

Anchored by the Foundation for Ecological Security (FES)

Co-benefits of reducing livestock emissions



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COORDINATOR

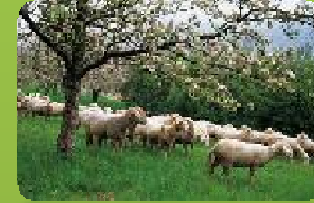
Multi-dimensional Impact of Climate Change



Forests and
Wild life



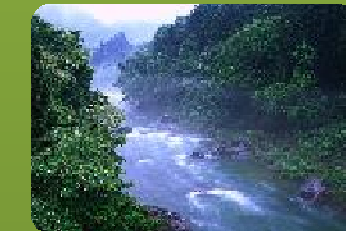
Agriculture



Livestock



Human
settlements



Water bodies

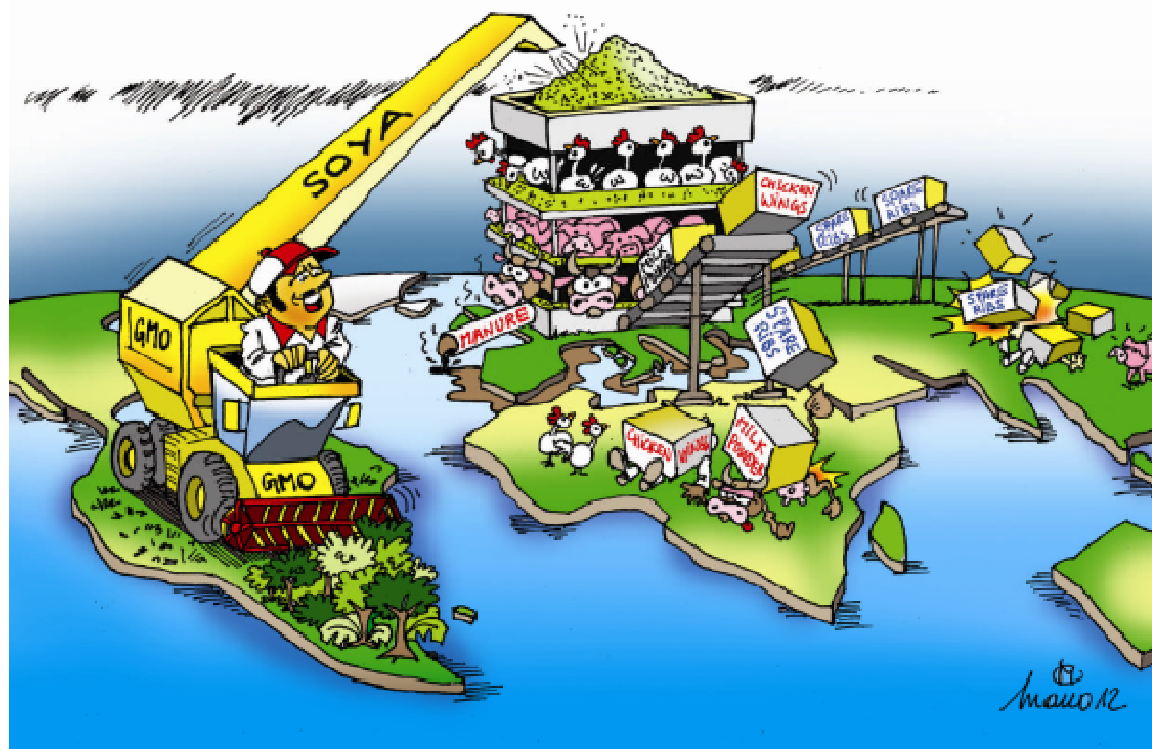


Industry

Climate Change



High dairy output in Europe dependent on imports of high protein feed

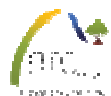


EU farm policy still harms poor countries – it's high time for change

Source: Katrien van't Hooft, Livestock futures conference, 2012

Soya Consumption
With a total soy meal consumption of 35.8 million tonnes in 2007, the average soy meal content of compound feed was 24.3%.

Over a quarter of Soy production of Brazil, Argentina and Canada was imported to EU 27





European Dairy Sector – Major Players

Feed Industry



In 2003, the ABCD firms controlled 73 per cent of the global grain trade.

