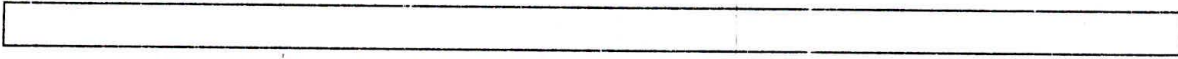
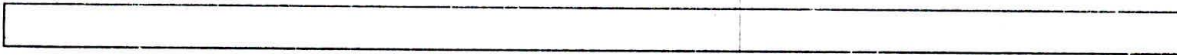


Draft



Reaping Scarcity : The Process of Drought and Marginalisation in Western Orissa.



By  
Sohini Sen Gupta  
April 1998

Very exhaustive ; needs editing  
= focussed on a particular area  
- Will somebody else be writing  
on drought in other areas?

Contents

Acknowledgement

1. Introduction \_\_\_\_\_ Pg 2-4

2. Characteristic of Drought Areas

3. 'This Business of Drought Relief'

4. About the Paper \_\_\_\_\_ Pg 2-3

5. About the Area: Hills, Plains, Forests and River Systems \_\_\_\_\_ Pg 3-4

6. About the People \_\_\_\_\_ Pg 4

7. Political Administration between 1850-1900 \_\_\_\_\_ Pg 4-5

8. Of Surplus Generation and Land Alienation : Agriculture, Railroads, Revenue Systems, Trade and Tribal Assertion between 1830-1930. \_\_\_\_\_ Pg 5-12

8.1 Landuse and Agriculture \_\_\_\_\_ Pg 5-6

8.2 British Land Revenue System and the Institution of Gountia \_\_\_\_\_ Pg 7-8

8.3 Alienation and Uprising \_\_\_\_\_ Pg 9-11

8.4 Trade, Pauperizatio, Surplus Production and Railways \_\_\_\_\_ Pg 11-12

9. The Scarcity of 1899-1900 \_\_\_\_\_ Pg 12-14

9.1 An analysis of the Causes of the 1900 Drought annd it's relevance to the present context. \_\_\_\_\_ Pg 14-15

10. Drought was here to stay \_\_\_\_\_ Pg 15-19

11. The Political Economy of Tank Irrigation in West Orissa \_\_\_\_\_ Pg 19-23

12. The Politics of Government Relief programs

13. Case Studies \_\_\_\_\_ Pg 24-34

14. Anex

## 1. Introduction

The phenomenon of drought is associated with monsoon failure and the consequent water scarcity in popular belief. This manner of thought lends it a mantle of inevitability. Visions of vast stretches of arid tracts, heat cracks wrinkling agricultural land and dried up wells and ponds and helpless farmers, as the aftermath complete the association. The emotion it arouses is one of despair and helplessness at what seems to be the ultimate vagary of nature rather than one of anger against the social organisations of man and as a manifestation occurring out of indiscriminate manipulation of nature.

The occurrence of Drought with a periodic familiarity in some parts of the country in the present century, has its roots in a complex set of factors emerging out of our social, economic and political context in the recent past. That, drought has occurred in areas so dissimilar to each other as far as physical features are concerned, is indicative of the fact that, its occurrence cannot be blamed on natural factors alone. *"The commonly made correlation between failure and variation in rainfall and drought is simplistic and inadequate. Drought occurs whenever and wherever the links in the water cycle are broken or destabilised"* (ref: 14)

Theoretically drought can be classified into four categories based on the nature of destabilisation or break in the water cycle. *"The special situation when rains do not arrive in time or in adequate quantities is... one form of drought; meteorological drought.... Deforestation and Hydrological destabilisation in the mountain catchments of rivers can make rivers and streams dry up in the post monsoon period. In such situations we can have surface water drought in spite of adequate rainfall..... Soils can lose their effective moisture conserving capacity through a complex of diverse processes and the consequent land aridisation could be described as soil water drought..... The mining of ground water can create an almost irreversible ground water drought even under conditions of normal rainfall and good soil condition. Rainwater, Surface water, Soilwater and Groundwater droughts are ecologically connected."* (ref: 14)

The disbalance in the equilibrium between the various components of a dynamic water system causes water scarcities and aridisation in some places and flooding and water logging in others. Annual precipitation is the single important source of renewal and recharge of water in surface and groundwater bodies. In a destabilised context, with the other recharge mechanisms breaking down, or extinct, a single variation in rainfall, would catapult the situation into one of acute water scarcity. The Meteorological department in India defines the drought *"as a situation occurring in a meteorological subdivision in a year when the annual rainfall is less than 75% of the normal. When the deficiency of rainfall is above 50% of the normal, it is termed as a severe drought"* (ref: 29)

In tropical weather conditions, fluctuation in annual rainfall are a normal phenomena. India as a country therefore has existed with monsoonal variations as a part of its climatic reality. *"The frequency of recurrence of drought as 25% deficiency in rainfall has been analysed by Jodha. According to him 13.2% of India's total geographical area has a drought frequency of less than three years. Similarly 11.6%, 36.5% and 30.9% of India's area have a drought frequency of 3, 4 and 5 years respectively."* (ref: 14)

Not all fluctuations in every point in time had translated themselves into a drought. Communities living in tropical zones had also evolved suitable cropping patterns and systems of water use that were both sustainable and enabled them some amount of protection against monsoonal aberrations. The appropriateness of the processes was due to typical land use practises that had inbuilt mechanisms of water conservation.

Drastic changes in land use practises has led to rapid ecological degradation creating arid zones in good rainfall areas. A case in point is the Doon valley, where limestone quarrying in the last three decades have dried up perennial mountain streams and converted them into carriers of monsoon

flood water. Limestone served as aquifers storing natural water. Extensive Limestone stone mining by Cement factories are responsible for the transformation of the unique and fertile ecological system of Coastal Saurashtra into saline desert. The megalithic Limestone acts as a natural aquifer which recycles fresh water and is the check against salinity ingress along the Western Coastline of Gujarat. In Kolar district of Karnataka, the massive spread of Eucalyptus plantation and excessive groundwater mining to irrigate cash crops like grapes and vegetables have created aquifer droughts.

Changing the species composition of upland watersheds by displacing natural forest with commercial monoculture plantations have caused surface water drought. The drought prone-ness of the Terai region of Uttar Pradesh, is a contribution of the monoculture of Pine and Eucalyptus which has displaced the natural forest in the upper catchment. A classic example which wraps up the case is the "drying up of Cherrapunji" till recently the place which recorded the highest quantum of annual rainfall in the world. *"With the destruction of the mixed natural forest in the upper catchment the above 12000mm of rainfall in Cherrapunji, instantly run off accentuating the flood situation in Bangladesh and as soon as the monsoon is over, the springs and streams start drying up and water scarcity haunts the one time wettest spot on earth."* (re:14)

Modernisation was followed by redefining agricultural practises whose foundations were laid on external dictates of quantitative productivity and in the ignorance of micro realities. While local practises were termed primitive and non-productive, vast areas, irrespective of landtype, were brought under single crop systems. The shift was in almost all cases to a more water intensive crop. Intensive irrigation practises followed; to sustain the productivity of the crop leading to imbalances in the water cycle. Further rainfed cultivation with its inbuilt mechanisms of drought resistance suffered from neglect due to lack of financial and institutional support and gradually decayed. Changes in cropping pattern also increases the chances of crop failure as the soil cannot cater to the high water demand of the new crops. Agricultural land is also depleted due to intensive cropping, soil erosion and increasingly deficient in organic nutrients. Simultaneously, the upper catchments of the mountains, hills and ghats were denuded of vegetation, which hitherto held one of the most significant recharge mechanisms for perennial streams which would feed into surface water bodies. Deforestation in the upper catchments would bring about changes in the micro-climate leading to variations in rainfall pattern. High rate of run-off from denuded uplands would gradually silt up the low lying surface water bodies reducing their storage capacity. Exploitation of groundwater in low rainfall areas in the absence of recharge mechanisms created ground-water drought in many parts of the country.

The seemingly abundant nature of water resources had led to unbridled and irresponsible human interference and created the conditions of scarcity. As the degree of renewability decreased and water attained the status of a scarce resource even in high rainfall areas. The economics and politics of its control started defining its availability and use rather than more appropriate factors of sustainability and ecological wisdom, establishing the inevitability of drought.

From the wide range of the causality of drought it is apparent that the phenomenon leads to marginalisation as one of its direct impact. To explain this further. When appropriate and sustainable landuse practises are sacrificed in the name of surplus production, profitability and short term economic gains, a whole system of production and way of life associated with it, diminishes in status through calculated neglect and ultimately goes extinct. The section of the community who form the intrinsic part of such systems are the primary losers. As their system declines in credibility and their resources are appropriated in the name of development, by an economically stronger minority backed by modern institutional support, the process of marginalisation gains foothold. From there on, while the rich gain from the yield oriented, resource intensive production system in the short term, the poor face the consequences of drought. The practises which usher drought also destroy the coping capacities of people to survive the

consequences of it. Each occurrence leads to further deterioration in their scope of entitlements and leads to a crisis of survival. Marginalisation therefore, is not only the cause but also the consequence of the phenomenon of drought.

**2. Characteristics of Drought areas**

Despite the large diversity in causal factors, there are underlying threads of similarity between areas which show extreme vulnerability to drought. The indicators in these situations are intertwined in a complex maze of cause, effect relationship. The following discussion attempts to look at a few of these critical factors.

- 1. Drought prone areas tend to have low agricultural productivity. The absence of largescale, widespread, systematic sources of irrigation. The limited spread of green revolution package of HYV seeds, chemical fertilisers, pesticides. Adherence to traditional and diverse landuse practises. More emphasis on subsistence orienteted dryland farming and a variety of crops grown traditionally under rainfed conditions.
- 2. Larger size of average landholding with more number of marginal, owner cultivators. Mostly single cropped areas raising kharif crop. More area under low value crops. Lower per hectare yield of water intensive crops like Paddy. High dependence on rains and consequently, greater chances of crop failiure in low or erratic rainfall years.
- 3. Agriculture as the primary source of livelihood through marginal holdings or wage labour. Agricultural season has enormous significance for subsistence. Disturbances in the agricultural cycle due to rain failiure causes crisis. Other modes of livelihood involving dependence on forest or pasture land. These cannot meet even supplementary subsistence demands when irreversible ecological degradation has taken place in these systems.
- 4. Lower growth of population, higher rates of migration, Higher rates of morbidity and mortality, due to recurrent scarcity condition and persistent undernutrition. Low density of population.

**3. 'This Business of Drought Relief'**

Drought is closely associated with 'the spectre of scarcities. All scarcities are not the natural or inevitable outcome of drought. Infact from the numerous instances in the recorded documentation of last 100 years it is quite apparent that drought acts as a trigger in the occurrence of largescale famines and scarcities. The nature of manifestation of the events that follow is dictated by the existing socio-economic and political relations in the context. Infact drought results in a dramatic presentation of the inherent and endemic problems in the system.

The causes of Drought are only natural if described as nature's backlash to unbridled and unsustainable human interference. The outcomes, in terms of massive human suffering, as a consequence of drought, is definitely human made. Till the beginning of this century, even localized crop failiure would translate into famine situations. Following one or two seasons of erratic monsoon, rainfed agriculture would suffer losses. Small and marginal farmers dependent on agriculture for subsistence would not be able to fulfill the consumption requirement of their families. Agricultural wage labourers would suffer as the agricultural cycle gets disrupted. Purchasing power would fall drastically, and at the same time their dependence on the market would increase. In the absence of state interference monopoly traders would create artificial

scarcity while hoarding foodstock, food prices would rise in unprecedented scale. To meet survival needs the vulnerable group of small owner-cultivators, landless agricultural labourer, rural artisans would undertake distress sale of assets, migrate in search of wage opportunities, depend on kinship network, gather forest produce for consumption. If these limited alternatives are unable to meet their subsistence needs, large populations would undergo starvation after stages of undernutrition. Following the first rains, after the bad season, epidemics would claim it's victims from among the survivors.

The victims of drought are always among the groups occupying the most disadvantageous position in the socio-economic hierarchy. It has been well argued that the translation of droughts into famines is related to largescale entitlement failures rather than actual scarcity of food.

*“The entitlement of a person stands for the set of different alternative commodity bundles that the person can acquire through the use of the various legal channels of entitlement open to someone in his position.... In a private ownership market economy, the entitlement set of a person is determined by his original bundle of ownership (what is called his ‘endowment’) and the various alternative bundles he can acquire respectively from each initial endowment, through the use of trade and production.....A person has to starve if his entitlement set does not include any commodity with enough food. A person is reduced to starvation if some change either in his endowment (eg alienation of land, or loss of labour power due to ill health), or in his exchange entitlement mapping ( eg fall in wages, rise in food prices, loss of employment, drop in the price of goods he produces and sells), makes it no longer possible for him to acquire any commodity bundle with enough food.”Re: Amartya.Sen, Food, Economics And Entitlements. Pg 53.*

State intervention in drought relief is in the nature of organising largescale Public Works Program which generates employment to create purchasing power among the vulnerable groups which would enable them to regain their food entitlement to a certain extent and keeping the food availability situation stable by releasing supply from it's buffer stock through the public distribution system. To keep food prices stable, the state discourages private monopoly in foodtrade and hoarding of food by traders by declaring ban on interdistrict food exports in critical months. Over the years the above strategies have been used in combination with the dynamic political forces in the shape of opposition to the ruling party and the press and media coverage generating and shaping public opinion, to avert the translation of seasonal crop failures due to drought into largescale disasters. Dreze in his case study on the 1972-73 drought in Maharashtra writes about the

*“...high standards of effectiveness which the relief system is capable of achieving. Against the background of a dramatic and prolonged collapse of agricultural production and food availability, massive programs of income generation through public employment succeeded in attracting considerable amount of food into Maharashtra, in a situation where the public distribution system had proved unequal to the task of filling the initial gap between availability and requirements...The effectiveness of relief measures largely explains why this devastating drought caused relatively little damage in terms of excess mortality, nutritional stress and asset depletion. ....the crucial role played by public pressure, cash relief, and public works in averting a tragedy. Public pressure from political parties, the media, voluntary agencies, and last but not least -affected population themselves galvanized the government into action at an early stage and kept it on it's toes throughout the crisis.”(pg155, Dreze.J, Famine Prevention In India)*

Public Action plays a critical role in ensuring that the Government delivers relief and delivers in time to avert serious crisis. Appropriate institutional mechanisms notwithstanding in the absence of public pressure results in imperfect, inadequate implementation of relief measures. Corruption is rife and the large financial outlays on shortterm relief measures spawns local mafia consisting of local contractors, politicians, traders who reap rich harvest from the scarcity by siphoning

resources meant for relief. Being such a profitable enterprise, strong lobbies press for the official declaration of drought, whose clamourings can be heard louder than the affected population, coping with their misfortune. Besides money for state relief measures, assistance from foreign aid agencies flows into the area creating a resource glut in the shortterm whose ultimate utilisation is not in many cases for the purposes it was assigned for. Flaws in implementation due to ineptness of the agencies involved coupled with inappropriateness of the relief, and interference and cash siphoning by vested interest groups are quite common. The affected communities are not consulted at any stage unless as acts of tokenism and they are merely recipients or "beneficiaries" of the relief package offered them. There are two distinct fallouts of this. The Community which has experienced the phenomenon of drought frequently and can anticipate the fallouts, relies on the practises emanating out of years of coping with crisis. Since they also have experience of state relief, they rely more on the alternative means. An illustration of this could be the low attendance in a publicworks program because of the delay in implementation by which time most of the affected population had migrated. Shortterm relief cannot redress the critical factors which go into the creation of drought. While it serves the purpose of averting immediate catastrophe, procedural delays, faulty implementation and misappropriation of money, takes away the edge from the intervention. In chronic drought prone areas a routine of short-term relief actually perpetuates dependency among the local inhabitants and creates vested interest groups, the profitability of whose enterprise is derived out of large spendings on drought relief works. The longterm debilitating impact of relief on a population can include low selfworth and a sense of distrust in hitherto trusted practises of self preservation, in local inhabitants. Relief after all comes in all hues and ideologies and often dosed with dollops of morality from the 'patron', whether the state or other agencies which devalues local practises and situates the disaster in the immediate local context and as a function of 'illiteracy', 'primitive culture' etc. The overwhelmingly 'we know better than them' attitude of relief coupled with actual ignorance of the context, it's people and the causality of drought have crippled local initiative to cope with the disaster and question the processes of 'development' which perpetuates and entrenches disempowerment. The government functionaries are accountable to their higher-ups, political functionaries are accountable to their parties, voluntary agencies more often than not accountable to their funders, in-country or over-seas, the community does not figure in the relief business except as an inanimate recipient of 'benefits' or as 'portraits of human suffering' etched dutifully by the media. The much needed public action, the most important component of a successful relief operation is elusive under the constant perpetuation and reinforcement of the myth of helpless victims of a disaster, mute spectators of their losses. Communities in drought prone areas can predict the occurrence of a drought and take decisions regarding the best possible options in their command. Practises evolved over the years of, for instance, reducing dietary intake during the difficult months in the agricultural cycle before harvest, seasonal migration to double cropped areas, storing food rations consisting of dried forest products, etc, are all evidence of dynamic coping mechanisms. While ecological degradation and regional imbalances created by modern agriculture have increased the incidence of drought, it has simultaneously reduced the scope of indigenous coping mechanisms. Irresponsible Relief breaks the back of people by defining and eventually converting them into victims.

*(The above argument is not against all drought relief perse. Many of which have played critical role in preventing the transition of droughts into disasters. It only investigates the premises of the nature of most relief operations seeks to outline the inadequacy of shortterm measures in addressing disasters like drought which have a predictable outbreak and a longdrawn manifestation. footnote)*

#### 4. About the Paper

Based on the above theoretical premises this paper primarily looks at the socio-political-economic-historical-ecological causes behind the frequent occurrence of drought and it's typical manifestation in selected districts, located in the Western part of the state of Orissa. This area including the districts of Bargarh, Bolangir, Nuapada and Kalahandi in Orissa, covering a geographical area of 23988 sq km has a population of over 40 lakhs according to 1991 census. The frequent occurrences of drought in Western Orissa was almost a non issue till Kalahandi district acquired certain

notoriety following Rajiv Gandhi's visit in 1985 to Komna block (now in Nuapada district), followed by the media uproar over the starvation deaths in the area. This has resulted in the mythification of drought in Orissa superimposed on the background of enormous human suffering, blurs the causality of drought entrenched in the system and most important, does injustice to the initiative and dignity of the local people who are not faceless, voiceless and incapacitated victims of drought as commonly depicted.

This paper attempts to trace the history of occurrence of drought in the area and establish linkages with changing land utilisation pattern, water technologies, deforestation, revenue administration, improved communication etc over a period of 150 years and their contribution to the processes of marginalisation. The report has depended heavily on the vast archival documentation of British land revenue administration, as well as various editions of the district gazetteer on reconstructing the past. The substantiation of the analysis and conclusions drawn, have come from the living memory of people and experiences of communities in over sixty villages in Western Orissa, travelled between April '97 and March '98 during the author's involvement in Oxfam's Drought Intervention Program in the same period.

##### **5. About the Area : Hills, Plains, Forests and River Systems**

The significant physical feature of the area is that the Eastern ghat runs throughout the four districts in an irregular manner. The area of Western Orissa can be categorised as an area of relative isolation from a historical-geographical perspective. It can be located roughly between the great Chattisgarh plain to the west and the Mahanadi delta to the east of it, the uplands of Orissa highlands to the north and the Eastern ghats to the South. The terrain is rugged and described as "a mass of jungles and hills" in early 1900.

The South-Western portion of Bargarh district comprising of the Borasambar tract, (the present Padampur tahsil) consisted of a set of uneven hill systems and undulating land. The most important among them being the Gandhamardan range, with an average ht. 2000-3000 ft runs along the Southern boundary of Borasambar, separating Bargarh plains and Borasambar tract from Bolangir basin. To the northeast the Phuljhar range separates Padampur tahsil from Raipur district. The eastern part of the Bargarh plains, is closer to the Mahanadi basin, were open plain areas drained by the tributaries of Aung and Tel river. The Western and Southern portion of Bolangir district are also rugged and isolated with hill ranges running in various directions having considerable forest cover once. The North and East has some flatter land drained by the tributaries of Tel river. From the border of Borasambar and Nuapada district, starts the valley of Jonk river. Towards the west of Nuapada all along the length of the district are outcrops of hills stretching down to Sunabeda plateau bordering MP on the west. To the south of Jonk valley lies the Sundar- Udanti valley of Nuapada. Kalahandi district with Nuapada to the Northwest and Titlagarh subdivision of Bolangir district to the northeast, consists of hill and forested areas towards the Northeast and flatter valleys of Sundar, Tel, Ret and Hatti towards the West.

The areas was rich in Forest resources, remnants of it are found today, conserved or protected in isolated patches, severely degraded in most places. The forest are a combination of dry and moist mixed deciduous type. The principal categories according to species are, Sal forests, Teak forests, Bamboo forest, dry mixed forests. The species growing in association with Sal are Sahaj, Dhaura, Bija, Kendu, Char, Senha, Gambhar, Jamun, Halland, Sissoo, Karla, Amla, Semel, Siali and Mango. In Bargarh district Sal and mixed forests with Bamboo predominate. Teak forests appear in stretches in Nuapada and Bolangir districts. Village forests and agricultural land abounded in Maiua, Neem, Mango, Date palm, Char, Ber, Custard Apple and other fruit and Timber trees.

Today, Sal or Rengal as it is called locally, are rarely seen in open forests or even protected forests. Their erstwhile locations can be identified from the secondary growths of associated



species. The natural Teak forest belt of MP extends into the present Nuapada district. These have been severely degraded and displaced in some places by government monoculture plantations of Teak.

The most fertile and closely cultivated land of the area are found in, the Bargarh plains to the west of Mahanadi, drained by Danta and Jira, the two tributaries of Mahanadi and to the south east of Borasambar tract (present Padampur subdivision), on the valley of Aung river, in Bargarh district. The best cultivable land of Bolangir district lies to the Northeast, on the valleys of Aung, Tel, Lanth and Sukhtel. In Nuapada district, the Jonk valley and the plain area drained by Sundar - Udanti system form the best cultivable land. In Kalahandi district the plains of Jayapatna and ~~Chauhan~~ Chauhan people constitute the most fertile land.

