

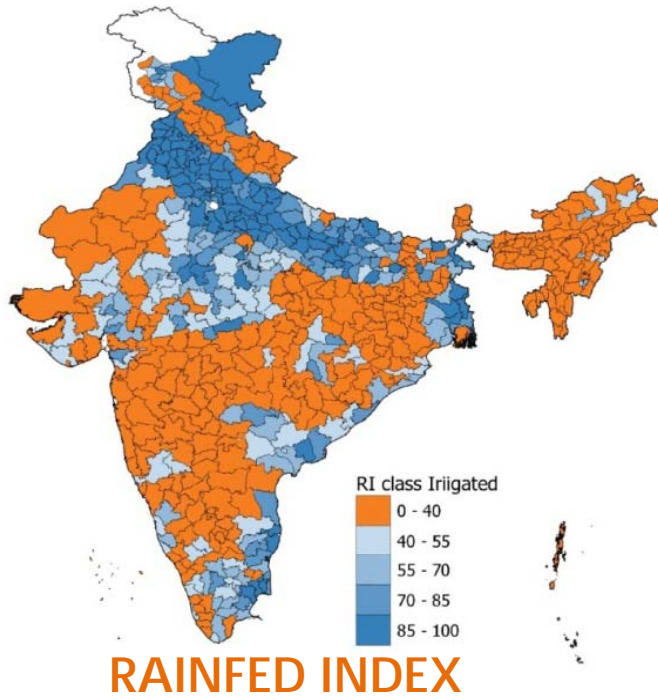


# Extensive Livestock Production System for Sustainable Food System

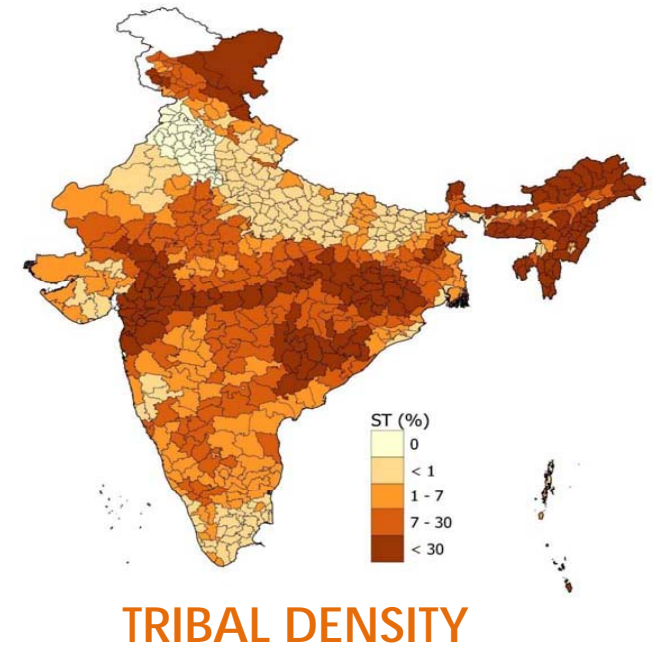
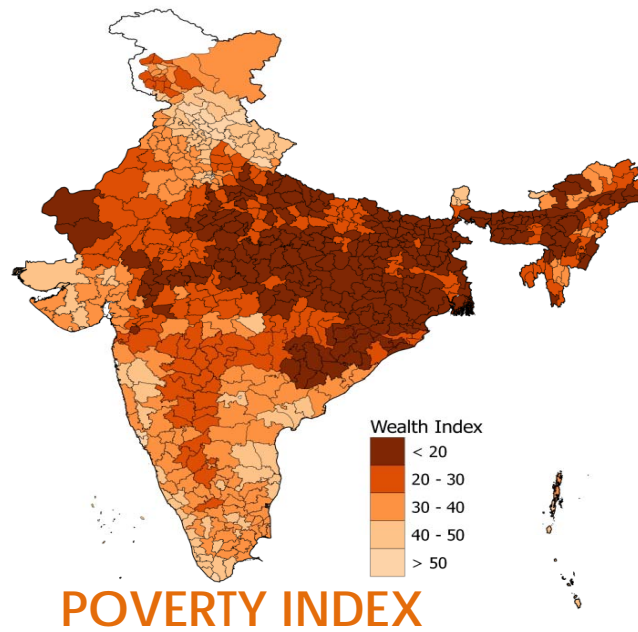
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# LARGE PARTS OF INDIA AREA RAINFED



Largest Rainfed Areas in World  
86 Million Hectares



Poverty Landscape of India overlaps with Rainfed Areas; & high Density of Tribal population



