



Impacts of Government Policies on Sustenance of Tribal People in the Eastern Ghats



**IMPACTS OF GOVERNMENT POLICIES ON SUSTENANCE OF TRIBAL PEOPLE
IN THE EASTERN GHATS**

Report submitted by:

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&

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List of Abbreviations

AAL – Anrak Aluminium Limited
APFDC – Andhra Pradesh Forest Development Corporation
APMDC – Andhra Pradesh Mineral Development Corporation
BPL – Below Poverty Line
CFM – Community Forest Management
DP – Displaced Person
DR – Daily Requirement
FRA – Forest Rights Act
GCC – Girijan Cooperative Corporation
Ha – Hectare
ICDS – Integrated Child Development Scheme
ITDA – Integrated Tribal Development Authority
JFM – Joint Forest Management
JSWAL – Jindal South West Aluminium Limited
JSWHL – Jindal South West Holding Limited
Kg – Kilogramme
Km – Kilometre
MGNREGA – Mahatma Gandhi National Rural Employment Guarantee Act
MMDR – Mines and Minerals (Development and Regulation)
MoEF – Ministry of Environment and Forests
Mw – Megawatts
NALCO – National Aluminium Company
NGO – Non Governmental Organisation
NSTFDC – National Scheduled Tribes Finance Development Corporation
NTFP – Non Timber Forest Products
OBC – Other Backward Classes
PAP – Project Affected Person
PDS – Public Distribution System
PESA – Panchayats (Extension to Scheduled Areas)
PHC – Primary Health Centre
Rs. – Rupees
SC – Scheduled Caste
SHG – Self Help Group
Sq km – Square Kilometres
ST – Scheduled Tribe
TAC – Tribes Advisory Council
TRICOR – Andhra Pradesh Scheduled Tribes Cooperative Finance Corporation Limited
VTG – Vulnerable Tribal Group

Acknowledgements

This micro-level study titled ‘Impacts of Government Policies on Sustenance of Tribal People in the Eastern Ghats’ attempts to understand the impacts of specific government policies and programmes on local communities.

The *adivasi*/tribal/indigenous communities residing in the Scheduled Areas of Visakhapatnam district, Andhra Pradesh, have a unique relationship with their land and forests. Their traditional agricultural practices have ensured a degree of food security, while the forests surrounding them have enabled them to meet their household and cash income needs. Government programmes—existing and proposed—to improve the lives of *adivasis* include coffee monoculture, introduced several decades ago, and the proposed bauxite mining in the Eastern Ghats. Augmenting incomes and bringing about development of the region are quoted as the main reasons for these interventions. However, both these programmes, have different and long-lasting impacts on the environment and the lives of the local *adivasi* communities. The report is an attempt to understand—and even raise questions—as to what kind of interventions could best advance the development of tribal communities in the region. The report also looks at the impacts on a community displaced as a result of bauxite mining in Damanjodi situated in Koraput district, Orissa.

Collection of primary data was carried out in the villages of Beespuram and Nimmalpadu in Visakhapatnam district, and among affected in Damanjodi. I would like to thank all the interviewees who participated in this study, gave us their time and answered the long list of questions patiently. I am immensely grateful to each one of them.

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Dhaatri Resource Centre for Women and Children & Samata

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Introduction

The Constitution of India provides special protection to the *adivasi*/tribal/indigenous people, who constitute more than 8 percent of the total population of India and who inhabit the remaining vestiges of forests in the country. The Fifth Schedule is one such constitutional safeguard that deals with administration and control of Scheduled Areas (areas with predominantly tribal population) in nine states. Nine districts in the state of Andhra Pradesh, which includes the district of Visakhapatnam too falls under the Fifth Schedule. Nearly half a million tribal people from various communities, including the Vulnerable Tribal Groups (VTGs), reside in the forested and hill-top villages of the Eastern Ghats in Visakhapatnam district. *Podu* or shifting cultivation continues to be practiced today and a variety of paddy, millets, cereals, oilseeds and vegetables are grown on *podu* lands, as well as on dry and wet lands. Collecting non-timber forest produce (NTFP), some of which is used for consumption and the rest for sale is also an important traditional activity. Forests of the region are rich in biodiversity and a variety of medicinal plants and fruit trees are abundantly available here. Cash crops, horticulture and plantation crops have also been promoted in the region.

The lives of these *adivasi* communities are intrinsically linked to the forests, lands and natural resources and have been the basis of their survival. While on the surface their life seems like a simple existence—one of tilling the land, working on the commons and collecting from the forests—what is not evident is the complex knowledge systems passed on over generations that has enabled them to make the best use of resources available around them in a sustainable manner. While this is no means an idyllic existence—with illiteracy, ill-health, mortality and malnutrition stalking them throughout their lives—in the absence of

any external support structures they have yet managed to survive. However, today the *adivasis* in the Eastern Ghats, as in several other parts of the country and even across the world, are being exposed to external influences often beyond their control or complete understanding. Often these are imposed on them without their consent or even any form of consultation.

Two such programmes, specifically being promoted in the Eastern Ghats of Andhra Pradesh are coffee monoculture and bauxite mining. Both are promised to improve the lives of *adivasis* bringing them economic prosperity and also development of the region as a whole. From a non-traditional coffee growing region, the cultivation of coffee here is being projected as important for socio-economic reasons: providing income to the impoverished communities and meeting the increasing demand for organic coffee within India and abroad. Bauxite mining proposed in the region promises employment opportunities, increased incomes and better infrastructure. These decisions will have far reaching consequences on the biodiversity and ecology of the region, and in turn on the tribal communities whose sustenance and survival is connected to the forests and the land. This situation is not unique; promoting monocultures and development activities on tribal people's lands is increasingly happening across the country. What is critical at this juncture is to investigate the implications of these policies on communities historically dependent on natural resources and understand to what extent their participation has been sought in bringing about these changes. The current study aims to understand the implications on livelihoods of these tribal communities in the backdrop of developments with regard to coffee monoculture and mineral extraction, both of which have impacts on the people and the environment of the region.

About This Study

Need

Tribal communities in the Eastern Ghats of India, as in other parts of the country, have been able to survive on the land and forests. While many of them have existed in impoverished conditions, in times of distress they have been able to fall back on their natural resource base. Traditional mixed cropping systems have helped meet their needs of food security to a considerable extent. In recent years certain government policies and programmes have been introduced with the objective of improving the social and economic conditions of the *adivasis*. These are expected to impact the lives of the tribal communities and the environment on which they are dependent on in more ways than one. Two such decisions that are of significance in the Eastern Ghat area of Visakhapatnam district in the state of Andhra Pradesh are coffee monoculture and the proposed bauxite mining. Monocultures might improve cash income, but it is important to understand whether tribal communities have the wherewithal to deal with the vagaries of an open market and to what extent incomes are really being augmented. In addition, the effects of monocultures on the biodiversity of the region and in turn the food security of the tribal people are also areas of concern. Mineral resource extraction is seen as imperative for the nation's development, and while this true to some extent, what one needs to consider is the cost in terms of lasting and irreversible environmental impacts as well as the effect on the economy and social fabric of the tribal communities.

The primary objective of the study is thus to understand the impact of government policies and programmes on sustainability of tribal peoples livelihoods against the backdrop of coffee monoculture and proposed bauxite extraction in the Eastern

Ghats of Visakhapatnam district, Andhra Pradesh. While advocacy is an important tool to secure tribal peoples' rights, strengthening it with empirical evidence collected in a scientific manner can open fresh avenues for dialogue. This will aid the process of exploring viable alternatives to help improve living standards of these communities and at the same time safeguard the biodiversity of the region. In addition it will enable the communities make informed choices on developmental issues directly concerning their lives and livelihoods.

Methodology

Both primary and secondary data collection are included in the study. Primary data collection was done from three sites through individual personal interviews, as well as small group meetings. Two of the sites—Beespuram and Nimmalpadu—are located in Ananthagiri *mandal*, Visakhapatnam district in Andhra Pradesh, while the third site is located in Damanjodi, Koraput *mandal* in Koraput district of Orissa state. While residents of Beespuram village, located on the foothills of one of the proposed bauxite extraction sites, undertake both coffee cultivation and traditional agriculture, the *adivasis* of Nimmalpadu grow traditional crops on their lands. At Damanjodi the interviewees were those who had been displaced as a result of the National Aluminium Company (NALCO) project, and this case study provides insights about a community impacted directly by bauxite mining.

Secondary data was collected from various publications—reports, journals, newspaper articles, books, etc—as well as from the internet and websites of organisations. The secondary data includes analysis of Constitutional safeguards, legal framework, violations and proposed policy shifts that are of relevance for the communities and environment. Samata, an advocacy and social justice organisation, and Adivasi

Mitra, a community-based organisation working on *adivasi* rights and development issues in Visakhapatnam district also contributed by way of sharing their experiences and perspectives.

The report is divided into three sections. Section I provides a background to the study areas biodiversity and ecology, an overview of relevant constitutional safeguards and legislations, and the genesis of the coffee and mineral extraction programme along with a current status. Section II is divided into two parts. The first part discusses the findings of the case study from the two villages Beespuram and Nimmalpadu (the latter consisting of the hamlets Karakavalasa and Rallavalasa) in Visakhapatnam district, Andhra Pradesh, and includes the relevant secondary data analysis specific to the issues highlighted. The second part deals with analysis of primary data collected from those affected by bauxite mining and allied activities in Koraput district and describe a post-mining scenario. The data for this case study was collected primarily for a parallel study conducted in 2009-10 on the impacts of mining on children.¹ Section III consists of the recommendations and the conclusion.

Section I: Eastern Ghats- Background to the Ecology, People and Legal Safeguards

This section provides an overview of the ecology of the Eastern Ghats in Andhra Pradesh, including threats to the biodiversity. The Eastern Ghats is home to several tribal communities, who have been living here for hundreds of years with the forests and land sustaining them. A brief mention of these forest-dependent communities and their

¹ Dhatri-Samata and HAQ, 2010. India's childhood in the 'pits': A report on the impacts of mining on children in India. Dhatri Resource Centre for Women and Children-Samata, Visakhapatnam, Andhra Pradesh and HAQ: Centre for Child Rights, New Delhi.

lifestyles is provided. The Constitution of India and progressive legislations have tried to secure the rights of *adivasi* communities—rights that were historically denied to them especially in the Fifth Schedule areas. This is true for the state of Andhra Pradesh as well. A synopsis of the relevant and most important statutory framework and legislations protecting tribal peoples' rights in the state of Andhra Pradesh is given. In addition a brief comparison between the intent and existing realities with regard to these safeguards is mentioned. The Scheduled Areas in Andhra Pradesh are of economic importance, not just to the tribal communities, but for the state and private corporations. Coffee monoculture and mineral extraction are two such programmes initiated here, both of which have different consequences and impacts on the environment and communities. The section also traces the historical background and examines the current status of these programmes in the state.

The Eastern Ghats: A snapshot of the biodiversity and ecology

The Eastern Ghat mountain range: Some indicators

The Eastern Ghats are an irregular range of mountains along the east coast of India located between 11°30' and 22°N latitude and



76°50' and 86°30' E longitude in a northeast to southwest strike. The Deccan Plateau lies to the west, between the Eastern and Western Ghats, and to the east are the coastal plains parallel to the Bay of Bengal. The Ghats cover a total area of around 75,000 sq km and have an average width of 220 km to the north and 100 km to the south.

The Eastern Ghats spread across the states of Orissa, Andhra Pradesh and Tamil Nadu; and parts of Mysore and Kolar districts of Karnataka also touch these Ghats. They are divided into the northern, middle and southern Eastern Ghats. The northern portion of the Eastern Ghats extend from the River Mahanadi to the River Godavari covering, in Orissa, the districts of Sambalpur, Angul, Cuttack, Bolangir, Mayurbhanj, Kalahandi, Ganjam, Dhenkanal, Gajapathi, Phulbani and Koraput, and in Andhra Pradesh the districts of Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari and parts of Khammam. This part has an altitude of above 400 m with a few peaks exceeding 1,100 m. The highest peak is Mahendragiri range at 1,516 m. The middle Eastern Ghats extend from the River Krishna towards the city of Chennai (in Tamil Nadu state) in the south. In Andhra Pradesh the districts covered are Krishna, Nalgonda, Mahabubnagar, Kurnool, Nellore, Anantapur, Cuddapah, Chittoor and Prakasham. The average elevation is 750 m. The southern Eastern Ghats meet the high mountain ranges of the Western Ghats in the Nilgiri belt and cover in Tamil Nadu the districts of North Arcot, Villupuram, Salem, Chengalpattu, Dharmapuri, Tiruchirapalli and Coimbatore.

The mean temperature in January ranges between 20°C and 32.5°C and summer temperatures range between 30°C and 35°C. The maximum temperature can reach 41°C with an increasing trend from north to south. The Eastern Ghats falls under the tropical monsoon climate receiving rainfall from



both the southwest and the northeast retreating monsoon. The northern portion of the Ghats receives rainfall between 1,000 mm and 1,600 mm annually indicating sub-humid climate. However, parts in Orissa sometimes receive as high as 2,000–3,000 mm. The average annual rainfall in the middle Eastern Ghats is 685 mm. The southern part receives between 600 mm and 1,000 mm rainfall exhibiting a semi-arid climate. Heavy winter rains coupled with cyclonic storms are characteristic of the coastal eastern portion. Humidity reaches as high as 70–75 percent during the rainy season.

Natural resources, biodiversity and ecological significance

In terms of biodiversity the Western Ghats are richer; however, the Eastern Ghats too have significant biodiversity and a rich natural resource base. Unlike the Western Ghats the Eastern Ghats are not so well documented. There are very little comprehensive studies conducted on the flora and fauna occurring in the Eastern Ghats region. Several wildlife sanctuaries and reserve forests provide protection to the diversity in the region.

Vegetation type

There is a diversity in vegetation that includes the tropical moist deciduous type, tropical dry deciduous type, mixed dry deciduous forests, dry savannah forests, thorny scrub, tropical semi-evergreen and tropical evergreen (Table 1: Vegetation types of the Eastern Ghats).

Table 1: Vegetation types of the Eastern Ghats

Vegetation type	Region
Tropical evergreen forests	Valleys of Shevaroy hills of southern Eastern Ghats, small patch of forests in Laksmipuram of Visakhapatnam in northern Eastern Ghats
Tropical semi-evergreen forests	Moist valleys of Simlipal forests, Atai, Mahendragiri, Banguru forests and parts of Ganjam and Koraput districts, Sapparla, Dharakonda, Galikonda, Tanjavanam, Minumuluru, some areas near Ananthagiri, Nulakamaddi, Maredumilli of northern Eastern Ghats and Shervaroy hills of southern Eastern Ghats
Tropical moist deciduous forests sub-divided into:	
A. Northern sub-tropical deciduous forests (sal forests)	Districts of Kalahandi, Pulbani, Ganjam, Koraput and Srikakulam and northeastern border area of Vizianagaram district
B. Southern Indian tropical moist deciduous forests (non-sal forests)	Rampa Agency, Maredumilli areas of East Godavari district, parts of West Godavari district, small patches of Nallamalais, Talakona and some parts of Seshachalam hill ranges of middle Eastern Ghats and parts of southern Eastern Ghats
C. Southern tropical moist deciduous riverian forests	Spread in very limited areas along banks and the dried river beds, represent a distinct ecotype
Tropical dry deciduous forests divided into:	
A. Teak bearing forests	Distributed over northern and middle Eastern Ghats of Andhra Pradesh and dominated by valuable timber tree species
B. Non-teak bearing forests	Distributed along the Seshachalam hill ranges of middle Eastern Ghats, and North Arcot of southern Eastern Ghats
Mixed dry deciduous forests divided into:	
A. Northern mixed dry deciduous forests	Distributed in restricted areas in Sukinda-Rebna, Keonjhar area, Nigirda-Llung area (Mayurbhanj district), and parts of Angul, Kalahandi, Ganjam and Koraput districts of Orissa
B. Southern mixed dry deciduous forests	Found in drier areas of all regions of Eastern Ghats
Dry savannah forests	Formed mostly as a result of biotic interference and are scattered throughout the area, covered with stunted tree species
Scrub forests	Seen all along the Eastern Ghats in larger or smaller areas
Tropical dry evergreen forests	Found in south Cuddapah, Sriharikota and Mamandur valley in Seshachalam hill ranges
Tropical dry evergreen scrub	Saidapet division and Madurantakam in Tamil Nadu
Source: Sandhya Rani, S and T. Pullaiah. 2002. A taxonomic survey of trees in Eastern Ghats. In: Proceedings of the National Seminar on Conservation of Eastern Ghats, 24–26 March 2002, Tirupati, Andhra Pradesh, India. Pp 5–15.	

Floral diversity

Extensive field and literature survey of trees in Eastern Ghats yielded 560 tree taxa under 262 genera belonging to 80 families out of the estimated 2,500 species of flowering plants in Eastern Ghats. Floristically the region is rich with the flowering plant species constituting 13 percent of the Indian element. On an analysis it is seen that as many as 77 taxa (68 species and nine varieties) and 27 families, are endemic to Eastern Ghats.

The Eastern Ghats have some 'ecological islands' that harbour endemic plants. These areas are Ganjam-Koraput range in Orissa, Visakhapatnam hills (including Araku Valley and Madgol hills), Nallamalai-Cuddapah range, and Tirupati hills of Andhra Pradesh, Shervaroys, North and South Arcot districts of Tamil Nadu. For example a study revealed the presence of the tree fern, *Cyathea nilgiriensis*, which is endemic to South India. The species is restricted only to Ananthagiri, Galikonda and Sunkarmetta hills, Araku Valley, Vishakhapatnam district, and was found growing on the roadside. In some of the areas only vestiges of the once luxuriant and verdant forests remain. The species rich zones are isolated primarily because the Eastern Ghats does not form a continuous range, but rather broken hill ranges with plains in between. Thus the isolation and restricted distribution of the narrow endemic plants due to geographical, ecological, edaphic and climatic barriers is much more pronounced in Eastern Ghats. In comparison, the Western Ghats, where there is a continuity of mountain system and an almost same climatic regime, is the reason that the endemic plants of Western Ghats have a relatively wider distributional range. There is no endemic genus strictly confined to the Eastern Ghats. Eastern Ghats harbours around 10 red listed species of



A tree fern

Picture courtesy P. Sekhsaria

orchids, among the several species of orchids found. Patches of mangrove vegetation also occur in the estuaries of the Mahanadi, Godavari, Krishna and Cauvery rivers. The forests of the Eastern Ghats also harbour several species of medicinal plants, many of which are endangered. The medicinal plants are used by the local *adivasis* to treat illness many of who are living miles away from the nearest Primary Health Centre (PHC). There are also a number of sacred groves many of which are even today preserved in a mostly undisturbed condition. An interesting feature among the flora is the presence of some Himalayan species in the Mahendragiri (Orissa) region of Eastern Ghats. Ethnobotanical studies conducted have recorded the myriad uses of the different species of plants to the tribal communities in the Eastern Ghats as food, medicine, NTFP, timber and fuelwood.

Faunal diversity

Faunal records include several species of mammals, reptiles, amphibians and birds, some of which are rare and endangered. Mammal inhabitants found here are tiger, jungle and leopard cat, wild boar, *nilgai*, *gaur*, spotted deer, *sambhar*, mouse deer, barking deer, Indian blackbuck, four-horned antelope, porcupine, Indian hedgehog, slender loris, tree shrew, black-naped hare, jackal, palm civet, striped hyena, Indian wild dog, Indian fox, rhesus and bonnet macaques, common/Hanuman langur, sloth bear, mongoose as well as several species of bats and rats. The Indian pangolin, fishing cat, Indian smooth-coated otter and wolf are some of the more uncommon/rarely seen mammalian species of the Eastern Ghats.

A camouflaged golden gecko



Picture courtesy P. Sekhsaria

Several species of reptiles and amphibians have been recorded, some rare/endangered species like the golden hill gecko, the Indian monitor lizard, the python and the solitary species of uropeltid snake are recorded, not to mention the burrowing limbless skink. In the Salur Wildlife Sanctuary located in Salur *mandal* of Vizianagaram district, Andhra Pradesh, is found the king cobra. A number of other species of both venomous and non-venomous snakes are also found in the Ghats.

The Eastern Ghats are very rich in avifauna. The ornithological surveys carried out by

several experts helped to list over 425 species and sub-species of birds belonging to 57 families. The Jerdons courser, a restricted endemic, once thought to be extinct was rediscovered and is now found only in the Sri Lankamalleshwara Sanctuary, in the Eastern Ghats of Andhra Pradesh. The Blewitts owl another critically endangered, endemic is also reported from the forests of the Eastern Ghats. A large number of insect species, including butterflies are also found in the Eastern Ghats. Several species of fishes and crabs can be found in the streams of the forests as well.

Rivers

The Eastern Ghats constitute the watershed of many big rivers. Four main rivers cut through the range at different points: Mahanadi in Orissa, Godavari and Krishna in Andhra Pradesh and Cauvery in Tamil Nadu. In addition hundreds of streams and rivers also originate or crisscross the region covered by the Ghats. These include in Orissa, Rushikulya, Vamsadhara, Langulya, Brahmani, Subarnalekha, Baitarini, Salandi, Salia, Budhabalanga, Jamira, Kolab and Bahuda. In Andhra Pradesh flow the Pennar, Papaghni, Chitravathi, Cheyyer, Gunjana, Nagavaali, Sileru, Indravati and Machkund, and in Tamil Nadu the Vellar, Ponnaiyar, Amaravathi, Vaigai and Thambaraparni.

Hill ranges

The peaks in Eastern Ghats are not as high as those of the Western Ghats. The elevation ranges from a few metres to 1,680 m. The average elevation is about 750 m with peaks rising to elevations like 1,643 m in case of Gabikonda and 1,680 m in case of Armakonda. The elevation in general in the state of Tamil Nadu is a little higher—over 900 m to the west—due to the Nilgiri hills. Compared to the Western Ghats these mountain ranges have a much older and more complex geological history (Table 2: Main hill ranges in the Eastern Ghats).

Table 2: Main hill ranges in the Eastern Ghats

Name of the hills, district	Altitudes of the hills
Northern Eastern Ghats	
Orissa—Districts of Sambalpur and Bolangir (Gandhamardan hills), Mayurbhanj and Kalahandi (Khondmal hills), Phulbani and Koraput Andhra Pradesh—Srikakulam (Palakonda-Antikonda-Burrakonda ranges), Vizianagaram and Visakhapatnam (Madgole hills-Ananthagiri-Chintapalli-Sapparla-Gudem-Marripakalau hill ranges), East Godavari (Gurtedu-Addateegala-Rampachodavaram-Maredumalli ranges), West Godavari (Polavaram, Papikonda ranges)	Altitude of above 400 m, few peaks with above 1,100 m. Mahendragiri 1,510 m, Debmali Prabar 1,672 m (Koraput district), Koraput 1,515 m, Singaraju Parbar 1,516 m, Devagiri 1,381.2 m, Turiakionda 1,598 m, Hatimali 1,391 m, Chandragiri 1,269 m, Armakonda 1,680 m, Dharakonda 1,365 m, Sambarikonda near Gudem village 1,527 m, Galikonda 1,643 m
Middle Eastern Ghats	
Andhra Pradesh—District of Krishna (Kondapalli ranges), Kurnool, Mahabubnagar, Prakasam (Nallamalai hills), Anantapur, Cuddapah, Chittoor and Prakasam (Palakonga-Seshachalam-Lankamala-Nagari hills) and Nellore (Veligonda range)	Average elevation 750 m. Nallamalais 800 m, Seshachalam hills 850 m
Southern Eastern Ghats	
Tamil Nadu—North Arcot (Javadi hills), South Arcot (Gingee hills), Salem (hills of Shevaroy, Kollimalai hills, Kalrayan and Bodamalai), Dharmapuri (Melahiri hills), Tiruchirapalli (Pachamalai hills)	Javadi hills up to 1,375 m, Pachamalais hills up to 1,000 m. Shervaroy hill (400–1,600 m), Koli hills 1,000–1,500 m
Source: Sandhya Rani, S and T. Pullaiah. 2002. A taxonomic survey of trees in Eastern Ghats. In: Proceedings of the National Seminar on Conservation of Eastern Ghats, 24–26 March 2002, Tirupati, Andhra Pradesh, India. Pp 5–15.	

Geology and minerals

The Eastern Ghat belt is commonly referred to as the Eastern Ghats granulite belt in geological nomenclature. The belt extends for 1,000 km in a northeast-southwest direction along the east coast of India. The belt seems to have developed in two stages during the early Proterozoic and middle to late Proterozoic ages. The predominant lithounits in the belts are khondalites, charnockites, basic granulites, leptynites,

megacrystic granites while the intrusive consists of alkaline, ultramafic, anorthositic (layered and massive) rocks distributed at many tectonically disturbed zones of the belt.

