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Livestock-dependent Livelihoods at the Forest Interface in Schedule V and Plain/Rural Areas of Telangana and Andhra Regions of Andhra Pradesh

Collaborative Research by CESS (RULNR) and ANTHRA

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Foreword

The Centre for Economic and Social Studies (CESS) was established in 1980 to undertake research in the field of economic and social development in India. The Centre recognizes that a comprehensive study of economic and social development issues requires an interdisciplinary approach and tries to involve researchers from various disciplines. The Centre's focus has been on policy relevant research through empirical investigation with sound methodology. Being a Hyderabad based think tank, it has focused on, among other things, several distinctive features of the development process of Andhra Pradesh, though its sphere of research activities has expanded to other states as well as to issues at the nation level.

The Research Unit for Livelihoods and Natural Resources (RULNR) was established in the CESS in the year 2008 with financial support of Jamsetji Tata Trust. The core objectives of the RULNR are to conduct theoretical and applied research on policy relevant issues on human livelihoods and natural resource management, especially in areas related to river basins, forest and dryland ecosystems and to provide an effective platform for debates on policy relevant aspects for academicians, policy makers, civil society organizations and development practitioners. RULNR intends to adopt a multi-disciplinary approach drawing on various disciplines such as ecology, economics, political science, and social anthropology.

The Present Research Monograph titled "Livestock-dependent Livelihoods at the Forest Interface in Schedule V and Plain/Rural Areas of Telangana and Andhra Regions of Andhra Pradesh", (A Collaborative Study Jointly undertaken by RULNR-CESS and ANTHRA) by Sagari R. Ramdas, S. Ashalatha and M.L. Sanyasi Rao of ANTHRA attempted to look at livestock dependent livelihoods at the forest interface in scheduled V and plain/rural areas of Telangana and Andhra region of Andhra Pradesh. Covering a sample of 690 households in twenty villages of five districts of Andhra Pradesh (Three Scheduled V Districts i.e., Adilabad, East Godavari and Vishakapatnam and Two Plain and Non-Scheduled areas i.e., Medak and Chittor Districts), the study mentions that the adivasis share an all-embracing relationship with the forestscape, which is central to their lives and survival. The forest is not merely a grazing ground for animals, or a place to cultivate food and collect forest produce, medicinal plants and firewood; forests are their home, and are intrinsic to their spiritual and cultural moorings, through which they are connected to their past, presence and future. Within this, livestock is but one element, which defines their relationship with the forests, and by no means, is the central aspect of adivasi lives and livelihoods. In stark contrast, in the "plain regions", a minority community (i.e., shepherds, dalits, lambadas,

etc.) comprising perhaps 20% of the village population, in villages at the forest interface, depend on the forest for their livelihood and survival. The forest grazing system that the adivasis in the Schedule V regions and the pastoralist communities in the "plain areas" have evolved over the years is well marked with distinct parts of the forest being grazed at specific periods during the year, and different animal species preferring particular sections, based on the fodders available therein.

The study also analysed the various government livestock development interventions carried out thus far, and mentions that they are singularly directed towards replacing grazing-based livestock production systems with "stall-fed" systems for high yielding animals. These have failed across the board - be it in Schedule V or plain areas. The State's veterinary health facilities are pretty much non-existent in the adivasi villages, and barely exist in the plain areas.

As a way forward the study mentions that the FRA 2006 (Forest Right Act), which legalises grazing and recognizes the primary role of communities to govern and conserve the forests according to customary practices, holds the seeds of change; it opens up new possibilities for the communities to define and implement their idea of development, including addressing livestock livelihoods. Moreover, the adivasi people of the Schedule V regions, who encompass 60% of the forests of Andhra Pradesh in both Telangana and Andhra regions, are empowered through the PESA to forge their way forward, to protect their forests, and, in turn, their livelihoods.

I hope the findings contained in Monograph and the issues raised in the report will trigger larger debate on the FRA, livestock and livelihood relationship of the tribal and other forest dependent communities. At the same time the material contained in the report will be useful to the implementors of the Act as well civil society groups speaking on behalf of tribal communities and academia interested in understanding the complex issues of forest governance.

S.Galab
Director, CESS

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Acknowledgements

At the very outset, we are thankful to JSTT and RULNR for their financial support for the entrusting the study to us.

We thank all the adivasi, dalit, shepherd, pastoralist, small and marginal farming communities for their wholehearted participation in the conversations concerning their forests and livelihoods.

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We thank CESS for the opportunity of this collective inquiry.

(We dedicate this publication in memory of Ms.Chinnabulli, a dynamic Adivasi Women Leader and Community Researcher, who established the Tholakari Mahila Sangham in Adivasi areas of Hukumpet Mandal, Vishakapatnam district, Andhra Pradesh. She passed away very tragically and suddenly in 2012, at the young age 25).

* * * * *

Chapter - I
INTRODUCTION

1) The Context

The history of conflict between the adivasis, peasants and pastoralists and the State around people's rights to rear and graze their animals in the forests and other non-forest common property resources, dates back to the second half of the 19th century, when the British colonial state extended its laws and models of private property and state monopoly over forests and other natural resources in India. This conflict continued after independence, because the Indian State persisted with identical set of laws and ideologies, pertaining to the governance of forests and other non-forest common property resources, which advocated that people were "encroachers" on this property, and had to be kept out. If at all their presence was tolerated, it was only at the largesse and self-interest of the State. The practices of grazing and shifting cultivation have, in particular, and consistently, been singled out by both pre- and post-colonial State for being ecologically destructive, economically inefficient, and the main enemies of forest and conservation. The State has persisted in taking aggressive steps to stamp out these "pernicious practices". Legislations, policies, and development programs have time and again attempted to delegitimize and criminalize these livelihood practices. It is a testimony to the resilience of the people and their traditional livelihoods, that despite 200 years of the State's attempts to stamp out these livelihood strategies, they continue to survive; and grazing on common property resources (forest, non-forest) and on agriculture fallows, continues to be the single most important means by which livestock (particularly small ruminants) in India obtain their feed and nutrition (Foundation for Ecological Security, 2010).

Conflicts between the adivasis and the State have been critically researched and discussed since the colonial period. However, conflicts between the "maverick" and unruly grazer - whether in the forests or in other non-forest common resources - be they pastoralist, agro-pastoralist, adivasi or peasants, have been less rigorously explored. The opposition to "grazing-based livestock production systems" continues, and in recent history, the State's efforts to police the grazer and banish grazing, has taken different forms, in colonial as well as post-colonial India. That grazing-based livestock production systems continue

to survive is testimony to the resilience of the people and their practice, and their persistent resistance to the State. It has taken over 200 years of people's resistance and movements to force the State to finally recognize "grazing" and seasonal nomadic pastoralism in forests, as legal livelihood practices, under the aegis of the historic Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA, 2006,). This is a huge step forward, and raises new hopes and opportunities of addressing issues related to the governance of the commons - forest and non-forest - in the context of grazing-based livestock livelihoods. This extraordinary legislation, itself an outcome of people's resistance and struggles, unequivocally recognizes communities as integral to the survival and sustainability of the forest eco-system, and aims to undo a historic injustice perpetrated by the State in the colonial period as well as in independent India. The act provides a legal framework for the state to record and recognize the age-old collective and individual rights of the adivasi communities and other traditional forest dwellers to their ancestral homes and habitats in the forests, including the path-breaking recognition of grazing as a legal right. The "negativity" associated with grazing has influenced a host of downward interventions of the state in the name of livestock development, since the colonial period (Satya, 2004). This innocuous-sounding clause in the legislation, we hypothesize, is going to pave the way for profound changes in the governance of forests, as also in forcing the State to wake up and respond to the demands and development plans of the communities for their livestock. The provisions in the Forest Rights Act, 2006, reaffirm the powers of the gram sabha as envisaged in the Panchayats (Extension to the Scheduled Areas) Act, 1996 (Act No. 40 of 1996 - PESA) which pertain to the Schedule V regions, and the powers of the Panchayati Raj Institutions (PRIs) as listed in Schedule II (Article 243), which pertains to all other rural villages, with respect to the governance of village resources[1]. The community rights of FRA, 2006, coupled with the empowering legislations of local governance (PESA and PRI), add strength to the people's movements to challenge fossilized colonial mindsets of the State, which has today dangerously aligned with global corporations, determined to industrialize people's livestock livelihoods, and once and for all, break people's control over their land-livestock-food farming systems.

Anthra and the Centre for Economic and Social Science collaborated on a joint research between April 2010 and June 2011, to explore "how recent forest legislations such as the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA, 2006), which for the first time, legally confirms the rights of the forest-dependent communities (adivasis as also pastoralists) to graze their livestock (cattle,

[1] The villages/study areas which are governed under the Panchayat Raj Act will henceforth be referred to as "rural" or "plain" areas.

buffaloes, sheep, and goats)" in forests", is being used by the adivasis and traditional shepherd/ pastoralist communities to resolve long-standing conflicts around grazing in the forest regions, as also exercise their customary methods of conserving and managing the forests according to their needs. It also aimed to review the government's livestock development programs, plans and strategies in the context of adivasi and other traditional forest-dependent communities in the Schedule V and other forest areas. The research throws light on the strategies for strengthening livestock-based livelihoods at the forest interface.

Objectives of the Study

1. To explore how the FRA, 2006, is being used by the forest-dependent communities both within the Schedule V and non-scheduled (rural/plain) areas of Andhra Pradesh to confirm their community grazing rights as per the act, as also utilize the rights to conserve and manage the forests according to their subsistence needs.

2. To study the traditional and customary forest management practices with respect to utilizing the forests for grazing/lopping/other livestock-related uses and to understand how the communities view the applications of these practices in the context of conservation and management rights that form part of the basket of rights accorded to the communities through FRA, 2006. To understand the potential of the FRA, 2006 to give opportunity for the people to assert their rights, to positively interact, and govern their resources to strengthen their livelihoods, which include livestock.

3. To examine the existing government and other livestock-development interventions, as well as to explore whether they address the ongoing problems related to livestock as experienced by the forest-dependent communities. These would cover issues pertaining to the role of the animal in the livelihoods, breeds, fodder, feeding and watering strategies, disease and health care, markets and asset building, as also their ability to exercise their indigenous knowledge systems.

4. To carry out the above, keeping in mind gender, tribe, caste, and class interactions.

Research Methodology

This study, using participatory approaches, includes a desk study as well as a field study. The desk study entails a comprehensive literature review of existing studies, reports, scientific papers, official government data, etc, based on which a working paper was produced. This is followed by a field study for the collection of primary data, which was gathered from select study sites. The research generated both quantitative and qualitative

data. PRA methods such as focus group discussions, time lines, historical analysis, transect walks, resource mapping, matrix ranking, Venn diagrams, seasonality mapping, problem ranking, etc, were used. Interactions were held with the entire community, ensuring that the perceptions across castes/tribes, class, gender, and age were captured. Interactions were also held with PRIs and other institutions such as Self Help Groups (SHGs), Vana Samrakshana Samitis (VSSs), watershed committees, cooperatives, Adivasi Peoples Organisations, and the concerned line departments (Integrated Tribal Developement Agency(ITDA), Forest Department, Animal Husbandry Department, District Rural Development Agency (DRDA), etc).

Household surveys were carried out to collect specific quantitative data. The data generated was analysed statistically, and also used to triangulate information captured through the group interactions. The household survey consisted of a village schedule and a household schedule. The village schedule captured village-level information about livestock reared across castes, classes and gender, landholdings, cropping patterns, link between agriculture and livestock, infrastructure facilities in the village, government programs, and their implementation. It also captured information on traditional and customary forest management practices and indigenous knowledge with respect to utilizing the forests for grazing/ lopping / other livestock-related uses.

The household schedule gathered household-level information on the family, landholdings, agriculture, cropping patterns, income and expenditure in agriculture, livestock ownership, livestock management, diseases, prevention, breeding, income from livestock, income from other sources, and food consumption. It also explored the knowledge on FRA and how the concerned family used the legislation. Draft schedules were tested in May 2010, and then finalized.

The household-level study used purposive sampling method to study a sample of families that are dependent on the forests, for their livestock-based livelihoods. Families that owned any one type of livestock or poultry were included in the purposive sample for the study. Village-level data of caste, landholding, and livestock holding was also collected from all the villages. There is difference between the entire village data and the sample data, because the sample data specifically looked at livestock-owning households, and their relationship with the forests. The sample is not a representative sample of the entire village. The purposive sample does not represent the distribution across gender, class, and castes. It was to the extent of selecting families owning at least one animal, and those that are dependent on forests for their livelihood.

Ten field researchers[2] from five districts were oriented to the field research methodologies at a two day workshop organized on the 24th and 25th of May 2010. The training team consisted of Mr. R. Nageswararao, Dr. Rambabu, and technical consultant Dr. R. Mallikarjuna Reddy from CESS, and Ms. Ashalatha, and Mr. Sanyasi Rao from Anthra. The field study was conducted between June and August 2010.

Study Area

The field study was carried out in three Schedule V districts (Adilabad, East Godavari, and Visakhapatnam) and two rural districts (Chittoor and Medak); four villages were sampled in each district.

The sites were selected keeping in mind the following criterion:

i) Systems of governance: Governance systems (Schedule V and rural/plain areas) influence and shape the forest-livestock interactions

ii) Forest types:

Adilabad	- Dry Deciduous Forests
Visakhapatnam	- Southern Tropical Moist Mixed Deciduous Forests
East Godavari	- Tropical Dry/Mixed Deciduous Forests
Chittoor	- Dry Tropical Mixed Deciduous Forests
Medak	- Southern Tropical Dry Deciduous Forests

iii) History of conflict: All the regions have recorded history of conflict of communities with the Forest Department regarding access to the forests to graze their livestock

iv) Institutions of governing the forest: Customary forest protection/management systems and/or the presence/absence of Joint Forest Management Committees (JFMCs), known as Vana Samrakshana Samitis (VSSs).

v) Livestock species reared: Variation of species and their dependence on the forests (cattle, buffalos, sheep, and goats)

vi) Communities: Tribes, dalits, and traditional pastoralists. Historical literature reporting the importance of livestock in their livelihoods

vii) Livestock management systems: Migratory, settled, seasonal migration

[2] The field researchers were Mr. Narsimlu, Mr. Apparao, Mr. Shivaprasad, Mr. Abbayireddy, Mr. Nukaraju, Mr. Murthy, Ms. Rajamma, Ms. Murugamma, Ms. Chinnabulli, and Mr. Anand.

viii) Community organization present in the region: The field documenters will be from the local community-based organizations and thus the study will enrich their own work

ix) Village and Household sampling:

- Schedule V areas: Average-sized hamlets with approximately 50 hhs were selected. All the households in the village were included in the study
- Rural/plain areas: Villages at the forest interface, wherein the animals continue to depend on the forests to obtain fodder, were selected. A representative sample of households, which covered all major communities and livestock species were included in the study

Keeping this criterion in mind, 690 households from 20 villages in five districts were surveyed using the household format.

Presentation of Findings

The findings of the study begin with a short introduction to each study district and village. The analysis of the findings begins with the forest interface villages located in the "plain/rural" areas and then the Scheduled V regions. Findings from the plain/rural districts (Medak and Chittoor) are presented first, followed by the findings from the three Schedule V districts (Adilabad, Visakhapatnam, and East Godavari).

In the plain/rural areas and Scheduled V areas respectively, the analysis explores the livestock ownership trends and population dynamics, examining each important livestock species and breed that are reared, and the current role of these animals in the context of people's livelihoods. It then analyses the relevance of grazing in the context of current village livestock production systems and rearing practices, and explores the interactions between livestock and different land categories - forests, non-forest commons (or public lands), private agriculture lands, and fallows. It then studies the changes in land use and their impact on livestock as well as the challenges this has posed to the village community, teasing out the relative impact across landholding categories, castes/communities and specific livestock-owning communities. The analysis then goes on to examine the impact of government programs on grazing-based livestock livelihoods, in terms of whether these have enhanced/ameliorated the challenges experienced by the communities that rear animals at the forest interface. The analysis concludes by exploring the potential of the Forest Rights Act, 2006, as a mechanism for communities to strengthen grazing-based livestock livelihoods, and the implications of this to policy makers who design livestock development interventions and plans. A gender lens is applied throughout the

analysis, to understand the relative impacts on women and men within and across communitie

The final chapter examines the commonalities and differences of the interplay and relationship between people, livestock, and forests of the villages located in plain/rural and Schedule V regions. It discusses community systems of forest governance, and the role of local institutions of self-governance (traditional community institutions of self-governance / gram sabhas in the case of Schedule V regions, and the gram panchayat in the case of rural/plain areas), in asserting rights, utilizing legislations, and pointers to the decentralized community-controlled forest governance, and its implications for livestock livelihoods at the forest interface.

District-level reports are presented in the annexure.
Each district report begins with an overview of the district (location, demography, caste, landholding structure, and major livelihoods).

Land, livestock, and agriculture livelihoods of the study villages are presented, drawing from the village data and sample household data, and describes:

- structure of landholdings
- caste and landholding
- livestock holdings with respect to landholding and caste

The role of different species of livestock (large ruminants, small ruminants, and poultry) in people's livelihoods is discussed with respect to:

(i) Communities that rear the species/breed, and why they are reared by the community;
(ii) Reproductive and productive parameters of the specific animal (where relevant);
(iii) Management, grazing and feeding practices;
(iv) Commonly-occurring diseases that affect the species/breed and health services accessed/utilized; and
(v) Gender roles with respect to the management of the animals are analysed.

A description of customary grazing systems and governance in forests and non-forest commons of the study village follows. The changes in land use in the study villages, over the past few decades, and their impact on grazing-based livestock-rearing practices and production systems is discussed.

The government interventions and programs, which have either directly or indirectly impacted livestock rearing and production systems in the study villages, are assessed with respect to their having been able to address the challenges and problems faced by the village livestock rearers.

The district findings conclude with a discussion on people's awareness of the Forest Rights Act, 2006, and how they have used the legislation to assert their rights to forests with specific reference to collective rights to graze animals in forests. The section also explores the role of FRA in re-addressing hitherto experienced problems and challenges of livestock rearers.

Table 1:Sample Frame & Study Sites

	Districts					
	Medak	**Chittoor**	**Adilabad**	**Visakhapatnam**	**East Godavari**	**Total**
Type	**Plain/Rural**	**Plain/Rural**	**Schedule V**	**Schedule V**	**Schedule V**	**2 Plain/Rural 3 Schedule V**
Mandal	Narsapur Shivampet	KVB Puram Kurbalakota	Utnoor Tiriyani	Hukumpet Paderu	Y.Ramvaram Addateegala	8 Mandals
Villages	4 villages	4 villages 1 thanda 1 village/ mandal	4 villages 2 villages per mandal one with -VSS and one without	4 villages	4 villages	20 villages
Households	183 hhs	140 hhs	127 hhs	120 hhs	120 hhs	690 hhs
Species	Cattle Buffaloes Goats Sheep	Cattle Goats Sheep	Cattle Buffaloes Goats Sheep	Cattle Buffaloes Goats	Cattle Goats	
Migratory population (current)	Shepherds from Medak go on local migration (20-30 km) Shepherds from Mahabubnagar migrate through	Local migration (30 km)	Shepherds from Mahabubnagar and Maharashtra and Rajasthan		Shepherds from Godavari plains Prakasham/ Krishna/ Visakhapatnam	
Community	Dalits Lambadas Gollas Kurmas Muthrajus	Dalits Gollas Kurmas Yanadis	Adivasis Gonds Kollams Nayakpods Pardhans	Adivasis Bhagathas Kondadoras		Adivasis Kondareddys Koyas Kondas Kammaras
Forest Type	Southern Tropical Dry Deciduous	Dry Tropical Mixed Deciduous	Dry Deciduous	Southern Tropical Moist Mixed Deciduous	Tropical Tropical Dry/ Mixed Deciduous	

Chapter - II

Introducing the Study Districts

i) Plain/Rural Areas

A. Medak District

Medak district is located in the Telangana plateau and is a part of the table land of the Deccan, crossed by different ranges of hills, isolated peaks, and rocky clusters all over the district. It lies in the semi-arid agro-ecological zone, with rainfall less than 900 mm. The district is spread over an area of 9,669 km2, of which 9.3% or 905.94 km2 is classified as forests, contributing 1.42% of the states forest. The Forest Department has divided the forest into 233 administrative blocks. The district population is 26.70 lakhs (2001 Census). The district is divided into 3 revenue divisions with 46 mandals. The Manjira river passes through the district, but most of its waters are used to supply drinking water to Hyderabad city, leaving very little for local use. Backward caste communities comprise the majority of the population, with Mudirajs (Tenugus), Kurmas, Gollas, and Gouds predominating. Malas and Madigas are the important dalit castes (Scheduled Castes, or SCs), and Lambadas, Yerukas are classified as Scheduled Tribes (STs).

Small and marginal farmers comprise the core of the farming community. Agriculture, livestock rearing and wage labour are the major livelihoods. Agriculture is primarily rain fed, and dependent on small and medium tanks, and medium irrigation projects like the Ghanpur anicut and Nallavaagu project. A variety of millets, pulses, and oil seeds were cultivated until 20 years ago, in addition to rice sown near village tanks. Between 1990 and 2010, responding to government policies and development plans that have promoted green revolution type agriculture, the farming system has transformed into mono-cropped, commercial, chemical, and pesticide-dependent farming, where farmers have become increasingly dependent on corporations and the external markets for procuring inputs; bullocks replaced by machines, human labour and animals replaced by mechanized harvesters; local traditional seed varieties replaced by hybrid seeds; reduced applications

of natural animal manure and increased use of chemical fertilizers and pesticides in response to declining animal populations; and bore well irrigation in place of the sustainable and intricate network of village tanks and open-wells. The major crops cultivated in the district today include paddy, maize, jowar, green gram, red gram, groundnut, sugarcane, and vegetables like chillies and onion. Cotton is cultivated in some parts of the district. High indebtedness of farmers, with the rise of farmer suicides has characterized the district. Land under current fallows stood at 1.92 lakh hectares (19.8% of the total area) during 2007-08. Cultivation of jowar registered a steep fall from 1990-91 to 2007-08 (-60%). Red gram cultivation has almost remained steady in the district, indicating a marginal increase during the period 2007-08. Maize cultivation expanded from 65487 hectares to 1.04 lakh hectares, in direct response to the growth of commercial industrial poultry farming in the district.

Study Villages

The study was carried out in four villages, two in Narsapur mandal (Gudemgadda and Nallavalli) and two in Jinnaram mandal (Gummadidala and Maddur). The study villages are located at an average distance of 60 km from Hyderabad city. Jinnaram mandal has several agro-chemical and pharmaceutical companies, which were established in erstwhile common lands that belonged to different village panchayats. Gummadidalla village has several factories located within its village boundaries, and at the same time has an extremely large small ruminant population, which is dependent on the nearby forests of Narsapur, which come under the Narsapur forest range. The village has a long history of shepherds organising to protect their forest resources and their grazing rights, and thus, was selected as one of the study villages.

B. Chittoor District Chittoor district is located in the southernmost part of Andhra Pradesh, between 12?37 and 14? northern latitudes and 78?30 and 79?55 eastern longitudes. Based on topography and agro-climatic information, Chittoor can be broadly divided into two major agro-eco zones. Eastern Chittoor receives a normal average rainfall of 1100 mm per annum, with almost all of it being brought by the North-East monsoons (Oct-Dec). Western Chittoor has an average elevation of 2000-3000 feet, and is classified as semi-arid - with an average rainfall of 700 mm per annum; most of the rainfall is received by the South-West monsoons (Sep-Oct). As one proceeds from east to south-east, there is a gradual decline in elevation - most of Eastern Chittoor lies a little above sea level. The major soil type in western Chittoor is red soil, with the natural vegetation being dry deciduous tropical forests. In eastern Chittoor the major soil type is red loamy. Eastern Chittoor is characterized by dry evergreen and deciduous natural vegetation species. The average ground water level in both eastern and western Chittoor is 300 feet. In eastern Chittoor, two blocks have been declared 'dark areas', where there has been

over 85% exploitation of ground water. The district is spread over an area of 15152 km2, of which 29.8% or 4520.18 km2 are classified as forests, contributing 7% of the state's forest area. The Forest Department has divided the forest into 184 administrative forest blocks.

Chittoor is administratively divided into three divisions (Madanapalle, Chittoor and Tirupati), and 66 mandals, covering 1540 revenue villages in 1394 gram panchayats. Of the total land available for cultivation, land under crops was 351686 hectares, and current fallows are 114881 hectares (year); 119598 hectares of land is under food crops, 228418 hectares is under oil seeds, of which 218762 hectares was under groundnut. The other major crops grown in the district include rice, sugarcane, tomatoes, sunflower and beans. Agriculture in Chittoor is primarily dependent on seasonal rains and traditional tanks. In recent years, there has been an explosion of tube wells, which is increasing each year. The gross area irrigated is 167681 hectares and the area irrigated more than once a year is 36282 hectares. A total of 110975 electric pumps and 9073 diesel pumps are being used. The district has some irrigation projects which irrigate a gross area of 180 acres. Livestock have been equally important in Chittoor district, which boasts of the world-renowned dwarf-sized Pungunur breed cow and Hallikar cattle, as also the largest population of cross-bred cows in Andhra Pradesh. In the early 1980s, Chittoor was renowned nationally for having the most dynamic dairy cooperative movement and vibrant women's dairy cooperatives, which collapsed by the end of the nineties, with the countries policies to liberalize the dairy sector The Holstein Friesans and Jerseys of Chittoor district, continue to be the mainstay of dairy production. By the mid-nineties, the dairy cooperatives were forcibly dismantled through government policies, which simultaneously facilitated the emergence of private dairies, which today dominate the dairy markets of Chittoor district. Chittoor too has witnessed a transformation of its agriculture, which was dominated by rain fed millets, pulses, and oil seeds. Similar impacts of green revolution, as witnessed in Medak District, are observed in Chittoor district. The castes in Chittoor district include Dalits (SCs Malas, Madigas,), STs (Yanadis), BCs (Gollas, Kurubas, Palegars, Chakalis, Vadderas, Medaris, Kummaris, Pallireddys, Valmikis, etc.), and OCs (Reddys).

Study Villages The study villages in Chittoor district include Mandyamvaripalle and Galetivaripalle in Kurabalakota mandal, situated near the Horsely hills forest beat of Madanapalli forest block, Moriskandriga (situated near the Aare forest beat of Putturu forest block.), and SL Puram (situated near the Kalathur forest beat in Tirupathi forest division) in KVB Puram mandal. The latter two villages lie adjacent to forests and hills of the Tirupathi forest division, located in eastern Chittoor.

ii) Schedule V Regions

C. Adilabad District

Adilabad district is located at 19.67° N latitude and 78.53° E longitude, at an average elevation of 264 metres (866 feet). It derives its name from the erstwhile ruler of Bijapur, Ali Adil Shah, and was carved out of a sub-district named Sirpur-Tandur in 1905. The district has hot summers, which can reach 46 C in May. December is the coldest month with temperatures ranging from 8-15 C. The average rainfall is 1157 mm, and increases from the south-west towards the north-east. About 85% of the rainfall in the district is received during the monsoons. Adilabad occupies an area of 16105 km², of which 44% (7231 km²) is notified as forest area, contributing 11% of the total forest area of the state. It is administered by the Forest Department in 235 forest blocks. Forests are of tropical dry deciduous type. About 50% of the district comprises forests, and there are two tiers of vegetation. The top tier consists of Teak (*Tectona grandis), Nallamaddi (Terminalia alata), Chirmanu (Anogeissus latifolia), Bijasal, and Jilledi Musti. The lower tier consists of Usiri (Emblica officianalis), Maredu (Aegle marmelos), Modugu (Butea monosperma), Sarapappu (Buchanania oxillaris)*, Bamboo, etc. The mineral deposits of the district include coal, iron ore, and hematite. Bamboo from the forests is a major source of raw material for the Sirpur paper mill at Sirpur Khaghaz Nagar, which was established in 1938. The main rivers flowing through the district are Godavari, Penganga, Pranahita and Kadem. The total population in the district is 2479347 (2006 Census) - males outnumber females in the ratio 1000:980. Scheduled Tribes form 18.54% of the population and dalits form 16.74% of the state's population; about one-third of the population comprises adivasis and dalits. The district has 52 mandals and 1743 villages, with a predominantly rural (73.52%) population. Adilabad has an average literacy rate of 44.7%, which higher than the state average of 37.8%; about 57% of the males and 43% of females are literate. Furthermore, 20 mandals, which are the homelands of indigenous adivasi people, are notified as Scheduled V. This district has the largest adivasi population compared to other districts. Gonds, Kolams, Pardhans, Mannevars, Thottis and Nayakpods are the main forest-dwelling adivasi communities inhabiting the district, while Lambadas, who were originally nomadic pastoralists, also comprise a significant proportion of the STs in Adilabad. Kolams and Thottis are recognized as Primitive Tribal Groups (PTGs). The non-ST population comprises OCs (Vellamas and Reddys), BCs (Perakas, Gollas, Kapus, etc), and dalits. Adivasi livelihoods are entwined with the forests, including agriculture and livestock rearing. Black cotton soils predominate the region, and the net sown area in the district is 534961 hectares (35.4%), which is less than the state's average of 40.2%. The extent of land under non-agricultural use is 60673 hectares (11%) and permanent pastures and grazing lands form 14234 hectares (2.5%) of the

total land area. The major crops cultivated are jowar, paddy, cotton, wheat, maize, chillies, sugarcane, and soya bean. Livestock are extremely important for livelihoods of the people - both adivasis and non-adivasis in Adilabad. The trends in the district for the past 20 years clearly show that the livestock population across all species has increased.

Study Villages

The study was carried out in Laxmipur/Lachuguda and Lohekothaguda villages of Thiryani mandal and Kamayipet and Ghanpur villages of Utnoor mandal. Laxmipur/ Lachuguda village belongs to Ginnedari panchayat. It falls under Ginnedari forest beat of Thiryani range in Bellampally division. Lohekothaguda lies in Kannepalli panchayat and is located in the Morriguda forest beat of Thiryani range, Bellampally forest division. Kamayipet village is a part of Laxetpet panchayat, Utnoor mandal, in Shyampur forest beat, Utnoor range,Adilabad forest division. Ghanpur village is in Ghanpur panchayat, Utnoor mandal, located in Ghanpur forest beat, Utnoor range of Adilabad forest division. Ghanpur is a Gond village, Kamayipet a Kollam village, and Laxmipur a mixed village with predominantly Gond adivasis.

D. Visakhapatnam District

Visakhapatnam district lies between 17 15 N and 18 32 N latitudes and 18 54 E and 83 30 E longitudes. The district is bounded by Orissa State and Vizianagaram district in the north; East Godavari district in the south, and Orissa State and the Bay of Bengal in the east. The district consists of two distinct geographic divisions: the coastal plains, and the hilly Eastern Ghats, flanking the north-western portion of the district, also known as the "Agency Division". The Agency Division, which is the Schedule V region in the district, consists of hills with an altitude of about 900 meters dotted by several peaks exceeding 1200 metres - the Sankaram forest block tops with 1615 metres altitudes, and embraces Paderu, G. Madugula, Pedabayalu, Munchingput, Hukumpet, Dumbriguda, Araku Valley, Ananthagiri, Chinthapalli, G.K. Veedhi, and Koyyuru mandals. The Sileru River flows through the region and has been tapped to generate power. The plains division does not exceed an altitude of 75 metres, and is watered and drained by the Sarada, Varaha and Thandava rivers. Administratively, the district is divided into 3 revenue divisions and 43 mandals. BC and dalit communities predominate the plain division. The Agency Division is home to adivasi people, and the major tribes include Bhagathas, Kondadoras, Nukadoras, Kondhs, Mannedoras, and Gadabas. Dalits constitute 7.60% of the population and adivasis form 14.55% of the population. About 20.02 lakhs or 52.25% of the total population are literate - male literates constitute 69.7% while female literates comprise 50.1%. The literacy rate in the district is 60%. The district receives an average annual rainfall of 1202 mm. About 69.9% of the villages in the district have red loamy soils, which are poor textured and easily drained, while 19.2% of the villages have

sandy loamy soils. The adivasi homelands are also regions rich with mineral deposits of bauxite, apatite (rock phosphate), calcite, and crystalline limestone. Bauxite deposits in Sapparla, Jerrila and Gudem of G.K.Veedhi mandal are considered to be the largest in the country, and their proposed mining is being stiffly resisted by the adivasis, who do not want their homelands to be violated and mined. The total geographical area of the district is 11.34 lakh hectares. Of this, 30.5% is arable area while 42.1% (44211 km2) is classified as forest area, and is administered under 188 forest blocks, contributing 7% of the states forests. The forests are of moist and dry deciduous type. The common tree species include Guggilam, Tangedu, Sirimanu, Kamba, Yagisa, Nallamaddi, Gandra, Vepa, etc, while bamboo shrubs are sparsely scattered. Agriculture is the major livelihood in the district and the major crops cultivated are paddy, jowar, red gram, green gram, black gram, horse gram, cow pea, etc; while in the adivasi villages, we still find a diverse cropping of millets, pulses, and oil seeds. Coconut, banana and mango plantations are also grown, and since the past 25 years, cashew plantations have rapidly replaced dry land crops such as pulses and millets particularly in the coastal plain regions. In the adivasi hill regions, the ITDA and development programs have aimed to promote coffee plantations in place of food crops that are cultivated under shifting cultivation regimes on the hill slopes. Animal husbandry differs vastly between the coastal and adivasi regions of Visakhapatnam district. The total district livestock population is 12.02 lakhs, with 2.14 lakh bullocks, 3.10 lakh milch animals and 4.06 lakh small ruminants.Buffalo dairying and backyard poultry is important in the plains. Fishing is crucial for the fishing communities living in 59 villages along the 132 km long coast spread across 11 coastal mandals. In the Schedule V adivasi areas (the focus of our study), the cattle are reared as work animals, for manure, and as a source of meat; followed by goat rearing, backyard poultry; pig rearing is also extremely important.

Study Villages

The study was carried out in two villages each of Hukumpet and Paderu mandals. All four villages are located in the Paderu forest division. Shobakota and its hamlet Godibiri in Shobakota Panchayat located in the Sukuru forest beat were studied in Hukumpet mandal; and Badimela and Olloyi villages located in the Paderu forest division were studied in Paderu mandal.

E. East Godavari District

East Godavari district was formed in 1925 when the old Godavari district was divided into west and east districts. In 1959, the Bhadrachalam revenue division which included Bhadrachalam and Nuguru Venkatapuram taluks of the East Godavari district were merged into Khammam district on grounds of geographical contiguity and administrative viability. East Godavari district lies on the north-east coast of Andhra Pradesh and is

bound on the north by Visakhapatnam district and Orissa state; on the east and south by the Bay of Bengal, and on the west by Khammam and West Godavari districts. The geographical area of the district is 10807 km2, out of which 29.85% (3232 km2) constitutes forest areas, contributing 5% of the state's forests - the forests are administered by the forest department under 161 forest blocks. About 60.98% of the district's geographical area is irrigated and cropped; the major flora of the forest includes bamboo, *karaka, maddi, vegisa, chintha, musidi, kakkitha, parimi, thumma, kunkudu, usiri*, etc. Geographically the district includes the hilly Eastern Ghats located towards the west, and the plains to the east, bordering the Bay of Bengal. The climate is comparatively moderate throughout the year from April to June, when temperatures touch 48 C. The normal rainfall in the district is 1280 mm. Godavari, Pampa, Thandava and Yeleru are the main rivers flowing through the district. East Godavari district has a total population of 5151549, with 2569419 males and 2582130 females. East Godavari District, with its lush paddy fields and coconut groves bordering the coast, is known as the rice bowl or rice granary of Andhra Pradesh, and agriculture is the primary livelihood for the people living in the plains. The district consists of 5 revenue divisions, viz., Kakinada, Rajahmundry, Peddapuram, Rampachodavaram and Amalapuram. The district has 60 mandals and 1011 gram panchayats, of which 7 mandals are designated as Schedule V, also known as the "Agency Areas". In the Schedule V regions, forests are integral to the people's livelihoods: agriculture, livestock, and other forest livelihoods. The important adivasi tribes are Kondareddys, Koyadoras and Kondakammaris.

Livestock rearing is very important for people living in both Schedule and plain areas. In the plain areas, dairying is a key source of livelihood; while bullocks are kept for agriculture and some communities' rear Red Nellore breed sheep and goats. In the Scheduled V areas, the major livestock reared are local cattle, goats, and backyard poultry, which play a key role in agriculture, income generation, as well as the culture.