Livestock genetics industry



Pharmaceutical industry



Less than 10 companies control more three-quarters of the animal pharmaceutical market.



Effects of Intensive Dairy Farming in Europe

Dairy Population

EU28 the total milk production is 141 Million Tonnes with the total Dairy population of 508,628 in 2012.

Dairy farmers in Denmark

Debts average € 2.25 million/per farm

€ 19,000/per cow (Mathias, 2012)

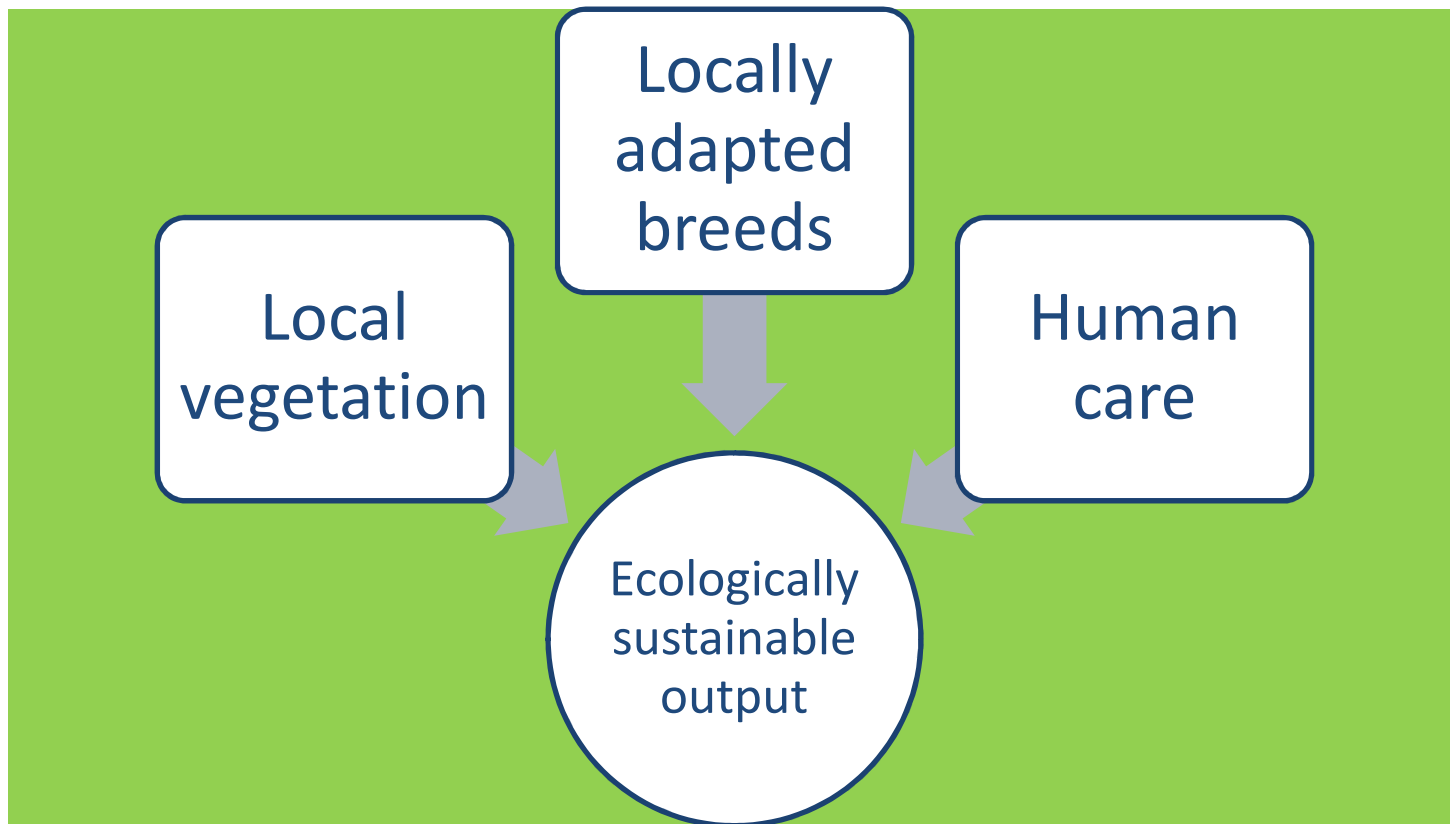
Dairy farmers in Germany

4000 (about 4%) are expected to go out of business this year (website Green Party Germany)



