread of intensive operations. In parts of the world where the movement against factory farming has begun to make progress, it is clear that collective action and coalition-building amongst these different stakeholders are critical to success. Given the existing institutional weaknesses in developing countries like India, it is proposed to bring together multiple stakeholders within civil society to create a credible pressure group against factory farming.

b. **Network of dairy scientists and progressive dairy farmers** for sustainable and humane dairying in India

Our research has shown that there are dairy practitioners as well as academics that favour humane and sustainable practices. These can form an important platform to influence policy makers, academics and industry. Such a network would differ from the coalition described in point a above, insofar as this is a network of dairy professionals themselves. This would complement the civil society coalition described above.

9. Knowledge Creation and Dissemination

a. **Strategic Research Partnerships** with Indian academics and academic institutions to research specific correlations between environmental sustainability, poverty alleviation, animal welfare, extensive systems of production and nutrition status.

b. **Seminars** in various Indian institutions that research farm animals (Indian Council for Agricultural Research, National Dairy Research Institute, various central and state agricultural universities and veterinary colleges) on the theme of sustainable production and welfare friendly practices bringing international lessons to India and provide learning opportunities to Indian dairy researchers.
Implementation strategy

A **steering group** comprising of the following may be set up to oversee the implementation of this strategy. This would involve the following:

- Break up the strategy into annual action plans
- Monitor the implementation of the action plans
- Conduct periodic reviews of strategy and effect mid course corrections
- Identify and recruit other members to the steering group

The steering group could comprise of the following:

1. A representative of WSPA
2. Chairperson of the Animal Welfare Board of India (or his/her representative)
3. A representative of the FIAPo board
4. A representative from GoI animal husbandry department (optional)
5. A representative from state government animal husbandry department (optional)

Over time, representatives from the GoI’s animal husbandry department as well as from select state government AH departments could also be inducted after ensuring their commitment to animal welfare and sustainability. This would help us mainstream welfare into the programmes and policies of the central and state AH departments.

**A possible prioritisation for implementing the strategy**

An interesting finding that is emerging is that there are problems with animal welfare not just in the large commercial farms, which are still in the process of picking up in India, in fact the most serious compromises are being made in the production systems that already exist, namely the urban and peri urban dairies. It is also emerging that animals with small holders are not necessarily better off especially in comparison to large commercial dairies. For instance when considering the criteria of access to health services, it is likely that animals in large commercial dairies may be better off.

From the point of view of developing welfare interventions in the dairy sector the following framework is proposed:

1. The absence of a regulatory framework for the establishment of dairies is possibly the single largest challenge for enforcing welfare within the Indian dairy sector.

2. A pre step to the development of a regulatory framework would be the development of a set of principles according to which dairy cattle in India would be raised. These principles would apply as much to small holders as to large farms. The existing principles are entirely production oriented and these need to be modified to incorporate welfare as well.
3. While the regulatory framework would be largely preventive in nature, there is an urgent need to address welfare of animals already in existing facilities. The priority here would be urban dairies, which is where the most prominent compromise of animal welfare is taking place.

4. The large dairy herd that exists with small holders is the next priority that needs to be looked at. The major hurdle here is with regard to outreach since small holders are sparsely (and almost uniformly) dispersed.

5. Finally, gaushalas merit attention. With gaushalas, there is a fairly well established institutional framework for channelling welfare inputs. There are cow protection agencies at the state level and the animal welfare board of India at the central level that provide the institutional space for welfare interventions.

It is proposed that an implementation plan, initially with a three year horizon, be drawn from this strategy. This would include elements of standards and legislation, capacity building and project specific campaigns.