Study Villages

The study was conducted in 2 villages each from Rajavommangi and Y.Ramavaram mandals. Pulusumamidi village and Musilimetta hamlet of Dalipadu panchayat in Y.Ramavaram mandal fall under the Vedullakonda forest beat of Kakinada forest division.

Musilimetta is a hamlet of Dalipadu village. The two villages Kimmalagadda and Ammirekula in Baradanapalli panchayat in Rajavommangi mandal are located in the Veyyada forest beat of Rajavommangi range, Eleswaram sub-division, Kakinada division.

Chapter - III

Forest Interface Villages in Rural/Plain and Schedule V Areas

There is a crucial difference between the village-forest entity of the adivasi villages situated in the Schedule V regions and the villages in the rural/plain areas - or areas that are not governed by the Schedule V of the Constitution of India.

The majority of the Schedule V villages are located in the midst of forests[3], surrounded by forests on all sides. The customary boundary around a village demarcates one village from another, and includes forests within the village boundary perimeter, as depicted in Figure 1. The neighbouring villages share customary boundaries that are not water-tight compartments, but are porous with clear governance and sharing mechanisms that exist within and between villages. Hence in reality, these villages are not at the edge or interface of the "forest", but are nestled inside the forest, which forms an integral element/resource within the village limits. These forests, which lie within the customary boundaries of the village, according to the Forest Department's lexicon, are either Protected or Reserved forests.

The villages of the "plain areas" such as those in Medak and Chittoor districts, are located at the periphery of the forests, and truly fall in the category of "villages at the forest interface". The customary boundary of the village may or may not include forests within their traditional village "*polimera*", or limits. Several years ago, these villages too probably had forests within the village customary boundary. However, today, large tracts

[3] The categories of "forest" have to be understood through "customary lens" and official lexicon. The Forest Department (FD) has notified areas as forest, and in AP, there are only two categories, namely Protected or Reserve Forests. The FD has the power to notify new areas as forest, and denotify other areas, albeit following a set of procedures which includes having consultations with communities living in or near these forests, before any land area is notified or denotified. Most often than not, such consultations with people never occurred. The people on the other hand have their own understanding of what constitutes a forest, and have an inherited use of the term. There are several academics who have documented how vast tracts of land were notified of forests, despite the fact that their traditional use was, for instance, as grasslands and pastures; and this was done to extend their control over the land (see Sarin, Madhu). In this paper, when we refer to forest, it is used interchangeably to denote "official categories" as also people's categories. We specify the difference.

of erstwhile village forests and other non-forest commons have disappeared, and the majority of these villages are indeed at the forest interface. In this context, several villages collectively share and have access to a common forest expanse. Villagers, cutting across the chain of villages located at the interface of this "common forest", utilise the forest to graze livestock, and collect firewood, medicinal plants, and forest produce (see Figure 2). Most of these forests are officially classified as Reserved forests.

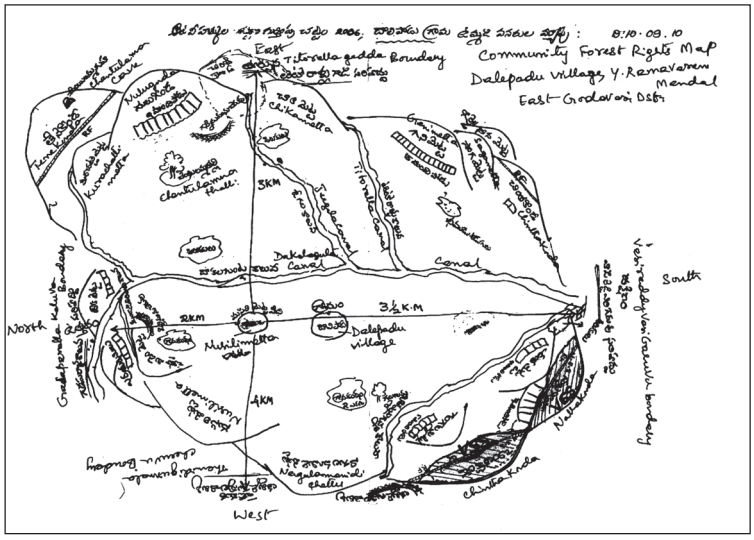


Figure 1: Dalipadu/Musilimetta villages surrounded by forests, and includes forests within customary boundaries

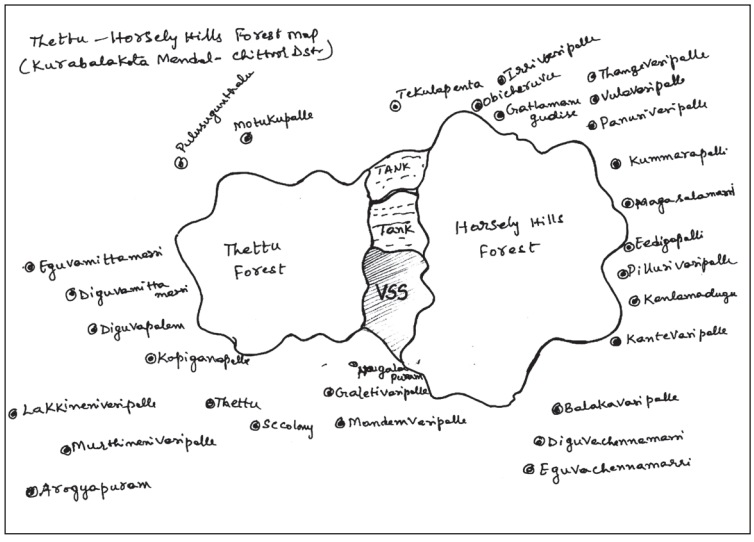
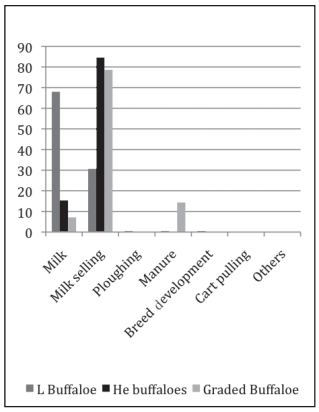


Figure 2: Villages located on the periphery of Thettu and Horsley Hill Forests

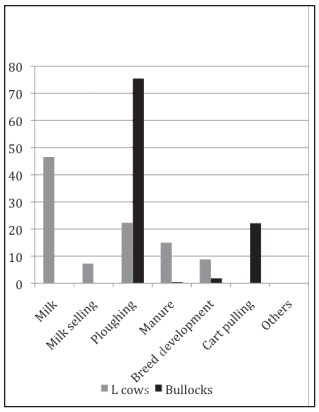
3.1. Forest Interface Villages in the "Rural/ Plain Areas": Medak and Chittoor -Trends Observed, Community Response, and Potential of FRA, 2006

3.1.1 Traditional grazing-based livestock production systems that continue to dominate

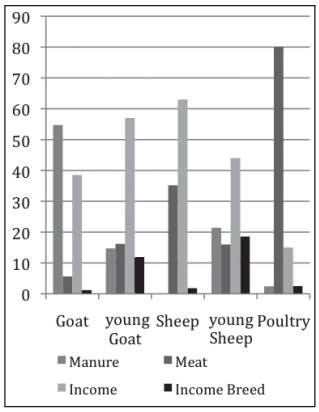
The study lucidly demonstrates and reaffirms that livestock (large and small ruminants) and backyard poultry, continue to be a vital component of people's livelihoods in the villages of the "rural/plain areas" that are located at the forest interface, particularly for the landless, marginal, small farmers, and traditional pastoralists. The animals have historically been reared under grazing-based systems, which have continued largely unchanged, despite all the restrictions imposed by the State as well as the forest department through the years. Indigenous cattle are critical for agriculture (manure, draught animals, transport) - local buffaloes are the mainstay of dairying in Medak, cross-bred cows are the main milch animals in Chittoor, and sheep and goat are reared as a crucial source of income in both districts. Hallikar cattle, Nellore sheep, local goat breeds, and Kalahasthi poultry are the key breeds reared in Chittoor district. Buffaloes are reared in eastern Chittoor (KVB Puram), but are virtually non-existent in western Chittoor (Kurbalakota). The native breeds of Medak district are indigenous cattle, Pandharpuri type buffaloes, the woolly Deccani sheep, and Osmanabadi goats. Some communities in Medak district also rear donkeys and pigs.



Graph 1 Purpose of Rearing Buffaloes - Schedule V



Graph 2 Purpose of Rearing Cows and Bullocks

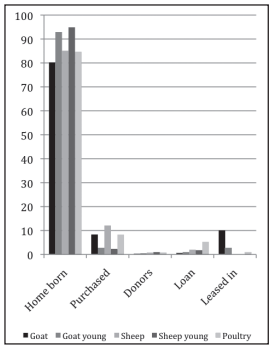


Graph 3 Purpose of Rearing Sheep and Goats - Schedule V

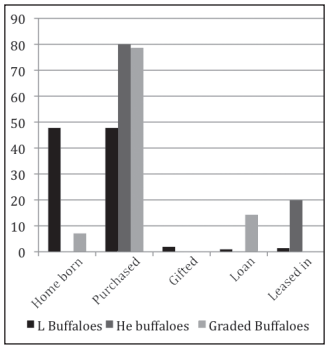
The caste system, rather than the presence of "forests" per se, continues to strongly influence livestock-rearing patterns in these villages located at the forest interface. In Chittoor district, powerful castes (Reddys/Kapus) and BC farmers with irrigated landholdings that exceed 4 acres, commonly own high-yielding Jersey and Holstein Friesen cows. Similarly, in Medak district it is the landed irrigated households that own greater numbers of buffaloes. Further, shepherding, with sheep and goats, largely continues

to be the domain of the traditional shepherding castes - the Gollas and the Kurumas, while the Lambadas/Banjaras, who were an erstwhile nomadic pastoralist community, are the principal cattle breeders in Medak, breeding and selling work-bullocks to local farmers; the traditional Erukula communities of Medak rear pigs; the marginal farmers and landless agricultural labourers across different castes, rear goats; and the dalits continue to own proportionately much fewer animals, and the number of dalit families owning animals is proportionately much smaller compared to the other communities and castes. Whilst the study villages in Chittoor district did not have dalit families, the dalits who live in the neighbouring villages, owned relatively more animals than the dalit communities of Medak district, where a mere 20% owns indigenous buffaloes/cattle and goats. The discrimination evident with respect to dalit livestock ownership is a caste issue, as also one that revolves around land ownership. Owning a respectable piece of agriculture land continues to be a distant dream for several dalit families. A critical pre-requisite for owning livestock is owning sufficient private agriculture lands, along with unlimited access to common lands. The village studies elucidate how a large number of dalit families that once were proud owners of cattle and/or goats, sold their animals due to the loss of the commons.

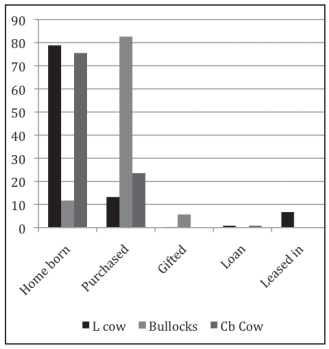
The study demonstrates that in plain area villages the local cows and buffaloes are mostly home-born / bred, while bullocks are primarily purchased or leased-in. Cross-bred cows are home-bred, purchased, or taken on loan. Local buffaloes continue to be home-bred, whilst the graded Murrah buffaloes are primarily purchased or acquired through loans. Sheep, goats and poultry are primarily home-bred. It is clear that people continue to control the genetics of all their animals, except the graded buffaloes.



Graph 4 Mode of Acquisition of Sheep and Goats - "Plain Areas"



Graph 5 Mode of Acquisition of Buffaloes



Graph 6 Mode of Acquisition of Local Cows, Bullocks, Cross-breds

The study reconfirms that land ownership is directly correlated with bovine ownership - with the landless possessing least numbers of large ruminants.

Women in these production contexts in every community, play a key role in agriculture and livestock rearing. They perform most of the labour-intensive activities such as cleaning the animal sheds, cleaning the animals, feeding and watering animals, collecting fodder, milking the animals, caring for the young calves, lambs and kids, and nursing sick animals. Moreover, poultry is managed completely by women. In KVB Puram Mandal, Chittoor district, women also graze the sheep and goats, whilst in Kurabalakota mandal, Chittoor District, as well as in Medak district, men primarily graze the sheep and goats, and women largely graze the animals when the men are indisposed. In Chittoor district, women graze the cross-bred cows when the men go out to work go out to work.

Large ruminants are marketed (sold and purchased) in weekly animal markets, where brokers assist the buyers and sellers in negotiating the deal. Sheep and goats are predominantly sold to traders or neighbours, and the transactions occur at the goat/ sheep shed. In Medak district, milk is sold to the local traders who come to the village, milk the animal and sell the milk in nearby towns or in Hyderabad. In Chittoor district, the farmers primarily sell milk at the dairy milk collection centres established by private dairies such as Agri-gold, or Balaji dairy, which is affiliated to the National Dairy Development Board (NDDB). The Balaji dairy milk collection centre is supposedly managed by women groups of the Indira Kranthi Pathakam Program and the District Rural Development Agency (DRDA).

Communities in both regions, report a decline in indigenous cattle, goat and sheep populations, with an increase in the population of buffaloes in Medak district and cross-bred cows in Chittoor district, as compared to 30-40 years ago. This decline is due to a reduction in the number of families owning cattle, sheep and goats, as well as in the average number of animals owned per family. Women report an increase in workload in managing crossbred cattle. Several agricultural families in the plain areas have sold their cattle and bullocks, and are ploughing with tractors. Similarly, a number of traditional shepherding communities have sold their sheep and goat flocks and are now entirely dependent on agriculture. The critical factors that have influenced the decision to sell their livestock includes disappearing grazing grounds, shortage of labour to graze animals, a shift to intensive agriculture, shift of cropping from mixed food crops to commercial cash crops, and an overall enhanced need for cash, which is partially fulfilled by selling the animals. The increase in the number of buffaloes and cross-bred animals is due to the overall macro-economic "dairy" pull factor.

3.1.2 Livestock dependence on access to forests, non-forest commons, private agriculture fallows, and crop residues

To meet fodder and water requirements, the livestock are seasonally herded and grazed in the non-forest commons, forests, harvested agriculture lands, and private agriculture

fallows. The relative dependence of an animal species on a particular resource varies seasonally. Villages have established special arrangements amongst themselves, to accommodate the practice of animals from one village, grazing in the common property resources that fall within the jurisdiction/boundary of another village.

Indigenous cattle derive their nutrition during the summer and winter months by grazing on non-forest commons, harvested agriculture fallows, crop residues (millets, pulses and oilseeds) and, to a lesser degree, on forests. The diet is also supplemented with lopped tree fodders. In the monsoons, the cattle are grazed in the forests, non-forest commons, and fallow agriculture lands. The farmers also collect naturally available grasses and other herbage from common and private lands to feed their animals. Bullocks and milch animals are fed concentrates when they are used for work (in the case of bullocks) and when they are milked (in the case of milch animals). Buffaloes are grazed primarily on non-forest commons, fallow private lands, and are fed with crop residues and concentrates (in the case of milch animals). Interestingly, the cross-bred cows, which everyone assumes would be stall-fed, are also grazed!

The goats primarily derive their nutrition from forests, other non-forest fallows as well as lopped tree fodder and fruit. Sheep are similarly grazed, but are less dependent on the forests as compared to the goats. In Medak district, small ruminant owners (shepherds) either pen or fold their sheep/goats on farmers' fields, and in return for manure, the farmers pay the shepherds/pastoralists in kind (mostly grain). Elderly shepherds of Medak district recall how their sheep would be in the forests through the year, without being penned in permanent animal sheds. However, this practice has virtually stopped, due to the diminishing forests. In Medak district, the shepherds lease Acacia trees from the farmers during February-March, and enjoy exclusive rights to lop the Acacia pods to feed their goats and sheep. They either pay the farmer in kind or in cash. In Chittoor district also, the small farmers and shepherds, enter into a lease and rental arrangements with landowners within their village or in neighbouring villages, and pay the owner a rent for a period of 4-6 months in exchange for exclusive grazing rights. In both districts, there exists a traditional practice, where shepherds lease their animals to another shepherd to graze, and in return, the "lessor" and the "leaser" share the offspring on a 50-50 basis, as long as the leaser herds the animals.

Earlier, in Medak district, the villages had a practice of appointing a *"jangidi"*, a person responsible for grazing the cattle and buffaloes of the entire village. Dalits prominently played this role. Livestock owners paid the jangidi a monthly fee for each animal grazed[4]. However, this system of collective grazing is now on the decline, and one increasingly

[4] In 2011 for instance, the rates for grazing and herding the animals was Rs.100 per cow or adult buffalo.

finds each family making its own arrangements to graze its stock. In fact, the breakdown of this system of community grazing has been a key reason why many families have sold their livestock. In Chittoor district, each farmer grazes his/her large ruminants. In both districts, about 4-5 sheep or goat rearers usually join together and graze their animals, thereby sharing labour as well as strength in numbers/size. The pregnant sheep/goats are often fed with concentrates such as the husk of pulses and oil seeds.

Forests continue to be the primary resource that sustains and supports livestock in villages at the forest interface. The community has precise names to identify watering holes, grazing spaces, spaces rich in medicinal plants, and other locations in the forest. Cattle and goats are grazed more frequently in forests, as compared to sheep and buffaloes. Forests are also important as a source of herbal medicines for shepherds, farmers and healers. In Kurbalakota mandal, Chittoor district, the shepherds and farmers feed their sheep, goats and cattle with a cocktail of medicinal herbs each month, and sometimes increase the frequency during the monsoon months. This acts as an excellent preventive, and protects the animals from a range of diseases. In Medak District, each shepherd and farmer - particular the elderly men and women - are a repository of knowledge about healing animals with herbs. In addition, there are specialised healers who treat more advanced disease conditions.

Forests are also vital seasonal grazing grounds for the migratory pastoralist communities. In Medak district, migratory shepherds from neigbouring districts (Mahabubnagar) seasonally graze their sheep in the Narsapur forests. They seek permission from the villages located on the periphery of the forest to pen their animals near the village as well as to graze their flocks. In Kurbalakota mandal, Chittoor district, cattle owners from villages located roughly 20 km away from Horsely Hills migrate to the forests during the summer months to graze their animals.

Age-old arrangements between villages with respect to the use of the "commonly used forest space" continue to sustain, with animals grazed in different parts of the forest, in distinct seasons. Conflicts around grazing and using the "common forest" have rarely occurred, except during the period of the Forest Department-imposed VSS regime, which began in the mid-1990s.

3.1.3 Declining grazing spaces and the industrialisation of agriculture: key challenges to livestock livelihoods at the forest interface, particularly impacting dalits and shepherds

Common lands (forests and non-forest) have been under tremendous pressure in both Medak and Chittoor districts, as a result of government policy decisions. Village non-forest commons have drastically reduced over the years as they were diverted due to the following changes:

(i) Common lands were distributed under land reform programs to landless families

(ii) Common lands were given to industry

(iii) Real estate boom in the last decade

In the last decade, there has been a spate of sales of private agriculture lands, which were purchased by real-estate dealers, with the boom in real estate and land speculation. These lands have been fenced-in; and this has deprived animals of land for free grazing. Private agriculture lands have traditionally never been fenced, and in the past, animals have grazed on such fallow agriculture lands. In Chittoor district, the similar phenomena of common lands being distributed or "assigned" to landless families under land reform programs has also occurred. Likewise, during this last decade, rich urban-based industrialists have purchased and fenced-in the lands (for example, the lands fenced-in for setting up a mango juice processing factory in KVB Puram). Chittoor continues to have substantial acres of non-forest commons, which in official parlance, are known as "revenue lands", and are administered by the Revenue Department. Chittoor district has also witnessed the diversion of smaller quantities of agriculture lands for non-agriculture uses and real estate, compared to Medak.

In Medak district, pharmaceutical and agro-chemical factories established on village common lands not only resulted in reduced common grazing spaces, but have also polluted village soils and water bodies, posing an additional threat to livestock; the factories blatantly violate all pollution control norms. In spite of protests from the villagers, the industries in nexus with powerful sarpanches and corrupt government officials, who are paid off, suppress any attempts to punish the polluting industries. In essence, the polluter "pays" and continues to pollute. Many animals have died after consuming polluted water and fodder.

The ultimate irony is that the commons have disappeared, because the State chose the safe option of distributing common lands to the landless families including Dalits, in lieu of land owned by landlords. The latter cleverly evaded land ceiling laws by registering the land in the name of different family members. A common space to graze animals is critical for small landowners, who cannot feed their animals through the year from their small holdings - this is a luxury enjoyed by large landowners whose animals graze on the owners' agriculture fallows.

The study reinforces not only the well-known factor of persistent disparities in land ownership between upper castes and dalits, but also the visible disparity in livestock ownership that exists between dalits and other castes, with a miniscule number of Dalits owning animals.

Industrial agriculture is gradually replacing traditional agriculture practices in these villages,

which has directly impacted livestock livelihoods. Cropping patterns have shifted from traditional food crops (millets, pulses, and oil seeds) cultivated under mixed-cropping patterns, to mono-cropped commercial cash crops such as cotton, commercial maize used as animal feed, sugarcane, and exotic vegetables; and this has aggravated the fodder crisis during the summer months. These commercial crops yield very little, if any, crop-residue, resulting in an overall decrease in the total volume of crop-residues available for the animals during the summer months. In recent years, the complexity of the situation has been further compounded by the increasing use of "Combined Mechanized Harvesters" to harvest paddy. The paddy is harvested at an inappropriate length, too long to be grazed on in the field, and too short to be stored as paddy straw, resulting in a drop in the availability of paddy straw. Farmers burn the standing paddy straw to prepare the field for the next sowing season, instead of feeding the straw to animals.

Livestock grazing in forests faced imminent threat with the advent of the Joint Forest Management (JFM) Programs implemented by the Forest Department in the mid-nineties. The Forest Department formed Vana Samrakshana Samitis (VSSs), in the JFM villages, which were directly controlled by the Forest Department. The VSS instigated by the FD, declared blanket bans on forest grazing, and were particularly harsh on goats. Severe grazing restrictions resulted in several families, especially the economically poorer families dependent on goats, to sell their goat flocks. This endangered their food and livelihood security. Further, the livestock rearers were excluded from JFM micro-planning processes. Forest interventions carried out during the JFM years, such as raising mono-plantations of Eucalyptus and Pongamia, and coppicing and clearing undergrowth, compromised the fodder base of the livestock. The VSS restricted the access to forests for the livestock from their own village as well as from the neighbouring villages. In both districts, the communities identified the VSS and JFM programs as the most important recent event that destroyed, damaged and disrupted their traditional customary systems of grazing, and livestock livelihoods. In both districts, the people recalled and reported instances of being threatened, abused, fined, and harassed by the VSS committee members and forest department officials.

The first round of loss of commons, namely the loss of non-forest commons distributed as private landholdings under land reforms resulted in a decline in cattle and sheep populations (herd sizes), as also a decline in the total number of households/families owning cattle and sheep. This was exacerbated and aggravated by the decline in crop residues and the emergence of the real-estate business by mid-2000. The forestry interventions, in particular, the JFM program and plantations of the mid-nineties, severely impacted the goats and indigenous cattle populations, and several households had to either sell off their goat flocks or reduce their goat flock size.

Whilst some households succumbed to the pressure and sold out, there were an equal number of families that resisted the onslaught on their livestock livelihoods, and protested against the draconian restrictions imposed by the VSS and the forest department. The resistance was in the form of shepherds getting organized and united to resist the FD: the shepherds stopped paying fines and fees and continued to graze their animals in the forests despite threats (Medak and Chittoor districts); while some decided to "pay and graze" (Chittoor district, Kurbalakota mandal), and yet others staged rallies and protests and refused to be bullied into submission (Medak district). The protests and resistance by people, coalesced and became a part of the larger movement and struggle for recognition of rights in forest led by the adivasis; this movement emerged simultaneously across Andhra Pradesh as well as India.

In both districts, the primary challenge faced by livestock rearers - large and small ruminant owners, is the severe scarcity of grazing spaces and the declining fodder and water sources. The scarcity of grazing spaces is a direct consequence of the declining common lands. The changes in cropping patterns aggravate the fodder shortage during summer months.

3.1.4 Government Livestock development programs aggravated people's problems

The third major challenge is the absence of government schemes and loans, which the farmers can access to purchase livestock of their choice, in order to meet their livelihood needs.

The study shows how the government's livestock loan programs for farmers come with a rider: the farmer is compelled to buy a so-called "high-yielding" breed, which is supposedly superior to the local indigenous animals. The study revealed that in all such instances, the high-yielding animals proved to be a complete disaster, and far from benefitting the beneficiary, pushed them into further indebtedness and hardship. The burden also fell on women, whose responsibilities and workload increased with the highyielders.

For instance, during the early part of the 2000s in Medak District, Red Nellore rams were distributed to shepherds in all the four study villages through a government-development program, resulting in the dilution of the pure Deccani breed that is native to the region, and created a "mixed Deccani* Nellore sheep breed". The resulting cross-breed ended up being highly prone to diseases, particularly respiratory problems, and the shepherds incurred higher expenditure on sheep health care; this negated the supposed gains derived from a faster growing and heavier breed.

A similar example from Medak District occurred in 2008-09, when the so-called "high-yielding buffaloes" were distributed under the Pashukranthi Program. In three of the

study villages, 12 women, who were members of the IKP women's SHGs, received Pashukranthi loans, which had to be utilized to purchase graded Murrah buffaloes. The terms under the Pashukranthi program, debarred the women from purchasing local buffaloes, which was their preferred choice. All the 12 women belonged to the dalit (SC) and BC communities. The study revealed that 50% of the graded Murrah animals either died or were sold off within the first year of their purchase. The women sold the animals, as they were unable to meet the fodder, water and health demands of the graded Murrah breed.

Another instance of the inappropriateness of so called "high-yielding" breeds came to light from SL Puram Village of Chittoor District. Five women, members of the Indira Kranthi Pathakam (IKP) Self Help Group (SHG), received loans from their SHG, which they utilised to purchase Jersey cows. Two women sold the animals, as they could not afford to feed the high-yielders. The remaining cows showed a huge decline in milk yield. However, despite their enterprises running at a loss, the three women continued to rear the cows, because they were receiving cash.

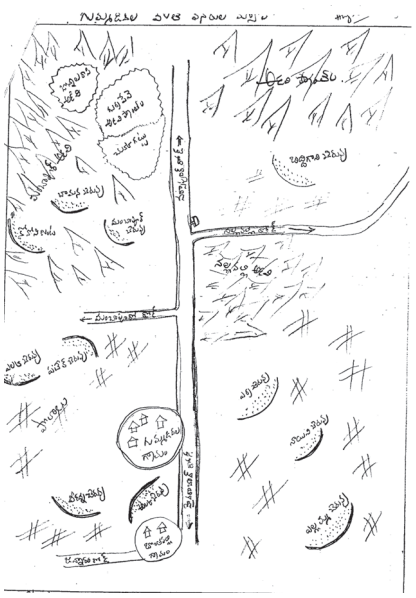
Thus, the absence of useful credit sources for farmers to purchase local indigenous breeds of animals is a major factor limiting the rate of replacement of the animals once sold.

The crisis in milk marketing, and the collapse of cooperative milk marketing mechanisms, has severely affected dairy farmers in Chittoor district, who are at the mercy of the private dairy companies. The existing price they receive from private dairies and Balaji dairy does not cover their cost of production. On the other hand, the milk marketing situation in Medak district, where the farmers sell their milk to local traders from their own village, is more equitable and fare. Here, the farmers have a greater role in deciding/ determining the milk price, which they negotiate with the trader, thus ensuring that they receive a "critical milk price" for their produce (the critical milk price is the price that covers the farmers' cost of production).

A weakening government veterinary health delivery system adds to the woes of the farmers. The government veterinary hospitals are located 3-5 km away from the villages: Government veterinary doctors, livestock assistants, and government-trained gopalmitras (animal health workers), are available at these hospitals. The sheep and goat are dewormed twice a year, subject to the program being sanctioned by the state animal husbandry department. Vaccinations for large ruminants (Haemorrhagic Septicemia (HS), Black Quarter (BQ), Foot and Mouth Disease (FMD)) and small ruminants (Peste du Peste Ruminants (PPR), Enterotoxemia (ET), Sheep pox, and Hemorrhagic septicemia (HS) are stocked but the animals are vaccinated only in the event of a reported disease outbreak, and not as a matter of course. As both Chittoor and Medak are "border districts" sharing

state borders with Karnataka and Tamil Nadu (in the case of Chittoor), and Karnataka (in the case of Medak), animals are vaccinated twice a year under the National FMD eradication program. Anthrax is endemic in Chittoor district, and the department vaccinates animals, based on the occurrence of reported out-breaks. Artificial Inseminations (AI) services and fodder seeds such as PC 23, Guinea grass, and Napier grass are also available at the government veterinary hospitals. The shepherds and farmers of Medak and Chittoor districts, have begun to exercise their rights as citizens - demanding vaccinations prior to the seasonal occurrences of diseases, reporting diseases to the veterinary department, demanding services from the government vets, as also strategically using the media whenever they find that the government is slow to respond to their demands.

Box 1: The Case of Gummadidala village



Shepherd organize to resist losing their customary rights to graze in forests: The Case of Gummadidala village 27 shepherds, belonging to the traditional pastoralist Kurma and Golla community, live in Gummadidala village, Medak district and are completely dependent on their sheep and goats for their livelihood. Traditionally these shepherds have grazed their animals in forests that are surrounded by over 13 villages including Mambapur, Nathyanapalli, Nallavalli, Suraram, Kondapur, Narsapur, Laxmapur, Mangampet, Domadugu, Dacharam, Anantharam, Nawabpet and Bonthapalli. Livestock of these other villages have also been grazed in this one common forest. The shepherds seasonally graze their animals in different parts / locations within the forest. For instance during the rainy and winter seasons shepherd tend to move towards that part of the forest which is closer to village Natyanapalli and Mambapur. They use other parts of the forest only during a sever drought period, or to quarantine their flocks when there are diseases outbreaks. Shepherds lop tree fodders like Yegisa (*Pterocarpus marsupium*), Dirisena (*Albizia lebbeck*), Billa godisa (*Cleistanthus collinus*), Panchatakam (Fluegea virosa), Gotte (Zyziphus xylopyrus), Pariki (Zyziphus oenoplia), Chandrugu (Acacia chundra), Maddi (Terminalia alata), Danthe(Maytenus senegalensis) and Illintha (Diospyrus chloroxylon), and these are found at different times of the year in different parts of the forest. Shepherds of Gummadidala identify that customarily they have had grazing rights to about 200 acres of forests which lie adjacent to Mambapur village, and another 150 acres near Nathnayapalli village. In return for grazing their animals in these forests, the shepherds have traditionally gifted a lamb to these 2 villagers during each of the important village festivals like Peerla pandaga, Pochamma pandaga, Durgamma pandaga, Ellamma and Peddamma panduga. Gummadidala shepherds recall how in the 1960's, they used to pay a grazing fee (Rs 10 per goat, 25 paisa for a sheep, and Rs 1 for a cattle/

buffalo) to the forest officials but after some years this stopped. The shepherds had co-existed and lived peacefully with the other villages, till the formation of the VSS committees in Mambapur and Natnayapalli in 1994-95. The Natyanapalli VSS was supported by NABARD and the Mambapur VSS by the World Bank, and continued to receive support under CFM. The forests which were "allocated" to these VSS's were "regenerated" with plantations of Eucalyptus, Pongamia pinnata, bamboo, amla, teak, and some herbs such as sathavari and lemon grass. None of these species save bamboo had any fodder value at all. From the mid-nineties to around 2006, shepherds suffered immensely as they were completely prevented from grazing their animals in the forests. The Forest guards and VSS committees accused them of destroying the forests. The shepherds fiercely contested this. Shepherds were very forthright in their observation that the most palatable fodder species are still abundantly available. The VSS plantations worsened the restrictions. The VSS committees, heavily influenced by the Forest Department, gradually began to behave extremely cruelly and were encouraged by the department to demand hefty fines from the shepherds- which could go up to Rs 1500 or in kind in the form of a sheep/ goat from each flock, whenever it entered the forest. In early 2006, the Nathyanapalli VSS committee stopped goats from entering the forest, beat up the young goatherd and prevented him from returning home with the animals. Several goats were badly injured when the committee members went on a rampage beating up the goats, who ran helter, skelter. They refused to allow the animals or the goatherd to leave till they paid a fine. The issue got resolved only when the Gummadidala Panchayat along with activists of the local shepherds sangham, intervened and resolved the conflict by reminding the Nathyanpalli VSS committee about the historical customary relationships between the villages. The frequent disputes and harassment from the VSS, resulted in 11 of the 27 shepherds (40%) selling their goat flocks and 3 others halved the size of their goat flocks (Table 11). Of those who completely sold their goats, 4 shepherds shifted to sheep rearing, while the remaining became "non-owners". The pre VSS small ruminant population in the village consisted of 650 sheep and 1450 goats, which virtually reversed by 2004 to be about 1300 sheep and 700 goats. However in the midst of the sales, 7 shepherds defiantly purchased goat flocks and grazed them.

3.1.5 The potential of FRA, 2006 to defend traditional grazing rights and to open up new avenues to strengthen grazing-based livestock livelihoods

Livestock rearers in the study villages of both districts are aware of the Forest Rights Act, largely due to the advocacy and campaign work carried out by shepherd sanghams and civil society groups such as Anthra. The shepherd sanghams took the initiative and sensitized other livestock keepers in their village and neighbouring villages about the new legislation. The District Level Committees (DLCs)[5] and Sub-Divisional Level Committees (SDLCs) of these two districts made no effort to spread awareness about the act amongst the local citizens, such as the adivasis and other traditional forest dwellers living adjacent to forests, who could benefit from the new legislation. They also made no effort to instruct villages located adjacent to forests, to set up Forest Rights Committees at the level of gram sabha/ gram panchayat. The efforts of the local citizen groups resulted in shepherds and other livestock rearers taking the lead to map their traditional forest

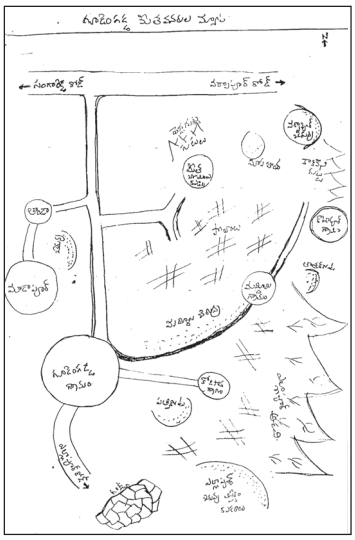
[5] DLC and SDLC are committees set up to implement the FRA. The District Collector chairs the DLC.

grazing locations, water bodies, and other forest uses. They sensitized their sarpanch and gram sabha to initiate the process of preparing and submitting community claims for recognizing traditional grazing rights in the forests.

The Thettu and Kurabalakota village panchayats of Kurabalakota mandal, Chittoor district unanimously passed a resolution that the panchayats would initiate the process of claiming community forest rights, using the FRA, 2006. Village volunteers particularly from the shepherd community, mapped and listed out the villages within their panchayats, which depend on the Horsley Hills and Thettu forests. The volunteers assisted each village/ hamlet, which continues to depend on the forests, and created their own forest resource maps, carefully noting down all the different uses (grazing, watering, and collection of forest produce and medicinal plants), and locations within the forest, which are traditionally visited. The panchayats then submitted all the resource maps with one consolidated Community Claim using Form B, to the SDLC, in March 2011. When several months passed without any communication from the SDLC, the panchayats sent a reminder letter to the District Collector, who is also the chairperson of the DLC, whereby they described the steps taken by the gram panchayats thus far, to record their customary practices, enclosing a copy of the resolutions passed and the claims. They requested the Collector to inform the SDLC to respond to their claim. The Collector sent a letter to Thettu and Kurabalakota panchayats that they should set up a Forest Rights Committee in each hamlet/village and remap/resubmit the community claims, prepared by each hamlet/village. In SL Puram, of Chittoor district, the local people's sangham sensitized the the Yanadi adivasi community about their rights to the forests under FRA, following which all the 53 Yanadi households submitted claims for individual titles. However, a mere 24 families received pattas/titles, and only for a fraction of the area originally claimed. The villagers are now mapping their traditional customary forest use, and preparing a community claim, which includes their traditional grazing routes. Similarly, the livestock rearers of Moriskandriga village learnt about the Forest Rights Act from the shepherd's sangham, and stopped paying grazing fines to the Forest Department in 2008. The villagers set up their own Forest Rights Committee in November 2011, and mapped out traditional grazing and watering routes/spaces in the forest, with a view to submit their community claim.