Extensive Indian System

Low input, multi-purpose, decentralised





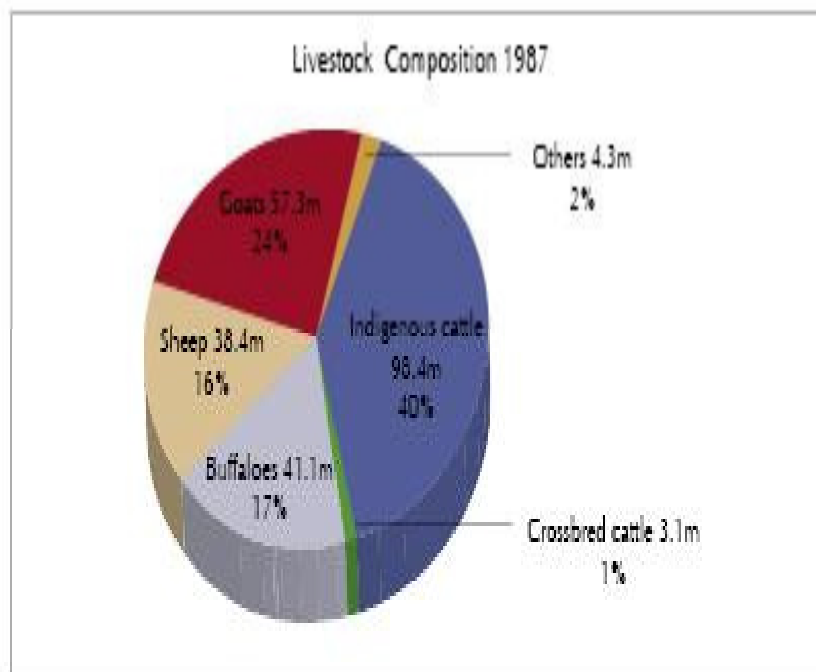
Functions performed by Livestock

- **Output Functions:** related to Outputs in form of edible / non edible products.
- **Input Functions:** related to Inputs provided for crop production in form of draft power, dung, urine etc.
- **Economic Functions:** as source of regular income.
- **Risk Coverage Functions:** to meet needs during exigencies like crop failures as livestock are liquid assets can be easily encashed (crucial for resource poor).
- **Socio-cultural Functions:** cattle are closely linked with socio-cultural aspects of rural society.

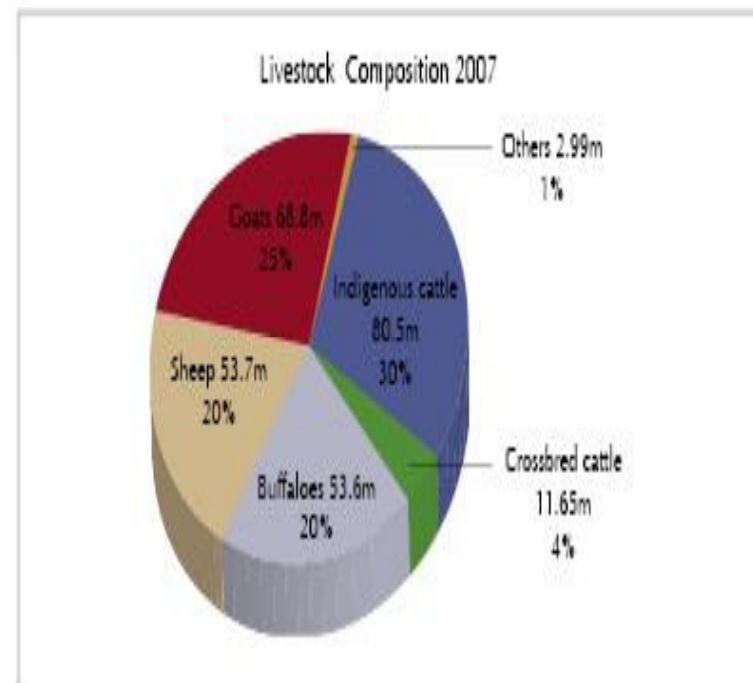


Change in livestock composition (1966-2007)

