

## **Small Ruminants Production Population Trends in Andhra Pradesh**

### **Population of Small Ruminants**

- | A.P. has a SR Population of 276.53 lakhs Sheep (213.76 lakh) & Goats (62.77 lakh)
- | Sheep account for 77.3% and Goats 22.7%
- | Mahabubnagar has highest SRs population (38.66)
- | Share of goats declined from 34.9% in 1999 to 22.7% in 2003

### **Agro-climatic zones in A.P.**

- | North Coastal Zone (3 districts)
- | South Coastal Zone (6 districts)
- | Rayalaseema Zone (4 districts)
- | South Telangana Zone (5 districts)
- | North Telangana Zone (5 districts)

### **Distribution of SR in A.P.**

- | North Coastal Andhra has lowest SRs population 18.56 lakh followed by South Coastal Andhra 44.82 lakh
- | Goats across regions is more or less same as that of sheep
- | North Coastal Andhra has higher share of goats than in sheep
- | North Telangana zone has slightly higher share in goats
- | Vishkha, E.Godavari, W.goadavari, Hyderabad, Warangal and Khammam have higher no. of goats
- | South Telangana has the largest SRs population (84.57 lakh) and share is as high as 30.6%

### **Intensity of Small Ruminants**

- | At the State level density is 100.8 per sq.km
- | Significant variations across the zones South Telangana has highest density of 169.2 per sq. Km
- | Followed by North Telangana and Rayalaseema with 97.5 per sq. Km
- | South Coastal Andhra has the lowest density of 64.9 per sq. Km

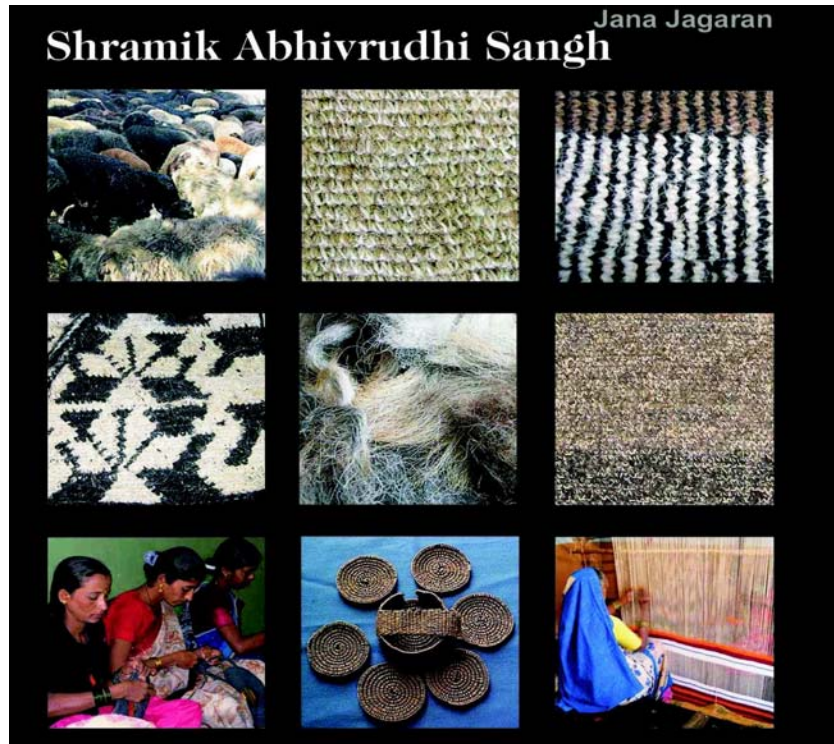
## **Number of SRs per 100 persons**

- | No. of SRs per 100 persons has no significant variation across zones
- | At the state level 36 SRs per 100 persons
- | SR population (110.02 per 100 persons) in Mahabubnagar district
- | North Telangana & Rayalaseema have a high density ranging from 45 to 50 per 100 persons
- | Coastal Andhra has low density of SRs about 20 per 100 persons
- | Activity is more or less equally distributed across zones except in 2 coastal zones