The early settlements of immigrant agriculturists from the neighbouring districts took place near the fertile plain areas drained by these river systems. The principal caste among them were the Kulthas, whose movement has been in a westerly direction from their place of origin. Brahmins also moved westwards, they were often brought in groups in different periods by the ruling Chauhan kings. Kurmis and Agharias were the two communities that had moved eastwards from Madhyapradesh. Kulthas, Kurmis and Agharias were the main agricultural communities of the area who occupied high social status in the hindu caste hierarchy and gradually gained prominence over the tribal agriculturists, namely, Binjhals, Gond, Saonra and Kondhs. The prosperity of the former can be directly correlated to the decline in influence and status of the latter. The Brahmins were fewer in number but easily among the more prosperous. During the beginning of the colonial rule they were both agriculturists as well as traders and moneylenders. The other castes which gained economic prominence were the Telis, Mali and Mehers. Telis were the traditional oil pressers of the community, many of them took to settled agriculture, some sections among them were traders in Turmeric etc and hence are known by the name of Haldia Teli even today. The Mehers were the traditional weavers community. Many of them became landlords and money lenders. The lower castes included Doms, Chamars, Ghasis, Ganda. Caste hierarchy existed in most villages with the lower castes relegated to their caste specific services. This was a practise even in villages with tribal headmanship. Many of the Binjhals, Gonds and Kondhs wear the sacred thread and consider themselves in high position in the hindu caste system. The muslims are very few in number. Most of them are descendants of the Islamic traders from Kutch who were a wandering community of traders coming into the area seasonally to trade in grains, clothes and animal hide. The Marwaris who today form one of the most prosperous migrant community, came in first with the opening of the branchline of Bengal-Nagpur railways in 1898. The next influx was the decade of the second world war, 1930-1942, with the opening of Raipur-Vizianagaram branchline, when grain trade, Timber trade and kendu leaf trade attracted besides the Marwari, also the Gujarati and sikh trader community in large numbers.

### **7. Political administration between 1850-1900**

Prior to independence the area was divided into a number of political administrative units under zamindaries and smaller kingdoms; feudal in nature. For our discussion we shall confine ourselves to the period starting exactly 150 years ago. Maratha dominion was on the decline and the British were establishing their stronghold. Between 1803 and 1818, the Patna state was in a process of exchange between the British and the Marathas. In 1818 British rule was confirmed and in the period between 1818 and 1861 it formed a part of Bengal - Bihar provinces. In 1861, Patna state was included in the Central Provinces. It was also during this period that the British acknowledged Patna as a feudatory state. The first land revenue settlement under the British took place in 1871. Kalahandi came under Durbar rule when the province of Nagpur lapsed to British crown in 1853. In 1882 the British appointed a political Agent based in Bhawanipatna, to manage the estate. The first summary land settlement took place in 1883. (add similar details about Sambalpur district). In

Sambalpur district which was first included in the Southwestern frontier of Bengal provinces and Later got included in the Central provinces, the first land settlement was undertaken in 1849 which could be continued only in 1872 , in the intervening years the district was in throes of the uprisings of 1857.

Sambalpur district had 17 zamindaries, out of which 13 were held by Gond and Binjhal zamindars. Kalahandi consisted of 6 hill zamindaries held by the relatives of the ruling Chauhan dynasty. Patna state had two estates held by the relatives of Patna Maharaja, 5 hereditary estates held by the Gond thakurs, 5 Binjhal estates held by Binjhal chiefs and 8 Khondh mahals.

The two largest zamindaries of Sambalpur district, Borasambar and Phuljhar were both held by tribal chieftains, Binjhals and Gond respectively. Binjhals, Gonds and Kondhs were the three main tribes inhabiting the area even prior to the arrival of the Chauhan kings in the 15th century. In the beginning of British administration their numbers were higher , their concentration more in some places than other. In the Western zamindari of Borasambar comprising the present Padampur subdivision and the southern portion bordering Patna state, there was a high concentration of Binjhals. In the Bargarh plain areas to the east of Borasambar and the west of Mahanadi , there was a high concentration of Gonds. There were also large population of Gonds in Khariar zamindari area and the Phuljhar estate. The Kondhs predominated in the western and Southern portions of present Bolangir district and the hill tracts and plain areas of Kalahandi. In 1899 the three main divisions of Patna state were Bolangir, Kondhan and Binjhalty.

It is often made out that the hilly and forested areas were inhabited by the considerable tribal population of the area. However this is not entirely true. The plain areas of Bargarh tahsil and the Jonk river valley area to the north of present Nuapada district were inhabited by Gonds who practised settled cultivation.

### **8.Of Surplus generation and Land alienation : Agriculture, Railroads,Revenue Systems, Trade and Tribal Assertion between 1830 - 1930**

On the doors of the British land revenue administration in the central Provinces, can be laid one of the principal responsibilities for bringing about certain irreversible socio- economic and ecological changes in the area. Infact as we proceed further it would become evident that not only were crop patterns altered, the introduction of railroad and trade in foodgrains and timber led to massive land alienation from the dominant tribal community by selective promotion of immigrant cultivators from the plain areas and ushered in the first major scarcity situation in the region in less than three decades of following the altered systems of cultivation.

#### **8.1 Landuse and Agriculture**

When the British revenue administration embarked upon the first settlement operations, much of the area was inaccessible and covered with dense forests. The undulating topography of the area demanded that agricultural land be classified into accordance to their comparative location. O'Malley in 1909 defined it as follows.

*“ At land consists of high lying land on the watershed, ie, upland which are dependent on moisture for rainfall.....these are often sandy and cultivated with oilseeds, cotton and pulses. The term Mal is used for the slopes which are terraced to catch the surface drainage coming down from the uplands. The lower terraces are wider and deeper than the above.... the term Berna denotes land towards the bottom of the depression which receives drainage from from the slopes on either side and also from the drainage line between them. .... Bahal is the term used for flat land at the bottom of the depression or drainage line.... The best bahal lands are served by the widest and largest irrigation reservoirs and so are secure from crop failiure. Two other classifications are Khari and Bari lands. Khari is a term used for land situated near the*

*village site which receives drainage of the streets and the washings from the houses, when under irrigation it's called kharipani. Bari denotes vegetable garden, generally occupying high lands close to the village homestead, enriched by village drainage." (Pg 107-108).*

The type of land determined the cropping pattern. While the lowlying land were cultivated with wet crops like Paddy, the uplands were kept for dryland crops including Pulses like Mung, Biri, Kulath, Rahad, coarse grains and oilseeds especially Rasi or Sesame. Certain varieties of hardy, dryland Paddy were also grown in combination with pulses and fibre crops on the uplands. Paddy was mostly sown broadcast till about the last quarter of 19th century.

There was a wide range of Paddy varieties with different duration periods which determined their suitability for land types. Hence the broad classification of "At dhan", "Mal dhan", "bahal dhan". Generally, short duration Paddy was grown on uplands, requiring less moisture and reaching harvesting stage within 45-60 days of sowing. The Bahal varieties of Paddy were typically long duration as the comparatively secure low lying land had adequate water retention capacity to support the long growth period of 120-160 days. Besides paddy, Coarse grains like Kodo, kutki, Gurji, Jhari, Suan etc were also grown over large areas. These in addition to their shorter growth period in comparison to Paddy, also required less water. Dryland Paddy in combination with coarse grains and Maize and Bajra, ensured optimum food supply, even in years of erratic rainfall. Vegetables were grown on what were known as "Bari" land or fenced off kitchen gardens in the homestead plots. Sugarcane was grown for manufacture of jaggery. In Sambalpur district Sugarcane was grown on the village common land called "barchia" land in Summer months.

*Rice is the staple crop occupying 82% of khalsa area in Sambalpur and 81% in Bargarh Khalsa. 56% in Bargarh zamindari areas and 71% in Sambalpur zamindaris. The low proportion in the Bargarh zamindaris is attributed to the fact that after the famine of 1900, the aboriginals substituted Kutki (Panicum Psilopodium) which ripens at the end of August and is not so dependent on the rainfall. This crop however is again going out of fashion. In the Sambalpur zamindaris the areas under rice has also fallen off slightly, because the aboriginal races have been driven from the lower lands and now cultivate Til or Sesamum largely. The greater part of the rice is sown broadcast, only 4% being transplanted, though proportion rises as high as 8% in the Bargarh plains. Maize of good quality is grown in Borasambar... Other cereals are not of much importance with the exception of millets which are a favourite crop with the aboriginal races. Of these the most largely grown are Kodo (Paspalum Scrobiculatum) and Kutki, small grasslike millet grown on upland, which taken together occupy 34,377 acres. Kodo sown broadcast in the beginning of monsoon and reaped in August. Til principal oilseed crop. It is sown on uplands and is commonly the first crop taken from newly broken land where it gives a large yield. It is also grown on poor soil. Of late years it's cultivation is decreased in the Bargarh plain, where uplands are exhausted, but has increased in the other parts of the district. Cotton cultivation was on the decline in 1900. Due to exhaustion of uplands esp in the open tracts, all available manure was used in rice and sugarcane cultivation. Cultivation is nowhere important except in Borasambar... where lower slopes of forest clad hills are rich in vegetable silt. (1909, O'Malley)*

*Best Cultivation is in the northern part of the state. The principal crops grown are Rice, Oilseeds, Pulses, Sugarcane, Cotton and Til. There is considerable amount of shifting cultivation in the South and the West of Patna State. The four kinds of Paddy represent 58% of the total cropped area of the state. Paddy is mostly sown broadcast. Millets, Gurji, Jhari, Kodon, Mandia, Kango, Jawar, Makai cover 41% of the cropped area. (1910, CH XIX, Patna State, LEB. Cobden Ramsay)*

While this was broadly the system followed in the plain areas, in the hill tracts tribal communities mainly the Kondhs were also practising shifting cultivation or "dongarfa chas" or "Podu chas". The principal crops grown by them were coarse grains, turmeric, various roots and tubers, rices, pulses and oilseeds. Land was fertile and plentiful and production sufficient for the maintenance of local population. Forests on the upper catchment enriched the uplands with organic detritus. Cultivation was primarily rainfed. Irrigation was provided through tanks, dugwells and hill streams.

*The Khondhs were the sole occupants of the inaccessible hill tracts. Their principal crop is Mandia. Turmeric is also grown on a small scale. They supplement their resources from the jungle. No khondh appears to be in anyway hardup for food. The hill Khondhs bring a variety of products such as Turmeric, Chillies, Tobacco, Oilseeds and Kandul to exchange with salt, clothes etc. (1910, ChXI, Kalahandi State, LEB. Cobden Ramsay)*

The basic immunity to scarcities which the area enjoyed till about 1850's was probably due to the typical nature of agriculture there. Firstly the crops were so diverse that there was a wide difference between their moisture requirement. Since mixed cropping was practised, it was ensured that if some crops perish due to water shortage at critical periods, other would survive.

Crops evolved under local climatic patterns had inbuilt resistance to the erraticity of monsoons and could withstand variations, ie both excess as well as deficient rainfall. Secondly, intensive cropping had not taken hold and land was fertile, due to forests in the upper catchment. Water retention capacity of soil must have been more due to the practise of organic manuring. Finally the dependence of the majority of inhabitants belonging to the tribal community was as much on cultivation as on forests. During even normal rainfall years their subsistence on Summer and rain months would be entirely based on forest, in which the Mahua flower formed one of the primary components of their staple food. The traditional forms of protective irrigation methods was another component in the prevention mechanism. However the politics of ownership and usage underwent a change which shall be discussed in detail in the next section.

As long as the tribal community maintained their stronghold on land and cultivation remained mainly for local consumption, there were sufficient protective mechanisms inherent in the livelihood systems against rainfall failures in the area. For, looking at the rainfall data of the then Bargarh tahsil (present Bargarh district), for instance, one discovers that pattern of erraticity of annual rainfall was as much evident a 100 years ago as today.

### **8.2 British Land Revenue System and the Institution of Gountia**

To substantiate this argument, we would have to trace the change in ownership of land, from tribal to non-tribal, rise in intensive cultivation for surplus generation and trade, in turn creating demand for land and gradual clearing of forests, catalysed by the rising revenue demands and the introduction of railways in 1896. Infact the opening of the branchline of Bengal- Nagpur railways in 1896 and the subsequent drought of 1897-98, is a landmark in the history of scarcity of the area in the following years to come.

The British with their primary concern of maximising the revenue returns from the ex-states and zamindaris embarked upon the first series of settlement operations. Their first interference was in the system under which several villages were held revenue free under various service grants. Next, they tried to bring under settlement operations all those villages and areas which were hitherto left unassessed due their inaccessibility. Most important of all they brought about changes in the system of village headmanship or "gountiahi". As detailed in the Bihar and Orissa gazetteer of Sambalpur; " Under native rule the revenue of the raja was obtained from the customary rents or revenues paid from the khalsa or state lands. In khalsa the village headman called the gaontia were responsible for the payment of the lumpsome assessed on the village for a period of years,

according to a lease which was periodically revised and renewed. The amount of assessment was recovered from the cultivator and the headman was remunerated by holding a part of the area free of revenue. The headmen were occasionally ejected for default in the payment of revenue and the grant of a new lease often made an opportunity imposing a fee (nazrana) which the gountia paid in great part from his profits and did not recover from his cultivators."

The same system was also operational in the neighbouring states of Patna and Kalahandi. Though the British had annexed all the three states by 1850, it took another two decades before they could implement new revenue systems. Between 1850 and 1870, a large number of villages had already been alienated from the original tribal gountias, in many cases due to their inability to pay the amount of nazrana each time the lease on their villages expired.

From an account by O'Malley, "*The original settlers who cleared the forests were looked upon by other cultivators as the headman among tribes of strong tradition. During Maratha rule a system of auctioning villages or giving them out to favourites after deposition of long established headmen became rather widespread..it was during the later years of Maratha rule that the village headman as the hereditary incumbent began to be displaced by the lessee or the thekedar. Practically everywhere the headman became responsible for the payment of land revenue of the entire village to the state.*"(ref: 10)

In Sambalpur and Patna states, immigrant Hindus used this opportunity to displace the original leaseholder, usually tribal, from the village. In many cases the tribal leaseholders were tricked into giving away their entitlement. It was a part of the privilege of the gountia to hold the best cultivated land in the village, called "Bhogra jami". The gountia was also entitled to free labour from the tenants under the system of "Beth Begari", which was utilised not only for cultivation of Bhogra land but also the construction of irrigation tanks over their lands. When the tribal gountias who owed their position from the virtue of being the original settlers or "khuntcata" (meaning forest clearers), lost their gountiaship, they also lost the entitlement on the best lands of the village. Since it was customary for the gountia to settle the other tenants in the village, the caste of the gountia also determined the caste composition of the tenant body of the village. With the tribal gountia losing his right over the village, the entire community often disappeared from those villages. In such a manner, the villages with the best cultivable land were first alienated, with the tribal community withdrawing further in to the forest.

The British not only raised revenue demands for all the estates, but also brought under assessment the hitherto revenue free "Bhogra" land of the gountia. In Patna state in 1876 the land revenue demand rose to Rs.37398 from Rs. 8792, in the beginning of British administration. By 1895, the revenue demand was Rs. 76900. In Sambalpur district, the annual rentals on khalsa villages was raised from Rs. 89796 to Rs. 110414 in 1876. In the settlement of 1885- 1889, revenue went up to Rs. 152406. By 1906, the revenue demand was Rs. 171992. In 1921 the annual rentals rose upto Rs.804080.

### **8.3 Alienation & Uprisings**

The first series of land alienation was already over by the time the British established their land tenure systems. The areas which attracted the non-tribal cultivators were the plain areas of Bargarh tahsil, the fertile areas to the northeast of present Bolangir district, (namely areas under Agalpur, Loisinga, Bolangir and Deogaon blocks), the plains of Nawapara and Kalahandi. The principal among the settlers were the Kulthas, Brahmins, Agharias and Telis. The first grains of resentment sprouted with tribal assertions and uprisings in many part of the state between 1850 and 1880. The fact that many of the zamindars and estate holders belonged to the Gond, Binjhal and Kondh communities, ensured that the confrontation got military support from them. The British during all these cases had supported the non tribal component of the struggle.

In 1869, the Kondhs in Patna state had risen in rebellion against the state. Between 1857 and 1870, the Gonds in the Bargarh plains put up a strong resistance. In 1882 there was the infamous Kondh melee in Kalahandi. All the uprisings were as a mark of reasserting their rights over their land. They were infact a fight for land entitlement and were aimed against the immigrant cultivator community of the Kulthas in most of the cases. Similar instances had occurred earlier in the Phuljhar estate where the resident Gonds had risen against the spreading power of the migrant Kurmi cultivators. In the long battle known as Gondmaru, tanks all over the state are said to have turned red with the blood of the slain. Even today Gonds in Phuljhar do not consume the water of these tanks. These uprisings were manipulated by the disgruntled relatives of the ruling Chauhan family into a support for their aspirations for the throne. The assertions were suppressed brutally and violently with the assistance of the military might of the British. Contrary to the popular assumption that all these battles in the period of 1857 and thereabouts, were nationalistic in nature and waged against the British by a united local population, these were in reality, manifestations of internal disputes over land among the original settlers and the later arrivals, in which the British chose to take the side which appeared to be more profitable for them. A direct proof of this is the "Kondh melee" which took place in Kalahandi in 1882, exactly 15 years after the Raja settled a group of Kultha cultivators in the state. An excerpt from the chapter titled

*"Repression of aboriginal" from F.W. Dewar's report on Land Settlement 1906, goes as follows : " On other aspect of recent history of Sambalpur is the gradual breaking of the power of the aboriginal owners of the soil. The part played by the district , then a portion of Southwest frontier, in the operations against the Khondhs and the Kols... In the internal struggles for throne under Rani Mohan Kumari the chief supporter of the discontented pretenders were always Gond and Binjhal zamindars who found their privileges threatened and their lands encroached upon by the Hindu favourites of the queen. Later the Gonds of Bargarh rose , led by a Gond zamindar who had been ousted in 1821 in favour of a Kultha. From 1857 to 1864, the chiefs of insurrection were Gonds and Binjhals who feared further losses under the British settlement. Since that date the most important rising of aboriginals against the Hindus was a massacre of the immigrant Kulthas by Kondhs in in 1882 in the Kalahandi feudatory states... The aggression of the Hindus is continuous and successful". (pg7)*

The first systematic settlement operations were undertaken by the British in 1871 in Patna state and 1872 in Sambalpur. Settlement operations were not undertaken in Kalahandi till about 1883 due to the general inaccessibility of the terrain. Under the settlement operations, the terms and conditions of the gountiahi lease was redefined. The new settlement demanded that all payments were to be made in cash. Till 1875 the gountia continued to enjoy his "Bhogra" land rent free. After 1885 the gountia's Bhogra land was brought under assessment, also newly broken or "Chirrol" land were assessed for rent. The Gountia was allowed to hold on to his Bhogra land revenue free upto a maximum of 1/4th of the revenue paid by the raiyats.

A combination of new revenue demands and the increased might of the Kultha and Brahmin communities, coupled with the brutal suppression of tribal uprisings broke spirit of the community.

They were not only losing their traditional hegemony in the area but also losing out on basic entitlements.

Allusions of this are found in the Land Settlement Report by Dewar in 1906. "In the census of 1891, the aboriginals numbered 35% of the total population. But they are in many parts being pressed out by the Hindus, and, between 1891-1901, while the population of the district rose by 4%, their number rose only by 3% and now amount to only 33%. The Binjhals and Kondhs show the most decline." (pg8) In the same period, Brahmins increased by 9%, Kulthas by 13% and Agharias by 20% (mostly by immigration). According to the account of 1906, in the khalsa tracts of the Bargarh plains, comprising of 950 gountias, 775 were non tribals. It goes on to tabulate, 691 villages were held by Kulthas, 575 by Brahmans, 241 by Agharias, while only 275 were held by Binjhals and 386 by Gonds. Also among the principal tenant body, the kulthas numbered the largest at 14043, while Binjhals numbered only 2282.

With the changing composition of village headmanship and the composition of the tenant body, the agricultural practises too were undergoing a change. Large areas were brought under Rice cultivation. Crop diversity reduced, the uplands suffered from degradation due to deforestation on the catchment. In 1896 when the Bengal- Nagpur railway line was opened, rice trade received a tremendous boost. The cost of production was low in the area and rice was cheap. Gountias and large tenants made huge profits from rice trade. Profitability was derived to a certain extent from the large individual holdings and cheap labour cost. Many of the Binjhal, Saonra and Gonds were swelling the ranks of either permanent farm labour or resorting to wage labour in sowing and harvesting season in addition to working on their own marginal holdings. The gountias in prosperous villages made a killing utilising the free labour of his tenant working on the best lands as well on construction of irrigation tanks.