1987



2007



As per above data:

- Native cattle reducing
- Replaced by Buffaloes
- Major increase in Small ruminants
- Marginal increase in terms of livestock units(0.14% per year)

The 2012 Livestock Census, further reduction of 3.3% in total livestock



Percentage contribution to fodder

| | CPRs | Crop Residue | Purchase |
|-----------|------|--------------|----------|
| Arid | 66 | 22 | 12 |
| Semi-Arid | 35 | 60 | 5 |
| Sub-Humid | 67 | 32 | 1 |



Fodder requirements from Commons

**Percentage of annual fodder requirement met from commons-
across regions and different livestock in India**

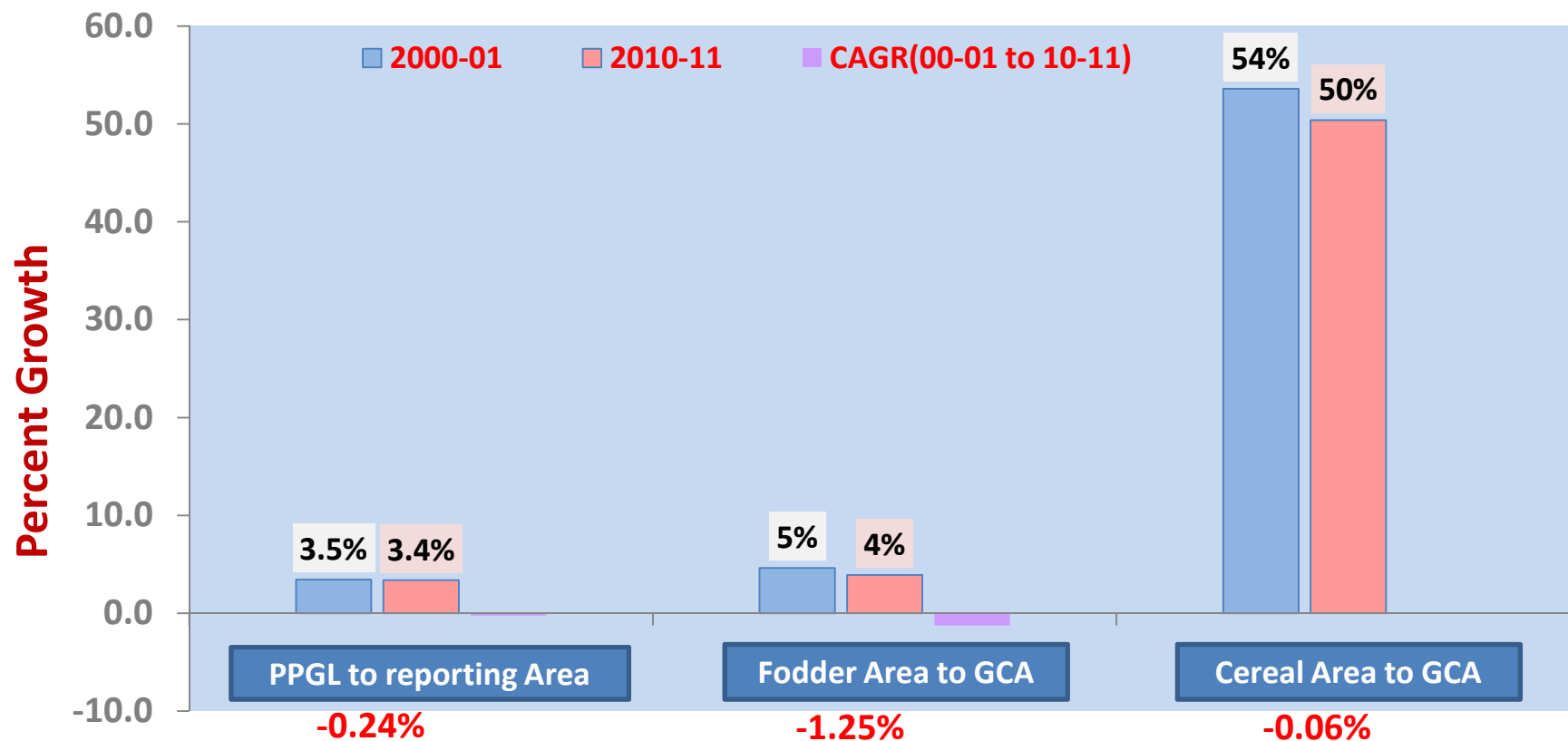
| | Draught animals | Indigenou s cattle | Crossbred cattle | Buffalo | Sheep and goats | Camel |
|---------------|--------------------|-----------------------|---------------------|---------|--------------------|-------|
| Arid | 33.1 | 62.94 | 44.63 | 65.13 | 83.78 | 68.25 |
| Semi- Arid | 31.09 | 40.79 | 29.82 | 29.95 | 51.73 | 29.23 |
| Sub- Humid | 67.83 | 74.02 | 11.11 | 58.24 | 79.3 | 0 |