## **Conclusion**

- | Ananthapur, Karimnagar, Kadapa and Warangal also have large population of SRs in relation to human population (more than 50 per 100 persons)
- | Annual compound growth rate of SRs is 3.9% between 1983 to 2003.
- | Growth rate of Sheep is high (5.4%) while goats is low (with 0.7%) per annum.
- | Rainfall and irrigation have a significant negative influence on SR activity.
- | Availability of grazing land or uncultivated land have a significant positive influence.
- | Crop out put per hectare or per capita or share of forest in geographical area have no influence.
- | Growth rate of sheep & goats indicate the relative importance of the activity.

## COARSE WOOL SCENARIO NORTH KARNATAKA - Gopi Krishna & Kamal Kishore



North Karnataka Region consisting 14 districts namely Belgaum , Bijapur, Bellary, Bidar, Chitradurga, Dharwad, Gulbarga, Raichur, Bagalkot, Koopala, Gadag, Haveri, Davangere with exception of Uttara Kannada is semi-arid and depend on rainfed agriculture. Small ruminants husbandry is an important source of sustenance and livelihood.

The Kurbas and Gollars in the region carry on till this day, their traditional occupation of rearing Deccani sheep, for its meat, wool, skin and manure.

The Karnataka state has 7.2 million sheep according to livestock census of 2003 and the wool production is around 5355 tons. It ranks second in production of wool after Rajasthan.

The North Karnataka region has 62.22% percent of the sheep population and produce about 3332 tons of wool. The annual wool yields in the region is in the range of 421 grams – 738 gms per animal. The districts of Belgaum, Bagalkot, and Raichur are the major Wool production pockets in the region. The wool produced in Chitradurga district is inferior as compared to Bagalkot and Belgaum



## QUALITY OF WOOL

The average fiber diameter varied from about 35 microns to about 70 microns. The overall average was about 53 microns. The wool quality thus has a wide variability, further the wool tends to be more hairy than wooly. The wool samples without exception had a core content of about 20 to 25% of woolly portion which ranged in fineness from 20 to 26 micron. This fiber can be spun. Based on the qualitative analysis of the fibers, wool was graded broadly.

The analysis of fiber quality revealed that there are pockets of finer wool producing deccani sheep.

Further as one looks at the distribution of wool on the animal, one sees basically two peaks - 25% of the fleece averaging around 24 microns is good quality wool.

The other fleece averaging around 58 microns – very coarse, forms another 25 % of the fleece on the sheep.

Grading of wool according to color and age of the animal was traditionally practiced in the region when the wool was locally used by spinners and weavers for production of 'kambalies'.

The women folk accompanied the shearers and helped them in sorting and grading wool because the weavers demanded different shade of wool for designing their 'kambalies'.

## NORTH KARNATAKA MAP OF WOOL YIELD 2003-2004



The wool in the region was classified as shown below.