*"The Gonds are principally engaged in agriculture and the bulk of them are farm servants and field labourers, but they include some of the leading zamindars and many of the gountias...the Binjhals, a great majority of them are cultivators, and the rest are usually farm hands and field labourers. They are not such good cultivators as Kulthas and Agharias but are not inferior to the Gonds. Those who have settled in the plains have taken to improved methods of rice cultivation and in the hills and jungles they have the reputation of being skillful dahi cultivators ie clearer of jungles and being the hardiest of forest races. Here they are managers or proprietors of villages and the majority are independent cultivators, but in the plains they are mostly farm servants, field labourers or jhankars."* (1999, O'Malley)

While the settled cultivators consolidated and expanded their holdings, the tribals were pushed into the margins of the estates. Indebtedness and landlessness was rife among them. Many of the Binjhal and Gond zamindars were poorer than the Kultha or Brahman gountias in the plain areas. One of the classification made by Dewar regarding the composition of tenant body during the settlement period of 1902-06 is illustrative of that. According to him, among the classes of tenants, "9% were well to do with large holdings. Most important among them was the gountia who holds the best land of the village revenue free. 40% of the raiyats were substantial tenants who had extended their holdings and on an average hold 19-15 acres. 40% raiyats were moderately well off including semi aboriginals who had failed to extend their holdings. They had small stocks and moderate debts. The tenant remains sufficiently solvent but has little margin for the accidents of famine, cattle disease or deaths in the family. 11% were tenants in reduced circumstances, deeply indebted or with mortgaged holdings, having the same status as day labourers. This category includes the real aboriginals whose holdings are insufficient to provide a full livelihood and who eke out cultivation by collecting forest produce." (ref: 11)

Between 1885 and 1900 the price of agricultural produce quadrupled in Sambalpur and Patna

5-8.3: Good information given but can it be reduced; relevance to drought?

states. Simultaneously, as much as 10% of total land changed hands. The number of land related litigations showed a rapid rise after 1894. As Dewar mentions in his report, "*It would indeed have been surprising if in a district were the Hindu cultivator was already in open competition with the aboriginal, a sudden doubling of prices of produce had not accompanied by much transfer of land*". He goes on to give an example from Bargarh tahsil where, 7.5% of total landholdings changed ownership between 1891 and 1906. "*in the Lakhanpur, Sohella and Kurkuta groups of villages many aboriginal gountias still remained in possession in the last settlement (1891) have since been ousted by Kulthas and Brahmans.*" (ref: 11) An account written in 1910 about Kalahandi mentions that, *good land and most of the villages are held by Brahmin and Kulthas. Kulthas predominate in the northeast and Brahmans in the Southwest. Kultha and Brahmin gountias are well to do persons of the locality, own fertile land but the condition of tenants under them is generally poor. Besides having large areas of land under them they also do money and paddy lending business. Oppression of tenants by Kultha and Brahmin gountias was a common feature in Kalahandi before..*"

#### 8.4 Trade, Pauperization, Surplus Production and Railways

Before the introduction of railways the districts were landlocked. Women constituted the majority of retail merchants. All trading except in cattle was done by women. Wholesale grain dealers were Brahmans, Cutchi Mohammedans and Marwaris. The Cutchi Mohammedans were seasonal migrants and would trade in small amounts and leave the district till the next season.

*"The women are the real retail merchants of the district...it is the women, wives and relatives of farm labourers and cultivators, who do the rice husking, buying up grain in small quantity, husking it at home and selling it at the weekly village markets. At these the trade is in grain, cloths, tobacco, oil, trinkets and cattle, and all trading is done by vociferous women, young and old....The wholesale grain dealers are local Brahmans who are growers. Kutchi mohammedans and Marwaris banias. They buy grain and sell imported cotton thread, salt, tobacco, kerosene oil and cloth. The Kutchi trader is usually a migrant, coming in at harvest time to buy grain on a small capital, with quick returns and small profits and leaving the district in spring. He is a pioneer in trade and penetrates to the remotest tracts, but though he is in much evidence at the village markets he does not now command the bulk of the grain trade. Of late years the number of settled Marwarī traders in Sambalpur town, Jharsuguda and all the large villages have greatly increased. Between 1891 and 1901, their no. rose from 1223 to 2867. They do business wholesale...a trade which is greatly extended since the coming of the railways is the export of hides. This is worked by the Mahammedan dealers."* (ref: 11)

The introduction of railways brought with it settled communities of traders. Marwaris by then were commanding the bulk of trade in forest produce, such as Timber and Kendu leaf. In Kalahandi, there was a spurt of trading activities between 1905-1907, when the average price of common agricultural produce like, Rice, Wheat, Sesame, Mustard, Gram, Kodo, Mandia, Arhar increased. The estate which did not produce any exportable surplus till 1856, was by the early part of 20th Century, exporting grain and forest produce. Traders settled in Junagarh and Bhawanipatna conducted brisk trade in purchase of grain and sale of cloth. In 1910 the state was well connected with surface roads to Sambalpur via Patna and Sonapur states. The Raipur - Vizianagaram branch line finally materialised in 1930.

The introduction of railways led to the export of labour from this area to the tea gardens of Assam. More than 30000 people, most of them tribals emigrated to Assam between 1891-1900. That the British revenue administrations point of view on this phenomena was one of "good riddance" can be ascertained from the following statement, "*The emigrants to Assam are chiefly thriftless aboriginals, unable or unwilling to compete in cultivation with the Hindus. ...The emigrants to*



*the state both from feudatory states as well as British districts are steady cultivators, who have been attracted by the light rent of the district and the opportunity to exploit forest land". (ref: 11)*

### 8.5 The Scarcity of 1899-1900

In the beginning of this century the area comprising of the present Bargarh, Bolangir and Nuapada district faced a scarcity of devastating proportions for the first time in its history of existence. The area was then under the political administrative unit of the central Provinces. In the report of the General Review of Administration of Chattisgarh Feudatory states, in 1899, the phenomena was described as the "worst monsoons and the most serious failure of crop that has been experienced in the Chattisgarh feudatories within the memory of man". From the reports and documents of that period it was apparent that the extent of monsoon failure and the subsequent severity of crop loss was much more in the Western states of the Central Provinces (present MP). In the Eastern states (present West Orissa), the crisis was more in the nature of failure of entitlements of a sizeable section of people in 1900, that is the year that followed the drought year of 1899.

The drought of 1899-1900 was a culmination of a series of short failures that had been occurring from 1896 onwards. Between 1896 and 1900, the rains showed maximum fluctuation in the peak kharif months between August and September. When the rains ceased in mid-season, the maximum damage was to the long duration low lying or bahal Paddy which by then covered the best lands in the plain areas. While the prosperous farmers could save most of their crop by cutting the embankments of irrigation tanks close to their land, the marginal holders lost almost their entire crop of rice. In the plain areas the marginal holdings consisted of the most inferior land with no irrigation facilities. In the forested tracts and closeby, the tribal communities could harvest their dryland crops to a certain extent. The crisis started with the shortening of the period of agricultural season. Permanent farm labourers were discharged and other agricultural wage labourers did not find employment. Smaller farmers did on their own what they would have hired others to do under normal circumstances. The crunch came when prices of foodgrains spiralled to hitherto unknown heights and there was severe food crisis in the area. Distressed migrants from the Western states were pouring into the area which had gained a reputation of plenty. Prosperous tenants and gountias hoarded foodgrains in panic of being looted by hungry hordes. After the onset of monsoons of 1900, epidemics ensued and hundreds died of Cholera. Organised relief was introduced for the first time. To people who were not used to living off dole, the concept of relief in the form of free food distribution, soup kitchens etc were alien and unacceptable. British authorities had a lot of difficulty in persuading the scarcity affected people to avail of relief measures.

Some glimpses from the documentation of that period would throw light on how the brief failure of rain and the consequent drought, attained nightmarish proportion.

*"In Patna State, the best cultivated land was in the northern part of the state. Principal crops were Rice, Oilseeds, Pulses, Sugarcane, Cotton and Til. Considerable amount of shifting cultivation was practised in the South and the West. The four kinds of Paddy (At, Mal, bernu and Bahal), represent 58% of the total land area of the state. Paddy is mostly sown broadcast. Millets, Gurji, Jhari, Kodon, Mandia, Kango, Jawar and Makai covered 41% of the cropped area. The Southern and Western parts of the tract are liable to suffer on any untimely distribution of rain or early cessation of rains. These tracts are inhabited by the aboriginals. Kondhs to the south and Binjhals to the West. They are indifferent cultivators and make no attempt to secure regular crops through irrigation dams or reservoirs. In 1899, when the rains ceased in August, the people in the northeast were able to secure 65% of the crops while in the south and the west only 30% was secured. The rainfall was 43.3", 9" below average in 1899-1900 kharif season. Between August and September, rainfall had ceased. Kondhs and binjhals had raised a good crop of Gurji and Mandia. By the end of September, food prices started*

*rising. Most people did not have reserve stocks in command. The earlier two years people had sold their surpluses. Rice had to be imported from Kharagpur at prohibitive prices. Mandia was imported from Ganjam. After close of monsoons, relief work, mostly in the form of tank excavation were reopened. One of the great difficulties to cope with was rendering of relief to the aboriginal races whom nothing would induce to take on regular pick and spade work. Rs. 21904 was spent on state relief work, excluding the amount spent by zamindars and private persons.” (ref: 10)*

In Sambalpur district the situation was slightly different. The Productivity which even on normal years was skewed in favour of the Eastern plains to the right of Mahanadi, in comparison to the forested, hilly areas of the primarily tribal dominated Borasambar and Phuljhar zamindaris to the far west, appeared in greater contrast in the drought year of 1899-1900. In the Borasambar and Phuljhar estates the crop was less than 20%, while in the east it was moderately good. In 1899 the recorded rainfall in the drought affected Bargarh tahsil of Sambalpur district was 41”. The distress from the crop failure which affected the local population differentially depending upon their landholdings and access to irrigation, was compounded by the unprecedented price rise of foodgrains. An account from the Sambalpur district gazetteer of 1909 is illustrative of the fact.

*“In 1899 the rice crop failed all over the west and southwest part of the district. Small cultivators had lost all their crops even in villages where the richer men using their irrigation tanks had saved half their harvest. The small cultivator soon had to buy. But a price of 16 Seers formerly considered a scarcity price was now a normal rate and when that rose to 12 or 10 Seers famine conditions were established. Meanwhile the richer men attracted by previously unequalled prices had sold for export much too soon and most of the surplus grains had left the district. Later even in the stricken tracts there were large stocks, but gountias and tenants held them back. The climax was reached in 1900 when no faith could be put in the second harvest. Matters were worse in the remote western zamindaris. Here only 15 years ago, normal price after harvest had been 70-80 Seers a rupee. It went to 6 Seers in August 1900. Rice had been rushed out on the railways in October, November, December, January. Ton for Ton an exactly equal amount had from April to August to be railed and carted back, inferior grains and at double the price. The financial loss fell on the labouring classes, the small cultivators chiefly aboriginals and the government.” (ref: 10)*

In 1900 a series of dacoities broke out in the Patna State and later spread to Sambalpur. The gangs were led by binjhals who conducted raids on the granaries of prosperous tenants and gountias and distributed the spoils among the poor, from their hideouts in the inaccessible caves in the hills tracts of Borasambar zamindari. Meanwhile the consequences of the drought was also that the marginal farmers could not retain their seed stock for the next kharif sowing season. In 1900 the rainfall was good. However in the Binjhaly and the Kondhan parganas, the sowing was 25% and 40% of the normal. Kalahandi was not affected by the famine of 1899-1900. The state was however in grip of epidemics and artificial scarcity was created due to unnatural hike in prices of foodgrains. The present Nuapara district, then a part of Khariar zamindari in Raipur district of MP, was severely affected. Kalahandi exported mandia to Khariar zamindari during 1900. Mortality due to epidemics was high in Patna and Sonapur states.

### 9.1 An Analysis of the Causes of the 1900 drought and its relevance in the present context.

If one takes a look at the series of events that precipitated the drought of 1900 and the crisis that followed subsequently, the following pattern would emerge.

In the fifteen years that preceded 1900, settled cultivators in the plain areas, mostly non tribal Kulthas, Telis, Agharias and Brahmans, had consolidated and expanded their holdings. Land was closely cultivated with rice and irrigated through tanks in the upper reaches. Labour was cheap and the price of rice thus produced, had an attractive export value, once the railway commenced. In good rainfall years, the production was good, trade flourished and substantial landholders became prosperous. Besides cultivation they also undertook money and paddy lending business and trade of forest produce and timber. Simultaneously the process of marginalisation had reached its limits in the plain areas. There was a visible class of resource poor marginal farmers who swelled the ranks of day labourers during peak agricultural seasons, in addition to an increasing number of landless destitutes, mostly from among the tribal people. These produced primarily for household level consumption and supplemented their subsistence through wage labour in Summer season. This larger section of people with comparatively lesser proportion of land were the hardest hit due to erraticity of monsoon. Rain failure would directly affect their consumption needs due to inadequate production and curtail possibilities of supplementing income by ending the agricultural season prematurely. In the ensuing period would come severe food crisis. People did not have food in their own granaries and did not have the money to buy food from the market. In such a situation prices rose in an unprecedented manner. The railways had given an impetus to intensive cultivation, which had bred land grabbing, individualization of agriculture and monetization of a consumption oriented production system. The prosperous farmers had not only sold all their surplus from the earlier season, they also held back the remaining stock. The district faced severe food crisis even when the major food surplus producing areas had reaped a 70% harvest. In the forested tracts where people were still practising dryland cropping and thus could save some of the coarse grain production, there was partial dependence on market for food. In the plain areas where diversity in cropping pattern had suffered a blow from the rising profitability of rice trade, most of the marginal holders too were growing rice mainly, on inferior land compared to the richer tenants or the gountia. While the latter could save their rice harvest through tank irrigation the former lost almost the total crop. Also, in the plains, the forests which had been under the agriculturists axe for

*"Of the Agricultural Community the landowners are generally possessed of resources sufficient to stave off actual distress, and the same may be said of a large proportion of tenantry in the plain tracts, whenever aboriginal tribes contribute substantially to the tenant body or whereas in Chattisgarh, the distinction between the small tenant and field labourer is very slight, there will be found a large number of resource less tenants with little or no credit to carry them over a long period of scarcity and famine. Farm servants in ordinary years are in favourable position, but when distress becomes acute all but the well to do employers turn them off, and they go on to swell the large labouring population out of work. The field labourers who at the best of times can reckon on only casual employment are the worst of all when the crops fail. These can as a rule count on field labour during the rains. There are intervals between the sowing and weeding and between Weeding and Harvesting when the demand for labour is lack, but their employers or village banias will give a little credit and they can save part of their earnings to tide them over the difficult period. From the middle of April to the middle of June is the hardest period. With the harvest of Mahua (*Bassia latifolia*), and if the crop is favourable, they can lay by enough to carry them not only over this period but to supply them with food when the employment is slack in the rains. When crops fails as completely as they did in the year 1899-1900, not only are harvest earnings insufficient but employment is rigidly curtailed."*

source : *Report on the Famine in Central Provinces, 1899-1900.*

some years and the volume of generation of forest produce was not adequate to supplement subsistence needs of people. The culmination of the disaster was evident in the next season when most of the marginal landholders in the kondh and Binjhal tracts left their land unsown because they could not recover even the seeds. Money and Paddy lending business flourished and the process of land alienation received a further push. The drought of 1900 broke the backs of the original inhabitants of the area, already suppressed and marginalised, they were pushed further down. Birthrates fell and the proportion of tribal people came down in the district population.

Different people responded differently to the drought of 1900. Large, well to do tenants, brought their bahal land under closer cultivation. Tank building was undertaken with furious energy. At lands were totally neglected and as a result dryland farming received a tremendous setback, also crop diversity suffered. The tribal people however in many places substituted rice with Kodon, Gurji, Kutki and other short duration dryland crops. However At land was losing fertility due to rapid denudation of forests in the upper reaches. Wetland Rice cultivation retained its stronghold and thenceforth people would spend all their energy and resources to devise means to expand their holdings, increase productivity and protect their rice crop against failures without addressing the other critical factors of deforestation, appropriate cropping pattern, soil fertility etc. Further all these solutions were for the landed. There were no remedies presented for the dispossessed and those in the process of alienation and pauperization.

*The increased cost of food has produced greater industry on the labourer and poor cultivator and the opportunity to trade and profit has tempted the richer and more industrious to a greater effort. The demand for land has become keener. ...It's cultivation closer and better... There is a gradual breaking up of communal life and in a few cases undesirable accumulation of land and capital in the hands of the money lender. The main result of stirring up competition has been the establishment of a very large class of substantial cultivators by habit thrifty and industrious with adequate holdings, good stock, and savings sufficient to allow for individual employment and extension. The distinction between such men and the lower class of semi-aboriginals with debts and small holdings is much more clearly marked than formerly. (1906, Dewar)*

## 9.2 Drought was here to stay

In the next 50 years, the the situation worsened. Land distribution became more and more skewed and inequity had come home to roost. With improved communication, roads and railroads, the remaining forests were clear felled. Cultivated area expanded under demographic and migration pressures. Land was gradually getting exhausted. The rice boom continued till about the second world war period. By then Marwari and Gujarati traders people had established themselves in large numbers in well connected areas like railroad towns. The prime Teak forests in the southwest of present Bolangir district in the Titlagarh subdivision extending into Khariar zamindari and the Sal forests in the Borasambar tract were totally exhausted during this period. Till then, there was virgin forests that could be cleared and area to expand into; interior tracts were being opened up. Independence came and estates were abolished. Anticipating such a step, many zamindars had already sold most of their land. Therefore prime land was retained either by the original family or sold to bidders with capital. Land ceiling act even when implemented later in the seventies could only salvage waste land or scrub forests for distribution among the landless and the marginalised. The equation started changing drastically after the introduction of Green revolution package of HYV seeds, chemical fertiliser and canal irrigation in the area. With the completion of Hirakud dam in the 50s, the productivity standards became a comparative between the rainfed and irrigated agricultural systems. The profitability of large tenants in the rainfed area had been maintained till then, by a combination of four factors, largeholdings, fertility of soil, supply of cheap labour and access to protective irrigation. Rice trade had brought about a certain amount of homogenisation in the cropping pattern, but tribal people and marginal holders had continued to grow two to three

crops of coarse grains along with rice. With green revolution in the canal areas, crop diversity was dealt a fatal blow. Incurison of improved varieties of rice in the rainfed areas ensured that the indigenous Paddy varieties with its inbuilt capacity to resist drought, would be replaced for shortterm gains. With improved communication, the wagherate went up. People hitherto engaged as only local agricultural labour, started migrating. Community agricultural practises such as the one in which the tenants lent a sickle and plough to the gountia during harvesting and sowing, weeding seasons got discontinued, with the tenants concentrating on making their own land yield. Irrigation tanks with their ambiguous ownership were falling into disrepair and served less land than before. For sometime the yields were raised with improved varieties and chemical fertilisers, but it soon reached a saturation point. And from a shortterm economic point of view, the rainfed rice was no match for the canal irrigated one. The boom was over. In the intervening period there were a number of scarcities. In 1965 there was another drought. For the first time the big farmers felt the pinch of scarcity.

If one looks at the quantum of rain that fell in the kharif seasons of 1900, 1965, 1982, 1987 and 1996, there is not much difference. Peoples vulnerabilities however have been increasing steadily. The dependency pattern of the local population determines their ability to tide over crisis. The original inhabitants had devised a system of land classification, appropriate cropping had evolved, the subsistence was intrinsically linked to their understanding and usage of land, water and forest resources in the area. When land got concentrated with a minority with radically different livelihood practises, the pattern of usage of resources altered. Some section of the original population who were able got incorporated within the new system, others retreated into inaccessible tracts where they continued to follow their own practises. When the next crisis occurred people found their original coping mechanisms to be dysfunctional. Since these were intrinsically linked to typical landuse practises and availability of forest, none of which worked as before, subsistence needs could not be fulfilled using the communities own capacity. The concept of external assistance or relief was introduced. Relief measures brought gratification of immediate needs but failed to look into the flaws in the propagated systems of individualized agriculture, trade, deforestation, land alienation which were breaking down community capacity to deal with the vagaries of their ecological system. Community dependencies were diverted to the market for wages and food and to the government for relief, both abstract external agencies on which they had no control and this alienated them further from their own natural systems, to which now, they too lent their axes. As the contexts changed the simultaneous diversification in livelihoods did not take place. The state failed miserably to deliver both modern education and healthcare, which could have lent a semblance of control on the external system. New vulnerabilities were created, old ones got entrenched. The ecological systems too were losing their renewability.

In Western Orissa average annual rainfall is above 1200mm. Drought is still manifested as frequent aberrations in rainfall during the peak kharif season lasting from June to September leading to crop failure. The majority of the people live in villages and are dependent upon their marginal holdings and on agricultural wage labour for subsistence. Agriculture for the majority of marginal farmers is subsistence oriented though a large portion of the produce reaches the market in the form of distress sales. Cropping pattern has changed drastically. Most people in the rainfed areas cultivate improved varieties of Paddy and use chemical fertilizer. Here and there people still do some traditional crop types, but more as an exception or lack of capital to procure government seeds as they are called. Yields are poor and the crop prone to frequent failures. In the plain areas of Nawapara and Bargarh and Bolangir, the forest has disappeared. There are very few trees on field bunds and people suffer from fuelwood crisis. In places, they cannot grow certain crops due to non-availability of natural fencing material. In the erstwhile forested tracts the Mahua trees provide some employment in Summer months. The flowers and seeds are sold at low rates to traders. No longer they are used for household consumption. Various forest produce collection provide a wage labour option of 20-30 days in Summer. But Agriculture has become a risky venture in this

primarily undulating country with the upper slopes of land cleared off natural vegetation, leading to high rates of soil erosion on uplands, sandcasting on lowlands during the rains when high speed of the large volume of water flows over it. Depleting the upland of its top soil cover, diminishing fertility as no organic decayed matter is deposited on it. In the most drought prone tracts of West Orissa there is a high rate of run off due to the gradient of the land. Which implies that, even though large volume of water passes over it, none can be retained by the land.

During the time of independence most of this land was already in a highly depleted state. In such a situation they got a new lease of life through the usage of green revolution methods, HYV and chemical fertilizers and canal irrigation. The resulting hike in yield was misleading as land was depleted. Today this degradation is highly visible in areas where canal irrigation has not substituted tank irrigation and crop failures are common on the slightest aberrations of monsoon. Change in cropping pattern has also had a tremendous impact on soil fertility and scarcity.

1. In 1946-56, the total cropped area in Kalahandi was 37% of the total geographical area. In 1976-77, the cropped area rose to 48% of the total. By 1993-94 the area had dropped to 39%. In Patna state, total cropped area in 1937 was 57.7% of the total area. In 1965-66 the cropped area of Bolangir district came down to 50.7% of the total. By 1993-94, the area had risen marginally to 53%. In undivided Sambalpur district total cropped area declined from 44% in 1961-62 to 39% in 1993-94.

2. While total cropped area showed a slight decline in all the three districts. Area under rice had expanded in all the areas and area under coarse grains have declined.

During the final settlement of the ex-state of Kalahandi, in 1946-56, out of the total cropped area of 908975 acres, including both zamindari and khalsa areas; 472644 acres or 52% of the total area was under Paddy while, 268445 acres was under coarse grains like Mandia, Jhari, Kodo, Gurji, Suan etc. The percentage of cropped land under coarse grains was as high as 36% in the ex-zamindari areas. The ex-state of Patna had 43% of total cropped area under Paddy in 1937. During the same period the area under coarse grains was 11%. Till the middle of sixties, area under coarse grains was around 10% in Bolangir district while in Kalahandi area had come down to 10% of the total cropped area. By 1996 the area under coarse grain was less than 2% of the total cropped area. (refer to annexure I, tables)

3. In the Hirakud command area the area under HYV rice had increased at the cost of traditional paddy varieties. In undivided Sambalpur district, area under HYV paddy increased from 12058 acres in 1965-66 to 126599 acres in 1969-70. Double cropped area increased from 87000 acres to 226000 acres during the same period. The major increases were under relatively water intensive crops.

