

# Feeding strategies to alleviate negative impacts of drought on ruminant production



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# [ Drought - Livestock ]

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## 1. Livestock

- Key to security for many smallholder farmers.
- Indicator of wealth.
- Preferred species (sheep, goats & dromedaries)

## 2. Drought

- Feed shortages (quantity & quality)
- Low productivity
- Increased use of concentrate feeds (cost !)

# [ Drought - Actions ]

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## 3. Farmer's actions

- Purchase feed...local know-how... **Destock.**
- Buyers market.
  - .. Sell all non breeding stock early in the drought!

## 4. Government

- Helping farmers survive drought (strategies ?)
- Subsidisation of specific feeds (barley, maize..)
- Encouragements (feed transport, shrub plantation ...)

## 5. Solutions

- Institutional & policy options
- **Technical options**

# [ Drought – Technical options ]

## 1. Enhance the nutritive value of cereal crop residues

- ❑ Targeted supplementation
- ❑ Particle size (chopping, grinding)
- ❑ Chemical & other treatments



# [ Drought – Technical options ]

## 2. Reducing the cost of transporting forage



Compaction & baling  
(reduce the transport cost by  
1/3)



# [ Drought – Technical options ]

## 3. Simple & cheap technique for baling



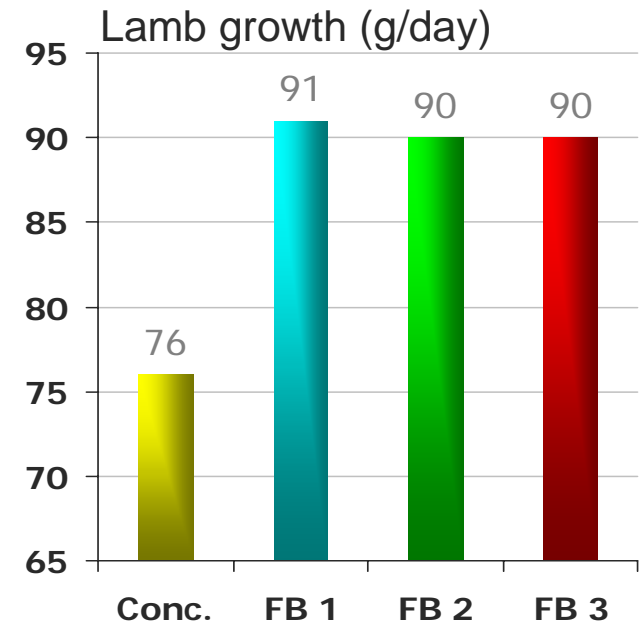
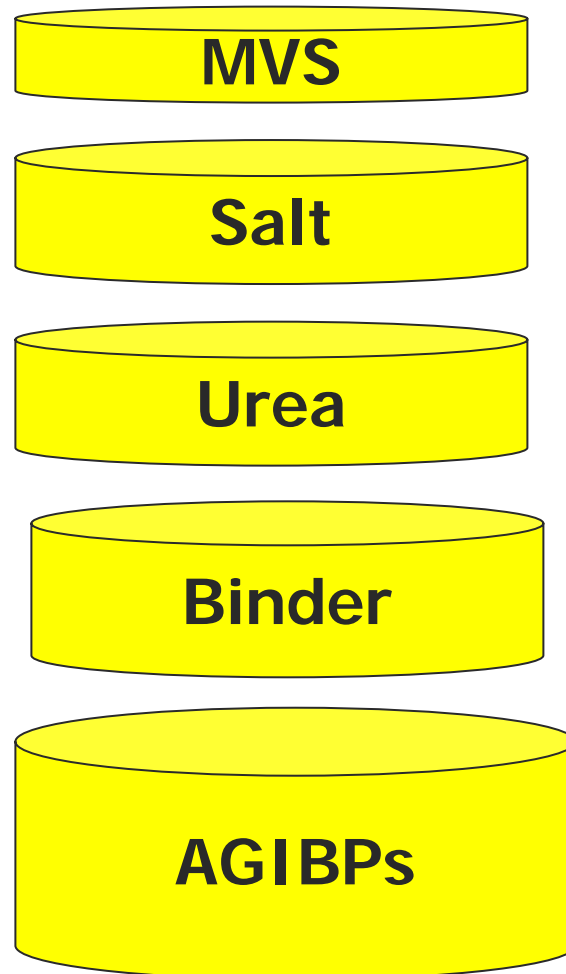
# Drought – Technical options