### SHADES OF WOOL



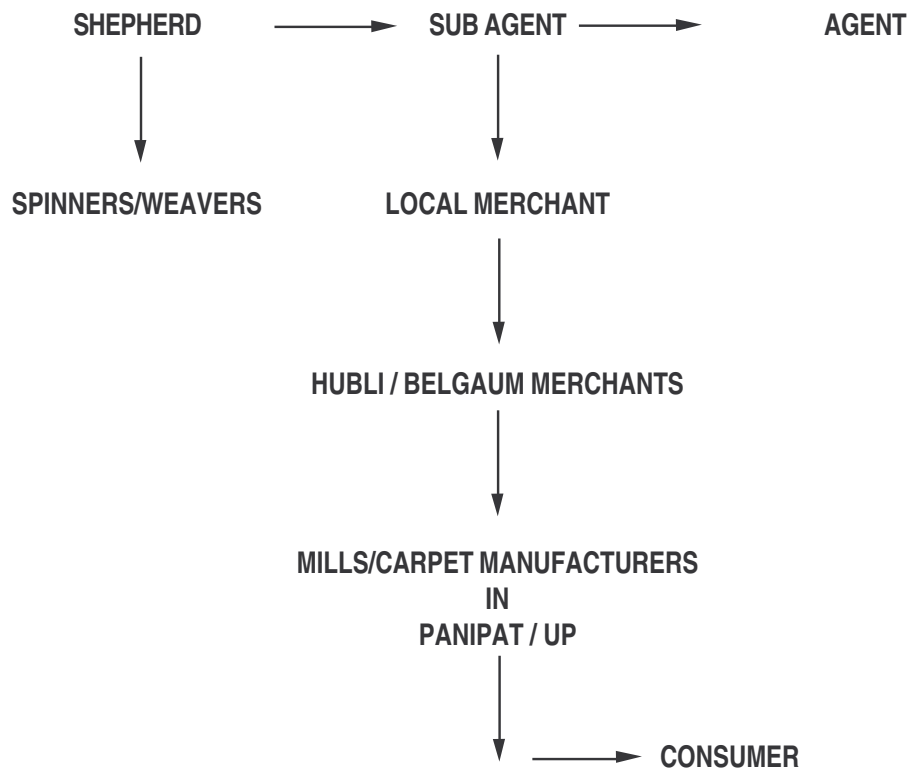
<u>(Kappa Kari)</u>	--	<u>Black</u>
<u>Neel</u>	--	<u>Blue Black</u>
<u>Bengar</u>	--	<u>Redtip/Black/White</u>
<u>Hal (Dark)</u>	--	<u>Dark Brown</u>
<u>Hal (Light)</u>	--	<u>Light Brown</u>
<u>Mixed Bili</u>	--	<u>Mixed (White)</u>
<u>Chokke Bele</u>	--	<u>Pure White</u>



## MARKETING OF RAW WOOL

The distinguishing feature of the trade in wool in this region is that there is no set methodology or system. From the time the wool is sheared and collected it passes through several hands before it reaches the manufacturers. The seller of the wool is ineffectual and poor consequently agents, sub agents and middlemen form a large part of the market chain. This results in the final cost of the wool shooting up considerably when it reaches the manufacturer or producer.

## MARKETING CHANNELS - RAW WOOL IN NORTH KARNATAKA



## WOOL MERCHANTS

1. District level at Dharwad, Belgaum, Bijapur, Bellary etc.
2. Taluka level
3. Shantie / Santhe
4. Village level

Agents take money from wool merchants and go to villages to collect wool from shepherds. Normally these agents are paid 50% of the profit on their transactions by the merchants.

Sub agents are sometimes hired by agents so that a greater number of villages can be covered for wool collection in a shorter period. They are paid 10-25% of their profit on their transactions by the agents.

Laborers are hired by merchants and agents on a daily wage basis to collect wool from different places in village and surrounding villages. The wool is then stored in go-downs and transported further to carpet / wool producers and mills.

# PASTORALISM IN NORTH KARNATAKA

Dr. Z.A. BAIG - SHRAMIK ABHIVRUDHI SANGH BELGAUM.

## PASTORALISM OF NORTH KARNATAKA

### SHEEP & GOATS (Kurbas / Gollas)

1. Nomadic
2. Semi Nomadic
3. Stationary

### CATTLE & BUFFALOES (Gawalis / Lambanis)

1. Semi Nomadic
2. Stationary

### Migration Head (MH)

#### Flock of 100-150 Sheep (4-5 People)

- | Graziers
- | Helpers
- | Women, Children
- | Dog, Cattle, Donkey, Horse
- | Tent & Caravan Equipments

#### One Herd (8-10 Flocks)

- | 850-1200 Sheep
- | 40-45 People
- | 5-6 Leaders

### One Migration Head

- | 18000 - 25000 Sheep
- | 700 - 800 People
- | 8 - 10 Main Group Elders
- | Area 15-25 (Sq. Kms)

### Major Migration Heads

- |         |             |
|---------|-------------|
| Chikodi | Koppal      |
| Mudhol  | Gangavati   |
| Haveri  | Kappad Guda |
| Ramdurg | Hospet      |
| Halyal  | Shikaripur  |
| Mundgod | Almatti     |