# RAINFED AREAS - UNTAPPED POTENTIAL



88%  
Pulses



69%  
Oilseeds



42%  
Rice

EXPONENTIAL POTENTIAL  
*for*  
**FOOD SECURITY**  
**NUTRITIONAL SECURITY**

% Gross cropped area of pulses, oilseeds & rice rainfed in India

Source: Agricultural Census 2011

% Livestock output from rainfed areas

*for*  
**RURAL LIVELIHOODS**  
**ENVIRONMENTAL REGENERATION**  
**SUSTAINABLE INTEGRATED**  
**PRODUCTION SYSTEMS**



55%  
Indigenous Cattle



50%  
Goats

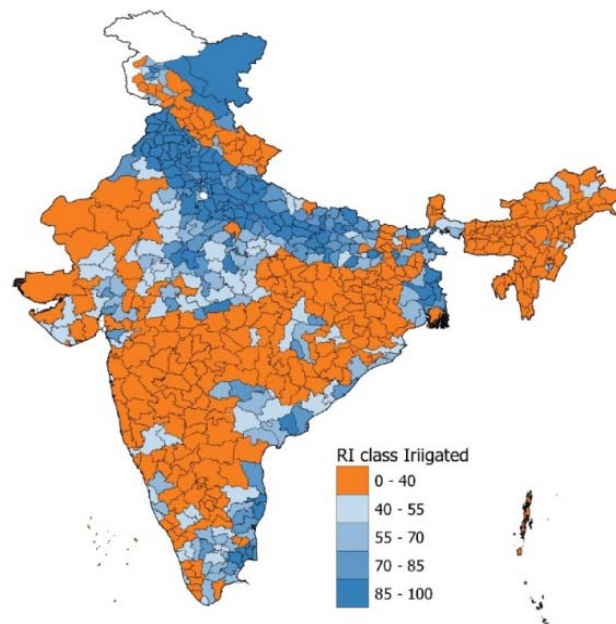


61%  
Sheep

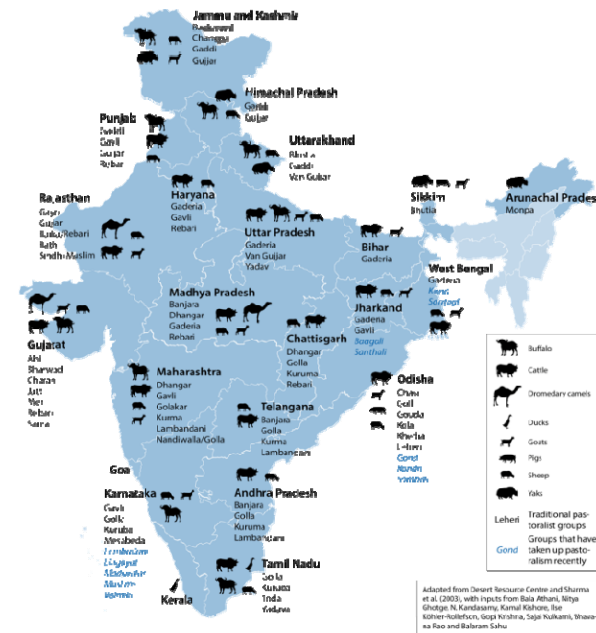
Source: Livestock Census 2011



# Rainfed areas are Native Track of Most of the livestock breeds in India



RAINFED INDEX