The shepherds of Chittoor district pointed out that despite the new FRA legislation, which clearly gives constitutional legality to grazing in forests, the Forest Department officials persist in harassing the shepherds to pay the annual fine. The shepherds stopped paying the fees once they became aware of their rights through FRA and have also set into motion the process of filing claims for grazing rights using the FRA. However, the threats and harassment have not abated. Similarly, the shepherds of the Medak district

too have initiated the process of "formally" claiming grazing rights in the forests.



However, the shepherds of Medak and Chittoor districts argue that the Forest Department's complaint that goats and cattle have destroyed forests is baseless and unacceptable because the animals continue to find a diverse basket of fodders in the forests. The Chittoor case study is particularly interesting, because the Forest Department's efforts to stop grazing has actually only been a process of granting permission to graze on payment of fines. Once the grazing fines were paid, the animals continued to be grazed, and the shepherds have not noticed any decline in the diversity of fodder in the forests. If the FD is concerned about forests being harmed by livestock, then how does the "pay to graze system" prevent forest destruction?

What emerges from the analysis of both districts is that livestock continues to be extremely important for the livelihoods of the communities on the margins. Despite changes in land use, cropping patterns and several attempts by the government departments (animal husbandry and Forest Department) over the years to replace grazing-based livestock systems with stall-fed systems, grazing-based livestock systems continue to dominate. The landless, small and marginal communities that own cattle, sheep and goat, depend on the forests to graze their livestock, and wherever they have encountered restrictions on their access, they have resisted, and continued to practice their historical customary practices - of using the forest to feed their animals. Women play a significant role in grazing animals in forests, along with men, which has made them equally active in resisting the restrictions on their access to forests. The traditional systems have built into them systems of sustainable forest use and conservation. For example, specific parts of the forest are grazed during particular seasons, by different animal species; and these practices are strictly adhered to.

The landless, small and marginal farmers and shepherds, express a strong preference for indigenous breeds. It is interesting that even in a district like Chittoor, which is known for its cross-bred cow population as the mainstay of dairying, preference is given to taking even the cross-bred cows out to graze. It is perhaps only the large farmers with resources such as land, water, capital and labour, who manage their animals under "stall-fed" intensive systems of production. The major challenges faced with respect to livestock-rearing are related to the limited availability of fodder - particularly during the summer

months, and diseases. The situation is further aggravated by government programs to replace hardy local indigenous breeds, with so-called "high-yielding" improved breeds. However, these improved breeds are seen to be capital-intensive, resource- intensive, and more prone to diseases.

The FRA is being used by the community as a weapon to assert its traditional customary rights, and those communities that depend on forests to graze their animals, and are highly aware/knowledgeable about the legislation. The awareness is largely due to the efforts of people's organizations and civil society groups; the State machinery has virtually abdicated its role in actively spreading awareness about the legislation to the people. In doing so, they have failed to challenge the powerful Forest Department, whose powers stand to be curbed with the effective implementation of the legislation. The government officials are actually extremely ill-informed about the provisions and scope of the legislation, and their confusion results in wrong interpretation of the law, and allowing the diktat of the FD to dominate. As they are confused, it is much more convenient for them to allow the terms to be dictated by the FD, (falling into a comfortable pattern that has existed thus far), and they quietly acquiesce. The FRA has the potential to open up the "legal space" for communities at the forest interface to rear their animals without fear, and to involve the process of sustaining diversity of the forests by applying their own traditional knowledge and practices. The latter is possible because through FRA the communities have the legal right to involve in the conservation of forests. The study villages have not yet formally begun to discuss conservation plans, the seeds of which are located in their own traditional knowledge and practices.

3.2 Forest Interface Villages in Scheduled V Areas: Trends Observed, Community Response, and Potential of FRA, 2006

3.2.1 Traditional grazing-based livestock production systems sustain

Livestock and poultry rearing are an integral component of the adivasi forest-based livelihood systems, with virtually every family owning one or the other animal, and backyard poultry reared by each family. The household data shows that a significantly higher proportion of families in the Scheduled V villages that are surrounded by forests, own livestock as compared to families living in "plain area" villages that are located at the periphery of forests (Table 2)

Table 2: Details of Livestock Owning Households in Schedule V and Plain Areas

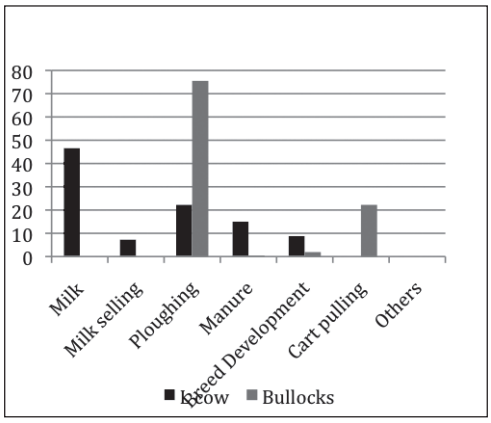
Livestock Type	Schedule V Villages		"Plain Areas" / National Sample Survey Oranization (NSSO)	
	Hhs Owning Animals	% of Hhs Owning Animals	Hhs Owning Animals	% of Hhs Owning Animals
Local Cows	245	66.8	96	29.7
Cross-bred Cows	5	1.4	83	25.7
Bullocks	330	89.9	164	50.8
Total Cattle	345	94.0	250	77.4
Local Buffaloes	17	4.6	86	26.6
Graded Buffaloes	1	0.3	10	3.1
Milch Buffaloes	12	3.3	89	27.6
He Buffaloes	8	2.2	3	0.9
Total Buffaloes	26	7.1	91	28.2
Total Bovine	351	95.6	285	88.2
Goat s	158	43.1	103	31.9
Sheep	10	2.7	59	18.3
Small Ruminants	163	44.4	134	41.5
Pigs	0	0.0	4	1.2
Poultry	263	71.7	169	52.3
Total Households	367	100.0	323	100.0

Source: Sample household data.

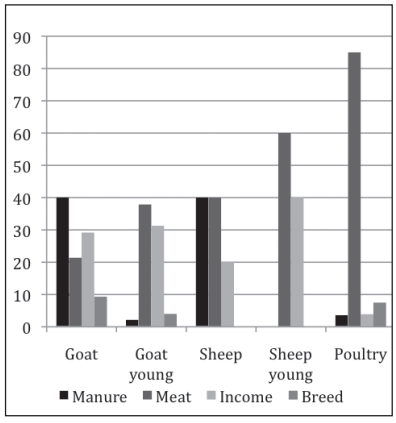
About 94% of the adivasi households own cattle as compared to 77.4% of the households in the plain area villages; 67% of the adivasi households own indigenous local cows, as compared to 30% of the households in the plain area villages; and amongst bullocks, 90% of the adivasi households own bullocks compared to a mere 50% of the households in the plain area villages. The population of cross-bred cows is negligible in the Schedule V areas, clearly demonstrating that the adivasis do not prefer such breeds; buffaloes are rarely owned by the adivasis in the Schedule V areas; goats are owned in both adivasi and plain areas, and this reflects the innate ability of goats to survive under a wide range of agro-ecological conditions; sheep ownership is negligible in adivasi areas, as compared to the plain areas; while poultry ownership too is higher amongst the adivasi villages (72% compared to 52% in the plain areas).

In the study villages, it appeared that the Gonds in Adilabad, Kondareddys in East Godavari and Bhagathas of Visakhapatnam district, owned more cattle and goats than

the other tribes of the districts. The livestock reared by adivasis in Adilabad, Visakhapatnam, and East Godavari districts are indigenous breeds of cattle, goats, and backyard poultry. Some adivasi families in Adilabad District also rear buffaloes of the Nagpuri breed. Though milk has never been traditionally consumed, and dairying has never been an intrinsic livelihood for the adivasi communities, the adivasis recently began to rear buffaloes in districts like Adilabad. Cattle are important - as a source of manure, draught animals, a source of income from the sale of bullocks, and a source of protein for the Koyas in East Godavari and Kondadora adivasi communities of Visakhapatnam, who consume cattle meat. Goats and backyard poultry are important sources of nutrition, a source of income from the sale of young kids and poultry birds, and extremely important for all adivasi cultural celebrations and festivals.



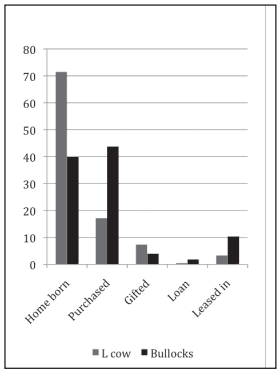
Graph 7: Purpose of Reading Cows and Baffalows- Schedule V Areas



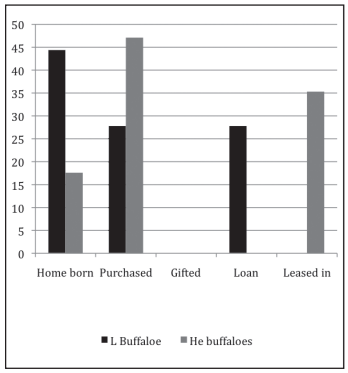
Graph 8: Purpose of Reading Goat and Poultry - Schedule V Areas

The local breeds of cattle are small in size and suited to the hilly forest terrain. The goats are also of local breed, with the distinct dwarf breed Kanchu Mekha of East Godavari District, standing out for its high fecundity. The adivasis of East Godavari rear the majestic Aseel poultry breed and its strains; while the adivasis of Visakhapatnam and Adilabad districts rear their own local varieties of poultry. Dairying and shepherding are culturally and economically insignificant for the adivasi economy and way of life. Cows, goats, and poultry in adivasi areas are mostly home-bred, or leased; and very few are purchased or obtained through loans (Graphs 9,10,11). Bullocks are home-bred and purchased/leased-in. Buffaloes are home-bred and acquired through loans. The sheep in the adivasi areas are primarily purchased or acquired through loans. This information revalidates the livestock-rearing practices of the adivasis which are centred on breeding cattle (cows), goats, and poultry.

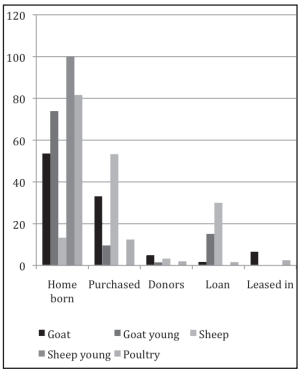
adivasis in all the three districts have witnessed the decline of cattle and goat populations in their villages. In adivasi villages, the decline is linked to the decline in the average number of animals reared by each family, and not because of the declining number of families that maintain livestock. The adivasi farmers in Adilabad district also reported an increase in the number of buffaloes in their villages. The community believes that the decline of cattle population is due to the growing fodder and water shortage faced during the summer months; interestingly, they also link it to the growing pressures for "cash", which forces them to sell their animals and convert these assets into money. Their need for money has spiralled in the last decade, primarily to meet rising expenditures for food, healthcare, education, as well as due to the great pressure to "save" when they are members of SHGs. The adivasi community has been under pressure from the government to shift away from subsistence food farming to cash crop production (both food and non-food), which has compromised food security at the household level as well as the fodder security for animals during summer months. Government development interventions and investment over the years have actively and aggressively pushed towards transformation from food to commercial crops: cotton and soya bean replacing jowar in Gond villages of Adilabad, and cotton replacing dryland millets and pulses in East Godavari District. Similarly, the coffee, rubber and Jatropha plantations raised by the Forest Department and ITDAs on Adivasi podu lands in Visakhapatnam and East Godavari districts have destroyed food farming cycles, and truncated traditional grazing cycles.



Graph 9: Mode of Acquisition - Schedule V Areas



Graph 10: Mode of Acquisition of Buffaloes - Schedule V Areas



Graph 11: Mode of Acquisition of Sheep and Goats - Schedule V Areas

The adivasi women are central to adivasi agriculture, livestock and forest livelihoods. Women graze animals, and also take care of the young and sick animals. Further, women are entirely responsible for backyard poultry, and are highly knowledgeable about traditional herbal remedies, though majority of the animal healers are men.

The adivasis of East Godavari district have learnt to minimize diseases by emphasizing prevention based on improving fodder availability through reverting to cultivating food crops, rather than commercial non-food crops, and regularly using herbal remedies for prevention and cure.

The cattle, goats and poultry are predominantly traded (bought and sold) in the village. Individual farmers buy and sell animals amongst themselves, while traders visit the villages to purchase animals/birds. Weekly cattle markets exist at the mandal headquarters in Visakhapatnam and Adilabad districts. The farmers feel that the small traders at the cattle market, who help negotiate transactions between the seller and buyer, play a constructive role. Hence, the adivasi farmers do not mind paying the traders a fee to assist the seller and buyer in completing their sales transactions. Poultry are often brought along to the weekly market and sold to buyers. In Adilabad district, milk is sold in the villages, and occasionally traders purchase milk and sell it to tea shops and hotels in nearby towns.

While not an objective of this study, the study brought out that despite various constitutional safeguards and protections to prevent land alienation in the Schedule V regions, non-tribals, who own and cultivate land, continue to reside in the Schedule V regions, violating state legislations such as 1/70 Land Transfer Regulation Act, 1970.

3.2.2 Adivasi customary laws of forest governance shape grazing practices

Forests are the spiritual, cultural, economic and social basis of adivasi life and livelihoods, and livestock is an integral component of this vast and complex canvas. Grazing in forests is the primary means by which animals obtain their nutrition in all the adivasi villages. There is a definite system of forest governance for grazing, where animals are grazed on different hillocks and parts of the forest at different times of the year. Forests are also crucial sources of herbal medicines, which support the traditional healing practices that are widely prevalent and used extensively to prevent and treat most animal diseases.

The traditional adivasi institutions of governance, such as the panch in Adilabad and gotti in East Godavari and Visakhapatnam districts, continue to play a dynamic and authoritative role in the decision making around forest governance, including grazing. There is a living customary law, which defines relationships between neighbouring villages with respect to sharing and accessing forest resources lying within each others' customary boundaries. It is this unwritten law for instance through which everyone in the village (from the eldest to the youngest) knows that livestock are permitted to graze in the forests within the boundaries of the adjoining village. This knowledge is transferred across generations through the aegis of practice as also through the traditional institutions of governance such as the Gotti/Panch.

The system of labour to graze animals differs between the districts. The adivasi villages of Visakhapatnam district have a unique tradition of grazing animals through labour sharing that sustains to date. Ten families in a village pool their animals, with five families taking responsibility to graze the animals for one week. Each of the five families designates one person to be part of the "herding team". The other groups of five families similarly contribute labour for the following week. Families that cannot contribute labour make a small monetary contribution. In Adilabad district, a person called Jangidi collectively grazes all the animals, except plough bullocks, with each family paying him a certain amount per animal per month. In East Godavari district, on the other hand, each family grazes its own livestock. Further, in East Godavari and Adilabad districts, the animals are grazed under supervision from June to December when there are standing crops in the fields. Between January and May, the animals graze unattended on standing crop-residue in the harvested fields as well as in the forests.

The adivasi villages of East Godavari and Visakhapatnam districts report that seasonal migratory shepherds visit their forests to graze animals during certain time of the year. Shepherds from the coastal parts of East Godavari district migrate with their sheep and goats to the study villages in East Godavari district soon after Dussehera (October), and leave the area in May/June. In Adilabad district, shepherds from Mahabubnagar and the neighbouring states of Maharashtra and Rajasthan visit the villages with their sheep flocks from June till November. Villages in both districts report another aspect/component of customary law of forest governance, where the visiting shepherds are expected to seek permission from the concerned adivasi *Gotti* / *Panch* / gram sabha, before entering the community forests of the village. The village elders discuss the terms for the shepherds to graze their animals in their forests. The elders designate the areas where the sheep are permitted to graze. They deny permission if sheep are sick, or revoke permission in case the visitors destroy the forest in any way. In Adilabad district, the shepherds are additionally expected to donate a goat kid to the adivasi gram sabha. Further, the migratory shepherds also placate the forest officials by paying them in kind - with a goat kid - in case the guards prevent them from grazing their animals. If the shepherds do not listen to the adivasi decisions, clashes occur, especially as the shepherds tend to exert their power over the adivasis. This is particularly evident in Adilabad district, where certain shepherds from Rajasthan have chosen to remain in the district without returning home.

3.2.3 Government "development programs" are the biggest challenge to adivasi livestock livelihoods and disrupted customary forest governance

The government's development programs have been formulated on the premise and an underlying assumption that the adivasi economy and way of life - be it their relationship with forests, adivasi agriculture, or livestock production - are "backward", non-viable,

un-economical, "technologically under-developed", and "ecologically harmful"; and thus need to be replaced by investing in programs that will "wean them away from pernicious practices", and earn them better cash and income. Replacing *Podu*[6] with plantations, subsistence food production with cash crops, and indigenous breeds with stall-fed cross-breds, is the recurring theme of all development interventions, reverberating through the social forestry programs of the eighties, the IFAD agriculture development programs and the World Bank's JFM and SHG programs of the nineties, and the NREGS and other private plantation initiatives of the 2000s.

The government's Joint Forest Management program implemented by the Forest Department in all the adivasi study villages was found to be the primary factor that resulted in large-scale disruption of traditional forest governance systems including grazing traditions. The JFM brought with it expansion of plantations which were raised on forest lands that were a part of the traditional shifting cultivation cycle of the village. The plan to "rehabilitate" shifting cultivation lands through the JFM program, was one in a series of identical attempts in the past, made by the government, to force the adivasis to stop their traditional system of cultivating food. Such initiatives included social forestry programs in the 1980s and the IFAD program in the 1990s, through which plantations were raised on adivasi homelands.

In Kamayipet village, Adilabad district, for instance, the adivasi farmers' rights to graze in the forests were under severe threat, after the formation of the village Vana Samrakshana Samitis (JFM committees) under the JFM program. Kollam adivasis also lost their podu lands, which were forcibly taken over by the VSS to be "regenerated". The VSS, under the diktat of the forest department, raised plantations in the forests, and restricted the cattle and goats from grazing in the forests and drinking water from the Theppalamadugu Pond, the lone perennial source of drinking water for all animals, and a particularly important source that meets the water needs during summer months. The adivasis in Adilabad district began to experience severe shortages of fodder and water in summer, when cotton and soya bean replaced the traditional maize and jowar crops.

In Kamayipet village, the IKP sanctioned loans for IKP- SHG members to purchase 25 graded Murrah milch buffaloes and one breeding bull. These animals were purchased from Undi in Krishna district. At the time of the study, 10 animals had died or were sold, while the rest under-performed. The milk collection centre, which was established by the IKP after the buffaloes were purchased, was subsequently shut down. A Bulk Milk Chilling Centre was established in Gadalpalli village near Laxmipur (Adilabad district) and managed by the IKP, but had closed down at the time of the study.

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[6] The term used in Telugu for shifting cultivation

The VSS of Shobakota and Badimela villages, Visakhapatnam district, raised plantations of silver oak and coffee, which was also planted on private lands. Grazing was restricted in these forest areas. In Shobakota village silver oak was planted on 250 acres; and in 2006, coffee was planted in 144 acres of forest, involving 85 families. Each family was allotted one acre, and was allowed to harvest the produce from that area. However, some of the plants died and the families did not earn anything from this intervention.

The World Bank, which funded the JFM program, subsequently financed a Rehabilitation Action Plan (RAP), to compensate for the loss of land incurred by the adivasi families under the JFM program. Through the RAP, 18 households in Shobakota village, whose podu lands were amalgamated under the VSS, were given Rs.25000 each to purchase animals. Two households purchased a pair of bullocks, two households purchased Jersey cows, while the remaining 14 households purchased sheep and goats.

In 2008, in Musilimetta village, East Godavari district, the Integrated Tribal Development Agency (ITDA), responsible for the welfare and development of the adivasis, raised Jatropha plantations on 55 acres of land. Further, in 2009, rubber plantations were forcibly raised on people's lands by the ITDA - The ITDA threatened to withhold NREGS wages unless the people agreed to plant rubber saplings on lands, where they usually cultivate food crops.

Programs such as the JFM that aimed at replacing shifting cultivation with plantations and food crops with cash crops were found to be the major factors that contributed to food insecurity and fodder scarcity. Food insecurity pushes people to depend on external markets for purchasing food, which means they often sell animals to obtain cash - the sale of animals is higher than the replacement rate. Comparably, programs that persuade the adivasis to shift to "high-yielding animals" and dairying were also observed to be an utter failure. The adivasis demand loans to purchase local indigenous cattle and goat breeds. However, these demands are rarely met, and most credit sources come with a rider that these are to be used only to purchase "high yielders", and families that wish to improve their livestock asset base find it nearly impossible to obtain loans to purchase indigenous cattle and goats.

The adivasis point to the combination of all these factors as having triggered the emergence of new animal diseases such as Peste Des Petits Ruminants (PPR) in goats, which never existed in the region. The traditional herbal remedies are unable to effect a cure for these new diseases, and the government veterinary facilities are few and located about 8 to 30 km away. Even the one veterinary hospital, which is situated a kilometre away from an adivasi village in Adilabad district, has neither a veterinary doctor nor any facility. Vaccinations are a rarity, and are only carried out when local adivasi people or people's

organizations pressurise the animal husbandry department to deliver; this is illustrated by the efforts of the adivasi organization Girijana Deepika in East Godavari district, which has pro-actively mobilized vaccinations for cattle, goats and poultry, whenever required.

It is evident that the so-called development programs implemented by the government are the root cause of livestock-related problems experienced by the adivasi community!

The adivasis have never meekly submitted to the VSS and other plantation programs that have threatened to disrupt their traditional governance systems. They protested in several ways: The majority ignored the diktat of the VSS and continued to graze animals, despite some families who sold the animals. The adivasis in Musilimetta Village, for instance, dug up and removed all the rubber plantations, once they realized the duplicity of the government agency, which had bullied them to raise plantations against their will and against the law[7].

In East Godavari and Visakhapatnam districts, we find that despite all efforts by the government to persuade the adivasis to stop shifting cultivation, forgo food crops, and switch to cash crops, the adivasis have continued to practice shifting cultivation in their territories, and continued to cultivate a diverse variety of food crops, which yield crop-residue for their animals. This holding on to food crops, and shifting cultivation systems, can also be interpreted to be a form of resistance. Shifting cultivation production systems conserve and sustain diverse crop varieties, which in turn contribute to food sovereignty and livelihood security. They also are a part of the larger customary forest governance systems and customary laws.

All the adivasi villages were a part of the larger mobilization that was triggered across the state and the nation, and eviction orders were issued by the Ministry of Environment and Forests in 2002. This mobilization grew into the larger struggle for rights in forests.

It is observed that there is a high level of awareness amongst the adivasis in all districts (Table 3), and in the study villages regarding the Forest Rights Act, and this was used to secure individual and collective rights to forests. State-level adivasi people's organizations such as the Adivasi Aikya Vedika, and the local district-level adivasi sanghams have played a key role in spreading the information and creating awareness about the legislation, and how it is to be used for securing the recognition of rights. In all the study villages, the adivasi farmers, who are cultivating lands in the forests, have applied for individual pattas, including those adivasis who lost their lands under the VSS regimes.

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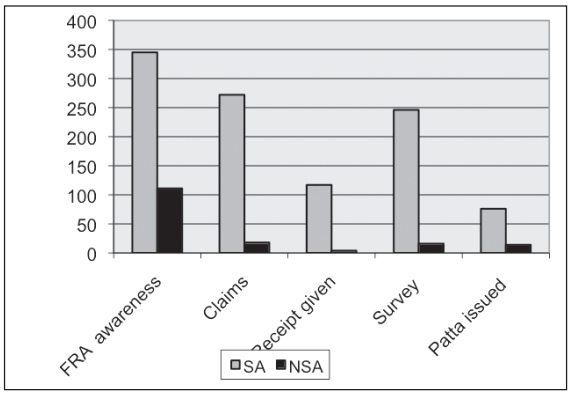
[7] The NREGS Act clearly states that the activities to be carried out must be decided by the gram sabha, and cannot be imposed by the government machinery.

In the study sample, while 74% of the adivasis submitted claims, a mere 32% were given receipts to their claims and 67% of the claims were surveyed. Unfortunately, only a miniscule number of those who applied (21%) have actually received their titles.



Graph 12: FRA Awareness and Status of Individual Claims

Table 3: FRA Awareness and Status of Individual Claims

	Scheduled Areas		Plain Areas	
FRA awareness	345	94.0	111	34.4
Claims	272	74.1	18	5.6
Receipt given	117	31.9	4	1.2
Surveyed	246	67.0	16	5.0
Patta issued	76	20.7	14	4.3
Total	367	100.0	323	100.0

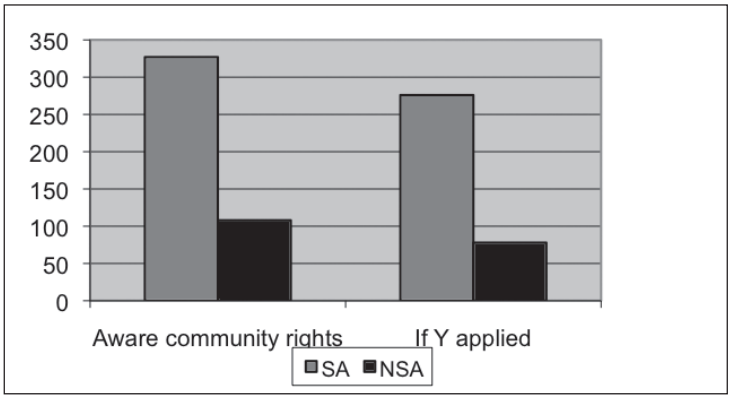
Those who received their titles were awarded a fraction of the total land that they are cultivating. In the plain areas there was comparatively much lower awareness about the act (34% of the households). About 90% of the adivasi families in the Schedule V areas are aware of the Community Forest Rights, as compared to 33% in the plain areas (Table 4). About 75% of the respondents were aware that their village had applied for CFR, as against 24% respondents in the plain areas. All the villages, except one, have applied for CFR, after carrying out detailed meetings in the village, mapping resources, and filling out detailed forms of all that is contained within their traditional customary boundaries - grazing spaces, watering holes and ponds, forest produce, medicinal plants, spiritual places, burial grounds, sacred groves, ancestral lands, and so on.

They insisted that the SDLC should acknowledge the submission of their claims with stamped receipts. However, despite some villages having submitted their claims as early as 2009, till date, none of the villages have been awarded the CFR titles, according to the customary forest boundaries and governance regimes. Moreover, Kamayipet Village had 200 acres of land under their customary boundaries, but the CFR title was prepared only for 108 acres; so the gram sabha rejected this title and returned it to the SDLC.

Table 4: Awareness on Community Forest Rights and Status of CFR Claims

	Scheduled Areas		Non-Scheduled Areas	
Aware about community rights	327	89.1	108	33.4
Awareness about application of CFR claim	276	75.2	78	24.1
Total	367	100.0	323	100.0

Source: Household data.



Graph 13: Awareness about Community Forest Rights
If Y applied: This refers to the awareness amongst communities of having applied for the community forest rights

Thus, in all the districts, the negative role played by government officials and departments - both the Tribal Welfare Department (TWD) that is responsible for the implementation of the FRA as well as the Forest Department - is evident. While the ITDA has done the bare minimum to spread awareness about the act, it chose to emphasize on the individual titles aspect of the FRA, and ignore/suppress information on the CFR. However, in all the three districts, it was found that even the individual titles were not correctly issued -

majority of the adivasis are still waiting for their titles; and those who were issued titles, were issued titles only for a miniscule area, far below what was claimed.

The Tribal Welfare Department has actually played an obstructionist role and chosen to misinterpret the legislation. This is reflected in several ways, beginning with the obstinacy to set up FRCs at the panchayat level, and not at the village/hamlet level, and intentionally misinterpreting the scope of the Community Forests. In collusion with the Forest Department, the TWD undermined the CFR element of the act, when they agreed to the Forest Department's suggestion that the CFR titles should be issued only to VSS or VSS-managed lands. The TWD also agreed to reject individual titles claimed for lands, which were located in VSS-managed areas; and the adivasis were duly informed that the individual titles were rejected, as the lands were located in VSS-managed forests.

In all the three districts, the study revealed that community rights pattas were granted to the VSS (in the case of Adilabad), and to the gram sabhas but only for the lands managed by the VSS, in the case of East Godavari and Visakhapatnam (see map to illustrate the difference between community forests managed under customary boundaries and VSS-managed forests). .

In all the three districts and at the state level, the local adivasi *sanghams* and *Adivasi Aikya Vedika* raised their voices against this subversion of the law by the State. At the district level, the local adivasi organization, *Girijana Deepika* for example in East Godavari District, motivated the communities in the village to pass resolutions in their gram sabha rejecting the faulty CFR titles, and dissolve the VSS. At the State level, the *Adivasi Aikya Vedika* strongly mobilized and lobbied with the Commissioner Tribal Welfare to establish FRCs at the village (gram sabha) level, to cancel faulty CFR titles prepared in the name of VSS / area managed under VSS, to accept applications for CFR, and only prepare these titles according to customary boundaries. This hard-hitting lobbying, with the TWD, finally resulted in the TWD issuing an order in January 2011, instructing all district-level ITDAs to:

i) Establish FRCs at gram sabha level.
ii) Redo CFR titles according to customary boundaries - the prototype for CFR titles was attached, and had to be prepared accordingly.

They however did not, in writing, instruct the districts to cancel the CFR titles prepared for VSS. Hence, the *Adivasi Aikya Vedik*a and local sanghams continue to struggle and organize on this.

The adivasis have clearly understood that the legislation is a tool that gives "legitimacy" to an age-old system of forest governance and use, which the people have evolved and enjoyed. The CFR is most powerful, as it covers all aspects of their life and its relationship with the forest, on which they depend (grazing being just one aspect of this large canvas). There are very clear systems of forest governance including grazing practices, well established systems of negotiation and decision making between settled adivasis and the seasonal migratory pastoralists, whereby the pastoralists need to negotiate and cooperate with the adivasis, who are most knowledgeable about the exact situation of their forest as it exists and changes from year to year. In this way, the pastoralists do not need to "claim their rights" for every forest, as their migration and routes, and who migrates and who does not is extremely dynamic, and changes from year to year, and form season to season. Paying a forest official to obtain rights to graze in the forests is neither good for the forests nor for the local governance. On the other hand, the CFR records the customary practices and gives "legal" space for customary law to function, and shape protection, conservation and sustainable use for supporting livelihoods. The CFR, along with the PESA, opens up the space for adivasis to design sustainable conservation and use of the forests, so as to support their livestock and other forest livelihoods. The PESA strengthens the spirit of Schedule V, and empowers the adivasis to design and implement development programs according to their needs. The FRA holds the potential for people to truly use their customary laws as also to design development plans that will strengthen their livestock livelihoods in meaningful ways.

Chapter - IV

DISCUSSION AND CONCLUSION

The circumstances in adivasi territories differ substantially from those in the "rural/ plain areas". The adivasis share an all-embracing relationship with the forestscape, which is central to their lives and survival. The forest is not merely a grazing ground for animals, or a place to cultivate food and collect forest produce, medicinal plants and firewood; forests are their home, and are intrinsic to their spiritual and cultural moorings, through which they are connected to their past, presence and future. Within this, livestock is but one element, which defines their relationship with the forests, and by no means, is the central aspect of adivasi lives and livelihoods. Their freedom to govern the forest and move freely in their territories has always been contested by the State. In this case, it is the Forest Department that has systematically attempted to control the adivasi space and curtail the freedom of the people who live therein, as they consider the forest as "their property". However, the adivasis as a community have consistently resisted any attempt to curtail their freedom of movement and decision making that they have historically enjoyed in their territories.

In stark contrast, in the "plain regions", a minority community (i.e., shepherds, dalits, lambadas, etc.) comprising perhaps 20% of the village population, in villages at the forest interface, depend on the forest for their livelihood and survival. It is this minority community that experiences the violence of the Forest Department and discrimination of the Police Department, which have strived to restrict their access to the forests to graze their animals. The sheer lack of numbers has often translated into the community quietly acceding to the threats of the FD, and paying their way to access of forests.

Common in both contexts, is the communities' knowledge about their resources, and using these resources to nurture their livestock in ways that are deep, complex and precise, defined by a rhythm and pattern, which is neither "random" nor unscientific. The forest grazing system that the adivasis in the Schedule V regions and the pastoralist communities in the "plain areas" have evolved over the years is well marked with distinct parts of the forest being grazed at specific periods during the year, and different animal species

preferring particular sections, based on the fodders available therein. There are defined periods of rest when the forest as a whole, or parts of the forest, are left undisturbed and allowed to rejuvenate. The animals contribute to the forest's wealth and diversity, enriching the soil with manure, controlling the undergrowth and grass, thereby minimising the chances of summer fires, and assisting in the propagation of different tree and shrub species. The interaction of animals and forests is one of reciprocity, each one nurturing the other.

Crucial to these regimes of forest use are community systems of governance and decision making. This is where the forest governance and customary laws of forest use continue to be much stronger and vibrant in the adivasi Schedule V context, than in the "plain areas", largely because of the continuing presence of strong traditional institutions of collective decision making, in which the entire village or hamlet participates. All the three adivasi study districts demonstrate the visible and vibrant presence of traditional institutions of decision making such as the Panch in Adilabad and the Gotti in East Godavari and Visakhapatnam districts. Another critical feature is that every family in an adivasi village continues to depend on the forest in one way or the other, and is directly concerned and involved in the discussions, which impinge on their lives that are intrinsically entwined with the forests. The adivasi communities have resisted the hegemony of the Forest Department by defiantly nurturing and exercising their customary laws and systems of local forest governance, which have been in direct conflict with the Forest Department's notion of "Forest Conservation and Management". The knowledge of how to graze, where to graze, and where not to graze, is an inherited traditional adivasi norm, which is imbibed and known even to the youngest child in the village. It is a regulation from within the adivasi tradition and culture. Concurrently, the existence of the local institutions of self-governance and decision making is allowing space for decision making by the current generation in the community, which modifies or updates traditional norms based on their understanding of an existing situation. This is well illustrated, for instance, in the continuation of a traditional norm where seasonal migratory pastoralists are required to seek permission and negotiate the terms to graze their animals in the forests located within the customary boundaries of an adivasi village, from the concerned adivasi village Panch or Gotti. Permission is either granted or denied after considering and debating factors such as the state of their forests, and the health of the visitor's flocks.

Collective celebrations and festivals - to propitiate the adivasi goddesses and gods that protect the village boundaries, the forests, the livestock, the crops, and the ancestors reinforce the relationship between the community and the forest, and are traditional means through which knowledge of the forest space and territories is transmitted from

generation to generation, and each and every member of the community reconnects again and again with their "adavi thalli". This is the basis for each family to visit and connect with each part of the village territory.

In contrast, villages at the forest interface in Medak and Chittoor districts - the "plain areas"- are characterized by a minority population within one hamlet or village, who continue to depend on the forests, and are involved on a day-to-day basis with the life of the forest and its governance. The gram sabha of a village in the "plain areas", as a decision-making body that involves in decisions around the governance of the forests, has over the years, essentially become defunct. Elected representatives of the gram sabhas have allowed the Forest Department, by default, to exercise and consolidate its powers. Resistance to the Forest Department's laws of forest governance emerged from that class or section of the village that continues to have a deep bond with the forests, and depend on them for their survival: the shepherds, the dalits, and the erstwhile nomadic pastoral communities - such as the lambadas, traditional healers, the few remaining families who collect forest produce, and women from small peasant families who continue to depend on forest to collect firewood, wild vegetables, herbs and medicinal plants. Moreover, their lives are equally dependent on agriculture, which is virtually disconnected from the forests, unlike in the adivasi territories, where agriculture is woven into the forestscape.

It is this small minority cutting across several villages that shares a common forest, and have organised and forged alliances with one another to protest against infringements of their customary forest usages. It is this "collective" spread across several villages that has taken the lead to defend an age-old customary relationship with the forest, by utilising the provisions of the FRA, 2006. Further, this same collective has begun to visualise the future of community forest governance, and of their shared resources. This is an attempt to rekindle and democratise a lethargic and indifferent institution like the gram sabha and ensure its involvement in the politics of resources.