The two most typical rock types of the Eastern Ghats are charnockites and khondalites and are of the Precambrian age. The early British geologists coined the names in India, the former after Job Charnock the founder of Calcutta and the latter named by the geologist TL. Walker after the Khond tribes of Orissa. Such rocks

are typical of high metamorphic grades known as granulites and rocks of granulite provinces are known to have formed by metamorphism at high temperatures and substantial depth. The geochronologic data so far available suggests that the Eastern Ghats were subjected to high grade metamorphic conditions over a period extending over thousands of millions of years. Thus the terrain being one of high grade metamorphic rocks, it contains minerals appropriate to origin under such conditions and also minerals produced by weathering processes. The high temperature minerals include graphite, crystalline marble, manganese ore and gemstones. Products of weathering include oxidised products of manganese ore and bauxites. Morphologically the area exhibits conical hills, gently sloping plateaus and broad, confined valleys. Bauxite deposits occur mostly on the gentle to moderately sloping plateaus. Khondalite, in general forms the hills, while the charnockite occupy the lower slopes and intervening valleys. The minerals of economic importance in the Ghats thus include limestone, bauxite, chromite, graphite, manganese, mica, coal, asbestos, barite iron ore and tungsten. Other minerals like apatite, clays, building stones and quartz are also found. Gem stones and semi-precious stones like ruby, chrysoberyl, chrysoberyl cats eye, moonstone, diopside, apatite, alexandrite, zircon, sillimanite, garnet and tourmaline are also found to occur in several parts of the Ghats.

Threats to and conservation of the Eastern Ghats

The Eastern Ghats are today under severe environmental stress and many of the natural resources therein are not being managed on sound ecological principles to ensure sustainable yields. The forest cover in the Ghats is diminishing at a much faster rate than the replenishment, so also are there

other changes that are affecting the social and economic milieu of the region. There are multiple causes for this—development activities, like hydro-electric dams, mining and irrigation projects leading to deforestation and displacement, government programmes like forestry [joint forest management (JFM), community forest management (CFM)] and monocultures (coffee, cashew, etc) adversely impacting the environment, livestock and grazing affecting the vegetation, unscientific extraction of NTFP that is depleting the resources, forest fires caused accidentally or willfully destroying forest cover and in turn causing soil erosion, increasing tourism and its pressure on the ecology, biodiversity being lost as result of introduction of exotic species like tropical pines, eucalyptus plantations and invasive species like lantana, ipomea, jatropha, etc., an increasing tribal population and more so, an increasing external population settling down in these hill areas, straining the land and limited resources, and the rising incidents of wildlife trade and wood smuggling. All these have impacted the diversity and abundance of biodiversity and in turn the lifestyles of the people, primarily the *adivasis* of the region. The roots, tubers, medicinal plants and small animals that form a part of the tribal peoples' diet are depleting resources and affecting adversely the nutritional balance of the *adivasis*. Livelihoods have also been affected; with forests disappearing resources like grass for thatch, wood for house construction and agricultural implements, and fodder and grazing land for livestock is becoming scarce.

The Western Ghats has received considerable and consistent attention from the environment lobby in the country as a result of its very rich biodiversity. However, threats to the Eastern Ghats are by no means any less serious. Organisations have been working in the region too—some on issues

relating to environmental conservation and others with the tribal people who coexist with the environment. The government has also made efforts to prioritise the conservation of the area. In addition to the protective environmental legislations that exist in the country there are a number of areas in the Eastern Ghats that have been designated as wildlife sanctuaries and national parks and that serve as refuge for several endangered species of flora and fauna. The central government, recognising the unique ecology and with the aim of protecting and preserving the same proposed the development of two biosphere reserves in the state of Andhra Pradesh—one of them in Chintapalli in Visakhapatnam district. While this is a welcome move, its success would all depend on how serious the government is about the proposal and its strength to withstand the powerful industrial lobbies like that of mining.²

Tribal communities, their lifestyles and livelihoods in the Eastern Ghats

The Eastern Ghats are home to a number of tribal communities some of them from the VTGs. The state of Orissa is home to 62 different tribal communities of which the tribes in the Eastern Ghats include Khonds (Kandho), Gond, Santal, Soara, Kolha, Shabar, Munda, Paroja, Bhotada, Bhunya (Bhuiyan), Kissan, Oraon, Bhumiya, Bhathudi, Kharia, Binjhal, Koya, Kol, Saunti, Gadabas, Mirdhas and Juang. In Andhra Pradesh that has 35 different tribal communities 32 of these communities live in the Eastern Ghats. These include Andh, Bagata, Bhil, Chenchu, Dhulia, Gadaba,

² At the time of finalising this report the state government of Andhra Pradesh is reported to have rejected the suggestion by the MoEF to designate Chintapalli as a biosphere reserve citing problems for the local population and for the development of industries like mining in the region.



An *adivasi* woman from Ananthagiri situated in the Eastern Ghats of Visakhapatnam district

Gond, Goudu, Hill Reddy, Jatapu, Konda Kammara, Kattunayakan, Kolam, Konda Dora, Konda Kapu, Konda Reddi, Khond, Kotiya, Koya, Kulia, Mali, Manne Dora, Nooka/Mukha Dora, Naikpod, Nayak, Pardhan, Porja/Parangiperja, Reddi Dora, Rona/Rena, Savara, Thoti and Valmiki. There are a total of 36 different tribal communities in the state of Tamil Nadu, of which three of them—Sholaga, Uraly and Malayali—live in the Eastern Ghats.

The traditional economies of the tribal people centre around hunting, food gathering, slash and burn/shifting agriculture, flatland cultivation, vegetable growing, NTFP collection and trading. The geography, topography, and availability of forests, land and water determine the kind of traditional occupation that varies greatly. Paddy and a wide variety of traditional millets, cereals and pulses are grown in subsistence agriculture to meet household needs. These are supplemented by

vegetables, fruits, and roots and tubers some of which are cultivated while others are collected from the forest. Several other forest produce too contribute to their diet that includes, for example, honey and gooseberry. The forest is also an important source of fuelwood, timber and medicines. There have been several shifts in the traditional livelihood patterns that replaced barter system of old with commercial activity, and included also the introduction of horticulture, plantation, monocultures and cash crop cultivation. Coffee, cashew, pineapple, tobacco are some examples.

Large populations of these tribal people, especially from the VTGs, live in some of the most remote and scattered hamlets and villages with no access to basic infrastructural facilities like health, education, roads or transportation. Poverty, malnutrition and ill-health plague them at every stage in their lives. Today their unique languages, culture, customs and traditions carefully passed on over hundreds of years is being eroded steadily and is in danger of being lost to the future generations.

Constitutional and legal safeguards for the *adivasis* in Andhra Pradesh

The *adivasi* communities in the Eastern Ghats of Andhra Pradesh, several of whom are VTGs, live in hill-top villages that are remote and difficult to access. Historically these communities have been living here for hundreds of years, and their existence has been intrinsically linked to the forests, ecology and lands. However, external influences, as far back as the colonial times, have exploited them to access the rich natural resource base in the region. The lands and forests on which they are dependent have been encroached upon by non-tribals and they face a constant threat from development projects that could result in their displacement (some of which

already have resulted in not one but multiple displacements). This is inspite of the several legal and Constitutional safeguards that have been provided to protect their rights.

The Fifth Schedule and Scheduled Areas

The Fifth Schedule [under Article 244 (1) (Provisions as to the Administration and Control of Scheduled Areas and Scheduled Tribes) of the Constitution of India] essentially provides a historic guarantee to the tribal people in the country on the right over their lands. The Fifth Schedule deals with the administration and control of specified areas (termed Scheduled Areas) and the tribes living in these areas. The President of India, exercising the powers conferred to him under the Fifth Schedule, in the year 1950 declared specified areas in the country as Scheduled Areas. Currently nine states in India—Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa and Rajasthan—have regions demarcated as Scheduled Areas.

As per the Fifth Schedule the President holds the power to direct that the whole or any specified part of a Scheduled Area shall cease to be a Scheduled Area or a part of such an area; increase the area of a Scheduled Area (after consultation with the Governor of the state); alter the boundaries but only by way of rectification, declare those areas post rectification as Scheduled Areas, and rescind and make fresh orders relevant to Scheduled Areas.

Administratively the Fifth Schedule Areas are part of the states in which they are situated. However, the Governor may make regulations for the peace and good governance of these areas that include regulations that (a) prohibit or restrict the transfer of land by or among members of the scheduled tribes (STs) in such area; (b) regulate the allotment of land to members of

the STs in such area; (c) regulate the carrying on of business as moneylender by persons who lend money to members of the STs in such area. In framing these regulations the Governor is required to consult with the Tribes Advisory Council (TAC). The Governor is also required to make submission annually or when required to the President on matters with regard to administration of the Scheduled Areas under his jurisdiction.

The Fifth Schedule envisages setting up of the TAC comprising not more than 20 members. Of these three-fourth members need to be representatives of the STs in the Legislative Assembly of the state. It is the duty of the TAC to advise on matters relating to the welfare and advancement of the STs in the particular state and act as an instrument to prevent the exploitation and discrimination of tribal people. The Governor is also empowered to prescribe rules and regulations with regard to the number of members of the TAC, mode of appointment of members as well as the Chairman of the Council; conduct meetings and procedures; and other incidental

matters.

Fifth Schedule areas in the state of Andhra Pradesh extend over 31,485.34 sq km constituting 11 percent of the total area of the state and is spread across the nine districts of Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Khammam, Warangal, Adilabad and Mahabubnagar (Table 3: District-wise Scheduled Area in Andhra Pradesh). It covers a total of 5,948 villages in these districts.

Panchayats (Extension to Scheduled Areas) Act 1996

The 73rd Amendment of the Constitution of India in 1993 gave constitutional sanctity to the *Panchayati Raj* institutions and marked the beginning of a new era in the federal democratic set up of the country. The *Panchayati Raj* institutions provide the broadest representative base that exists in any country in the world. Consequent to the enactment of the *Panchayat Raj Act 1993* at the national level almost all the states and

Table 3: District-wise Scheduled Area in Andhra Pradesh

District	Total area of district (sq km)	Scheduled Area (sq km)	Scheduled Area to district area (%)
Adilabad	16,105	6,138.50	38.12
East Godavari	10,807	4,191.65	38.79
Khammam	16,029	6,899.92	43.05
Mahabubnagar	18,432	1,191.90	6.47
Srikakulam	5,837	1,289.32	22.09
Visakhapatnam	11,161	5,904.51	52.9
Vizianagaram	6,539	1,740.98	26.62
Warangal	12,846	3,122.46	24.31
West Godavari	7,742	1,006.10	13
Total	105,489	31,485.34	29.84

Source: APTWD. 2006. Basic information. Andhra Pradesh Tribal Welfare Department, Hyderabad, Andhra Pradesh, India. URL: <http://aptribes.gov.in/html/basicstats.pdf> (accessed June 2010).

Box 1: The Sixth Schedule

The Sixth Schedule of the Indian Constitution [Articles 244(2) and 275 (1)] contains the provisions with regard to the administration of tribal areas in the states of Assam, Meghalaya, Tripura and Mizoram. The Sixth Schedule provides for the creation of autonomous districts and regions in the specified states. The Governors of these states, like in the Fifth Schedule areas, have considerable power with regard to administration of these regions and their approval is required for framing rules and regulations by the District Councils and Regional Councils.

District Councils and the Regional Councils constituted for the districts and regions are also empowered to make laws with regard to:

- allotment, occupation or use, or setting apart of land (other than Reserved Forest land) for the purpose of agriculture/grazing/residential/non-agricultural purposes or for any purpose that will help promote the interests of the inhabitants of the village/town. (However, nothing in such laws can prevent acquisition of occupied or unoccupied land for public purposes by the state government in accordance with the prevailing law on acquisitions.)
- management of forest (other than Reserved Forests)
- use of canal or watercourse for the purpose of agriculture
- regulation of practice of shifting agriculture (known here as *jhum*)
- establishment of village/town committee/councils and their powers
- matters relating to village or town administration including police, public health and sanitation
- appointment of succession Chiefs or Headmen
- inheritance of property (marriage and divorce)
- social customs

The District Councils and Regional Councils can constitute village councils or courts for the trial of cases between parties all of whom belong to the same tribe in the area for the administration of justice and frame relevant rules in this regard. The District Council is also empowered to establish, construct and manage infrastructure like schools (even prescribe the language and manner in which the education is to be imparted), dispensaries, markets, ferries, fisheries, roads, road transport and waterways. The Governor can also entrust to the District Council, conditionally or unconditionally, functions with regard to agriculture, animal husbandry, community projects, cooperative societies, social welfare, village planning or any other matters. The Councils are allocated funds to undertake their tasks. They have the power to assess and collect land revenue, levy and collect taxes on buildings and land, tolls on people residing in the area. The District Council in addition can levy and collect taxes on (i) trades, professions, callings and employment; (ii) vehicles, animals and boats; (iii) entry and sale of goods in a market; (iv) toll on passengers and goods carried in ferries; and (v) taxes for maintenance of roads, transport and schools.

The District Council can also receive royalty for licenses or leases issued for the purpose of prospecting or extraction of minerals and also make regulations for control of money lending and trading by non-tribals that include allowing money lending only by licensed persons and prescribing maximum rate of interest that can be charged or recovered by the money lender.

The Sixth Schedule also lays down state specific rules and the powers of the Governors in these areas with regard to repealing any laws that are detrimental to the interests of the people.

union territories in the country enacted their own legislations. However, unrest and problems in the tribal areas of the country with regard to land alienation, lack of development and exploitation by outsiders persisted indicating that a host of programmes initiated for tribal welfare had met with limited success. The Bhuria Committee was constituted in June 1994 to undertake an examination of the tribal scenario of the country and to study the extension of the 73rd Amendment to the Scheduled Areas. Based on the recommendations of the Bhuria Committee, on 24 December 1996, the Act termed the Provisions of the *Panchayats Extension to Scheduled Areas (PESA) Act 1996* came into force extending the system of *Panchayati Raj* to the Scheduled Areas. The *Gram Sabha*—consisting of adult members of the village as against the elected *Gram Panchayat*—was considered to be pre-eminent. It was recognised as the competent authority to safeguard and preserve the traditions and customs of the people, their cultural identity, community resources and the customary mode of dispute resolution. The state governments with Fifth Schedule areas were required to prepare the state conformity Acts and frame the rules and regulations for its implementation.

The Andhra Pradesh Panchayat Raj (Amendment) Act 1998

The Andhra Pradesh *Panchayat Raj Act 1994* was notified for amendment on 16 January 1998 and came to be called as the Andhra Pradesh *Panchayat Raj (Amendment) Act 1998*. The Act by providing reservation ensured that *adivasis* were represented in the local governance and could form a part of the decision-making process.

The primary features of this Act with regard to safeguarding land and natural resources in Scheduled Areas are:

- Every *Gram Sabha* shall be competent to safeguard and preserve the traditions and customs of the people, their cultural identity, community resources and without any detriment to any law for the time being in force, the customary mode of dispute resolution.
- Every *Gram Sabha* shall approve plans, programmes and projects for social and economic development before such plans and projects are taken up by the *Gram Panchayat* at the village level.
- The *Mandal Parishads* were to be consulted before making acquisitions of land in Scheduled Areas or development projects and before resettling or rehabilitating persons evicted by such projects in the Scheduled Areas; the actual planning and implementation of the projects in the Scheduled Areas shall be coordinated at the state level.
- Planning and management of minor water bodies in the Scheduled Areas shall be entrusted to *Gram Panchayats*, *Mandal Parishads* or the *Zilla Parishads*, as the case may be.
- The recommendations of the *Gram Panchayat* shall be taken into consideration prior to grant of prospecting license or mining lease, for minor minerals in the Scheduled Areas or for grant of concession for the exploitation of minor minerals by auction.
- The *Gram Sabha* or the *Gram Panchayat*, as the case may be, shall also exercise its powers in respect of matters relating to:
 - sale and consumption of intoxicants,
 - ownership of minor forest produce (or NTFP),

- prevention of alienation of land in Scheduled Areas and restoration of such land to the ST member,
- manage village markets and
- exercise control over money lending to a tribal person.

The Andhra Pradesh Scheduled Areas Land Transfer Regulation 1959 and amendments

The tribal areas in Andhra Pradesh saw several rebellious movements against the oppression by moneylenders and exploitative landlords. The Ganjam and Vizagapatnam Act 1839 was enacted as result of the widespread unrest in the tribal areas of the northern districts of the then Madras Presidency. As per this Act the tribal areas were removed from the purview of the general laws and the Collector, as an Agent to the state government, was vested with extraordinary powers. Exploitation of tribal people persisted with resulting escalation in rebellion and the Agency Tracts Interest and Land Transfer Act 1917 was enacted as a response to these disturbances. The objective of the Act was to regulate the transfer of land in the tribal areas. The Act prohibited the transfer of land between tribal people and non-tribals without the prior consent of the Agent (to the Government) or a prescribed officer. In the 1940s alienation from tribal land and forest reservation rules resulted in a revolt in Adilabad that ultimately led to the promulgation of the Tribal Areas Regulation 1356 *Fasali* in 1946. This regulation empowered the government to make such rules necessary for the administration of a Notified Tribal Area. The substance of this regulation was incorporated in the Tribal Areas Regulation 1359 *Fasali* in the year 1949 and the rules giving effect to its provisions were issued under the title Notified Tribal Area Rules 1359 *Fasali*. The most important provision of this regulation

is that no court of law or revenue authority shall have any jurisdiction in any Notified Tribal Area in any dispute relating to land, house or house site occupied, claimed, rented or possessed by any tribal person or from which any tribal person may have been evicted whether by process of law or otherwise during a period of one year preceding the notification of such an areas as a Notified Tribal Area.

With the enactment of the Constitution of India in 1950 and exercising the powers granted under the same the Governor of the state promulgated the Andhra Pradesh Scheduled Areas Land Transfer Regulation (Regulation 1 of 1959) on 4 March 1959 repealing the earlier Agency Tracts Interest and Land Transfer Act 1917 and the Tribal Areas Regulation 1359 *Fasali* of 1949. As per Regulation 1 of 1959 any transfer of immovable property located in the Scheduled Areas made by a tribal person was deemed null and void unless it was made in favour of any other member of the tribal community or registered society comprising solely of ST members or with the previous sanction of the state or with the consent in writing of a prescribed officer. The regulation was amended by Regulation II of 1963 to include some more areas in the state.

However, inspite of the Regulation 1 of 1959 it was observed that the non-tribals were able to find ways and means to circumvent the provisions by taking advantage of the illiteracy and ignorance of the poor *adivasis*. These exploitative conditions along with ineffectiveness of the government to prevent tribal land alienation triggered the Naxalite (Maoist) movement in Srikakulam region between 1968 and 1970. The uprisings were the last resort of the tribal people who were driven to despair by the outside encroachers. The state was forced to take note of the Naxalite movement and to acknowledge that in order to create peace and prevent tribal peoples'

exploitation in the Scheduled Areas it was necessary to prevent encroachment by non-tribals.

The next amendment or Regulation 1 of 1970 was passed by the Governor. The amendment strengthened the tribal peoples' right to land by:

- 1) Prohibiting absolute transfer of immovable property in Scheduled Areas in favour of non-tribals irrespective of whether the transferor is a member of the ST or not, except in the case of partitions or successions.
- 2) Drawing a statutory presumption that until the contrary is proved any immovable property situated in the Scheduled Areas and in possession of a non-tribal shall be presumed to have been acquired by such a person or his predecessor through a transfer made to him by a member of a tribal community.
- 3) Providing that where a tribal person is unable to sell any land at a fair price to another tribal person, he may offer the same to the government who will take over the land on payment of compensation.

Further amendments to the regulation were:

- 1) Regulation II of 1970 which provides for the *ryotwari* settlement of certain lands in the Scheduled Areas in Andhra Pradesh.
- 2) Regulation I of 1971 passed to enable mortgage without possession of any immovable property situated in the Scheduled Areas to any cooperative, bank or other financial institution approved by the state government with the express condition that in the event of default, the property should be sold only to an *adivasi* or a cooperative society consisting solely of STs.
- 3) Regulation I of 1978 made to prohibit registration of documents in favour on

non-tribals, to recognise all offences under this regulation as cognizable and punish those guilty. This regulation was brought about as inspite of an absolute prohibition on transfer of land to non-tribals it was found that registration of sale transactions in favour of non-tribals was continuing and lands restored to tribal people were being reoccupied by non-tribals.

Samatha Judgment

On 11 July 1997, after a two and a half year battle, the full bench of the Supreme Court in a Special Leave Petition, gave a historic judgment in favour of the tribal people of India. The Samatha Judgment³ is a landmark judgment and of great significance in the fight of tribal peoples for their land and resource rights.

The salient features of the Judgment are:

- 1) Government lands, forest lands and tribal lands in Scheduled Areas cannot be leased out to non-tribals or private industries, including for mining operations as this was in contradiction of the Fifth Schedule of the Constitution.
- 2) Mining activity in the Scheduled Areas can be taken up only by the tribal people themselves, either individually or as a cooperative with financial assistance from the state, or by state institutions like the Andhra Pradesh Mineral Development Corporation (APMDC) subject to compliance with the Forest Conservation Act 1980 and the Environmental Protection Act 1986.
- 3) The Court recognised the 73rd Constitutional Amendment—The *Panchayat Raj* Act 1993—and the Andhra Pradesh *Panchayat Raj* (Amendment) Act 1998 by stating that

³ Named so after the advocacy organisation, Samata that filed the petition

the *Gram Sabha* shall be competent to safeguard and preserve community resources and thereby reiterated the need to give the right of self-governance to tribal people.

- 4) If necessary, the Court felt that the Chief Secretary of Andhra Pradesh state should constitute a committee consisting of himself, and the Secretaries of Industry, Forest and Social Welfare to have factual information collected in order to consider whether it is feasible to permit the industry to carry on mining operations. The committee was to examine the issue on whether licenses could be allowed to continue or whether to prohibit further mining operations. In case where the similar Acts in other states do not totally prohibit grant of mining lease of the lands in the Scheduled Areas, similar committee of secretaries and state Cabinet sub-committees should be constituted and decision taken thereafter. Before granting lease, it would be obligatory for the state government to obtain concurrence of the central government by constituting a sub-committee headed by the Prime Minister and other Union Ministers.
- 5) The Court also felt that it would be appropriate to constitute a conference of Chief Ministers and concerned Union Ministers to take a policy decision so as to bring about a suitable enactment for a consistent scheme throughout the country in respect of tribal land exploitation of mineral wealth.
- 6) The state government of Andhra Pradesh was directed to stop all industries from mining operations.
- 7) The Court directed that 20 percent of the net profits should be set apart as a permanent fund as part of the industrial/business activity for establishment and maintenance of water

resources, schools, hospitals, sanitation and transport facilities by laying roads, etc. This 20 percent allocation would not include the expenditure for reforestation and maintenance of ecology.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act 2006

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act 2006, or the Forest Rights Act (FRA) primarily recognises the rights of forest dwellers and aims to make conservation more accountable. The Act grants legal recognition to the rights of traditional forest dwelling communities, and attempts to correct the historical injustice suffered by these communities as a result of forest laws. It is also a first step towards giving communities and the public a voice in forest and wildlife conservation.

The Act recognises three rights—right to land, user rights and right towards protection and conservation. It recognises individual and collective rights of tribal people and other traditional forest dwellers. Those who have been involved in cultivating land prior to 13 December 2005 are eligible for *pattas* on lands subject to a maximum of 4 ha (9.88 acres). The land to which title deeds are given, will be held in joint ownership by both husband and wife, and cannot be sold but only transferred through inheritance. The Act provides the right to forest dwelling communities including the STs, to collect NTFP traditionally collected by them (this excludes timber), and access to grazing grounds and water bodies. The Act further gives communities the right to protect and conserve their forests; protection prior to the Act was the sole prerogative of the Forest Department.

As on 31 August 2010, across the country, more than 28.73 lakh claims have been filed

and more than 10.13 lakh titles have been distributed. More than 30,000 were ready for distribution. In the state of Andhra Pradesh, the total number of claims received at the *Gram Sabha* level was 329,858 (322,955 individual and 6,903 community). The number of claims recommended by the *Gram Sabhas* to the State Level Development Committees was 230,476 (226,943 individual and 2,533 community) which in turn recommended 192,239 claims to the District Level Committee. The claims approved by the District Level Committee were 174,244. Of these the number of titles distributed was 166,749 (164,698 individual and 2,051 community). The rejected claims numbered 149,903. The extent of forest land for which titles were distributed were 577,701.299 ha (14,27,531 acres). The *Gram Sabhas* in the state have constituted 3,744 Forest Rights Committees.

The constitutional and legal safeguards were enacted to protect the land and resource rights of *adivasis*. However, exploitation of tribal people by private industries, non-tribals and most worryingly the state itself persist; this is true in the case of Andhra Pradesh as well. Interpretations by courts have diluted effectiveness of the Samatha Judgment in other Fifth Schedule states, while the Andhra Pradesh state government has itself initiated attempts to amend the Fifth Schedule and the Land Transfer Regulation.

