

Accounting for pastoralists in India



Photo: Ilse Köhler-Rollefson

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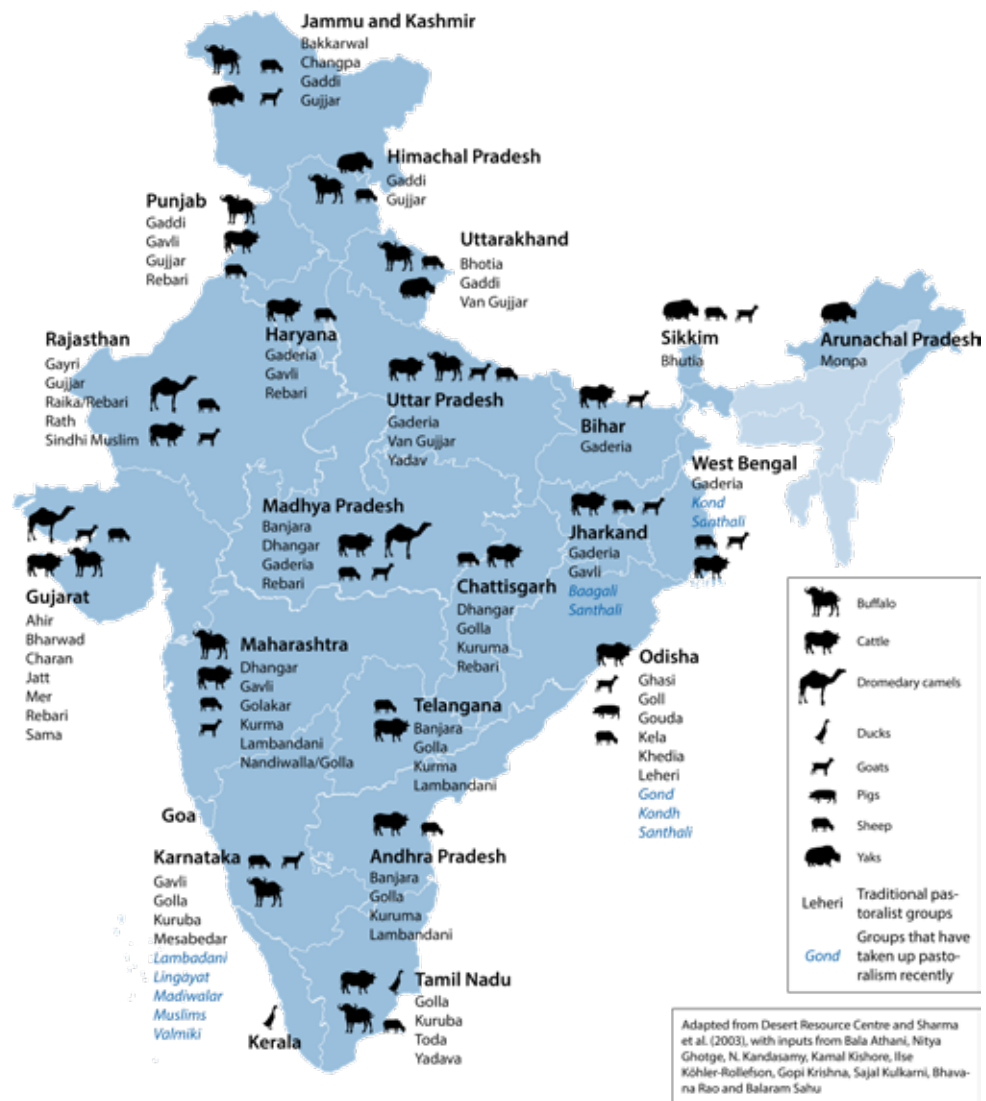
THERE ARE NO official data on the number of pastoralists in India, although a figure of 35 million is often quoted (though without a source). An older, much-repeated, statement is that they make up 6% of the population (Jitendra 2019, Sharma et al. 2003). We believe that the actual number is closer to 1% of the Indian population, or about 13 million people.

While the absence of data makes a conclusion impossible, it is possible to estimate the number and percentage of livestock kept in pastoralist, or rather extensive, systems. According to LIFE Network et al. (2016), approximately 77% of India's livestock are kept in extensive systems, meaning they are either herded or left to range on their own on common land. These animals produce about 53% of India's milk and 74% of its meat. Considering that India is the largest producer of milk and the largest exporter of beef and sheep and goats worldwide, this indicates the significance of herded/free-roaming livestock for India's rural economy and testifies to its dependence on common-pool resources.