*Though Paddy was not new to the area, what is the growth of HYV monocultures. Though the Command Area Development Authority is keen to change the crop mix, a sort of landlocking has occurred; the regimen of water regulation in the canals leaves the farmer little choice but to adopt the watering pattern of the dominant crop. Moreover the marshy conditions of the lowlands prevents cultivators from shifting to other crops. (ref: 12)*

While Hirakud command area combats with increasing amount of waterlogging in the low lying lands, (in 1974, 5.7% of the total area surveyed in Sambalpur district was water logged way back in 1974) the unirrigated blocks face drought and aridisation.

4. Consumption of chemical fertilisers have increased exponentially with the rise in canal irrigation. (refer Annex I, Tables)

5. The proportion of cultivators to agricultural labourers have increased in irrigated areas. (refer Anex I, Tables). Land Alienation increases with the rise in canal irrigation. In the hirakud Command area much of the land has been alienated from the local inhabitants, who have proceeded to swell the proportion of landless wage workers.

6. The distribution of land holding remained highly skewed in favour of a minority of middle and large farmers. (refer to anex I, table iii)

As long as people maintained a diversity in agricultural practises they were never completely dependent on any one season or any one crop in particular for survival. The superiority of rice as a staple food and the gradual disappearance of other cereals from the diet has in a way hastened disentitlement. Rice had a market and thus could be sold if not eaten. Hence people grew only rice. Other cereals Kodo, Gurji, Mandia etc, could be eaten but had no market. Mahua which formed a part of regular diet of almost all people in the area during the rain months has presently found it's use only in the manufacture of liquor. Groundwater has not been exploited in the arca. Groundwater too behaves in a erratic manner and in the absence of recharge mechanism can only be good for one time use (finite). Landholding is highly iniquitous still and the rate of land alienation high following the same distinctive pattern as it had 100 years ago. In some areas the tribal community were settled in the worst possible land. Whole villages situated in the degraded uplands. Migration has been coping mechanism for the last 30 years or so. Rates of permanent migration are highest in the erstwhile forested areas now completely denuded. The other means of livelihood are Kendu leaf collection, Kendu bush pruning, Bamboo cutting, collecting Mahua fruits and seeds, Siali (Piasal) leaves for plate making, char seeds, woodpiles to be sold as fuel, hill broom, Sal seeds etc. These are very low income activities and strictly seasonal. none of these substances are used by the people who collect them) Two other comparatively modern routes of migration has been, 1) to the brick kilns in Waltair to the brick kilns in Jamnagar, Rajkot and Gurdaspur, 2) summer paddy harvest in the Hirakud command area. Private mines offer another wage labour option.

#### **10. The Political Economy of Tank irrigation in West Orissa**

In the districts of West Orissa every village has a network of tanks. In an area where water was plentiful during the rain months but flowed away almost immediately due to the undulating nature of the landscape, the design of these earthen tanks were most appropriate for retaining surface water for use in dry months. They were constructed chiefly by throwing strong earthen embankments along drainage lines. A series of such restriction ensured maximum utilisation of the surface flow. Further the standing water in each structure recharged the low lying tanks and ultimately the dugwells on the underlying agricultural land.

There are various versions as to the origin of the technology of tank construction in West Orissa. The most popular notion holds, that settled agricultural community of Kulthas who migrated to the area around the later half of 18th century and early 19th century, were expert tank diggers and brought with them the unique design of tank building. However this is refuted both by the existence of ancient reservoirs and the living memory of the tribal people, Binjhals, Kondhs and Gonds, who were the original inhabitants of the area and whose ancestors they say, had evolved the design of the tank based on the topography of land. Long before the middle of 18th century a section of the tribal community had already developed area specific modes of irrigation systems. In the hill areas and plateaus, hill streams and perennial springs were used for cultivation of a variety of foodgrains, fruits and vegetables all year round. In the undulating areas, earthen embankment across drainage lines would create the tank like water reservoirs, further down in the plains, shallow wells were

used in association with wooden lifts for irrigation. The Kondhs, Gonds and Binjhals the three main tribal communities of the area had been already using these irrigation methods when settled agriculturists started coming in the area in large numbers from the eastern direction.

When the British entered the scene, some of the plain areas of the otherwise rugged and hilly terrain had already been cleared for cultivation. These areas were found occupied by the section of the tribal community who had taken to settled cultivation. The east of present Bargarh district, along the valley of Ong and its tributaries, the north of Nawapara district, along the valley of Jonk the northeast of Bolangir district along the valleys of Ong and Tel rivers. Under the Marathas some amount of dispossession had already taken place, whereby many a tribal headman lost his village to non tribal immigrants due to the inability to meet the sudden unprecedented revenue demands on his estate. As mentioned before, the changes in the gountiahi system, accompanied by high revenue demands laid the foundation of intensive agriculture in this area. The proliferation of tank building was closely associated with this phenomenon. Each gountia had to undertake tank construction in his village. This was recognised by the British administration as improvement being made to the village production system and the gountia as a reward was consequently granted a protected status meaning that he would not be evicted arbitrarily from his village.

*Secreteriate Letter number 44436-212 dated 22/7/1889, issued by the officiating commissioner, Chattisgarh division shows that, "The position of Gountia untill recently been merely that of a thicadar whose lease was for a term of years only and who had no absolute claims to the renewal of that lease at the end of the period. Untill the opening out of the country created a demand for the land, this position was not one of hardship. To meet this change the chief commissioner had ordered that a protected status will be given to gountias who have, a) been 20 years or more in the possession of their villages b) been actual reclaimers of the village or c) spent largely on tanks and settlement of raiyats. (source : 7)*

*An Ordinary irrigation tank known as a Kata is constructed by throwing a strong earthen embankment, slightly carved at either ends, across a drainage line, to hold up an irregularly shaped sheet of water. The undulations of the country usually determines its shape as that of a long isosceles triangle of which the dam is the base. It commands a valley, the bottom of which is the bahal land and sides are mal terraces. As a rule there is a cutting high up the slope near one end of the embankment. From this the water is led either by a small channel or Tal, or from field to field along the terraces, down which it finds its way to the lower land. Such tanks can supply water to an area of 30- 300 acres.*

*Munda is an embankment of smaller size across a drainage channel. Embankments of this sort are very common and can be constructed by the raiyats themselves for the benefit of their own holdings.*

*The Bandh is a four sided tank excavated below the Kata, from which it derives water by percolation. They are almost invariably used for drinking purposes. They add to the irrigated area by spreading percolation and by rendering it possible in years of drought to empty the irrigation tanks completely.*

*Source : Sambalpur District Gazetteer, 1971.*

Tank irrigation took root. Almost every village had systems of tanks along drainage lines. Paddy would be cultivated on lowland in the command area of the tank during the kharif season and Sugarcane during Summer. The tanks were built in many cases with the free labour of the tenants under the "Beth Begar" system. Especially in cases of the "khamar" villages, ie villages exclusively for the maintenance of raja or the zamindar's household, gountias of all the villages within the state would have to supply tenants who would provide free labour for the construction of tanks. Many of these huge tanks exists and can be seen even today. The discretion of water distribution from the tanks rested with the gountia. Usually it was land belonging to his household (called bhogra



land) which was located nearest to the tank. So in any case the primary benefit from the tank water was availed of by the gountia. Instances of sugarcane cultivation in summer on common land irrigated by tank was also there in the then Sambalpur district. Since the water was shared by all the tenants, the responsibility for the repair and maintenance of the tanks also rested with the entire tenant body. Desilting tank bed and repairing embankments were undertaken regularly by the tenant body. An element of coercion definitely existed as the gountia had the right to dispossess the tenant of his land.

The next important change came with the "opening out of the area" as the British put it with the introduction of the branch line of Bengal - Nagpur railways to Sambalpur. Rice cultivation received an phenomenal boost. There was a massive scurry for land. Within the next 10 years a prosperous tenant body arose flush from the profits of rice export. While all possible land was being brought under paddy, there was also a rush to build private tanks to ensure sustained production in case of rainfall failure. In this period large tenants started building their own tanks. The number of tanks rose in each village for assured water was a prime necessity for stable production. Not surprisingly the composition of this group of prosperous tenants was entirely non tribal. Tank irrigation had been totally coopted by the non tribal immigrants in the best areas and the tribal community was forced towards the edges of the estate, in the more difficult, forested terrains. By then many of the tribal gountias had lost their villages and thus rights over the best land underlying the tank. Alienation of land also meant loss of right to use tank water for irrigation.

*In 1909, 112,515 acres in the khalsa areas of undivided Sambalpur district were irrigated with tanks compared with 73105 acres, 20 years ago. There are now 5572 tanks in the khalsa. The advance is most striking in the Bargarh tahsil, where tanks have increased from 1697 to 2965 and wells from 204 to 6034. It is reported that 60% of the bahal land, 30% of the berna and 12% of the Mal land are irrigated. (1909, O'Malley)*

By 1922, irrigated area in Sambalpur district had increased to 2,21,347 acres. There were 12,282 tanks and 24,611 wells in 1922, in comparison to 8600 tanks and 14,907 wells in 1906. During the same period cropped area in Sambalpur had gone up by 17%. In Patna state there was 131,744 acres of irrigated land in 1937, in comparison to 83211 acres in 1919. At the time of the final settlement of 1946, Kalahandi had 5497 tanks which irrigated 95592 acres of land in the khalsa and zamindari areas. This constituted 12% of total cultivated land in the khalsa area and 8.9% of total cultivated land in the zamindari areas. By 1965-66, only 53,799 acres were irrigated by tanks in Bolangir district. In the same period tank irrigated area in undivided Sambalpur district had also decreased to 1,48,097 acres of land. By the early seventies the land under tank irrigation in Kalahandi had decreased to 1,97,87 acres.

The expansion of tank irrigation thus coincided historically with rice trade, railways and alienation of land from the original settlers of the area. What followed was massive clearing of forest by the land hungry immigrant settlers and a drastic change in cropping pattern. Crop diversity was retained only on the uplands and in tribal cultivation in the more forested tracts.

1899-1900 were severe scarcity years. The recorded rainfall data of the past century in this area, shows erratic distribution of monsoon esp in the main agricultural months between June and September. However droughts were unknown before 1898. Using their irrigation tanks the richer tenants and the gountias could save almost 65% of their crops. The marginal landholders with no facilities for protective irrigation lost their entire crop. The drought had a class as well as a caste colour to it. The tribal people in the margins of well settled areas lost their crops while their counterparts in the more interior forested tracts could still raise their traditional dryland crops. Down south in Kalahandi district where settled agriculture by non tribal immigrants had happened later, the 1900 scarcity did not have any effect.

scarcity?

*In 1896-97 nearly 800,000 acres were irrigated. In 1899-1900 every acre that could be watered required it, but tanks did not fill up and wells gave out, and irrigated area dropped to 350,000 acres. (1900, Report on the Famine in the Central Provinces)*

After this drought in the beginning of this century, tank building was undertaken with maniac energy. The kharif paddy was to be protected at any cost from the vagaries of monsoon. Interestingly most of the relief work undertaken during the 1900 drought year by the rajas, zamindars as well as richer tenants and gountias included tank digging as the primary activity. While private tanks were being built in the holdings of prosperous tenants, the maintenance of gountia's tank was suffering. With the restrictions on the bethi system and the growing indifference of tenants, tanks were falling into disrepair. The gountia had to spend considerable amount for the maintenance of tanks. There were also frequent disputes regarding the distribution of tank water.

*The chief subject of village disputes for some years has been water rights and rights in the common land which formerly grew Sugarcane. It is owing to the rise in rice profits that the irrigation tanks are not now habitually reserved for Sugarcane irrigation on common land during hot weather. In this respect the tenants as a body suffered from the change in custom. They get for their rice crop much less water than goes to the nearest land of the gountia and they have to irrigate their Sugarcane expensively from the well. The former grievance is voiced loudly in years of short rainfall. But it is a fact that the burden of maintaining public tanks in repair has fallen more on the gountia and the old custom of subscription is shirked by the raiyat. (Pg 206, 1906)*

Sometimes the tanks were deliberately allowed to get silted up so as to convert it into highly fertile farmland. These practises were not encouraged by the British revenue administration. Tank irrigation by its very nature was for the more privileged among the agriculturists. The tribal community depended more and more on dugwells and wooden lifts for irrigation and hill streams wherever possible. It so happened that in many cases the ancient reservoirs built by their ancestors were in the possession of non tribal immigrants.

Just after independence confusion reigned as regards the ownership of these tanks. Many of the tanks have been registered under "Jalchar", which basically meant public ownership. However, individual gountias who had financed the construction of the tanks did not wish to relinquish their ownership over it. In Kalahandi district all water reservoirs existing from before the settlement of 1922 and which were in use for drinking water purposes were kept under *government khatian*. Water reservoirs excavated by tenants in their holding after the settlement of 1922 have been recorded under the names of the tenants concerned and rents had been assessed on them.

By 1950s with the completion of Hirakud dam, canal irrigation started gaining round as superior irrigation method. Tanks however were still being used for irrigation. Most of the large tanks were transferred to the panchayat. The change in ownership did not take place simultaneously all over the place. In many places they continued to be called by the name of the erstwhile owners. The maintenance of the tanks suffered. In the next ten years, many of them silted up and subsequently could irrigate less and less land during the kharif season. Zamindari and gountiahi had been abolished and so had been the custom of "Bethi" or free labour. Wage rates had gone up. Individuals could no longer afford to maintain private irrigation structures.

In the canal irrigated areas, tanks lost their importance except as sources for bathing and providing drinking water for cattle. In rainfed areas, tanks still remained the only source of irrigation. Rain failures occurred frequently and people depended more and more on the government to maintain their tanks. Some money was periodically spent under various cash for work programs on construction of new tanks and maintenance of old ones. Especially during the scarcity years relief

money was majorly spent on the repair of the tanks. The subsequent benefit due to the generation of irrigation potential though minor, was availed chiefly by the erstwhile gountia's household in the village. Although they no longer owned the tank, they definitely owned the land underlying it. Many of the land owned by the erstwhile kings and zamindars had also been sold off prior to the implementation of the ceiling Act. Many of these lands too were situated under huge tanks. Thus government spendings on the maintenance of tanks, over the years also benefitted the prosperous sections of the community. In the rainfed areas of West Orissa, bahal land under tanks are still changing hands. Wherever new tanks are constructed the land underlying it acquires higher economic value and sold out to the monied bidder during distress years. Immigrants continue to buy land in the area, and one can even find 30-60 acres of land, underlying an old tank and giving two Paddy crops under their ownership in rainfed areas.

In areas where minor irrigation structures have been built by the government the land in the command area of the canals have been systematically bought up by the socially and economically higher section of the community.

Government spendings have no accountability and each year massive amounts are leaked away from the budget meant for either repair of old tanks or construction of new ones. In this process too, the stakes of the community are divided. The middle or large farmer wants the government to expend its resources on either constructing a new tank or enhancing the capacity of the existing ones. But the major section of landless and marginal holders who would not derive any irrigation benefit from the tank are only interested in the wage labour earnings from the earthwork sanctioned on the tank. Therefore in the leakages in government spendings, they too play a minor role. In western Orissa it has become an established practise, where every year the government sanctions some money on doing tankworks and people get employment in lean months. Less than 30% of the money sanctioned is actually spent on the works and people doing wage labour on piece rated basis where 1 unit is equivalent to 10'x10'x1' of earthwork, invariably do six inches and take wages for a foot.

Lately, the usage and distribution of tank water has become major bones of contention in many villages. The dispute takes one particular form when it is between the landed and the landless. The landless or marginal holders with no land in the command area object to the cutting of the embankment to irrigate kharif crop in scarcity years because they would rather retain the water for bathing, drinking and domestic use of human beings and cattle while the landowner is more keen to save his kharif production. The second kind of dispute is again between those who want to pisciculture in the tank versus those who would rather raise a summer crop in the command area. Another factor which has brought about the change in the pattern of utilisation is the large number of diesel and kerosene pumps which the prosperous farmers now use to lift water from the tanks, not only to water the kharif Paddy but also to cultivate Sugarcane or Groundnuts in Summer.

In conclusion, their technological appropriateness notwithstanding, there is a danger in identifying the revival of Tank irrigation as the panacea of drought and water scarcity in West Orissa. The inequity associated with tank irrigation has taken newer forms but nevertheless exist. Primarily because the ownership of bahal land underlying most old tanks are highly skewed in favour of socially and economically superior classes in the community. Also with all other factors remaining unchanged, new tanks if appropriately located would only hasten the rate of land alienation. Finally, tank irrigation which had in one stage of history ushered intensive rice cultivation, would promote shift towards water intensive hybrid mono cropping at the cost of diverse dryland farming still prevalent in the area.

#### **11. The Politics of Government Development Programs, Organised Relief and Voluntary Sector in West Orissa.**

The state of Orissa is identified as one of the more underdeveloped states of the country. It has low literacy rates; High maternal and infant mortality rates, low agricultural productivity, few industries and malaria claims hundreds of lives every year. Like many other parts of the country, there is an internal imbalance within the state, between the relatively prosperous coastal area and the neglected inland namely the western region situated in the scattered uplands of the Eastern Ghats. The area was basking in relative obscurity till the district of Kalahandi rose to infamous heights following the media hype over an incident of sale of girl in the drought year. (Quote from Sainath). After the 1899-1900 drought which affected almost the entire Central India, scarcity following rainfall failure and crop loss has occurred in this region with relentless periodicity, in 1935, 1965, 1975-77, 1987-89, 1992-93, 1995-96.

Drought was a reality. However the articulation of its causes and the prescription for its prevention and cure are coloured by the considerable lobby of interest groups, for whom the declaration of drought spells economic bonanza. The decision results in numerous soft gains for the major players in the region. The Soil Conservation Department, the single important implementor of water conservation related DPAP programs, the local contractors, the politicians and of late the voluntary sector. The Government Relief programs in the event of a major drought serves generally as conduits for channeling funds into powerful lobbies. To substantiate the argument we shall trace the basic pattern of Government approach to relief in the event of Drought.

Rainfall failure is recorded, losses are assessed through crop cutting exercise, State asks Central assistance, Money is made available from the Calamity relief Fund. District administration implements relief programs. Involves primarily Cash for Work or Food for work programs and controls movement of foodgrain in the open market, plus makes additional provisions through the public distribution system. Delay in Implementation and Faulty implementation, Hurried implementation, faking of muster rolls, creating white elephants of useless unproductive structures, roads that lead no where. Innumerable relief agencies are in the fray. Replicating Government programs, with appropriate results in rare cases, mostly adding to the mistakes. In the villages of west Orissa, the soil Conservation department is the object of ridicule. Any useless earthen structure resembling a tank in the unlikeliest of places is sure to be built by them. Government Works in the 1996-97 Drought year lived upto to its well established reputation of wasteful spending, delay in payments, useless structures. Travelling through Bongomunda Block of Bolangir district, where drought was accentuated by the dusty and treeless landscape, local groups pointed out no less than four earthen structures where the government agencies have claimed to have spent Rs.1.5 to Rs.2 lakhs. They had just scraped the top 6" of soil from the site and dumped the earth on the existing bunds. Only 10 days of employment was generated. In Badabanki Village of Turekela block, in Bolangir district, The "Block" had started the construction of a tank. The area lay its innards of white chalk and half exposed tree roots, with large termite hill like pillars, evidence of some work being done. People had not received full payment long after the work was closed. In Khuripani village of Patnagarh block, Bolangir district, the ubiquitous "Block" as people say, constructed a water harvesting structure which does not hold a single drop of water and still has standing Sal trees in several stages of decay. Sal or Rengal as it is known locally has become almost extinct in its natural form in the area and this particular grove was protected by the village community. In Luhakhan village of Padampur block in Bargarh district, some excavation was going on in private agricultural land. In the course of our conversation with the people working there we got to know, that the next day would be the last day of work. The budget for the tank was declared as Rs.50000. At the wages rates which the people were working, the number of people and the seven days of work, the expenditure worked out to only Rs.8000. In Baitalbhanta village of Paikmal block, the Watershed program under DPAP has resulted in the excavation and bund raising of private tanks belonging to four or five well to do farmers who did not allow others to physically lift water to save their patch of groundnut crop. In the months following the 1996 kharif

harvest failure, West Orissa was in welter of activities. Relief agencies were everywhere. Outdoing each other in their efforts. In one particular instance, the Tank Excavation work funded by one such agency had high turnover of people after one week of work, it so happened that the panchayat started work in the same village. In a number of villages in Paikmal and Padampur blocks of Bargarh district, Cash for work programs took off late, in the months of April and May, by which time people were otherwise engaged in their seasonal cycle of activities consisting of Mahul and Chahar fruit collection following which they migrate to the Hirakud command area for the Paddy harvest every year. So when the relief fell into place there were no takers from among the community. From villages of Anchalpur, Chandipur, villagers had already left in truckloads for far off destinations like Gurdaspur early in the season. Taken by contractors to work in brickkilns and construction sites. Families in Sundhimunda village migrate to places like Jamnagar in Gujarat to work in construction sites. The established migrating routes in the area are systematically followed by the communities as a way of coping with increasingly erratic monsoons and unproductive agriculture.

### Case Studies

#### 1. Agalpur ; remains of past glory

The Ong river travels eastward forming a wide valley on the borders of Bargarh and Bolangir district. Agalpur block of Bolangir district forms the eastern half of this valley. Famed to be highly fertile, Agalpur was among the best cultivated areas of Bolangir district.