The promise of self-governance made under PESA Act 1996 has been in stark contrast to its implementation. Till date the Andhra Pradesh government is yet to frame the rules under the state PESA Act; draft rules were prepared in 2007 but the same have not been put forward to the TAC and hence have not yet been notified. Without the rules the implementation of the state PESA Act at the ground level is null and void. The state PESA Act that was required to be enacted in conformity with the central legislation also has several lacunas that need to be

addressed. Of relevance in the study are the rights over NTFP. NTFP plays an important role in the economy and life of the *adivasis*; however there are several issues in the legal framework that are detrimental to the *adivasis* rights. Foremost amongst these is the ambiguity in the definition of the term NTFP itself. While the Andhra Pradesh Scheduled Areas Minor Forest Produce (Regulation of Trade) Regulation 1979 does define NTFP, it does so in very discretionary terms. Again the state PESA Act extends self-governance to the Scheduled Areas under which the *Gram Panchayat* or the *Gram Sabha* has powers as prescribed in respect of ownership of NTFP, but the state law i.e. the Andhra Pradesh Scheduled Areas Minor Forest Produce (Regulation of Trade) Regulation 1979 is not in compliance with state PESA Act. Then again the clause in the state PESA Act 'without detriment to any other law in force' implies that in case of a dispute on the question of NTFP the forest laws will take precedence over customary dispute resolution mechanisms. The central PESA legislation vests ownership of NTFP with both the *Gram Panchayat* at the appropriate level as well as the *Gram Sabha*. The state PESA Act in contravention provides that the ownership is to be vested with either the *Gram Sabha* or the *Gram Panchayat*, giving the state the discretion to decide this. Also while the state PESA Act gives ownership of NTFP to *Gram Sabhas/Gram Panchayat*, it is the *Vana Samrakshana Samithis* (Forest Protection Committees) under the Forest Department that control forest produce. Ownership would mean the complete right to grow, collect, store and sell the NTFP; but these rights are currently restricted. The monopoly rights given to the Girijan Co-operative Corporation (GCC), a government entity, for procurement and marketing of NTFP also conflict with the PESA Act that transfer ownership of NTFP itself to the *adivasis*.

In the case of implementation of the FRA one of the most serious lapses has been the level at which the *Gram Sabhas*, and in turn the Forest Rights Committees (for verifying and accepting claims) were constituted. Andhra Pradesh, like several other states, constituted the Forest Rights Committee at the *Panchayat* level and not at the village/hamlet level. This is in violation of not just FRA but PESA Act as well. This has meant that several revenue villages and many more hamlets come under one *Gram Sabha* making implementation of the Act impossible in a transparent and democratic manner. This, in addition, means that several hamlets/villages are also not a part of the Forest Rights Committees. While the implementation of the FRA is the responsibility of the Ministry of Tribal Affairs, the Forest Department is in control of the lands. The reticence of the latter has meant conflicts within the government with one department pitted against the other. Evidence of this conflict is the extremely low percentage—just 1.6 percent—of community claims settled across the country in favour of the *adivasis*; even here most did not include rights over NTFP. The Forest Department is seen as reluctant to hand over community rights over forest produce—a lucrative business of Rs. 50,000/- crores as per the Planning Commission and contributing to half of the Departments revenue. Forest Departments earn more from NTFP than timber. Andhra Pradesh, for example, earns Rs. 82 crore from NTFP and only Rs. 43 crore from timber. NTFP is an important source of income for the *adivasis* too. The denial of access to NTFP is a serious impediment to economic empowerment of the *adivasis*. While the states in India trade in NTFP through corporations and cooperatives, the FRA and the PESA render state trading in NTFP

illegal. In terms of individual claims, in all states, including Andhra Pradesh, where titles have been distributed till date claimants have seen that the final title is granted for an area much less than what was originally claimed. In several of the states claims were not being accepted from regions where forest areas were to be diverted for mining, irrigation or dam projects. In Andhra Pradesh, the names of 10,168 claimants were deleted from the list of beneficiaries in areas that were proposed to be leased for mining. A majority of the ‘Community Certificates of Title’ or community claims issued in Andhra Pradesh ostensibly giving community forest rights was in reality a transfer of community forest rights from the *Gram Sabha* to the *Vana Samrakshana Samithis*.

Coffee monoculture and bauxite mining in Eastern Ghats of Andhra Pradesh: A background

The legislations and Constitutional measures if enforced in their true spirit would surely advance the lives of *adivasis*, along with improvement in social indicators of education and health, supplemented by infrastructure support like roads and transport. Economic development to improve incomes and livelihoods planned carefully keeping in mind their lifestyle and dependence on natural resources is crucial to their progress as well. Over the years several programmes have been introduced in the Scheduled Areas of Andhra Pradesh for the economic development of *adivasis* in the region. Two such programmes popularised for augmenting incomes and improving development of the region are coffee monoculture and mineral extraction. However, both have far-reaching consequences for the *adivasis* as well as the environment in the region.



A coffee plantation in Ananthagiri, Visakhapatnam district

Coffee monoculture in the Eastern Ghats of Andhra Pradesh

Coffee was first introduced in the state of Andhra Pradesh by one Mr. Brodie, a Britisher, as far back as 1898. Seeds of Arabica variety were supplied to local people in Pamuleru valley in East Godavari but with poor results. At the same time coffee cultivation introduced in Sircilla of Karimnagar district met with good results. Coffee cultivation made its entry in 1920s in the tribal areas, introduced by the *Zamindars*/Revenue Officers and progressive tribal growers and spread to Ananthagiri, Minimuluru and Chintapalli areas of Visakhapatnam district. The Coffee Board's participation in the programme was initiated during the late 1950s. The Board established Extension Offices at Paderu in 1971 for the benefit of the tribal growers and others agencies to render technical advise. A Regional Coffee Research Station was also established in 1976 at RV Nagar (Chintapalli *mandal*) to cater to the needs of the non-traditional coffee growing areas of Andhra Pradesh as well as in Orissa. Cultivation of the plant by the Forest Department on a scientific basis

and later on a plantation scale was initiated in the 1960s with the assistance of the Coffee Board. The Forest Department raised coffee plantations in the districts with the aim of weaning away *adivasis* from shifting cultivation and providing them gainful employment. The strategy adopted in selecting a new plantation area was to take up an area adjacent to the fresh-clearing to prevent expansion of *podu*. The other advantages of coffee plantations included preventing encroachment of forest area, providing insurance coverage against soil erosion, enabling moisture conservation and providing substantial revenue. With the establishment of the Andhra Pradesh Forest Development Corporation (APFDC) (on 16 June 1975) the coffee plantations raised by the Forest Department, extending over an area of 1,296 ha (3,202.485 acres) was handed over to the APFDC in the year 1978. At present the APFDC is the single largest coffee grower in Andhra Pradesh, as well as in non-traditional areas in the country with its plantations extending over an area of 4,010.18 ha (9,909.37 acres) out of the total 40,000 ha (98,842.152 acres) estimated to be under coffee cultivation in the state of Andhra Pradesh.

It was the Integrated Tribal Development Authority (ITDA)—the entity in charge of administration of tribal areas where the *adivasi* population makes up 50 percent or more of the total population—however, that was responsible for introducing coffee cultivation among tribal farmers in the year 1985, and today has taken over the task of coffee development in the tribal areas of Andhra Pradesh. By the year 1999-2000 around 15,900 ha (39,289.755 acres) was under coffee cultivation and the number of tribal growers involved were 23,500. By 2008 coffee was grown in over 33,342.454 ha (82,391 acres) and in 2009-10 this extended to 42,700 ha (105,513.997 acres) with 78,000 tribal growers. The collaborators today in addition to the ITDA include the Andhra Pradesh Scheduled Tribes Cooperative Finance Corporation Limited (TRICOR) a registered body that functions under the Tribal Welfare Department of the Government of Andhra Pradesh, the Coffee Board, Government of

India (central), the non-governmental organisation (NGO) Naandi Foundation and the National Scheduled Tribes Finance Development Corporation (NSTFDC), a Government of India undertaking under the Ministry of Tribal Affairs. Financial subsidies and assistance is provided as follows—50 percent beneficiary contribution in the form of labour, 25 percent as central government assistance, 8.33 percent as state government assistance and 16.67 percent as NSTFDC contribution. The ITDA as the nodal implementing agency helped identify farmers and lands for coffee cultivation, assist with raising nurseries of coffee and shade trees along with TRICOR. The Coffee Board provided technical assistance to field functionaries and farmers in scientific cultivation and processing. In December 2008, the state government through a Government Order gave permission for a project proposal for taking up coffee cultivation in 42,087.306 ha (104,000 acres) in Paderu over a 7 year period starting in 2009-10 (Table 4: Year-wise coverage of plantations). The scheme brought a new collaborator—the *Panchayat Raj* and Rural Development Department by including coffee cultivation under the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA). Under this scheme the financial assistance under MGNREGA and Coffee Board includes raising and maintaining of shade plantations, raising coffee and pepper nurseries and raising coffee plantations with pepper as a shade crop and maintenance. The cost sharing would be Rs. 6,000/- per acre by the Coffee Board and Rs. 15,257/- per acre under the MGNREGA. The Coffee Board is required to release the funds to the ITDA and supply quality seed, facilitate procuring cuttings for raising shade trees and facilitate marketing of coffee beans by village organisations by providing market intelligence. Administrative support would be provided by the ITDA Paderu that will also take up



A coffee nursery of the government providing saplings and employment

capacity building of farmers, procure and supply baby pulpers and construct drying yards/trays by securing additional funds from the Coffee Board. The ITDA would continue to identify beneficiaries and suitable land availability, set up coffee and shade tree nurseries, assist growers in planting coffee and issue Coffee Possession Certificates to all growers. TRICOR would release funds for construction of godowns for storing seeds and for formation, strengthening and registration of coffee producer societies. The total project cost is Rs. 349/- crores of which Rs. 62/- crores is to be borne by the Coffee Board and Rs. 287/- crores by *Panchayat Raj* and Rural Development Department. It was also proposed to extend financial support in the form of subsidy to buy hand pulpers to identified beneficiaries and for construction of cement drying ponds.

The coffee produced by APFDC had been well received by big manufacturers like M/s Nestle India Limited and M/s Hindustan Lever Limited (now Unilever) as well as exporters from Karnataka and Tamil Nadu. The increasing popularity of the coffee from

the tribal areas prompted the government to take up renewed efforts at improving production.

The Araku Organic Coffee Project is a collaborative effort of the Coffee Board, the ITDA and the NGO Naandi Foundation, to promote organic coffee cultivation as a sustainable livelihood initiative for the tribal farmers. Its inception was in the year 2001. The Coffee Board and ITDA together provide technical assistance, help identify beneficiaries and new areas for organic coffee cultivation, provide facilities like pulpers and places for coffee drying. Naandi Foundation undertook the task of developing marketing linkages, and procuring the fair trade and organic certification. In addition it provided training and guidance to tribal farmers in creating stone bunding to safeguard crops from animals, inter-planting shade giving trees, making and using bio-manure, natural pesticides from plant and fruit extracts, and supporting spider populations to grow and provide natural pest control webs. Naandi Foundation also brought in Control Union (earlier known as SKAL), the Dutch organic

Table 4: Year-wise coverage of plantations

Year	(area in acres)	
	Shade plantation	Coffee plantation
2009-10	20,000	12,000
2010-11	20,000	12,000
2011-12	20,000	20,000
2012-13	20,000	20,000
2013-14	10,000	20,000
2014-15	10,000	10,000
2015-16	0	10,000
Total	100,000	104,000

Source: GoAP. 2009. National Rural Employment Guarantee Scheme (NREGS-AP)-Horticulture-Scheme of Coffee Plantation in Paderu-Amendment of GO-Orders-issued. GO Ms No 189, on 24 June 2009 to Panchayat Raj and Rural Development Department, Government of Andhra Pradesh, India. URL: http://www.rd.ap.gov.in/Horticulture/EGS_GoMsNo_189_Horti_Dt_24.06.2009.pdf (accessed December 2010).

accreditation agency to monitor and certify the plantations as 100 percent organic for international consumption and also facilitated the securing of the fair trade certification. An additional unique selling proposition of the coffee was that it would help restore the ecological balance and improve the living conditions and quality of life of tribal people by augmenting cash income considerably.

In February 2004, the 'Araku' brand of coffee was launched officially with the Coffee Board making all attempts to promote the brand internationally, and on 21 December 2007, the trademarked brand name 'Araku Emerald' was launched (by the then Minister of State for Commerce). With the organic and fair trade certification the coffee growers are able to secure a premium price for their product and the Araku Emerald is today being exported to buyers in Norway, France and the United States of America. A centralised Coffee Processing Unit was also inaugurated on 21 December 2007 at Thuraiguda village in Araku, Visakhapatnam district, to ensure quality of coffee processed, by undertaking the tasks of coffee bean washing, pulping and drying under controlled conditions.

Naandi Foundation also facilitated the creation of a special cooperative/federation of organic coffee farmers, the Small and Marginal Tribal Farmers Mutually Aided Cooperative Society, as a registered body to enable farmers to organise collectively and demand a better price for their produce. The Society today has over 8,000 members who grow organic coffee in 3,237.485 ha (8,000 acres). Naandi Foundation has sponsored farmers to enroll in the Coffee Board's Price Stabilisation Fund scheme where farmers are assured a stable income even when coffee prices fluctuate. Araku Emerald is today the only coffee grown by a tribal cooperative to have got both an international and a Fair Trade certification. It has also been awarded the 'Flavour of India-Fine

Cup Award' more than once. The award is given by the International Coffee Organisation. Interest in developing the Geographical Indication status for the coffee grown here has also been expressed by the government.

The annual output of coffee from the region is currently estimated at 5,000 tonnes—this is estimated to be about 15 percent of India's annual coffee production—with the yield per acre being at 300 kg, but with a potential of reaching 1,000 kg. The APFDC's plantations have a yield of around 300 kg per ha, while some private growers have as low yields as 140 kg per ha. To increase the yield from these plantations—to between 600 kg per ha and 800 kg per ha—APFDC had embarked upon a programme of planting high yielding varieties of coffee called 'Cauvery'. More recently it is looking at phasing out 'Cauvery' and replacing it with tall varieties of Arabica by providing economic assistance to farmers to take up the new variety. The earlier varieties included S795, S1934, S4 (Agaro), S4 (Tafraikela), S5, S6 and dwarf varieties of SanRamon. Of the 5,000 tonnes of coffee being produced it is estimated that about 1,000 tonnes is organic coffee. Naandi Foundation is exporting about 400 tonnes to European countries. However, the potential for better yields (from current 300 kg per acre to 1,000 kg per acre) and increasing the area under coffee cultivation is believed to be immense.

Till the year 1995 the Coffee Board of India, an autonomous body functioning under the Ministry of Commerce and Industries, had a pool (controlled) marketing system; all the coffee harvested by APFDC was handed over to the Coffee Board for disposal. Liberalisation resulted in this becoming a purely private sector controlled activity. The first direct sale of coffee produced by APFDC was conducted in the city of Vijayawada where an average rate of

Rs. 40/- per kg was obtained; almost a 100 percent increase over that being paid by the Coffee Board. Today APFDC sells its coffee at Vijayawada and Bangalore at auctions conducted every month from January to May/June. The APFDC currently accepts prices that are atleast on par with the prices prevailing in the international market. A considerable number of the tribal farmers on the other hand were selling their coffee to merchants or traders in the local *santhas*, often at very low rates and were being exploited by these middlemen. The members of the organic farmers cooperative, however, sell their produce through the cooperative and are able to demand a higher price. Recently (in October 2010) the GCC has also indicated that it would enter into coffee procurement by encouraging the *adivasis* to go in for coffee cultivation and has made a request to the Coffee Board to invest Rs. 25/- crores. It would install coffee processing units for roasting, grinding, drying yards, and baby pulpers in different villages as part of its pilot project for coffee.

Different estimates are available from different source on incomes earned from coffee over the years since coffee cultivation was introduced to the tribal farmers—in 1999-2000 income was estimated at between Rs. 15,000/- and Rs. 18,000/- per ha. A Government Order (dated 27 December 2008) mentions that the average annual income from coffee was between Rs. 8,000/- and Rs. 10,000/- per acre. Another government press release gives income in 2009-10 to have gone up between Rs. 30,000/- and Rs. 36,000/- per ha (for one acre between Rs. 12,000/- and Rs. 15,000/-). The infrastructure available consists of 3,465 cement drying yards, 2,165 baby pulpers and 29 storage/godowns.

The creation of employment through wage labour was one of the primary reasons for promoting coffee cultivation. Labour for coffee plantations in the early years

included tribal people from the region and repatriates from Sri Lanka. Labour from plain areas was also brought in especially during the harvest season to meet the increased demand for labour. At present, the coffee plantations of the APFDC are creating 6 lakh man-days of employment in the tribal areas of Andhra Pradesh. There has also been an improvement of wages. Between 1984 and 1987 the area saw a lot of labour unrest and strikes demanding higher wages. At that time wages paid were Rs. 14/- per day and this has been increased today to Rs. 50/- per day for both men and women. Nearly 3,000 families are employed in the coffee estates throughout the year, each family earning not less than Rs. 3,000/- per month according to the APFDC. Two hundred and fifty families of workers were also provided with permanent accommodation and facilities like free medical care, electricity and transport for their children to schools. The tribal farmers who grow coffee also hire labour to undertake coffee cultivation work at the rate of Rs. 50/- per day. The ITDA has also included the coffee project under MGNREGA in convergence with TRICOR in Paderu recently.

Pepper, was introduced as a companion crop to coffee in APFDC plantations in early 1970s with Kottandan and Karimundu being the original cultivars. Today there are several high yielding varieties of pepper like Panniyur-I, Purnima, Sreekara, Subhakara, Panchami and Panniyur-5. The pepper vines are grown as a climber on the shade trees in coffee estates. In the APFDC coffee plantations there are more than 4 lakh pepper vines whose yield is adding to the income generated from coffee plantations. In addition coffee plantations owned by the *adivasis* and the Coffee Board research and demonstration farms also produce pepper crop annually in Andhra Pradesh. The other intercrops include mango, jackfruit, areca nut and vegetables. Expected income from

pepper per one government document (Government Order dated 27 December 2008) is between Rs. 20,000/- and Rs. 30,000/- per acre while a government press release (dated 5 August 2010) gives the income from pepper and subsidiary crops as ranging between Rs. 2,500/- and Rs. 10,000/-.

Bauxite reserves and mining in the Eastern Ghats of Andhra Pradesh

The East Coast Bauxite Deposits located along the east coast in the states of Andhra Pradesh and Orissa in India have a special status owing to certain diagnostic geologic-geomorphic manifestations. The recognition in 1970 of crystalline gibbsite in the thick lateritic duricrust of Galikonda near Ananthagiri *mandal* in Visakhapatnam district, Andhra Pradesh, led to the discovery of these resources and brought about a spectacular boost to the bauxite reserves of the country. These reserves are found within the northern latitudes 17°47' and 19°45' and the eastern longitudes 81°53' and 83°30' over a length of 400 km and width of 30 km in a northeast-southwest alignment in the southern part and north-south alignment in the northern part.

Bauxite is a product of weathering and bauxite here is a product of *in-situ* weathering of bedrock. Theoretically, given enough time and suitable climatic parameters bauxite can form from any form of parent rock. In the context of the Eastern Ghats these have been best developed either over khondalites or over charnockites. The East Coast bauxite deposits are found on flat-topped hills and occur at two levels—1,000 m elevation that is more enriched in aluminium and lower altitudes ranging between 300 m and 500 m. The bauxite deposits occur mostly on the gentle to moderately sloping plateaus. The khondalite, in general forms the hills, while the charnockite occupy the lower slopes and intervening valleys. The area comprising the

bauxite duricrust is also devoid of thick vegetation whereas the slopes support thick vegetation. The bauxite reserves are, in general, low in silica and titania and high in iron content. The alumina content varies between 42 percent and 56 percent. In Orissa, the individual cappings have large areal extent and are widely scattered over an area of 4,000 sq km.

The state of Andhra Pradesh, in peninsular India has 21 percent, nearly 750 million tonnes, of India's bauxite resources. These bauxite reserves are primarily concentrated in parts of the Eastern Ghats that stretch across the districts of East Godavari and Visakhapatnam, in north coastal Andhra Pradesh. The main deposits in Andhra Pradesh are found in the Ananthagiri, Chintapalli and Gurtedu regions (Table 5: Exploration data for bauxite reserves in Andhra Pradesh sector).

Attempts to mine the bauxite ore had begun as far back in the 1970s, but faced severe opposition from the *adivasis* in the region. The state government and different private corporations made several attempts in the decades after to initiate mining in the region. The main benefits promised to the local communities are that of creation of employment opportunities and development of the region. The local communities, however, were more concerned about the threats to their agricultural and resource base, and sustained protests by them prevented the advancement of the mining plans. Some of the *adivasis*, especially from the older generation, who had been to exposure visits organised by an NGO to the NALCO bauxite mining site in Damanjodi, Orissa, were more than ever convinced that none of the benefits of mining would accrue to the communities. The district administration too had taken about 46 *adivasis* from the village of Beespuram to Damanjodi in August 2005 in an attempt to convince them about the benefits of the mining project. However, the *adivasis* were

Table 5: Exploration data for bauxite reserves in Andhra Pradesh sector

Deposit		Area (in sq km)	Elevation of bauxite duricrust above Mean Sea Level (in m)	Estimated reserves (million tonnes)	
Ananthagiri group					
1	Galikonda	a	0.46	1,170–1,404	12.4
		b	0.14	1,380–1,446	2.1
2	Raktakonda		0.42	1,230–1,326	8.57
3	Katuki	a	0.043	1,208–1,276	0.86
		b	0.097	1,236–1,296	2.04
4	Chittamgondi		1.52	1,090–1,420	28.5
Chintapalli group					
Sapparla subgroup					
5	Block-1		1.22	988–1,288	9.85
6	Block-2*		1.57	920–1,130	34.3
7	Block-3*		1.55	990–1,242	38.3
8	Block-4		0.917	980–1,182	8.4
9	Block-5		1.45	974–1,200	10.4
10	Block-6		0.585	980–1,088	5
11	Block-8		2.58	398–1,262	26.5
12	Block-7		1.41	1,024–1,125	8.5
13	Block-12		3.85	1,002–1,272	45
Gudem subgroup					
14	Block-1		1.25	1,034–1,130	12.21
15	Block-4		0.88	1,026–1,232	23.2
16	Block-5		0.5	—	3
Jerrela subgroup					
17	Block-2		4.9	916–1,270	93.84
18	Block-3		4.4	980–1,266	69.52
19	Block-8		3.35	950–1,172	75.88
20	Block-1		0.85	1,002–1,093	6.8
Gurtedu group					
Katamrajkonda subgroup					
21	Block-1		1.0	936–1,286	29.83
22	Block-2		0.8	1,016–1,174	12.8

*Investigated by Mineral Exploration Corporation Limited

Source: Rao, MG. and PK. Raman. 1979. The east coast bauxite deposits of India. Bulletins of the Geological Survey of India, Series A-Economic Geology, No. 46.

not impressed and questioned the kind of jobs offered to illiterate tribal people, the state of the water resources, the condition of one job per family and the poor rehabilitation package that included extremely small shelters.

The protests were escalated with the government of Andhra Pradesh signing

memorandum of understandings (MoUs) with Jindal South West Holding Limited (JSWHL) of the Jindal Group and the Government of Ras Al Khaimah (seventh Emirate of the United Arab Emirates) on 1 July 2005 and 14 February 2007 respectively. The Government of Ras Al Khaimah created Anrak Aluminium Limited (AAL) an Indian company and JSWHL

created Jindal South West Aluminium Limited (JSWAL) a special purpose vehicle for implementing these two projects. JSWAL was given permission to set up a 1.4 million tonne aluminium refinery and a captive cogeneration power plant of 90 mw at Srungavarapu Kota (S Kota) *mandal* (Vizianagaram district) while AAL was accorded permission to establish an integrated aluminium complex consisting of an alumina refinery (1.5 million tonnes) and an aluminium smelter (0.25 million tonnes) with a gas-based combined cycle cogeneration plant of 90 mw at Makavaripalem *mandal* (Visakhapatnam district). Both sites are primarily rural areas where the local communities are small and middle level farmers whose main source of livelihood is agriculture.

The bauxite mining was to be undertaken by APMDC—a state government institution—that would supply the ore to the two companies. The JSWAL project was given access to the bauxite ore from the hill ranges of Raktakonda, Galikonda and Chittamgondi (Ananthagiri group, Ananthagiri *mandal*) and Sapparala subgroup (Chintapalli group, Chintapalli *mandal*) consisting of approximately 2,446 ha (6,044 acres) and containing about 240 million tonnes of bauxite ore. The AAL agreement is to tap the ore from Jerella subgroup (Chintapalli group, Chintapalli *mandal*), spread over 1,649 ha (4,074 acres) and probable reserves of 224.6 million tonnes. In addition to employment, the APMDC would set aside a minimum of 0.5 percent of revenue to be spent on health, training, social infrastructure and welfare of tribal people. It claimed to have provided training to 200 tribal youth from Araku and Ananthagiri *mandals* on mining and allied activities while providing them a stipend of Rs. 4,000/- per month in addition to food and washing allowance.