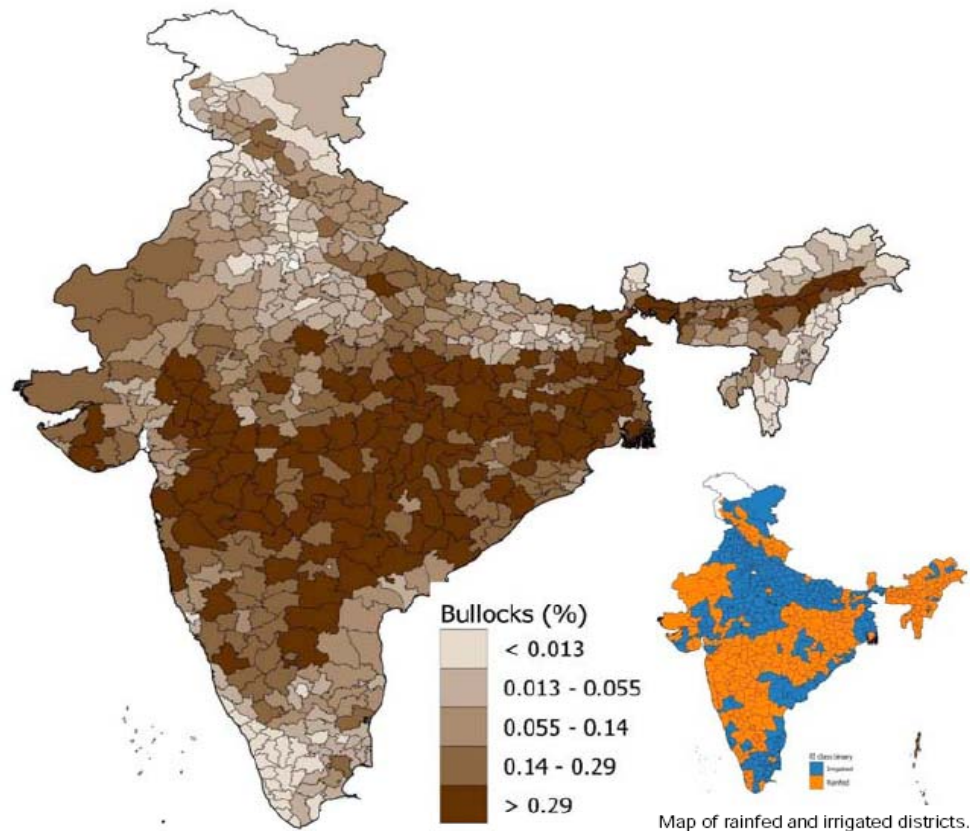


Breeds in Extensive Livestock system including Pastoral System

Greater Diversity of the Livestock Breeds and species in Rainfed Areas



## Male indigenous cattle (Draught power)



Geographical distribution of male indigenous cattle  
For each district, map shows proportion of male indigenous cattle in India in that district.

Most of the Breeds of cattle are draught breeds, more resilient but now out of the farming system due to the promotion of Mono cropping.

Bullock supports multi-cropping system – helps in sustainable food production.

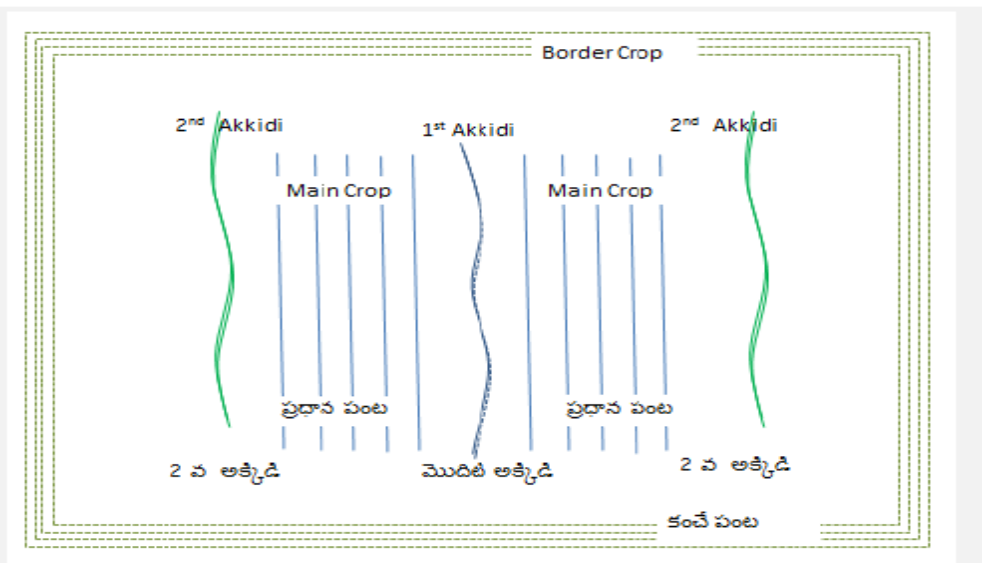
Bullock still source of livelihoods of several communities