The Ong river, flowed with a thin trickle, snaking along the wide sandy beds with large rocks and boulders towards the western course, in the month of March. Summer was round the corner and the banks were parched and brown with patches of vivid green, a few instances of a spring or Summer crop. In the village of Babuphasar, large landholders belonging to the Kultha community were raising Summer crops of Groundnut using the water of Ong through lift irrigation. There were only a few Gond or Binjhal households in the village. None had land. The next village Babupalli was also a Kultha village. The principal crop they cultivated was paddy. Traditional varieties of Paddy were no longer grown as they didn't yield much. People with larger landholding grew a few bahal varieties for household consumption. Land in their village was fertile they said and the average per acre yield of Paddy was as high as 20-25 bags in good rainfall years. But rains have been failing frequently and the kharif paddy dies. 1996 was a bad year for the area when most of the bahal Paddy died due to lack of adequate rains in August and September. This year the harvest rotted in field because of excessive rains between November to January. The smaller farmers cultivate vegetables like Onions, Chillies, Tomatoes and Brinjals on the Bari land using well water and Tenda for irrigation. In the well on the Bari land, water was visible at 10' from the ground level. Even in 1996 drought the wells in the village did not dry. In comparison to the western blocks of Bargarh district, Agalpur seemed to be drier with very few trees on agricultural land. Even the common trees like Mahua, Sahaj, Arjun, char were not to be seen. The uplands were bare and yellow in colour bearing marks of high degradation. The phenomena was more apparent in Gondpalli. It was the only completely tribal village, inhabited by Gonds in Agalpur block. The village seemed to be situated on upland. The village with 45 Gond families and 100 acres of arid and degraded upland. There were no tanks in the village and no trees. Cultivation even during kharif season was unsure because the land was bad. Groundwater cannot be accessed as one encountered rocks under 10'. Not a single Mahua tree was visible in the village. The oldest man in the village does not remember any trees in the forest even when he was a little boy, 80 odd years ago. The Gonds according to him came and settled near the forest about 200 years ago after being driven away from the more fertile areas by the Kultas. The village was chronically drought affected and almost the entire population subsists on agricultural wage labour on the lands of Kultha farmers in the nearby villages. Entire households migrate to the neighbouring blocks to work in the drying and preliminary processing of Kendu leaf, twice a year, once during the

plucking season in late Winter, and second time during the processing season in Autumn. There was no possibility to raise any Summer crop in the village. On the bank of the Ghensali Jor, a minor tributary of Ong, some families belonging to the Pondhra community were cultivating vegetables, mainly onions, Chillis and Tomatoes by digging shallow wells and using a Tenda to lift the water. Cartloads of Sugarcane were coming from Rengali. Rengali village was once the "khamar" village of the Agalpur zamindar. Generally villages with the best lands were kept as "khamars" for the exclusive use of the zamindars household. Sugarcane was watered by private wells of individual farmers. All the cane growers used diesel pumps for lifting water rather than the more traditional tEnda. Sugarcane is supplied to the Sugar factory at Deogan. The zamindar sold the village to a Kultha. An old Kultha farmer on being asked about his village hadli had remarked that if it wasn't fit to live in Rengali, it wasn't fit to live anywhere else. Beyond Agalpur, the villages of Dudka and Roath were getting canal irrigation from a medium irrigation project at Salebhatta. These villages were dominated by Agharia cultivators, next to the Kulthas they were the most prominent and prosperous agricultural community of the area. Agharia farmers from Roath had acquired large landholdings in the neighbouring village of Mahulpalli, whose residents belonging to the Teli and Goud community now wored the lands of the Agharia.

The prcipal characteristic of Agalpur block was the almost negligible tree cover. Agricultural field bunds were narrow and had scattered Neem trees or thorn scrubs of Acacia variety. The villages with best lands were under the occupation of Kultha and Agharia farmers. None of these villages had more than a few households of adivasis, Gond, Saonra and Binjhal, all landless and subsisting on agricultural wage labour. Wherever they had land like in Gondpalli for instance, it was of poor quality. Traditional Paddy varieties are not grown in the area. Improved and high yielding Paddy crop has established it's position. Crop diversity is far lower in comparison to the other areas of Bolangir district. Mung is widely grown as a spring crop. Irrigated areas raise a double crop of Paddy and are mostly owned by middle farmers belonging to Kultha or Agharia families. In the unirrigated aeras uplands are highly degraded and the bahal lands too are prone to crop failiure in low rainfall years. Tanks no longer served as protective irrigation mechanisms in Agalpur.

## **2. Scarcity, Relief and Captive Vote banks in Bijepur**

Bijepur block consists of some of the most arid areas of Padampur subdivision. The almost flat landscape is devoid of trees. Land closely cultivated and fertile once, appear parched and degraded. The unembanked uplands especially were degraded, sandy and scattered with rocks and stones. Before 1840, Bijepur zamindari was held by a Gond and the area had a high Gond population. Later the zamindari was given to a Kultha in return for military services rendered towards the suppression of a tribal uprising. The larger villages with better land in Bijepur today are mostly held by farmers belonging to the Kultha community. Gonds, Gouds and Binjhals are found in lesser number in some marginal villages. Located on the western side of the Bargarh plains, Bijepur was once famed for it's good cultivation. Almost every village has network of tanks and bahal land is under Paddy crop. During the rice boom of 1890's, major expansion of cultivation took place. But the "at" or the upland were degraded even then due to massive deforestation. The settlement report of 1906, mentions the degradation of uplands in Bijepur.

*"So recently as thirty years ago, good forests covered wide areas in the West of the plains and patches of Jungle covered all the higher ridges. These have now entirely disappeared. Much of the old forest land has been brought under cultivation, but most of it lies too high and is too rough and indented in surface to furnish good tilth. Great areas now lie idle covered with small and all but useless scrub. Deforestation must in time tell against the natural fertility of the soil..."*

Villages in Bijepur suffer from severe fuelwood crisis. Situation people say were worse twenty

years ago when old trees had gone and the thorn scrubs had not come up. Traditional Paddy has been replaced almost everywhere with high yielding and improved varieties. Chemical fertilizers are used by bigger farmers. Proximity to the canal irrigated areas of Bargarh has ushered in this practise. Yields are poor, between 15-20 bags on good land. Bahal Paddy fails every other year.

A major section of population of Bijepur, including marginal holders, eke existence through agricultural wage labour in the neighbouring canal irrigated areas. There has emerged over the years a large group of people who meet their subsistence needs by doing wage labour on various earthworks happening in the area. The creation of professional earthworkers out of subsistence farmers, is the legacy of organized relief, first introduced by the British and later continued by the independent state, in the frequent scarcity years. Over the years a large number of relief agencies and the state, have generated voluminous quantities earth to provide employment to people in lean months and scarcity years. Most of the resultant structures, tanks usually, do not serve any purpose besides wage labour generation, and stand like prehistoric behemoths in the dusty landscape.

Agriculture does not have too many takers in Bijepur. The state Government had till now not attempted any longterm regeneration processes that would address the root cause of scarcity. The soil Conservation department spends lakhs of rupees every year to create large damlike structure. These are erected almost anywhere they find open space and are seen as conduits for largescale financial misappropriation.

An example of this, is the so called watershed program undertaken by the District Rural Development Authorities under the Drought Prone Areas Program in Balanda village. The implementing agency was the soil conservation Department and the project period was between 1996-2000. The project was to benefit 6 other villages besides Balanda. Balanda is a village with population over 1200 and over 400 ha of land. Exactly 50% of the population was landless. ST and SC constituted little less than 50% of the total community in the village. The village has 21 Tanks. Most of the land is of poor quality. Ground water can be accessed at 25 foot. The only crop raised is the kharif Paddy. According to the people in the village the sole activity under the Watershed program, till then, had been, to generate a week or so of earthwork. The tangible result has been the deposition of a few inches of earth on existing bunds of old, private tanks. At the village level a committee of 12 has been formed. The president of the committee was a local contractor. People were not aware of the total sanctioned budget of the program, neither were they in the know of the total money expended on such works in 1996. Some of the earthwork has been done on absolutely derelict tanks lying on sandy waste lands. Some places, they had been gouged out of private agricultural land. There was no evidence of any Watershed techniques or approaches in the haphazard, disconnected earthworks. About two meetings had taken place in the village and some grains or seeds had been distributed. No one knew for what purpose. The case of Balanda is typical of the kind of activities undertaken by the government to alleviate the condition of the scarcity affected people of the area.

In 1996, rainfall ceased in the middle of the kharif season. There was widespread crop failures and drought was declared. A number of relief agencies of various hues and allegiance, religious and political embarked with the mission of delivering relief in the area. The front organisations of RSS and the Vishwa Hindu Parishad played major role in distributing gratuitous relief of Seeds and grains etc. Simultaneously, a vicious circle of rumours started making it's rounds that the "Christian" Charity organisations were converting the local people into christianity in return for digging tanks or doing other relief work in their villages. Allegations and counterallegations spread like wildfire and in the villages people were divided on their opinions. Long years of dependency on external relief had created an unquestioned acceptance of relief of anykind and from any source. The abject dependency on relief has been so debilitating that in 1996, even in places where water was available under 6-8' of surface level, people waited for the relief agencies to come and dig out water in their village. o Religious revivalism in the guise of relief added another dimension to the

scarcity of 1996-97. That the BJP scored a victory in the area in the 1998 elections was of course incidental. Relief without accountability has not only killed peoples abilities to cope with the scarcities but has also paved the way for political manipulation of people into creation of captive vote banks.

### **3. Foot of the Hills and Margins of Land; Alienation in Borasambar tract.**

In the early part of this century Borasambar or the present Padampur subdivision of Bargarh district was considered among the wild, forested and inaccessible tract of the area. The Gandhamardan system along with isolated outcrops of the Eastern ghats run diagonally across the erstwhile Binjhal zamindari spanning more than 50% of the total geographical area of present Bargarh district. The settlement report of 1906, describes Borasambar as,

*Bounded by high hills on the north and South and the western portion is a mass of hills and glens. Besides the hills, the chief natural feature of Borasambar is the Aung river which rises in the south east corner, cuts a great semi circle to the north and runs eastward in a widening valley. The eastern portion is the best agricultural part of the estate. It's soil contains some river silt and is enriched by hill drainage. In the hilly tracts chiefly inhabited by aboriginals, agriculture is in a backward state.*

The expansion of settled agriculture and the first movement of non tribal people, westwards from the Bargarh plains had taken place between the last quarter of 19th century and the early part of this century. The evidence of this can be found from the instances of villages where the gountia has changed from tribal to non-tribal. In almost all the villages of Borasambar zamindari, the original Binjhal, Saonra or Kondh gountias have been replaced by Kulthas, Telis, Mali, Agharia, Brahmin and Meher communities.

Marjetpalli is a small village on the foothills of Gandhamardhan toward the northeastern edge. One of the border villages of Bartunda panchayat, before the hillrange rises steeply. Forest produce collection was a major source of livelihood in the village. The principal occupants of the village are Binjhals, Saonras, Gouds and Harijans. There are large number of Mahua trees, some as high as 30'. Mahua flowers constitute the principal item of collection in the Summer months. Some flowers are retained for consumption while a majority are sold to the middleman procuring for liquor making units. People live in small mud houses with fenced in back gardens. Castor and Bajra are grown in many houses. Oil extraction in the village is still done thru' a crude distillation process using earthen pots with tiny holes and bamboo pipes. Most of the agricultural land were upland reclaimed from forest, (at and tikra as they say) with tree growth and scrub, uneven full of pebbles, stones, rocks and boulders. Cultivation is not intensive in the village and there is high dependence on wage labour. The forest on the hill sides still appear dense, occasional stark, bare patches notwithstanding which has exposed the underlying sheet rock. There is a disquieting presence of a contractor in the village, involved in stone quarrying and timber smuggling. People were telling us about how even 6-7' Bija trees are being systematically stolen from the village forest. People were also telling us about the unfortunate experience during "Balco hatao" movement to save the Gandhamardan from Bauxite mining. As to how all the leaders chickened out and got involved in mainline politics, and people in the frontline had to face police brutality. When asked whether they would fight again if the need arose to protect the Gandhamardan, they said if need arose they would as their survival was inextricably linked to the hills. However it would be difficult this time to place trust in external leadership. Marjetpalli is also a typical example of the process of marginalization of the tribal community in the area. The settlement is not more than 70 years old. The old man in the village (he was the oldest) told us that the village was settled two years before his birth. The village is settled close to the foothills of gandhamardan. There are about 80 odd households maybe less. Each with a fenced in backyard with Raxi, Semi and Castor (Jara).



Village has good tree cover, remnants of forest visible everywhere. Summer cropping constitutes of vegetables in backyards for household consumption. Land quality poor for cultivation. Unit families have couple of acres of degraded forest land. Uneven, rocky with thin top soil cover and exposed roots. There is a high rate of sand casting when rain water streams flow down at high rates from the hills. The hills have large denuded patches, underlying sheet rock is exposed. The agricultural land has huge standing trees and dense undergrowth of kendu, palsa, char and mahul. People do scattered patches of traditional variety of short duration, upland Paddy (sarian, Kulian etc) on unembanked at and tikra land. Paddy is cultivated broadcast. Yield is very poor, 4-6 bags per acre and that too often withers. Due to land topography, surface drainage rate is high. After heavy rains the top soil gets washed off, and the land is completely dry. The lowlying lands belonging to villages located downstream get all the water. The form of cultivation is traditional and there is high dependency on the forest. In scarcity years, people are affected more due to lack of agricultural wage labour options than due to crop failures.

There is an interesting story associated with the pathan gountia of Bartunda. The village originally had a Gond gountia and there was a sizeable population of gonds in the village. The gountia had to travel about 50 odd kms through deep jungles to deposit revenue with the zamindar at Padampur. A Pathan whose name of Ghasi Khan Gointa had come to the village to trade in cloth and rice. Ghasi Khan had horse and offered to help out the gountia by taking the revenue to the zamindar on his behalf. In Padampur the pathan conspired with the zamindar's emissaries and became the gountia himself. Till today a litigation is going on over the ownership of more than 60 acres land in Bartunda village among the descendants of the Gond and the Pathan. Most of the gonds have left the village and disappeared.

On the other side of the Gandhamardans, in the area bordering Khaprakhol block of Bolangir district, in the foothill villages, people cultivate small patches of short duration paddy in Summer, irrigated by the perennial springs. In Dhaulibahal village about 20 acres can avail of the spring water to grow short duration (60 days) Paddy in Summer. Dhaulibahal rests close to the lower slopes of Gandhamardan. It is a small village with total land of about 100 acres. The land is rocky with thin soil cover but very fertile due to the proximity of forest. The village has a mix of Binjhal and Kultha population. The earlier gountia was a Binjhal, the later one was a Kultha. The old Binjhal woman added another dimension to the understanding of internal displacement of local population. Her father-in-law was the gountia of Jagalpat village in Gaisilat block who was dispossessed by a Brahmin family, 50 years ago. The entire family left the village in an impoverished condition. They came to Dhaulibahal and worked as halia (permanent farm servant) on the Kultha gountias land for subsistence. At the cross roads we met two people from Amrakhol village. One of them was a supervisor for the bamboo cutters. The natural Bamboo forest in the Gandhamardan hills are leased to the Orient Paper mills belonging to the Birla group of companies. Cane cutting in the hills involves a precarious climb up the dongar and coming down with a bundles of cane as a headload. Provides wage labour for the summer and spring months for the villages close to the hills. But as he was telling us, the groves are getting thinner and the quality of cane is also on the decline. There are hardly any conservation measures that have been taken up. Twenty years ago in this area, Tigers roamed and forest was close to the village.

All the way along the foothills towards the Southern edge of Gandhamardans, vast stretches of forest has been cleared. The countryside was rugged, the land looked broken and cut with ravines, vegetation was mostly scrub with occasional trees, even Mahul trees were rarely to be seen. The terrain was badly deforested. Double cropping was possible only due to semiperennial springs probably deriving out of Harishankar nalla. Some agricultural land were, highly fertile due to the continuous wash of organic matter from remaining forest and watered by the semi perennial springs of the hills. Most of the villages here in Khaprakhol block, were once strongholds of Kondhs who are also the hereditary priests of the Nursimhnath and Harishankar temples on the Gandhamardans.

The best lands today are under the ownership of middle and large Kultha farmers. Improved varieties of Paddy with liberal dosage of chemical fertiliser are raised twice a year. Most of the large trees including fruit trees like Mahua etc have been felled. The Kondhs are very few in numbers. In villages like Bhanpur, Turla and Nadupalla, the erstwhile, Binjhal estates, even the Kondhs and Binjhals wherever they have land, have not retained traditional agricultural practises.

A few villages towards the northern and Southern edge of Gandhamardan system have enjoyed a certain amount of immunity from drought due to the presence of the perennial streams. Most cultivable land in these areas are today in non-tribal hands and there is a continuous process of alienation. As the protective cover of forests near the foothills fell to the axe and the "Bauns company" as the people call the Paper mills, cut a trail going 2000' - 3000' high all the way to the top of the hills, the remaining trees are fast disappearing. With the natural Bamboo forests being hacked rampantly and the Bauxite companies eyeing the high grade deposits on the flat topped hill, the sensitive ecological system of the Gandhamardans are in danger. The hill system commands the micro climatic pattern of a large area and determines crucial aspects of soil fertility and rainfall. The natural resource base forms the direct livelihood source of a large number of local population, whose immunity to scarcity is associated with the proximity of the habitat to the Gandhamardan. The close subsistence link has created the sense of ownership which has enabled local communities to launch resistance against the bauxite mining companies. Destabilisation of the Gandhamardan systems could turn vast areas into arid deserts.

#### 4. Irrigation: Old and new

Purena is a big village lying in the North western side of Padampur block towards Jagdalapur border in MP. The first reference to Purena we had from the district agricultural office at Barikel which caters to the requirements of padampur division consisting of six agricultural blocks; namely, Padampur, Paikmal, Bijeypur, Gaisilat, Jharbandh and Sohella. All these blocks are under similar agro climatic zone and cultivation is primarily rainfed. Purena village has the reputation of housing some progressive farmers (we were told) who were adopting modern methods of agriculture and were also showing keen interest to try out new varieties of crop types and seeds and also a variety of irrigation methods.

According to the 1981 census, Purena had the largest acreage of irrigated land in Padampur block. It had low forest cover. Total area of Purena was given as 651.14 ha. Area irrigated by source was 222.17 ha and unirrigated land was 376.76 ha. Area under forest was 1.22 ha.

Purena seemed to be an old village, could be more than two hundred years old. The village community consists of 50% people of the Teli community and 50% Saonra tribal people. Land distribution is highly skewed in favour of the Teli community. There are ten big farmers in the village with individual landholdings of over 50 acres each, and all belong to the Teli community. The Saonras have marginal holdings or are landless. The original inhabitants or settlers who were responsible for clearing the forest and settling the village were almost certainly Sawras or Binjhals as is the case in almost all villages in this area which was a portion of the erstwhile Binjhal zamindari of Borasambar. The Telis came later. In fact there is dispute even today on the identity of the original gountia or headman of the village. The gountiaship of the village had changed hands thrice. The original gountia was a Saonra, later ones are Telis. It seems that the gountiaship had probably changed during the British reign when many tribal heads of villages lost headmanship due to the inability to fulfill the revenue demands of the state. Once a gountia became a defaulter, anybody else could takeover that post by paying the dues to the state. Between the 1850 to 1900 many villages went to nontribal gountias in this manner. The non tribal communities not only supplied the gountias but also went on to form the more prosperous category of raiyats in times to come. That such a phenomena had occurred is very apparent from the present situation in Purena.

The Teli and the Sabar reside in two distinct paras in the village. The former looking bigger and prosperous houses the landed Telis, the latter belongs to the landless and impecunious Saonras.

There are three old Muras in the village. These probably served the purpose of protective irrigation during kharif season and could probably support rabi and summer crops in the command area. All three were private to begin with. During one of the settlements probably just before independence the ownership was transferred to government khata. The present descendant of the last gountia is presently engaged in a legal wrangle with the government as to the ownership over one of the muras. One of the muras known by the name of "Kurmi Mura" seems to be under the best condition as far as maintenance is concerned. It's ownership has been with the panchayat and repair, maintenance works take place occasionally. Water from the minor irrigation project at Sanplahar has been diverted to it enhancing it's capacity for irrigation. Using the water from this tank a number of big farmers are able to raise summer paddy in a small area of land. Second mura called the "Teli mura" is the disputed one is largest covering 27.46 acres of land. The utilisation of water in irrigation is negligible. The land in the comand area doest not seem to be closely cultivated. During '96-97 agricultural season, when rains failed there was a big dispute when the gountias family cut the embankment to save the crop. The present battle people said was more for the land than for the water utility of the Mura. Once the ownership issue is settled they would probably want to convert it into agricultural land. Earlier they said, Sugarcane was cultivated extensively on the command area of the tank. The third mura which is known by the name of "mahajan ghar mura" is indistinguishable in appearance from the nearby land. It once covered an area of 16 acres. Though the outline can be made out as the embankment still stands overgrown with trees the storage space or what would have been the submerged area is totally silted over and has come at level with the neighbouring land. Only the slightly saucer like depression of the land and the profusion of water weeds mark the area as having been a water reservoir once. This mura is still under private ownership. The owning family seemed quite keen that the state take over the tank and effect some improvement in it. The land in the command area belongs mostly to this family of telis known as the mahajan ghar. Besides the tanks, some big farmers are also using deep bore wells for irrigation. This is fairly new option, not more than two years old and not very successful at places. Especially because the groundwater behaves quite erratically within short distances in this area and one encounters sheet rock after 25-30'.

Paddy is the principal kharif crop. After talking to the VAW and some other farmers in the village it was apparent that very little of indigenious paddy is cultivated in this village. The 60021 variety which yields 60 bags per acre under farm conditions yielded 34 bags in one of the farmers land in this village. The land looked closely cultivated. Very little tree cover in the village. Mahua and other trees non existent on raiyati land. Practically no forest. All the dryland agriculture has been discontinued. no one Cultivates coarse grains like Kodô, Gurji, Mandia etc in the village.

Dineshwar Sahu is one of the progressive farmers. He has large land holding. One set of holdings inthe command area of the "Kurmi mura" utilising water kharif paddy. The other set of land with barbed wire around them and a big iron gate, watered by deep bore well. He was cultivating groundnuts and mung as summer crops. He also raises seeds for the district agricultural dept. He is one of the most prosperous farmers in the village. On enquiring about the present landed property of the original Saonra gountia of he village, they said, that the direct descendant works as a watchman in Dineshwar Sahu's farm.