While a public hearing was conducted (on 3 October 2008 at Chintapalli village) amidst



Galikonda: One of the sites for bauxite mining

Picture courtesy P. Sekhsaria

widespread protests by the people from Gudem Kotha (GK) Veedhi (adjoining *mandal*) and Chintapalli *mandals* the public hearing for Ananthagiri is yet to be held. In spite of the resistance from the people, on 12 December 2008, the Ministry of Environment and Forests (MoEF) accorded environmental clearance to the four blocks in Jerrela subgroup and on 20 March 2009 clearance was also given to expand bauxite extraction in one of the blocks (III). The MoEF also agreed in principle on diversion of forest land on 12 August 2008. In September 2009 the Central government after delaying for nearly a decade also gave permission to NALCO, a public sector unit, for mining bauxite in the Gudem group of Visakhapatnam district and Katamrajukonda in East Godavari district, both areas being known for the Maoist influence. The reason for the delay had been the reluctance of the Andhra Pradesh state government to provide the required no objection to NALCO to take up mining, and its insistence that APMDC should be vested with the right to mining instead.

Bauxite mining would cause irreparable and lasting damage to the ecology of the regions and lives of the *adivasi* people. Twenty-seven hills in the region have been identified for bauxite extraction, which would affect approximately 270 villages and its *adivasi* residents. Thousands of acres of land used for growing a variety of agricultural crops will be destroyed affecting tribal food security, as will forests that are important sources of raw materials and income-generating NTFP.



Adivasi women at the public hearing at Chintapalli protesting against the proposed mining

Nearly 2,025 ha (5,003 acres) of coffee plantations which are located just below and around the proposed bauxite sites, will be lost if mining is started, putting a considerable population out of jobs in these plantations. In addition, agricultural lands where tribal people grow their produce will also be destroyed.

Catchment areas that feed the rivers and streams supplying water to the region and coastal towns would be destroyed and groundwater levels would reach alarmingly low levels. Protests against bauxite mining encompassed all these issues central to the environment and peoples' survival. The rights of tribal people too were being undermined. The use of APMDC, which has no record of experience in bauxite mining or extraction in the past—seen as a *benami* leaseholder to supply ore at a cheap rate to the companies—is a clear attempt to subvert the Samatha Judgment and PESA Act 1996.

While protests continued to mount in the extraction sites in the hills and the smelter and refinery sites in the plains, in early August 2010 an expert's team set up by the MoEF to study the impacts of bauxite mining on the local communities and environment asked for a relook at the project. The report particularly mentions the stiff resistance to the smelter and refineries

by the people in the plain areas, concerns with regard to pollution and agricultural potential of the area all of which called for a reconsideration of the project. In the later part of the month, the Ministry of Mines issued a statement that bauxite mining would not be permitted till a further evaluation was conducted of the forest and environmental clearances, and also pending enactment of the new Mines Minerals (Development and Regulation) (MMDR) Act currently in its draft stage. In September 2010 a further 13 proposals for bauxite mining were rejected by the Ministry of Mines and another 12 proposals were put on hold. The 13 proposals had been put forward by APMDC to mine 1,876 ha in Sapparla. Of those put on hold seven were submitted by APMDC and five by NALCO, and were for bauxite mining in 2,680 ha in Galikonda, Raktakonda, Chittamgondi and Jerrela (by APMDC) and in Chintapalli *mandal* and two blocks in East Godavari district (by NALCO).

Section II: Case Studies

This section is divided into two parts. The first part comprises the findings from the survey undertaken in two tribal villages in Visakhapatnam district, Andhra Pradesh. The study looks into aspects of food security from traditional agriculture, cash income from coffee, benefits that the forests and trees on land provide in terms of income, food, medicine, fuelwood, timber and NTFP, importance of livestock and poultry as a safety net, access to government schemes and the daily wage and migration pattern. The objective is to understand the different income sources, the expenditure details and the overall degree of self-sufficiency that their current lifestyles provide them with.

The second part is the case study carried out in the mining affected villages and

Box 2: Highlights of the Andhra Pradesh Mines and Mineral Policy

- The state has improved mineral administration through interaction with the district level officers and stakeholders
- Thrust is being given on pre-fixed time disposal of mineral concession applications to bring additional areas under mining and resource mobilisation
- Government extends support for grounding of high-tech and innovative value-added mineral projects under single window industrial clearance
- Aim is to serve as a guiding force to translate the mineral potential into reality with the objective of eco-friendly and sustainable mining
- The government, through APMDC intends to enter oil and natural gas exploration and coal mining in other states. The government is contemplating levying cess on semi-precious stone areas, seignorage fee on weightment basis for granite and has plans to levy prorated basis royalty on limestone consumed by cement companies

Source: PPP. 2010. State Policy. Andhra Pradesh. Public Private Partnerships in India, Ministry of Finance, Government of India. URL: <http://www.pppinindia.com/state-policy-andhra-pradesh.php> (accessed November 2010).

Displaced Persons (DP) Camps in Koraput district, Orissa.

It attempts to understand to what extent the introduction of mining has been beneficial or detrimental to people who were in the past dependent on forests and agriculture for their livelihood. The status of displacement and that of compensation and

rehabilitation/resettlement 25 years after project initiation is also examined. The two parts are thus a comparison of *adivasi* life in pre- and post-mining scenarios. Wherever relevant, in addition to primary data, information from secondary sources has been quoted.

Part 1: Case study on *adivasi* livelihoods and food security in Beespuram and Nimmalpadu villages, Visakhapatnam district

Background to the district

Visakhapatnam district is located on the eastern shore of India in the northern part of the state of Andhra Pradesh. It lies between 17°15' and 18°32' northern latitude and 18°54' and 83°30' eastern longitude. It is bordered on its north in part by the state of Orissa and in part by the Vizianagaram district, on the south by East Godavari district (both of Andhra Pradesh), on the west by Orissa and on the east by the Bay of Bengal. Geographically it can be divided into two strips—the thin coastal strip of land and the interior called the plains division, and the hilly areas of the Eastern Ghats in the north and west called the Agency



The River Gosthani and its verdant surroundings

division. The coastline is broken at points by bald-headed hills. While the altitude in the plains division is about 75 m that of the hills extends to an average of 900 m with the highest altitude being 1,615 m. In terms of climatic conditions, while the coastal regions have a warm climate, as one moves towards the hilly areas the temperature lowers as a result of the altitude and vegetation. The annual rainfall that the district receives is 1,202 mm, primarily from the southwest monsoon that accounts for more than 70 percent of the rainfall. The northeast monsoon, and the summer and winter showers contribute the rest. The Agency and inland areas receive rainfall from the southwest monsoon while the coastal regions are more favoured by the northeast monsoon. The district lies in the river basin of the Thandava, Varaha, Sarada and Gosthani rivers and the larger rivulets flowing through it include Meghadrigedda and Ghambheeragedda.

The geographical area of the district is 11,161 sq km which is 4.1 percent of the area of the entire state. Of this only 36.45 percent is arable land. Of the arable area, the net area sowed forms 27.2 percent while cultivable waste and fallow (current and old) lands constitute about 9.2 percent (during 2006-07). More than one-third of the land i.e., 39.53 percent is covered by forests. The remaining is distributed between 'barren and uncultivable land' 11.7 percent and 9 percent is 'land put to non-agricultural use'. Administratively the

district is divided into three revenue divisions and 43 *mandals*.

The population of the district is 38.32 lakhs as per the 2001 Census and this constitutes 5 percent of the population of the state. The district has a population density of 343 per persons per sq km; however, the Agency area has a lower density than the plain areas. Fifteen *adivasi* communities reside in the Fifth Schedule area of Visakhapatnam district and include the Bagata, Gadaba, Goudu, Kammara, Konda Dora, Khonds, Kotia, Kulia/Mulias, Mali, Manne Dora, Mukha Dora, Porja, Reddi Dora/Nooka Dora/Mukha Dora, Rona/Rena/Rana and Valmiki communities. They comprise 14.55 percent of the entire districts population (Box 3: ST population indicators for Visakhapatnam district). These tribal populations live in hill-top villages or hamlets, many of which are very remote and difficult to access.

The case study discussed is of two *adivasi* communities, the Nooka Dora and Konda Dora tribal groups, residing in the villages of Beespuram and Nimmalpadu in Ananthagiri *mandal* of Visakhapatnam district. The Nooka Dora numbers 29,680 while the Konda Doras are a population of 179,334 (figures as per the 1991 Census). The case study looks at the livelihoods, food security, and income and expenditure patterns of these tribal people. A total of 39 personal interviews using a questionnaire were conducted in two villages—20 from Beespuram and 19 from Nimmalpadu—to

Box 3: ST population indicators for Visakhapatnam district

ST population-Total: 557,572

ST population-Male: 278,399

ST population-Female: 279,173

Percentage share of ST population to district population: 14.55 percent

Percentage to total states ST population: 11.1 percent

Source: Census 2001 and Fact Book on Scheduled Castes and Scheduled Tribes in Andhra Pradesh. Directorate of Economics and Statistics, Hyderabad, Andhra Pradesh, India.

collect the required data. The Nimmalpadu village comprises smaller hamlets and the interviews were conducted in the hamlets of Karakavalasa and Rallavalasa.

Village and household information

Beespuram is a village of 45 households and a population numbering 197 (men: 74, women: 72, children: 51). The *adivasis* here are from the Nooka Dora community. There are 10 *pucca* and 35 *kaccha* houses in the village. The *pucca* houses are made from cement with slabs as roofs while the *kaccha* houses are mud structures with tiled or grass roofing. The village is located on the roadside and is accessible by a concrete road in all weathers. The main water source for the village is a stream and a small lake. The village has electricity connection, an *anganwadi* and a primary school. The main health problems faced by the village are malaria, jaundice and diarrhoea. The nearest PHC is located in Ananthagiri about 10 km from the village. Ananthagiri is the *mandal* headquarters and has a Veterinary Hospital,

Forest Department and Agriculture Department Office as well. The local market or shandy (known locally as *santha*) for grains, NTFP and vegetables is also located in Ananthagiri. The nearest Reserve Forest is located at Ananthagiri while the community forest accessed by the residents is situated close to the village itself. The village is located at the foothills of Galikonda, one of the proposed bauxite extraction sites.

The hamlets of Karakavalasa and Rallavalasa constitute a part of the Nimmalpadu village. The total population of Karakavalasa village is 117 (men: 53, women: 50, children: 14). The *adivasis* here are from the Konda Dora community. There are 20 households in the village; 17 *pucca* and three *kaccha* houses. The *kaccha* houses are made of mud and roof is of tiles or grass. The road leading to the village is *pucca* for some distance and *kaccha* as it nears the village; however, it is accessible throughout the year, even during the heavy rains. Water source for the village is from a



Nimmalpadu village

stream. In 2007 piped water to a tap was made accessible thanks to the efforts of a local NGO, Samata. Water was diverted using gravity from an uphill stream through pipes to a tap. The village has electricity, an *anganwadi* and a primary school. The common health problems in the village are malaria and diarrhoea. Ananthagiri is the nearest *mandal* headquarters located 25 km away and also has the Agriculture Office. The Forest Office closest is at Damuku located at 21 km. Damuku is also the nearest *santha* for grains, vegetables and NTFP, while Patwakamba (30 km) is the nearest *santha* for sale of timber. The nearest Reserve Forest is at Valasi (2 km). The nearest PHC is at Lungaparathy (10 km) and the Veterinary Hospital is at Ananthagiri.

Rallavalasa village has a population of 103 (men: 50, women: 48, children: 5) and has members of the Konda Dora community. There are 26 households in the village with a gravel road providing access that is unapproachable in the rainy season. The water source in the village is a small stream and a natural spring. The *mandal* headquarters for the village is located in Ananthagiri 30 km away. The Forest Office is located in Damuku (21 km) while the Agriculture Office is situated at Ananthagiri. The nearest community forest is in Rallavalasa itself while the Reserve Forest is in Valasi (2 km). The nearest timber *santha* is Patwakamba (30 km), while the *santha* for NTFP, grains and vegetables is at Damuku. Rallavalasa has no electricity or a government school of any

Table 6: Age group and family size of interviewees Beespuram, Karakavalasa and Rallavalasa

Village	Family no.	Age group (years)	Family size	Village	Family no.	Age group (years)	Family size
Beespuram	1	3–43	6	Karakavalasa	1	20–55	4
Beespuram	2	12–35	5	Karakavalasa	2	9–48	5
Beespuram	3	13–50	5	Karakavalasa	3	38–45	2
Beespuram	4	3–35	4	Rallavalasa	4	5–45	5
Beespuram	5	3–68	8	Karakavalasa	5	5–45	4
Beespuram	6	7–50	5	Karakavalasa	6	6–36	5
Beespuram	7	23–27	2	Karakavalasa	7	20–56	5
Beespuram	8	6 mths–62	7	Karakavalasa	8	20–48	4
Beespuram	9	6–48	7	Rallavalasa	9	10–60	5
Beespuram	10	1 mth–65	6	Rallavalasa	10	16–45	4
Beespuram	11	19–45	3	Rallavalasa	11	8–45	4
Beespuram	12	12–35	5	Rallavalasa	12	10–40	6
Beespuram	13	8 mths–45	8	Rallavalasa	13	16–60	3
Beespuram	14	20–48	3	Rallavalasa	14	9–48	5
Beespuram	15	7–40	7	Rallavalasa	15	1–35	5
Beespuram	16	6–45	5	Karakavalasa	16	5–55	10
Beespuram	17	18–70	6	Rallavalasa	17	2–54	8
Beespuram	18	1–37	7	Rallavalasa	18	13–35	4
Beespuram	19	23–70	5	Rallavalasa	19	45–50	2
Beespuram	20	43–55	4				

kind. Diarrhoea and typhoid are the major health problems in the village, with Lungaparathy located 10 km away having the nearest PHC.

The twenty families interviewed in Beespuram have been living in the village for many generations; some of them since 1930s while some were more recent inhabitants having come to the village a decade or two before. Eight families from Karakavalasa and 11 families from Rallavalasa were interviewed. Several generations of the families had been living here. The family size ranges between four and five on an average with larger families consisting of 7–10 members as well in a few cases (Table 6: Age group and family size of interviewees in Beespuram, Karakavalasa and Rallavalasa).

In all three villages literacy levels are extremely low among the older generation, while the younger children today are accessing education facilities of the government. In Beespuram only one person had attended degree and another had attended a course at an Industrial Training Institute, while a third had dropped out after his Class XII (intermediate). In Karakavalasa village the highest class reached was intermediate while in Rallavalasa one of the interviewees had done a Bachelor in Science (in Medical Laboratory Technology). The main reason for the low literacy levels among the older generation was a lack of awareness among the parents about the importance of education and the absence of a school in their village during their childhood. Reasons for children dropping out at present include having to help with household and farm work. Financial difficulties at home also caused a few to drop-out. In one incident a child who was sick and had missed school was not allowed back by the teacher.

Land details

Beespuram has wet, dry, *podu* and coffee cultivation being undertaken on its land. The total cultivable land in Beespuram village is 130 acres of which about 120 acres is cultivated. The reasons for not cultivating the entire land are given as reduced soil fertility as a result of erosion especially on *podu* land, inadequate rainfall and not enough labour in some households to work on the land. In addition some of them perceived a greater risk in cultivation and gave preference to work as wage labour in coffee plantations. The soil type of the village is primarily red and black soil. In the case of *podu* lands while claims had been filed none had received any *pattas*. *Pattas* for land under coffee cultivation were received in different years (1987, 1988, 1992, 1993, 1998 and 2004). In the case of two of the interviewees while they had claimed for 5 and 8 acres, *patta* was given only for 4 acres in both instances. Only two of the interviewees who had submitted a claim were yet to receive *pattas*. *Pattas* for wet and dry land had also been received by most of the interviewees some as far back as the year 1972, others in 1982, 1983, 1988, 1992 and 1995 and some more recently in 2004 and 2009. Some of them had submitted claims that were still to be settled.

Karakavalasa has red and sandy soil types while Rallavalasa has red, sandy and black soil. *Pattas* for wet and dry lands in both hamlets were settled in the year 1976. In the case of *podu* land six of the villagers interviewed had *pattas* (settled in 1976, 2005 and 2008), while the rest had claimed but not received the *pattas* as yet.

Majority of the farmers in both Beespuram and Nimmalpadu had land holding for wet land, dry land and *podu* ranging between 1 and 2 acres.

Table 7: Land details of interviewees

						(acres)					
Village	Family no	Wet	Dry	Podu	Total	Village	Family no	Wet	Dry	Podu	Total
Beespuram	1	3.7	0	2	5.7	Karakavalasa	1	6	3	3	12
Beespuram	2	0	1	1	2	Karakavalasa	2	1	2	3	6
Beespuram	3	0	3.5	2	5.5	Karakavalasa	3	0	1	2	3
Beespuram	4	0	0	1	1	Rallavalasa	4	2	2	2	6
Beespuram	5	0	2	1	3	Karakavalasa	5	1	1	2	4
Beespuram	6	0	0	1	1	Karakavalasa	6	0	1	3	4
Beespuram	7	11.7	0	4	15.7	Karakavalasa	7	4	3	3	10
Beespuram	8	0	0	0	0	Karakavalasa	8	1	1	2	4
Beespuram	9	0	0	2	2	Rallavalasa	9	2	1	1	4
Beespuram	10	0	0	0	0	Rallavalasa	10	3	2	2	7
Beespuram	11	0	0	1	1	Rallavalasa	11	0	2	2	4
Beespuram	12	0	0	3	3	Rallavalasa	12	2	0	2	4
Beespuram	13	0	2	2	4	Rallavalasa	13	0	0	2	2
Beespuram	14	0.3	16	1	17.3	Rallavalasa	14	1	2	3	6
Beespuram	15	0	2	0	2	Rallavalasa	15	0	1	1	2
Beespuram	16	0	0	1	1	Karakavalasa	16	4	2	2	8
Beespuram	17	4	4	1	9	Rallavalasa	17	0	1	1	2
Beespuram	18	1	0	2	3	Rallavalasa	18	3	2	2	7
Beespuram	19	1.4	6.5	0	7.9	Rallavalasa	19	0	0	2	2
Beespuram	20	0.3	1.5	2	3.8						

Also the majority undertook cultivation on *podu* lands (Table 7: Land details of interviewees).

Neither Beespuram nor Nimmalpadu had participated in the forest management programmes of the government, primarily as they were not carried out in their villages. The hamlets of Karakavalasa and Rallavalasa had filed claims under FRA, both individual and community, and these were being processed. Beespuram too had filed about 40 claims and a survey was conducted in 2009; however the claims are yet to be settled.

Agriculture and food security

Agriculture is a very important activity among the tribal people here. A diversity of crops that include several varieties of paddy, millets, cereals, pulses, oilseeds and

vegetables are grown by the villagers (Table 8: Diversity of crops grown in Beespuram, Karakavalasa and Rallavalasa)⁴.

Seeds for cultivation are mainly used from previous year's crops. In a few instances seeds were purchased from the Agriculture Office, ITDA, Forest Department or borrowed from villagers but this was very rare. A variety of methods are used to store the different kinds of seeds. Paddy and finger millet are first dried in the sun. These are then stored in mud pots, dried gourds or baskets made from bamboo and *adda* leaves (platter leaf tree). A layer of hay, dry dung and mud are placed on the top of these baskets. Foxtail millet, pearl millet, little millet, corn and pulses are hung in dry places, for example above the kitchen stove.

⁴ The common/trade name, botanical name and local name are provided in Annexure 1. In the text wherever known the trade or common name has been used.

Table 8: Diversity of crops grown in Beespuram, Karakavalasa and Rallavalasa			
Crop	Beespuram	Karakavalasa	Rallavalasa
Paddy			
Pearl millet			
Foxtail millet			
Maize			
Finger millet			
Little millet			
Kidney beans			
Red gram/pigeon pea			
Black gram			
Cow pea			
Chilly			
Green gram			
Black-eyed peas			
Broad beans			
Horse gram			
Niger			
Ginger			
Tomato			
Round beans			
Tobacco			
Corn			

These seeds are also stored in pots or dried gourds after mixing with ash. Pulses are mixed with ash, covered with *adda* leaves, tied tightly together with a rope and hung over the stove to keep away from rats. They are also stored in bamboo stems. Pumpkins that ripen are cut, dried in the sun for a few days and then hung by a rope in and around the house. The seeds are dried and stored in gourds for future sowing. Beans are stored either in their pods or as seeds in gourds. Tubers, turmeric and ginger are stored in three ways. In a dry place near the house a hole is dug in which the tubers are placed

covered with a layer of grass and mud and a stone is placed over the hole. Alternately they tubers are piled up in a dry corner of the house, covered with a layer of grass and a mixture of mud and dung. They are also stored in baskets made of bamboo that is covered with hay and sprinkled with dry cow dung and mud.

The crops are sown cyclically and intercropped in the available land depending on the season. This usually coincides with the main festivals celebrated by the villagers as well. The busiest period for agriculture is between May and December when most of the crops are grown. Crops are grown on *podu*, dry and wet land. Finger millet, pearl millet, little millet, foxtail millet, maize, kidney beans, black-eyed peas, niger, red gram, beans, ginger, turmeric, chilly, tapioca, horse gram, black gram, green gram and gourds are all grown on *podu* land. Different crops are mixed together to



improve the soil fertility; finger millet, little millet, maize and red gram are grown together, foxtail millet is intercropped with pearl millet, pumpkin and corn sown together, beans, kidney beans and corn are another combination. The site selected for *podu* cultivation has a good tree cover and undergrowth with few rocks or stones. The trees are cut and undergrowth cleared using various implements like sickle, knife, spade and axe. These are left to dry and then set on fire. This preparation of the *podu* land begins during the month of May. This is followed by ploughing and then sowing of seeds. Seeds are normally sowed by broadcasting. Weeding is a continuous process. Crops grown on *podu* lands take three to four months before they can be harvested. During the rainy season to prevent soil being washed away bunds with stones are built at the base of the *podu* land. Shrubs are planted as well to prevent the soil erosion.

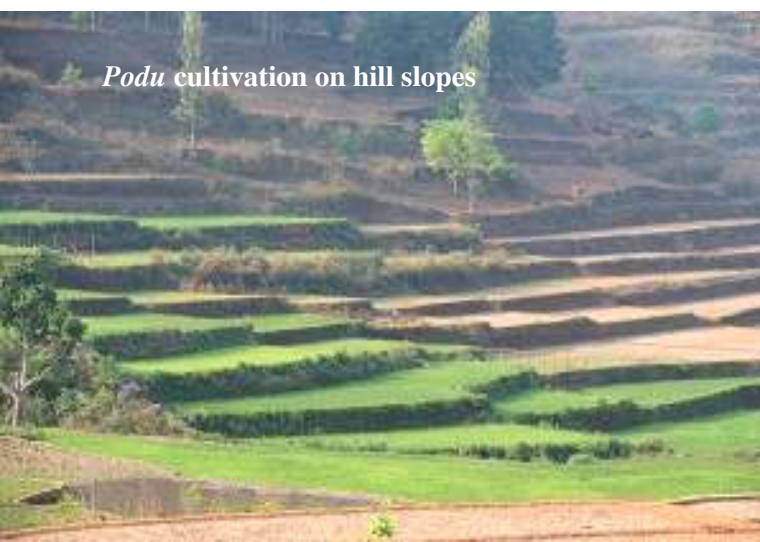
In the case of paddy, the field is ploughed and soil turned several times. Once the plants grow to a certain height they are transplanted into another field with sufficient water in neat rows. Dry and wet lands are also cleared, ploughed and the millets, pulses and vegetables sown at different times. Pumpkin, a variety of beans, turmeric and ginger, tubers like sweet potato, potato, tapioca, yam and colocasia are also grown on agricultural lands or in kitchen gardens. The entire family in the past used to be engaged in agricultural work, but today some members leave home to work elsewhere or are pursuing their education. Ploughing was also earlier done

entirely using cows but today some farmers use tractors to plough the fields.

Availability of water is an important factor that determines the number of harvests. The villages of Karakavalasa and Rallavalasa are nestled in a fertile valley with sufficient water resources, when compared to Beespuram. Crops here are grown throughout the year, whereas Beespuram, dependent primarily on rains, the main crops are grown during the rainy season. Check dams are built to capture and preserve rainwater which is diverted to the fields via channels. Water from streams is also utilised. Excess water collected during the rainy season is drained off from the fields into the stream as well through channels dug for this purpose (Table 9: Calendar for some of the main crops grown).

Harvesting paddy requires nine to ten men, who use sickles to cut the stalks. The paddy cut is piled into mounds and left to dry. In the case of millets, the cobs are cut off and piled in a drying place. In the case of pulses, the entire plant is uprooted and dried. The place for drying is prepared by clearing the land, leveling it and plastering it with cow dung. Paddy cut is strewn and trampled using cows to separate the grain from the stalks. The stalks are removed and, grain separated from the chaff by winnowing. The stalks are used as cattle feed and the chaff is also fed to hens and cows. Cobs of finger millet are spread out on the drying area, trampled by cows, cobs beaten with sticks and winnowed to separate the millet from the chaff. In the case of foxtail millet, pearl millet and maize, the cobs are spread out on mats and stamped using bare feet. These are then sun dried and stored. Pulses are beaten using sticks to separate them from the plant.