Not only are the small ruminants but also other livestock species, supported in grazing based production systems. Even the archetypical stall fed animals, buffaloes and crossbred cattle depend on commons for meeting more than 20% of their fodder requirement.

Based on a study undertaken by FES and partner organizations in arid and semi-arid regions of India (2010)



Status of Permanent Pastures and Grasslands (PPGL), Fodder area and cereals area in - India



- There was a decline in fodder area. Cereals area has improved. Land under PPGL remain constant



Share to milk Production

- Total milk production including goats, sheep and camel is 114 MT

| Total Milk Production | Year | Indigenous Cattle | Crossbred Cattle | Buffalo |
|-----------------------|---------|-------------------|------------------|---------|
| India | 2012-13 | 21.51 | 25.40 | 53.09 |

- Total livestock population is 512 million as per the 2012 census.
- Almost 80% of the milk comes from the extensive system
- Nearly all of the meat production from the small ruminants is from the extensive system, accounting for 46% of the total meat produced
- India is the highest exporter of beef, most of which again comes from the extensive system

| Registered Breeds (NBAGR figures) | | Livestock |
|--------------------------------------|--|-----------|
| India | | 138 |



Species shift–response to climate change?

- Farmers may switch over to SR (resilient and adapt to CC)
- Feed requirement :1 Cow = 10 goats (7 kg and 0.7 kg DM/day)
- Methane emission :1 Cow = 10 goats (43 ± 5 and 4 ± 1 kg CH_4 /head/year)



‘Environmental and Social cost accounting’ approach needs to be applied

Considering the facts:

- Kind of feed/quality on which Desi cattle thrive;
- The ‘Water Foot Print’ is small;
- Resilience towards climate change is high;
- Increasing usage of urine for preparing human medicine and organic pesticides.
- Make positive contribution to environment.

Further more

- Feed prices at new level (high)- support extensive system
- India-intermediate milk : price ratio supports extensive system
- World production increasing at 13% driven by India, china and Pakistan



Case Studies – Impacts of Grazing bans

- At Keoladeo Ghana National Park in Bharatpur, the grazing of livestock was banned, following the popular belief amongst the then park managers and ecologists about its destructive nature on natural systems. Following the ban on cattle grazing in 1982, the habitat began to decline.

Lewis M. Cattle and Conservation at Bharatpur: A Case Study in Science and Advocacy. Conservat Soc [serial online] 2003 [cited 2014 Oct 31];1:1-21. Available from: <http://www.conservationandsociety.org/text.asp?2003/1/1/1/49354>

- The findings from a study in Hungary show that absolute numbers may be similar, but the varieties of various types of flora and fauna goes down (A. Báldi, 2012) due to ban on grazing.
- Similar experience was recorded in the Epping forests, where the cattle grazing ban was found to lower the diversity in the species of flowers and insects (Coporation of London).



Case Studies – Grazing to improve biodiversity

- ***Result bases Grazing Management***

In the EU, the grazing management systems are being used as tool for reaching specific end-objectives. Three types of objectives have been identified as forest multi-functionality, fire prevention and biodiversity enhancement. (Etienne, 2005)

- ***Grazing projects - landscape conservation with sheep in Germany***

In Germany the sheep grazing has been found to play an important role in the conservation of degraded landscapes (Grazing projects - landscape conservation with sheep, n.d.).



Discussion Points

- Tier 1 And Tier 2— estimations GHG emissions (IPCC)
- FAO's 2006 assessment found livestock emissions contribute to 18% of global greenhouse gas emissions, however the latest study has revised the estimates to 14.5% (2011).

Thank You!