## **Income from Deccani Breed**

- | Meet (lamb sale)
- | Manure
- | Wool
- | Culled Animals

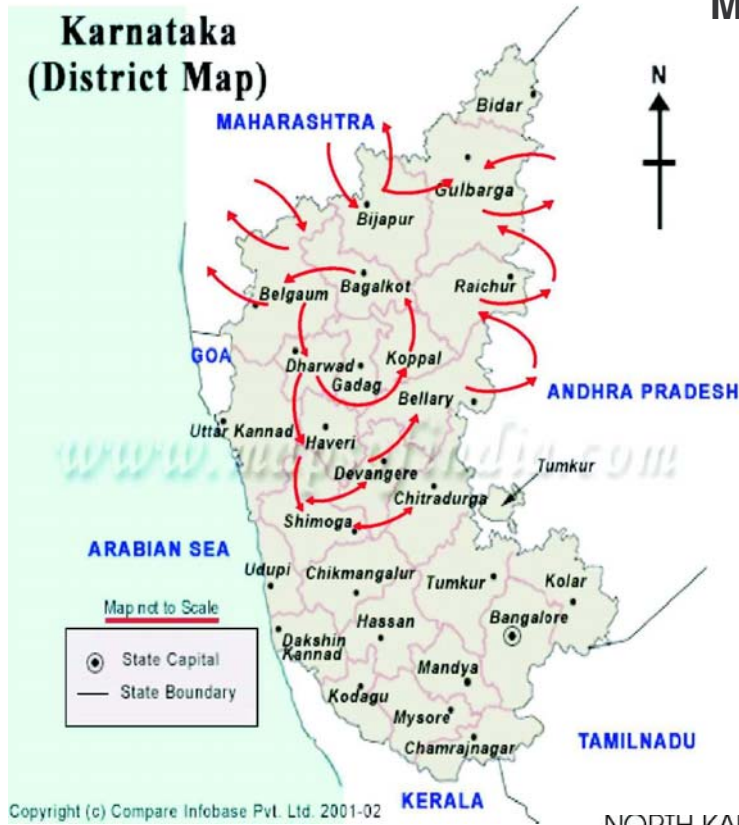
## **Hazards of Migrations**

- | Stress to animals / family
- | Shrinking pastures & CG Land
- | Over Grazing, Unpredictable Markets
- | Conflict with Farmers / Forest Officials
- | Disease out break / Water scarcity & Contamination  
/ Pesticides Residue
- | Accessibility of Vet support / Unawareness of Welfare measures
- | Lack of Education / Missing of Socio-cultural-  
events / Socio-economic deprivation
- | Lack of Representation
- | Health Issues / Alcoholism

## **Problem Addressed**

- | Attempting Semi Migration
- | Rapport with Villages & Local Leaders
- | Cordial Relationship with Farmers
- | Contract Grazing
- | Hired Graziers
- | Labor for Grazing
- | Use of Borewells for water
- | Children with Boarding / Grand Parents