The main threats to the crops were from animals like monkeys, bear, rats, squirrels, wild pigs, and rabbits, insects, and birds like the peacock, mynah and sparrows. Domestic cows, buffalos and goats also wandered in



Podu cultivation on hill slopes

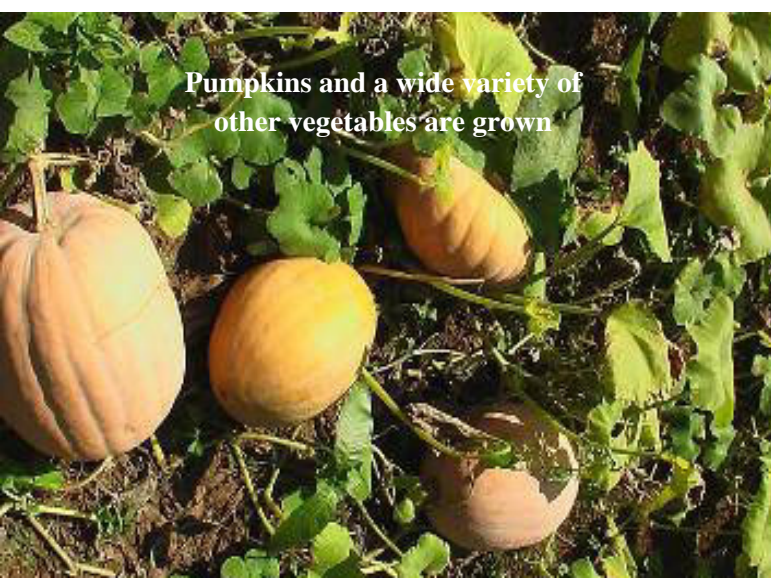
Table 9: Calendar for some of the main crops grown

Crop name	Season and details
Paddy	Sown in June/July and harvested in November/December If water is available second crop from January to April/May. One variety known as <i>methadhanyam</i> grown on <i>podu</i> land
Finger millet	Sown in August and harvested in October If water is available sown in October and harvested in December/January
Little millet	Sown in June/July and harvested in September/October If water is available sown in October and harvested in December/January
Foxtail millet	Sown in June/July and harvested in September/October If water is available sown in October and harvested in December/January
Maize	Sown in June/July and harvested in September/October If water is available sown in October and harvested in December/January
Pearl millet	Transplanted in June Harvested in August
Corn	Sowing in June Harvested in August/September
Round beans	Three crops in a year—June, August and December/January
Niger	Sown in August and harvested in December/January
Broad beans	November to February
Black-eyed peas	Sown in July/August and harvested in November/December
Kidney beans	Sown in September/October and harvested in November/December
Horse gram	Sown in June/July and harvested in November/December Sown in August/September and harvested in December/January
Red gram	Sown in June/July and harvested in December/January
Black gram	August to December
Peas	October to January
Sweet potato	Planted in November/December and harvested in March
Yam	Planted in November/December and harvested in March
Chilly	Sown in July and harvested in December
Ginger	Sown in July and harvested in November/December

to graze on standing crop. A considerable amount of time was thus spent by the villagers in guarding their crop. Fencing, using scarecrows and beating drums are all done to scare the animals and birds. Crop loss percentage between 10 percent and 30 percent seemed to be common.

Most of the crops were retained for domestic consumption and seed stock for the next year's harvest. Paddy, finger millet, pearl millet, little millet and foxtail millet were mainly retained in larger quantities for household consumption. These form the main components of the diet of the *adivasis*. Corn, green gram, red gram, horse gram, black gram and kidney beans from the agricultural fields also contributed to the nutrition of the daily meal. The percentage of total yield set aside as seed for the next year's crop varies depending upon the crop and the individual family.

Crops sold for income include part of the produce of red gram, cow pea, broad beans,



black gram, green gram, ginger, chilly, tomato, niger and black-eyed peas at the *santha* (many cases at Sunkermetta and Damuku) to traders. Red gram was the most widely sold crop. Occasionally little millet, kidney beans, round beans and maize were also sold to the traders at local *santhas*. Paddy was sold in a few instances only by the villagers at Nimmalpadu. Red gram and kidney beans was sold at around Rs. 40/- per kg, ginger and tomato at Rs. 12/- per kg, niger at about Rs. 20/- per kg, and green gram and black gram at Rs. 15/- per kg. Paddy sold was between Rs. 20/- and Rs. 30/- per kg.⁵

The harvest retained for domestic consumption, after sale and retention as seed stock, provide a degree of food security to the families, in the absence of which they would be forced to depend on purchase of these items from the open market. This food security is reflected in the comparatively lower dependence on the public distribution system (PDS) for meeting household needs of rice, cereals, pulses and vegetables. The millets like finger millet, little millet, foxtail and pearl millet were able to meet the requirements of the family for 4–12 months depending on the family size. The different types of pulses—green gram, horse gram, red gram and black gram—lasted the family for 3–5 months. Paddy grown in Nimmalpadu villages sustained a majority of the families for 7–12 months, whereas in Beespuram the paddy grown lasted for about 4–8 months. At any rate, the variety of millets, paddy, pulses and vegetables met the domestic requirements for food for a considerable period of the year. The *adivasis* normally have two meals a day. *Ambali*, a gruel made from finger millet, is also a staple in their daily diet.

⁵ These are approximate estimates as provided by the interviewees.



Kitchen gardens near homes



Harvesting paddy by cutting stalks using a sickle



Millets harvested by lopping off the cobs



Paddy and millets being dried after harvest



Produce being taken to the *santha* for sale

The expenditure on agriculture was towards labour for ploughing, weeding and harvesting, cow manure, fertiliser, pesticide, hiring of livestock for ploughing and in some instances purchase of seeds for sowing. Majority of the labour was contributed by the family members. Charges for hired labour are at the rate of Rs. 50/- per day per person, raised from Rs. 30/- the previous year as a result of increased cost of living and increase in wage rates in coffee plantations in the region. Hired labour included members from the same or neighboring villages. Seeds were also purchased from the Agriculture Office, Forest Department, ITDA or from other villagers. Fertiliser is purchased from Agriculture Office, traders at Damuku and Sunkermetta in Ananthagiri and is either DAP (di-ammonium phosphate) or urea. Pesticides, like malaria prophylaxis are bought from traders in the local *santhas*, and in one case from S Kota, but their use is still very limited. Expenditure in Beespuram on agriculture ranged between Rs. 1,000/- and Rs. 5,000/- (and in once case as high as Rs. 11,250/- spent on labour and cow manure), while in Nimmalpadu as well it was in the same range (except in one instance where it was Rs. 20,820/- spent primarily on cow manure). Cow manure was purchased by

those who usually did not own any livestock. But on the whole the expenditure on inputs into agriculture was low.

Coffee cultivation

Coffee cultivation was introduced in Beespuram village by the Coffee Board and the Paderu ITDA (according to the interviewees). The interviewees said that they had been cultivating coffee since 1982, while others gave varying years of late 1980s and early 1990s to as recently as 2008 in one case. All the interviewees said that they had taken up coffee cultivation to augment their income. Initially the coffee saplings were provided by the ITDA and the Coffee Board. A few of the interviewees had purchased saplings in the next procurement, while others whose plants had died had been able to procure the same from the Coffee Board nursery, the ITDA nursery in their village or from Naandi Foundation. Among the interviewees the land area under coffee cultivation ranged from 3–5 acres (Table 10: Land area under coffee cultivation, Beespuram).

Coffee plants are prone to attack by insect pests, wild animals and birds. Insects (locally called *arumudatha*), those that cause yellow leaf/worm disease did affect the crops in Beespuram. Birds like peacock and wild monkeys consumed the coffee fruits, while wild boar caused damage to the coffee plants. The villagers spend a considerable amount of time guarding the crops from these wild animal and bird attacks. Dead plants affected by the insect pests are normally removed and replaced with new saplings. One of the interviewees



Coffee plantation in Beespuram

Table 10 : Land area under coffee cultivation, Beespuram

Family no	Area in acres
1	5
2	4
3	5
4	6
5	4
6	5
7	4
8	6
9	5
10	5
11	4
12	3
13	6
14	5
15	4
16	5
17	4
18	4
19	5
20	5

said that he used BOD 51, a pesticide, to fight the insects. Loss of yield ranging between 10 percent and 40 percent was reported.

All members of the family were usually involved in the different tasks of coffee cultivation. The tasks involved in coffee cultivation were weeding, centering, pruning coffee bushes, removing dead branches, harvesting coffee seeds and drying the seeds. In addition to labour contributed by the family, labour was also hired to undertake the different works. The villagers, after consultation among themselves, had fixed a rate of Rs. 50/- per person per day as daily wage. This amount had earlier been Rs. 30/- but keeping in mind the increasing cost of living and price rise, and the demand for

wage labour in the coffee plantations the rates had been increased.

Pesticides, BOD 501 were used to fight pest attacks and the interviewees gave multiple sources from where they procured the same—supplied by ITDA Paderu, purchased from Naandi Foundation or bought in the open market from traders. Fertiliser was also used in coffee cultivation. The main fertiliser was the brand Vrushamitra bought in the market or from the ITDA at Paderu or from Naandi Foundation. It was also supplied free of cost to some of the cultivators by the NGO and the ITDA. Urea was also purchased for Rs. 2,000/- (10 kg at Rs. 200/- per kg) and as per one interviewee organic cow manure of 50 kg was received free of cost every year from ITDA. Cow manure was also purchased from the villagers. The primary expenditure in coffee cultivation, however, is labour charges. There was very little expenditure on sale incurred as well; only a couple of interviewees stated that they had to spend on transport charges.

Coffee is harvested during November/ December. Depending on whether they were a part of the network of farmers working with the NGO farmers sold their produce either to Naandi Foundation or alternately in



Coffee beans being dried

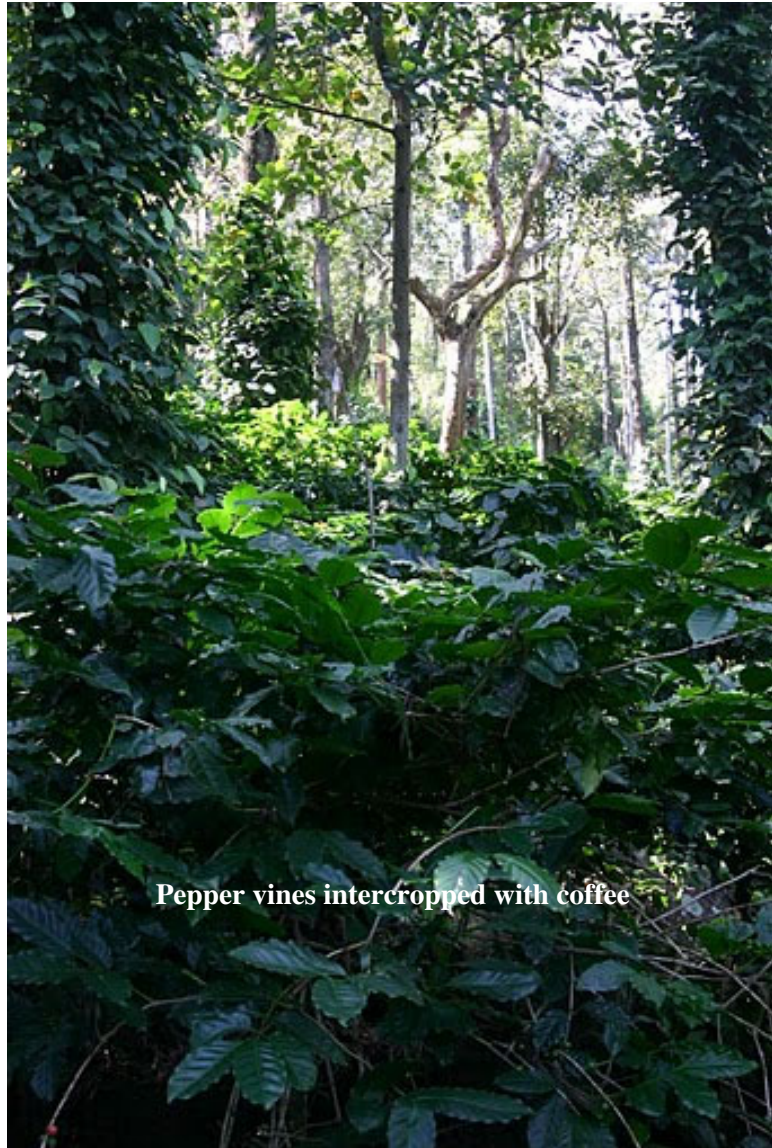
Table 11: Details of yield and sale of coffee, Beespuram

Family no	Quantity sold (in kg)	Income (in Rs.)	Expenditure (in Rs.)
1	350	42,000	15,000
2	240	28,800	8,500
3	225	27,000	12,000
4	450	54,000	14,000
5	200	24,000	8,000
6	275	33,000	13,000
7	300	36,000	10,000
8	348	41,760	9,500
9	320	38,400	12,000
10	330	39,600	10,500
11	280	33,600	12,500
12	165	19,800	5,500
13	450	54,000	16,000
14	210	25,200	8,000
15	252	30,240	9,400
16	315	37,800	12,300
17	140	16,800	4,500
18	208	24,960	7,500
19	310	37,200	12,300
20	200	24,000	6,500

the open market to traders. (Table 11: Details of yield and sale of coffee, Beespuram).

The village was provided by the ITDA with a large sized coffee pulper which was used by the families. However, in recent years individual families purchased small sized pulpurs costing about Rs. 600/- from the ITDA. A place for drying the coffee beans had also been provided. While most of the coffee was sold a few of the interviewees said that they retained coffee for household use as well by boiling and storing the same. While none of the interviewees mentioned this, women were also seen selling coffee in packets on the roadside to tourists.

Indian fir or mast tree, gooseberry, sesbania, sal, jackfruit, custard apple, teak, monkey-face tree, siris, silver oak, java plum, mango



Pepper vines intercropped with coffee

and oleander are the shade trees grown in coffee plantations. Peper vines were intercropped with coffee and helped augment incomes of a few of those interviewed. The quantity sold ranged between 1 kg (for Rs. 160/-) and 30 kg (for a total of Rs. 3,600/-).

Forest dependency

The forest is an important source of food, fuel, timber and NTFP for the *adivasis*. Fuelwood is collected by both the men and women of the household for use at home but not for sale. Timber too is used for household



Firewood collected from the forest for household use

purposes only. Wood from different trees are used for a variety of purposes—for house construction (threshold, door frame, support beams, central pole), building cowsheds, making ploughs, crafting furniture like benches and cots, in fencing, and as handles for spade, axe, knives, hunting spear as well as for firewood (Table 12: Use of trees as timber). Grass and leaves, of which again there are several varieties, is used for thatching and include different species of

grass, leaves of date palm, lemon grass, *palagaddi*, *koperigaddi* and *bontagaddi*. The fibre of the *adda* leaf creeper is used to make ropes and to take measurements in house construction.

The forest is an important source of food as well, especially during the lean months. The men and women are primarily involved in collection of food, with the children sometimes joining them. Several varieties of tubers, pumpkins along with its leaf and

Table 12: Use of trees as timber

Tree/Used for	House construction				Plough	Bench	Fencing	Beds/cots	Hunting spear	Cowshed
	Support beams	Threshold	Door frame	Central pole						
Myrobalan										
Java plum										
Indian cork tree										
Teak										
Mango										
Silver oak										
Sal										
Sesbania										
Oleander										
Tanners cassia										
Jackfruit										
<i>Gandra</i>										
<i>Thunchika</i> creeper										
<i>Billakarra</i>										
Arjun										
<i>Erugudu</i>										
Siris										
Indian Beech										
<i>Kanjela</i>										
<i>Gajara</i>										
<i>Galichettu</i>										
<i>Kchelachettu</i>										
Bamboo										
Champak										
Indian laurel										
<i>Peddabusichettu</i>										
<i>Nagara</i>										

flower and other gourds, leafy vegetables, fruits and nuts that were collected as food from the forest were mentioned by the interviewees. Honey is also collected and consumed. Tubers mentioned and popular in the diet include sweet potato, tuber of the date palm, potato, tapioca, yam, *nagalidumpa*, *addengidumpa*, *pindidumpa*, *kondadumpa*, *thegadumpa*, *batridumpa*, *kandadumpa*, *tiyyasaridumpa*, *chedudumpa*, *taragayi* (*vaimudumpalu*), *nilludumpalu*, *modugadumpalu*, *vaderudandem*, *kummulu*, *vedurudumpa* and colocasia. Leafy vegetables collected and consumed included the leaves of the purple bavinia plant, *charukoora*, *dudikoora*, *konkodikoora*, *bodantukoora*, *saarukoora*, *maandikoora*, *bommatentemkoora*, *mullukoora*, *gaddasaarikoora*, and *thagalu*. Wild mushrooms and bamboo shoots are also common in the diet. Nuts of the platter leaf tree (*adda* nuts), marking ink nut/black cashew nut and myrobalan are popular among nuts. The *adda* nuts are considered to be highly nutritious and used in several preparations. Mango, papaya, custard apple, jackfruit and gooseberry apart from being relished in their raw form are included in curries. A host of plants and their parts—bark, nut, leaf, fruit, seed—believed to have medicinal properties are used by the families both in treating illness/injuries and are included in their daily diet.

Hunting, using bird and animal traps and spears, was also done, primarily during the festival known as *itukalapandaga*. The main animals hunted during this festival are wild boar, rabbit, wild sheep and deer. Different varieties of birds are all hunted for their meat, throughout the year. Crabs and fishes caught in the streams and the edible insect called *eetahabiding/eethapurugu* (=date palm insect) found inside the roots of the tender date palms all constitute a part of the *adivasi* diet and are an essential source of protein.

Medicinal plants are collected by the traditional healers and used to cure a number of ailments, cuts, bruises and even fractures. Plants and leaves believed to have curative properties are included in the diet by the families and used in home remedies. These are many in number and find their way into the food in some form or the other.

Non-timber forest produce: An important income source

In the past families possessed traditional rights over trees and entire families migrated temporarily for collection of NTFP. Today their access to the forest is restricted and scrutinised by the Forest Department. However, NTFP collection continues to be an integral income generating activity of the tribal people here. Different varieties of NTFP were collected during different seasons (Table 13: NTFP collection calendar), primarily by the adult men and women of the household. Some of the products were used both for household consumption/use as well as for sale, while others were collected purely for income. *Adda* leaves, hill broom grass and gooseberry were the three most widely collected NTFP.

The NTFP was sold to individual traders or to the GCC. The GCC was established in 1956 to protect the *adivasis* from exploitative middlemen and petty traders. It was appointed as an agent to the government to procure NTFP from the *adivasis* under the Andhra Pradesh Scheduled Areas Minor Forest Produce (Regulation of Trade) Regulation 1979.



Table 13: NTFP collection calendar												
Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Adda leaves												
Hill broom grass												
Bark of Indian fir/mast tree												
Gooseberry												
Myrobalan												
Marking nut/black cashew												
Adda nuts												
Honey												
Soap pod												
Pampannu chekka												
Athuka												
Serpentine/rauvolfia root												
Adda fibre												
Kasthuri												
Vasakommu												

The GCC takes the forest area under lease from the Forest Department with the rights over procurement of the NTFP and pays a rental to the Forest Department; the tribal people are the main procurers of the NTFP. The procurement price of each NTFP is determined by the Divisional Manager of the area or the Managing Director of the GCC depending on the produce to be procured. Salaries, staff and overhead costs are borne by the state government of Andhra Pradesh.

Today GCC has monopoly rights over procurement of listed NTFP from *adivasis* in Andhra Pradesh, and their marketing. The GCC serves a population of nearly 4 million tribal people spread over 32,000 sq km forest area across the state. The GCC purchases NTFP and agricultural produce from the tribal people in addition supplying essential commodities and items of day to day necessities through their network of fair price shops known as Daily Requirement (DR) Depots. The NTFP procured by the GCC from the *adivasis* includes a wide variety of products—medicinal plant parts, *adda* leaf, honey, oil seeds (castor, niger, sesame or gingelly, seeds of Indian beech,



kusum), gooseberry (dried and wet), gums and resins (gum karaya, gum olibanum or gum of salai tree, gum kondagogu or gum of silk cotton tree), hill broom grass, myrobalan, nuts (cleaning nut, *adda* nuts, marking nut, soap nut), tamarind, soap pod, bees wax, and bark of trees like Indian fir/mast tree and Tanners cassia. The

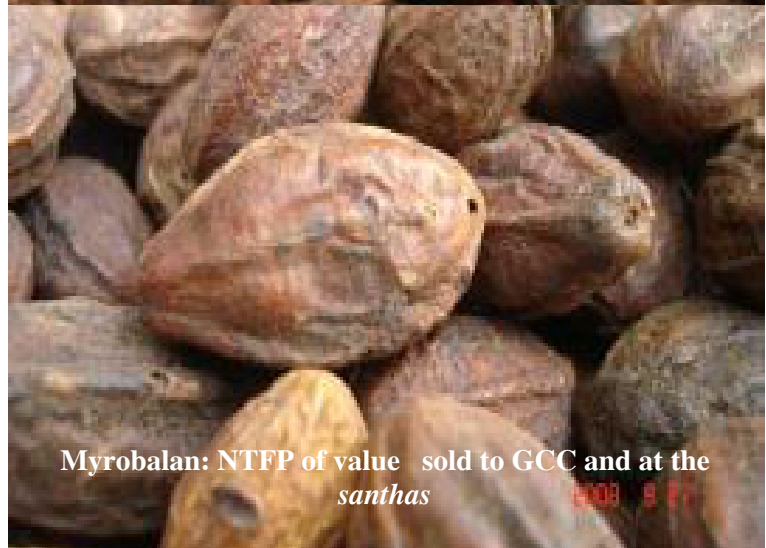
procurement sites for the produce number 300 and are located at the *santhas*. The *santhas* are held at different places at different days in the week. For example the *santha* at Sunkermetta is held on Sundays and Damuku on Wednesdays. These were the ones primarily accessed by the interviewees.

Adda leaves, hill broom grass, bark of the Indian fir/mast tree, gooseberry, myrobalan, marking nut, *adda* nut and honey were sold by the *adivasis* interviewed to GCC, traders who visit the village and the traders in the *santhas*. In addition soap pod and *adda* fibre were also collected but mostly retained for household use. In addition one interviewee collected *Pampannu chekka*, another serpentine/rauvolfia root (of medicinal value) and *athuka*, and one of them *kasturi* and *vasakommu*; all were from the village of Beespuram. From the data collected it was seen that while the interviewees in Beespuram accessed the GCC, the families in Nimmalpadu sold most of their produce to the traders. The primary reason for this was the absence of a GCC procurement point in or close to the Nimmalpadu villages which are more interior when compared to Beespuram, a roadside village, that has easier access to the local *santha*.

The prices offered by the GCC and the traders were more often similar—between Rs. 5/- and Rs. 7/- per kg for *adda* leaves, Rs. 20/- and 60/- for a bundle of hill broom grass, Rs. 10/- and Rs. 30/- per kg for the bark of the Indian fir/mast tree, Rs. 2/- and Rs. 5/- per kg for gooseberry, Rs. 2/- and Rs. 10/- per kg for myrobalan, and in a few cases between Rs. 15/- and Rs. 40/- (all to traders), Rs. 3/- and Rs. 5/- per kg for marking nut/black cashew, and in a few cases as high as between Rs. 20/- and Rs. 35/- (both to GCC and the traders), Rs. 15/- per kg for *adda* nuts and Rs. 100/- and Rs.400/- for a litre of honey. The interviewee who collected 100 kg of *athuka*



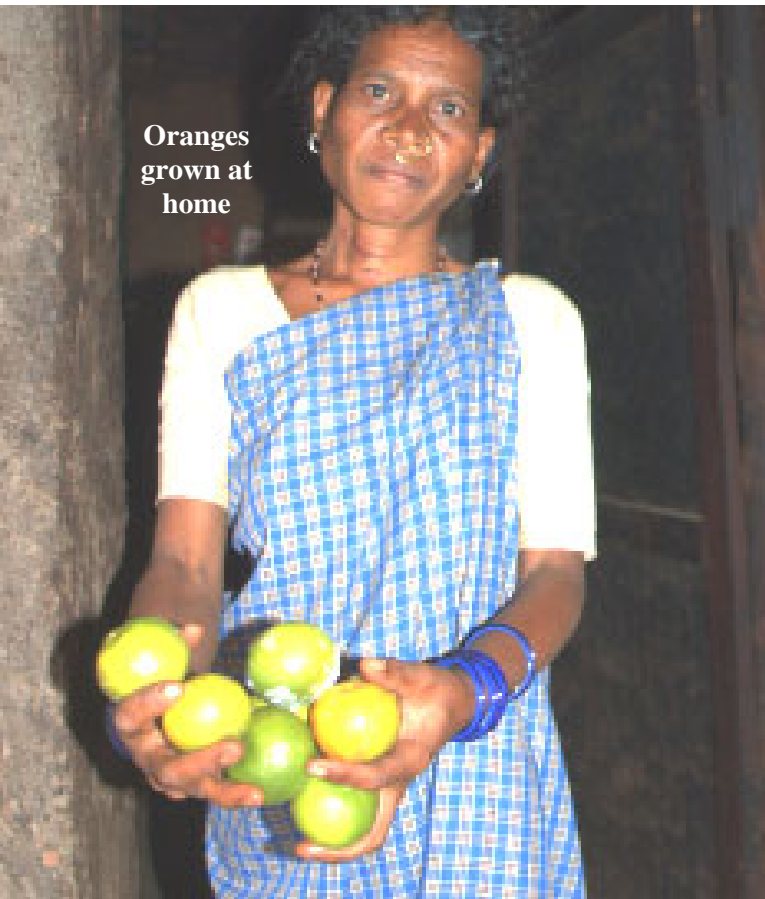
Soap pod: NTFP collected and also retained for household use



Myrobalan: NTFP of value sold to GCC and at the *santhas*

and 5 kg of the Serpentine/ Rauvolfia root earned a high income—Rs. 15,000/- during the year. The interviewee who had collected *kasturi* and *vasakommu* had earned Rs. 3,500/- during the year. The difficulty in collecting medicinal plants included lack of availability and walking long distances into interior forests meant that many did not prefer them as an important source of income. Quantities of the NTFP collected ranged between 200 kg and 500 kg in case of *adda* leaves, 5–15 bundles of hill broom grass, 20–60 kg of bark of the Indian fir/mast tree, 200–600 kg of gooseberry, 50–400 kg of myrobalan, 10–50 kg of marking nut/black cashew, 5–20 kg of *adda* nuts and 2–5 litres of honey. The incomes earned from NTFP ranged between Rs. 5,000/- and Rs. 10,000/- annually among the majority of the interviewees. Tamarind another important NTFP collected by Nimmalpadu villagers was exchanged for jaggery with traders. Expenses were minimal, and were for travel/luggage charges.