5 Cr Economy of Bullock Trade in Amrabad Mandal

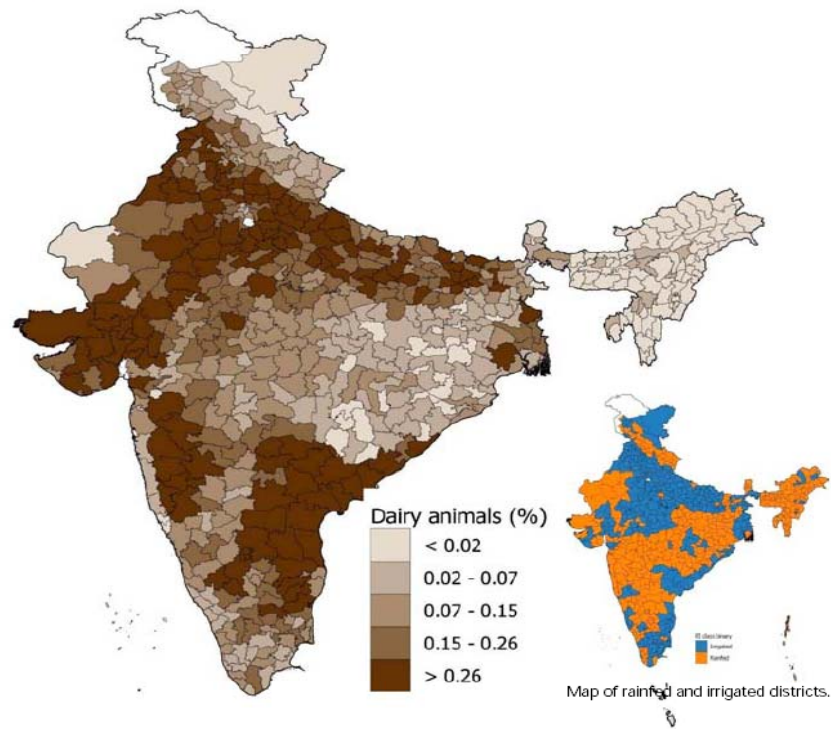


# Bullocks supports Diverse Crop Systems for Sustainable Food Production





## Dairy cattle and buffaloes



Geographical distribution of dairy animals  
For each district, map shows proportion of dairy animals in India in that district.

Source: Livestock Census 2012

High density in Irrigated belt with intensive system with few exceptions.

High use of Antibiotic in these Intensive system

The exceptions are pastoral production system which produce significant amount of milk but having less occurrence of diseases

Eg. 19 Panchayats in Banni produces > 1.5 lakhs Lt everyday

Revival of Dairy in Kutch district created **900** cr annual Economy and Impacted on Pastoral Livelihoods





## Experiences from the Ground

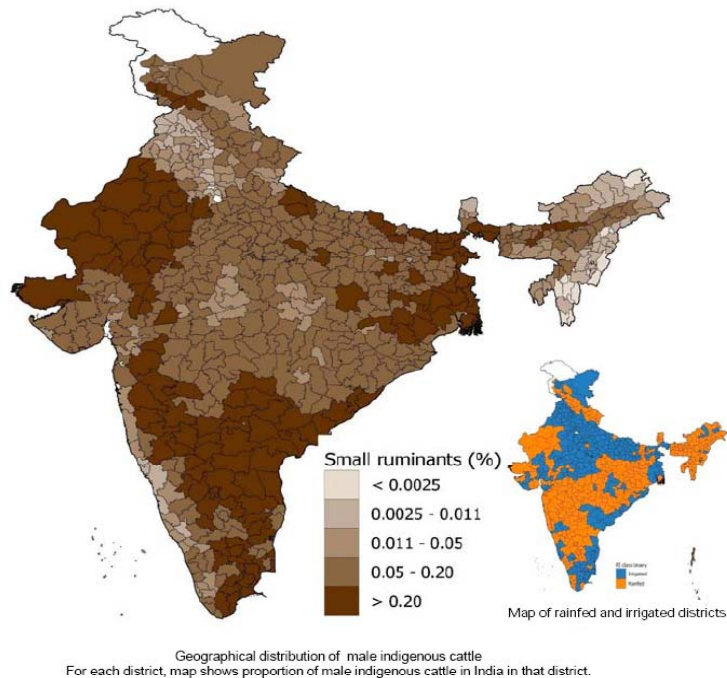
- Communities and Breeds – Kharai Camel
- Animal use salinity in their favour – graze of saline species



**This system, mostly antibiotic free, having high medicinal value, just recently recognized**



## Small ruminants



Source: Livestock Census 2012

## Goat & Sheep Population dynamically adjusts with the forage resources



### K N Palayam Village, Kadiri Mandal, Anantapur District.

- 500 acres of revenue forests regenerated in this village linking with MGNREGS facilitated by REDS, an NGO).
- Dependent communities were organised into protection committees and sustainable use and usufruct sharing norms were established.

- With regenerating biomass in the commons, sheep population increased from 450 to 3000 (about 7 times) in 5 years. And, the number of sheep rearing families increased from 5 to 21.
- Last two years sheep herders did not migrate from the village.