The loss of village commons (forest and non-forest) coupled with a diminishing and weakening sense of a shared relationship between the village community as a whole, and its resources, tells the story of resource politics in the post-independence Indian villages, where two key political decisions stand out: The first is definitely the long years of political control of village governance by economically landed and privileged castes and classes, whose self-interest and need to protect "their private landholdings" drove them to bulldoze the State and stall any attempts of genuine land reforms, which in turn prepared the grounds for the State to choose the easy option of privatising the village commons in the name of land-reforms; the same profit motivation resulted in vast expanses of common lands being handed over to industries and factories through gram sabha resolutions, resulting in the ultimate destruction of the commons. The mid-nineties

marked the next major milestone: Economic reforms carried out by the Indian State with the intent to privatise resources and services, resulting in the mushrooming of new institutions of neo-liberal growth, created through government development programs supported by bilateral and multilateral donor agencies, such as the VSS/JFM, SHGs, Water Users Associations, Farmers' Clubs, and "watershed committees", which were uniformly packaged and marketed as spaces to encourage community participatory resource management. However, in reality, these new institutions were market-based business solutions for "resource management" that served to privatise resources, and further weaken the gram sabha, stifling even nascent processes of its democratisation.

While similar neo-liberal institutional growth models were initiated in the adivasi villages of the Schedule V regions, fortunately the strong adivasi traditions of self-rule and local governance, coupled with their long history of struggle to protect forest resources, ensured that the sense of the collective and community sustained, despite the VSS/JFM, and the SHGs. If anything, the infringements on their freedom, that these institutions brought, evoked strong resistance which amalgamated into the nation-wide protests against the eviction orders issued by the MoEF in 2002, and transformed into a sustained struggle and demand that the India State undo the historical wrongs and legally protect the rights of adivasis in forests. This finally took the shape of the The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 in 2006.

The adivasi people of the Schedule V regions, as well as the other traditional forest dwellers in the "plain areas" of our study, gained awareness regarding the legislation only from people's movements and other civil society organisations; the government had failed miserably to inform the people about this important legislation. With this knowledge, the people used FRA, 2006, to file claims to the forests. In the adivasi areas, it has been an opportunity for the adivasi communities to proudly and fearlessly proclaim and declare their customary forest governance systems, and transfer the same onto paper in the form of individual and community FRA "claims". Similarly, for the OTFDs living in the "plain area villages at the forest interface", the process of claiming individual and collective rights acted as a positive trigger to stimulate a feeling of "community" or collective which spreads across several villages, and an opportunity for the collective to work with their elected village representatives in the gram sabhas, and to reconnect to its resources. It is also hugely evident that this high level of awareness on the act amongst the communities, and the pro-active steps taken by the communities to defend their rights using the legislation, happened because of committed people's organisations and advocacy groups that persevered doggedly to conscientise and spread awareness about the act amongst their people, and help their people to use it.

As an adivasi activist put it, an adivasi cannot rest for a minute when it comes to defending their rights: *"We fought to sustain our customary systems through these years of repression, we fought and resisted VSSs, we fought against being evicted from the forests , we had to fight for the new forest legislation , we had to fight for the rules, and now we have to continue the fight to ensure that the legislation works to defend our rights, because the same legislation is being used by the State to deny us our rights! They reject our claims at will, they reduce the acres at will, they allocate CFR rights to VSS at will, they assume it is their birth right to plant and raise plantations on our lands and forests, they trample all over our customary laws, and the FRA legislation itself. To the extent that the Forest Department is trying to argue that goats browse and do not graze, and hence the law disallows goats!"* The State has played the most negative role and did all it can to make it near impossible for a simple law to work to protect the people (which was the original intention of the act). The Forest Department mainly tried to curb grazing and shifting cultivation, and with the legal recognition accorded to grazing in the FRA, they are seething with anger, and doing everything they can to dislocate the law. The process underway, if correctly executed, stands to topple the existing power structures and to legally acknowledge the primary role of the communities in governing their forests according to their customary laws, which will severely diminish the powers of the Forest Department.

It is also clear that the adivasis in the Schedule V regions and the OTFDs[8] in the plain areas, cannot fearlessly deepen their engagement with the sustainable use and conservation aspects of the FRA, as long as they have to contend with a tyrannical Forest Department and a non-motivated Tribal Welfare Department/DLC/SDLC, whose combined goal appears to be to obstruct the process of the law, and prevent legal recognition of people's forest governance. The seeds of conservation are embedded in the complex set of traditions, knowledge, and practice of people, and will blossom only if administrators would abdicate their power and step aside. As of now, people's energies are spent in contesting the everyday hurdles set up in their path by the bureaucracy whose approach towards law and justice seems to be based on the premise that the claimant (read community), is "guilty" until proven innocent. The onus of this proof lies with the community, if they are to "be eligible for the right". In reality, what we have seen is that no proof is powerful enough for the bureaucracy that has pre-decided to reject most claims.

In fact, it is diabolic and a primary contradiction in the construction of this law that a legislation, written to undo historic injustice to the adivasis and other traditional forest dwellers, in its operational element, places the onus of proof on the victim to demonstrate their "eligibility" for justice. The same powerful bureaucratic superstructure that has

[8] OTFD - Other Traditional Forest Dwellers.

viewed this community as the primary enemy of the forests for the past 200 years has been empowered through the law, to be the ultimate decision maker regarding the "eligibility for justice"! It is assumed that this powerful superstructure will automatically transform, change their attitudes, take a sensitive position, and be pro-active to ensure that justice is done. However, there is nothing written into the law that places the onus on the State to ensure that people's customary rights are recorded; there are also no accountability mechanisms to force the government servant to deliver justice. Once again, the victim is left to battle this intransient and powerful superstructure.

Finally, when we analyse the various government livestock development interventions carried out thus far, we find that they are singularly directed towards replacing grazing-based livestock production systems with "stall-fed" systems for high yielding animals. These have failed across the board - be it in Schedule V or plain areas. The State's veterinary health facilities are pretty much non-existent in the adivasi villages, and barely exist in the plain areas. The people's need for these institutions is primarily to address emerging diseases, for which local healing practices thus far, have no solutions.

The FRA, which legalises grazing and recognizes the primary role of communities to govern and conserve the forests according to customary practices, holds the seeds of change; it opens up new possibilities for the communities to define and implement their idea of development, including addressing livestock livelihoods. Moreover, the adivasi people of the Schedule V regions, who encompass 60% of the forests of Andhra Pradesh in both Telangana and Andhra regions, are empowered through the PESA to forge their way forward, to protect their forests, and, in turn, their livelihoods. The bottom line question is will the State be a willing ally in this process or will this be a continued battle for justice?

ANNEXURE
DISTRICT-WISE FINDINGS

A. Medak District

1.1 Study Villages

The study was carried out in four villages, two in Narsapur mandal (Gudemgadda and Nallavalli) and two in Jinnaram mandal (Gummadidala and Maddur). The study villages are located at an average distance of 60 km from Hyderabad city. Jinnaram Mandal has several agro-chemical and pharmaceutical companies, which were established in erstwhile common lands that belonged to different village panchayats. Gummadidalla Village has several factories located within its village boundaries, and at the same time, has an extremely large small ruminant population, which is dependent on the nearby forests of Narsapur. It has a long history of organization of the shepherds to protect their forest resources and their grazing rights, and thus, was selected as one of the study villages.

1.1.1 Land, Livestock and Livelihoods - An Overview in the Study Villages

Based on the survey of the entire village (Table 1), the ownership of land reveals that 31.5% of the households are landless, 44.5% are marginal farmers, 16.2% are small farmers, and 7.4% are middle farmers. The proportion of landless families is high because nearly 50% of the households in Gummadidalla Village are landless. Many of these families of Gummadidalla do not own land because they either work in factories/ companies or run small businesses.

As seen in Table 2, 12.4% of the families are dalits (SCs - Malas and Madigas), 77.1% are BCs (Mudirajs, Kurmas, Gollas, Gouds, Munnurukapus, Chakalis, Gangeddus and Muslims), 8% are STs (Lambadas, Yerukulas), and 1.8% are OCs (Reddys); 7.2% of the landless are dalits (SCs), 8% are STs, and 84% are BCs. The relatively high proportion of landless BC families is once again related to the fact that many of the landless are from Gummadidalla Village.

From the sample household data, we observe that out of the total 183 sample households (Table 3), 8.7% are landless, 68.3% are marginal farmers, 21.3% are small farmers, and 1.6% are middle farmers. Caste break up across the sample households shows that 12.6%

Table 1: Distribution of Households based on Landholding Size in all Four Villages _ Medak district

Name of the Village	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Households
Gummadidala	502 (49.9)	378 (37.6)	126 (12.5)	00 (0.0)	00 (0.0)	1006 (100.0)
Nallavalli	6 (1.8)	144 (43.1)	102 (30.5)	79 (23.7)	3 (0.9)	334 (100.0)
Gudemgadda	1 (1.0)	88 (87.1)	12 (11.9)	0.0 (0.0)	0.0 (0.0)	101 (100.0)
Madduru	60 (27.4)	95 (43.4)	26 (11.9)	34 (15.5)	4 (1.8)	219 (100.0)
Total	649 (31.5)	916 (44.5)	333 (16.2)	152 (7.4)	10 (0.5)	2060 (100.0)

Source: Village data
Note: Figures in brackets represents percentage

Table 2: Land Ownership across Castes - Medak district

Caste	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Households
BC	478 (37.3)	504 (39.4)	216 (16.9)	78 (6.1)	4 (0.3)	1280 (100.0)
OC	4 (12.9)	13 (41.9)	5 (16.1)	7 (22.6)	2 (6.5)	31 (100.0)
SC	41 (19.8)	101 (48.8)	36 (17.4)	28 (13.5)	1 (0.5)	207 (100.0)
ST	46 (32.4)	87 (61.3)	9 (6.3)	0 (0.0)	0 (0.0)	142 (100.0)
Total	569 (34.3)	705 (42.5)	266 (16.0)	113 (6.8)	7 (0.4)	1660 (100.0)

Source : Village data
Note: Figures in brackets represents percentage

are dalits (SCs), 82.5% are BCs, and 3.3% are OCs (Table 4). Whilst there is relative parity between the sampled households and the entire village with respect to caste

distribution, there is a significant difference with respect to the landless households. Once again, this is logical, as the majority of landless households from the entire study village are factory workers, and the purposive sample covered livestock owning households with different amounts of landownership.

Table 3 : Landholding Distribution of the Sample Households - Medak district

Name of the Village	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Total
Gummadidala	0 (0.0)	42 (84.0)	8 (16.0)	0 (0.0)	50 (100.0)
Nallavally	1 (1.9)	33 (63.5)	16 (30.8)	2 (3.8)	52 (100.0)
Gudemgadda	3 (9.7)	20 (64.5)	8 (25.8)	0 (0.0)	31 (100.0)
Madduru	12 (24.0)	30 (60.0)	7 (14.0)	1 (2.0)	50 (100.0)
Total	16 (8.7)	125 (68.3)	39 (21.3)	3 (1.6)	183 (100.0)

Source : household data
Note: Figures in brackets represents per centage

Table 4 : Land and Caste Distribution of the Sampled Households - Medak Ddstrict

Caste	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Total
ST	0 (0.0)	3 (100.0)	0 (0.0)	0 (0.0)	3 (100.0)
SC	0 (0.0)	17 (73.9)	6 (26.1)	0 (0.0)	23 (100.0)
BC	14 (9.3)	103 (68.2)	31 (20.5)	3 (2.0)	151 (100.0)
OC	2 (33.3)	2 (33.3)	2 (33.3)	0 (0.0)	6 (100.0)
Total	16 (8.7)	125 (68.3)	39 (21.3)	3 (1.6)	183 (100.0)

Source : household data
Note: Figures in brackets represents per centage

Based on the entire village data (Table 5), the study villages have 622 cows, 872 bullocks, 637 buffaloes, 450 calves, 2681 sheep, 1355 goats, and 4147 poultry. Nallavally Village and Madduru Village contribute 96% of the total cow population. Nallavally contributes 43% of the total bullock population and half of the calf population.

Table 5: Total Livestock Population (all Households in Four Villages) - Medak District

Name of the Village	Cows	Bullocks	Buffaloes	Calves (Buffaloes and Cattle)	Sheep	Goat	Poultry	Total
Gummadidala	15	283	213	83	673	370	880	2517
Nallavally	214	376	289	221	1150	560	2256	5066
Gudemgadda	8	104	38	28	600	122	539	1439
Madduru	385	109	97	118	258	303	472	1742
Total	622	872	637	450	2681	1355	4147	10764

Source: Village data.

1.1.2 Traditional Grazing-based Livestock Production Systems

Traditionally, livestock rearing has been a critical source of livelihood for the people of Medak District. Animal rearing is an integral component of farming for the small and marginal farmers, and so is rearing sheep and goats for the pastoralist communities - the pastoralist communities in Medak have mostly practiced a semi-migratory system of production. The major livestock reared in the study villages includes local indigenous cattle (bullocks and cows), local indigenous buffaloes, sheep, goats, and poultry. Pandharpuri breed-type buffaloes, Deccani breed sheep, Osmanabadi breed goats and a typical indigenous cattle breed that is bred by the lambada communities, are native to the area. Further, donkeys and pigs are also reared by some communities. In the semi-arid context with a history of cyclic droughts and seasons of good rains, animals have always been crucial for the people's livelihoods. In addition, animals provide dung and urine to keep the soil healthy and fertile; energy for agriculture operations and transport; food and nutrition to the people in the form of milk, meat, and eggs; and income through the sale of animals and animal products. Milk from local buffaloes is mostly sold to the traders who come to the villages and collect the milk and some people sell it to the hotels and sweet shops in nearby towns.

Livestock ownership is however not uniform and varies across caste and landownership categories; and about 43.6% of the households do not own any livestock. The livestock population ownership patterns of the entire village (Table 6) confirm that livestock ownership is directly correlated to landownership: 73.8% of the landless do not own livestock; 70% of the marginal and small farmers own livestock; and 86% of the medium and large farmers own livestock.

Table 6: Livestock Ownership across Landholding Categories in Medak district

Landholding Category	Yes	No	Households
Landless	149 (26.2%)	420 (73.8%)	569
Marginal Farmer	494 (70.1%)	211 (29.9%)	705
Small Farmer	189 (71.1%)	77 (28.9%)	266
Medium Farmer	98 (86.7%)	15 (13.3%)	113
Large Farmer	6 (85.7%)	1 (14.3%)	7
Total	936 (56.4%)	724 (43.6%)	1660

Source : Village data.

Empirical observations of the study show that BC communities, such as the Mudirajs, Kurmas and Gouds, own bullocks and buffaloes, while the Other BC communities, such as Chakalis, Kummaris and Padmashalis own very little livestock. Approximately 25% of the dalits (SCs) own local buffaloes and cattle, and about 10% own sheep and goats. Nearly half the dalit and BC households, and almost all the lambada (ST) households, own backyard poultry.

Based on the survey of the sample households in the study villages, there is a large ownership of cattle amongst the landless households (75%), which is because Maddur Village has a special community known as "Gangeddula", whose entire livelihood is based on cattle breeding - over half of the landless interviewed belonged to this community. Furthermore, 25% of the landless own buffaloes, 50% own sheep and goats, and 56.3% own poultry;

68.8% of the marginal farmers own cattle, 45.6% own buffaloes, 37.6% own sheep and goats, and 42.4% own poultry; 76.9% of the small farmers own cattle, 48.7% own buffaloes, 38.5% own sheep and goats, and 48.7% own poultry; and 66.7% of the middle farmers own cattle, 33.3% own buffaloes, 33.3% own sheep and goats, and 33.3% own poultry. The sample household data further reveals that 60.8% of the dalit farmers own cattle, 52.1% own buffaloes, 8.6% own sheep and goats, and 43.4% own poultry. The relatively higher proportion ownership amongst dalits, as compared to the village data, is due to the fact that only livestock-owning dalit families were selected for the study. The data also revealed that 73.5% of the BC farmers own cattle, 44.3% own buffaloes, 45.6% own sheep and goats, and 44.5% own poultry; and 83.3% of the OC farmers own cattle, 33.3% own buffaloes, 0% own sheep and goats, and 25% own poultry.

The traditional shepherding communities of Kurma and Golla predominantly rear sheep and goats. However, in recent years, small ruminant ownership has cut across caste boundaries, with many other marginalized dalit-bahujan communities acquiring and rearing small ruminants, which helps them to spread their risk, particularly in the semi-arid regions, which continue to witness cycles of good years alternating with drought years. The Kurmas and Gollas also own some cattle and buffaloes in addition to sheep and goats. However, today a large number of Kurma-Golla households have stopped rearing sheep and goat and shifted completely to agriculture - they sold their animals, and acquired agriculture land. The study villages confirm this trend (Table 7), and show that 79% (37 out of 171 HHs) of the Kurma-Golla castes, do not own sheep and goats - a mere 21% continue to rear sheep and goats.

Table 7: Proportionate Ownership of Sheep and Goats amongst Traditional Shepherding Castes - Medak district

Name of the Village	Total HHs	Golla and Kurma HHs	Golla and Kurma HHs Owning Sheep and Goats
Gummadidala	1282	100	15
Nallavally	463	30	7
Gudemgadda	95	40	15
Madduru	377	1	0
Grand Total	2217	171	37

Source: Village data.

The Lambadas were a traditional nomadic pastoralist cattle-rearing community of India, who moved in caravans/groups known as "*thandas*" across the vast plains of India. Across Andhra Pradesh, during the mid-sixties, the nomadic lifestyle of the lambada community ended, with their being settled into permanent habitations, which were named as "*thandas*", drawing from the formation in which they traditionally migrated from region to region. These thandas are located adjacent to the main villages. The lambada community continues to breed and rear large number of cattle and goats. They train bullocks to be plough-ready and also in othe4

Regarding the mode of acquisition of animals in the study villages (Table 8), it is observed that 35% indigenous cows are home-born, 38% are purchased, and the remaining are leased-in. There are very few cross-bred cows owned in the study villages, of which the majority (60%) are acquired through loans. About 92% bullocks are purchased, 43%

local buffaloes are home-born with a negligible percentage acquired through loans, and 100% of the graded Murrah buffaloes are acquired through loans. Similarly, about 88% of the goats and sheep are home-born, bred from the home stock, while the remaining are purchased, usually from shepherds. Most purchased animals are acquired from the local markets, or other farmers. Poultry are once again home-bred.

Table 8: Mode of Acquisition of Livestock - Medak district

Local Cows					
Name of the Village	**Home-born**	**Purchased**	**Gifted**	**Leased-in (Sharing)**	**Grand Total**
Gummadidala	9	8	0	10	27
Nallavally	2	12	3	5	22
Gudemgadda	3	4	0	0	7
Madduru	10	2	0	0	12
Grand Total	24	26	3	15	68

Cross-bred Cows					
Name of the Village	**Home-born**	**Purchased**	**Gifted**	**Leased-in**	**Grand Total**
Gummadidala	1	3	0	0	4
Nallavally	3	0	0	0	3
Gudemgadda	1	0	0	6	7
Madduru	1	0	8	0	9
Grand Total	6	3	8	6	23

Bullocks				
Name of the Village	**Home-born**	**Purchased**	**Gifted**	**Grand Total**
Gummadidala	10	68	0	78
Nallavally	2	76	0	78
Gudemgadda	0	40	1	41
Madduru	0	14	3	17
Grand Total	12	198	4	214

Local Buffaloes

Name of the Village	Home-born	Purchased	Gifted	Loan	Leased-in	Grand Total
Gummadidala	61	36	2	2	0	101
Nallavally	32	21	0	1	1	55
Gudemgadda	5	34	0	0	1	40
Madduru	29	3	0	0	0	32
Grand Total	100	94	2	3	2	228

Graded Buffaloes		
Name of the Village	Home-born	Grand Total
Gummadidala	27	27
Nallavally	2	2
Gudemgadda	1	1
Grand Total	30	30

Goats					
Name of the Village	Home-born	Purchased	Gifted	Leased-in	Grand Total
Gummadidala	330	1	0	62	393
Nallavally	33	12	1	0	46
Gudemgadda	160	16	0	0	176
Madduru	153	0	0	0	153
Grand Total	676	29	1	62	768

Sheep			
Name of the Village	Home-born	Purchased	Total
Gummadidala	915	41	956
Nallavally	245	124	369
Madduru	80	15	95
Total	1240	180	1420

Source: Sample household data.

The data reveals that farmers continue to breed indigenous breeds of buffaloes, cows, sheep, goat and poultry; and they are in control of the genetics of their herds and flocks. Even the purchased animals are acquired from other farmers/breeders. The data on loans affirms that loan programs are not given for acquiring indigenous breeds, and there are conditional loans for graded breeds. This clearly brings out the fact that the state plays no role in supporting the conservation and breeding of indigenous breeds, or of local livestock assets - a completely farmer-supported initiative.

Qualitative observations show that the Lambadas are traditional cattle breeders, and many small and marginal farmers purchase their bullocks from them. Shepherds are the sheep and goat breeders, and other farmers purchase animals / young stock from them, if they need to start up their livelihood.

1.1.4 Gender Roles in Livestock Rearing

Women along with men, play key roles in agriculture and livestock production. The data reveals (Table 9) that men and women equally share the responsibilities of watering, feeding, and grazing the animals, as well as collecting grass, milking, and cleaning the animals. Men take more responsibility with respect to the health care of the animals (taking the animals to the hospital, etc.), and in marketing the animals.

Table 9: Gender Roles in Livestock Rearing - Medak district

Gender	Feeding and Watering	Grazing and Grass Collection	Health Care	Milking	Marketing
Male	995	932	767	409	718
Percent	51	56	68	55	64
Female	936	707	357	324	387
Percent	49	44	32	45	36
Total	1931	1639	1124	733	1105

Source: Sample household data.

1.1.5 The Role of Livestock in the Livelihoods of the Community

a) Large Ruminants What emerges in Medak District is that the cattle are primarily reared for farming operations, and buffaloes for dairying. Manure is an extremely important output from the animals, and the average manure collected per household per year varies from household to household, based on the number of animals reared. Those households who own larger number of animals and/or own sheep and goats in addition to the large ruminants obtain maximum manure. A household owning a pair

or bullocks get 16 bullock carts of manure per year, while a shepherd owning 80 sheep gets 19 bullock carts of manure per year. Almost all the manure is utilized on the farmers' own fields, while communities like the Gangeddulas, who do not own land, sell the manure. For example, in Gudemgadda Village from all the 31 households surveyed, 51 bullock carts of manure is produced from the cattle and 33 bullock carts is produced from the goats and sheep.

The average number of days of work in a year for a bullock is 90 days (3 months) - cows are not used as work animals in Medak District. About 69% of the total milk obtained in the village (Table 10), is produced by the local buffaloes, 21% by the local cows and a negligible amount from cross-bred cows / graded buffaloes. The milk is marketed through local markets in Narsapur Town or supplied to Hyderabad through milk vendors. The average price at which a local milk vendor purchases buffalo milk is Rs.25/ litre. The milk vendor collects the milk in the village; and the farmers negotiate the price with the vendor, ensuring that it covers their production costs. The milk sold in Narsapur Town fetches an amount between Rs.30 to Rs.35 per litre.

Table 10: Total Milk Production (in Litres per Day) in the Sample Households - Medak District

	Milk in litres per day			
Name of the Village	Local Cow Milk	Cross-bred Cow / Graded buffalo Milk	Local Buffalo Milk	Total Milk in Litres per day
Gummadidala	35	11	140.5	186.5
Nallavally	16	13	93	122
Gudemgadda	5	10	60	75
Madduru	41.5	3	16	60.5
Grand Total	97.5	37	309.5	444

Source: Sample household data.

The reproduction parameters for local buffaloes indicate that the average age of first calving is four years, the average calving interval is 18 months, and the average number of months in milk is 9-10. Graded Murrah buffaloes are scarce and the community prefers the local buffaloes because they are sturdy, hardy, produce and reproduce with minimal feed inputs, have high disease resistance, and yield adequate milk under the existing constraints. The Murrah on the other hand requires a lot of care which in particular women cannot handle, as it is a huge labour-intensive task - the Murrah needs far more care and its yield is not comparable to the care it requires. Further, raising it is more risky as it is more vulnerable to diseases and hence, requires more care. The farmers

reported that the local buffaloes are bred using natural breeding methods, while the Murrah graded buffaloes are bred using Artificial Insumination (AI). Further, calf mortality amongst the local buffaloes is non-existent as compared to the calf mortality amongst the graded Murrah buffalo calves. This is another important reason why farmers prefer to rear their own indigenous buffalo breeds.

Grazing and feeding practices: The large ruminants (cattle and buffaloes) derive their nutrition by grazing and being fed with crops residue, green fodder (when available), and concentrates. An average animal is grazed from 10 am to 5:30 pm during the rainy and winter seasons, and from 7 am to 11 am and 3 pm to 7 pm during the summer season. An analysis of grazing practices reveals that during the summer months the animals are predominantly grazed in the forests / non-forest commons / agriculture fallows and harvested fields; and during monsoons and winter, in the forests and non-forest commons. Most farmers graze their animals by deputing someone in the family to do the task (either a family elder - man/woman/children). The dominant source of water is tanks, check dams, and bore wells during summer, tanks during the monsoons, and tanks and bore wells during winter. Along with grazing, the large ruminants are also fed with crops residues. The average quantity of crop residue fed to one large ruminant (such as a bullock) varies from season to season. The majority of the respondents feed paddy straw, approximately 5 kg/day and those who cultivate jowar or maize feed their stover during the summer season, while during monsoon and winter, more green fodder is fed and dry fodder is reduced. The majority of the respondents obtain the crop residues from their own crop, while the remaining is purchased from the market.

Natural green fodder is fed to the large ruminants during the monsoon season when the families collect green fodder from the fields. The common varieties collected include Lerripothula gaddi (Panicum repense), Etigaddi (Dicanthium annulatum), Gunugu gaddi (Dactylactinum aegyptium), Garika gaddi (Cynodon Dactylon), Parka gaddi (Chloris barbata), Chouta gaddi (Eroogrostis pilosa), and Tunga (Cyperous spp). Only households which own bore wells cultivate green fodder, which is fed to the dairy animals usually during the summer months. Concentrates are also fed to the dairy animals, and work bullocks. The common concentrate fed is groundnut cake - the farmers feed this to their buffaloes when they are pregnant. On an average, the buffalo is fed with 2 kg a day when it is in milk. Households that own bullocks feed them with concentrates when they are used in agriculture work.

Major diseases affecting large ruminants: Bullocks and cows are most affected by diseases such as Hemorrhagic Septicemia (HS), Black Quarter (BQ), diarrhoea, bloat, Foot and Mouth Disease (FMD), eye diseases, skin diseases, etc.

The farmers begin with home treatments which they administer themselves, followed by accessing local healers, the government veterinary doctors, and finally the shopkeeper who supplies veterinary medicines. When the animals are dead the owners inform the dalits (Madigas who are the traditional carcass removers), who carry the carcass to the outskirts of the village, skin the carcass, and bury it in a pit. They sell the skin to the traders - they are not paid anything extra for the work done.

The animal husbandry department regularly vaccinates the large ruminants against FMD. Farmers also reported that the calves are dewormed free of cost, on an average, twice a year.

b) Small Ruminants

The average size of the flock ranges from 80-100. There are 3-4 male rams in a flock of 100 sheep. The dominant breed is the Deccani and the percentage of Deccani sheep in the flock ranges from 65% in Gummadidala to 100% in Maddur. The sheep lamb thrice in two years and usually give birth to single lambs.

The practice of penning flocks on harvested fields to provide manure to the agricultural fields has declined since the past. This decline is reported to be linked to the transformation of the agriculture cropping practices, where the farmers who have switched to intensive commercial, chemical-based farming, no longer desire to have the sheep flocks penned on their lands. The shepherd's source of income from is derived the sale of young male lambs and wool. The average wool sheared in a year per flock is 40 kg. The total wool obtained in the villages is about 1500 kg. Though wool markets had virtually collapsed, the efforts of the Mekkala Gorrela Sangham to revive the Deccani Breed and the wool craft has resulted in the sangham purchasing wool from the shepherds at Rs.10/kg of pure Deccani black wool. This has also triggered a renewed interest from the other wool traders who are offering a price of Rs.3-5 per kg. Goats are primarily reared for mutton, and the shepherds also derive income from selling the goat kids. The average age at which goat kids are sold is around 8-12 months. Goats are of Osmanabadi breed, and are handsome and tall animals. Some goats kid twice a year, and others thrice in 2 years. Twinning percentage is much higher among goats than among sheep and an average of 30-50% goats twin in the flock. Grazing and feeding: During the monsoons, the sheep and goats are grazed on agriculture fallow lands, remaining common lands, forests, and the land near village tanks. During the winter and summer months, the sheep are grazed on harvested agriculture lands, forests and village tank bunds/basins. Some shepherds migrate with their animals during the summer months to villages. These villages have witnessed in-migration of shepherds from Mahabubnagar and Anantapur, who graze their sheep in the Narsapur forests. From February to April, the shepherds lease-in the

acacia nilotica fodder trees from other farmers, and have the exclusive right to lop these trees for their pods, to feed their sheep and goat flocks. The current rate of leasing a tree (6-8 year old tree) is paid in kind - on an average, for leasing 15 trees one goat kid is given. Major diseases affecting small ruminants: Sheep diseases include Enterotoxemia (ET), sheep pox, peste du petits ruminants (PPR), cough and cold, HS, foot rot, blue tongue, and diarrhea; morbidity in goats is commonly due to PPR, contagious ecthyma, mange, diarrhoea, foot rot and HS. Sheep are more susceptible to ET, sheep pox, and PPR, while goats are susceptible to PPR and HS.

The shepherds treat their animals with home treatments which they administer themselves, followed by accessing local healers, the government veterinary doctors, and finally the shopkeeper who supplies veterinary medicines. Many sick sheep are sold before they die. If a sheep or goat dies of non-contagious disease conditions, the carcass is skinned and the meat is eaten.

The sheep and goats are regularly vaccinated and dewormed against ET (sheep only), PPR, and sheep pox (sheep only). Vaccinations are accessed from the government veterinary hospitals and some shepherds purchased the vaccines even when the government vaccines were not available. The shepherds, community animal health workers, and animal husbandry department staff administer the vaccinations. The government animal husbandry department deworms the sheep and goats twice a year. The shepherds also purchase deworming medicine when they feel that their animals need to be dewormed.

The kids and lambs are sold to local traders who visit the flocks and purchase animals at specific times of the year, usually October and November, which coincide with the Dussehra and Bakrid festivals. The average sales price of an 8-12 months old sheep is Rs.2500-Rs.3500. A similar situation pertains to goats: Adult females are sold only if they are sick, aged, or are infertile. Young female lambs/kids are rarely sold / given away, and are kept as replacement stock. The females are sold only if the flock size exceeds the management capacity of the shepherd. c) Poultry

Backyard poultry include all local indigenous breeds, and are reared for meat. The birds are consumed at home, during festivals, or to honour guests/relatives/visitors. Women sell birds when they are in need of money.

Maddur Village had a large number of commercial poultry farms, while Gummadidalla Village had a large number of contract poultry farmers, who were contracted in by private poultry companies to rear commercial broilers. Most of these farmers belonged to the "other caste" communities. 1.1.6 Customary Grazing Systems in Forest and Non-Forest Commons and its Governance

Livestock - both large and small ruminants - have historically been reared under grazing-based systems where animals have been seasonally managed and herded to different parts of the village to obtain their fodder and water. Livestock species depend on the non-forest commons, the forests and private agriculture lands to meet their fodder and water requirements. The natural vegetation (grasses, trees, shrubs, creepers, and climbers - used as fodder and medicines) available on community grazing / pasture lands (known as charayi zameen, which were dedicated pastures rich with diverse natural fodders), gautan lands (less nutritious lands used for grazing), poromboke lands (lands which were communally used by the village but unusable for agriculture), banjar lands (fallow lands), shikam lands (areas bordering village tanks), and lands situated along canals and forests, have been the traditional grazing and fodder resources. Villages had clear-cut mechanisms and customary grazing practices where different locations within and beyond the village were utilized to graze animals, throughout the year. The village also had a practice of appointing a person or two people (known as "*jangidi*") for grazing the village cattle and buffaloes. Dalits prominently played this role, and the owner for each animal paid them a certain amount each month. In addition to animals being grazed on common property resources, animals were grazed on harvested agriculture fallows. What is well recorded is that even "*privately*"-owned lands, become commonly grazed land post-harvest, and are equally important as a fodder source for animals, particularly during the summer months. Assorted crop residues (millets, pulses, and oil seeds) fed during the summer months, supplemented with lopped tree fodder complete the feeding regime for animals. During the monsoons, the farmers collect naturally available grasses and other herbage from common and private lands, to feed their animals.

Small ruminant owners (shepherds) additionally pen or fold their sheep/goats on agricultural fields, and in return for the animals fertilizing the fields, the farmer pays them in kind - mostly grain. Villages have also developed special arrangements amongst themselves to accommodate animals from one village to graze in the common property resources that fall within the jurisdiction/boundary of another village.

For example: Shepherds from Gummadidala Village have traditionally grazed their sheep in the forests which fall within the boundaries of the Mambapur Village, and in exchange for grazing their animals there, the shepherds have always contributed one sheep from their flock to the Mambapur villagers at the time of the "Peerla Panduga", or Moharram, which while being a Muslim festival, is celebrated by all communities in these villages of Telangana. Many small farmers and shepherds, enter into lease and rental arrangements with landowners within their village or in neighboring villages, where they pay the owner a rent for a period of four to six months in return for exclusive grazing rights. Some may actually give their animals to other owners to be reared on a "sharing" basis, where the

recipient grazes and takes care of the animals and both parties share the offspring on a 50-50 basis. Over the years, communities developed a vast repertoire of indigenous livestock management, feeding, shelter, breeding, and healing practices appropriate to their area, for which they depended heavily on the common property resources, using the local flora and fauna therein. The survival and practice of traditional knowledge is intrinsically linked to the availability and access to these local genetic resources. While some traditional practices have collapsed and broken down, others continue to survive, as illustrated in the case of Gummadidala Village. Customarily each village has had its own system of grazing animals: they were grazed in different parts of the forest and non-forest commons during different seasons. These were customary systems that evolved over the years in the village and between the villages, and are described as follows: During the rainy and winter seasons, animals (large and small ruminants), from Nallavalli Village are grazed in specific locations in the Nallavalli forest such as Venkatiah gutta, Mannevani kunta, Oddigani cheruvu, Amaraboina kucha, kasana vagu, Bamadai kunta, Soppari kunta, Kadeela bavi cheruvu, and Pedda orre areas. During the summer season, animals from Nallavalli Village are grazed in the harvested agriculture fields (fallows) and catchment areas of Kasanvagu, Nallacheruvu, Pathikunta, Erra cheruvu, Tella moram gadda, Bamani dani kunta, and Regadi bhumulu (fallow black cotton soils). A check dam constructed by the VSS in the forest near Kasanvagu has become a major source of drinking water for the animals during the dry period. Apart from Nallavalli Village, animals from Gummadidala, Mambapur, Kondapur, Laxmapur, Hanmanthapur, and Narsapur are also grazed in these regions; and seasonally, the shepherds from the neighbouring districts of Mahabubnagar and Anantapur are also grazed in this forest. Animals from Madduru and Gudemgadda villages are grazed in the Kondapur forests. The specific grazing areas are Nallagutta, Karsela gutta, Kondapur cheruvu, Thuman cheruvu, Thathan kunta, and Errachelka. During summer, all the animals are grazed on harvested agriculture fields/fallows, and the sheep and goat drink water from check dams, which were constructed by the VSS. During the monsoon and winter seasons, and to an extent, also during the summer, animals drink water from the Pedda cheruvu and Sadacheruvu.

Gummadidala villagers graze their animals in the Nallavalli, Mambapur, Nathnayapalli and Royapalli forests. A detailed description of Gummadidala Village's grazing practices is presented in the case study (Box 1 in main text).

A person known as Jangidi was appointed by the villagers to graze large animals (cattle and buffaloes). He was paid by the village. This practice has virtually disappeared from several villages, giving way to individual grazing. Shepherds however continue to graze their animals collectively: about three to four shepherds join together and graze their animals in one large flock.