Oranges
grown at
home



Some amount of the NTFP is also retained for household use. *Adda* leaves are used as plates and lids or for making hats/umbrellas to protect oneself from the rain and sun, *adda* fibre is used for making ropes and taking measurements, hill broom grass is used for cleaning the homes, gooseberry in pickles and other preparations, *adda* nuts are a part of the diet and an important source of nutrition, and honey were also retained for household consumption.

Trees grown on land

A variety of trees are grown by the *adivasis* on their land, the produce (fruits, nuts, oil from seeds) of which are used for household consumption as well as for augmenting income through sale. Some of the trees are also used as timber and as fuelwood. The main trees grown on land include jackfruit, orange, guava, mango, gooseberry, java plum, Indian fir/mast tree, tamarind, myrobalan and marking nut/black cashew. The other trees grown include silver oak, custard apple, Indian beech tree, beech, fishtail/toddy palm, lemon, eucalyptus, teak, pomegranate and banana (Table 14: Trees

grown on land and what they are used for). Trees like mango and java plum also serve another purpose that of retaining water in the soil, and were grown around homesteads and water sources.

The produce from the trees are sold at the *santhas* in Damuku and Sunkermetta to individuals or to traders. Several of the interviewees also sold the produce to traders who visit the villages. Myrobalan and the bark of the Indian fir/mast tree were however mostly sold to the GCC as were gooseberry and marking nut/black cashew on occasion. The tribal people are able to earn an income from the trees; majority earned amounts ranging between Rs. 2,000/- and Rs. 12,000/-, while some of them earned incomes even as high as Rs. 25,000/- to Rs. 30,000/- annually. The expenses incurred include for labour, pesticide and carrying produce to the market, but these were minimal.

Poultry and livestock

Cows, bullocks and goats comprise the livestock raised by the tribal families with hens as poultry. Cows and bullocks are used in ploughing and their dung as manure. Among the interviewees 21 (10 from Beespuram and 11 from Nimmalpadu) of them had cows numbering between one and five. These were purchased from the local *santha* at Damuku in a few cases and from Kasipatnam, Jagadalu and Medaparathy (located about 30 km from Beespuarm and 50 km from Nimmalpadu) as well. The cost of the cows bought in recent years ranged between Rs. 5,000/- and Rs. 9,000/- per animal, with one interviewee from Nimmalpadu having paid as much as Rs. 11,000/- for a single cow (in 2007). Among the interviewees only two had purchased cows during the study period. One of them was from Beespuram and had purchased two cows for Rs. 20,000/- and the other from

Table 14: Trees grown on land and what they are used for

Tree	Household use	Income source
Jackfruit	Fruit consumed and wood used as timber	Fruit sold for income
Orange	Fruit consumed at home	Fruit sold
Guava	Fruit consumed at home	Fruit sold
Myrobalan	Wood used as timber	Nut sold for income
Mango	Fruit consumed at home and wood used as timber	Fruit sold for income
Gooseberry	Fruit consumed at home	Fruit sold for income
Marking nut/black cashew	-----	Nuts sold for income
Java plum	Fruit consumed at home and wood used as timber	Fruit sold for income
Indian fir/mast tree	Shade tree for coffee, bark in medicine	Bark sold for income (medicinal purpose)
Tamarind	Fruit consumed at home	Fruit sold for income
Silver oak	Wood used as timber	-----
Custard apple	Fruit consumed and wood used as timber	Fruit sold for income
Indian Beech	Oil extracted from seed used at home to treat skin disease, lice infestation and as insect repellent	Oil extracted from seed sold for income
Beech	Fuelwood for household use	-----
Fishtail/toddy palm	Toddy consumed at home	Toddy sold for income
Lemon	Fruit consumed at home	Fruit sold for income
Teak	Wood used as timber	-----
Pomegranate	Fruit consumed at home	Fruit sold for income
Banana	Fruit used at home	Fruit sold for income

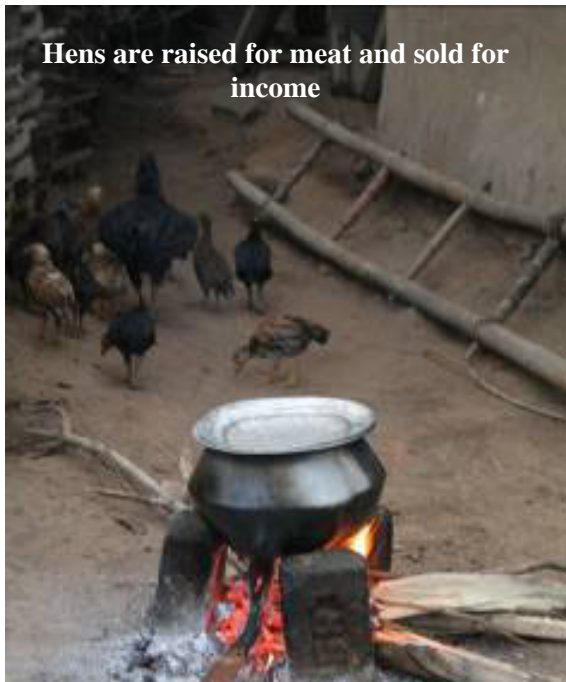
Rallavalasa who had bought two cows for a total amount of Rs. 22,000/-. Sale of cows was also reported by interviewees. One of the interviewees said that he had sold three

cows for Rs. 7,250/- as they had been ill. Cows were usually stall-fed or left to graze in the open for 7–8 hours on an average in each instance. Scarcity of fodder was an issue the interviewees said they faced.

Seven of the families interviewed had bullocks. These were used for ploughing and were stall-fed and left for open grazing for 7–8 hours in each instance. The bullocks of interviewees had been purchased from Dabbagunta, Gujaribata and Kasipatnam (located about 30 km from Beespuarm and 50 km from



Cows are used in ploughing and their dung is an important source of organic manure.



Hens are raised for meat and sold for income

Nimmalpadu) for prices ranging between Rs. 11,000/- and Rs.17,000/- per animal. None of the bullocks were bought during the study period in 2008; however several had been purchased in the year 2009. One of the interviewees had earned an income of Rs. 7,500/- by renting the bullocks out during the study period.

Goats are raised for household consumption and sale to augment income especially during financial crises. Goats are also stall-fed and open grazed for 7–8 hours every day in each instance. One of the interviewees had purchased a goat during the study period for Rs. 10,000/- from the *santha*, while another had purchased one for just Rs. 4,000/- from Kasipatnam.

Goats were sold in one case to meet expenditure of house construction, another instance to meet educational expenses and household expenses. One of the interviewees had sold two goats for Rs. 4,000/- while another had sold two for a total of Rs.5,300/- during the study period. One of them had sold a goat for as low as Rs. 1,500/- in 2008.

Hens were bought for domestic consumption of eggs and meat and are also sold for their meat to augment income. The hens are purchased either from others in the village or from the *santhas*. Open grazing and stall feeding for 6–8 hours was common in each instance. One of the interviewees had bought five hens for Rs. 180/- during the study period another six for Rs. 200/-. One of the interviewees had sold four hens for their meat during the study period for a sum of Rs. 600/- to overcome financial problem at home, while another had sold two for Rs. 500/-. Another interviewee had sold two for Rs. 300/-.

Two of the interviewees also mentioned that they had pigs; one pig had been sold for Rs. 2,500/- to augment income and the other for Rs. 2,000/-.

Government schemes accessed

The villagers were accessing different schemes of the government. These include the housing and pension scheme under Indiramma Programme (Integrated Novel Development in Rural Areas and Model Municipal Areas), self-help group (SHG) membership under Indira Kranthi Pathakam, MGNREGA as well as accessing the DR Depots to meet the essential requirements of the household.

The primary aim of the Indiramma Programme launched by the Andhra Pradesh state government with effect from 1 April 2006 is to provide nine services in identified villages that include *pucca* houses, pension, drinking water, roads, elementary education, electricity, Integrated Child Development Scheme (ICDS), health and sanitation. In the case of pension, the state government was initially providing pension under the National Old Age Pension Scheme. The state government decided to enhance the number of old age pensions under the Indiramma Programme as well as the amount paid per month as pension to Rs. 200/- from the earlier Rs. 100/-.

Both men and women above 65 years of age who are destitute and not covered till date under any pension programme are eligible for receiving the pension. In the case of widows there is no age limit. Housing is the most important component of the Indiramma Programme provided to below poverty line (BPL) families to convert their *kaccha* houses to permanent or semi-permanent houses in both rural and urban areas. The rural housing for *adivasis* provides assistance for constructing semi-permanent structures (mud walls with tiled roof) to families living in remote inaccessible areas and in ITDAs, whose income is below Rs. 20,000/- per annum and who possess title over land proposed for construction of house. Each house cost is estimated at Rs. 26,000/- (later revised to Rs. 50,000/-). The Indiramma Programme housing scheme, implemented in a phase-wise manner, was accessed in Beespuram by six of the families in the first phase. The

Programme is yet to be initiated in Nimmalpadu villages and is expected to be done so in the coming year. Pension scheme under Indiramma was being accessed by men and women in both Beespuram and Nimmalpadu and the amount of pension was Rs. 200/- per month.

Several of the women were also members of SHGs under the government scheme, Indira Kranthi Pathakam. They used to loans taken from the SHGs for the house construction purposes as well.

All the families in the study villages possessed job cards under MGNREGA. The cards carried the list of adult members in the household and each household was eligible to receive work for a maximum of 100 days in a year. The number of days of work received and wages varied in the study sites. Only one interviewee in Beespuram had worked for 100 days in the year, while another had worked for 90 days. The



Pucca houses in Beespuram village

remaining had worked anywhere between seven and 20 days in the whole year. In Karakavalasa village, among the families interviewed, one job card holder had worked for 25 days and another for 20 days; the rest had worked anywhere between 6 days and 18 days. In the case of Rallavalasa the maximum number of days worked in the year was 30 days (by four persons among families interviewed) and two of the job card holders had worked for 25 days and one for 24 days; the remaining job card holders had worked between 6 days and 20 days in the year. In Beespuram the daily wage paid were either Rs. 80/- or Rs. 100/-. In Rallavalasa and Karakavalasa the wages paid were either Rs. 100/- per day or Rs. 120/- per day. The kind of work undertaken, in Beespuram amongst those interviewed, included bush cutting and weeding in coffee plantation, stone-breaking, building bunds for tank and digging a pond. In the case of Karakavalasa and Rallavalasa, the kind of work included rock and contour bunding.

In the tribal ITDAs the PDS is managed under the supervision and control of the Project Officer of the ITDA. The GCC takes care of the retail and wholesale distribution. Essential food grains, as well as other items of everyday requirements (like potatoes, onions, soap, clothes, hair oil, spices, even cell phone recharge cards, plastic chairs, etc) are supplied to the *adivasis* through a network of 839 fair price shops also known as DR Depots run by the GCC. In some cases the functioning of the DR Depots has been handed over to SHGs, several of which are women SHGs run entirely by women. Where no such depots are possible part-time depots are set up by the GCC and manned by *adivasis* and in the absence of both it is the responsibility of the Project Officer of the ITDA to identify an individual to whom the fair price shop is then entrusted. In the tribal areas it is specified that there should be one ration ship for a population of thousand. Each DR Depot caters to 4–5

villages. The GCC also maintains the Mandal Level Stockist in the ITDA areas, that number 28 and stocks of commodities are stored here.

DR Depots were accessed by interviewees in all the three study sites for purchasing household necessities like rice, oil, sugar, red gram and kerosene. Onion, tea, soap, peas (dried) and pulses are also purchased by a few of the interviewees. Kerosene is purchased at Rs. 10/- per litre and 3–5 litres were purchased in a month by one family. Nearly 1 kg of onions were consumed in some households every month which was purchased at a rate between Rs. 14/- and Rs. 20/-. Most families consume about 20 kg each month of rice, each kilo at a subsidised price of Rs. 2/- per kg. Larger families consume nearly 35 kg. Red gram, 1–2 kg are consumed by the family each month; the average price paid for is Rs. 70/- per kg. In some cases the interviewees said they had paid as low as Rs. 30/- or as high as Rs. 90/- per kg for red gram. Sugar, nearly 1 kg, is consumed monthly by each family which is purchased from the DR Depot for Rs. 15/- per kg. Cooking oil normally consumed is 1 litre per month bought from the DR Depot for about Rs. 50/- per litre. The number of items purchased from the DR Depots were mostly limited to those mentioned above.

Migration and daily wage

About 20 members from the entire village of Beespuram migrate for a period of 15 days to one month or 50 days in a year to the towns of Visakhapatnam or Anakapalle situated nearby and even to as far off as the town of Tirupathi. They take up machinery or road/soil work, masonry work or loading bricks to earn an income. The main reason for leaving their village is the lack of work in the village and the fact that they did not earn much from daily wage labour. Among those interviewed four of the households had migrants, one of whom was a woman. Wage rates for the migrants

ranged between Rs. 100/- and Rs. 150/- per day and the number of days they migrated ranged between 15 and 40 days in a year. The villagers from Karakavalasa and Rallavalasa also migrate in search of work to the towns of Visakhapatnam and Jami (located in S Kota, a small town near Visakhapatnam). The work they took up was making cement bricks and they are usually away for on an average of 3 weeks. Financial problems are the main reason for the migration. Among those interviewed two members from two households had migrated to Visakhapatnam and Jami; wages they received for work done was sometimes as low as Rs. 55/- per day.

Four of the families interviewed in Beespuram said that members from their household went for daily wage labour for additional income to meet financial difficulties. The work opted for included masonry work, construction work and labour in coffee plantations. They did this usually after the agricultural season and work in their own fields had been completed. The wages earned ranged between Rs. 70/- per day to as high as Rs. 150/- per day for masonry work. The number of days worked varied between the families—20 days to 60 days in a year—and more than one family member would go for such work. Daily wage labour in works like construction, masonry, weeding and harvesting are also undertaken by the villagers of Karakavalasa and Rallavalasa to earn additional income and tide over financial difficulties. One of the interviewees from Karakavalasa said that they had opted for wage labour as soil fertility had decreased as a result of which they spent lesser time on agriculture with more time to spare for wage labour. Mostly the villagers went to work after the agricultural season was over. Wages earned averaged around Rs. 120/- per day and the number of days an individual went to work ranged between 20 and 30 days in a year.

Income and expenditure of the tribal communities

The expenditure for the *adivasi* families who formed a part of this study involved purchase of household necessities from DR Depots, agricultural expenses and household related expenditure for festivals, household supplies, some amount for education, clothes and jewellery especially during occasions like marriage, and some amount on furniture, travel and health. One of the major expenditures seen is in house repair, with a majority of those interviewed having spent considerable sums on house repair.

The different sources of income for the tribal families in the three study sites—Beespuram, Karakavalasa and Rallavalasa—included agriculture, coffee cultivation (only in the case of Beespuram), income from trees on land, poultry and livestock and income from NTFP. Other sources to augment income were through daily wage labour and migration. Accessing government schemes like the pension scheme, SHGs and participating in the MGNREGA also helped improve their living standard marginally.

A comparison of the cash income earned and expenditure for tribal families does not provide an indication of profits earned or losses incurred. This is because a considerable part of their needs are met from their own agricultural produce, trees on land, and the forest, be it that of food, medicines, fodder or fuelwood. Their livelihood basket, apart from their traditional activities, consists of several sources of income including daily wage labour, migration and access to government schemes that generate income or provide support.

Major findings and discussion

- Agriculture is a way of life for the *adivasis*. It is a yearlong activity in which the entire family participates, especially in villages like Nimmalpadu that have access to abundant water resources for cultivation. The immense diversity in food crops includes several varieties of paddy, millets, cereals, pulses, tubers and vegetables as mentioned by the interviewees. A variety of crops also means a food basket that provides a higher level of nutrition. It is this diversity that has helped the *adivasis* survive over generations and has ensured some degree of food security for a considerable part of the year. It has also meant a limited dependence on cash income that is not always ensured and the open market that is subject to fluctuations and rising inflation.

The problems faced by the families in the study sites were primarily the decreasing soil fertility, access to water and organic manure. With *podu* cultivation being discouraged and increasing population pressure, the cycle for shifting cultivation has reduced. Earlier cultivation was done for three years and stopped with new lands being cleared. But today with the restrictions on *podu* cultivation the *adivasis* are forced to cultivate on the same piece of land year after year. This has affected soil fertility and lowered yields of crops on *podu* land. The hard work put into cultivation on *podu* lands is not paying off for the tribal people nowadays. Soil and conservation works will help reduce erosion and improve yields. There is considerable scope for undertaking this through the MGNREGA programme that is currently not being accessed in full by the villagers.

- Coffee cultivation in the tribal areas of Visakhapatnam district was initiated to improve the incomes of the *adivasis*. But there are several areas of concern that need to be addressed:
 - Mere increase in cash income does not translate into better living conditions for the *adivasis*. The *adivasis* grow a variety of crops and vegetables on agricultural land and depend on the forests for their food, medicinal, timber and fuelwood needs. This has ensured food security and a certain level of nutrition. Coffee brings in cash, but this is now spent on purchasing food from the shops and with inflation in food prices—which stands at high 14.4 percent at the time of writing this report—more money is spent on buying less food. The daily diet is restricted to rice, with no pulses and cereals and has severe long term implications on nutrition, especially in the case of *adivasi* women. The input costs for coffee cultivation were also seen to be higher when compared to that of agriculture, and an increase as a result of inflation or price fluctuations will reduce cash income being earned. At the same time having moved away from traditional food crop cultivation they will not be in a position to fall back on agriculture to meet at least the minimum consumption needs of the household. It is important to recognise the value of the traditional agricultural practices in an *adivasis* life, and provide support to them so that they can improve yields on their lands or in case of sale get better prices for their produce.
 - Coffee cultivation is also dependent on external conditions, many of which are outside the control of an *adivasi* farmer. The production and

demand for coffee and its sale prices, both at the domestic and international markets, are dependent on several factors that result in fluctuations—from erratic climatic conditions in the coffee growing areas in India to state of weather conditions in other coffee producing countries as far away as Brazil or closer in countries like Vietnam and Cambodia. Insect pest attacks like that of berry borer and white stem borer are dependent to an extent on climate that hasten or slow ripening process. Recession too plays its part. In the year 2009, India exported a total of 177,995 tonnes of coffee which was 16 percent lower than the previous year as a result of slowdown in the market. It is difficult for an *adivasi* farmer to comprehend these problems, or the complicated impact of global phenomenon on his daily livelihood.

- Locally too there had been other kinds of problems. In 2006 Maoists blasted coffee pulp units in several tribal settlements and godowns of the coffee research station in RV Nagar were set ablaze.
- It is also ironical that the bauxite mining being pushed for by the government to bring about ‘development’ of the region and its inhabitants will destroy more than 2,000 ha of coffee plantations, plantations that were to improve the conditions of the *adivasis*. Here we see one economic programme being replaced by another, both initiated according to the government for the benefit of the *adivasis* in the region.
- The cash income earned by the families seems considerable; however what one needs to keep in mind are the multiple support structures that have been provided—

pulpers, drying areas provided by government, nurseries for saplings, stabilisation fund to protect farmers against price fluctuations, fertilizer and organic pesticides, inputs at every stage from the Coffee Board, ITDA, NGOs, etc. Without these it would be difficult for farmers take up cultivation on their lands. On their own and left to the mercy of the market it is unlikely that the *adivasi* farmers will be able to withstand such pressures. A low yield with low prices for coffee can push them into the debt trap. Currently, they do not seem to have the wherewithal to deal with these factors independently.

- The coffee cultivators are incurring input cost in the form of pesticide, fertilizer and manure. These are relatively low at present as several of them are receiving the same free of cost or at lowered rates from either the ITDA or the NGO. However, in the absence of such support and the volatile market prices the coffee cultivators will have to depend on the open market and like with other cash crops farmers can fall into the cycle of debt.
- Monocultures, including that of coffee, have long term impacts on biodiversity. While they may be commercially viable and lucrative, monocultures have poor biological diversity. This has impacts on both agriculture and forest ecosystems. Monoculture promotion and expansion should be carried out with caution.
- The forest is integral to the survival of the *adivasis* in that it is an important source of food especially during the lean months. The wide variety of tubers, vegetables, nuts and fruits collected by them supplements daily diet and improves

nutrition with meat from hunting adding to their protein consumption. The requirements of repair and maintenance of their traditional houses, need for agricultural implements and furniture are met from timber sourced from the forest around them. Firewood was earlier sold for income but the scarcity has meant that today it is primarily used for household consumption alone. The biodiversity of the forests is thus crucial for meeting the needs of the *adivasis*, and protecting the same is imperative. The loss of biodiversity as a result of the manifold pressures is reflected today in the difficulty and longer time spent in collecting forest produce. Medicinal plants are a good source of income for the tribal families but few of them seem to be involved in collecting the same due to lack of availability and need to spend long hours walking to interior forest areas. Protecting the forest biodiversity can help increase availability of medicinal plants and improve incomes of the *adivasis*.

- The range of NTFP available and collected offers a wide scope for enhancement of livelihood. While the incomes earned among the interviewees were low, ranging between Rs. 5,000/- and Rs. 10,000/- annually, there is considerable scope for improving the same as an important income source. It is also an ecologically non-destructive and non-displacing development alternative that should be encouraged. The sale of NTFP by the *adivasis* to the traders and not to the GCC is an indication that the mandate of the organisation is being inadequately met and interviews with local *adivasis* revealing their lack of confidence in the pricing and

valuation of their produce *vis-à-vis* the traders. Lack of access is an important constraint and needs to be improved. There is only one procurement point for each *santha* where the GCC is concerned but several traders to whom to sell to. The traders position themselves at the entrance points of the market and purchase the produce from the *adivasis* even before they can gain access to the procurement point of the GCC or enquire about a more competitive or suitable price. In the case of interior villages the absence of a procurement point of the GCC leads to the villagers selling their produce to the traders who visit these villagers and source NTFP directly from the *adivasis*. GCC has a fixed rate for the produce listed, while traders pay as per market prices which are often higher than what the GCC is offering. Furthermore, at the GCC procurement points not all items are purchased, even though the GCC is required to purchase the same, making the *adivasis* see an advantage in selling their produce to the traders. Often, the historical custom of lending by local traders at the time of sowing or during the lean months also adds to their advantage of being the principal claimants to the crops and NTFP produce of the people. Separately, looking at the incomes it is clear that the GCC earns considerable revenue from the sale of NTFP. There is a need to ensure that this trickles down to the tribal families as well (Annexure 2: Quantity collected and revenue realised from NTFP between 2002-03 and 2007-08). Several studies were commissioned in the past to identify these problems and improvement of quality services by

GCC and produce specific recommendations are existing with the GCC itself. Pricing of NTFP, more in line with the prevailing market prices, needs to be developed to ensure that the *adivasis* are able to command a better price for their produce. The promotion of monocultures, like that of coffee, should also be relooked in the light of access to NTFP. While monocultures may increase the cash income, it reduces the access to common resources and NTFP, and has impacts on the ecosystems that are not perceptible in the short-term. The compensatory afforestation schemes being promoted are not a substitute either as they do not provide the same degree of biodiversity. JFM/CFM was not implemented in the study villages, and the primary reason for this was the area being found to be unsuitable for the same.

- Trees grown on land are an important source of income for the *adivasi* families, with a majority of them earning anywhere between Rs. 2,000/- and Rs. 12,000/- per year and a few of them earning incomes as high as anywhere between Rs. 22,000/- and Rs. 30,000/-. Trees are a capital investment that require very little input yearly, but are a source of income annually and also meet household consumption needs. This is important to keep in mind, in the light of the meagre one time payments given as compensation to families who are displaced and lose their access to this resource. An example is from the refinery and smelter sites in Visakhapatnam itself where the compensation given per tree owned by the

displaced families was a mere Rs. 600/-.