**Kadalimunda:** Kadalimunda was a small village with a large Saonra population. According to the circle VAW almost all the land in the village was getting irrigated from the Minor irrigation Project at Saanplahar. However this was not the case. The gountia was a Bhoidar. The ex- mantri of the Borasambar zamindari, was given some land and settled in this village. Even today his family has the maximum land in the village. The water from the Sanplahar irrigation project has been diverted

to a mura belonging to the Bhoidar. The land in it's command area also belongs to the same family. Of the total land getting irrigation benefits, 50% land belongs to the Bhoidar's family and the rest belongs to the others in the community. Even so total irrigation is no where close to the VAW's figures. According to him the entire village land was irrigated by the Sanplahar project water. The village has very low tree cover. The village is more than 100 years old. Primary crop is Paddy. All government improved varieties, very little of hardy local varieties of crops even among the tribals. No coarse grain cultivation what so ever. Groundnut is cultivated in a big way. In the MIP command area a few acres of short duration Paddy (Lalat mostly), groundnuts and Sunflowers. Whereas the large farmers in neighbouring Purena has given up on Sunflowers due to inadequate marketing facilities, the small and marginal farmers in Kadalimunda continue to cultivate, without benefitting much from it. So much so last year they had to consume all the harvest themselves as there are no processing facilities nearby and no market for the un processed Sunflower seeds. The introduction at high subsidy has been a part of the government schemes. Gountia's family hold more than 60 acres of land. About 200 acres belonging to him has been distributed to the landless in the village under the ceiling act. Village had low tree cover even 50 years ago. Mahul and other forest produce collection was not a subsidiary occupation here. We had a most interesting encounter with an old man, belongs to the Kultha caste and used to be an Amin in the Barpalli area and earlier in ex- Sonepur state. He came to settle in this village 12 years ago and had bought up land in the MIP command area from a Saonra.

The MIP structure at Sanplahar village has a submergence area of 40 acres. In the command area could be seen beds of germinating Paddy, brilliant green in the diminishing light before sunset. The land however was clearly uneven, rocky, haphazard tree growth, open surfaces seemed espec ally degraded where there was little soil or tree cover. The land being cultivated belonged to Loharpalli village. Loharpalli has 75% tribal population and 25% other castes. The gountiaship had reverted more than 100 years ago from a Binjhal, who were the original settlers to a Kultha. Most of the good cultivable land also changed hands from the tribals to the non-tribals, who were numerically fewer. Sannplahar village too had seen the replacement of a Binjhal gountia with a Kultha gountia. The construction of the MIP had led to the submergence of agricultural land of Sanplahar and Loharpalli villages. Sanplahar had lost more land, good bahal land they said. While people in Loharpalli are getting some benefit from the MIP, in terms of irrigation, Sanplahar gets no benefit from the project. Though cash compensation has been apparently given there is a great deal of discontent in Sanplahar regarding the project.

As far as the drought was concerned the perception of people vary. The big farmers did not seem to have felt the pinch till about 1965. This is almost unanimously declared by the big farmers one met all over the districts. The most commonly stated reasons were erratic rainfall and lack of stable and systematic irrigation facilities. The second in line reasons were degradation of land due to extensive clearing of forests.

Instances of land alienation in the command areas of Minor Irrigation Projects are commonly encountered. The Upper Sukhtel MIP on Sukhtel river, in Mohurundi village of Khaprakhol block, irrigates almost 50% cultivable land in Kapsipalli village. Total agricultural land in the village was a little more than 500 acres. About ten to fifteen years ago, a group of Kulthas had started buying up land in the village from the Binjhal and gond inhabitants. Today 100 acres of land, irrigated by the MIP water and growing a double crop of paddy belongs to one of them, Sudershan Pradhan. The gountia of the village who was a Binjhal, is among the landless.

Jaipur Village is located in one of the most picturesque parts of Padampur block. Close to the gandhamardans, the land of the village is like a valley drained by the perennial strams from the hills and fringed by dense forest all around on the uplands. The majority of the population in the village are Binjhals. The Teli gountia who replaced the original Binjhal gountia, drove away all the

binjhals from the village mainland and asked them to cultivate the foothills after clearing the forests. All the land near the village as the gountia's till recently. About 5 years ago minor irrigation department started the preliminary works to bund one of the hill streams for irrigation purposes. Three years ago twenty Agharia families from MP came into the village and bought up land from the gountia in the command area of the MIP. In addition to them, Kultha families from the nearby Dhaulibahal villages have also bought land in the command area. The Binjhals still travel more than 10 km to reach their marginal holdings on the foothills of the Gandhamardan.

##### 5. Water disputes and reassertion of community rights.

Khuripani is a small village in the Patnagarh block of Bolangir district. It is one of the border villages with considerable tree cover even today. The dongars at whose foothills the village is situated is covered with trees and constitute the reserve forest areas. Most of the agricultural land has large, 20' - 40' high, Mahul trees. In the village forest and in the boundary of protected forest there are 60' high Mahul, Sahaj, Bija, Karla trees. The really big ones are few. Mostly 10-20 years old. Most of the old Rengal trees are gone. Surprisingly the only Rengal trees are now found in the village forest area outside the reserve forest line, all new growth, not more than 10 years old. Khuripani has a Teli gountia. The community is a mix of Saora, Binjhal, Gond and Kondhs. It is a border village near the hill forest. A high proportion of agricultural land is of the "At" and "Tikra" varieties, (*At means upland and Tikra means a small hill*). The at and tikra lands are unembanked with considerable tree growth on them. Paddy is not grown on them. The bahal land lies under the old tank in the village. Most of the bahal land is under the ownership of the Teli gountia. When Kharif rains failed in 1996-97, Khuripani witnessed a major dispute over the usage of the Tank water. While the gountia wanted to cut the embankments to save his kharif Paddy, the rest of the community wished to retain the water for household use in Summer months. Since the ownership of the tank has been transferred to the panchayat, the gountia approached the tahsildar with the request to cut the tank bunds for irrigation purposes. Even after permission was granted, the community did not allow him to use the water for irrigation. Considering that was the only tank in the village, on which people were dependent on for bathing, washing clothes and drinking water for cattle, their right over usage came first.

A similar incident happened in Jaring, reputed to be one of the foremost agricultural villages of Bijepur block. The village has a population of over 2000 and over 500 acres of land. The majority community are Kulthas and Harijans, with a few Binjhal households. While the Kulthas are all landed, the Harijan population is completely landless. The soil of Jaring is very fertile and subsoil water is within 6-7'. Individual farmers cultivate their land using wells and diesel pumps. The summer crops are Sugarcane, groundnuts and Mung. The principal crop is the Kharif Paddy. Jaring has an old reservoir built during the zamindari times. Being the "khamar" village of the zamindar, the land in the command area of the tank was owned by the Bijepur zamindar. Just before the abolition of estates, the zamindar sold the land to Kultha farmers. In 1996-97, kharif season when the rains failed, the Harijan people in the village did not allow the Kultha farmers to cut the bunds of the "mura" to irrigate the dying kharif Paddy. As a result, paddy crop withered over 60 acres of land.

Another form of dispute arose in Sahajpani village of padampur block. The village has a majority of Saonra population. Almost all are small to marginal holders. Twenty years ago Agharia families from the neighbouring state of Madhya Pradesh had bought up the best bahal lands in the village underlying the old tank. In the Summer of 1998, the Agharia wanted to cut the embankment to water his 20 acres of Paddy crop. The Saonras who had released fish spawn in the tank after taking a pisciculture contract from the panchayat, did not allow them to cut the bunds, since the fingerlings would escape with the water. The farmer had to resort to the more expensive option of using a diesel pump to irrigate his Summer Paddy.

This form of dispute over water use in scarcity years, is generally between the landed and the landless. The proportion of landless are growing in every village and since most of them are availing of wage labour option even outside their villages, they are no more as dependent on the landed farmer for subsistence as before. Further with increasing cost of farm inputs and constant danger of crop failure in the rainfed context and the increasingly fragmented land, the landed body no longer commands the same might as before. All these factors together have lent voice to the landless in matters of water usage, which was hitherto a domain of the landed.

#### 6. Across the border, in Phuljhar

The erstwhile Phuljhar zamindari is a part of the Raipur district of MP. Phuljhar was a Gond zamindari. However the incursions of settled agriculture had been extensive in the area due to the flatter terrain and alluvial nature of the soil. As a description in the 1906, settlement report goes,

*“Phuljhar an area of 787 sqmiles, it is cut of from the district proper by a wide belt of hills. It is indeed completely surrounded by hills, but consist chiefly of a central flat plain which has black alluvial soil. This exceptional feature has caused the land to be very fully occupied and closely cultivated. AS the main road to Raipur passes through the estate, the trade facilities are good and cultivation as of late years extended considerably into the hills. It's chief disadvantages are that it loses from it's flatness the irrigation facilities which are so fully used in Bargarh tahsil, and that it shares the uncertain rainfall of the Raipur district...”*

On the way from Padampur to Saraipalli, the landscape kept changing. The terrain remained uneven with scattered clumps of hills and outcrops, however number of trees on agricultural land grew fewer. Also hill slopes were stark and absolutely denuded. As one crossed lakhmara the last outpost of Padampur block, there appeared to have been some fenced attempts at regeneration of what seemed to be remnants of scrub forest. Mahul trees also became less and less as we approached some villages. The land was flatter, closely cultivated, with narrow field bunds. The uplands were absolutely bare, vast expanses of rock, sand and gravel with wisps of grass and small growths of tenacious kendu and palsa. An extremely arid looking countryside with thorn trees, date palms, very few and vast expanses of bare highlands and distant hills. Compared with the borasambar tract, this was ecological degradation at it's peak. Tanks appeared in vilages with large Banyan or Pipal trees on the bunds. No sign of utilization for a summer crop. Not even vegetable patches were visible. The ground water table was low, solid rock underneath. Wells were not feasible they said as there was no ground water even at 250 ft. Lowlands are intensively cultivated, high lands are degraded, barren. Soil erosion rate must be very high. Villages looked bigger, houses cemented with TV antennae and two wheelers in profusions. Use of stone in construction of houses boundaris and threshing grounds and straw thatching yards. Mechanical process of winnowing, numerous tractors. The practise of making “pura”, (baskets made out of twisted Paddy straw in which harvested paddy is generally stored in the more traditional villages in West Orissa) seemed largely absent. Paddy was stocked in sacks and gunny bags. Signboards of schools, panchayat buildings, govmt. Works and political slogans all in Hindi. People are by and large bilingual.

Large Kultha settlement in the border villages. They have held large villages as gountias. There is also a sizeable population of gond, Binjhal and Saoras. Largely in the category of agricultural wage labourers. Process of marginalization has reached it's culmination. There were very few independent adivasi cultivators in this region. In Pondrapada for instance there is a distinct cultivators pada and a wage labourers pada. The latter residents are adivasis.

Pondrapada was a Kultha village. Land was apparently very fertile here. Rainfall was good, due to

the proximity of Shisupal range of hills. Rainfall has decreased in the last 50 years they said. Here also they said, the pinch of scarcity was felt after 1965 by big farmers. Their maner of estimating decrease in rainfall was thru this statement. The land on which their fathers grew Bhulu and Sapri (long duration paddy-160 days), can now support only IR-36 (120 days). Clearly the water retention capacity of the soil is decreasing as well as the absolute rainfall. The village has a network of three large tanks apparently sufficient to provide protective irrigation facilities for the primary kharif crop of paddy. The tanks apparently are as old as the settlement itself. The area is single cropped. Crop diversity seemed much lesser than the neighbouring Borasambar tract. About 80% population in the village live outside and hold some form of job or the other. The major cultivating families have a supplementary income other than agr.culture. They invest substantially in land and seli most of their produce. There are stories about the Gond insurrections against Kurmis in the area. There are tanks in the areas were soiled weapons were cleaned after a battle, Gonds till today donot use the water from such tanks.

*Annex I*  
**References**

- 29
1. F.C. ; Bihar and Orissa District Gazetteer, Sambalpur. 1932.
  2. LEB. Cobden Ramsay; Bengal Gazetteer. Feudatory States of Orissa. 1910.
  3. The General Review of the Administration of Central Provinces, for the Calendar Year, 1899.
  4. Womack.A, Report of the Administration of Feudatory States of the Central Provinces for the year 1900.
  5. Report on the Administration of Feudatory Stats of Central Provinces for the Year 1904.
  6. Ramdhyani. Report on the Land Tenure and Revenue Systems of the Orissa and Chattisgarh States. Vol I, II, III.
  7. Das, Final Report of the Land Revenue Settlement in Kalahandi District, Ex-State-Khalsa Areas, 1946-56.
  8. Final Report on the Land Revenue Settlement of the Patna State, 1937.
  9. Final Report on the Survey and Settlement of the Kashipur, Karlapat, Mahulpatna & Madanpur Rampur, Ex-Zamindaris in the district of Kalahandi, 1963.
  10. O'Malley. LSS; Bengal District Gazetteer, Sambalpur, 1909.
  11. Dewar.F, Report on the land Revenue Settlement of Sambalpur district, 1906.
  12. D'Souza Rohan, Mukhopadhyay P, Kothari A, Reevaluating Multipurpose River Valley Projects. A case Study of Hirakud, Ukai and IGNP, EPW, Feb 1998
  13. Velayudham. TK, Monsoon and Economy. EPW, Dec 5, 1987.
  14. Bandopadhyay.J, Political Ecology of Drought and Water Scarcity , Need for an Ecological Water Resources Policy. EPW, Dec12, 1987.
  15. DN, Drought , Famine and Agrarian Relations, EPW, Nov 24, 1987.
  16. Vaidyanathan A, Agricultural Development in Eastern India, EPW,Dec 26, 1987.
  17. BM, Drought Relief, Belated, Half hearted. EPW, Sept 5-12, 1987.
  18. Kumar.A, Consequences of the 1987 Monsoons Failure. A preliminary Assessment. EPW Sept 26, 1987.
  19. Report of the Visit of the Official Team of the National Human Rights Commission to the Scarcity Affected Areas of Orissa.
  20. Statistical Abstract of Orissa, 1996.
  21. Orissa District Gazetteer, Sambalpur. 1971
  22. Orissa District gazetteer. Kalahandi. 1980
  23. Orissa District Gazetteers. Bolangir. 1968.
  24. District Statistical Handbook. Bargarh, 1993
  25. District Statistical Handbook. Bolangir. 1993
  26. District Statistical Handbook, Nuapada, 1993
  27. District Census Handbook. Sambalpur District. Census of India, 1981.
  28. District Statistical Handbook, Kalahandi, 1989-90
  29. Report on the Development of Drought Prone Areas. National Committee on Development of backward Areas. 1988.
  30. Document of the World Bank, Orissa, Water Resources Consolidation Project, Nov 20, 1995.



31. Thakkar H, Parikh A and Singh,  
Community, Community Based  
Organisation, Oxfam and Drought Mitigation  
in West Orissa, 1998 (Draft Report)

32. Nayar Janaki, Many Faces of Drought,  
EPW, May 3rd, 1986.

33. GO, Fighting Drought, EPW, May 3rd,  
1986

34. Ilaiyah.K, Andhra Pradesh: Drought -  
Worsening Situation, EPW. 24th May, 1986

35. Shiva.V & Bandopadhyay.J, Drought,  
Development and Desertification, EPW,  
Aug 16th, 1986

36. Nadkarni.M.V, Backward Crops in Indian  
Agriculture. Economy of Coarse Cereal and  
Pulses, EPW, Sept 20th, 1986.

37. IC, Maharashtra, The Silent Drought,  
EPW, 10th Jan, 1985.

38. Mathur.K, Jayal.G.N, Drought, Policy,  
and Politics. The Need for a Longterm  
perspective. Sage Publication.

39. Dreze.J, Sen.Amartya, and Athar Hussain  
(ed), The Political economy Of Hunger.  
Selected Essays, Wider Studies in  
Development Economics.

Annex II

Table i) Area & Population

source : 1991 census

| District  | Area in sq km | No. of villages | No. of towns | Population in '000 no. | % age of SC | % age of ST |
|-----------|---------------|-----------------|--------------|------------------------|-------------|-------------|
| Bargarh   | 5831.6        | 1208            | 3            | 1207                   | 18.44       | 19.56       |
| Bolangir  | 6551.5        | 1792            | 4            | 1231                   | 15.39       | 22.06       |
| Kalahandi | 8197.4        | 659             | 3            | 1131                   | 13.09       | 35.95       |
| Nuapada   | 3407.5        | 2205            | 2            | 469                    | 17.01       | 28.88       |
| Orissa    | 156000        | 51057           | 123          | 31660000               | 16.20       | 22.21       |

ref: 21

Table ii) Landuse pattern

| District  | Total area under forest in sq km | Area under reserve forests in sq km | Total cropped area in '00 ha under operational holdings |
|-----------|----------------------------------|-------------------------------------|---|
| Bargarh   | 1859.42 (32%)                    | 574.45 (10%)                        | 2972  |
| Bolangir  | 1647.49 (25%)                    | 1080.83 (16%)                       | 2972  |
| Kalahandi | 3851.12 (47%)                    | 1449.03 (18%)                       | 3150  |
| Nuapada   | 1121.69 (33%)                    | ---                                 | 1321  |
| Orissa    | 55223                            | 26351                               | 52958   |

ref: 21

Table iii) Landholding Pattern

no. in '00

area in '00 ha

1996

| District  | Marginal holdings % of total | % of total land | Small 1-2 ha % of total | % of land | Semi medi u 2-4 ha | % of land | Medi u 4-10 ha | % of land | Large <10 ha | % of land |
|-----------|------------------------------|-----------------|-------------------------|-----------|--------------------|-----------|----------------|-----------|--------------|-----------|
| Bargarh   | 42                           | 13.3            | 28                      | 22.4      | 20.3               | 29.7      | 8.6            | 26.2      | 1            | 8.2       |
| Bolangir  | 45                           | 13.7            | 26                      | 20.7      | 20                 | 29.8      | 8.4            | 27.0      | 1            | 8.6       |
| Kalahandi | 35.7                         | 9.9             | 28.2                    | 18.8      | 23.6               | 30.4      | 10             | 30        | 1.4          | 10.75     |

ref: 21, 25,26,23.

- In Bargarh district, Area under 1,15800 , small and marginal holdings (>1-2ha) 106400 ha whereas 16,100 medium and large holdings ( 4-10 ha and above) cover an area of 102400 ha. 48% marginal farmer household. 7% are middle to large farmers. 31% of total households are landless in Bargarh district. 32804 holding are held by ST households; 71% of total ST holdings are in the Small to marginal category. 30% of the total ST household are landless.

- In Bolangir district, 124300, small and Marginal holdings cover an area of 102600 ha whereas 16,600 medium to large holdings cover an area of 105900 ha. 246200. 50% marginal farmer household. 7% middle to large farmers. 37% landless households. 26% of ST hh are landless. 68% of total ST holdings are in small, Marginal category

- In Kalahandi district , 159200, small and Marginal holdings cover an area of 144700 ha whereas 25600 medium to large holdings cover an area of 163100 ha. 49.7 % marginal. 8% large farmers. 35% landless households. Between 1980 to 1986, number of marginal holdings increased by 26%. The area under them increased only by 19%. During the same period, the number of medium to large holdings increased by 9% and the area covered by them also increased by 9%. By 1986, there were 180,000 ha under holdings over 4-10 acres and above, while only 43700 acres under marginal holdings.

Table iva) Cropping Pattern 1996

Area in ha

| District  | Area under Rice | Maize | Ragi | Pulses      | Net Area sown in ha. |
|-----------|-----------------|-------|------|-------------|----------------------|
| Bargarh   | 247440(86%)     | ---   | 0.01 | 30.05 (9%)  | 289308               |
| Bolangir  | 214390 (72%)    | 0.69  | 1.92 | 77.92 (26%) | 296830               |
| Kalahandi | 218.84 (70%)    | 2.36  | 2.29 | 85.28 (27%) | 313980               |
| Nuapada   | 98.96 (68%)     | 0.55  | 1.30 | 39.93 (27%) | 146070               |

ref:21

Table ivb) Cropping Pattern 1966-76

Area in acres

| District  | Area under    | Coarse grains/other cereals |       |        |                  | Pulses  | Total Cropped area |
|-----------|---------------|-----------------------------|-------|--------|------------------|---------|--------------------|
|           |               | Rice                        | Maize | Ragi   | Kudo/gurji/jhari |         |                    |
| Sambalpur | 1299598 (67%) | 2003                        | 2065  | 24942  | 7753             | 77876.6 | 1936000            |
| Bolangir  | 702000 (63%)  | 6964                        | 11187 | 94582  | 5405             | 187497  | 1107543            |
| Kalahandi | 641706 (46%)  | 35367                       | 65753 | 140335 | 21451            | 223870  | 1373320            |

ref:22

• During 1966-76, the area under coarse grains was about 10% of total cropped area in Bolangir and Kalahandi and about 1% in Undivided Sambalpur. By 1996, the area under coarse grains declined from less than 2%. During the same period total area under rice and Pulses have gone up.

Table v) Sourcewise Irrigated area in 1996

area in ha

| District/ State | Minor & Medium IP |        | Minor (flow) IP |       | Minor (Lift) IP |        | Total Kharif | Total Rabi |
|-----------------|-------------------|--------|-----------------|-------|-----------------|--------|--------------|------------|
|                 | Kharif            | Rabi   | Kharif          | Rabi  | Kharif          | Rabi   |              |            |
| Bargarh         | 92000             | 57000  | 16000           | 3000  | 8000            | 5000   | 116000       | 65000      |
| Bolangir        | 6000              | 1000   | 13000           | 3000  | 5000            | 3000   | 24000        | 7000       |
| Kalahandi       | 32000             | 2000   | 20000           | 5000  | 9000            | 5000   | 61000        | 12000      |
| Nuapada         | 9000              | 2000   | 5000            | 2000  | 4000            | 2000   | 18000        | 6000       |
| Orissa          | 1014000           | 458000 | 416000          | 66000 | 302000          | 181000 |              |            |

ref: 21

12.5% of total Cropped area in undivided Bolangir district is irrigated in kharif.

11.2% of total Cropped area in undivided Kalahandi district is irrigated in kharif.

18% of total Cropped area in undivided Sambalpur district is irrigated in kharif.

These figures do not reveal internal variation, in undivided Sambalpur district, Bargarh area had more than 40% irrigation from the Hirakud canal systems, so was the case of Sonepur in Undivided Bolangir district.

213

Table va) Irrigated Areas in 1965-66 in undivided Bolangir district

| District | From MIP in acres |     | From Hirakud canal system | From wells and tanks |
|----------|-------------------|-----|---------------------------|----------------------|
| Bolangir | 11393             | 815 | 113849                    | 53799                |

ref: 24

Figures are for undivided Bolangir district comprising of the present Bolangir and Sonepur districts. In 1937, 131744 acres of land were irrigated by tanks in Bolangir District.