1.1.7 Changes in Land Use (Forest and Non-Forest) and their Impact on Grazing-based Livestock Production Systems

The village common grazing lands, both forests and non-forests, have drastically reduced over the years due to diversion of commons for other purposes. Historically one of the earliest events, which resulted in a decline in the commons in Medak District, was the government land reform program, which was initiated in the 1970s and 1980s which targeted the distribution of commons to the landless, instead of distributing the land of landlords to the landless. In the early nineties, the gram panchayats, under the leadership of their respective sarpanches, passed resolutions granting permission to private companies to construct agro-chemical factories on the gram panchayat lands, which were earlier used as grazing lands. By 2003-04, the villages were gripped by the real estate boom which enveloped the region, resulting in escalating land prices, and several non-locals purchasing land as part of real estate business and fencing these off. Medak District is located close to Hyderabad city and has become an industrial hub for chemical and pharmaceutical companies. During the last decade, it has also become a hub for commercial industrial poultry farms. Thousands of acres of agriculture lands have been diverted for such uses. In the forest areas, whilst it is evident that factories were also permitted to come up in and around the forested areas, the recent disruption to traditional grazing practices in forests was a result of the Joint Forest Management Program in 1995, when the village VSSs were formed. In the study villages, all except Gummadidalla Village had VSS committees. The VSS committees were entirely controlled by the Forest Department and placed severe grazing restrictions, particularly on the goat rearers. Livestock rearers were suddenly disallowed from grazing their animals in the forest after the commencement of JFM activities. Eucalyptus and Pongamia plantations, which do not yield any fodder, were raised in the forest and grazing was banned in such areas. The villages with VSSs restricted access to the livestock rearers, who have been grazing their animals in the forests for several years, from their village as also from the neighboring villages. This led to severe conflicts between the VSS members of the concerned village and the livestock rearers. Livestock rearers were harassed by the VSS and had to pay fines, if caught grazing their animals in the forests. Many farmers sold their goats under pressure from the VSS (see Box 1). The shepherds, in particular, resisted these pressures and refused to pay up a fine. The opposition to paying grazing fees increased, once the shepherds became members of the *Mekala Gorrela Pempakadharla Sangham*, and refused to pay the fines imposed on them. This resistance organically evolved into a larger action and participation of the shepherds in state and national level movements for recognition of forest rights. In Medak, the shepherds expressed their anger by lopping trees, in ways that actually harmed the tree as a sign of their non-cooperation with the state (Ramdas and Ghotge, 2007). The shepherd *sanghams*/collectives began to actively negotiate and

persuade the VSS committees for their customary rights to graze in the forests. In other situations, they actually decided to rear goats in complete opposition to the threats being handed out. Around the same time, the *sanghams* both in Chittoor and Medak began to actively engage with the animal husbandry department and demanded that they provide veterinary services to goats. After initial resistance, the department gradually relented, however, surprisingly, many of the local veterinary doctors continued to record "goats" as "sheep" in their books, fearing their "higher officials" (Anthra, 2005). The strong resistance by the shepherds resulted in closure to all restrictions and the VSS too have stopped functioning actively. However, the Gangeddula community in Maddur Village reported that they continue to give a goat kid to the forest guards every year during the Dussehra festival. In fact, each family that grazes its animals in the forest contributes one goat kid to the forest guard each year.

The massive decline in grazing resources was the key reason for a decrease in livestock population both in terms of the number of households owning large and small ruminants as also the size of the herd/flock owned per family. Communities reported that the livestock population has drastically decreased in all four villages. Cattle, in particular, have shown huge declines, the only exception being Gudemgadda Village, where the number of bullocks has increased. In Gudemgadda, nearly 60% of the households continue to own and use bullocks for agricultural purposes. No tractors are used in this village. The other reasons for the decline in livestock, as reported by the people, include: scarcity of fodder (crop residue), scarcity of water during summer months, disappearance of traditional methods of collective grazing, change in cropping patterns, and use of tractors and harvesters. Emergence of new contagious diseases among the small ruminant population was a factor highlighted by the shepherds. Almost all villages also reported an increase in buffalo population accompanying the declining cattle population. The reason cited by the farmers include: the growing milk markets, and the ability of local buffaloes to survive on coarser and less nutritious crop-residues, as compared to cattle.
1.1.8 Major Government Livestock Development Programs and their Impact Veterinary hospitals (Livestock Supervisory Units or LSU) are located in three of the four study villages, but the hospital at Nallavalli Village has not been in function since several years; it neither has a Veterinary Doctor, nor a compounder. In the remaining three study villages - Maddur, Gudemgadda and Gummadidala - farmers access services for vaccinations, deworming, and Artificial Insemination (AI), while in Gummadidala, fodder seed varieties like Pc 23, Guinea grass, and Napier are given to the farmers, who have irrigation facilities. They grow these fodder varieties so as to feed their buffaloes during the dry months.

A decade earlier (2000), Red Nellore Rams were distributed to shepherds in all the four villages through the animal husbandry department and this resulted in the pure Deccani

Table 11: Ownership of Sheep and Goats: Before and After VSS - Medak district

	Name of the Shepherd	Small ruminant population 1993-94 (Before VSS)		Sheep forcibily sold	Goats forcibily sold	Small ruminant population in 2004 After VSS	
		Sheep	Goats			Sheep	Goats
1	Pala Balaiah		100	0	0	40	
2	Bollaboina Pedamallaiah	100	100	0	0	100	0
3	Bolleboina Chinamallaiah	0	100	0	0	0	0
4	Poduru Shivaiah	0	70	0	0	0	0
5	Padala Veeraiah	0	60	0	0	0	0
6	Neelam Sathaiah	0	50	0	0	150	0
7	Kokkarakonda Mallesh	20	200	0	0	60	40
8	Kotha Basaiah	0	100	0	0		50
9	Munigala Malaiah	0	100	0	0	120	0
10	Sappati Muthyalu	50	100	0	0	100	30
11	Padala Narsaiah	0	100	0	0	0	0
12	Padalapalli Nagaiah	0	50	0	0	0	50
13	Kalpaguri Sankaraiah	0	0	0	0	0	100
14	Padala Lingaiah	0	0	0	0	0	120
15	Poduru Pochaiah	0	0	0	0	0	70
16	Kotha Balaiah	0	0	0	0	100	60
17	Gayantha Yadaiah	0	0	0	0	0	50
18	Bolleboina Veeraiah	0	0	0	0	0	100
19	Sappati Rajaiah	0	50	0	0	40	0
20	Sangham Adivaiah	0	150	0	0	0	0
21	Kalpaguri Pochaiah	0	120	0	0	0	0
22	Sappati Satyanarayana	60	0	0	0	250	0
23	Kotha Yadaiah	50	0	0	0	60	0
24	Akula Balaiah	100	0	0	0	30	20
25	Kolukuri Ilaiah	130	0	0	0	100	0
26	Jaggampet Pentaiah	0	0	0	0	70	0
27	Thuppati Krishna	100	0	0	0	50	0
		670	1450	0	0	1270	690

flocks turning into mixed flocks. The purity of the Deccani breed was lost, and the new mixed breed turned out to be very susceptible to diseases.

In 2008-09, in three of the study villages, Murrah buffaloes were distributed under the *Pashukranthi* program. Twelve women belonging to SC and BC communities (three from Nallavally, six from Maddur, and three from Gudemgadda), all of them members of the village SHGs, were given a Murrah buffalo each. By the time the study was carried out, about 50% of the "improved high-yielding" Murrahs had either died or were sold off within a year. Neither sheep nor goats were distributed under the *Jeevakranthi* program, and loans are not available for local breeds of animals.

The NREGS program is being implemented in all the four villages, and land development works are the priority activity. Trees of fodder and fruit varieties are being distributed to the farmers to plant on their field bunds through the NREGS.

1.1.9 The Major Challenges Faced by the Community

1. Decline in common grazing spaces. 2. Polluted grazing lands and water bodies caused by the effluents from a large number of agro-chemical and pharmaceutical companies located in and around the villages are resulting in animal morbidity and mortality. The farmers reported the death of animals that have consumed polluted water and fodder. 3. Severe fodder and water shortages during summer. 4. Difficulties in accessing credit to purchase local cows, bullocks, buffaloes and goats from banks and/or any other sources. 5. Difficulty to obtain good indigenous breeding bulls. 6. Pressure from the government to inseminate local buffaloes with Murrah semen. 7. Lack of persons to graze the animals. 8. Disappearance of traditional methods of collective grazing. 9. While grazing in forests was difficult in the context of VSS restrictions, the resistance and struggle led by the shepherds ensured that they continued to enjoy their traditional customary grazing practices.

The government programs that provide loans for so-called high-yielding animals (Murrah and Red Nellore), as also upgrading local buffalo breeds with Murrahs, were found to have failed. The scarce and declining fodder and water resources make it difficult for the farmers to rear and manage these breeds that require greater quantities of water and fodder, as compared to local breeds.

1.1.10 Community Awareness on FRA, 2006

Livestock rearers of the four study villages are aware of the Forest rights Act, 2006, mainly through the shepherd's *sangham* and through the work of ANTHRA. In all the four villages, mapping of the grazing areas and water bodies was initiated, and a resolution

was passed by their gram sabhas where they affirmed their traditional and customary uses of the grazing lands.

Nallavalli villagers, for instance, mapped out their customary grazing practices. *Kasana vagu* was identified as a key grazing area that is located in the reserve forest. The Forest Department employees frequently threatened shepherds when they grazed their animals therein. Once the shepherds became aware that the FRA recognizes their right to graze, they began to carry the act with them, and refused to be bullied by the forest guards. The shepherds also mapped their grazing routes/areas and discussed this with the gram sabha, which passed a resolution to claim community grazing rights in the forests. Similarly, In Madduru and Gudemgadda villages, the shepherds mapped their customary grazing routes in the forests towards claiming their community grazing rights.

In Gummadidala Village, the shepherds who led the resistance against the VSS restrictions on grazing and were successful in putting a halt to such false restrictions, took the lead in sensitizing the others about the community rights to forest: they sensitized other livestock keepers in their village and surrounding villages; communities of Muslim artisans, whose primary source of livelihood is making toys from the wood of the *Wrightia tinctorea* tree; and the community of Yerukulas, who weave baskets and mats using the palm leaves that they collect in the forest. A collective map of forest use was evolved, where the shepherds first prepared a map showing grazing locations, the Muslim community identified areas from where they collect wood, and the Yerukula community included regions where they access palm leaves. The Gummadidala shepherds and the Muslim community also sensitized the Bonthapalli and Nallavalli gram panchayats about these customary grazing rights. A major reason for the knowledge amongst the community was the role played by the local community organizations and NGOs to create awareness about the FRA; the government had done nothing to create awareness in this regard.

B. Chittoor District

1.2. Study Villages

The study villages in Chittoor district include Mandyamvaripalle and Galetivaripalle in Kurabalakota Mandal, situated near the Horsely Hills forest beat of Madanapalli forest block, Moriskandriga (situated near the Aare forest beat of Putturu forest block), and SL Puram (situated near the Kalathur forest beat in Tirupathi forest division) in KVB Puram Mandal. The latter two villages lie adjacent to the forests and hills of the Tirupathi forest division, located in Eastern Chittoor.

Similar to Medak, agriculture, livestock rearing, and wage labour are the major livelihoods in this district. Chittoor district too has witnessed a transformation of its agriculture, which was dominated by rainfed millets, pulses, and oil seeds, in addition to rice sown

near the village tanks; and similar impacts of green revolution have also occurred in Chittoor in its caste and landholding composition. The castes in Chittoor District include dalits (SCs) (Malas and Madigas), STs (Yanadis), BCs (Gollas, Kurubas, Palegars, Chakalis, Vadderas, Medaris, Kummaris, Pallireddys, Valmikis, etc.), and OCs (Reddys).

1.2.1 Land, Livestock and Livelihoods - An Overview in the Study Villages

Mandyamvaripalli Village is located in Thettu gram panchayat of Kurabalakota Mandal. This habitation lies adjacent to the Horsely Hills forest beat of Madanapalli forest block. There are 200 families in the village, of which 163 households (hhs) belong to the Golla community, 21 hhs are Reddys, 5 hhs are Muslims, and the remaining belong to the Vaddera, Yanadi, Kummari and Chakali communities. The major livelihoods of the people are agriculture, livestock rearing, and wage labor. The major livestock reared in this village include the Hallikar cattle, Holstein Friesan (HF) and Jersey cross cattle, Nellore sheep, goats, and poultry. The Hallikar cattle are reared primarily as work animals, for manure, and to produce future young bullocks. Holstein Friesan and Jersey-cross cows have been reared in the village since the past decade, and there are approximately 150 cross-bred cows in the village today. Ten years ago, the population of the local cows was around 1000, but now it has reduced to 100; the number of bullocks reduced from 400 to 80, and indigenous cattle breeding bulls declined from 100 to 1 - there has been a rapid decline in the indigenous cattle population. The sheep population has decreased from 2000 to 700, and goats have decreased from 1000 to 500. There are about 362 backyard poultry in the village. Galetivaripalle Village in Thettu panchayat, Kurabalakota Mandal is similarly positioned near the Horsley Hills. This village has 59 households, where the Reddy (24 hhs) and Vaddera (21 hhs) communities predominate. Agriculture, wage labour, and livestock rearing are the major livelihoods of these people. Most families belong to the small and marginal farmer categories, while 18 households are landless. The village has 64 cows (30 indigenous Hallikar and 34 cross-bred cows), 27 calves, 1 bullock, 3 sheep, 47 goats, and 186 poultry. Indigenous cattle are used for all the agriculture operations, to produce offspring, manure, and milk. The small ruminants are reared for meat, and sale of offspring. A decade ago, the livestock population was nearly double the present population. There were about 30 buffaloes, and every household had, on an average, 10 local cows. The village had a large population of sheep and goat. The community attributed the decline in livestock population to the presence of a cheetah in the forest, which frequently attacked animals whilst they grazed in the forest. Many people sold their animals, fearing these attacks. Only about 40 families continue to use local cows and or bullocks to plough their fields, while the remaining farmers use tractors. The farmers owning more than 4 acres of land, rear Jersey and HF cows.

SL Puram Village is located in Kalathur panchayat of KVB Puram Mandal. This village lies adjacent to the Kalathur forest beat of the Tirupathi forest division. The village

consists of 81 households, of which 53 belong to the Yanadi (ST) community, 12 are Palegars, 9 are Vadderas, 3 are potters, 2 are Gollas, and there is one household each from the Medari and Pallireddy community. The village is primarily a Yanadi (ST) village, where till about ten years ago, the community was completely dependent on the forest for their livelihood. Today their livelihoods include collection of minor forest produce, agriculture, livestock rearing, and wage labour. About 50% of the people are landless and the remaining are marginal and small farmers. Livestock rearing was not a traditional occupation; it was introduced by the NGOs and through government schemes in the later eighties and early nineties. The village has 13 local buffaloes, 70 cows, 10 bullocks, 84 sheep, 301 goats, and 150 backyard poultry. The main purpose of rearing these animals is for manure, milk (only a few cows), meat, and income. Animals are grazed in 300 acres of forest land and 30 acres of revenue common lands located in and around the village.

Moriskandriga Village, belongs to the Aare gram panchayat of KVB Puram Mandal. This village is situated near the Aare forest beat of Putturu forest block. There are 59 households in the village with a population of 236. The entire habitation consists of the Palegar community, which is a Backward Caste (BC). The Palegars are said to have migrated to the region, several hundred years ago. The geographical area of this habitation is 620.35 acres, of which cultivable dry land is 32 acres, cultivable wetland is 52 acres, fallow land is 25 acres, grazing lands are 12 acres, common lands (panchayats/revenue) are 500 acres, temple lands are 12 acres, and assigned lands are 30 acres. The major livelihoods of the community are agriculture, collection of minor forest produce, livestock rearing, and wage labor. The community rears local indigenous Hallikar cattle, bullocks, sheep, goats, and poultry. Cattle (female and male) are reared mainly for ploughing, draft and manure. In the past, there were no livestock in the village; but presently they rear 62 local cows, 48 bullocks, 865 sheep, 281 goats, and 140 poultry. About 12 Jersey cows were distributed to 8 households through government programs, but due to lack of green fodder and scarcity of water, two families sold their animals, while the remaining six families continue to rear these Jersey cows with great difficulty.

Land ownership estimates based on the entire village survey (Table 12) found that 28.2% are landless, 46.6% are marginal farmers, 17.4 % are small farmers, and 7.5% are middle farmers. About 75% of the households are BCs, 10.9% are OCs in three of the villages, while one village (SL Puram) is an ST village. **None of the study villages had dalit (SC) population**. Further, about 73.8% of the BCs are small and marginal farmers while 23.7% of them are landless, and 57.6% of the STs are landless with 42.4% marginal farmers. The OCs are predominantly small and medium farmers (84%), while the remaining are large farmers (Table 13).

Table 12: Distribution of Households based on Landholding Size (Four Villages) - Chittoor district

Name of the Village	Landless	Marginal	Small Farmers	Medium Farmers	Large Farmers	Households
Madyamvaripalli	29 (14.6)	95 (47.7)	62 (31.2)	13 (6.5)	0 (0.0)	199 (100.0)
Galetivaripalli	18 (30.5)	17 (28.8)	8 (13.6)	15 (25.4)	1 (1.7)	59 (100.0)
SL Puram	43 (53.1)	36 (44.4)	2 (2.5)	0 (0.0)	0 (0.0)	81 (100.0)
Moriskandriga	15 (23.4)	41 (64.1)	8 (12.5)	0 (0.0)	0 (0.0)	64 (100.0)
Total	227 (28.2)	374 (46.6)	140 (17.4)	60 (7.5)	1 (0.1)	803 (100.0)

Source: Village data.
Note: Figures in brackets represents percentage

Table 13: Land Ownership across Castes - Chittoor district

Caste	Landless	Marginal	Small Farmers	Medium Farmers	Large Farmers	Households
BC	71 (23.7)	158 (52.7)	63 (21.0)	8 (2.7)	0 (0.0)	300 (100.0)
OC	0 (0.0)	6 (13.6)	17 (38.6)	20 (45.5)	1 (2.3)	44 (100.0)
ST	34 (57.6)	25 (42.4)	0 (0.0)	0 (0.0)	0 (0.0)	59 (100.0)
Total	105 (26.1)	189 (46.9)	80 (19.9)	28 (6.9)	1 (0.2)	403 (100.0)

Source: Village Data.
Note: Figures in brackets represents percentage

Of the 140 sample households (Table 14), 10% are landless, 45.7% are marginal farmers, 23.6% are small farmers, and 20.7% are middle and large farmers. The sample is comparable to the village data in all respects except with regards to the landless, and this can be explained by the fact that there are very few landless households who own livestock.

About 67.9% of the sample households are BCs, 22.7% are STs, and 10.7% are OCs (Table 15); 65% of the ST sample households are marginal and small farmers - this differs from the whole village data, according to which 43% are marginal and small farmers, and the remaining are landless. Once again, the difference here is due to the fact

that very few landless families own livestock (Table 16). Further, 73% of the BC sample households are small and marginal farmers; this is comparable to the village data (Table 13); and 60% of the OC sample households are small, medium or large farmers, which is slightly lower than the distribution in the entire village data (Table 12).

Table 14: Distribution of Households across Landholding Categories, based on Sample Household Data - Chittoor district

Name of the Village	Landless	Marginal	Small Farmers	Medium Farmers	Large Farmers	Total
Mandyamvaripalli	2 (4.0)	24 (48.0)	14 (28.0)	7 (14.0)	3 (6.0)	50 (100.0)
Galetivaripalli	2 (6.7)	11 (36.7)	6 (20.0)	8 (26.7)	3 (10.0)	30 (100.0)
SL Puram	5 (16.7)	12 (40.0)	8 (26.7)	4 (13.3)	1 (3.3)	30 (100.0)
Moriskandriga	5 (16.7)	17 (56.7)	5 (16.7)	1 (3.3)	2 (6.7)	30 (100.0)
Total	14 (10.0)	64 (45.7)	33 (23.6)	20 (14.3)	9 (6.4)	140 (100.0)

Source: Household data.
Note: Figures in brackets represents percentage

Table 15: Caste and Landholding based on Sample Household Data - Chittoor district

Caste	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large	Total
ST	4 (13.8)	13 (44.8)	6 (20.7)	4 (13.8)	2 (6.9)	29 (100.0)
BC	10 (10.4)	45 (46.9)	25 (26.0)	11 (11.5)	5 (5.2)	96 (100.0)
OC	0 (0.0)	6 (40.0)	2 (13.3)	5 (33.3)	2 (13.3)	15 (100.0)
Total	14 (10.0)	64 (45.7)	33 (23.6)	20 (14.3)	9 (6.4)	140 (100.0)

Source: Household data.
Note: Figures in brackets represents percentage

The total livestock population in the village (Table 16) includes 408 cows, 143 bullocks, 20 buffaloes, 120 calves, 1656 sheep, 1136 goats, and 906 poultry. The average number of cows per household ranges from 0.86 in SL Puram to 1.08 in Galetivaripalli; and the average number of bullocks ranges from 0.016 to 0.68. The relatively poor bullock ownership is due to the predominant and wide-spread practice, in Chittoor District, of using cows as plough animals. Madyamvaripalli and Moriskandriga have the largest

number of traditional shepherding (Golla and Kurba) households and consequently contribute to 94% of the sheep population. A quarter of the goat population is found in the ST village (SL Puram), which has a large landless population. This clearly reflects that goats, unlike sheep, are reared by a range of communities, and are particularly important for the landless. The very small number of Buffaloes confirms that Buffalo rearing is insignificant in Chittoor District.

Table 16: Livestock Population in the Four Study Villages - Chittoor district

Village name	Total Hhs	Cows	Bullocks	Buffaloes	Calves (Cows)	Sheep	Goats	Poultry	Total Livestock
Madyamvaripalli	199	210	88	1	81	704	496	322	1902
Galetivaripalli	59	64	1	0	27	3	47	189	331
SL Puram	81	70	10	13	2	84	301	151	631
Moriskandriga	64	64	44	6	10	865	292	244	1525
Total		408	143	20	120	1656	1136	906	4389

Source: Village data.

1.2.2 Traditional Grazing-based Livestock Production Systems

Based on the entire village data from the 4 study villages (Table 17), the ownership of livestock across landholdings indicates that 21.8% of households do not own any livestock. Livestock ownership is directly correlated to land-ownership, with 64% of the landless households, 70% of the marginal and small farmers, and 86% of medium and large farmers owning livestock. Livestock ownership amongst the landless households in Chittoor is proportionately higher than in Medak District.

Table 17: Livestock Ownership across Landholding Categories in Chittoor district

Type of Farmer	No	Yes	Households
Landless	38 (36.2%)	67 (63.8%)	105
Marginal Farmer	32 (16.9%)	157 (83.1%)	189
Small Farmer	5 (6.3%)	75 (93.8%)	80
Medium Farmer	12 (42.9%)	16 (57.1%)	28
Large Farmer	1	0	1
Total	88 (21.8)	315 (78.2%)	403

Source: Village Data.

According to the sample household data (Table 18), the average number of cattle owned by different landholding categories ranges from 2.42 for marginal farmers and 2.57 amongst the landless to 4.9 heads of cows amongst the small farmers. These values are

higher than the village data, as they are a measure of the average holding amongst livestock-owning households, and the village data represents the average ownership across all households (including non-livestock-owning households). The average ownership of goats owned ranges from between 4.3 and 4.7 amongst the marginal and small farmers to 5.57 amongst the landless households. Similarly, amongst sheep the average number of sheep owned by landless is 3.6 and the highest average holding (10.5) is found amongst the medium farmers.

Table 18: Livestock Ownership across Landholding Categories - Chittoor district

Type of Farmer	Sampled HHs	Cattle	Local buffaloes	Calves	Goat	Kids	Sheep	Lambs	Poultry	Livestock
Landless	14	36	0	0	78	51	51	17	54	287
Percent	(2.57)	(12.5)	(0.0)	(0.0)	(27.2)	(17.8)	(17.8)	(5.9)	(18.8)	(100.0)
Marginal Farmers	64	155	4	2	280	142	248	138	246	1215
Percent	(2.42)	(12.8)	(0.3)	(0.2)	(23.0)	(11.7)	(20.4)	(11.4)	(20.2)	(100.0)
Small Farmers	33	163	3	2	156	79	68	31	113	615
Percent	(4.9)	(26.5)	(0.5)	(0.3)	(25.4)	(12.8)	(11.1)	(5.0)	(18.4)	(100.0)
Medium Farmers	20	74	0	0	107	53	210	74	101	619
Percent	(3.7)	(12.0)	(0.0)	(0.0)	(17.3)	(8.6)	(33.9)	(12.0)	(16.3)	(100.0)
Large Farmers	9	20	0	0	27	12	43	17	23	142
Percent	(2.2)	(14.1)	(0.0)	(0.0)	(19.0)	(8.5)	(30.3)	(12.0)	(16.2)	(100.0)
Grand Total		448	7	4	648	337	620	277	537	2878
Percent		(15.6)	(0.2)	(0.1)	(22.5)	(11.7)	(21.5)	(9.6)	(18.7)	(100.0)

Source: Sample household data.

Note: Figures in brackets represents percentage

There is no significant difference across castes in the average cattle holding (3.4 for STs, 3.1 for BCs, and 3 for OCs). However, there is significant difference between castes with respect to average goat ownership - 7.1 goats among ST, 44.1 goats among BC, and no goats among OC households, and sheep (0.5 amongst the STs, 6.2 amongst the BCs, and none amongst the OCs). This is a clear reflection of the continued traditional caste-based livelihood of shepherding.

1.2.3 Farmers Breed their Own Stock

Regarding the mode of acquisition of animals in the study villages (Table 20), 38% the indigenous cows are home-born, 32% are purchased, and the remaining are leased-in;

and a mere two indigenous cows were acquired on loans; 53% of the cross-bred cows are home-born, and 45% are purchased either directly or using loans; 24% of the bullocks are home-born and 76% are purchased; 39% of the goats are home-born, 25% are leased-in, and 33% are purchased. An insignificant number of goats were acquired through loans, reflecting the bias of the government towards goats. Amongst sheep, 63% are home-born, 14% are purchased or acquired through loans, 23% are leased-in, and the remaining are purchased, usually from shepherds. Most purchased animals are acquired from the local markets, or other farmers. Poultry are once again home-bred.

Table 19: Livestock Ownership across Castes - Chittoor district

Caste	No. of	Cattle Households	buffaloes	Goat	Kids	Sheep	Lambs	Poultry	Livestock
ST	29	99	1	207	127	16	15	84	549
Percent		18.0	0.2	37.7	23.1	2.9	2.7	15.3	100.0
BC	96	303	10	441	210	604	262	414	2244
Percent		13.5	0.4	19.7	9.4	26.9	11.7	18.4	100.0
OC	15	46	0	0	0	0	0	39	85
Percent		54.1	0.0	0.0	0.0	0.0	0.0	45.9	100.0
Grand Total	140	448	11	648	337	620	277	537	2878
Percent		15.6	0.4	22.5	11.7	21.5	9.6	18.7	100.0

Source: Sample household data.

Table 20: Mode of Acquisition of Animals - Chittoor district

Local Indigenous Cows

Name of the Village	Home-born	Purchased	Loan	Leased-in	Grand Total
Mandyamvaripalli	13	4	0	0	17
Galetivaripalli	18	2	0	0	22
SL Puram	2	17	3	5	27
Moriskandriga	2	7	0	17	26
Grand Total	35	30	2	17	92

Cross-bred Cows

Name of the Village	Home-born	Purchased	Loan	Leased-in	Home-born Purchased	Grand Total
Mandyamvaripalli	41	15	0	1	6	63
Galetivaripalli	15	0	2	0	18	35
SL Puram	0	3	1	0	0	4
Moriskandriga	4	5	1	0	0	10
Grand Total	60	23	4	1	24	112

Bullocks

Name of the Village	Home-born	Purchased	Total
Mandyamvaripalli	10	26	36
Galetivaripalli	4	4	8
SL Puram	2	9	11
Moriskandriga	2	18	20
Grand Total	18	57	75

Goats

Village name	Home-born	Purchased	Gifted	Loan	Leased-in	Grand Total
Mandyamvaripalli	204	187	0	0	110	501
Galetivaripalli	20	0	0	0	40	60
SL Puram	63	50	5	10	29	157
Moriskandriga	44	35	0	0	33	112
Grand Total	331	272	5	10	212	830

Sheep

Name of the Village	Home-born	Purchased	Loan	Leased-in	Grand Total
Mandyamvaripalli	341	30	0	110	481
SL Puram	0	21	0	40	61
Moriskandriga	78	29	15	0	122
Grand Total	419	80	15	150	664

Source: Sample household data.

1.2.4 Gender Roles in Livestock Rearing

Women, along with men, play key roles in agriculture and livestock production. The data reveals (Table 21) that men and women equally share the responsibilities of watering, feeding, grazing animals, collecting grass, milking, cleaning, and marketing of the animals. Men take on slightly more responsibility with respect to the health care (60%) of the animals (e.g., taking the animals to the hospital).

Table 21: Gender Roles in Livestock Rearing - Chittoor district

Gender	Watering and Feeding	Grazing and Grass Collection	Health Care	Milking	Marketing
Male	227	201	172	142	154
67.6	49.8%	52%	60%	51%	54%
Female	230	185	116	136	130
64.6	50.2%	48%	40%	49%	46%
Total	457	386	288	278	284

Source: Sample household data.

2.5 The Role of Livestock in the Livelihoods of the Community

a) Large Ruminants

What emerges in Chittoor District is that the local cattle (both cows and bullocks) are primarily reared for farming operations, while for dairying both local cows and CB cows are reared. Buffaloes are not generally reared in this district and this has reflected in the study villages also (there are no buffaloes in two villages in Kurabalakota Mandal). Manure is an extremely important output from the animals, and the average manure collected per household per year varies from four bullock carts (from one cow) to eight bullock carts (from a pair of bullocks) based on the number of animals owned. Maximum manure is obtained by those households that own larger number of animals and/or own sheep and goats in addition to the large ruminants. Almost all the manure is utilized on the farmers' own fields. The average number of days of work in a year for a bullock is 90 days.

The total daily milk collected (Table 22) is essentially contributed by the cross-bred cows, and is maximum during the monsoons (86% milk from cross-breds and 14% from local cows), and reduces slightly during the winter. There is a drastic (47%) reduction in the amount of milk collected during the summer months.

Table 22: Seasonal Milk Production (Total Daily Milk Collected in Litres/Day) - Chittoor district

Name of the Village	Local Indigenous Cows (Milk Collected/Day)			Cross-bred Cows (Milk Collected/Day)		
	Monsoon	Winter	Summer	Monsoon	Winter	Summer
Madyamvaripalli	0	0	0	600	500	300
Galetivaripalli	50	50	20	150	200	100
SL Puram	36	36	20	0	0	0
Moriskandriga	32	32	20	0	0	0
Total	118	118	60	750	700	400

Source: Village data.

The reproduction parameters for local cows indicate that the average age of first calving is three years, the average calving interval is 15 months, and the average number of months in milk is nine months. The reproduction parameters of CB cows: average age of first calving is two years, the average calving interval is one year, and the average number of months in milk is nine to ten months. The community prefers the local cows which are sturdy, hardy, produce and reproduce with minimal feed inputs, have high disease resistance, yield adequate milk under the existing constraints, and are also used

for agriculture purposes. The cross-bred cows on the other hand require lot of care which in particular women cannot handle, as it is a huge labour-intensive task -the cross-bred needs far more care and gives nothing in comparison. Further, it is more risky, more vulnerable to diseases, and requires more care. Majority of the farmers reported that their local cows are bred using natural breeding methods, while some farmers reported that they use AI to breed their cows. The farmers owning cross-bred cows reported that they use only AI to breed their cows. The calf mortality amongst local cows is non-existent as compared to the calf mortality amongst the cross-bred cows.

Feeding and grazing practices: The large ruminants (cows and bullocks) derive their nutrition by grazing and being fed with crop residue, green fodder (when available), and concentrates. An average animal is grazed from 10 am to 6 pm in all the seasons. An analysis of the grazing practices reveals that during the summer months, the animals are predominantly grazed in non-forest commons / agriculture fallows); and during monsoons and winter, in the forests. Most farmers graze their animals by deputing someone in the family to do the task. The dominant source of water is ponds and bore wells in summer, and water ponds inside the forest during monsoons and winter.

Along with grazing, large ruminants are also fed with crop residues. The average quantity of crop residue fed to one large ruminant (cow) varies from 1 kg/bullock during the monsoons to 5 kg/bullock during winter/summer - the majority of the respondents feed paddy straw. The majority of respondents obtain the crop residues from their own crop, while the farmers who rear dairy animals purchase paddy straw from other villages. The average total amount of straw purchased annually is 1000 kg/farmer, who owns two cross-bred cows. The average expenditure incurred in purchasing crop residues is Rs.10000/year.

Natural green fodder is fed to the large ruminants during the monsoon season when the families collect green fodder from the fields. The common varieties collected include *Garika (Cynodon dactylon), Erra topiri (Oplimenus barmanii), Errakasi (Apluda mutica), Upagaddi (Heteropogon contortus),* and *Sannautla kasuvu (Digitaria sanguinalis)* are the grass varieties, and Peddavepa (Melia acompositae) is a tree fodder variety. The collected fodder is fed to animals. Only households which had bore wells cultivate green fodder, which is fed to the dairy animals usually during the summer months. The common varieties cultivated include napier bajra and Guinea grass for the dairy animals. Out of the four villages, green fodder is cultivated only in Mandyamvaripalli). In the case of Mandyamvaripalli, out of the 50 households, 15 are cultivating green fodder, while two households have leased-out their land along with water facility to others for cultivation of fodder at the rate of Rs.1500/*gunta* (one acre is equal to 40 *guntas*) per year.

Concentrates are also fed to the dairy animals, and work bullocks. The common concentrate fed to the dairy animals is the ready-made feed mix purchased from the market. The average cost of feed (concentrates) for a cross-bred dairy animal (HF/Jersey) is Rs.1300/month and for a local cow, it is Rs.700/month.

Major diseases affecting large ruminants: Morbidity is largely due to FMD, mastitis, HS, and respiratory problems such as cold and cough. An Anthrax outbreak was reported in 2010 in Mandyamvaripalli Village in Kurabaloka Mandal. The animal husbandry department, assisted by community animal health workers, responded by vaccinating all cattle, sheep and goats in the village as well as surrounding villages. As a precaution, the gram panchayat decided to continue Anthrax vaccinations for the subsequent five years.

The most popular form of treatment for local breeds of livestock is utilising the services of the local traditional healers, followed by government veterinary doctors. The farmers consult government veterinary doctors, veterinary compounders, *gopalmitras*, and private consultants to treat their cross-bred dairy animals. The compounder comes to the village to treat the animals, when called by the farmers. The farmers regularly feed their indigenous cattle with a cocktail of herbal leaves, roots and barks, which help to build immunity.

The large ruminants are regularly vaccinated against FMD and Anthrax. The vaccinations are accessed from the veterinary hospitals. The animal husbandry department is assisted by the local community animal health workers to administer the vaccinations. The farmers purchase deworming medicine and deworm their calves once every month for six months.

b) Small Ruminants

The average size of the flock ranges from 40-60. There are 2-3 male rams in a flock of 60 sheep. The dominant breed is the White/Jodipi Nellore. The sheep lamb thrice in two years and usually give birth to single lambs. The flocks are grazed on harvested fields and fallow lands during the summer months, and in the forest during monsoons and winter. The practice of penning flocks on harvested fields to provide manure to the agricultural fields has declined since the past; now, it is no more practiced. The decline is reported to be linked to the transformation of the agriculture cropping practices, where the farmers who have switched to intensive commercial and chemical-based farming, no longer desire to have the sheep flocks penned on their lands. The shepherds earn their income through the sale of young male lambs. Goats are primarily reared for their meat, and the shepherds derive their income from selling the goat kids. The average age at which the goat kids are sold is about 6-12 months. The local goat breeds are reared. Some goats kid twice a year, while others thrice in 2 years. The twinning percentage amongst goats is much higher than amongst the sheep. Major diseases affecting small ruminants: The important diseases affecting sheep and goats are foot rot, blue tongue, PPR, sheep pox (sheep), mange

(goats), HS, and respiratory disorders. Dead animals (sheep/goats) are disposed of by throwing them into a pit. The shepherds treat their own animals, consult healers, and if that does not work, approach the veterinary doctor. The shepherds mobilize vaccinations from the government veterinary hospitals, and ensure that their animals are protected against ET, PPR, and sheep pox - the vaccines are provided free of cost. The shepherds and the community animal health workers assist the government staff in vaccinating the animals. Sheep and goats are dewormed twice a year by the government, free of charge.