- Livestock and poultry, in addition, to being used for household consumption are a safety net for the families during financial crisis. Distress sale of both are done to meet emergency requirements of cash for buying household goods, health, education or house repair. With the increasing pressure on land, scarcity of fodder was faced by the interviewees. Monocultures also reduce grazing lands and affect fodder source. Greater investment to improving common property resources like grazing lands is required.
- The semi-permanent housing, like those being promoted under the Indiramma Programme imposes a hidden burden on the families, even while claiming that beneficiaries are not required to bear any costs. The initial installment is released only when the foundation is laid, for which the *adivasis* have to take loans. The expenditure incurred on house repairs by the residents of Beespuram where several of the villagers have accessed the scheme is quite high. These structures require annual inputs into maintenance and repairs annually. Traditional housing, like in Nimmalpadu, requires less cash expenditure for annual maintenance and the raw materials can be accessed from the forests nearby. The villagers in Beespuram had taken loans from moneylenders and through SHGs under another scheme, the Indira Kranthi Pathakam, to meet the extra costs incurred in construction and for initial cost of laying the foundation. In addition, schemes launched by the

government are often politically motivated for vote gains. They often also run into roadblocks. Launched as a flagship programme of the state government, the Indiramma housing scheme is facing several issues—rising cement, steel and sand prices that place an additional burden on the beneficiaries, corruption among officials, incomplete construction and banks not giving loans easily.

- MGNREGA can be an important source of income for the families. Creating more jobs under MGNREGA can help reduce dependency on migration and wage labour and improve the incomes. Access to water for drinking and household purposes is a huge problem in the *adivasi* villages. Soil and water conservation works and protection of the natural springs, ponds and streams can help address the problem; these regeneration works should be taken up under MGNREGA. At present the number of days of employment accessed by the villagers in both the study sites is quite low and there is also a disparity in wage rates. The primary reason for this is the lack of awareness among the villagers about their rights to demand work and a minimum pay. Where the NGOs are active they are able to provide for 100 days work per family, but this is not often the case. Implementation and monitoring is severely lacking. In a site like Beespuram, where only one crop is grown during the rainy season, there is considerable scope for taking up developmental works under the MGNREGA as the families have additional free time on their hands.
- The cash expenditure of the tribal families on items of food (except

rice) in the study areas on the DR Depots is observed to be low. This is primarily because food crops are grown by them on their lands and retained for domestic consumption. Vegetables, tubers and fruits are also accessed from the forest. Other problems also discourage the tribal people from depending on the DR Depots. These include difficulty in access, non-availability of stocks, limited manpower to run the shop, irregular working, erratic timings, diversion of stock and charging higher price for commodities. Where essential commodities like rice or salt need to be purchased by the *adivasis* this causes severe problems.

- Another interesting factor that the data collected throws up is that while the purchase of sugar from DR Depots is common among the families in Beespuram, there are only two interviewees in Nimmalpadu who mentioned that they had bought sugar from the DR Depots. This indicates a change in consumption pattern. Beespuram being a roadside village, and more exposed to outside influences have taken to consumption of tea. Also in the case of Nimmalpadu, tamarind is exchanged for jaggery. Beespuram has fewer tamarind trees and their dependence on DR Depots for sugar is higher.
- Migration from Nimmalpadu village is lower than that of Beespuram, as seen from the data collected, while daily wage labour was preferred among the residents of Nimmalpadu. This was because there was greater daily wage work available in Nimmalpadu where agriculture was a yearlong activity owing to better rainfall and soil fertility. In the case of Beespuram, daily wage labour

was available only during the rainy season, and with only one agricultural crop they had more time on their hands which they spend working as migrants in cities and towns nearby. Both daily wage and migration contributed to the incomes of the household, but conservation of soil and water resources and inputs to improve fertility of land can help increase agricultural production, grow greater variety of crops and thereby reduce migration to a great extent.

- The income and expenditure account of tribal families, where only cash transactions are concerned, does not necessarily show a profit or a favourable balance. However, it is important to keep in mind that a large part of the household needs of food, fuelwood, timber and medicines are met from agriculture and the forests for which they do not incur any cash expenditure. Their limited expenditure on the PDS system for the food items is a clear indication of this. The system of barter also exists where, for example, forest produce like tamarind are exchanged for items like jaggery. Debts incurred are paid off by pledging a part of the next year's agricultural produce, yield from trees or NTFP collected from the forest. This dependence on the natural resources and subsistence agriculture needs to be acknowledged by considering sustainable livelihood options. The

local markets *santhas*, are an important aspect of the economic life of the *adivasis*. It is accessed by each of the families to buy, sell and barter produce and goods. The cumulative business transacted in these markets would translate into considerable monetary terms and their importance needs to be recognised.

The tribal peoples' life is inextricably linked to the land, water resources and forests. Conserving and protecting resources, developing methods to improve yields, encouraging sustainable use of resources should be given priority. Developing suitable market linkages will enable them to get appropriate prices for their produce. The region also receives a large number of tourists and there is considerable scope for promoting eco-tourism in these parts. Done in collaboration with the local *adivasi* communities it can help not only conserve the natural resources but provide an additional source of income. Along with this it is integral to provide development support in education, health and necessary infrastructure like accessible roads and transport facilities with a serious intent to improve the quality of life of the *adivasis* instead of the mock publicity of providing them as was seen in the road construction for the Birla Periclase calcite mining project in Nimmalapadu. The people's campaign opposing mining and the road construction between 1992 and 1994 was projected as an anti-development campaign by the government which argued that the road was being constructed for the utility of the local villages and for providing public transport to them. However, even after almost two decades of the road being built, there is no public transport provided by the government which clearly shows that the road was only meant for the mining company. The villages of Nimmalapadu and around still do not have a government primary school either.





Forested hill slopes of Galikonda, a site proposed for bauxite mining: Beespuram, one of the study sites, is located on its foothills

Picture courtesy P. Sekhsaria

Trying to improve cash incomes or wage employment will not necessarily improve their lifestyle. The traditional systems of agriculture and forest use should be given recognition as sustainable methods to meet their requirements while also providing development interventions.

Part 2: Case study on impacts of displacement on local communities as a result of bauxite mining Koraput district⁶

Background to the district

Koraput is a tribal dominated district with lush forests and rich mineral resources located in the southernmost part of the Orissa state. It is situated between the 17.4° N to 20.7 °N latitude and 81.24.4 °E to 84.2 ° E longitude. The district is bounded by Rayagada district (of Orissa) and Srikakulam district (Andhra Pradesh) in the east, Bastar district (Madhya Pradesh) in the west, Nowrangpur district in the north (Orissa) and Vizianagaram and Visakhapatnam district in the south (of Andhra Pradesh).

The total area of the district is 8,379 sq km, altitude is 1,000 m above mean sea level and average rainfall of 1,522 mm. The

temperature ranges here between a minimum of 12°C and maximum of 38°C. Humidity ranges between 92 percent saturation in August and September to 60 percent in March and May. The district is located on the Eastern Ghats and has a wavy topography. The main rivers that pass through this district are Indravati, Kolab and Machkund. It is divided into four distinct natural divisions based on the altitude of the landscape ranging between 500 feet and 3,000 feet plateau. Seventy percent of the district was at one point covered with forests. Today only 1,410 sq km or 16.8 percentage of the district has a forest cover.

The total population of the district is 11,77,954 while the *adivasi* population numbers 585,830 and constitutes 50.66 percent of the population in the district, living mostly in the Scheduled Area. The population is extremely poor and backward. Of the 62 tribal communities in Orissa, 52 of them live in the district. These include some of the most primitive tribes like the Bondas, Parojas and Koyas. Administratively the district is divided into 14 blocks.

Koraput is a mineral rich district and has one of the largest deposits of bauxite in the country, with the major deposits located in five sites—Panchpatmali, Potangi, Balada, Maliparbat and Kodingamali. The two sites where mining is being carried out is Panchpatmali and Maliparbat. Of these, Panchpatmali, is the site of the biggest bauxite mine (open-cast) in the country with a capacity of 4.8 million tonnes per annum. The mining and processing of the ore is carried out by NALCO, set up specifically for this purpose. Incorporated in 1981 as a public sector enterprise of the Government of India, NALCO today has Asia's largest integrated aluminium complex. The ore from the mines in Panchpatmali is carried by a conveyor belt 14.6 km long to the refinery site in Damanjodi town, in Koraput district itself, where it is refined into

⁶ The data for this case study was collected primarily for a parallel study conducted in 2009-10 on the impacts of mining on children. Dhaatri-Samata and HAQ. 2010. India's childhood in the 'pits': A report on the impacts of mining on children in India. Dhaatri Resource Centre for Women and Children-Samata, Visakhapatnam, Andhra Pradesh and HAQ: Centre for Child Rights, New Delhi.

alumina. The captive power plant and the smelter in Angul district convert the alumina into aluminium. The mechanised storage and ship handling facilities of NALCO set up in the Visakhapatnam port are used for exporting in bulk and importing caustic soda required for the refining process. The mining in the region was pushed ahead with promises of economic prosperity and improved lives for the people in the region.

However, NALCOs operations in the different locations, including the mining at Panchpatmali and refinery at Damanjodi in Koraput district, have had severe social, economic, cultural and environmental impacts. One of the continuing issues is that of displacement and inadequate compensation/rehabilitation.

Displacement and compensation/rehabilitation

The total land area acquired for the NALCO operations in Koraput district was 4,070.63 ha (10,058.76 acres). Of this, 172.92 ha (427.30 acres) was for the mines, 1,067.94 ha (2,638.96 acres) was for the township and 2,829.76 ha (6,992.50 acres) was for the plant. Of the land acquired 2,805.49 ha (6,932.51 acres) or 40.94 percent was government land and 2,834.56 ha (7,004.35 acres) or 41.36 percent was agricultural land. The villagers depended on this land during their lean months living off the fruit, seeds, leaves and flowers and were used by 70 villages to meet their sanitary requirements.

There are different estimates of the number of displaced persons. From the primary data collected with the Project Affected Persons (PAPs) it was gathered that a total of 26 villages around the mining and refinery sites in Koraput district have been directly or indirectly affected (Narayanpatna, Koraput, Dasmathpur, Surabeda, Potangi, Semliguda and Laxmipur blocks) with 597 families

directly displaced both in terms of land and housing. This action research was conducted in the villages of Amalabadi, Champapadar, Damanjodi, Goudaguda, Janiguda, Marichimala and Putsil, which are apparently some of the most affected by the project. However, according to the statements made by the displaced people the recent update of displaced families for NALCO is 631 families. One source gives the total number of people displaced at Damanjodi to be nearly 3,000 from 19 villages of which 15 villages with 610 families and population of 2,368 were fully displaced and four villages consisting of 178 families and a population of 736 were partially displaced. A statement by the Minister of Mines (in March 2010) gave the number of displaced as 600 families in Damanjodi of which 598 had been rehabilitated in two settlement colonies, with the remaining two families opting to remain in their native place.

Those displaced were resettled in two DP Camps, one at Amalabadi and others at a camp near the village of Champapadar. The DP Camp at Champapadar is situated far away from the township of the company while that of Amalabadi is closer. As per the initial resettlement made by NALCO, 597 families were taken as displaced families. Out of these, 441 were rehabilitated in the Amalabadi DP Camp, which was meant to provide resettlement for 13 villages affected by the project. This was later increased by another 156, totaling to 597. A second DP Camp at Champapadar was initiated for 75 households for the displaced from another affected village, Khoraguda, and also those who were affected from Champapadar village itself. At present there are more than 200 families who are living in the Champapadar DP Camp. The housing provided by NALCO consists of 10x10 feet structures. As rehabilitation was never properly completed, the PAPs invested their own money in building their houses or

supplementing the inadequate housing provided by the company. The traditional homesteads of the communities included space for livestock, storage and drying of agricultural produce and space for kitchen gardens to grow vegetables. In the houses provided at DP camps there is barely enough space for the family. The food basket is devoid of the earlier variety and in the absence of grazing grounds and difficulty in getting fodder there is limited scope for keeping livestock. There are hardly any cattle visible today in the DP Camps. Collecting fuelwood for domestic use is also a huge problem.

The two DP Camps were provided with basic drinking water facilities. Some partially affected villages have tube wells and taps but most still depend on stream and river water for their household use. The water problem is acute during the dry summer months. The company does not provide any medical facilities for the affected from these villages and basic services like drinking water, electricity and education are either not provided or marginally provided by the company.

A total amount of Rs. 1,48,73,474.52 is said to have been paid as compensation. Most of the villages affected had lost fertile agricultural land. Damanjodi had the highest number of displaced families where agricultural land was alienated. Those who lost land were given a compensation of Rs. 3,300/- per acre for paddy land and Rs. 1,100/- per acre for dry land in Damanjodi. In another village Putsil, the average compensation received per family was Rs. 1,300/- per acre. In Marchimala 50 households who lost their land but not their houses, were given an average compensation of Rs. 1,500/- per acre. In Janiguda village more than 240 acres of land was taken by the company but people here were not given any alternate livelihood. A cash compensation averaging Rs. 1,500/- per acre was all that was provided.

Compensation for land was given only to those farmers who had *pattas*, and several *adivasi* and *dalit* families who did not possess *pattas* never received compensation and lost their only source of livelihood. They were now working as landless labourers in agriculture, in rearing animals or as daily wage labourers in the construction industry. In the case of Amalabadi, villagers who were already living there were also displaced from their lands to provide for the oustees. No compensation was paid for common property resources and a mere Rs. 150/- was paid on average per tree. The oustees had little negotiating skills and lost out in the process of receiving adequate compensation and rehabilitation. The *adivasis* fared the worst as they had no exposure to the workings of the mainstream market. Cash received was spent on repaying old loans, purchasing items of daily necessities or wasted on consumer goods without investment in productive assets.

Employment with the company was given where the family lost both house and land, and that too only to the eldest son. The work was semi-skilled or unskilled (drivers, operators, machine attendants or labour) and even after 25 years of the company's existence only a few, about seven, of them had been promoted from unskilled to semi-skilled level. Those who did not receive employment were working as manual labour under contractors. Of the displaced who got jobs, 108 persons are dead and more than 20 have retired, but none of their family members were given jobs after them. So far only 20 women from the displaced communities are working in the company according to the PAPs. In the Champapadar DP Camp 59 persons of the 75 displaced families got jobs of which seven were from the Scheduled Caste (SC) community and rest were from the (Other Backward Classes (OBCs). In the Amalabadi DP Camp, of the 597 families only 200 managed to get jobs

in the company. In Putsil village where 18 households lost both land and house the families were given a job. In Marchimala where more than 50 households were affected only one person who lost both land and house was given a job with the company. Here again the *adivasis* were the worst affected as they had no experience with coping with a wage market, and the extremely high levels of illiteracy proved to be an additional handicap.

Education status of children living in the affected villages

Anganwadis visited in the study villages were in a deplorable condition with malnutrition evident among the children. At the *anganwadi* at Paraja street, one of the three in Goudaguda, the worker reported that there were 51 children enrolled in the age group upto 5 years. Of these 11 children suffered from grade III malnutrition, 12 children from grade I malnutrition, 10 were within normal range and the rest 18 are in the category of absolute malnutrition. Very few of the children were regular at the *anganwadi* as the facilities were negligent. Except for occasional health camps by NALCO, there are no medical facilities. The *anganwadi* worker reported that there were cases of tuberculosis but could not give the correct number. There is an *anganwadi* at Janiguda but the worker lives in another village and visits only occasionally. Champapadar has one *anganwadi* centre that does not function on a regular basis.

There are two schools maintained by NALCO—Delhi Public School which is an English medium school and the Saraswathi Vidya Mandir an Oriya medium school. It was seen that the educational institutions set up by the company were for the children of the employees and management staff and not for the local communities affected. Hence, almost none of the *adivasi* and *dalit* children of the displaced families or surrounding project affected villages attend

these schools. For one, the schools are located close to the township where the employees live, whereas the affected *adivasi* and *dalit* communities and the DP Camps are located far away from these institutions and have very unreliable transport facilities. The children were also unable to cope with the curriculum and many of them drop-out by high school, and are taken for agricultural labour or for cattle grazing. Besides, social barriers between the *adivasi* and *dalit* children and the children of the employees and the management further discouraged attendance. Most of the children attended the government primary and upper primary schools that have poor infrastructure and quality of teaching. In the school visited at Janiguda, there are two regular teachers and one para-teacher but only the headmaster visits the school regularly, as reported by the villagers. The school building is in a very poor condition and has minimal infrastructure. School drop-out rates are seen to be alarmingly high in the study villages.

Child labour

Child labour is a clear indication of the social and economic status of a community, coupled with the inaccessibility to basic education, reduced livelihood opportunities and landlessness due to mining. All this has resulted in more children dropping out of school to supplement the family incomes. The high rate of child labour in the area is fuelled by the demands of the township with young girls working as domestic help and maids. The youth interviewed stated that they were unable to qualify for the matriculation examination due to their poor school education, and since very few were able to attend college, they end up as cleaners and drivers of trucks, ply autos and buses for private contractors or are hired in petty shops and business (Table 15: Some data on child labour and drop-outs from study villages, Koraput district).

Table 15: Some data on child labour and drop-outs from study villages, Koraput district

Block	Village	Total no. of children	Total no. of school going children	No. of child labourers	No. of school drop-outs
Damanjodi	Amalabadi	800–900	250–300	150	20 (in 2009)
Koraput	Champapadar	300	60–70	50–70	----
Damanjodi	Damanjodi	3,000–3,500	Around 2,500	500–600	----
Kakiriguma	Gouduguda	650–700	222	60	15–20 (in 2009)
Damanjodi	Janiguda	Around 250	30–35	Around 150	More than 150

Note: Data provided by local community leaders (figures are approximate based on people's estimate) '----' = Data not available

Source: Dhaatri-Samata and HAQ. 2010. India's childhood in the 'pits': A report on the impacts of mining on children in India. Dhaatri Resource Centre for Women and Children-Samata, Visakhapatnam, Andhra Pradesh and HAQ: Centre for Child Rights, New Delhi.

The child labour is concentrated around the NALCO area although there is no child labour within the company premises. According to the locals there are 500–600 children working in various activities in Damanjodi. A majority are migrants residing in the Mathalput slum, which is an extension of the Damanjodi town. Both boys and girls from the DP Camps in Champapadar also work under contractors with around 30–40 male children below the age of 18 years working as daily wage labour under contractors and 20–30 female children working as domestic labour or under contractors. In Amalabadi too children were engaged in daily wage activities in the mining township and its surrounding area, and these were those who came from women-headed households. In the other villages too the testimonies of the residents gave an indication of the number of children working—from a handful in Putsil, to more than 50 in Goudaguda and as high as 150 or more in Janiguda.

Many of these children were working in hotels, *dhabas* and petty shops. A

conservative estimate of child labourers numbering 500–1,000 of the project affected are working in the regions of Laxmipur, Kakiriguma, Damanjodi town, Korpaut, Semliguda and Potangi. Many youth are reported to have migrated to the cities of Chennai, Mumbai and Hyderabad in search of livelihoods.

Health and environment concerns

Air and water pollution are reported to be high, by the local community. The most adversely affected villages are Kutundi, Karadiguda, Bhitarguda, Lachuani and Gouduguda. Water scarcity is one of the major problems faced by the people. Women and children have to walk long distances to collect water. People from these villages stated that due to mining activities, traditional water sources (natural springs) of the Panchpatmali hills have dried up and some of the perennial streams have reduced flow. Hence water for both domestic uses and agriculture has become inaccessible, particularly in summer. Contamination of the water bodies due to run-off from mine tailings and unsafe sewage disposal due to

expansion of the local and migrant population as a result of the mining project is another major problem identified by the people. Therefore water related diseases like diarrhoea and skin problems were common. Terminal illnesses like cancer were also reported by the community leaders and union members, although this has to be medically verified. Of the 18 employed in the NALCO mines from Putsil village, 10 persons have died and the villagers said that they had been suffering from cancer as understood by them from the reports of NALCO hospital. In Janiguda village 30–40 cases of tuberculosis were detected among daily wage labourers, during the study. The village also complained of contamination in their drinking water and how their health is affected due to this.

Government health infrastructure consisted of one sub-health centre in Goudaguda and Amalabadi each, and one PHC at Damanjodi.

Social disturbance and sexual harassment

Villagers have reported 10–15 cases of sexual harassment of the women from their community. Women walking to the mine sites for daily wage work have faced intimidation by migrant labour and truck drivers. There are a large number of destitute women, single mothers, and widows who with no other source of livelihood have been forced into the sex trade in the fringes of Damanjodi and Mathalput. Also there were at least 100–200 HIV/AIDs affected persons but it is difficult to give accurate estimates. Damanjodi has acquired the reputation of being the second Ganjam (a city in Koraput district with high incidence of HIV/AIDS) in terms of HIV cases. Considerable numbers of migrant workers come from Ganjam and the coastal belt. The social environment of the DP camps has changed from a village community to a slum community with problems like alcoholism, domestic

violence, theft and crime being common. Although basic amenities do not exist in DP camps, liquor is the most easily available commodity with liquor shops set up within the rehabilitated colonies. In Damanjodi it is no different, and the wages earned by men are directly drained out for alcohol, which is a cause for domestic violence, frequent brawls and physical abuse on women. Children, especially from the *adivasi* community are exposed to this degenerate social order, where violence, poverty and destitution are the realities.

The impacts are magnified in the case of women. Women who were once self-employed and contributing to agricultural production are today reduced to the status of manual workers. Loss of common property land had manifold impacts on women who were the primary utilisers of these resources. The DP Camps do not provide the space or the protection that the women had in their villages, and are exposed to higher levels of domestic violence. The compensation and rehabilitation process was gender blind and this is evident from the lowered status of women both within the confines of their house in DP camps and in their destitution and helplessness in society. The struggle continues for them and a huge protest rally was taken out by the affected families in 2009 to demand for inclusion of women-headed households in the rehabilitation among the PAPs.

What the communities lost

Before the commencement of mining and other developmental projects, the region had vast natural resources on which the *adivasis* depended for their survival. Thick deciduous forests and fertile agricultural lands covered the area. The *adivasis* cultivated two crops a year on rainfed cultivation on a subsistence basis to meet their needs of food security. The entire family worked on the agricultural lands as a single unit sharing the produce. Collection

of a range NTFP and their sale was an important source of livelihood as well, and said to have sustained families here for a period of 6 months. Even with limited developmental support—education, health, road, transport—the *adivasis* were able to still survive on the natural resource wealth of the region.

With the commencement of the mining and refinery project, as well as other projects, the socio-economic fabric of the lives of the local communities, especially of the *adivasis*, has been ripped apart. Mining was declared as the need of the hour for the nation as well as for the local population and it was meant to bring economic prosperity for both and therefore, the NALCO bauxite mining project opened up in Damanjodi, Orissa. However, the reality of mining was a stark contrast. The meetings with the village elders, PAP unions and discussions with women in the DP Camps and affected villages reflect the deplorable status of the local people and the condition of children who were directly or indirectly affected, behind the apparent urbanisation witnessed around the Damanjodi town. The percentage of landless among the displaced communities has increased significantly, from 20 percent prior to mining to as much as 88 percent post mining.⁷ The meagre compensation, one job per family criteria, dependence on daily wage labour, insensitivity to their age old traditions and culture, destruction of the common property resources, depletion of water resources, disappearing forests and pollution of the environment are all in contradiction to the promised economic prosperity. The rehabilitation of the displaced even after three decades remains incomplete which is evident from the continuing protests by the DPs and PAPs. It is evident that the benefits of bauxite mining

⁷ This percentage is from among 100 families displaced as a result of mining by NALCO

and its allied activities do not seem to have trickled down to the local communities. For all its bauxite reserves, Koraput is still one of the poorest districts in Orissa.

Major findings and discussion

Mining and its allied activities were promised as a means of development and economic prosperity for the local communities of Koraput. But the prevailing conditions of the DPs and the PAPs do not reflect the same.