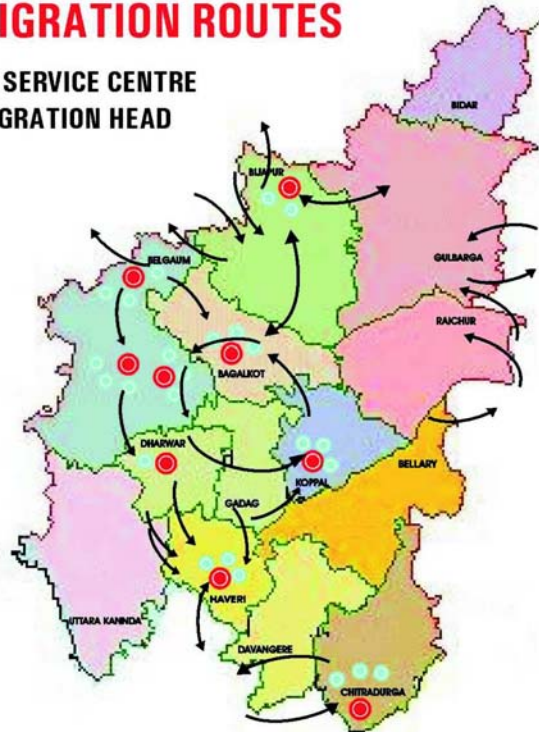
# MIGRATION ROUTES



## MIGRATION ROUTE

### NORTH KARNATAK MIGRATION ROUTES

- JJ SERVICE CENTRE
- MIGRATION HEAD



# SHEEP AND GOAT POPULATION OF NORTH KARNATAKA



60%                      25%                      15%

**TOTAL SHEEP -KARNATAKA      72,55,931**

**TOTAL GOATS -KARNATAKA      44,83,776**

## LIVE STOCK IN NORTH KARNATAKA -2003 -2004

Sl No	Sheep	Goats	Total	% KK	% KK sheep	%KK goat	Deccani	
							Total	% District
1	902555	508776	1411331	12.02	12.44	11.35	790243	87.56
2	396575	221861	618436	5.27	5.47	4.95	5642	1.42
3	66024	131043	197067	1.68	0.91	2.92	16	0.02
4	270290	322400	592690	5.05	3.73	7.19	267306	98.90
5	715592	220272	935864	7.97	9.86	4.91	38107	5.33
6	33583	60946	94529	0.81	0.46	1.36	6382	19.00
7	459515	562104	1021619	8.70	6.33	12.54	5926	1.29
8	382513	273933	656446	5.59	5.27	6.11	784	0.20
9	17399	13527	30926	0.26	0.24	0.30	0	0.00
10	409559	266913	676472	5.76	5.64	5.95	72539	17.71
11	204906	112847	317753	2.71	2.82	2.52	27949	13.64
12	208666	100677	309343	2.64	2.88	2.25	32234	15.45
13	197981	127678	325659	2.77	2.73	2.85	190564	96.25
14	250156	134964	385120	3.28	3.45	3.01	5668	2.27
	4515314	3057941	7573255	64.51	62.23	68.20	1443360	31.97



Growth and feed conversion efficiency of lambs raised  
by farmers of Belgaum region

**S.A. KARIM  
&  
KAMAL KISHORE**

**Central Sheep and Wool  
Research Institute  
Avikanagar.**

**The target cluster of villages used for  
intensive mutton production program**

<b>District</b>	<b>Kapal</b>	<b>Raibag</b>	<b>Bagalkot</b>	<b>Haveri</b>
SHG	Kustagi (a) Kustagi (b) L. Karur	Akkarma Hubbarwadi (a) Hubbarwadi (b)	Gangur Bhimanagad a.	Gangoor Guttal (a) Guttal (b)

**Growth performance of the lambs**

Number of lambs used in the study	178
Average days in experiment	89
Average initial weight (kg)	15.0
Average final weight (kg)	28.0
Total gain in the experiment (kg)	13.0
Average daily gain (g)	146

**Feed intake and feed conversion efficiency**

Concentrate intake in expt. (kg)	26.4
Fodder intake during the period (kg)	108.0
Total fed intake during the period (kg)	134.4
Feed conversion ration (1:... )	10.67

**Economic inputs in the enterprise**

Animal cost (Rs)	1020.25
Concentrate cost (Rs)	158.41
Fodder cost (Rs)	54.01
Total Cost of feeding (Rs)	212.42
Medicine cost (Rs)	50.00
Total cost of rearing (Rs)	1282.67

**Economic realization and net profit in the venture**

Sale receipt of lambs (Rs)	1722.19
Net profit / animal (Rs)	439.52
% profit over investment	34.59