Local traders visit the flocks, and purchase young lambs and kids from the shepherds. The common season of sheep sales is between September and November; while for goats it is between October and November. The average sales price of a six-month old sheep ranges from Rs.2500-3000. A one year old sheep fetches up to Rs.4000, based on its weight. Goats are also sold at similar prices. The adult female sheep/goat is sold only if the animal is sick, aged, or has a fertility problem. Young female lambs/kids are rarely sold/given away, and are kept as replacement stock. Females are sold only if the flock size exceeds the management capacity of the shepherd.

Backyard poultry are of the local Kalahasti indigenous breed, and are reared for their meat. An average of 4-7 birds are owned by a farmer, and a hen lays about three clutches per year. Birds are consumed at home, and used during festivals, and special occasions.

Summary of livestock contribution towards overall income: The study revealed that livestock contribute a major part (more than 50%) of the income for the dairy farmers, and sheep and goat rearers, followed by agriculture and wage labour in Mandyamvaripalli Village. In the other three villages, agriculture, livestock-rearing, and wage labour are the three major sources of income. The exception is SL Puram, where the major livelihood is collecting minor forest produce and goat rearing, followed by agriculture.

1.2.6 Customary Grazing Systems in Forest and Non-Forest Commons, and their Governance

Mandyamvaripalli shepherds graze their animals in Horsley Hills and Thettu forests. Shepherds from Arogyapuram, Diguvapalem, Galetivaripalli and Thettu villages also graze their animals in Horsley Hills. Livestock rearers of Arogyapuram stay in Horsley Hills for about 1-3 months particularly during summer. The shepherds graze their animals in the forest during the monsoon and winter seasons. Apart from these forests, the shepherds also graze their animals on revenue hillocks such as Gollapalli gutta. The shepherds from Thettu dalitwada,

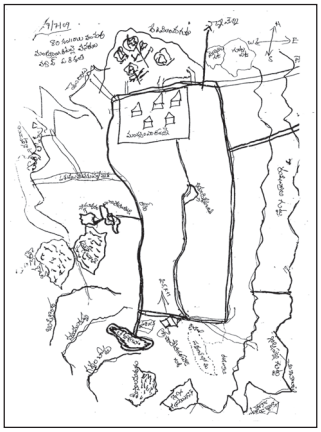


Fig.1 Gadetivaripalle Revenue Village

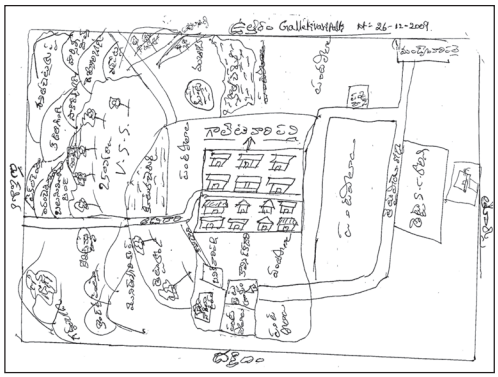


Fig.2 Mandyamvaripalle Revenue Map

Pujarivaripalli and Murthynainipalli, during rainy and winter season, normally take their goats to specific locations namely the Thettu forest, *gadarimanu gutta, muniswaruni kuppa, kunjagani gutta, deyyala kota, komatoni bavi, gederi manu dona, kundelu bodu, kaditi gundam, pedda kanuma, and vaddi kanuma for grazing.* Traditional water ponds, namely *kotha cheruvu, kotala cheruvu, korivoni bavi, akkagari kala, kappara kunta, misala madugu, and enumu lutlu* are used for sheep, goats and cattle during winter and summer months.

Shepherds from Gurralavaripalli and Arogyapuram villages graze their animals on *Gollapalli gutta.* About 500 sheep from these villages are grazed on *Gollapalli gutta* each day. In the past, Mandyamvaripalli villagers too grazed their animals on *Gollapalli gutta.* However, they lost their traditional access route to *Gollapalli gutta* after a part of the hillock was handed over to the Rishi Valley Education Centre (RVEC), for its restoration. The entire hillock comprises 150 acres, of which 50 acres were being protected by the RVEC. The dalit families of Thettu village own assigned lands which lie adjacent to this gutta. At the time of the study, the dalit families shared that they had not been cultivating these lands. The Mandyamvaripalli shepherds have been exploring different strategies to address their grazing needs and one of the opportunities they identified was to re-vegetate the revenue hillock located adjacent to their village with a variety of traditional fodder trees and grasses. However, if this were to work, they needed to identify an alternate space for them to graze their animals. They also expressed that if they were granted the use of a narrow path to reach the unprotected portion of *Gollapalli gutta* to graze their animals, then they would be able to go ahead with their idea of re-vegetation of their own hillock. For this, they negotiated with the sarpanch, and the RVEC to grant them permission to carve out a narrow path (5 feet wide), from the main road leading up to the hillock. After several rounds of discussions, the Sarpanch and the RVEC agreed to grant a narrow path through their respective properties so as to facilitate access to the hillock. At the time of the study, the shepherds were once again using the *Gollapalli gutta* for grazing. The farmers graze their cross-bred cows on their own fields only.

KVB Puram farmers traditionally use forest for fodder, fuel, and other minor forest products, but they never destroy the trees while using forest resources. Goat rearers are of the opinion that, the local Forest Department staff and the Red Sandal wood smugglers

were in nexus with one another. The shepherds observed that one of the reasons why the Forest Department does not want them to graze in the forests is because this hinders the smugglers who smuggle timber. This is why the FD forces the people to move out from the forest, and blames goats for forest destruction. The dalit woman goat rearers say, "We have been rearing goats since several years and not a single fodder tree has become

Table 23: Select Grazing areas in Thettu Forest, Village Livestock/Species grazed there, and the Fodder Available - Chittoor District

Grazing Areas		Geddalabodu & Kundelubodu	Tekulapenta	Muniswaruni kuppa	Ragimanubanda, mula rayi	Rallamanu banda
List of Villages		Arogyapuram Diguvapalem Murthinainipalli Lakinenivripalli Eguvapalem Pulisiguntalu Thettu Thettu HW Nagulapuram Galetivaripalli Mandyamvaripalli	Diguvapalem Murthinaini palli Thettu	Murthinainipalli Galetivaripalli Thettu Thettu HW Kotakadapalli Mandyamvaripalli	Murthinainipalli	Murthinainipalli Lakinenivaripalli Eguvapalem
Livestock Species		Goats, cattle, sheep	Goats, cattle, sheep	Goats, sheep	Goats	Goats
Season-wise Fodder Species Availability	Monsoon	Jalari Thopiri Upa Yada teega Erra seeki Balusu Resi gaddi	Upa gaddi Boda gaddi Yadaku teega Nalla pulisi Kothi iriki	Billi Merigi seeki Jalarlu Elimi Boda Resigaddi Thalakasi	Upa gaddi Boda Yadaku Pullelaka	Upa Kandalam
	Winter	Kandalam Upa gaddi Thopiri Isikareni Methani mamidi Alli manu Dabbegiri gaddi	Kommi Elama Billi	Mirapaginja Alli manu Bagi Erraseeki Isikareni Chinta	Erra seeki Seeki Eetha	Resi gaddi Pedda manga
	Summer	Endugaddi Ullinja Pachari Mullu udaga chekka Nemali uduga Ammudugu Mirapa seeki		Resi gaddi Mirapaseeki Mirapaginja aku Narava Alli	Adavi nelli Resi gaddi	

Grazing Areas		Geddalabodu & Kundelubodu	Tekulapenta	Muniswaruni kuppa	Ragimanubanda, mula rayi	Rallamanu banda
Season-wise Medicinal Plants' Availability	Monsoon					
	Winter	Usiri Thandra	Seethaphal Thandra	Chilla Maredi gaddalu Pasaleni pasirigaddalu Mirapaginja chekka Nemali uduga seeds Podapathri Pala gaddalu Nalla jilakarra		
	Summer	Karaka Elama	Mothuka Adavi nalli			

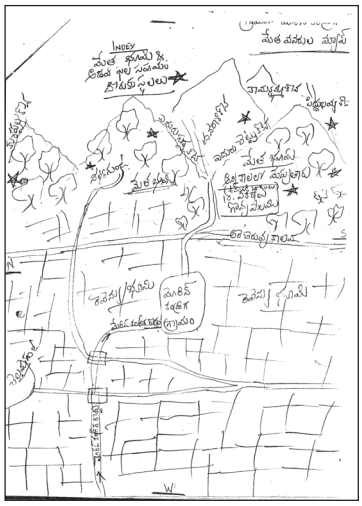


Figure 3: Moriskandriga Resource Map

scarce, yet, those species that are commercially harvested have declined tremendously".

Moriskandriga Village has two forest areas known as Are forest and Vagathuru forest. Villagers seasonally graze their animals in these forests. During the monsoon and summer months, farmers who own local cows, goats and sheep graze their animals in specific locations inside the Are forest, such as *Siddalappakona, Are cheruvu, Kamakshammakona, Veduru Kuppa, Danaraj Kona,* and *Enni male tippa.* Farmers from neighbouring villages - Jnanammakandriga, Marappa Reddy kandriga, Middikandriga, and Pulimgunta also graze their animals in these forests. Animals are grazed in *Siddalaiahkona* area throughout the year. The major drinking water sources for the animals are Siddalaiahkona and Kamakshammakona, which are located in the Are forest.

According to the elders of Moriskandriga Village, the villagers have a mutual understanding amongst themselves about how the forests are utilised for grazing, which

dates back several generations. When forest fires occur, the farmers have traditionally taken the responsibility and collectively stopped/controlled the fire. They do this because it is they who suffer and are unable to feed their sheep and goats after forest fires. The farmers feel that the forest is not just their common resource, it is one of their major livelihood resources.

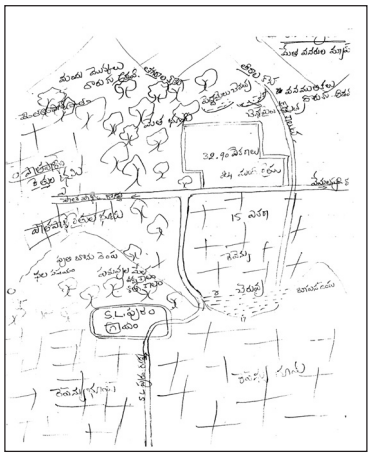


Figure 4: SL Puram Resource Map

The SL Puram animals graze on the common lands and forest during the monsoon and winter seasons and on harvested fields during the summer season. Specific locations for grazing in the forest are *Theerthalakona, Thagarthalakona, Bapannadempa*, etc. Further, *Seethakaluva* is a major channel and provides drinking water for the animals in the forest. Animals from neighboring villages such as Kondaladaram, Pathaplyam, Belireddykandriga, Kalathur and Vemulapudi are grazed collectively in SL Puram forest as also in Vemulapudi forest. These forests are rich in fodder and medicinal plants.

The forests also provide healers in the form of a large source of wild herbs that are used to treat humans and animals alike. Healers of the region collect these valuable herbs from the forests to treat sick people and animals.

1.2.7. Changes in the Governance of Land Use (Forest and Non-Forest) and their Impact on Livestock-Livelihoods-Community Response

Forest guards and rangers have harassed and intimidated women shepherds since as long as they can remember. They have been stopped and threatened by the guards, fined for grazing their goats, sheep or cattle in forests, and coerced to hand over live animals as payment to the guards. In 1995, the usual presence of the forest guards was compounded by threats received from *"Mana walle"* - their own villagers - who were members of the newly created Forest Protection Committees or Vana Samrakshana Samitis (VSSs). The latter imposed strict fines on shepherds who grazed their animals, particularly goats, in the forests; the fines ranged from Rs.10 to Rs.25 per animal. The ten-year period from 1995 to 2004, was living hell for the shepherds, as the Forest Department through the hands of co-villagers working as VSS committee members, enforced an unofficial ban on goats through fines, threats, and terror. Around this period, the State Animal Husbandry Department adopted an utterly illogical and unethical "unwritten" code that they would neither treat goats, nor extend their deworming and vaccination services to cover goats. Under severe economic and mental duress because of the Forest Depart-

ment and VSS committee members who belonged to the powerful castes in the local village hierarchy, coupled with the lack of veterinary services for goats, several families reluctantly sold their goats. While some households completely moved out of small ruminant rearing, others purchased sheep. The maximum number of offences by the forest guards, rangers or VSS-appointed guards was committed against women. The guards captured goats, snatched the women's lopping tools, or fined them, if they were caught grazing goats in the forests. Many women resisted by refusing to pay the fines, but many could not sustain the pressure, and paid the fines.

The formation of the VSS committee in Vagathuru (1995), resulted in several grazing restrictions being imposed on the farmers of Moriskandriga, who were restricted from grazing their animals in the forests. A VSS committee started collecting a grazing fee of Rs.10 per goat and the goat rearers paid them continuously for ten years between 1995 and 2005. In Chittoor, the shepherds organised themselves into *sanghams* in 2004-05, and began to pass resolutions asserting that they would continue to graze their animals in the forests, and would resist the pressure of the VSS and the forest guards. Individual threats to women shepherds were effectively countered by the collective/*sangham*, challenging the forest guards (Ramdas and Ghotge, 2007). The people, organised under the banner of the shepherds' *sangham*, refused to pay the fines. The protests amalgamated into a larger state-wide protest for the recognition of forest rights in the forests in the same year, which finally culminated in the enactment of the Forest Rights Act, by which grazing in forests was a legal right! The shepherds and farmers from these villages including Moriskandriga participated vigorously in the movement, and subsequently they carried around copies of the Forest Rights Act, 2006 translated into Telugu by the NGO Yakshi; if any forest guard came to question them, they would point out the clause which talks about their right to graze in the forests.

In SL Puram Village, till last year (2009), there were no restrictions on grazing in the forest, but a new forest ranger was appointed in 2009, and since then the Forest Department tried to resume harassing the farmers and shepherds and to pay fines of up to Rs.20 per goat. They also tried to prevent the community from from collecting firewood and/or other forest produce. If anyone is seen carrying any produce from the forest, they were threatened that cases will be filed against them. The shepherds now have the FRA legislation to challenge the Forest Department's guards, stating that it is now their "legal" right to graze in the forests, according to the law of the land, as the legislation pertains to both adivasi and other traditional forest dwellers such as themselves.

Identical problems were faced by shepherds and farmers located all the way in Mandyamvaripalli and Galetivaripalli, where the Forest Department guards regularly fined the shepherds and farmers when they grazed their animals in the forests. They were

fined at the rate of Rs.50/goat/year and each shepherd was forced to pay a live goat to the guard at the time of Dussehra. The shepherds were not given a receipt for the payment they made, and they did not know how the money was used. The shepherds were unable to understand the logic of how "payment" to the forest guard would stop the supposed destruction being created by goats - if there indeed was destruction, which the shepherds were emphatic did not occur because of their goats, but due to the corrupt nature of the Forest Department.

Due to restrictions on goats grazing in the forest, the goat population declined; and the lack of access to common lands for grazing has also been a reason for the declining of sheep population in the village. Fortunately, the shepherds were able to negotiate to obtain the path to approach the common lands with the impact of the RVSDA project in the village.

The non-forest commons are still intact, albeit a lot of it either being gradually encroached upon or distributed to the landless in the name of social justice. The shepherds argue that these commons are useful for all, and the landless should be given private lands that belong to landlords. There continue to be landlords who own large quantities of land. Another reason for the decline in the common and fallow lands is that the large farmers sell their lands to non-locals, who then proceed to erect a fence around the lands, thus making the lands completely inaccessible. Fencing the land was never a traditional practice, and it was customary that post-harvest, all lands "including private lands, were open to all livestock to be grazed". The decline in grazing lands (common lands and private lands) is a major reason why farmers are selling their indigenous cattle that depend on open grazing systems. Fodder shortage in summer has aggravated with the shift in cropping pattern from millet-pulse-oilseed production to intensively cultivated vegetables such as tomatoes, beans, gurkins, baby corn, and other exotic vegetables, mainly for supply to Bangalore markets.

1.2.8 Major Government Livestock Development Programs and Their Impact

All these villages had strong dairy cooperatives, which collapsed sometime between the mid-nineties and early 2000s. Subsequently, a variety of private dairies sprang up, which are now controlling the markets.

In 2008, the government announced and subsequently notified the creation of the Rishi Valley Special Development Authority (RVSDA) with the Rishi Valley Education Centre, as a key actor in the development zone. The creation of the RVSDA has stalled and halted the relentless pressure on the land by the mining companies. Under the aegis of the RVSDA, several programs for sustainable development have been imitated, including a program of sustainable livestock and agriculture development.

The veterinary hospital is situated at Thettu village, at a distance of 5 km from the Mandyamvaripalli and Galetivaripalli villages. The shepherds are extremely aware of the veterinary services available through the government veterinary hospital and access vaccinations and deworming medicines for their animals. The animal husbandry department supplies fodder seed varieties such as Guinea grass and Napier grass to the farmers of these two villages. These are distributed to farmers who have irrigation facilities; they use the seeds to cultivate green fodder for feeding their dairy animals during summer.

The farmers of Mandyamvaripalli collectively rear and use an indigenous cattle (Halliker) breeding bull locally known as *Basaveddu* for breeding purposes. However, the veterinary department discourages this practice; its wants to stop all natural service, and instead get the entire village to breed the animals using AI.

Presently, is milk is collected by Balaji Dairy in Mandyamvaripalli Village. In Galetivaripalli Village, the milk is collected in cans and taken to the nearby milk collection centre run by the SHG, Velugu. The veterinary hospital is in KVB Puram located 10 km away from Moriskandriga Village. In 2001, the government gave loans to eight families to purchase Jersey cows. Due to lack of green fodder and scarcity of water, two families sold their animals. The remaining six families still have their animals, but are unable to meet the cost of production of milk from their earnings from milk sales.

In SL Puram Village, five households were given Jersey cows through SHG loans. Two of these households sold the animals, as they could not feed them. The other three families continue to rear the cows, but complain of a tremendous decline in milk yield.

1.2.8 Major Problems:

i) Severe fodder shortage in summer due to shift in cropping pattern from millet-pulse-oil seeds-based production that yielded both grain as well as crop residues to intensive vegetable cultivation.

ii) Decline in common and fallow lands as the farmers have been selling lands to non-locals who erected fences around such lands.

iii) Grazing restrictions in forests and imposing of fines for grazing, harassment from VSSs (this was severe in the past, but has stopped as the shepherds organized and resisted the pressure. They also stopped paying the fines).

iv) Diseases such as Anthrax. In 2008, 12 HF adult cows and 5 sheep died due to the outbreak of Anthrax disease in the villages of Thettu panchayat.

v) Lack of veterinary facilities in SL Puram and Moriskandriga.

vi) No loans available for plough animals; loans are given only for dairy animals.

vii) The cost of production per liter of milk is much more than the price paid to the farmers (Rs./litre of milk) by private dairies (e.g., Thettu panchayat).

1.2.9. Community Awareness on FRA, 2006

All the four villages studied in this district, particularly the shepherds and other families who graze their animals in the forests, have high levels of awareness about the Forest Rights Act. This is largely due to the awareness building that was carried out by the local community *sanghams* and activists who are part of larger networks in the state, and are working on the FRA. The government departments have done nothing to create awareness about FRA amongst the people. Of course the Forest Department has done everything in its capacity to prevent the implementation of the law, with respect to people's rights to graze their animals in the forest.

Community activists of the shepherd *sanghams* in the KVB Puram Mandal narrated how they decided to arm each family with a copy of the act. They organised meetings with the VSS committee members in the surrounding villages and explained the provisions of the act and how it recognizes the grazing rights of forest-dependent communities and other pastoralists. The communities learnt about how the FRA, 2006, for the first time, gives legal recognition to grazing in forests as a customary community right, and would provide the forest-dependent communities a new opportunity to claim their traditional community grazing rights and other rights in the forests. It would also once and for all end the long-standing conflict with the Forest Department, as now, instead of being "criminalized", the shepherds had rights to graze. The forest guards and the VSS chairmen were informed that if they tried to prevent any community member from grazing their animals in the forests, they could be prosecuted as per the provisions in the act.

Women shepherds in KVB Puram Mandal, in Chittoor District, reported that they carry a copy of the act whenever they enter the forest with their animals, and confidently challenge the forest guards, if they are accosted. In the words of Krishnamma, a dalit *sangham* activist and goat rearer, "We women are strong, and are no longer afraid, now that we have this act with us. We wave the book in front their faces and show them the page, which mentions our rights. They are too stunned to oppose us". The past two years have seen the women of Chittoor pro-actively entering the forests and staking claims to their grazing rights. Interestingly, shepherds in other villages, who continued to face threats from the forest guards approached the local *sangham* activists, and asked for help. Today, shepherds living in villages across KVB Puram Mandal, have stopped paying fines, and are actively asserting their traditional/customary rights to graze, as the first step towards staking their historical claims to their forests. They also state, that they

now have the right to graze and protect the forests, from the forest guards who sold out truckloads of trees to smugglers in collusion with the VSS committee members.

Livestock rearers of Moriskandriga got to know about FRA and started negotiating with the Forest Department against paying fines since 2008.

An interesting development narrated by the shepherds of KVB Puram Villages was that those who had sold their goats previously because of enforcements from VSS, have once again purchased goats, as these are far more suitable and adapted to the terrain than sheep, and had always been their source of livelihood, till it was disrupted by the VSS - the goat population had declined by as much as 50% between 1995 and 2003. However, in the past two years, the goat population has increased by 40%.

Specifically pertaining to the current use of FRA, 2006, the villages in both panchayats prepared community claims that include the clauses under Section II, 3c (right of ownership over MFP), 3d (rights of uses and entitlements to water bodies), grazing (settled and transhumant), and for the traditional seasonal resource access or nomadic or pastoralist communities, the right to protect, regenerate, conserve, or manage any community forest resource which they have been traditionally protecting and conserving for traditional use, 3k - the right of access to biodiversity and community rights to IPRs and traditional knowledge related to biodiversity and cultural diversity are relevant for these communities to claim their rights using the act.

In SL Puram Village, all the 53 Yanadi households have submitted claims for individual *pattas* under the FRA. However, 24 households have received *pattas*, but for much lesser land than what they had claimed. Community mapping of the community forest resources was done, and the gram sabha is in the process of applying for their community claims. The elders of the village mapped their grazing resources, and the Forest Rights Committee was formed in the month of November 2011.

In Thettu panchayat, the gram sabha passed a unanimous resolution that the panchayat would like to initiate the process of claiming community rights using the FRA, 2006, and a Forest Rights Committee was set up at the level of the panchayat. Community maps were prepared, and the community rights listed out for each hamlet. All these maps and forest uses were listed out for each hamlet, and were compiled under one consolidated community form "B" claim, which was submitted to the SDLC in April 2010. There was no response for a long time, and finally after the change of the Collector in 2011, the new Collector enquired whether the FRC had been organized at the level of each hamlet. The Collector directed that the Thettu gram panchayat should pass fresh

resolutions to set up FRCs at the level of each hamlet, and prepare fresh community claims. This process was initiated during November-December 2011. Fresh resource maps were generated in 12 villages, which include Thettu, Thettuharijanwada, Moothinayanpalli, Diguvapalam, Pulsiguntalu, Eguvachinnamarri, Balakavaripalli, Nagulapuram, Galetivaripalli, Lakinaypalli, Arogyapuram and Mandyamvaripalli. In all these villages, the villagers graze their sheep, goat and cattle in the forests. They also water their animals in the forest.

The shepherds of Mandyamvaripalli Village, used to pay Rs.500000 per annum as a bribe to the FD for grazing their animals in the forest. However, since the last two years they stopped the payments completely - after they learnt about their rights under the FRA. The Shepherds petitioned the senior forest officials to instruct their forest guard and watchman to stop pressurizing them to pay bribes. The shepherds also resolved that they would graze their animals without chopping down the trees from their base. They would practice lopping of branches in a manner that enhances biomass production and vegetative growth.

Mandyamvaripalli Shepherds and other livestock owners are eager to participate in community efforts to enhance fodder and water resources in the commons and have immense knowledge to share - provided they are given a key role in shaping the plan. The Forest Rights Act, 2006, is a crucial legislation that is being effectively used by the villagers in Thettu panchayat to secure their traditional and customary rights to graze in these forests. It can also be effectively used to involve villagers to exercise their right and responsibility to develop and conserve the forest resources according to their customary ways. There is huge potential and need to develop the revenue hillocks to meet the grazing, fodder and water needs of the livestock by regenerating the hillocks to build local biodiversity, as also meet the needs of the people. This has to be done in a phased fashion and should be planned and implemented by the villagers who use the commons for their livelihood. The shepherds of Mandyamvaripalli have already initiated this process.

The act has clearly given these communities a sense of "empowerment", and while all regions may not be expressing it as vividly as the women shepherds of Chittoor District, the recognition of the grazing right, is the first step towards actually setting the stage for the communities to begin to think about ways to "protect and develop" these very same forests, which will sustain their livelihood in the years to come.

C. Adilabad District

1.3.1 Land, Livestock and Livelihoods- An overview in the study villages

The study was carried out in Laxmipur/Lachuguda and Lohekothaguda villages of Thiryani Mandal and Kamayipet and Ghanpur villages of Utnoor Mandal.

Laxmipur/Lachuguda Village belongs to Ginnedari panchayat. Bhiriguda, Paterguda, Shoughad, Choupanguda, Moinda, Gudipeta and Ginedari are the other villages of this panchayat. Laxmipur/Lachuguda Village falls under the Ginnedari forest beat of Thiryani range in Bellampally division. The customary boundaries of Laxmipur/Lachuguda Village include Ginedari Village in the east, Danapur forest and Madora Bhindi in the west, Chandur lonka Hermi Sandhi in the north, and Gudigutta and Deevegutta in the south.

Lohekothaguda lies in Kannepalli panchayat and is located in the Morriguda forest beat of Thiryani range, Bellampally forest division. Other villages of this panchayat are Sonapur, Rambaiguda, Kannepalli and Molalaguda. The customary boundaries of the villages are Buggagudem in the east, Verriguda in the west, Padakadadigutta in the south, and Rajulagutta in the north.

Kamayipet Village is a part of Laxetpet panchayat, Utnoor Mandal. Its customary boundaries are Gangapur Village in the east, Rajulguda in the west, Laxetpet in the north, and Cheemalagandi in the south. This village comes under Shyampur forest beat, Utnoor range of Adilabad forest division.

Ghanpur Village is in Ghanpur panchayat, Utnoor Mandal, and is located in Ghanpur forest beat, Utnoor range of Adilabad forest division. The customary boundaries of this village are Narsapur in the east, Kothaguda in the west, Chenchanpalli in the south, and Ganeshpur in the north.

Gonds, Kollams, Pardhans and Nayakpods are the major adivasi communities residing in these villages. The major livelihoods of the community include agriculture, livestock, forests, and wage labour. The major crops cultivated are maize, jowar, red gram, green gram, paddy, soya bean, fox tail millet, and cotton. The crops cultivated in the past were *sama, korra, sajja, jonna, goduma, kandi, pesara, minumu, senaga* and *anapachikkudu.* The shift in the crops from food crops to commercial crops happened during the last 15 years, with cotton and soya bean replacing jowar. The average landholding is less than 5 acres, and the land is predominantly rainfed dryland.

The forest produce collected seasonally includes honey, broom sticks, wild mango fruits, tamarind, *amla (usiri), mahua f*lowers, *addakulu* for leaf plates, *maredu fruits, thirumanu* gum, *karaya gum,* mushrooms, *sikakai,* fish (caught in streams located in the forest), medicinal plants, and diverse edible tubers. Most of the forest produce is used for consumption, while some products such as honey, tamarind, *amla,* and gum are sold through the Girijana Cooperative Corporation (GCC).

Ghanpur is a Gond village, Kamayipet a Kollam village, Laxmipur a mixed village of Gonds and Pardhans, and Lohekothaguda a mixed village of Gonds, Nayakpods and

Kollams. The tribe-wise composition across all the villages is 59.1% Gonds, followed by 22.8% Kollams, and the remaining population includes Pardhans, Nayakpods, and other non-tribe castes (Table 24).

Table 24 Tribe Composition in the Four Villages - Adilabad district

Name of the Village	Gonds	Kolams	Other Castes (non-tribes)	Other STs	Total
Ghanpur	21 (70.0)	0 (0.0)	6 (20.0)	3 (10.0)	30 (100.0)
Kamayipet	1 (3.3)	28 (93.3)	0 (0.0)	1 (3.3)	30 (100.0)
Laxmipuram	32 (88.9)	0 (0.0)	0 (0.0)	4 (11.1)	36 (100.0)
Lohekothaguda	21 (67.7)	1 (3.2)	0 (0.0)	9 (29.0)	31 (100.0)
Total	75 (59.1)	29 (22.8)	6 (4.7)	17 (13.4)	127 (100.0)

Source: Village data

Note: Figures in Brackets represents percentage

Nearly 80% of the households are marginal, small and medium farmers, and 18.1% are landless (Table 25).

Table 25: Land Ownership across Four Villages- Adilabad district

Name of the Village	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Households
Ghanpur	28 (46.7)	11 (18.3)	17 (28.3)	4 (6.7)	0 (0.0)	60 (100.0)
Kamayipet	7 (9.2)	13 (17.1)	46 (60.5)	10 (13.2)	0 (0.0)	76 100.0
Laxmipuram	2 (2.7)	13 (17.3)	33 (44.0)	23 (30.7)	4 (5.3)	75 (100.0)
Kothaguda	12 (20.3)	16 (27.1)	12 (20.3)	16 (27.1)	3 (5.1)	59 (100.0)
Total	49 (18.1)	53 (19.6)	108 (40.0)	53 (19.6)	7 (2.6)	270 (100.0)

Source: Village data

Note: Figures in Brackets represents percentage

About 84% of the adivasis are marginal, small and medium farmers, and 16% are landless.

According to Schedule V, and legislations such as the 1/70 Act in Andhra Pradesh, non-tribals are not permitted to own, lease or cultivate lands in villages that are located within Schedule V regions. However, despite these protections, non-tribals continue to occupy these lands, while adivasi movements continue to struggle to reclaim their lands using the law. Regrettably, government officials have failed miserably to enforce the law. The study village findings (Table 26) reflect the above: 33 non-tribal families reside in these villages, of which 67% own land, which is of course a violation of Schedule V and 1/70 laws.

Table 26: Land Ownership across Tribes and Castes - Adilabad district

Caste	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Households
ST (Adivasi)	38	39	102	52	6	237
Percentage	(16.0)	(16.5)	943.0)	(21.9)	(2.5)	(100.0)
Non-Tribals (SC and BC)	11	14	6	1	1	33
Percentage	(33)	(44)	(18)	(3)	(3)	(100)
Total	49	53	108	53	7	270

Source: Village data

Note: Figures in Brackets represents percentage

The sample household data included 0.8% landless adivasi households, 3.1% who had marginal landholdings, and 96.9% with small and medium holdings (Table 27).

Table 27: Land Ownership based on Sample Household Data - Adilabad district

Name of the Village	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Households
Ghanpur	0 (0.0)	1 (3.3)	8 (26.7)	19 (63.3)	2 (6.7)	30 (100.0)
Kamayipet	0 (0.0)	1 (3.3)	4 (13.3)	18 (60.0)	7 (23.3)	30 (100.0)
Laxmipuram	0 (0.0)	2 (5.6)	1 (2.8)	21 (58.3)	12 (33.3)	36 (100.0)
Kothaguda	1 (3.2)	0 (0.0)	4 (12.9)	12 (38.7)	14 (45.2)	31 (100.0)
Total	1 (0.8)	4 (3.1)	17 (13.4)	70 (55.1)	35 (27.6)	127 (100.0)

Source: Sample household data

Note: Figures in Brackets represents percentage

There is no significant difference in landownership patterns between tribes (Table 28).

1.3.2 Traditional Grazing-based Livestock Production Systems

Traditionally and historically, livestock play a major role in the people's livelihoods in Adilabad district. Haimendorf, the great anthropologist who wrote about the Gond Adivasis of Adilabad, describes in depth the importance of cattle in their lives (Haimendorf, 1948). Cattle, buffaloes, goats and poultry are the important animals reared. Adilabad district has witnessed a steady flow of migrant pastoral communities across the border mainly from Maharashtra. Some of the migrants, especially the Lambadas have settled down in the district along with their animals.

Table 28: Land Ownership across Tribes - Adilabad district

Tribe	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Households
Gonds	1 (1.3)	3 (4.0)	8 (10.7)	41 (54.7)	22 (29.3)	75 (100.0)
Kolams	0 (0.0)	1 (3.4)	4 (13.8)	17 (58.6)	7 (24.1)	29 (100.0)
Non-Tribals	0 (0.0)	0 (0.0)	2 (33.3)	3 (50.0)	1 (16.7)	6 (100.0)
Pardhans/ Nayakpods	0 (0.0)	0 (0.0)	3 (17.6)	9 (52.9)	5 (29.4)	17 (100.0)
Total	1 (0.8)	4 (3.1)	17 (13.4)	70 (55.1)	35 (27.6)	127 (100.0)

Source: Sample household data
Note: Figures in Brackets represents percentage

The major livestock reared in the district (Table 29) (revalidated from the villages studied) are indigenous bullocks, cows, goats, poultry, buffaloes and sheep in the same order of preference. Apart from the role of animals in agricultural operations, sale of live animals and animal products such as meat, milk, skin and manure are an important source of income, which can be depended upon during times of need. In addition, animal products are an important source of nutrition for the household.

Table 29: Livestock Population in Study Villages - Adilabad district

Name of the Village	Cows	Bullocks	Buffaloes	Calves	Sheep	Goat	Poultry
Ghanpur	126	124	12	49	0	91	539
Kamayipet	128	76	43	1	1	4	221
Laxmipuram	74	123	0	66	23	151	117
Kothaguda	59	78	0	62	0	107	124
Total	387	401	55	178	24	353	1001

Source: Village data.

The livestock breeds found in this district are cattle (local indigenous), buffaloes of Nagpuri variety, goats of local breeds, sheep, originally Deccani, which have increasingly been out crossed with Red and White Nellore, and local breeds of Poultry. Livestock ownership is not uniform and varies across tribes and landholdings. Based of the entire village data (Table 32), 94.8% of the adivasi households own some kind of livestock, regardless of landownership.

Table 30: Livestock Ownership across Landholding Categories - Adilabad district

Type of farmer	Yes	No	Total No of Households
Landless	49 (100.0)	0 (0.0)	49 (100.0)
Marginal Farmers	49 (92.5)	4 (7.5)	53 (100.0)
Small Farmers	98 (90.7)	10 (9.3)	108 (100.0)
Medium Farmers	53 (100.0)	0 (0.0)	53 (100.0)
Large Farmers	7 (100.0)	0 (0.0)	7 (100.0)
Total	256 (94.8)	14 (5.2)	270 (100.0)

Source: Village data
Note: Figures in Brackets represents percentage

Table 31: Species-wise Distribution of Livestock Ownership across Landholding Categories - Adilabad district

	Cattle	Buffaloes	Goat	Sheep	Poultry	Livestock
Landless	4	0	0	0	3	7
1 hh	57.1%	0.0	0.0	0.0	42.9%	100.0
Marginal Farmers	12	0	0	0	1	13
4 hh	92.3%	0.0	0.0	0.0	7.7%	100.0
Small Farmers	73	0	32	0	40	145
17 hh	50.3%	0.0	22.1%	0.0	27.6%	100.0
Medium Farmers	397	4	226	0	193	820
70 hh	48.4%	0.5%	27.6%	0.0	23.5%	100.0
Large Farmers	199	6	52	0	60	317
35 hh	62.8%	1.9%	16.4%	0.0	18.9%	100.0
Total	685	10	310	0	297	1302

Source: Household data.

