

Nomadic Pastoralism and Soil Fertility

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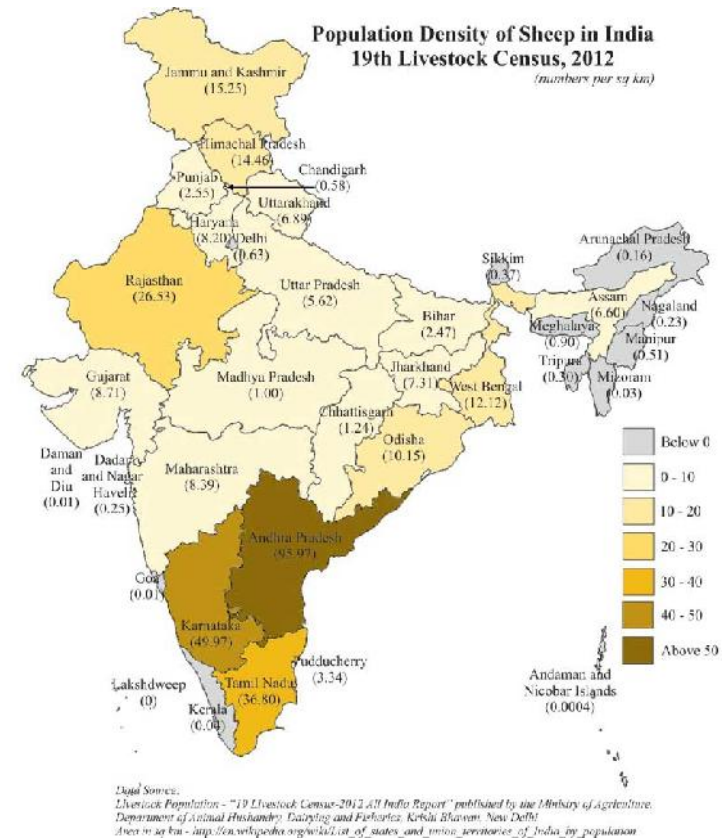


A window for understanding impact of penning on livelihoods, ecosystem and national economy

Karnataka, the state where studies done



Density of sheep population, Karnataka : >46/SqKm, second highest



The Practice of Penning... *basis for mutuality*

- Fundamental to growth of shepherding, farmer-shepherd bonding- can happen only in arable lands
- Adult sheep are made to stay within wired fences on farm land during night (lambs the whole day)
- Shepherds derive substantial proportion of their income from penning their herds on farmers' fields.



The Practice of Penning

- Local perceptions- penning improves soil fertility- multiple ways
- Improved water retention capacity of farm lands (pulverisation due to weight and body heat)
- Solarisation
- Bio-control of soil borne pests



The Practice of Penning.....*estimating natural organic fertilizers...*

- Direct application of droppings and urine to soil (both commons and farmers' lands)
- 0.5 Kg of droppings and 1.2 l urine / sheep /day
- Sheep droppings: N= 0.7%, P=0.51% and K=0.29 %
- Sheep Urine: N=1.5%, P=0.05% and K=1.96%

(Ref: Kolay, A.K. 2007. Manures and Fertilizers. Atlantic Publishers, New Delhi).

- 100 sheep fertilizes 2.5 acres in 6 nights



The Practice of Penning

....trampling manures in to soils

- Karnataka: 10 million sheep
- 5 million kg of manure and 12.1 million liters of urine every day
- Supplying a total quantity of 7847 tons of N, 1131 tons of P and 911 tons of K per annum.
- Supplies to fields / trampling to soils directly- no transport / application costs



Implications on livelihoods of pastorals

- Farmers pay Rs 1-2 per sheep per day: Approx. Rs 15 million per day for 4 months penning period in Karnataka.
- A whopping Rs 1.8 billions per annum – approx Rs 7000/family
- Pooled manure value during other nights: approx. Rs 12000 / family p.a
- This is apart from free services to rejuvenating commons in-lieu of grazing facilities, throughout the year



Implications on national economy

- Each sheep produces Rs 0.63 worth of manure and urine per day (in terms of actual NPK value)
- For a total of 64 m sheep, Rs 14.68 billion worth fertilizer – every year, organic way- free
- Savings on forex





Thank
you