Table vb) Irrigated Areas in 1962 in undivided Sambalpur district

| District  | Govmt. Canals in acres | Private canals | Tanks  | Wells | Other sources |
|-----------|------------------------|----------------|--------|-------|---------------|
| Sambalpur | 351329                 | 113849         | 148097 | 10668 | 13818         |

ref: 22

In 1922, 2,21,347 acres were being irrigated by tanks in undivided Sambalpur district. This had come down to 1,48,097 acres by 1962.

Table vi) Agricultural Production (foodcrops)

1996

in '000 MT

| District  | Rice    | Pulses | Oil seeds | Other Cereals/coarse grains |
|-----------|---------|--------|-----------|-----------------------------|
| Bargarh   | 585.11  | 12.81  | 20.87     | 585.68                      |
| Bolangir  | 263.91  | 29.04  | 5.02      | 266.43                      |
| Kalahandi | 241.71  | 35.76  | 9.77      | 247.16                      |
| Nuapada   | 91.97   | 16.33  | 3.09      | 95.89                       |
| Orissa    | 6616.89 | 408.64 | 272.90    | 6791.78                     |

ref:21

Table vii) Agricultural Productivity (Rice)

1996

in Qtls/ha

| District  | Autumn Rice | Winter Rice | Summer Rice |
|-----------|-------------|-------------|-------------|
| Bargarh   | 11.33       | 19.04       | 26.42       |
| Bolangir  | 8.30        | 14.74       | 13.40       |
| Kalahandi | 7.51        | 13.10       | 13.46       |
| Nuapada   | 6.54        | 10.92       | 11.47       |
| Orissa    | 9.00        | 15.48       | 21.09       |

ref:21

Table viia) Consumption of Chemical Fertiliser

| District  | Total Quantity of Consumption in MT | Total irrigated area in ha. |        |
|-----------|-------------------------------------|-----------------------------|--------|
|           |                                     | Kharif                      | Rabi   |
| Bargarh   | 27306                               | 116000                      | 65000  |
| Bolangir  | 4342                                | 24000                       | 7000   |
| Kalahandi | 6117                                | 61000                       | 12000  |
| Nuapada   | 1396                                | 18000                       | 6000   |
| Orissa    | 220,000                             | 1732000                     | 705000 |

ref: 21

Table viib) Consumption of Chemical fertilisers in the undivided districts in 1963-64

| District  | Year   |        |        |        |        |        |        |        |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
|           | '61-62 | '62-63 | '63-64 | '64-65 | '65-66 | '66-67 | '67-68 | '68-69 |
| Sambalpur | 3508   | 5713   | 8716   | 12616  | 10751  | 21602  | 36930  |        |

24

|           |        |        |        |  |  |  |  |  |
|-----------|--------|--------|--------|--|--|--|--|--|
| Bolangir  | 193    | 248    | 607    |  |  |  |  |  |
|           | '74-75 | '75-76 | '77-78 |  |  |  |  |  |
| Kalahandi | 29.5   | 39.5   | 41.7   |  |  |  |  |  |

ref: 22,23,24

Table viii) Average Annual Rainfall

| District  | Rainfall in mm |
|-----------|----------------|
| Bargarh   | 1527           |
| Bolangir  | 1443           |
| Kalahandi | 1378           |
| Nuapada   | 1378           |

Table x) Socio-economic profile of Bargarh district/ comparative analysis between canal irrigated and rainfed blocks of Bargarh district.

| Block        | Area in sq km | % of ST     | Proportion of cultivator vs agricultural worker | Forest Area in ha. Excluding R.F & P.F | Net Area Sown in ha. | Yield rate of Paddy in Qtl/ha | Total irrigated land from all sources kharif in ha. | Consumption of chemical fertilizer in Tonnes | Average Annual Rainfall in mm |
|--------------|---------------|-------------|---|--|----------------------|-------------------------------|---|--|-------------------------------|
| Ambabho na   | 182.26        | 27          | 1.5   | 644                                    | 11256                | 39.21                         | 4255  | 534  | 1447                          |
| Attabira     | 404.96        | 21          | 0.7   | 4971                                   | 23038                | 40.62                         | 24499   | 5240   | 1559                          |
| Bargarh      | 369.37        | 12          | 1.16  | 355                                    | 21713                | 30.32                         | 16563   | 4062   | 1494                          |
| Barpalli     | 266.18        | 13          | 1.47  | 370                                    | 18343                | 33.94                         | 18455   | 2404   | 1484                          |
| Bhatli       | 355.55        | 23          | 1.92  | 5164                                   | 21539                | 21.58                         | 3516  | 1957   | 1479                          |
| Bheden       | 362.75        | 13          | 1.01  | 935                                    | 25642                | 35.69                         | 26343   | 3167   | 752                           |
| <b>Total</b> | <b>1941.7</b> | <b>16</b>   | <b>1.29</b>                                     | <b>12439</b>                           | <b>121,531</b>       | <b>33.56</b>                  | <b>93,631</b>                                       | <b>2894</b>                                  |                               |
| Bijepur      | 323.94        | 13          | 1.8   | 860                                    | 22784                | 21.41                         | 5563  | 775  | 2097                          |
| Gaisilat     | 354.93        | 19          | 1.98  | 4165                                   | 23588                | 14.91                         | 4232  | 469  | 894                           |
| Jharband h   | 422.97        | 30          | 2.09  | 3905                                   | 21791                | 23.62                         | 4335  | 632  | 1368                          |
| Paikmal      | 564.64        | 37          | 2.19  | 4638                                   | 31956                | 21.21                         | 10788   | 1619   | 1447                          |
| Padampu r    | 488.04        | 24          | 1.52  | 1916                                   | 32686                | 14.04                         | 6138  | 953  | 827                           |
| Sohela       | 515.11        | 19          | 1.89  | 2188                                   | 34972                | 26.70                         | 6447  | 1000   | 1140                          |
| <b>Total</b> | <b>2669.6</b> | <b>23.6</b> | <b>1.91</b>                                     | <b>17672</b>                           | <b>167,777</b>       | <b>20.31</b>                  | <b>37,503</b>                                       | <b>908</b>                                   |                               |
|              | <b>3</b>      | <b>6</b>    |   |  |                      |                               |   |  |                               |

ref: 25

1. % of irrigated area against total geographical area : 22%
2. % of Irrigated area against net area sown is 45%. The proportion is as high as 77% in the blocks irrigated by Hirakud canal Systems (grey shaded ones). And only 22% in the rainfed blocks.
3. The proportion of cultivators to agricultural wage workers rise in the unirrigated blocks where

55/

there is an average of 2 cultivators for one wage worker, the average reduces to one cultivator for one wage worker in the irrigated blocks.

4. The yield rate of Paddy is a high average of 33 Quintals in the canal irrigated blocks compared to an average of 20 Quintals per ha in the unirrigated blocks. In places like Gaisilat and Padampur, the yield is as low as 14 Quintals per ha.

5. Consumption of chemical fertilisers show a steady increase with increase in Irrigation.

Table xi) Socio-economic profile of Bolangir district.

| Block         | Area in sq km | % of ST | Proportion of cultivator vs agricultural worker | Forest Area in ha. Excluding R.F & P.F | Net Area Sown in ha. | Yieldrate of Paddy in Qtl/ha | Total irrigated land from all sources kharif in ha. | Consumption of chemical fertilizer in Tonnes | Total Rainfall in mm |
|---------------|---------------|---------|---|--|----------------------|------------------------------|---|--|----------------------|
| Agalpur       | 295.96        | 12.29   | 1.66  | 1688                                   | 16259                | 27.95                        | 13907   | 453  | 1460                 |
| Bolangir      | 388.16        | 22.73   | 1.14  | 9789                                   | 16229                | 17.33                        | 4312  | 431  | 1757                 |
| Deogan        | 432.01        | 21.59   | 1.42  | 13193                                  | 15043                | 21.99                        | 3087  | 358  | 1392                 |
| Tentulikhunti | 204.83        | 29.38   | 2.12  | 1881                                   | 12536                | 18.64                        | 2243  | 360  | 1456                 |
| Loisinga      | 319.22        | 18.56   | 1.33  | 3131                                   | 13807                | 18.53                        | 3306  | 359  | 1267                 |
| Puintala      | 340.69        | 6.62    | 2.01  | 478                                    | 19132                | 19.75                        | 3614  | 438  | 1725                 |
| Belpara       | 498.17        | 35.65   | 1.51  | 4589                                   | 29983                | 17.62                        | 5264  | 276  | 1177                 |
| Khaprakhol    | 448.34        | 36.86   | 1.67  | 3678                                   | 21493                | 15.25                        | 3188  | 326  | 724                  |
| Patnagarh     | 591.33        | 32.44   | 1.28  | 13544                                  | 26000                | 17.54                        | 5162  | 330  | 1014                 |
| Bongomunda    | 318.03        | 17.66   | 1.84  | 545                                    | 21427                | 14.60                        | 3338  | 332  | 1143                 |
| Muribahal     | 398.75        | 26.78   | 1.79  | 1796                                   | 26510                | 22.40                        | 1884  | 284  | 1220                 |
| Saintala      | 459.99        | 21.13   | 1.99  | 5944                                   | 20087                | 14.64                        | 1175  | 300  | 1234                 |
| Titlagarh     | 355.23        | 21.42   | 1.70  | 1748                                   | 22661                | 19.85                        | 3124  | 288  | 1419                 |
| Tureikela     | 337.36        | 36.81   | 1.79  | 3932                                   | 16901                | 13.58                        | 860   | 284  | 1113.9               |
|               |               |         |   |  |                      |                              | 54464   |  |                      |

ref:26

1. %age of irrigated area from all sources against total geographical area : 8.3%

The coverage is 47% (the highest) in Agalpur block from all sources in Kharif season. Agalpur is the only block which can avail of Hirakud canal water.

2. The chronic drought prone blocks are the ones shaded in grey. The average annual rainfall is less than 1200 mm. The percentage of ST population is also higher (more than 30%) than other blocks. Yield rate of Paddy is as low as 15 Quintals per hectare.

Table xii) Socio-economic profile of Nuapada district

| Block     | Area in sq km | % of ST | Proportion of cultivator vs agricultural worker | Forest Area in ha. Excluding R.F & P.F | Net Area Sown in ha. | Yieldrate of Paddy in Qtl/ha | Total irrigated land from all sources kharif in ha. | Consumption of chemical fertilizer in Tonnes | Total Rainfall in mm |
|-----------|---------------|---------|---|--|----------------------|------------------------------|---|--|----------------------|
| Nuapada   | 746.06        | 39.93   | 1.66  | 14454                                  | 32369                | 14.93                        | 5525  | 385  | 890.7                |
| Komna     | 651.77        | 45.33   | 2.28  | 12805                                  | 29197                | 12.22                        | 11297   | 422  | 1144                 |
| Khariar   | 308.87        | 28.77   | 1.41  | 527                                    | 19502                | 12.31                        | 5135  | 254  | 845                  |
| Sinapalli | 416.46        | 30.72   | 1.57  | 4743                                   | 25178                | 17.13                        | 536   | 226  | 747                  |
| Boden     | 338.48        | 41.77   | 2.79  | 7724                                   | 17131                | 13.18                        | 221   | 186  | 1127                 |

ref:27

17

%age of irrigated area from all sources against total geographical area : 6.6%

The coverage is 17% in Komna block. The completion of the Upper Jonk project would bring another 8000 ha under irrigation in Nuapada. The yield rate of Paddy is very low all over the district.



208

## Reaping Scarcity : The Process of Drought and Marginalisation in Western Orissa.

### Box Items

#### Box I : Along with the introduction

19% of the Total area of the country is in Drought prone areas. 12% of the total population live in drought prone areas.  
 Rajasthan : 56% of the total area and 33% of the population.  
 AP: 30% of the area and 22% of the Population  
 Gujarat : 29% of the area and 18% of the Population  
 Karnataka : 25% of the area and 22% of the Population. (source :29)

A Block is defined as a Drought affected if the pattern or quantum of rainfall during the main crop season of the area, makes the traditional cultivation of the main crop of the area hazardous in three years or more out of every ten years. (Re : Report of the National Committee on the Development of Backward areas). (source:29)

Drought Prone Areas are classified into four categories.  
 Arid : Districts with annual rain upto 375 MM  
 Semi Arid : Rainfall , 375-750 MM  
 Sub-Humid : 750 – 1122 MM  
 Humid : Above 1125 MM (source:29)

The Indian Meteorological Department defines Drought as a situation in a meteorological sub division in a year when annual rainfall is less than 75% of the normal. When deficiency is above 50% of the normal, severe drought declared. Definition does not take into account the critical factor of rainfall distribution across the crop growing season. (29)

The 1987 drought was over 267 districts of the country and affected more than 166 m people. (source:38)

The Telengana and Rayalseema regions of AP suffer from periodic drought. Rayalseema is a completely dry area and was declared drought affected in the years 1958-62, 1965-70, 1975-77, 1979-85. Between 1900 and 1959, the Ananthapur district was declared drought affected 11 times. The quantum of annual rainfall has been steadily declining. In one single decade, (1972-82), 1032 sq km of forest land was denuded in the state. Out of the remaining 63971 sqkm, 30% are scrub forest and secondary growth. (source: 34)

In areas like Gujarat, Rajasthan and Karnataka, rainfall is so deviant that a drought situation can be shown in any district in any year. (source:35)

All the 11 talukas in Kolar district in Karnataka, was severely affected by drought in 1986-87. (source: 32)

In 1986-87, 60% of the 300 talukas in Maharashtra , comprising nearly 17000 villages were experiencing scarcities. 19.4 million people and 8.1 million heads of cattle were affected by it. (source: 33)

#### Box II

#### Periodicity of Drought in different Meteorological Sub divisions source : 29)

| Meteorological Sub Division  | Recurrence of Period of Highly deficient rainfall |
|--|---|
| Assam  | Very Rare. Once in 15 years.                      |
| West Bengal, MP, Coastal AP, Kerala, Bihar, Orissa                                     | Once in 5 years                                   |
| South Interior Karnataka   | Once in 4 years                                   |
| Eastern UP, Vidarbha, Gujarat, Eastern Rajasthan, Western UP, TN, Kashmir, Rayalseema, | Once in 3 years                                   |

|                   |                   |
|-------------------|-------------------|
| Telengana.        |                   |
| Western Rajasthan | Once in 2.5 years |
|                   |                   |

### Box III

Iron Ore Mining in the Western Ghats Watershed of Tungabhadra creating Drought by reducing base flows and increasing silt load of rivers. (source 14)

Flood prone area in India has tripled from 20 mha in 1971 to 60 mha in 1986, inspite of continuous droughts in the same period.(source 14)

A 1982 report of the Central Groundwater Board marked the districts of Ahmednagar, Jalgaon, Nasik, Sangli, Sholapur in Maharashtra and Chittoor and Cuddapah in AP, as, negative balance districts. (14)

Areas under dryland agriculture account for 70% of land under cultivation and only 43% of the value added in the agricultural sector. (source: 38)

The advantage of coarse grain is that, critical limits of failiure of rainfall below which they cause serious crop failiure are lower for coarse cereals than for rainfed rice. Thus where "superior" cereals would not grow atall or give uneconomic yields, coarse grains do well. Total area under coarse grain was 44.4 mha in 1960-61, declined to 39.2 mha in 1984-85. Relative to total foodgrains it contributed, 31% in 1950-51 and 21% in 1984-85. Among coarse grains the proportion of snall millets declined from 27% to 9%. (36)

In Dharwar district of Karnataka, HYV Jowar has replaced traditional Jowar varieties. In 1965-66, area under traditional Jowar was 839.12 acres, 1975-76 it was 4 acres. Area under HYV Jowar was 99 acres in 1970-71 and 835 acres in 1980-81. HYV Jowar does not allow mixed cropping, is more prone to drought. Fodder production is reduced. 1986-87 drought resulted in fodder crisis in Dharwar. (source: 14)

#### Water Requirement of Irrigated Crops(source:14)

| Crop      | Water in MM |
|-----------|-------------|
| Rice      | 950         |
| Ragi      | 250         |
| Jowar     | 250         |
| Sugarcane | 1250        |
| Wheat     | 400         |
| Maize     | 200         |

In the state of Karnataka area under Sugarcane, Cotton, Coconut and Sunflower has shown steady increase while area under foodgrains have stagnated during the same period.(source: 32)

In Maharashtra, canal water is preferentially diverted towards Sugarcane fields at the cost of subsistence, staple food crop even in critical drought years. (source: 33)

### Box IV

Food Production gains after independence have resulted in reduced imports and accumulation of large stocks leaving net availability, stagnant. (J.Dreze, Famine Prevention in India)

Growth of food and agriculture since independence has been uneven across different parts of India. Irrigated areas using Green Revolution package exhibited growth in yields and outputs, large unirrigated areas faced stagnation. Rural incomes and employment in unirrigated areas covering 2/3rd of the total cropped area have not risen. Huge ecological degradation have caused droughts and crop failiures frequently. pg101

India has had to cope with the threat of major disasters on three occassions since 1947: in 1966-67, 1972-73, 1979-80. The first of these crises occured in the wake of countrywide crop failiures for two consecutive years. In both 1965-66 and 1966-67, all India level of food production was nearly 20% below the average for the previous five years. In terms of magnitude and geographic spread, a disaster of this magnitude had not occurred since the 1899-1900 famine. In Bihar foodgrain production in 1966-67 was 54% of the national

50

average, 1961-65 levels. Officially no starvation deaths occurred...There were non official allegation of starvation deaths. ....every possible kind of damage occurred to an alarming degree : hunger, severe nutritional deterioration, massive loss of livestock, depletion of assets, and possibly substantial excess mortality. pg 101-102

In 1972-73 severe drought hit large parts of the country. Worst affected state was Maharashtra, which suffered exceptional calamity of three successive drought years from 1970-71 to 1972-73....At the peak of distress nearly 5 million attended the relief works in Maharashtra.pg 102.

The drought of 1979-80 was short lived, but it's intensity and geographical coverage were exceptional. compared with the previous four years foodgrain output fell by 30% in northern India as a whole, and by much more in individual states. Pg 102-103

source : J.Dreze. Famine Prevention in India.

Dhanter - a cyclone - D

27/9/2000

**Subject:** [Fwd: Jagatsinghpur Update 1-31st August\_2000]

**Date:** Wed, 20 Sep 2000 15:38:24 +0530

**From:** coblr <coblr@actionaidindia.org>

**To:** sochara@vsnl.com

1 of 1

Attention Dr Thelma Narayan,

I hope this is what you wanted.

Regards,

Sunita

① Dear Sunita,  
Thank you for  
update. Shela  
② Orissa cyclone file

**Subject:** Jagatsinghpur Update 1-31st August\_2000

**Date:** Thu, 07 Sep 2000 01:07:36 IST

**From:** "maietry patnaik" <munmunip@hotmail.com>

**To:** harshm@actionaidindia.org

**CC:** tripathy@actionaidindia.org, shankarv@actionaidindia.org, bijayk@actionaidindia.org, abhijitthyaguv@actionaidindia.org, amarn@actionaidindia.org, mathewsc@actionaidindia.org, gouthanilimar@actionaidindia.org, ravip@actionaidindia.org, tomt@actionaidindia.org, balajis@actionaidindia.org, daniel@actionaidindia.org, smrutia@actionaidindia.org, dharitrip@actionaidindia.org, coblr@actionaidindia.org, rodel@actionaidindia.org, rohyd@actionaidindia.org, ropat@actionaidindia.org, ais@actionaidindia.org, roaur@actionaidindia.org, robho@actionaidindia.org, nitilab@actionaidindia.org, birajp@actionaidindia.org, binab@actionaidindia.org

Dear All,

Greetings from AAI , Jagatsinghpur.


Please find herewith the attach file contains the "Jagatsinghpur Update 1-31st August\_2000".


With Regards

Subrat Kumar Nayak  
AAI, Jagatsinghpur.

Get Your Private, Free E-mail from MSN Hotmail <http://www.hotmail.com>

Share information about yourself, create your own public profile at <http://profiles.msn.com>

|  |   |
|--|---|
|  JPU August2000.doc | <b>Name:</b> JPU August2000.doc<br><b>Type:</b> Microsoft Word Document (application/msword)<br><b>Encoding:</b> base64 |
|--|---|

|  |   |
|--|---|
|  JPU CoverpageAug2000.doc | <b>Name:</b> JPU CoverpageAug2000.doc<br><b>Type:</b> Microsoft Word Document (application/msword)<br><b>Encoding:</b> base64 |
|--|---|

DM-9

# A RAVAGED REGION

After the killer cyclone, disease and famine stalk coastal Orissa.

SUHRID SANKAR CHATTOPADHYAY  
in Orissa

COASTAL Orissa remained grim two weeks after the October 29 cyclonic storm had devastated vast areas of it. The death toll mounted by the day as several affected areas, which had been rendered inaccessible, were accessed. The official toll as of November 15 stood at 9,524, the district-wise break-up being: Jagatsinghpur 8,119; Puri 287; Cuttack 392; Kendrapara 242; Nayagarh 3; Khurda 84; Bhadrak 92; Keonjhar 27; Dhenkanal 50; Jajpur 158; Balasore 48; and Mayurbhanj 7. Unofficial estimates put the toll above 50,000.

According to official estimates, 1.26 crore people in 12 districts have been affected. As many as 12.48 lakh houses have been damaged, and 15.7 lakh hectares of paddy crop and 32,956 hectares of other crops destroyed. Moreover, most of the paddy fields have been rendered uncultivable by the saline water carried 15 km inland by massive tidal waves.

State Revenue Minister Jagannath Patnaik, who is in charge of the relief operations, told *Frontline*: "If immediate steps are not taken, we will be saddled with a drought-like situation. We are giving top priority to developing a strategy for rabi cultivation." However, owing to the large-scale destruction of cattle, the State faces an acute shortage of draught animals. The Government planned to procure bullocks from the unaffected regions of the State and also from Andhra Pradesh, Haryana and Punjab. Tractors, not commonly employed in ploughing operations in the State, were also being mobilised. Negotiations were on to procure seeds from Maharashtra and Gujarat. "We have invited horticulturists to help us out in areas where saline water has ruined the land. We are willing to change the pattern of cultivation if necessary," Patnaik said.