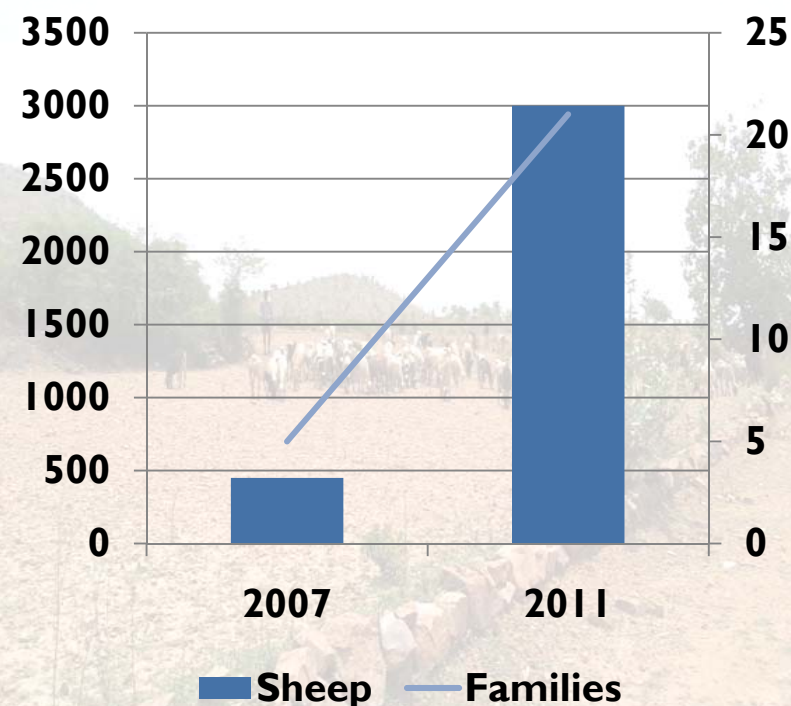
# Stories of Resilience & economic revival

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# Integrated Natural Farms through Free Range Desi

## WHY

Escape predator easily

Easy to handle

Local Knowledge

More disease resistant

Natural regeneration



## 5 States

Piloted in **5 States** with  
RRA Network Partners



84

% Poultry in Backyard in the  
Country is **DESI**

However **due to lack of system approach potential** of  
Backyard Poultry has not been realized in terms of  
**Income and Nutrition Security.**

## Experience / Result



200+

Tribal enterprises  
developed



80 k – 120 k

30%  
Enterprises

50 k – 80

50%  
Enterprises

50 k

20%  
Enterprises



Scaled up in  
Andhra Pradesh  
with Animal Husbandry  
Department and TRICOR



15000

Tribal households  
covered



> 25%

Reduction in Mortality

Decentralized  
Chick  
Production  
(Breeding  
Farm) in ½ ac  
Land

Diversify  
Income  
Sources by  
Integrating  
fruits-  
vegetables-  
crops

Decentralized  
Healthcare  
Services

Promote  
Natural Habits  
of Birds for  
foraging

Common  
Interest  
Group to  
Manage  
Poultry  
Service Fund



# Complementary with Natural Farming

No external commercial feed

Most of the raw materials for BYP forage and feed **grown in the Farm** -  
Crops, Waste of Vegetable, Fruits

Poultry waste are used for **soil health improvement**

Poultry helps in **reducing insects** of vegetables and fruits

Ethno-veterinary practices helped in **flock immunity**

Canopy cover (50%) of plantation helped in **lowering temperature** in summer, helpful for poultry



## Health Benefit of Desi

### Poultry



1/3

Less Cholesterol



1/4

Less Saturated Fat



2/3

More Vitamin A

3

More Vitamin E



2

Times more Omega-3



7

More Beta - Carotene



# Extensive vs Intensive Livestock System

Extensive Livestock System	Intensive Livestock System
Grazing based	Stall fed
Utilize natural Resources from Commons	Depend on Fodder and Feed
Low External Inputs	Heavily depends on External Resources
Crop – Livestock Mixed System	Lacks integration
Kept in Large Number by Pastoralists	Small and Medium Herd Size
Local Indigenous Breeds, suited to local ecosystem	Exotic and Cross Breeds
Local Breeds are having greater disease resistance	High use of Antibiotics
Multiple products – Milk, Meat, Wool	Mainly for Milk production

Never heard of Suicides among pastoral communities



# Conclusion

- The issue of AMR is not only technical, it has to be approached in a more holistic manner
- Indigenous Breeds, more resilient, well adapted to local ecosystem, needs attention
- Need Paradigm shift towards ecologically balanced production system from productivity maximization.
- Ecology, Economy and Equity framework needs to be evolved
- Extensive livestock system should get policy support for sustainable food production



# Thank you



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