## 4. Better use of agro—industrial by-products

- Silage
- Pellets
- **Feed blocks**



FB - Partial/total replacement of concentrate feeds



# [ Drought – Technical options ]

## 5. Fodder shrubs & trees

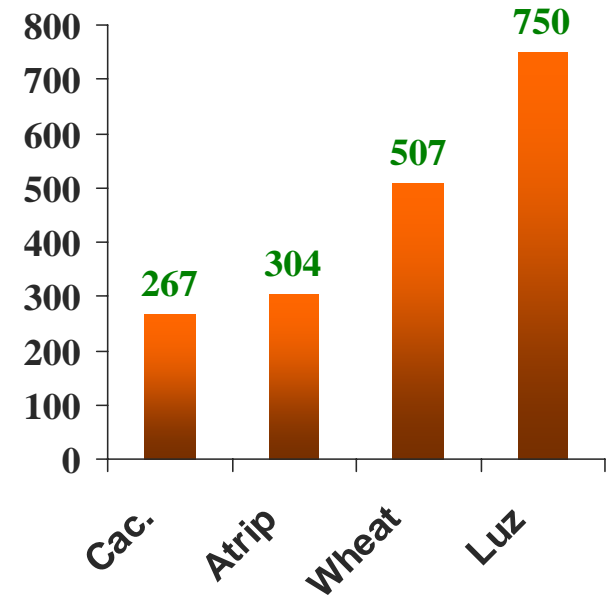
- Benefit from tanniniferous fodder shrubs
- Anthelmintic activity of tanniniferous species
- Alley-cropping (higher cereal grain yield)



# Drought – Technical options

## 6. Cactus, a promising species

- Water use efficiency
- Drought tolerant
- High in sugars, beta-carotene, pectins
- High in water
- Reduces the use of concentrate feeds
- Alley cropping (cactus-barley) increased grain yield by 180%



# [ Drought – Technical options ]

## 6. Cactus, a promising species

- Multipurpose use (feed, food, medicinal plant, ..)
- Cactus plantation, an income's generating activity



# [ Drought – Technical options ]

## 7. Rest technique to improve rangelands productivity



# [ Drought – Technologies transfer ]

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**Technical options available, but adoption by farmers has been slow... why?**

- **No involvement of target users**
- **Misunderstanding of farming systems and/or farmers' constraints**
- **Non technical problem (e.g. absence of credit, cultural..)**

*Involvement of all stakeholders is mandatory for the development of cost effective & sustainable feeding strategies for animals raised under harsh conditions*

# [ Conclusions – to cope with drought? ]

## 1. Need to identify cost-effective technologies.

Among the promising techniques & technologies

- Cactus plantation
- Feed blocks and AGIBPs-based pellets
- Rest technique (rangelands)

## 2. Need to consider a participatory approach

- **Researcher** should explore and fully characterize the intervention zone before starting the identification of technical solutions
- **Extension staff** should be involved – problem solving is a team operation
- **Farmers** should be involved in all stages of on-farm research

# [ Conclusions – to cope with drought? ]

3. Farmers should be “told” by extension what the solution is but given a basket of options. *‘On-size’ fits all solutions do not work in practice*
4. **Local knowledge!**
5. ***Links with pioneer projects should be established for better adoption of developed strategies***



## [ Conclusions – Success stories ]

**Projects designed to generate technology are rarely funded to go back and assess usage after input support has been withdrawn. Of those projects successfully transferred into practice the following are worthy of note:**

- The Mashreq & Maghreb Project (coordinated by ICARDA) ‘Development of integrated crop-livestock production systems in low-rainfall areas’ (technologies developed, transferred, adopted and impact assessed)
- The community-based dairy goat project in Kenya (Meru district) (Farmer managed through goat breeders association) (*Livestock Production Programme – UK*)
- The promotion of collection and storage of tree fruits as dry season protein supplements (*Livestock Production Programme – UK*)