The average cattle owned per household ranges from 3/HH amongst marginal landholders to 5.6/HH amongst the medium and large landholders. Ownership of buffaloes is minimal (0.05/HH), and even these are owned only by medium and large farmers. The average number of goats owned per household varies from 1.4/hh amongst the large farmers, 1.8/hh amongst small, to 3.2/HH amongst medium landholders. Landless and marginal farmers in the sample household data did not own goats. There was no sheep ownership in the sample households. The average birds owned per household ranges from 2.3/HH amongst the small farmers to 3/hh amongst the landless.

There is no significant difference in ownership of cattle, goats and poultry between the different tribes. However, the non-tribe families own more goats, while buffaloes are owned by Kolams (Table 32).

Table 32: Livestock Ownership across Tribes - Adilabad district

Tribe	Cattle	Buffaloes	Goats	Sheep	Poultry	Livestock
Gonds	58.1	0.0	20.1	0.0	21.9	100.0
Kolams	56.2	3.6	12.0	0.0	28.3	100.0
Pardhans/ Nayakpods	52.6	0.5	20.1	0.0	26.8	100.0
Non-Tribes	18.0	0.0	69.8	0.0	12.2	100.0
Grand Total	52.6	0.8	23.8	0.0	22.8	100.0

Source: Household data.

A notable feature is that in all the villages, there has been a major decline in the large ruminant population, particularly the bullock and cow populations. Cattle population has decreased compared to the past, and according to the farmers, the population has decreased by 25%. Further, according to the farmers, the population of buffaloes has increased. The decline in cattle population has occurred primarily due to shortage of fodder and water during summer months as also the need to convert assets into cash, during times of need. Another important factor, which led to the decline in livestock population, is the lack of persons to graze the animals. The usual practice is to hire a person for grazing the animals on payment basis (Rs.30-40/animal/month).

The goat population has also declined compared to the past (20 years ago), while the sheep population has increased (overall in the district); however, not many sheep were found in the villages studied.

Backyard poultry population has almost remained constant, according to the farmers. On the other hand, according to the official government statistics, there has been a slight overall increase in the cattle population (1993-2006), a decline in bullock population which is offset by an increase in young stock. The buffalo population over the same

period shows a 77% increase. Goats have increased by 44%, and sheep have increased by over 300%. Surprisingly, the observations of farmers in the villages visited with respect to sheep and goats, as also our own observations and household surveys of the villages do not tally with these statistics.

1.3.3 Gender Roles in Livestock Rearing

Men and women share the responsibilities and contribute equally with respect to feeding, watering and milking the animals. Men contribute more in grazing and marketing the animals, and towards their health care (Table 33).

Table 33: Gender Break-up of Livestock Management Activities - Adilabad district

Gender	Feeding and Watering	Grazing and Grass Collection	Health Care	Milking	Marketing	Total
Male	151 (47.5)	125 (39.3)	126 (39.6)	50 (15.7)	122 (38.4)	318 (100.0)
Female	139 (42.5)	31 (9.5)	6 (1.8)	57 (17.4)	8 (2.4)	327 (100.0)
Total	290 (45.0)	156 (24.2)	132 (20.5)	107 (16.6)	130 (20.2)	645 (100.0)

Source: Sample household data

Note: Figures in Brackets represents percentage

1.3.4 Role of Livestock in the Livelihoods of the Community

Cattle are reared mainly for agricultural purposes (draught, manure, transport, threshing, and other agriculture operations) and most importantly for the sale of offspring. Goats and sheep are reared for income from sale of live animals and also for manure. Goat's milk is also consumed at home. If there is excess, some farmers also sell the milk. Poultry are reared by each and every family in their backyards in the villages and are mostly for festivals and household consumption. Some families sell poultry when they have excess. Communities have traditionally also reared local buffaloes and consumed the milk at home. Excess milk was sold. In recent years, government institutions like the ITDA, as also development programs such as IFAD (1995-2000) and *Indira Kranthi Pathakam* (formerly *Velugu*), introduced graded Murrah buffaloes, especially in the adivasi areas.

a) Large Ruminants

Feeding and grazing practices: The large ruminants (cattle and buffaloes) derive their nutrition from grazing, crop residue, green fodder (when available), and concentrates. An average animal is grazed from 10 am to 5:30 pm in all seasons. Bullocks are grazed early in the morning between 4 and 6.30 am, during the agriculture season, after which

they are used for ploughing and other agriculture activities till 11am. Thereafter, they are grazed with the other animals. An analysis of grazing practices reveals that during the summer months, the animals are predominantly grazed in the forests / non-forest commons / agriculture fallows); and during monsoons, winter, as well as in summer, they are grazed also in harvested fields. The dominant source of water is streams and ponds in the forest during monsoons, while during summer when the ponds get dry, streams and bore wells are the only source of water. Natural green fodder is fed to the large ruminants during the monsoon season when the families collect green fodder from the fields, the common varieties collected include *Erragovi, Parkagaddi, Garika gaddi*.

Major diseases affecting large ruminants and health care: The major diseases affecting the cattle are bloat, constipation, respiratory problems (*domma* and *chali domma*), foot rot, stomatitis, eye discharges, skin diseases and contagious diseases like HS, FMD, BQ, and dysentery (*rakthaparudu*). FMD results in large morbidity and BQ results in large mortality, particularly in bullocks. The most popular form of treatment is traditional herbal treatment, followed by Allopathy. The farmers first treat the animals themselves, then access local traditional healers, and very rarely approach the veterinary doctor. Even when they do, the vet or any other staff from the government veterinary hospital is usually not available. Veterinary hospitals are situated at an average distance of 10 km from the study villages, but for Laxmipur Village, it is at a distance of 2 km. In some of the villages like Kamayipet, *gopalmitra* (trained animal health workers) are available, but they are inactive. The dead animals are buried/thrown into a pit.

Ethno-Veterinary Practices

The farmers extensively use herbal medicines with the help of traditional healers; they use locally available herbs to treat their animals. The farmers use ethno-veterinary practices mainly for diseases like foot rot, foot abscess, bloat, eye injuries, fractures, and skin diseases. However, the use of traditional medicine is on the decline compared to the past in general, and the farmers do not use any herbal medicines to treat the contagious diseases.

Vaccinations and deworming was not provided on a regular basis. FMD vaccinations were carried out erratically by the animal husbandry department. Marketing Purchase and sale of livestock is mostly done in the weekly cattle markets situated in the mandal headquarters and towns. Cattle are exclusively sold and purchased from the cattle markets. Sometimes the farmers go to far off places like Jainur to purchase a good pair of bullocks for agriculture. Middlemen play a major role in the markets for facilitating the sale and purchase of cattle, buffaloes, sheep and goats. The farmers feel that though they take some commission (Rs.100/animal) they help in negotiating the price and assessing the

status of the animal. The farmers mostly use the manure that is produced by the animals in their own fields, and only occasionally sell it to the other farmers in the village. It is sold at Rs.200/cart. Milk is sold mostly in the villages, and in some villages, they sell milk to the traders who in turn sell it to hotels in the nearby towns. After Murrah buffaloes were given on loans to women, milk collection centres were started by the IKP in these villages. In these centres, the pricing is done based on fat percentage, and not for individual farmers. An average fat percentage is calculated for all the farmers and in this process those who produced milk with high fat percentage were at a loss; hence, the farmers are dissatisfied.

b) Small Ruminants

Goats are primarily reared for mutton purposes, and the adivasi families derive their income from selling the goat kids. The average age at which goat kids are sold is six months. Goats are of local indigenous breed. Some goats kid twice a year, and others thrice in two years. Twinning percentage is much higher among goats than among sheep. The flocks are grazed on common lands and forests in all the three seasons. Forests are the major source for grazing livestock in all the villages in the district. During the rainy and winter seasons (June-December) livestock depend entirely on forest, while during summer they graze on the empty harvested fields. Goats are also grazed collectively by a *Jangidi*, who is paid Rs.30-40/animal/month.

Diseases affecting sheep goats and health care : The major diseases of sheep goats include, foot abscess, diarrhoea, colic, bloat, worms, ticks and lice, mange, cold and cough, fever, and contagious diseases such as contagious ecthyma ET, goat pox, PPR (*nalla mabbu*), *domma rogam* (respiratory conditions), and HS. The most popular form of treatment is traditional herbal treatment, followed by Allopathy. The farmers first treat the animals themselves, then access local traditional healers, and very rarely approach the veterinary doctor. Even when they do, the vet or any other staff from the government veterinary hospital is usually not available. The government provides absolutely no vaccination or deworming services for the goats.

Marketing: Farmers sell their animals for meeting sudden household expenses and also for expenses during the agriculture season. Goats are marketed in the weekly markets but sometimes are sold to local traders in the villages for a lower price. The price of an adult goat is Rs.2500-3000 and a six-month-old goat kid is priced at Rs.1000. The shepherds sell their sheep to local traders who visit their flocks and purchase animals at specific periods during the year. October and November are peak months for sale. The average sales price of an eight-month-old lamb is Rs.2000 while an adult sheep fetches up to Rs.3500. Female animals are sold only if they are sick, aged, or have a fertility

problem. Young female lambs/kids are rarely sold/given away, and are kept as replacement stock.

c) Backyard Poultry

Backyard poultry are indigenous breeds, and are reared for their meat purposes. The major diseases among poultry include *ranikhet*, fowl pox, and *tellaparudu* (which could be salmonella or bacterial white diarrhoea). Ranikhet and fowl pox result in maximum mortality. The birds are consumed at home and used for festivals, and treating visiting relatives and friends; they are sold occasionally when the women are in need of money. The women sell poultry within the village, whenever they need money. A six-month-old hen can be sold at Rs.100-15, while the cost of a six-month-old cock is Rs.200-250.

Contribution of livestock to income: Income is obtained through sale of cattle, goats, poultry, and manure. The other sources of income include sale of agriculture produce, wage labour, and forest produce.

1.3.5 Customary Grazing Systems in Forest and Non-Forest Commons and their Governance

The traditional community system of governance, known as the panch, manages and conserves the forests. Collective decisions are taken about the grazing locations, and sustainable methods of collecting forest produce. If anyone was found damaging a tree while collecting forest produce, they were warned and after repeated warnings, were fined. The migratory pastoralists who came to the forest from outside generally negotiated with the village elders and took permission for grazing their animals in the nearby forests. The village elders through the agency of the community panch would decide on where to allow the visiting pastoralists to pen their flocks and graze. This was necessary as the villagers know their forest well.

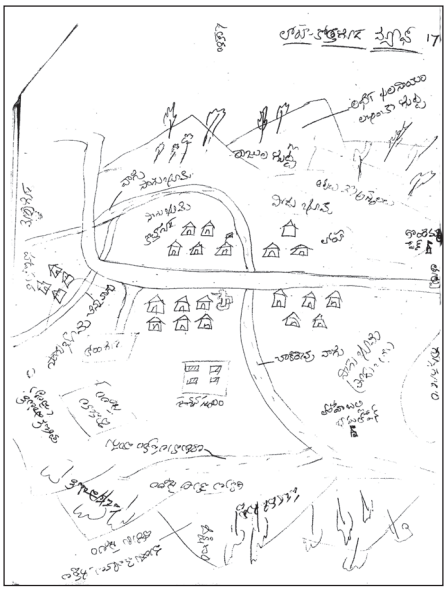


Figure 5: Lohekothaguda Resource Map

In Thiryani Mandal, all the animals except bullocks are collectively grazed by one or two persons known as Jangidi; they are paid Rs.40/animal/month by the farmer whose animals are grazed. Bullocks are grazed on field bunds and the road side for a few hours, and are fed with straw at home. This traditional system of grazing still exists. The Jangidi grazes the animals in the forest from June to December. From January to May the farmers leave

the cattle free to graze on the fallow harvested lands and forest lands. During this period, the farmers never tie the cattle.

Participatory mapping and discussions held with the villagers in Laxmipur and Lohekothaguda revealed that cattle are grazed in the forest throughout the year, in all seasons. Specific locations for grazing in the forest are Gudipeta, Paterguda, Ginedari, Nowgadh, Korlanka, Moinda, and Sungapur. There is a *Jonchula* vagu (stream) and three ponds, namely Jatakunta, Lachukunta and Jaitukunta in the forest, which are the major sources of drinking water for the livestock during the rainy and winter seasons. These streams and ponds dry up in the summer season; so the livestock face severe water shortage during this season.

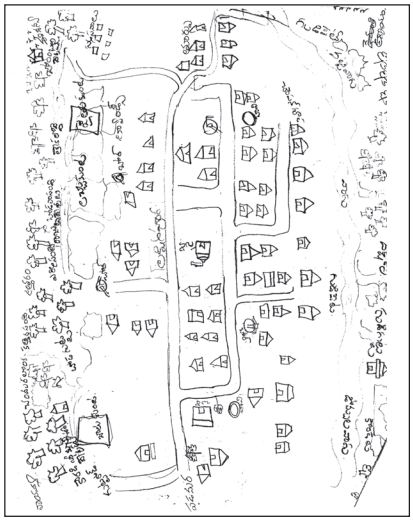


Figure 6Laxmipur Resource Map

Migratory pastoralists from Maharashtra and Rajasthan bring their animals, mostly goats and sheep, to graze in the forest areas adjoining the village. They arrive in June with their animals in a truck and stay till November or December. These migratory pastoralists seek the permission/consent of the gram sabha to graze their stock. The village gram sabha directs them to the part of the forest in which they may graze their animals, and in return for grazing, the gram sabha is paid in kind in the form of goat kid. In addition, the migratory shepherds also give goat kids to the officials of the Forest Department, in order to avoid their harassment. The Gonds in the village are concerned that in the spirit of FRA, permission should be sought from the concerned gram sabha, and the Forest Department has nothing to do with the decisions that pertain to the community forests of the village.

In Kamayipet, the cows and goats of the entire village are grazed in the forest throughout the year by the Jangidi who is paid Rs.40/animal/month. Bullocks and Buffaloes are grazed by individual farmers, on their field bunds or *voralu* (fallow lands owned by each farmer). *Theppalamadugu, Bobbarakunta, Maddulamadugu vagu, Buradamadugu, Panghat vagu,* and *Ontimamidi cheruvu* are the major water bodies around the village which are the drinking water sources for the animals. While *Theppalamadugu* is located in the forest, the remaining sources of are located in the agricultural fields. Pastoralists from Gujarat and Rajasthan bring their animals to the adjoining forest areas to graze animals, and occasionally conflicts arise between the local adivasis and the migratory communities with respect to the use of the forest.

In Ghanpur Village migratory pastoralists from Maharashtra and Rajasthan graze their animals in the forests that fall within the customary community forest boundaries of the village. Shepherds from Mahabubnagar and Nalgonda also migrate to these forests with their animals. They enter into an agreement with the gram sabha and obtain their permission/consent to graze their animals, and in return give one or two goat kids to the gram sabha. If it comes to the notice of the villagers that the migratory pastoralists are destroying the forest, a gram sabha meeting is called, the visitors are summoned, and an inquiry is conducted. If the offence is proved, the gram sabha asks the visitors to leave along with their animals.

1.3.6. Changes in Land Use (Forest and Non-Forest), their Impact on Grazing, and Community Response

In Kamayipet village, a VSS was formed in 2003 under the JFM program. After the formation of the VSS, the farmers lost their grazing places to some extent, and two Kollam farmers also lost their podu lands - no compensation was given to them. The VSS raised plantations on the land, and did not allow the village cattle into the forest to graze, or drink water from the ponds. *Theppalamadugu* is the only perennial stream and also the major source of drinking water for the animals.

There has been a major decline in the large ruminant population particularly in the bullock and cow population in all the villages. According to the local farmers the cattle population decreased by 25%, while the number of buffaloes has increased. The decline in the cattle population occurred primarily due to shortage of fodder and water during the summer months as also the need to convert assets into cash, in times of scarcity. Another important factor, which has led to the decline in livestock population, is the lack of persons (scarcity of labour) to graze the animals.

The goat population has declined compared to what it was 20 years ago, while the sheep population has increased (overall in the district). However, not many sheep were found in the villages studied. The sheep belong to migratory shepherds. Due to the rapid increase of Bt cotton cultivation in the villages, which has replaced jowar, many farmers are purchasing jowar straw from the market at Rs.10 /bundle, which is fed to the animals during the summer. Bovines: The conversion of jowar fields to cotton and soya bean fields, has resulted in acute decline of jowar straw, which traditionally has been the fodder source during summer months. Thus, today there is a scarcity fodder during the summer months, forcing the people to sell their animals.

Goats: The biggest threat in the past was from the Forest Department and the VSSs, which discouraged goats, and placed restrictions on their grazing in the forests. Thus, the major reason for decline in livestock population is scarcity of fodder due to change

in the cropping pattern from jowar to cotton and soya bean, resulting in reduced availability of jowar stover. This has increased the disease susceptibility among the animals, resulting in higher mortality than earlier. Other factors contributing to the reduced fodder include declining grazing lands, competition with migratory pastoralists, and prolonged periods of drought.

1.3.7. Major Government Livestock Development Programs and their Impact

The SHG members under the Indira Kranthi Pathakam (IKP/*Velugu*) program of poverty alleviation in Kamayipet Village, purchased 25 milch buffaloes and one breeding bull with loans from the program. These were purchased in 2006, from Undi in Krishna District. While five animals died soon after they reached Adilabad, five were sold due to lack of fodder, and the others have stopped yielding milk and are virtually dry. The IKP/Velugu program installed an animal trevice (A metal structure used to restrain animals) and a chaff cutter, which were not used. The IKP program also established a milk collection centre after the buffaloes were purchased. However, this was dysfunctional.

In Ghanpur Village, the farmers, using loans from the *Velugu*/IKP program purchased seven pairs of bullocks. In Kamayipet, a VSS was formed in 2003 under the JFM program. After the formation of the VSS, adivasi farmers lost access to their customary forest grazing spaces, and two farmers lost their podu lands. There was huge opposition to the VSS.

A bulk milk cooling unit was set up at Gadalpalli Village near Laxmipur, which was managed by IKP/*Velugu*, but was dysfunctional at the time of the study. No other government livestock development schemes have been implemented in Laxmipur and Lohekothaguda. The ITDA has special budgetary allocations under tribal welfare programs, to provide subsidized loans to adivasis to purchase livestock. In 1994, a special tribal development program funded by the International Fund for Agriculture Development was initiated. The project closed in 2000. Livestock development was a component of the project under which livestock units were distributed among the beneficiaries. Many Giriraja poultry were distributed among, adivasi beneficiaries, however no birds survived.

1.3.8. Problems Faced in Livestock Rearing

1. Severe fodder shortage during summer due to shift in the cropping pattern from food crops to commercial crops, mainly cotton, resulting in scarce crop residues.
2. Streams dry up in summer, resulting in shortage of drinking water for animals.
3. Absence of accessible cattle markets that are situated at an average distance of 45 km.

4. Animals fall sick and die of newly emergent contagious diseases which cannot be prevented or treated by herbal remedies. The government veterinary services are erratic, with irregular supplies of vaccines.
5. Banks do not provide loans to purchase bullocks and goats.
6. Occasional conflicts with the migratory pastoralists.

1.3.9. Community Awareness on FRA, 2006

The villagers have a high level of awareness about the FRA. All the families own agricultural lands and have permanent titles to their lands. In Thiryani Mandal, the adivasi communities have a sacred relationship with the forests, which they depend on for multiple needs vital for the life and livelihood of the community: they collect forest produce, fuel wood, timber to construct their homes, and build agriculture implements like the plough, bullock carts, and medicinal plants; they worship their gods who are residing in the forests, and graze their animals; they fish from the water bodies located in the forests, which are the home of their ancestors. The community has clear customary boundaries of the forests and they have submitted community claims for the rights to the forests.

The activists of the local people's organization, the Adivasi Chaitanya *Sangham*, met the gram sarpanch and village headman (patel) of Laxmipur Village and senstized them about the FRA and the opportunities of using the act to claim individual and customary forest community rights. The sarpanch and headman proposed that this would be discussed in the panch/gram sabha. The Patel then called for a meeting with the entire village. The adivasi activists spoke in the meeting and explained the FRA to the community. Through subsequent meetings, they facilitated a discussion whereby the community mapped their customary village boundaries and territories, sacred places, temples, grazing lands, fallow lands, agriculture lands, water bodies, streams, and the location of forest produce and medicinal plants. A community resource map was prepared with all the above details. The community listed out the forest produce in each hillock. It was extremely important that the elders, youth, women, healers, livestock owners and healers participated through the meeting and were actively involved in the actual mapping process. A Forest Rights Committee (FRC) was established in 2010 at the panchayat level, with representatives from all the constituent villages.

A gram sabha was held in the village in June 2010. Members of the FRC led the meeting, and the information compiled through the process of mapping and discussion was read out to the villagers. Once the information was counter-verified by the entire gram sabha, a resolution was passed, declaring that all the above resources belong to the village and are utilized by the villagers; and the gram sabha resolved to apply for community rights using the FRA. The resolution was signed by the Sarpanch, FRC members, ward members, and members of the gram sabha. Next, Form B was filled out and signed by the Sarpanch

and the FRC members. A copy of the Form B, the gram sabha resolution with signatures, and a map and list were submitted by the village elders to the FRA cell at ITDA, Utnoor on 7 January 2011. The receipt of the claims was acknowledged by an official stamp.

The same procedure was followed in Lohekothaguda village also, but the claims have not yet been submitted.

In Kamayipet Village, all the 86 households applied for individual *pattas*, but only seven families received the *pattas*. The Kamayipet gram sabha submitted its claim for community rights according to their traditional customary boundaries and territories, which includes about 200 acres of forests - traditional grazing areas, adivasi spiritual places, temples of gods such as Sanchi Bheema, burial grounds, water bodies, and forest produce. The surveyors appointed by the ITDA surveyed the entire region, but prepared the community forest rights titles for a mere 108 acres of forests. The Kamayipet gram sabha unanimously rejected the CFR title, and sent it back saying that they wanted their community rights to the entire 200 acres. Thus far, they have not received any response from the SDLC.

In Ghanpur Village, the process of mapping the resources and gram sabha meetings has happened but the claims have not yet submitted.

The District Level Committee (DLC) unilaterally prepared community forest right titles in the name of 34 VSSs located in Adilabad District. The adivasi people's organisation protested against these false and inaccurate community forest right titles, and demanded that they be cancelled and fresh titles be prepared according to the customary forest boundaries of villages, and issue them in the name of the gram sabhas.

D. Visakhapatnam District

1.4 Study Villages

The study was carried out in two villages each in Hukumpet and Paderu mandals of the district. All the four villages fall under the Paderu forest division. In Hukumpet Mandal, Shobakota and its hamlet Godibiri in Shobakota panchayat were studied, which are located in the Sukuru forest beat. Chilakalaputtu, Ganneruputtu, Purruveedhi, Chintalaveedhi, Gamparayi, Ponthili, and Chuntruputta are the other villages and hamlets in Shobakota panchayat.

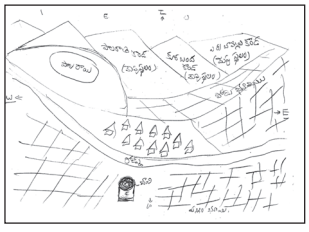


Figure 7: Godibiri Resource Map

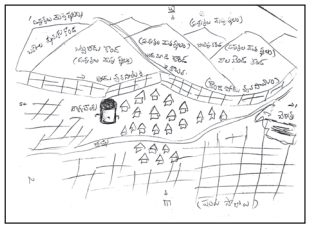


Figure 8: Badimela Resource Map

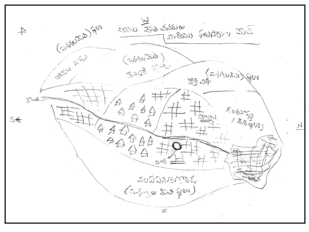


Figure 9: Olloyi Resource Map

The customary boundaries of Shobakota and Godibiri hamlets are Thiyyamamidi digudu in the south, Elugu loya in the east, agriculture lands located in the north, and Chilakamukku loddi in the west.

Badimela and Olloyi villages were studied in Paderu Mandal are located in the Paderu forest division. Theegalamitta, Isukagaruvu, Shockput, and Kolamba are the other villages in the panchayat. The customary boundaries of Badimela are *Vantimamidi Konda*, *Datu konda,* and *Batta beedu*. The customary boundaries of Olloyi Village are *Valasapanuku konda* on the east, *thondalagoppu* on the south, *Kummarigoppu* on the west, and *Ganthagoppu* on the north.

1.4.1 Land, Livestock and Livelihoods: An Overview of the Study Villages

Just as in the other districts, the adivasi people of Visakhapatnam District have an age-old, extremely holistic, and sustainable relationship with their forests which are their home and their life. They have very distinct customary laws that govern the forests. The communities follow certain norms while using forest resources for their livelihood, particularly for podu cultivation. The elders of the village (*Munasabu, Pujari, Goravadu*) do not allow the farmers to cut down the forest unnecessarily for podu cultivation, particularly those who already own land. However, they do allow a new podu land if a family does not have any support for their livelihoods in terms of land and livestock. Cultivation is done on the hill slopes (podu lands) where millets and pulses are sown and also in the low-lying wet lands where paddy and other commercial crops are sown. The major crops grown presently are paddy, finger millet, and red gram among food crops, and turmeric, ground nut, ginger, *pippali*, and beans among the commercial crops.

The Bhagatha community is the majority tribe in both Shobakota and Badimela villages, while Godibiri and Olloyi villages are dominated by the Kondadora community. The total tribe composition in all the four villages is 51.7% Kondadoras, 36.7% Bhagathas, while the remaining belong to other tribes such as Konds and Nookadoras (Table 34). Further, about 6% of the households are non-tribals.

Nearly 82% of the adivasis are small and medium farmers and the rest are marginal farmers, with one landless family (Table 35). According to Schedule V and legislations such as the 1/70 Act in Andhra Pradesh, non-tribals are not permitted to own, lease or cultivate lands in villages that are located within Schedule V regions. However, despite these protections, non-tribals continue to occupy lands, and adivasi movements continue to struggle to reclaim their lands using the law. Regrettably, the government officials have failed miserably to enforce the law. The study village findings (Table 38) reflect the above: about 35 non-tribal families reside in these villages, of which 34 (97%) own land, which is of course a violation of Schedule V and 1/70 laws.

Table 34: Tribe Composition across Villages - Visakhapatnam district

Village	Bhagathas	Kondadoras	Kondareddys	Kondhs	Non-Tribes	Total No of Households
Shobakota	6 (20.0)	22 (73.3)	0 (0.0)	1 (3.3)	1 (3.3)	30 (100.0)
Godbiri	22 (73.3)	5 (16.7)	1 (3.3)	2 (6.7)	0 (0.0)	30 (100.0)
Badimela	13 (43.3)	8 (26.7)	0 (0.0)	2 (6.7)	7 (23.3)	30 (100.0)
Olloyi	3 (10.0)	27 (90.0)	0 (0.0)	0 (0.0)	0 (0.0)	30 (100.0)
Total	44 (36.7)	62 (51.7)	1 (0.8)	5 (4.2)	8 (6.0)	120 (100.0)

Source: Household data.

Note: Figures in Brackets represents percentage

About 73% of the sample households are small and medium farmers, while 19.2% are marginal, and 5.8% are large farmers (Table 38). This data is relatively comparable to the village distribution of the households (Table 37). There is a similar ownership pattern of land between the Kondadora and Bhagatha tribes.

Table 35: Landownership across Villages - Visakhapatnam district

Name of the Village	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
Shobakota	1 (0.8)	26 (21.8)	58 (48.7)	33 (27.7)	1 (0.8)	119 (100.0)
Godibiri	(0.0)	5 (16.7)	21 (70.0)	4 (13.3)	0 (0.0)	30 (100.0)
Solamula (Badimela)	0 (0.0)	14 (11.6)	51 (42.1)	55 (45.5)	1 (0.8)	121 (100.0)
Teegala Metta (Olloyi)	0 (0.0)	6 (20.0)	14 (46.7)	9 (30.0)	1 (3.3)	30 (100.0)
Total	1 (0.3)	51 (17.0)	144 (48.0)	101 (33.7)	3 (1.0)	300 (100.0)

Source: Village data.

Note: Figures in Brackets represents percentage

Table 36: Landownership across Tribes - Visakhapatnam district

Tribes	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
Adivasis (STs)	1 (0.4)	46 (17.4)	131 (49.4)	85 (32.1)	2 (0.8)	265 (100.0)
Non-tribals	0 (0.0)	5 (14.3)	13 (37.1)	16 (45.7)	1 (2.9)	35 (100.0)
Total	1 (0.3)	51 (17.0)	144 (48.0)	101 (33.7)	3 (1.0)	300 (100.0)

Source: Village data.

Note: Figures in Brackets represents percentage

Table 37: Landownership across Villages, based on Sample Household Data - Visakhapatnam district

Name of the Village	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
Shobakota	1 (3.3)	14 (46.7)	14 (46.7)	1 (3.3)	0 (0.0)	30 (100.0)
Godbiri	0 (6.7)	1 (3.3)	11 (36.7)	13 (43.3)	3 (10.0)	30 (100.0)
Badimela	0 (0.0)	2 (3.3)	10 (33.3)	16 (53.3)	3 (10.0)	30 (100.0)
Olloyi	0 (0.0)	7 (23.3)	14 (46.7)	8 (26.7)	1 (3.3)	30 (100.0)
Total	1 (1)	24 (19.2)	49 (40.8)	38 (31.7)	8 (5.8)	120 (100.0)

Source: Household data.

Note: Figures in Brackets represents percentage

1.4.2 Badimela and Olloyi Villages, Badimela Panchayat

Podu cultivation: Farmers of this village practice podu (shifting cultivation) and they grow millets and pulses on the podu lands. Each household owns 2-3 acres of podu land; they shift to another place once every 2-3 years and again come back to the old place once in 8 to 10 years.

The traditional adivasi institution for collective decision making in these villages, is the gotti, and the gotti elders include the *Munasabu, Pujari* and *Goravadu*. These three

Table 38: Community-wise Land Particulars of Respondents - Visakhapatnam district

Name of the Tribe	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
Bhagatha	1 (4.5)	5 (11.4)	15 (34.1)	17 (38.6)	5 (11.4)	44 (100.0)
Kondadora	(1.6)	18 (27.4)	29 (46.8)	13 (21.0)	3 (3.2)	62 (100.0)
Kondareddy	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	1 (100.0)
Nookadora/ Kond	0 (0.0)	1 (20.0)	2 (20.0)	3 (60.0)	0 (0.0)	6 (100.0)
Non-Tribals	0 (0.0)	0 (0.0)	3 (42.9)	4 (57.1)	0 (0.0)	7 (100.0)
Total	1 (1)	24 (19.2)	49 (40.8)	38 (31.7)	8 (5.8)	120 (100.0)

Source: Household data.

Note: Figures in Brackets represents percentage

Table 39: Location of Podu Lands in the Forest - Visakhapatnam district

Name of the Forest	Vanti Mamidi Konda	Datu Konda	Batta Beedu Konda
Name of the Villages (people who own podu lands)	Teegala metta, Badimela colony, Olloyi	Badimela, Gonduru, Olloyi	Gonduru

elders, along with the rest of the adult members of the village (women and men), sit, discuss and decide on a range of issues that affect their life in the village, including critical decisions around the use and management of the village resources - lands, forests, water. Decisions regarding which part of the forest should be cleared for *podu*, permission to clear new *podu*, conflicts, decisions on festivals, and community sales/purchase of forest produce are all taken at the *Gotti*. The *Gotti* discusses and either gives consent or rejects permission to new families who want to come and live in the village. In the past, under mixed cropping system a variety of millets such as foxtail millet, little millet, *bontha, korra, sama, arikelu,* maize, and all varieties of pulses were cultivated; and crop residues from all these crops were fed to the animals. Though at present crop diversity has decreased due to cultivation of some commercial crops, the crop residues of some millets and pulses are still fed to the animals.

Forest produce, is primarily collected for consumption - namely, tubers (*Pindidumpa, thegadumpa, vaymudumpa, vagakathera dumpa, Cheda dumpa), addakulu* for leaf plates, bamboo, and fire wood.

1.4.3. Traditional Grazing-based Livestock Production Systems

The major livestock reared are cows, plough bullocks, and goats (Table 40). Very few sheep and buffaloes are reared. Dairying has never been a traditional livelihood. Almost all the households rear poultry. While all communities own some livestock, there is variation across community and landholdings. The Bhagatha households in all the four villages own more land, cattle and goats.

Table 40: Livestock Ownership in the Four Villages - Visakhapatnam district

Name of the Village	Buffaloes	Bullocks	Cows	Calves	Goats	Sheep	Poultry	Total
Shobakota	4	42	126	180	349	34	94	829
Godibiri	1	1	4	37	66	20	11	140
Badimela	11	50	2	282	413	1	213.4	972.4
Teegala Metta (Olloyi)	7	10	2	107	159	0	85	370
Total	23	103	134	606	987	55	403.4	2311.4

Source: Village data.

About 98.7% of the households own one or the other type of livestock.

Table 41: Livestock Ownership across Landholding Categories - Visakhapatnam district

Type of Farmer	Yes	No	Total No of Households
Landless	1	0	1
Marginal Farmer	50 (98.0%)	1 (2.0%)	51
Small Farmer	141 (97.9%)	3 (2.1%)	144
Medium Farmer	101 (100%)	0	101
Large Farmer	3 (100%)	0	3
Total	296 (98.7%)	4 (1.3%)	300

Source: Village data.

The average cattle ownership varies from 2.2/hh amongst small farmers to 4.3/hh amongst large farmers. The average goat ownership per household is 2.3 with negligible variation among the landholding categories. The average number of birds per household is 4. Here too cattle holding increases with landholding size.

Table 42: Livestock Ownership across Landholding Categories - Visakhapatnam district

Type of Farmer	Cattle	Buffaloes	Goats	Sheep	Poultry	Livestock
Landless (1 HH)	14	0	5	4	3	26
Marginal Farmers (24 HH)	82	5	69	4	59	219
Small Farmers (49 HH)	188	3	120	7	221	539
Medium Farmers (38 HH)	160	5	124	12	159	460
Large Farmers (8 HH)	35	3	16	8	9	71
Total	479	16	334	35	451	1315

Source: Household data.

a) Large Ruminants

Cattle are reared for ploughing, manure and offspring; the meat of cattle is also consumed. Cows are not milked - the milk is left for the calves. Goats are reared to earn some money from the sales of kids, for consumption at home, and fir manure. Poultry are reared for consumption, sale, as well as for festivals. All adivasis acquire their animals through breeding their own stock. The existing sheep and buffaloes are either obtained through loans or purchased. It is also a common practice to acquire animals on lease.

Feeding and grazing practices: The large ruminants (cattle and buffaloes) derive their nutrition by grazing and being fed with crops residue, green fodder (when available), and concentrates. An average animal is grazed from 10 am to 5:30 pm during the monsoon and winter seasons, while in summer they are left freely in the forests. An analysis of grazing practices reveals that during the summer months, the animals are predominantly left to graze in the forests; during monsoons in agriculture fallow lands; and during winter, in the forests. Most farmers graze their animals by deputing someone in the family to do the task (usually a family elder). The dominant source of water is streams, ponds and canals in all seasons, but in summer when the water ponds dry up, open wells are the major source of drinking for the animals as well as human beings. Along with grazing, the large ruminants are also fed crops residues. The average quantity of crop residue fed to one large ruminant (e.g., bullock) is around 1 kg/day. The common varieties collected include *Etugaddi, Edegaddi, Palasengali gaddi, Karuchode gaddi*, and *peresi*. The collected fodder is fed to animals.

Diseases affecting the large ruminants: The major diseases affecting cattle are diarrhoea, HS, BQ, Anthrax, foot rot, and eye diseases. Bullocks and cows are most susceptible to HS, BQ, and Anthrax. Anthrax has been recorded in Paderu Mandal - since many years, many animals have died due to this. The most popular form of treatment is traditional herbal medicine, followed by Allopathy. The farmers self-treat their animals using herbal remedies; if that does not work, they take the help of the local traditional healers, and

only as a last measure, they approach the government vet, who is never available. The vaccination and deworming services, provided by the government's animal husbandry department, are erratic and mostly non-existent. The dead animals are buried.

b) Small Ruminants

Goats are primarily reared for their meat, and the adivasi families derive their income from selling the goat kids. The average age at which the goat kids are sold is eight months, and it fetches about Rs.2500. A goat aged a year or more, costs Rs.4000. The goats are of local indigenous breed. Some goats kid twice a year, while others thrice in two years. The flocks are grazed in the forests in all seasons.

