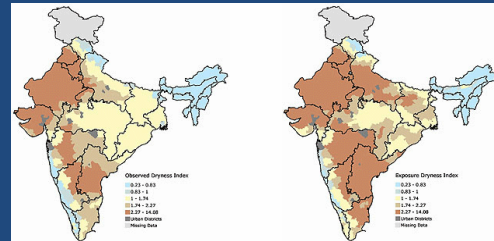


## Livestock Management in Drought

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Area prone to drought currently

Climate model showing likely area prone to drought due to climate change

Source: CICERO (Centre for International Climate and Environmental Research – Oslo) - Norway

- Drought is normally associated with crop failure, drinking water scarcity and out migration of people
- Livestock in drought prone areas are considered as best coping mechanism against crop failure
- Provides regular income and much needed safety net as they can be sold, pledged or traded

But

**Livestock are also considerably affected by drought**

### Impact of drought on livestock

- ❖ Unlike crops, impact of drought is slow as they are more resilient to drought
- ❖ However, prolonged drought has adverse impact on livestock

#### Impact of 1987 drought on livestock population in Barmer district of Rajasthan

Species	Population (000)		
	Pre drought	Post drought	% Decrease
Camel	109	94	13.76
Buffalo	41	35	14.36
Goat	1335	743	44.34
Cattle	491	234	52.34
Sheep	1157	482	58.34
Total	3184	1682	47.17

Source: Livestock Census, Govt. of Rajasthan, 1989

### Effects of drought on livestock

- ❖ Decline in production of milk and eggs
- ❖ Loss in body weight and body condition
- ❖ Reduced immunity levels and thus increased susceptibility to diseases
- ❖ Prolonged drought conditions lead to reduced reproductive efficiency

### Drought and livestock production

Kind of Drought	Effect on Livestock production
Meteorological	<ul style="list-style-type: none"> <li>• No visible effect.</li> <li>• Slight physiological adaptation</li> </ul>
Agricultural	<ul style="list-style-type: none"> <li>• Shortage of feed and fodder</li> <li>• Reduced production</li> <li>• Decline in sale price of animals</li> </ul>
Hydrological	<ul style="list-style-type: none"> <li>• Significant reduction in production</li> <li>• Increased physiological stress</li> <li>• Decreased immunity levels</li> <li>• Effect on reproductive efficiency</li> <li>• Out-migration of animals</li> <li>• Distress sale</li> </ul>

## Mitigation Strategies

## Available Options

Option	Advantages	Disadvantages
Selling some or all animals	Immediate cash available Higher value if sold early Saving on feed and labour Pursue other activities	Repurchasing may cost more Loss of steady income Loss of precious genetic material
Feeding for production	No loss of Production No need for restocking Higher income through sale of produce	Higher costs/ uncertain markets High labour requirement
Maintenance Feeding	No need for restocking Steady source of income Breeding cycle not disturbed	Longer the drought – higher the costs High labour input, lower production
Shifting to cattle camps	No need for restocking Saving on feed and labour Savings on cost	Farmers hesitant to move animals to camps Loss in production

## Objective of drought mitigation strategies

- Ensuring survival of farm business
- Minimum loss of productivity
- Minimal number of animals for optimizing available resources
- No loss of reproductive efficiency
- Recommencement of production after drought

## Feeding Strategies

### Critical loss of body weight in

- ❖ Cattle / Buffalo – 20%
- ❖ Sheep / goat / camel – 30 to 40%
- For maintenance to ensure survival
- To maintain minimum level of production / growth
- To maintain full level of production / growth

## Feeding Practices

- Focus to be on efficient utilization of existing feed resources
- Supplementary feeding required for producing and young animals
- Choice of supplements critical. Feed ingredients high in energy/ protein preferred
- Supplementary feeding of grains / oil cakes could be given twice in a week
- Feeding of urea as nitrogen source to be avoided.
- Mineral mixture / Mineral – Molasses blocks to be provided to overcome loss of reproductive efficiency

## Management Practices to be adopted

- Animals not to be kept under direct sunlight
- Provide proper ventilation in sheds
- Over crowding of animals in shed to be avoided
- Early mornings and late evenings feeding to be followed
- Preferably less hours of grazing and shorter distance

### Contingent Plan for drought mitigation – Livestock perspective

- ❖ Contingent plan for drought mitigation not well developed
- ❖ Focus mostly on drought relief measures
- ❖ Both short and long term strategies needed for mitigation

### Long term strategies

Issue	Strategy
Large scale migration	<ul style="list-style-type: none"> <li>▪ Creating additional resources in DPA</li> <li>▪ Inclusion of top feeds in cropping systems</li> </ul>
Grazing of poisonous plants/ toxicity problems	<ul style="list-style-type: none"> <li>▪ Inventory of anti-nutritional / toxic factors</li> <li>▪ Creating awareness in farmers for avoiding nitrate/ nitrite and HCN poisoning</li> </ul>
Transport of fodder from normal to DPA	<ul style="list-style-type: none"> <li>▪ Establishing feed and fodder banks</li> <li>▪ Effective mechanism for distribution of fodder/ feed to productive animals</li> <li>▪ Densification/ baling/ briquetting technologies</li> </ul>

- Arrangements of Quality Fodder.
- Livestock Strategy.



Most of paddy crop in the states of Punjab, Haryana and western UP is harvested by combines



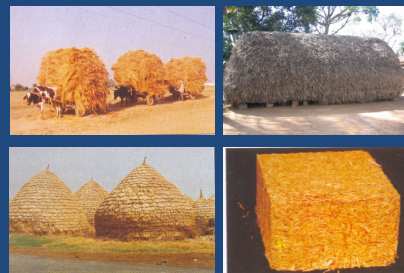
Left-over paddy stubbles (20–40 cm in height) are burnt by the farmers to facilitate *rabri* sowing. This practice causes environmental pollution.



The left-over stubbles can be baled, densified and transported to fodder scarcity areas



Maize stovers: An additional source to increase fodder bank account



Transportation, storage and densification of dry fodder during drought period

### Available options

- Unsown area should be harnessed for taking up cultivation of short duration crops of sorghum, bajra etc. as fodder
- In sugarcane growing areas Sugarcane tops and dry sugarcane leaves may be transported, enriched for crude protein content and fed in scarcity areas.
- Sugarcane baggasse and press mud may be treated and transported to deficit areas for survival feeding.
- Partially damaged wheat and other grains may be diverted for feeding to save productive animals

### Required policy changes

- Need for comprehensive drought manual at State level
- Drought relief largely oriented towards organizing cattle relief camps and providing health protection
- Focus to be given for sustenance of productive animals
- CRF norms needs a relook – productivity loss to be compensated
- Establishing a National Feed Grid