**SHEEP & GOLLAS –IN A SEMI ARID REGION**  
(SOUTH KARNATAKA AND ANDRAPRADESH)

**PRESENTED BY :**

§ Sheshagiri Rao , Lalitha Rao

<b>Herd size</b>	<b>Sheep rearing practices</b>	<b>Collective action required</b>
<5	Grazed with cattle or near work and penned at the house.	None
20-70	Collective grazing and penning. collective grazing. Reciprocal	Individual pens near houses with arrangements with land owners. Dealing with predators, thieves, disputes, wool shearers, vets,
70-2000	+ Migration in summer or throughout year. Well organized veterinary care.	Migration, watch and ward. + same as above

**ADAPTATIONS BY GOLLAS**

<b>Period</b>	<b>Major changes</b>	<b>Kadu golla livelihood strategy</b>	<b>Ooru golla livelihood strategy</b>
Prior to II world war	None	Cattle mostly (semi feral) + sheep + share cropping	Cattle (semi feral) + share cropping
Around II world war	Trees cut for charcoal, Better transport, Severe drought	Began local migration for tree and grass fodder to interior areas	Increase the percentage of sheep + migration for short distances
1950- 75	Initial land reforms, + Acceleration of above changes, redistribution of common grazing lands	Shift to sheep completely	Mix of cattle, sheep purchased farms
1975-90	Land reforms and redistribution of all common lands. Electricity, high price of groundnut Public distribution system	Purchase rainfed land,	Cattle rearing stopped. Acceleration of above changes. Large investments in farms Keep goats
1990	Bore wells. High price of sheep. Social transformation	Large investment in farming. Sheep keeping reduced. Education and employment Increase in goats ,	Priority to education, politics and employment High proportion of goats

## **Problems of sheep rearing**

- n Diseases and parasites- Multiple afflictions simultaneously.
  - Hygiene and sanitation at pen. Drinking water and fodder.
- n Shortage of grazing lands,
  - Tree fodder for lamb especially during drought years.
  - Further accentuated in consecutive drought years during wet spells
- n Labor for grazing sheep and migration
  - socially mean task, preference to education and irrigated farming
- n Erosion of their traditional social and cultural norms and conflict resolution mechanisms.
  - Increase in disputes and court cases. Breakdown of collective action and effective leadership

## **Economics and Politics**

- n Economic status compared to other sections of the society
  - Much better than the rainfed farmers
  - Best credit ratings by the informal money market.
  - Specialist lenders for sheep at 24 to 60 % annual interest.
- n Integration with mainstream, Political presence.
  - Kadu gollas more isolated than Ooru gollas. Serve as a meek vote bank of local leaders
  - Rulers in the past. Lent money to traders and large farmers.

## **Gollas are good adapters**

- n Highly affected by the status of
  - Natural resources and the policies
  - Laws and user rules in practice.
- n In the recent past, they have successfully adapted to
  - Rapid changes and degradation of their grazing areas and water sources
  - Erosion their rights and entitlements.

## **The Golla way of livelihood**

- n The golla way of livelihood
  - Mix of income sources- livestock, crop farming, and trees on farm.
  - Most profitable, sustainable farming strategy in the variable climate of our regions
- n They are moving away from their traditional strategy due to both ecological and social reasons

## **Enhancement of the Golla practices**

- n Trees on farm – increase density and multipurpose species
- n +Soil and water conservation measures-
- n +Intercrops- use dry land horticulture
- n Add live hedge component.
- n Main crop – with lowered vulnerability to moisture stress, pests and diseases.
- n Positive feed back and virtuous cycle over 3-5 year period.

**HOW GOLLAS COPE WITH DROUGHT ?**  
**A case study from semiarid**  
**eastern Karnataka**

**Lalitha Rao MG, Chennakeshava Trust,**  
**CK Pura, Karnataka.**

**Impact of climate variability  
on sheep rearing, livelihood**

- u Gollas are used to coping with climate variability for centuries.
- u Their traditional mechanisms are not available due to
  - Land use changes in their grazing areas
  - Social changes within the community.
- u Adapted new responses to recent drought of 2001 to 2004.
- u This is likely to lead to major changes in sheep production and livelihood of Gollas.