A tremendous variety of pastoralist systems exists in India, including transhumance and nomadic, semi-nomadic, and village-based herding. Some 46 castes or communities have specialized pastoralist identities. Animals reared by pastoralists include cattle, buffalo, sheep, goats, camels and yaks, as well ducks, guinea fowls, pigs, horses and donkeys.

Key messages

- Estimates of the number of pastoralists in India vary widely, but they probably total around 13 million people.
- Official data on livestock do not reflect the management system used.
- Around 77% of the country's livestock are kept in extensive systems. Both farmers and pastoralists rely on common-pool resources to maintain their animals.
- A wide range of pastoralist systems exist, from fully mobile to transhumant and sedentary. Species maintained in mobile systems include camels, cattle, ducks, donkeys, goats, pigs, sheep and yaks.
- Many pastoralists are members of traditional castes, but other groups, known as "non-traditional pastoralists", are also taking up mobile herding.
- Extensive livestock systems produce an estimated 53% of India's milk and 74% of its meat. The animals' manure is a vital source of fertilizer for crop farmers; for many pastoralists manure is their main source of income.



Pastoralist groups in India

In the high-altitude deserts in the Himalayas, pastoralists keep yaks, sheep and goats. Buffaloes, sheep, and goats are kept by Gujjar, Gaddi and Bakkarwal herders who remain in the Himalayan foothills during the winter and move to alpine pastures in the summer.

In the Thar Desert in India's west, Rebari, Raika, Jatt and other pastoralists keep sheep, camels, goats and cattle. Some migrate long distances across state boundaries, using camels and donkeys for transport.

On the Deccan plateau, Kuruba, Dhangar and Golla traditionally herd sheep, but new communities are entering this occupation. In Odisha in the east, pig pastoralism exists.

In the south, sheep, cattle, goats and ducks are raised in migratory systems.

Besides "true" pastoralists, the majority of the rural population also keep small numbers of animals that roam on common land, on which the people depend for supplementary income and food.

Socioeconomic and ecological contributions of pastoralists

Certain castes have pastoralist identities and believe that they were created to take care of particular animal species. Pastoralism is often well-integrated with crop cultivation. The animals play an important role in distributing organic manure

directly on fields where they are penned. For some herders, manure is actually their main source of income, as farmers compensate pastoralists for this service in cash or in kind. The value of this manure as a source of nitrogen, phosphorus and potassi-

um has been estimated at a massive US\$ 45 billion a year, and manure is a major source of nutrients for crops as well as for common land (Table 2). If livestock were not recycling these nutrients (and also clearing weeds from crop fields in the off-season), India would have to produce or import a lot more synthetic fertilizer and herbicides.

Based on official data from 2012, the pastoralist sector also is estimated to produce \$2.7 billion worth of milk and \$2.2 billion of meat a year in the formal sector alone (Table 2). Large quantities are produced and consumed or sold locally and do not enter the official statistics.

Little, if any, systematic research has been undertaken on the ecological significance of pastoralism in India, although pastoralists themselves know very well about the association of their herds with broad biodiversity. There is generally little conflict with wildlife; some pastoralists worship the wolf; killing of livestock by predators is generally accepted, and the forest department in most states compensates pastoralists for animals lost to predation. Pastoralists have created and steward a large proportion of India's indigenous livestock breeds: they can be regarded as "keepers of genes" (Köhler-Rollefson and LIFE Network, 2007).







Definition of pastoralism and historical context

Pastoralism is not an official category in India, and no official definition exists. Officials are aware of its existence but do not recognize it as a distinct management system. The following criteria for pastoralism were arrived at a workshop in 2016: "dependence on common pool resources, mobility, primary income from livestock, existence of traditional knowledge systems and association with specific breeds" (LIFE Network et al. 2016). However, some of the criteria, such as "existence of traditional knowledge systems" are not absolute, as in some parts of India, new communities