- Impact on the biodiversity, food security and traditional livelihood has been reported to be the most negative for the *adivasis* and local communities. Conversion of a large area of agricultural land for purposes of mining, township, slums and extended settlements has resulted in reduced agricultural activities around the mining region that is reflected in the growing levels of migration outside the area in search of employment. Forest cover and biodiversity of the area has been replaced by monocultural compensatory afforestation by the company through plantation of eucalyptus and silver oak species in a very scattered manner. The traditional practices of hunting and collection of forest produce has become negligible around the NALCO area. Forest degeneration for firewood and housing to cater to the sudden swell in the external population since the mining project came up has created severe crisis of firewood, grass for thatching of houses and house construction timber species
- Rehabilitation and resettlement was not carried out properly and protests continue to this day. The initial move from their ancestral homes to the temporary camp and then to the Amalabadi camp caused tremendous upheaval in the lives of the oustees. The earlier homesteads had sheds for livestock and poultry and space for kitchen gardens, but the current 10x10 feet structures provided at the DP Camps were

- barely enough for the families. Drinking water, fuelwood and access to facilities like education and health were inadequate. Similar was the plight of the PAPs who were made several promises few of which have been kept. In contrast the townships for the employees and management have been provided with all amenities.
- Cash compensation paid for acquired land, houses, trees and other structures was severely inadequate. The compensation of land was below the market rates, especially for paddy land (Annexure 3: Compensation paid for land and prevailing market value). A mere Rs. 150/- was paid for every full grown tree. The compensation did not last the oustees long and was spent on buying daily necessities, purchasing consumer commodities like watches, radios, etc., or repaying debts, and many had nothing left to invest in land or other capital assets. Those displaced, especially the *adivasis*, were mainly illiterate and non-materialistic, with limited exposure to the outside world. They had little or no negotiating skills that could have enabled them to get a better package and took whatever came their way.
 - No compensation was paid for common property resources. Loss of common property resources was a big blow, especially for the *adivasis* for whom NTFP collection was a major activity and income source. The DP Camps also did not have any grazing grounds, discouraging the families from keeping any livestock.
 - The provision of one job and to only one adult son per family was discriminatory towards women. Jobs provided were of unskilled and semi-skilled nature, with no training for skill upgradation. Employment provides limited security and that too for only one generation. Those who were not given employment were reduced to working as daily wage labour.
 - Earlier the entire family unit was engaged in productive agricultural activity with the contribution of all members. The produce from the lands, supplemented by the forests, provided a degree of food security to the families. The rehabilitation completely failed to provide any form of land-based livelihood opportunity that could enable the displaced to grow even vegetables, tubers or horticultural crops for household consumption.
 - Children were found to be malnourished and among the school going children drop-out rate was very high. Poor infrastructure and quality of teaching were reasons for the high drop-out rate. Poverty of the families forced children into working as domestic help, daily wage labour and manual workers. Child labour is rampant in the area and on the increase.
 - Women, among all the groups, were the most affected. The adverse impacts of losing land, access to forest and common property resources is experienced most by women. They have been exposed to greater social and physical threats, and sexual harassment in the DP Camps, affected villages and work sites. With jobs being held by the men, women have become solely dependent on men and this has undermined their role in the house.
 - Social disturbances have increased in the post-mining scenario with increasing domestic violence and spending on consumption of liquor.
 - Among the groups the *adivasis* were the worst affected. Their low literacy levels, inadequate negotiating skills and non-exposure to mainstream society resulted in them losing out the most in terms of compensation or employment benefits. The other communities like the *dalits* and the OBCs were able to adapt more quickly to the changes and developed an edge over the tribal communities.

- The environment is facing severe threat with dust and water pollution levels causing severe health hazards. Depleting water resources has added to the woes of the local communities. The perennial streams around Damanjodi where fishing was a very important livelihood and a source of food with several mythological fables surrounding the rivers in this area dry up in the summer now with highly reduced fishing activities. The sacred grove adjacent to the NALCO project which consisted of large bamboo growth and was deified by the *adivasis* traditionally is almost reduced to a few clumps today. Smuggling of sandalwood in this belt was at its highest until a few years ago and now there are barely any sandalwood trees found today. The mine tailings—the flyash pond and the red mud pond situated on top of the hill next to the NALCO plant—are an environmental hazard to the villages downstream as the heavy monsoon rains wash the effluents into the agricultural lands and streams below. Villagers have reported skin diseases and cancer suspected deaths in the DP camp areas and surrounding villages although the latter has not been corroborated with medical tests.
- The facilities provided at the DP Camps for those displaced are a stark contrast to those provided for the employees and management in the township. The former have inadequate water, health, education facilities while the townships are provided with all amenities. This has led to resentment among the DP Camp residents.
- NALCO has been allocating a mere 1 percent of its net profit towards corporate social responsibility activities. Till 2009-10 the total amount spent for peripheral development programmes was a total Rs. 136.87 crores of which Rs. 48.88 crores (40 percent) was for the Damanjodi sector. This is a miniscule amount.

Section III: Recommendations and Conclusion

Adivasi economy is a fascinating and a truly sustainable form of life closely bound to nature. This is clearly reflected in the study areas where the diversity of food and the multiplicity of incomes, although modest, are an indication that it is a planned form of economy with a deep understanding of the vagaries of nature. Therefore there is a planning with diversity of livelihoods. The village market is a vital link, not just for their food but for non-food items as far as their consumption is concerned. In terms of incomes, the local-ness of the market makes for easy supply of commodities with low risks and subsistence incomes. Therefore also, farmers' suicides are unheard of in the traditional economy model and agricultural system of the *adivasis*.

The multiplicity of crops and the alternative sustenance through forest resources always ensured that some form of food was available for survival. To assess this system in a market-based or cash-based economy in order to gauge incomes and expenditures does not synchronise with their way of life. Yet, an attempt was made to understand this system in the study from the perspective of sustenance and access to resources rather than a monetised form of incomes. It was seen that where cash has to be used more in the roadside villages like Beespuram, they were only able to consume little despite the fact that they had coffee plantations. The cash expenditure is much higher here as input cost for coffee is higher than that for agriculture and there was a greater dependence on the PDS as well. Where procurement of food was more accessible the communities had greater opportunity of food security.

This study also shows that growth in monetary incomes does not necessarily lead to growth in quality of consumption or food

security. The rich nutritive value of the food and access to several medicinal and domestic resources should not be underplayed in the development planning of the current politico-economic model where export and foreign exchange models of revenue are considered to trickle down to the forest-dwelling communities. On the contrary, the comparative study in Koraput area where the *adivasis* have experienced large mining projects in their areas indicates that the overall effects of monetised economy on food security and social security may actually be degenerative.

Thus, a serious review and cost-benefit analysis of land and traditional resource-based economy *vis-à-vis* resource exploitation models like extractive industries in these ecologically rich areas are urgently required. Community perspectives strongly condemn the new proposals. The state should not override this traditional wisdom which has protected the Eastern Ghats since the Paleolithic age. Although coffee was introduced by the government, the same machinery is working against the longevity of this crop by bringing in private mining interests in precisely the same areas. It is for the state to review its erratic policies as its investments in such experiments are high and affect a large population.

The introduction of coffee, the first monocultural cash crop in these forest areas generated a new form of cash economy model. As a government scheme it came to be implemented in large areas whether or not the people aspired for this shift in land utilisation. However, this has led to other cash-based crops and corporatised forms of economy in this region where even in the heart of this coffee land and forest land, cash crops like tobacco and sugarcane have started being pushed by private players. How much of land area should be protected to traditional ways of farming and what extent is to be flirted with such neo-

economic models are again a contentious issues that the state has to resolve.

Food security and malnutrition are starkly and ironically glaring at the state in this land of traditional abundance. Malnutrition has to be addressed seriously and so also the increasing seasonal illnesses and mortality rates, less with first-aid and emergency medical services, and more with improving the natural resource base of the Eastern Ghats.

The dwindling water situation and the water crisis in these hills where water was meant to be flowing like blood across the hills (Raktakonda) through the innumerable streams and springs, is a reality that is serious. Less water guzzling cash crops and lesser earth plundering land use mechanisms need to be adopted as an economic model in these regions. The state should look at ensuring better access to developmental schemes like the MGNREGA to improve village infrastructure, soil fertility and water conservation rather than promote environmentally destructive programmes like mining.

Legal safeguards

The legal and Constitutional safeguards for the *adivasi* people as well as the ecological resources of the Eastern Ghats need to be respected first by the state not only for the benefit of the *adivasis* but also for the health of the hills and political peace of the region. It is the ecological health and food security that will enable peace to the *adivasis* rather than the violent methods of suppression and monetary incentives like the Integrated Action Plan of the Government of India (to fight the issues of Naxalism).

The region is protected under the Constitution and by the several laws largely, as a measure of safeguarding the rights of the *adivasi* communities and the ecological resources and environment of the region. These need to be enforced in their true spirit.

Land alienation and violation of the Land Transfer Regulation Act, for purposes of private industrial activities is going to have a serious impact on the ecological balance as it would lead to further deforestation by local populations as well as the outsiders. In NALCO area, for instance, it was seen that a large area of land (around 10,000 ha) beyond the requirement of mining purposes was acquired. Today most of it remains unutilised and the communities displaced from these lands were forced to migrate or occupy forest lands. In-migration as a result of mining has led to occupation of a large area of land by outsiders causing pressure on the land as well as the forest. These impacts have to be given the seriousness they deserve and further land alienation should be stopped for such private and industrial purposes if the Eastern Ghats have to be protected.

Consultation of *adivasi* communities through the institution of *Gram Sabhas* is being completely ignored. The purpose of the PESA Act is being negated by the government either by pretentious consultations or by completely bypassing the consultative process. Local communities have a right to protect the resources of their region and also to take decisions over these resources. Without their participation, it would be impossible for the state to protect the natural resources on its own. It was in recognition of this reality that the CFM processes were initiated throughout the country. Government cannot selectively choose to ignore or consult but have a more consistent and people-friendly approach to development of our ecologically fragile regions.

The manner in which the Environment Protection Act of 1986 is being made a mockery of through engineered public hearings has to be stopped immediately. This Act along with the PESA and compliance with the United Nations Declaration on the Rights of Indigenous

Peoples and its recognition of the right to free, prior and informed consent have to be respected fully and in the spirit of the Constitution.

The Forest Conservation Act 1980 cannot be used as a weapon against the local communities for their usufructory rights whereas its dilution is justified for purposes of industrialisation and commercialisation. It is no longer small patches of isolated or degraded forests that are being denotified for mining and other non-forestry activities, but the cumulative effect of diverting forest lands for multiple commercial activities today is enormous. This cumulative impact has to be duly assessed. There is more threat to the forest cover today by large-scale projects in these regions than by individual and local communities.

The FRA while it has to be effected immediately for settling the long pending rights of the forest dwellers, has to be supported by other ecologically sensitive ways of enhancing the land utilisation and livelihoods of these communities. Food security should be an important component of this planning along with increasing the incomes. Today planning for land utilisation is erratic and *ad hoc*. It is important for planning to give priority for local capacities and locally manageable systems of land use and income generation than exotic and global market-oriented land utilisation keeping in mind that *adivasi* communities' vulnerability to external exploitation still persists on a huge scale.

These legal safeguards are supported by the Samatha Judgment which was fought in these very lands of Ananthagiri. However, the implementation of the Judgment has required continuous people's vigilance and protest where the natural resources are constantly under threat by non-forestry and private industrial mining activities. The Supreme Court, in its lengthy discourse of the case and the justification of upholding the Fifth Schedule of the Constitution,

recognised the traditional land utilisation patterns and way of life of the *adivasis* and the Constitutional obligation to protect these rights in the interests of the ecological health as well as the social security of this region. The final test to the survival of the Eastern Ghats lies in the future prudence of the state in respecting this Constitutional mandate.

Protective legal measures like the monopoly rights of the GCC over the forest produce in the state are more a hindrance to the *adivasis* than a safeguard. For far too long there has been a demand for GCC to fulfill its role as a support institution with its

support price and daily supplies than to function with the current monopoly restrictions that have only led to misuse of the law.

Although for administrative purposes, the Eastern Ghats are largely divided between Orissa, Andhra Pradesh and other states, for ecological purposes the economic decisions in any of the states affects the other. Large-scale projects and displacement in Orissa have been the cause for ecological degeneration in neighbouring Visakhapatnam. Hence, a balance in the biodiversity of the entire region needs to be planned with this macro- perspective.

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Annexes

Annexure 1: Local name, botanical name and trade/popular names		
Common name	Local name	Botanical name
Paddy	<i>Vari</i>	<i>Oryza sativa</i>
Cow pea	<i>Alasandlu</i>	<i>Vigna unguiculata</i>
Corn	<i>Mokkajonna</i>	<i>Zea mays</i>
Black gram	<i>Minimulu</i>	<i>Vigna mungo</i>
Finger millet	<i>Cholu/Ragulu</i>	<i>Eleusine coracana</i>
Little millet	<i>Samalu</i>	<i>Panicum sumatrense</i>
Green gram	<i>Pesarlu</i>	<i>Vigna radiata</i>
Foxtail millet	<i>Korralu</i>	<i>Setaria italica</i>
Jowar/Maize/Sorghum	<i>Jonnalu</i>	<i>Sorghum bicolor</i>
Horse gram	<i>Vluvalu</i>	<i>Dolichos uniflorus</i>
Pearl millet	<i>Gantelu</i>	<i>Pennisetum typhoides</i>
Peas	<i>Batani</i>	<i>Pisum sativum</i>
Kidney beans	<i>Rajma/Kontimali</i>	<i>Phaseolus vulgaris</i>
Red gram/pigeon pea	<i>Kondakandulu/sirikandulu</i>	<i>Cajanus cajan</i>
Broad beans	<i>Pedda chikkudkaya</i>	<i>Vicia faba</i>
Round beans	<i>Chikkudlu</i>	<i>Dolichos lablab</i>
Black eyed peas/Lobia	<i>Bobbarlu</i>	<i>Vigna catjang</i>
Tomato	<i>Tomato/thakkali/pulla vankaya</i>	<i>Solanum lycopersicum</i>
Chilly	<i>Miripakayalu</i>	<i>Capsicum annum</i>
Ginger	<i>Allam</i>	<i>Zingiber officinale</i>
Tobacco	<i>Pogaku</i>	<i>Nicotiana tabacum</i>
Pepper	<i>Miriyalu</i>	<i>Piper nigrum</i>
Niger	<i>Alusulu</i>	<i>Guizotia abyssynic</i>
Kusum	<i>Busichettu</i>	<i>Schleichera trijuga</i>
Coffee		<i>Coffea arabica</i>
Castor	<i>Amudamu</i>	<i>Ricinus communis</i>
Gingelly/sesame	<i>Nuvvulu</i>	<i>Sesamum indicum/orientale</i>
Mushroom	<i>Puttakokku</i>	
Hill broom	<i>Konda cheepuru gaddi</i>	<i>Thysanolaena maxima</i>
Lemon grass	<i>Dabbagaddi</i>	<i>Cymbopogon citratus</i>
Gum karaya	<i>Tanuku/yerrapoliki/tabsu</i>	<i>Sterculia urens</i>
Gum olibanum/Salai	<i>Anduga/dhupamu/tellaguppilagumu</i>	<i>Boswellia serrata</i>
Silk cotton	<i>Kondagogu</i>	<i>Cochlospermum gossypium</i>
Platter leaf tree	<i>Adda akku, adda pikka</i>	<i>Bauhinia vahlii</i>
Indian fir/mast tree	<i>Naramammidi</i>	<i>Polyalthia longifolia</i>

Common name	Local name	Botanical name
Arjun	<i>Maddi</i>	<i>Terminalia arjuna</i>
Bamboo	<i>Veduru</i>	<i>Bamboosa aurindinacea</i>
Beech	<i>Gummudu</i>	<i>Gmelina arborea</i>
Indian beech	<i>Kanuga</i>	<i>Pongamia glabra</i>
Tamarind	<i>Chintha</i>	<i>Tamarindus indica</i>
Tanners cassia	<i>Tangedu</i>	<i>Cassia auriculata</i>
India laurel	<i>Nallamaddi</i>	<i>Terminalia tomentosa</i>
Teak	<i>Teku</i>	<i>Tectonia grandis</i>
Soap nut	<i>Kunkudikaya</i>	<i>Sapindus emarginatus</i>
Soap pod	<i>Shikakai</i>	<i>Acacia concinna</i>
Champak	<i>Sampanga</i>	<i>Michella champaca</i>
Eucalyptus	<i>Nilagiri</i>	<i>Eucalyptus sp.</i>
Fishtail/toddy palm	<i>Jeelugu</i>	<i>Caryota urents</i>
Marking nut/black cashew	<i>Nallajeedi</i>	<i>Semecarpus anacardium</i>
Myrobalan	<i>Karakkaya</i>	<i>Terminalia chebula</i>
Oleander	<i>Ganneru</i>	<i>Nerium indicum</i>
Silver oak	<i>Parana</i>	<i>Grevillia robusta</i>
Cleaning nut	<i>Induga/katakamu</i>	<i>Strychnus potatorum</i>
Pomegranate	<i>Dannimma</i>	<i>Punica granatum</i>
Sal	<i>Yegisa</i>	<i>Pterocarpus marsupium</i>
Orange	<i>Kamala/narija</i>	<i>Citrus sinensis</i>
Custard apple	<i>Sitaphalam</i>	<i>Anona squamosa</i>
Gooseberry	<i>Vusiri/amla</i>	<i>Phyllanthus embilica</i>
Guava	<i>Jamma</i>	<i>Psidium guajava</i>
Jackfruit	<i>Panasa</i>	<i>Artocarpus heterophyllus</i>
Java plum	<i>Neredu</i>	<i>Syzygium cumini</i>
Lemon	<i>Nimma</i>	<i>Citrus sp.</i>
Mango	<i>Mammidi</i>	<i>Mangifera indica</i>
Banana	<i>Arati</i>	<i>Musa paradisiacal</i>
Date palm	<i>Eetha</i>	<i>Phoenix sylvestris</i>
Silk cotton	<i>Buruga/kondagogu</i>	<i>Bombax religiosum</i>
India cork tree	<i>Karakuchettu</i>	<i>Millingtonia hortensis</i>
Monkey-face tree	<i>Kunkuma</i>	<i>Mallotus philippensis</i>
Papaya	<i>Boppai</i>	<i>Carica papaya</i>
Serpentine/Rauvolfia root	<i>Pathalagaridi</i>	<i>Rauvolfia serpentina</i>
Siris	<i>Dirisinamu</i>	<i>Albizia lebbeck</i>
Sesbania	<i>Agise</i>	<i>Sesbania grandiflora</i>

Annexure 2: Quantity collected and revenue realised from some NTFP from 2002-03 to 2007-08

Commodity	2002-03		2003-04		2004-05		2005-06		2006-07		2007-08	
	Qty.	Val.	Qty.	Val.	Qty.	Val.	Qty.	Val.	Qty.	Val.	Qty.	Val.
Myrobalan	12,058	19.45	7,606	11.41	14,246	30.66	5,947.93	12.06	7,862.31	21.98	4,750.97	18.92
Marking nut	8,108	20.05	4,794	14.52	6,906	25.19	5,492.49	26.66	8,352.23	41.70	7,714.17	38.57
Honey	2,078	87.74	1,108	58.13	3,802	302.05	2,335.15	186.47	3,523.28	281.53	3,088	246.96
<i>Adda</i> leaf	12,625	42.50	9,867	34.93	13,645	51.54	8,865.83	37.95	9,140.67	46.70	6,820.95	32.82
Bark of India fir/mast tree	8,192	163.81	3,261	70.67	2,906	47.72	1,929.02	34.80	1,850.89	37.69	8,751.16	17.51
Hill brooms and wild brooms		69.55		80.71		64.57		57.10		66.30		63.80
Gooseberry											1,058.93	47.99
Total from NTFP*		1,660.82		1,356.44		2,949.70		1,997.68		2,076.66		1,396.68

Note: *This includes the total quantity and revenue from all NTFP collected (in addition to the ones mentioned above)

Qty.=Quantity in quintals and Val.=Rupees in lakhs

Source: APFD. 2009. Facts and figures 2009. Principal Chief Conservator of Forests, Andhra Pradesh Forest Department, Government of Andhra Pradesh, Hyderabad, India.

Annexure 3: Compensation paid for land and prevailing market value

Land type	Compensation paid		Market value	
	1981-82	1986-87	1981-82	1987
Paddy I	4,344	12,195	8,000–10,000	15,000–18,000
Paddy II	3,900	---	5,500–8,000	8,000–12,000
Paddy III	3,571	---	4,000–6,000	5,000–10,000
Dongar I	2,500	7,000	2,000–2,500	6,000–8,000
Dongar II	1,973	6,666	1,500–2,000	5,000–7,000
Dongar III	1,550	5,000	1,000–1,500	4,000–6,000

Source: Reddy, IUB. 1992. Displacement and rehabilitation. Mittal Publications, New Delhi, India.

Glossary

Acre: Unit of measurement for land area (1 acre = 0.404685642 ha).

Adda leaves/nuts/fibre: *Bauhinia vahili* or platter leaf vine a species of climber whose leaves are used to make plates, nuts are eaten and fibre use for making ropes.

Adivasi: Term used to refer to the indigenous or tribal population of India (Sanskrit language *adi*=beginning; *vasi*=dweller).

Agency areas: Fifth Schedule areas in the state of Andhra Pradesh are termed as agency areas.

Anganwadi: A government sponsored child care and mother care centre in India. It caters to children in the 0–6 age group. The word means ‘courtyard shelter’ in the Hindi language. These were started by the Indian government as a part of the ICDS programme to combat child hunger and malnutrition.

Below Poverty Line (BPL): An economic benchmark and poverty threshold used by the government of India to indicate economic disadvantage and to identify individuals and households in need of government assistance and aid. It is determined using various parameters which vary from state to state and within states.

Benami: These are purchases in false name of another person, who does not pay the consideration but merely lends his name, while the real title vests in another person who actually purchased the property and he is the beneficial owner.

Block: Block, *mandal*, *taluk* or *tehsil* is an administrative level in India below state and district.

Crore: Unit in Indian numbering (1 crore=10 million).

Dalit: This is a self-designation for a group of people traditionally regarded as low caste. *Dalits* are a mixed population of numerous caste groups all over South Asia, and speak various languages. The word ‘*dalit*’ comes from the Marathi language, and means ‘ground’, ‘suppressed’, ‘crushed’, or ‘broken to pieces’.

Dhaba: Small local restaurants usually found on roadsides and frequented by truck drivers.

Displaced Person (DP): A person forced to leave his or her home/native place.

District: Local administrative unit that generally form the tier of local government immediately below that of India's sub-national states and territories.

Dumpa: Refers to tuber

Gram Panchayat: Refers to the local government at the village level in India.

Gram Sabha: All men and women above 18 years of age in a village constitute a *Gram Sabha*.

Hectare (ha): A unit commonly used for measuring land area (1 ha=10,000 sq m).

Integrated Child Development Scheme (ICDS): The scheme was launched with the primary objective of improving the nutritional and health status of children in the age group 0–6 years.

Integrated Tribal Development Authority (ITDA): Generally contiguous areas the size of a block, *mandal* or even larger, in which the ST population makes up 50 percent or more of the total population.

Jaggery: Traditional non-refined whole cane sugar.

Kaccha: House made of mud with thatch or grass roofing that cannot usually withstand harsh weather.

Koora: Refers to vegetable/leafy vegetable

Lakh: Unit in Indian numbering [10 lakh (1,000,000)=1 million].

Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA): Earlier known as the National Rural Employment Guarantee Act 2005 it aims at enhancing the livelihood security of people in rural areas by guaranteeing 100 days of wage employment in a financial year to a rural household whose adult members volunteer to do unskilled manual work.

Mandal Parishad: Local government body at the block or *mandal* level.

Mandal: See 'block'.

Maoists: Also known as Naxals are an extremist group operating in different states in the country.

Mines Minerals (Development and Regulation) Act 1957 (MMDR Act): Act that provides for the regulation and development of mineral resources of India (currently being revised and in a draft stage).

Naxalite: See 'maoist'.

Non Timber Forest Produce: Produce that are obtained from the forest that does not involve harvesting trees and includes a wide variety of products like fuelwood, medicinal plants, food, fodder, seeds, nuts, grass, etc. Also referred to as non-wood forest produce or minor forest produce.

Other Backward Classes (OBC): In the Indian Constitution, OBCs are described as 'socially and educationally backward classes', and the government is enjoined to ensure their social and educational development.

Panchayat: Literally means assembly (*yat*) of five (*panch*) wise and respected elders chosen and accepted by the village community. Traditionally, these assemblies settled disputes between individuals and villages.

Parateachers: These are a large number of teachers recruited by the community (though not always), at less than the regular teacher pay scale, for the formal as well as the alternative schools, to meet the demand for basic education within the limited financial resources available, in the shortest possible time. In a broad sense, any appointment that is a deviation from the past practice in any particular state is referred to as a parateacher.

Pattas: Title deeds for lands or houses in India

Podu: Term used for shifting/slash and burn cultivation by the tribal people of Andhra Pradesh.

Primary Health Centre (PHC): These are the cornerstone of rural healthcare in India that are supposed to meet the health care needs of rural populations. Each PHC covers a population of 100,000 and is spread over about 100 villages.

Project Affected Person (PAP): Person affected by a development project but not directly displaced.

Public Distribution System (PDS): Facilitates the supply of food grains to the poor at a subsidised price.

Pucca: Refers to permanent and strong structures.

Rupees (Rs.): Official unit of currency in India.

Ryotwari: A system of revenue collection made effective in British India where the land revenue was imposed directly on the '*ryot*' i.e. the individual cultivators who actually worked the land.

Santha: Local name for the weekly markets in the tribal areas of Eastern Ghats, Andhra Pradesh

Scheduled Caste (SC): Any of the historically disadvantaged Indian castes of low rank, now under government protection. Some Scheduled Castes are also known as *dalits*.

Scheduled Tribe (ST): Specific indigenous peoples whose status is acknowledged to some formal degree by national legislation in India.

Tonne: Unit of measurement for weight (1 tonne = 1,000 kilogrammes)

Vulnerable Tribal Groups (VTGs): Tribal communities among the STs who live in near isolation in inaccessible habitats. They are characterised by a low rate of growth of population, pre-agricultural level of technology and extremely low levels of literacy.

Zamindars: Aristocratic and powerful landlords who owned large areas of land and ruled over the peasants who worked on their land.

Zilla Parishad: District councils or a local government body at the district level in India.



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