**House hold level economics of Gollas**

- u At Ckpura, Pavagada block,
- u 27 families- house hold level economics monitored during 1998 to 2005.
- u Based on stratified sampling- 6 families of Kadu Gollas.
- u Their livelihood – Distinct from others- sheep rearing along with Rainfed groundnut - major sources of income

**Impact of climate- on sheep**

Climate event	Probability	Impact on sheep
Wet spell >7days	41%	Increase Diseases, parasites, Fodder
<35 cm rain/ season	38%	Less fodder, diseases
>45cm rain/season	27%	Decrease in grazing area, better fodder growth
High summer temperature	?	Increase in diseases

EFFECT OF RAIN ON GROUNDNUT-PAVAGADA REGION			
Rain event	During crop stage	Effect	Probability
Dry spell, 15-25 days	during pod filling At harvest	Moisture stress, poor growth Difficulty in harvest	High Moderate
Dry spell >25 days	Flowering to pod filling	+ leaf miner	Moderate
Wet spell of >7 days	during pod filling Pod filling to harvest	Poor pod development Diseases, (Pod rot, late leaf spot)	Low Moderate
Yet to be understood	Flowering to pod filling	Hairy caterpillar* Virus*	High Low
Rain in Gujrat	Flowering to pod filling	Determines the market price	Moderate
None * =endemic	Sowing, pod filling	Wild boar*, Sloth bear*	High

## Rain during 1998 to 2005

Years	Climate event
1998, 2000	>60cm rain, 3 wet spells of >10 days
1999,2001,2002,2003 & 2004	<35 cm rain, 2 long dry spells of >20 days High summer temperatures
2005	45 cm rain, 2 wet spells of >10days

### MULTIPLE EFFECTS OF A RAIN EVENT Wet spell of >7days during pod filling

Impact on	Benefits	Problems
Groundnut		Poor pod development, diseases
Pigeon pea, Castor	Enhanced growth and yield	
Rice, finger millet (irrigated)		Blast disease, decrease growth
Weeds	Vigorous growth leads higher employment and income for wage earners	Increase in cost of weed removal
Trees under rainfed condition	Increase in yield of Tamarind, Mango Also in Neem and Pongamia. (Poor families collect seeds)	
Areca nut (irrigated)		fungal disease
Surface water and ground water	Increase in irrigated crop area in the follow during summer- large farm families Better income through wages and share cropping – small farm families	

## Drought and livelihood

Family	Livelihood before drought	Livelihood after drought
Total income and sources	Income= 35-50,000 Rs/yr Sheep rearing(35%) Share cropping (20%) Own farm (10%) wages (15)	Income= 60-100,000 Rs/yr Salaries (55%), sheep (25%), own farm(15%), wages (10%)
Investment of surplus	In sheep, purchase land, sharecropping	Bore wells, trade, education

## Response to drought- Gollas

- u Mix of livelihood options as their usual response (prepared before hand)
- u + follow a sequence of options in crisis (crisis planning)

Families	Mix of livelihood options	Coping mechanisms
Small farms	Rainfedfarm + sheep and goat rearing + wage labor + share cropping in irrigated farms + Annual lease fruit trees	Borrow from money lenders + Sell Manure, seeds, trees, fodder, livestock + lease farm + migrate in search of wages and fodder for sheep
Large farms	Rainfedfarm + irrigated crops and trees + govt. contracts + trade + money lending	Borrow from banks + lease rainfedfarm + Use drought benefits + more bore wells

## New responses to a very Severe drought

Consecutive years of drought of 2001 to 2004  
their usual responses were not adequate.  
Several new options were explored and adopted

New options	Extent of adoption	Likely consequences
Permanent migration to Bangalore	50-70 % of young men	•Acute shortage of skilled labor and services, reduction in sheep herd size. •Increase in income and further migration
Large scale sale of cattle and sheep Shift to goats	•Only 10% of the farms have cattle •20 fold raise in goats	•Shortage of FYM, increased dependence on tractors, consider alternative crops to groundnut. •Conflict between farm owners and grazers. High and assured income