Photos: Ilse Köhler-Rollefson

Table 1 Sources of data on pastoralism in India

Institution	Parameters	Area covered	Years, frequency	Accessibility
Department of Animal Husbandry and Dairying	Livestock populations by sex, rural/urban, breed	 Nationwide	Every 5 years, 1919–2019	DAHD (2012)
	Integrated sample survey of major livestock products, e.g., milk, eggs, meat and wool are estimated on the basis of an annual sample	 5% of villages in each district	2018	DAHD (2019)
National Sample Survey	Number of animals and land used for them in range of households with different income levels		Occasional	National Sample Survey Office (2014)
Population census	Population by caste	 Different administrative entities	Until 1931	Census archives
Jammu and Kashmir Administration	Grazing permits	 Jammu and Kashmir	Annual	
LIFE Network and Rainfed Livestock Network	Number of animals kept in extensive systems	 National	One-off, based on 2012 census	LIFE Network et al. (2016)

 National level

 Sub-national level

have taken up pastoralism, copying the methods of the “traditional” pastoralists. Not all pastoralists are mobile themselves; they let their animals roam around on their own. Furthermore, many farmers do the same, or a village cowherd herds animals for them. According to the National Sample Survey, only 1% of the land owned by farmers is used for livestock. This suggests that not only pastoralists depend on common-pool resources; a large number of farmers who keep crossbred cattle and

high-yielding buffaloes also rely on these resources (Kapur et al. 2012).

In colonial times, the government sought to settle pastoralists as they did not own any land and therefore could not be taxed (Bhattachariya 2018). Many nomadic pastoralists were classified as “criminal tribes”, and the disrespectful attitude towards pastoralists continues today, to the extent that even their existence is denied.

Data sources on pastoralism

Until 1931, population data were collected by caste, so we have exact figures for how many pastoralists existed at the time in different parts of India. By applying population growth rates to these figures, it is possible to calculate how many people belong to traditionally pastoralist castes. However large numbers have moved away from their ancestral occupations and are no longer practising as pastoralists, while newcomers without a pastoralist heritage have taken up the profession. In addition, members of some groups (such as the Rajputs in Rajasthan) herd animals in a pastoralist mode but do not primarily regard themselves as pastoralists.

The livestock census started in 1919 and is conducted every five years. It collects data on the number of animals, their age, sex, and now

breeds, but not about production systems. In many instances this can be inferred. For instance, female camels are all kept in nomadic systems, as are the vast majority of sheep. Crossbred and exotic cattle, on the other hand, are kept in stall-fed systems. Indigenous pigs are left to roam around. Based on such ground knowledge, it is possible to calculate the number of animals kept on common-pool resources and their economic contribution (Table 2).

Another source of data is the National Sample Survey, which conducted its 7th survey on national land and livestock holdings in 2012. But this provides the average number of animals for all households and does not differentiate between types of rearing systems, so it cannot be used to

Table 2 Estimated numbers and annual production of livestock kept on common land, 2012

Species	Animals thousands	Milk	Meat	Manure value US\$ million
		production, thousand tonnes		
Cattle (indigenous)	163,543	24,026	*	31,699
Buffaloes	61,084	39,861	586	11,840
Yaks	76			15
Camels	350			41
Donkeys, mules	267			
Sheep	59,670		379	957
Goats	103,265	3,826	724	1,198
Pigs (indigenous)	7,100			
Total		67,712	1,689	45,749

Based on estimates in LIFE Network et al. (2016), which draw on the 2012 livestock census. Rounded.

* Cattle are not generally used for meat in India.

make conclusions about the number of pastoralist households.

Some states, such as Jammu and Kashmir and Himachal Pradesh, issue grazing permits which indicate the number of pastoralists and their herds. However, these have remained unchanged since the 1960s.

How to improve the data situation

Expand dataset collected during the quinquennial livestock census to include data on production systems (stall-fed, grazing on common land, migratory). Coordinated efforts by various stakeholders to determine the numbers and economic contributions of extensive livestock keepers.

Vision for the future

The central and state governments need to acknowledge the significance of pastoralism and extensive livestock keeping for India's rural economy and GDP. With the livestock sector contributing 4.5% of the GDP, we can estimate that the pastoralist sector amounts to around 3%. This should be reflected in livestock policies that are sensitive to the specific needs, including mobile services, of this way of livestock keeping, rather than on the current presumption that livestock is stall-fed.



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In order to support the ecologically benign way of livestock keeping that prevails in India, its practitioners require secure tenure, access and rights to common-pool resources.

The role of pastoralism in adaptation to climate change and in biodiversity conservation must also be acknowledged.

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