Diseases of goats: Morbidity in goats is due to PPR, foot rot, HS, Anthrax, and cough and cold (respiratory problems). The most popular form of treatment is traditional herbal medicine, followed by Allopathy. The farmers self-treat their animals using herbal remedies, and if they do not work, they take the help of the local traditional healers, and only as a last measure do they approach the government vet, who is never available. Only when the villagers repeatedly complain about an outbreak or a sickness, does the local animal husbandry department respond and provide some veterinary help. Dead animals (sheep/goats) are consumed if they die of non-infectious problems, or they are thrown into a pit. No regular vaccinations and deworming were carried out by the government's animal husbandry department.

c) Backyard Poultry

Backyard poultry are of local indigenous breeds, and are reared for their meat. A hen lays up to three clutches per year. Salmonellosis and Ranikhet are the major diseases that affect poultry. The government veterinary hospital is located at a distance of about 10-15 km from the study villages.

The birds are consumed at home and used during festivals, and to feed visiting relatives and friends. They are sold occasionally when the women are in need of money.

Marketing The Cattle, bullocks and goats are sold and purchased in Hukumpet and Guthulakuttu weekly animals markets. Cattle are also sold at the G. Madugula market. Earlier, the traders used to visit the villages and purchase the animals, but now people prefer to go to the markets and sell their animals. The average sales price for a cow is Rs.3000, and the sales prices for a pair of bullocks ranges from Rs.12000 to Rs.16000. A year old goat is sold at Rs.3500 and the price of an eight-month old goat is Rs.2000. The poultry are sold in the local market and also within the village. The cost of a hen is priced at Rs.150, while a cock is priced at Rs.250.

1.4.4 Gender Roles in Livestock Rearing

Women play a key role in agriculture and livestock rearing. Women and men share the grazing of animals equally. The women also take care of the sick animals and the young ones at home; feeding and cleaning is also done mostly by women. Poultry is totally looked after by women.

1.4.5. Customary Grazing Systems in Forest and Non-Forest Commons and their governance

In Shobakota and Godibiri, the cattle and goats are grazed in the forest. During the rainy season, they graze at *Thamara gummi metta, Eluguvaloya metta, Thiyyamamidi digudu*, and *Allapukota konda*. During winter, the animals graze on *Atapitta chadunu, chilakamukku gommudu*, while during the summer months, the animals are left free to graze on the harvested fields. *Neellagadda cherluvu* is the major source of drinking water for the animals. Animals from neighbouring villages like Chilakalaputtu, Ganneruputtu, Purruveedhi, Chintalaveedhi, Gamparayi, Ponthili, and Chuntruputta also graze their animals in the forest. The animals are grazed sharing labour amongst the families, on a rotational basis. About 10 families come together, and members of five families graze the animals for one week; the remaining five families graze the animals for the next week, and thus they continue to rotate responsibilities. Men and women are responsible for grazing animals.

In Badimela Village, the cattle and goats are grazed in the forest in all the three seasons. Specific locations for grazing are *Bakkula panuku, Battabeerukonda, Bandamadikonda, Salepu konda, and Velibendakonda*. The major drinking water sources are *Bakkula panuku vana*, and *Pedda gadda cheruvu*. Animals from neighbouring villages like Theegalamitta, Isukagaruvu, Shockput, and Kolamba are also grazed in the forest. All the villagers who graze in the forest cooperate with each other to conserve the forest.

In Olloyi Village, the cattle and goats are grazed in *Thondala goppu, Kammaragoppu, Gantha goppu*, and *Kothanidhi* during the rainy and winter seasons. During the summer season they are grazed in *Valasapuku*. The canal and the tanks are the sources of drinking water for animals. Animals from neighbouring villages like Theegalamitta, Isukagaruvu, Shockput, and Kolamba are also grazed in the forest. MFP collection is also done in the same forest by all these villages. In these two villages, grazing is done collectively on a rotational basis. About 10-15 families come together and members from two families (hhs) take responsibility to graze all the animals in the forest; the next day another two hhs take this charge, and so on.

The Forest Department used to collect a grazing fee of Rs.5 per family per year, locally known as (*Kampa chistu*). Since some years, the community has stopped paying this fee,

and with the FRA legislation, they now know that they have a legal right to graze their animals. Livestock are grazed in the forests throughout the year, and at the time of the study, there were no grazing restrictions imposed by the Forest Department.

1.4.6 Changes in Land Use (Forest and Non-Forest), their Impact on Grazing, and Community Response

VSSs were established in Shobakota and Badimela villages during the mid-nineties. Plantations of silver oak and coffee were undertaken in a big way in the forests. Coffee was also planted on private lands, which were earlier part of the *podu* shifting cultivation regime. In Shobakota, silver oak was planted in 250 acres of forest lands in 2006, and coffee was planted in 144 acres of forest land, involving 85 families. Each family was allotted one acre and was told to take the produce from it. However, some of the plants died and the families did not get any income. The plantations have created huge changes in the traditional forest usage, and have severely restricted the forests.

1.4.7. Major Government Livestock Development Programs and their Impact

In Shobakota Village, under the Forest Department initiated Rehabilitation Action Plan (RAP) for adivasi households which had lost their *podu* lands under VSS, 18 households were given money to purchase animals. Each household was given Rs.25000. Among these, two households purchased a pair of bullocks, two households purchased Jersey cows, and the remaining 14 households purchased sheep and goats. In Badimela and Olloyi villages, loans were given through *velugu* groups, and some of the SHG members purchased plough bullocks with the loan money.

1.4.8. Major Problems in Livestock and Livelihood

In all the four villages, the major problems in livestock rearing articulated by the villagers are: In Shobakota and Godibiri villages, the goats fall sick with contagious diseases during the rainy season, and the people are dependent on local healers for their cure. Some diseases respond well to traditional herbal remedies, whilst other diseases do not. The government rarely vaccinates the goats and poultry. The cattle frequently fall ill with HS, pneumonia, and diarrhoea. The government vets only respond after several representations, and only occasionally vaccinate the cattle. The veterinary hospital is located at Hukumpet, which is 7 km away.

The nearest veterinary hospital for Badimela and Olloyi villages is at Paderu, located 15 km away. Large ruminants are vaccinated occasionally, but goats and poultry are never vaccinated. Olloyi is located on the top of a hill, and veterinary doctors never visit the village. The cattle have never been vaccinated. Healers continue to competently treat sick animals, and with emergent diseases, which do not have herbal remedies, the people express the need for veterinary assistance. The plantations raised in the forests by the

Forest Department under different schemes over the years, have severely restricted the grazing spaces for animals.

1.4.9. Community Awareness on FRA, 2006

The Villagers are well aware about the FRA. All the families interviewed in the study villages knew the act and its details. The adivasi people's organization, Tholakari Adivasi Mahila Ahara Bhadratha Sangham had campaigned about FRA in these villages.

In Shobakota village, an adivasi activist of the *sangham*, met the village elders and informed them about FRA in June 2010. After a few days, the villagers met and discussed the provisions of the act, and its relevance to their lives. They collectively recalled and mapped their forests, their customary boundaries, the locations of hills, the names of hills, the regions where they graze animals, forest produce, medicinal plants, implements to build their homes and agriculture implements, their gods and goddesses, spiritual places, and burial grounds. A Forest Rights Committee was set up in October 2010.

At a subsequent gram sabha meeting attended by the village adults, the Sarpanch, and the FRC members, the gram sabha passed a resolution proclaiming their rights to their community forests according to their customary boundaries. The FRC helped to fill out Form B for community claims, and submitted two copies to the SDLC at Paderu. They were told to submit the claim to the MDO at Hukumpet. When they met the MDO, he said he would accept the claim only if they submitted all community claims from the concerned panchayat. The organization completed the process of preparing community forest rights claims in all the villages which belonged to Shobakota panchayat. The community claims for all the villages located within Shobakota panchayat, were submitted to the SDLC at Paderu on 20 December, 2010.

The CBO representatives and the village elders met the District Collector on his visit to Paderu. The Collector said that the lands for which claims were prepared belonged to the VSS; so the rights cannot be granted without the consent of the Forest Department. He is also reported to have informed the villagers that wherever VSSs existed, the community forest rights would be prepared in the name of the VSS and for the land area already under the management of the VSS. The villagers as well as the adivasi people's organisations strongly and vehemently opposed this, and pointed out that this constituted a clear violation of the FRA legislation. This interpretation of the law, was a travesty of justice, and would undermine the strength of the law, which aimed at undoing historical injustices.

In Shobakota and Godibiri villages, 120 households applied for individual *pattas*, but none of them received *pattas* at the time of the study. All villages located within the Badimela panchayat had submitted claims for individual rights, but none had received their titles, at the time of the study.

E. East Godavari District

1.5. Study Villages

The study covered two villages each in Rajavommangi and Y.Ramavaram mandals of Schedule V region. Pulusumamidi Village and Musilimetta hamlet of Dalipadu panchayat in Y.Ramavaram Mandal fall under the Vedullakonda forest beat of Kakinada forest division. The other villages in this panchayat are Gummaripalem, Burugupalem, Annampalem, Mulagalapudi, Thunikelapadu and Noothikonda. The customary boundaries of Pulusumamidi are Thenekonda in the east, Thodichinthalu in the west, in the south Noothikondalova, and Gakalametta in the north. Musilimetta is a hamlet of Dalipadu Village. Its customary boundaries include Titurallakaluva on the east, Thammidisannalu in the west, Gadaparallakaluva in the north, and Vasireddivari garuvu in the south. The two villages studied are Kimmalagadda and Ammirekula in Baradanapalli panchayat in Rajavommangi Mandal, an area located in the Veyyada forest beat of Rajavommangi range, Eleswaram sub-division and Kakinada division. The other villages in this panchayat are Lakkavarappadu with Rajupet hamlet along with Baradanapalli. The customary boundaries of Kimmalagadda Village are Daraloddi in the east, Sudikonda or Kothulakonda in the west, Kummarlakonda in the north, and Edlakonda in the south. The customary boundaries of Ammirekula Village are Sunnapuralla loddi in the east, is Goravadilachalla chenu and Vepamanu in the west, Bodelammathalli konda in the north, and Ammathalli udan in the south.

Table 43: Landownership across the Study Villages - East Godavari district

Name of the Village	Land less	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
Kimmalagadda	3	22	25	20	2	72
	(4.2)	(30.6)	(34.7)	(27.8)	(2.8)	(100.0)
Ammirekula	7	52	37	14	2	112
	(6.3)	(46.4)	(33.0)	(12.5)	(1.8)	(100.0)
Musilimetta	2	7	12	9		30
(Dalipadu)	(6.7)	(23.3)	(40.0)	(30.0)		(100.0)
Pulusumamidi	1	12	13	13	1	40
	(2.5)	(30.0)	(32.5)	(32.5)	(2.5)	(100.0)
Total	13	93	87	56	5	254
	(5.1)	(36.6)	(34.3)	(22.0)	(2.0)	(100.0)

Source: Village data.
Note: Figures in Brackets represents percentage

Table 44: Landownership across Tribes and Non-Tribes - East Godavari district

Category	Land less	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
ST	5 (4.5)	86 (35.2)	86 (35.2)	56 (23.0)	5 (2.0)	244 (100.0)
Non-Tribes	2 (20)	7 (70)	1 (10)	0 (0.0)	0 (0.0)	10 (100.0)
Total	13 (5.1)	93 (36.6)	87 (34.3)	56 (22.0)	5 (2.0)	254 (100.0)

Source: Village data. *Note: Figures in Brackets represents percentage*

1.5.1 Land, Livestock and Livelihoods: An Overview of the Study Villages

About 5% of the entire adivasi population in the village is landless, 70% are small and marginal farmers, and the remaining 25% are the medium and large farmers (Table 43). Here too, the rules of Schedule V, and legislations such as the 1/70 Act have been flouted by non-tribals, which is evident from the findings (Table 46), where there continue to be 10 non-tribal families residing in these villages, of which eight (80%) own land, in violation of the law of the land.

About 87.5% of the village is composed of Kondareddy tribe (Table 45), with the remaining tribes being Konda Kamaras, Kondadoras, and Bhagathas. The dominant tribe in the villages is the Kondareddys of whom 76.2% are marginal, small and medium farmers, and 15.6% are landless. The Konda Kammaras, have a similar landholding pattern (Table 48).

Table 45: Distribution of Tribes across Study Villages - East Godavari district

Name of the Village	Bhagathas Tribes	Kondadoras	Kondareddys	Konda Kamaras	Non-Tribes	Total No of Households
Kimmalagadda	3 (10.0)	1 (3.3)	20 (66.7)	4 (13.3)	2 (6.7)	30 (100.0)
Ammirekula	0 (0.0)	0 (0.0)	30 (100.0)	0 (0.0)	0 (0.0)	30 (100.0)
Dalipadu	0 (0.0)	0 (0.0)	28 (93.3)	1 (3.3)	1 (3.3)	30 (100.0)
Pulusumamidi	0 (0.0)	0 (0.0)	27 (90.0)	0 (0.0)	3 (10.0)	30 (100.0)
Total	3 (2.5)	1 (0.8)	105 (87.5)	5 (4.2)	6 (5.0)	120 (100.0)

Source: Household data. *Note: Figures in Brackets represents percentage*

Agriculture, livestock rearing, collection of forest produce, and wage labour are the primary sources of livelihood. Agriculture comprises shifting cultivation (*podu*) as well as settled agriculture on lands situated in the valley between hills. It is entirely rainfed agriculture, and the major crops include dryland paddy, bajra, foxtail millet, finger millet, jowar, maize, black gram, red gram, green gram, cow pea, sesame, tapioca, and local tobacco. Cashew, rubber, and the occasional Jatropha plantations are also found, which the government through various schemes has introduced. Agriculture lasts for about 6-7 months and then the adivasi families work in the forests to collect forest produce. Wage labour is primarily through the NREGS.

Table 46: Landownership across Tribes, based on Sample Household Data - East Godavari district

Tribes	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total No of Households
Bhagatha	1 (33.3)	0 (0.0)	0 (0.0)	2 (66.7)	0 (0.0)	3 (100.0)
Kondadora	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	1 (100.0)
Kondareddy	16 (15.2)	16 (15.2)	28 (26.7)	36 (34.3)	9 (8.6)	105 (100.0)
Konda Kamara	0 (0.0)	2 (40.0)	1 (20.0)	0 (0.0)	2 (40.0)	5 (100.0)
Non-Tribals	2 (33.3)	0 (0.0)	2 (33.3)	2 (33.3)	0 (0.0)	6 (100.0)
Total	19 (15.8)	18 (15.0)	31 (25.8)	41 (34.2)	11 (9.2)	120 (100.0)

Source: Household data, *Note: Figures in Brackets represents percentage*

Tamarind, honey, broom sticks, soap nuts, *sikakai, addakulu* for leaf plates, *amla*, gum, and *beedi* leaves are collected seasonally from the forest and sold. The other forest produce collected for consumption at home includes mushrooms, wild tubers, leafy vegetables, fruits, and medicinal plants. Fuel wood and wood for agriculture implements are also collected. Medicinal plants like the *naramamidi* bark and *adda* fibre are also sold. Traditional healers from the Kondareddy community treat humans and animals. Some youth from villages in Dalepadu panchayat (consisting of Dalepadu, Gummaripalem, Burugupalem, Annampalem, Mulagalapudi, Thunikelapadu, Pulusumamidi and Noothikonda) are taken by "wage labour brokers", to neighbouring districts and sometimes even places like Mumbai to work. This usually happens during the summer months (January-May).

1.5.2. Traditional Grazing-based Livestock Production Systems

Livestock rearing is an integral part of adivasi life and livelihood. Cattle, goats and poultry are the major livestock reared. Cattle are reared primarily as a source of manure and offspring - such as good plough bullocks. Cows are never milked, and the milk is left for the calves. Goat kids are sold as also consumed at home. Poultry are reared by every family, for consumption, income through the sale of birds, and most importantly for festivals and agricultural rituals. The total livestock population in the four villages (Table 47) reconfirms the important role of cattle, goats and backyard poultry in the adivasi economy. The average number of cattle (cows, bullocks, calves) owned per household is 2.7. The average number of goats owned per household is 1.8, and the average number of poultry owned per household is 5.5.

Table 47: Total Livestock in the Study Villages - East Godavari district

Name of the Village (No. of hhs)	Local Cows	Local Bullocks	Local Buffaloes	Cattle Calves	Sheep	Goats	Poultry
Kimmalagadda (72)	64	60	0	23	9	126	372
Ammirekula (112)	125	123	29	48	0	212	795
Musilimetta (Dalipadu) (30)	102	43	1	1	0	38	185
Pulusumamidi (40)	28	59	4	61	36	95	62
Total (254 hh)	319	285	34	133	45	471	1414

Source: Village data

Table 48: Livestock Ownership across Landholding Categories - East Godavari district

Type of Farmer	Yes	No	Total No. of Households
Landless	6 (46.2)	7 (53.8)	13 (100.0)
Marginal Farmer	82 (88.2)	11 (11.8)	93 (100.0)
Small Farmer	84 (96.6)	3 (3.4)	87 (100.0)
Medium Farmer	55 (98.2)	1 (1.8)	56 (100.0)
Large Farmer	5 (100.0)	0 (0.0)	5 (100.0)
Total	232 (91.3)	22 (8.7)	254 (100.0)

Source: Village data, *Note: Figures in Brackets represents percentage*

About 91% of all households own one or the other type of livestock (Table 48), with a direct correlation between landownership and livestock ownership. Over 50% of the landless households do not own livestock, while the ownership of livestock ranges from 88% amongst marginal farmers to 100% amongst the large farmers.

Based on the sample household data (Table 49), the average livestock holding across tribes ranges from 2/hh among the Kondadoras to 4.4/hh among the Kondareddys. The Kondareddy sample households own all the goats, with the average holding being 2/hh. The average poultry holding across households of different tribes ranges from 6.6 amongst the Kondareddys to 8.6 amongst Bhagathas.

Table 49: Livestock Ownership across Tribes - East Godavari district

Tribes	Cattle	Buffaloes	Goats	Sheep	Poultry
Bhagatha (3)	12	0	0	0	26
Kondadora (1)	2	0	0	0	0
Kondareddy (105)	463	23	217	0	696
Konda (5) Kammara	16	0	0	0	39
Non-Tribes (6)	18	5	0	0	22
Grand Total (120)	511	28	217	0	783

Source: Household data.

The average livestock holding (Table 50) is 4.2 cattle/hh, 1.8 goats/hh, and 6.5 poultry/hh. We see that the ownership of cattle among the sample households (4.2/hh) is higher than the average cattle holding from the entire village data (2/hh).

Table 50: Livestock Ownership across Landholding Categories - East Godavari district

Type of Farmer (No. of Households)	Cattle	Buffaloes	Goats	Sheep	Poultry
Landless (19)	81	1	19	0	131
Marginal (18) Farmer	86	0	11	0	142
Small Farmer (31)	116	13	66	0	186
Medium Farmer (41)	177	14	95	0	282
Large Farmer (11)	51	0	26	0	42
Total (120)	511	28	217	0	783

Source: Household data.

The details of livestock ownership across landholding categories (Table 50), show that the average cattle holding per household from the sample data ranges from 2.7 per

marginal farming hh to 4.6 per large farming household. Even the landless households have an average 4 cattle/hh. Similarly, goat ownership is 0.6 goats/marginal household, 1 goat/landless household, 2 goats/small farmer household, and 2.3/medium and large farming household. The average number of poultry per household is also similar - 6/ small farmer household, 6.8/landless and medium farming household, and 7.8/medium farming household - amongst all the households, and is slightly lower (4/hh) amongst large farming households.

a) Large Ruminants

Cattle are of local breed, and are short in stature and size - ideally suited for the hilly areas. They are nimble, quick-footed and can climb easily; thus, they very capable of accessing fodder in the hilly forests.

Grazing and feeding: The cattle derive their nutrition by grazing and being fed with crops residue and green fodder (when available). They are grazed under supervision from June to December, and soon after the last harvest, are let free to graze on their own (January to May) - 100% cattle are grazed outdoors. The average time spent in supervised grazing is "8 hrs" in monsoons and winter, while post harvest, the animals graze freely on their own. An analysis of the grazing practices reveals that during the summer months, the animals are predominantly grazed in the forests / non-forest commons and harvested fields; while during monsoons and winter, they are grazed only in the. Most farmers graze their animals by deputing someone in the family for the task. The dominant sources of water are the various streams flowing in the forests in all the seasons.

Major diseases affecting large ruminants and health services: The major diseases affecting cattle are HS, BQ, foot rot, maggot wounds, diarrhoea, and eye diseases. Herbal remedies are widely used by the adivasi farmers as a first choice for treatment. This is followed by consulting the local traditional healers. Government veterinarians are consulted only if all else fails. Large ruminants are vaccinated against HS and BQ, largely because of local adivasi organizations (e.g., Girijan Deepika), who build pressure on the government hospitals, and mobilize vaccines.

b) Small Ruminants

Local goat breeds, including the famous Kanchu Mekha dwarf variety of goats are found here. Goats are primarily reared for mutton; moreover, the adivasi families also derive income from selling the goat kids. The average age at which the goat kids are sold is eight months. The goats are of local indigenous breed. Some goats kid twice a year, and others thrice in two years. The flocks are grazed on forest lands during all the seasons.

Major diseases affecting goats: The major diseases affecting the goats include PPR, cold, cough, HS, foot rot, and mange. Herbal remedies are widely used by the adivasi

farmers as the first choice of treatment. Consulting local traditional healers follows this. Government veterinarians are consulted only if all else fails. Goats have been vaccinated against PPR, with vaccinations obtained from the government.

c) Backyard Poultry

Backyard poultry is an extremely important part of people's livelihood, and the mainstay of the poultry livelihood is the Aseel breed. The Aseel poultry breed is an important indigenous breed of India, which has probably been selectively bred by the local indigenous communities - the Kondareddys, Koyadoras, and Konda Kammaras living in the forests of the Eastern Ghats, in Andhra Pradesh, from the original Red Jungle Fowl (*Gallus gallus*) that lives in the forests and has been recognized as the ancestor of many of today's modern domestic poultry breeds world-wide (Gopalakrishnan and Lal, 1985). Women are primarily responsible for the care and management of the bird under backyard poultry systems. It is also the only "resource" which is completely owned and controlled by women from the moment of selection of the bird to sales/purchase and control over the income earned from the birds (Anthra *et al*., 2000). As reported earlier (Ramdas and Ghotge, 1998), there are close to eight different strains/sub-strains that are recognized by the communities in the area such as the *Nati kodi, Shankar jati kodi, Geesa kodi, Medajari kodi, Rencha kodi or Agees kodi, Denki kodi, Mattedu kodi*, and *Juttu kodi*. Amongst all, it is the Aseel that has historically been the breed of choice, valued for its tasty meat, its cockfighting abilities, its agility and ability to escape from predators that are frequent in the forest regions. The Aseel has a short and broad breast, straight back, and a close-setting strong tail root. The outstanding feature of this breed is the thick and long neck, long and slender face without feathers, short beak, short and small comb, ear lobes, and the absence of wattles. The legs are long, strong and straight, and the bird has an upright and majestic gait. The plumage colouring is brilliant and the Aseel cock comes in many colours: typically *Dega* (red plumage), *Reza* (golden and red spotted plumage), *Massara* (blue black), *Poola Massara* (spotted), *Savala* (white and black spots), *Kaki* (pure black), *Petta maru* (hen-like colouring), and *Settuva* (white). The preferred colours are Dega, Reza and Massara (Girijana Deepika *et al*., 2002). The average weight of a two-year-old full-sized adult male ranges between 5-8 kg, while the average weight of a hen is 3-4 kg. The Aseel has been traditionally bred for its meat quality. With 36-60 eggs laid per year, the Aseel is not prolific layer. The hen matures and begins to lay eggs between 5-6 months of age, and lays 3-4 clutches per year, each clutch having 10-12 eggs. It is evident that women are primarily interested in producing live birds, and not eggs, as studies have indicated that 95-100% of the total annual eggs laid by a bird are kept to hatch. There is higher consumption of eggs during summer (May) as high ambient temperatures lead to greater deterioration of eggs. Of the live birds that hatch and survive, around 60-70% are sold, 15-20% are consumed at home, and the remaining 10-15% kept as breeding stock to increase the flock (Ramdas and Ghotge, 1998).

Traditional food crops provide the primary nutrition base and diet for the backyard poultry. The backyard poultry are fed with broken/waste grains and bran of pearl millet and other cereal mixed with the wastage after processing pulses and oil seeds, and as long as these are available from the produce of the household, feed costs are negligible. Women reported that whereas earlier they had to purchase feed from the market for 8-10 months in the year, today they are able to feed their birds from their own produce, for close to 11 months in the year. In certain years where they had experienced a loss of crop (for example, in 2005, many farmers lost their entire crop due to severe floods) (Anthra, 2005), the women were forced to purchase feed from the market. The women reported that cultivating food crops had helped them reduce the cost of feed for the poultry, as these were available from their own farms in the form of by-products. Of the farmers who owned poultry, all without exception fed their birds with by-products obtained from the crops they cultivated. The main feed included broken rice, rice bran, bran of other millets, pearl millet by-products, finger millet, etc. It is interesting to note that nearly 60% of the women feed a combination of different by-products of millets, which is the dominant dryland crop cultivated in the region, while the remaining 40% feed rice by-products.

Diseases among poultry and their health care: The important diseases that affect poultry include bacterial white diarrhoea, *ranikhet*, cold and cough, and fowl pox; there is further loss of poultry due to predators. Women regularly use herbal remedies to prevent and treat the birds. These herbal medicines are collected from the forests. Vaccinations against *ranikhet* are also regularly given, whenever they are available at the local government veterinary hospital. However, with a good diet, and regular use of herbal remedies, the incidence of *ranikhet* has reduced, even without vaccinations.

Marketing: The cattle and bullocks are purchased by the traders who visit the villages from far off places like Gokavaram and Jaggampeta. The cattle are transported out of the village in vehicles. Goats are sold locally as well as to traders. The average price of a goat aged 6 to 8 months is Rs.2500, and a one-year-old goat fetches a price of Rs.4000. The poultry are sold in the local market and also within the village. 1.5.3 Gender Roles in Livestock Rearing: Women and men share responsibilities in the care of livestock and in different activities like grazing, feeding, cleaning the sheds, taking care of the sick animals, and marketing.

1.5.4. Customary Grazing Practices

Typical of adivasi villages, the four villages in our study have their own traditional customary boundaries which surround the village, and demarcate their customary forests/ community forest territories from the neighbouring villages. As always, these are porous boundaries, with clear governance mechanisms and sharing mechanisms within and between villages.

Ammirekula and Kimmalagedda villages Ammirekula and Kimmalagedda villages in Rajavommangi Mandal describe their traditional customary boundaries as follows:

The customary boundaries of Kimmalagadda Village are: Daraloddi in the east, Sudikonda or Kothulakonda in the west, Kummarlakonda in the north, and Edlakonda in the south. The customary boundaries of Ammirekula village are: Sunnapuralla oddu in the east, goravadilachanna chenu and vepamanu in the west, Bodelammathalli konda in the north, and Ammathalli uddu in the south.

The forests which lie within their customary boundaries are the villager's life and soul, providing them with medicinal plants, forest produce, watering holes, fodder, grazing spaces, wood for cooking, construction, agriculture implements. Further, the forest is home to their village gods, goddesses, spiritual places, and burial grounds.

The cattle and goats are grazed in the forests that lie within their customary boundaries/ territories. The animals are grazed on different hills and valleys throughout the year. Forests are the major source of feed and fodder during the monsoon and winter seasons. In the summer season, the animals are mostly grazed in the harvested fields. Cattle are grazed under supervision, for six months from June to January. After the crops are harvested, they are left free to graze. They are usually left free to graze after the Sankranthi festival in January, and continue to graze without supervision till the end May/June. The cattle drink water from water bodies, which are located in the forests such as *Bottukumanu bode, Punadi goyyi uta, Cheedi pallam loddi, Gandi setti bode, and Pedda konda cheeku dara loddi.* The cattle from the neighbouring village Borukupalle, Appalarajupeta and Bakuluru also graze in the community forests of these two villages during the rainy and winter season. Shepherds (non-tribal sheep rearers) from Vishakhapatnam district migrate to these forests in search of fodder during the monsoon season. These shepherds contact the elders of Kimmalgadda and Amirekula villages; in particular, they meet the Munasabu and ward members of the village, and seek their permission to graze their animals in the forests. The village elders strictly warn the migratory shepherds not to cut trees within their forest. Further, if sheep are ill or sick, the village elders withhold permission and ask the shepherds to leave.

Musilimetta and Pulusumamidi villages Musilimetta hamlet comes under Dalipau Village and is bounded by Titurallakaluva in the east, Thammidisannalu in the west, Gadaparallakaluva and Vasireddivari garuvu in the south, and Gadaparalla kaluva, Daka metta, and Tene konda in the north.

The animals of these villages are grazed in the forests throughout the year in specific locations in the forests such as Kurachattimitta, Ganerumau cheruvu, chakametta, Ganemetta, Gorreladona metta, chintakonda, Nallkonda, Gangalamma mitta,

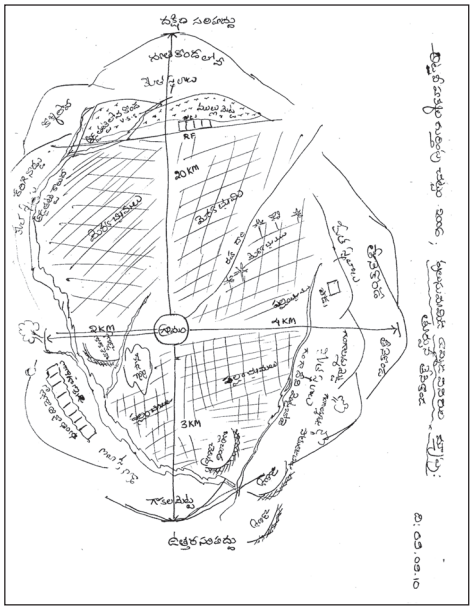


Figure 10: Pulusumamidi Resource Map

Nagulametta and Musilimetta. The cattle and goats drink water from traditional water bodies are like Teeruvaralla kaluva, Degala Kaluva, Gankalagunta kaluva, Thammidi kaluva, Pillimanu cheruvu, Ganneru manu cheruvu, Kundadivari loddi kaluva, Tetoralla Kaluva, and Tammidi gunnala kaluva.

The traditional customary boundaries of Pulusumamidi are Tene konda in the east, Gakala metta in the north, Nuthi konda lova in the south, and Thodichintalu and Adda tattu kaluva in the west. The animals are grazed in the forest throughout the year in specific areas such as Nuthikonda, Thenekonda, Gagalamma metta, Gakala metta, Mandabodi metta, and Kariginoddu. Traditional water bodies Boddamanu cheruvu, Ballachinta cheruvu, Pothuraju Bavi, Gangadevi metta bode, and Kotha cheruvu are drinking water sources for the animals.

Animals from neighboring villages of Choutidibbalu, Godugurayi, Pansalapalem, Vetamamidi, Pulusumamidi, and Burugupalem are also grazed within the customary boundaries and in the community forests of Pulusimamidi Village - this is an age-old system of sharing between villages and has existed over several generations. Migratory shepherds from coastal regions bring their sheep to graze in the forests during winter and summer seasons. These shepherds arrive after Dussehra and return to their villages in May/June. They contact the village elders and seek their permission to pen their animals outside the village, and graze their animals in the forests.

The local adivasi community takes primary responsibility to protect the forests, and conserve its resources, including grazing and fodder resources. They expect that the visiting shepherds will take on similar responsibility when they visit the forests with their sheep, and the customary laws regarding the use of the forests, are communicated to the shepherds who visit the village. One of the customary laws is a clear system of punishment of those who willfully destroy or harm fodder trees. If someone destroys a fodder tree, a *gotti* meeting is held and the community fines the person responsible. The fine is in kind, and the person fined has to contribute a cow, a sheep, or an equivalent sum of money to the *gotti*. The fine is decided based on the extent of destruction. The *gotti* denies permission to the shepherds to graze their animals in their forests, if the

sheep are sick/suffering from contagious diseases, as the adivasi community is highly aware that this disease may spread and infect their own animal. However, there is a strong sense that migratory shepherds too have a right to graze their animals in the forests seasonally, so long as they conform to the local laws of forest usage as determined by the local adivasi community, and as long as the animals are healthy.

1.5.5 Changes in Land Use (Forest and Non-Forest), their Impact on Grazing, and Community Response

The cattle population has drastically reduced over the past 15 years; goat population reduced in the early nineties due to restrictions placed on goats when the VSSs were created in Kimmalgadda and Dalepadu. However, the situation has reversed during the past 8-9 years, after people began to fight for their rights to their forests. With the FRA legislation, the community is highly aware of their right to graze animals in the forests.

In Musilimetta Village, Jatropha plantation was carried out on 55 acres in 2008 by the ITDA. In 2009, rubber plantations were forcefully introduced through NREGS work on agriculture fields, as the local government officials threatened the community that their wages would be withheld if they refused to plant rubber. However, after Girijana Deepika got to know of this and sensitised the people to the fact that the NREGS could not be imposed, and that they had the right to decide what they would plant, the community decided to uproot all the rubber plantations, which had been forced upon them on lands where they had been earlier cultivating food crops. The farmers decided to uproot and remove the rubber plantations, and returned to cultivating food crops.

The other reasons cited for the decline in livestock population included the division of joint families into nuclear families, which meant less labour available to graze animals. Many households sold their livestock to repay debts and loans. Most loans are taken to meet expenses incurred for marriages, children's higher education, and health.

1.5.6 Major Government Livestock Development

Programs and their Impact No major livestock development programs have been implemented in all the four study villages. The VSS and NREGS programs negatively impacted the livestock, as they resulted in reduced grazing access.

1.5.7 Major Problems in Livestock-based Livelihood

In the case of all four villages, the veterinary hospital is located at a distance of 12-15 km, and it is difficult to access the hospital if required. The hospitals are never stocked with sufficient vaccinations - in particular BQ, HS for cattle, PPR and HS for goats, and *ranikhet* vaccine for poultry. It is extremely difficult to access loans to purchase local breeds of cows and goats. The land available for grazing is decreasing due to the mono-plantations of rubber, Jatropha and cashew being promoted in the forests. The plantations destroy diversity of fodder trees, medicinal plants, grasses, and other traditional trees.

1.5.8. Community Awareness on FRA, 2006

There is high level of awareness amongst the villagers about the Forest Rights Act, and all the families know their rights included in the act. The villagers got to know of the act from the local people's organization, Girijana Deepika. Almost all of them have applied for individual rights and some of them have even received the *pattas*. Some have received titles to the extent of land which they claimed, whilst the others have still not received their *pattas* at the time of the study.

Community Claims

In 2009, the claims for community rights for all the four study villages in this district were submitted to the SDLC at Rampachodavaram. Mapping of the community resources was done, and a gram sabha was organized in all the villages, where a resolution was passed with the signature of the gram sabha members; and then, Form B was submitted. However, the applications were not acknowledged with a formal receipt by the government officials at the SDLC. Adivasi Aikya Vedika, an alliance of adivasi people's organizations working in the district, had applied under RTI to know the status of the community claims and received a reply that the claims applied from all the four study villages were rejected. The Adivasi Aikya Vedika representatives met the Commissioner of Tribal Affairs in August 2010 in Hyderabad and made a representation about the rejection of legitimate community claims, following which the commissioner sent out a Directive to the Project Officers of all ITDAs in the state to accept the community claims which were filed new or refilled, in view of earlier irregularities involved in accepting the claims. Thus, the process of mapping and gram sabha passing resolutions for the community forests rights was repeated in all the villages and the community claims were resubmitted to the SDLC, on 4 October 2010. This time, the villagers insisted upon a receipt and obtained the same. In a highly unjust and unilateral fashion, the SDLC in collusion with the Forest Department prepared community forest titles for the forest area which was managed by the VSS, but in the name of the gram sabhas. About 281 such community claim titles for the VSS areas were prepared. While some villages were given the titles, the process of distributing these false titles was forcibly stopped by the Girijana Deepika, as well as the state-level alliance - Adivasi Aikya Vedika, who condemned this outright violation of people's rights and called for revoking the false community titles, which were made out in the name of the VSS and for the VSS managed lands. The gram sabhas passed resolutions rejecting these false community forest titles, and passed resolutions to dissolve the village VSS.

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