The State government had sought a Central assistance of Rs.10,000 crores. The Centre granted Rs.200 crores. Patnaik said that the assistance extended

was insufficient as rehabilitation work alone would require Rs.2,500 crores. The Government plans to approach the World Bank for low interest loans for housing, electricity and infrastructural projects. "One of our top priorities is to rehabilitate the people who have been rendered homeless. HUDCO (Housing and Urban Development Corporation) has evolved a Rs.190-crore housing scheme. We plan to construct cyclone-proof houses," the Minister said.

ALTHOUGH the water level had receded in most areas, several villages in the Ersama block of Jagatsinghpur district, such as Padmapur, Bhitrandhari, Dhinkia, Noagaon, Bagadia, Balitutha, Gandikipur and Kunjakothi – were still inundated. Stagnant water and rotting bodies and carcasses posed a major threat to the survivors. Relief materials were air-dropped in these areas. Unofficial reports stated that 37 villages in Ersama had been washed away by tidal waves. Bijay Nayak, who represents Ersama in the State Assembly, said: "I am sure that in Ersama alone more than 20,000 people have died.

More than 50 per cent of them are Bengalis who came from Midnapore."

P.K. Pani, Additional District Magistrate of Jagatsinghpur, said: "We are unable to enter some areas in Ersama because of the overpowering stench of rotting bodies and stagnant water. More than 14,000 hectares of agricultural land there has been destroyed and rendered infertile. We are staring straight at a drought."

Unofficial reports stated that the cyclone had claimed more than 5,000 lives in adjoining Balikuda. The Army cleared two roads to Ersama. In areas that were inaccessible, Army personnel supplied

drinking water by boats. "We lower our boats east of Ersama and through a creek, deliver relief materials," Brigadier R.S. Rawat, who is in charge of relief operations by the Army, said. An Army team of 5,000 men planned to clear another road to Ersama via a bridge 5 km away. "Approaches to the bridge from both sides are blocked. We are clearing them," Rawat said.

The Army also planned to open a 30-bed hospital in Ersama. Three Army hospitals were functioning at Balikuda, Tirtol and Kendrapara. Two more were to be opened in Mahakalpara and Ersama. A team of Army doctors and volunteers from Pune, stationed at Balikuda, visited Ersama to treat patients. The Army cleared a stretch of 1,712 km of road, subsidiary roads and railway tracks; evacuated 24,201 people; treated 16,319 patients; and distributed 5,922 packets of food and 60,600 kilolitres of water. With the job of providing immediate relief over, the Air Force operated two aircraft to drop relief materials in Ersama and Balikuda, which remained inaccessible. The Air Force delivered a daily average of 27 tonnes of food materials.

The Army and volunteers of organisations such as the Anand Marg, the Rashtriya Swayam-sevak Sangh (RSS) and Christian missionary organisations were involved in the disposal of corpses and carcasses. The Government has instructed District Magistrates and gram panchayat chiefs to burn the bodies. "We are providing them as much petrol, diesel and other material required for this," Patnaik said. Of the 3.5 lakh head of cattle killed in the cyclone, about 75,600 have been disposed of.

Defence Minister George Fernandes, who heads the Central moni-

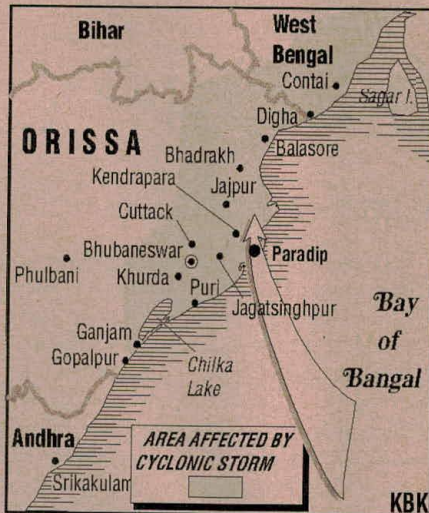


Chief Minister Giridhar Gamang.

V. SUDERSHAN

toring team, announced in Bhubaneswar on November 12 that a cyclone reconstruction authority would be formed to deal with the current crisis as also similar calamities that may occur in the future. The authority, comprising representatives of both the Central and State governments, would tackle long-term issues arising out of natural disasters.

Meanwhile, other Congress(I)-ruled States have adopted various districts affected by the cyclone. Puri has been adopted by Delhi, Kendrapara by Karnataka, Jagatsinghpur by Maharashtra, Bhadrakh by Rajasthan, Jajpur by Madhya Pradesh and Keonjhar by Goa. The Orissa Government insists that the Congress(I) governments would merely supplement the relief materials and manpower already available and not adopt any district. However, Goa's Minister for Agriculture Sanjay Bandhekar told *Frontline*: "We will adopt Keonjhar. We will first assess the damage and then send officials to rehabilitate the people." The Goa government has set up a special cell for relief, and all administrative officers, Ministers, Members of the Legislative Assembly and Members of



Parliament in Goa have been asked to donate a month's salary to a relief and rehabilitation fund.

Senior Indian Administrative Service (IAS) officers of Orissa resent the policy of adoption. "This will give rise to friction between the administrative officers of Orissa and other States," a senior officer said on the condition of anonymity. He said that this was a political gimmick adopt-

ed by the Congress(I) ahead of the Assembly elections in order to project a picture of solidarity. "The man who is truly the knight in shining armour is Andhra Pradesh Chief Minister N. Chandrababu Naidu, who is monitoring all relief work from Hyderabad instead of politicising matters by visiting Orissa," he said. Apart from sending 2,000 government employees to undertake relief work, Chandrababu Naidu assigned experts from different departments, such as engineering, medicine, and urban development, to the affected areas.

Not all IAS officers were happy with the planning and execution of relief works. Pratap Mukhopadhyay, Member, Board of Revenue, and the second senior most officer in the State, said: "A crisis such as this cannot be controlled from one place. Senior officers should have been deployed immediately to the affected areas as on-the-spot decisions had to be taken. Junior officers in the ranks of District Magistrates and Additional District Magistrates often hesitate to take them."

He said that the disaster was as much man-made as it was natural. The persistent depletion of forests in the coastal belt



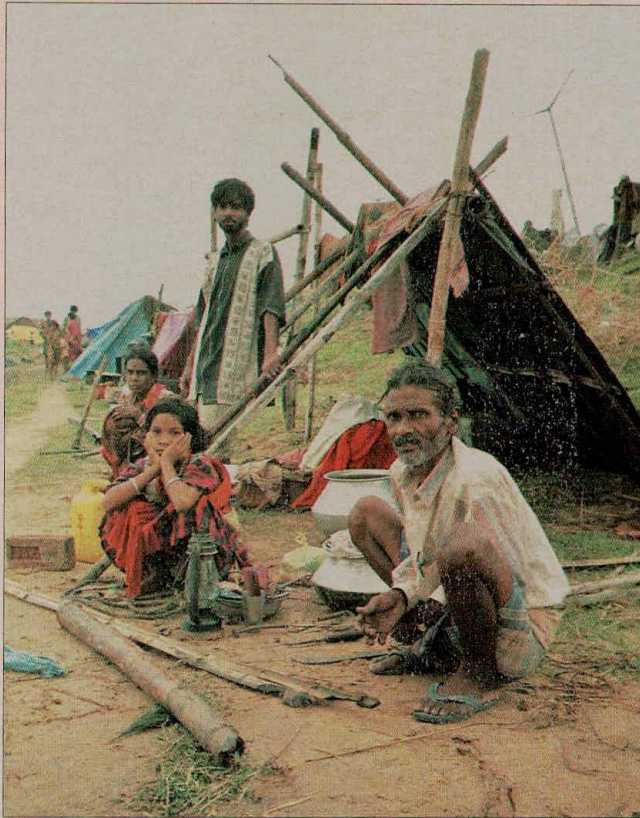
SUNIL MALHOTRA/REUTERS

In Khandadhar village. The storm brought down innumerable trees and destroyed thousands of houses in coastal Orissa.

for the last 20 years had resulted in an ecological imbalance, he pointed out. The cyclone had swept away whatever little forest area was left and another cyclone of similar intensity would occur, he said. "It is a vicious cycle." Another senior officer expressed his displeasure at the way relief materials were distributed. "Two truck loads of lemon rice that came from Andhra Pradesh was dumped at the Kalinga stadium and it lay there for over 48 hours. The rice got spoiled and had to be destroyed," he said. He further said that more than 15,000 polythene covers were waiting to be distributed.

**T**HE port town of Paradeep almost returned to normalcy with the clearing of the roads and the restoration of water supply. As of November 13, five of the eight berths were filled. "We have achieved 50 per cent utilisation and hope to achieve 100 per cent within 100 days," Port Trust Chairman Santosh Mahapatra told *Frontline*. He said: "There is marginal silting of the channels; where there should be 14 metres of water there is 12 metres. But this can be desilted soon. We are waiting for an improvement in power supply in order to load iron ore from the port plant. The damage to the port, estimated at Rs.65 crores, has not been much, considering that the port was set up at a cost of Rs.2,000 crores. What has been lost are the roofs of some godowns and office buildings, the electrical systems and 60 metres of the security wall around the port."

Electricity and water supply have been restored in most parts of Bhubaneswar. The animals in the Nandankanan Biological Park did not receive proper food and attention and as a result a number of camels are reported to have died. The Central zoo authority released Rs.20 lakhs for the immediate needs of Nandankanan. According to official estimates, Rs.4 crores is required to get the zoo back on its feet. With the cyclone destroying most of the bamboo shoots - the prime food for elephants - herds of elephants from the Chandaka



**Villagers outside their makeshift home in Paradeep. A spectre of starvation looms over the coastal belt of Orissa.**

Wildlife Sanctuary are raiding villages such as Chandaka, Andharua, Kantaban and Jokalandi.

**N**OTWITHSTANDING the State Government's claim that no epidemic was likely to break out in the cyclone- and flood-affected areas as precautionary measures had been taken, cases of gastroenteritis, cholera and diarrhoea were increasing. Official reports stated that 35 deaths had occurred owing to diseases and that nearly 5,000 persons had been admitted to hospitals. Cuttack reported 22 diarrhoea deaths and two cholera deaths, and 987 people were afflicted by diarrhoea in the district.

On November 13, a Sadbhabana Health Care Team from Gujarat, consisting of 150 doctors, arrived in Bhubaneswar with medicines meant for distribution in the affected districts. State Health Secretary Meena Gupta said that besides health teams from other States, 311 doctors and 515 paramedical workers had been deployed to treat the victims. She also said that Orissa had received 106 truckloads of halogen and paracetamol tablets and intravenous fluids.

The Central Reserve Police Force (CRPF) was actively engaged in provid-

ing medical relief. It deployed eight medical teams, comprising medical and paramedical officers from New Delhi, Hyderabad, Jamshedpur and Durgapur, in Jagatsinghpur, Ersama, Astarang, Bhadrak, Cuttack, Kendrapara and Jajpur. These medical teams were also distributing drinking water. A team of international doctors supplied medicines required for one lakh people for a period of three months.

The United Nations has contributed in a big way. It has already provided medicine and relief materials worth \$1.8 million. The United Nations Children's Fund (UNICEF) has provided 420 tonnes of medicines and other relief supplies. The World Food Programme, which had earlier promised \$200,000, has increased the grant to \$375,000. The U.N.

Population Fund will provide assistance worth \$170,000. The World Health Organisation will extend \$100,000 in order to set up an emergency surveillance system to control epidemic.

The previous Finance Commission had made provisions for a National Calamity Relief Fund, which would meet the requirements of a State in the event of a natural calamity of "rare severity". That fund has long been exhausted, but the Centre has nevertheless made available to Orissa more than Rs.500 crores by way of financial assistance.

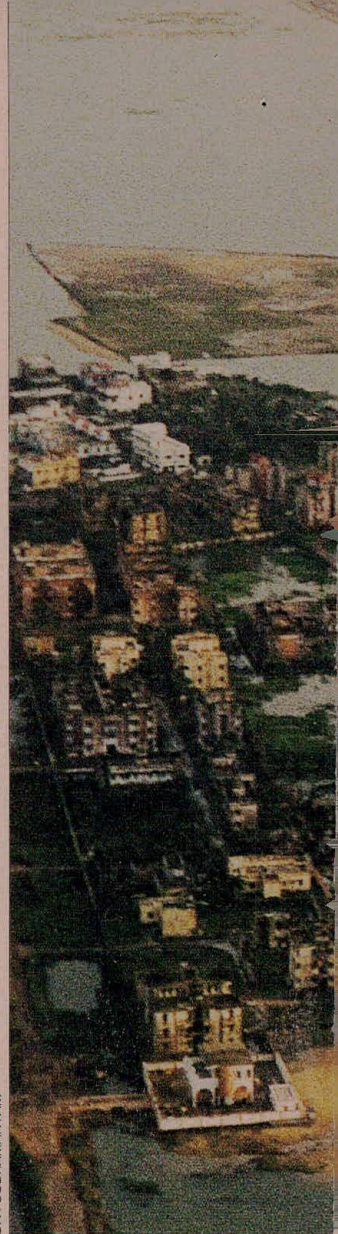
Yet all these efforts may just not be enough to infuse life into coastal Orissa. With the State administration still grappling with the immediate problems of distributing relief materials and medicines and restoring public utilities, a detailed assessment of the damage to private and public property has not been possible. According to informed sources, when such an assessment is finally done, the financial burden may be awesome. "If in the final assessment 10 lakh houses are found damaged, Rs.5,000 crores would be needed to repair them at Rs.50,000 a house." This burden is apart from financial requirement to provide infrastructure such as roads, power lines and water supply installations. ■

HIMANGSHU WATTS/ REUTERS

# AFTER THE STORM



PARTH SANAYAL



C.V. SUBRAMANYAM



In Ersama block of Jagatsinghpur district, rotting bodies and carcasses pose a major threat to survivors of the super cyclone. (Above right) An aerial view of an inundated township in Paradeep. (Right) Villagers in Madhyasasan, 40 km from Bhubaneswar, try to mend their hut with the sparse material available and (far right) a man examining a television set in Ersama block.





SUNIL MALHOTRA/ REUTERS

PARTH SANYAL



**A body lying in a paddyfield in Jathibari. (Below) Bodies of members of a family lie scattered in the inaccessible Ersama block.**



PARTH SANYAL



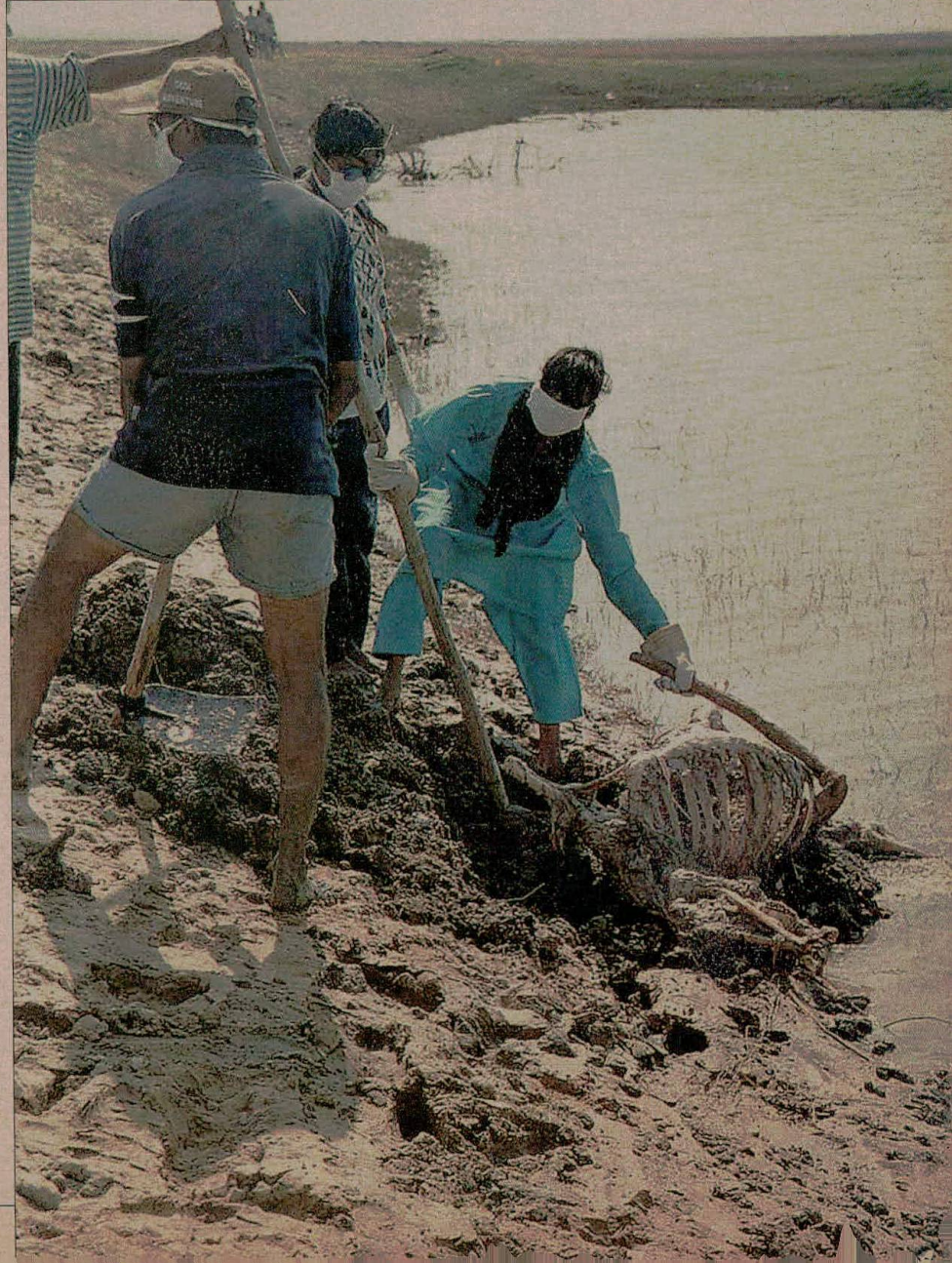


SUSHANTA PATRONOBISH

**One of many bodies lying unattended. (Below) Members of voluntary organisations pull out a carcass from a canal in Jathibari village of Ersama block.**

PARTH SANYAL

SUSHANTA PATRONOBISH





PARTH SANAYAL



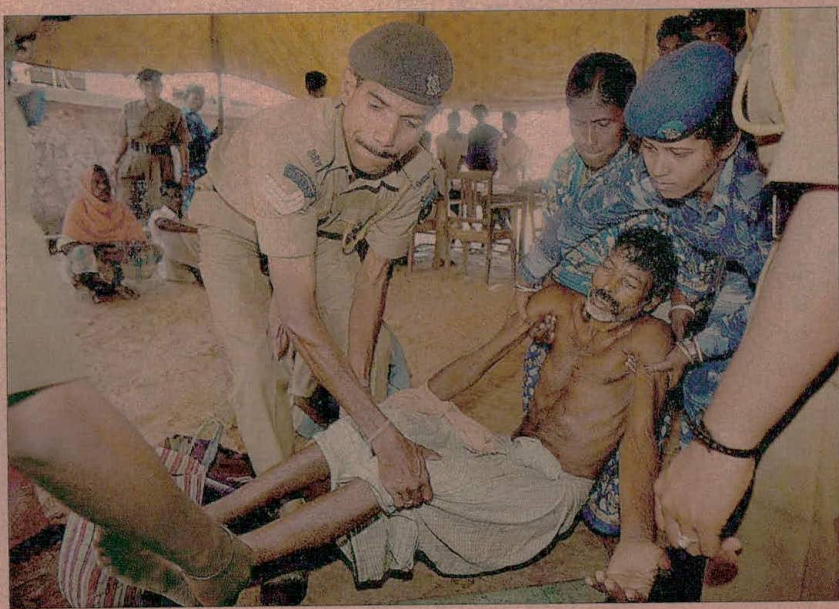
At a health clinic in Jagatsinghpur district. (Above right) After days of starvation, some villagers enjoy a meal. Several voluntary organisations arranged to provide food to the victims. (Right) Setting up a make-shift shelter in Paradeep. (Far right) Paramilitary personnel remove a man suffering from diarrhoea to a health clinic.



PARTH SANJAL



HIMANGSHU WATTS/ REUTERS



PARTH SANJAL

Army personnel engaged in relief operations. (Below) In Jathibari village in Ersama block, volunteers cremate putrefied bodies.



PARTH SANYAL



# A crippled economy

The cyclone has hit Orissa's already parlous economy hard, and there are no reliable estimates of the losses in the various sectors even weeks after the disaster.

SANTANU SANYAL  
in Orissa

ORISSA'S economy is in a shambles. There is hardly any sector that has not been hit hard by the October 29 cyclone. No reliable estimates of the extent of loss were available more than two weeks after the disaster as the government agencies were concentrating their energies on the distribution of relief materials and the disposal of bodies. However, preliminary projections indicated that the impact could indeed be enormous.

On November 10, poultry farmers submitted a memorandum to Chief

Minister Giridhar Gamang, drawing his attention to the damage caused to the poultry sector. The memorandum put the loss, which included the destruction of birds, hatcheries, feed mills and sheds, at Rs.40 crores. According to preliminary estimates, more than 1,000 poultry farmers, located mostly in the districts of Ganjam, Berhampore, Cuttack and Bhubaneswar, lost their means of livelihood. Altogether, more than 15,000 people engaged in this sector have been hit.

The resumption of agricultural operations may take time. The total crop loss is estimated at Rs.1,750 crores. The cyclone left more than 24 lakh hectares of farm land inundated. About 15 lakh

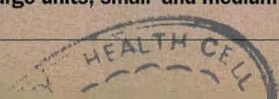
ha suffered a loss of between 50 and 75 per cent of standing crops. In the absence of mechanised farming, the loss of draught animals – more than two lakh head of cattle have been killed – could hamper cultivation in future.

Coconut and betel leaf cultivation has been badly affected. Coconut trees on several hectares of plantations, mostly along the coast, came down and betel leaf plantations, in the districts of Balasore, Puri and Bhadrak, were inundated. The State, which produced a surplus of coconuts, will now have to depend on supplies from Andhra Pradesh, Tamil Nadu and Kerala to meet its domestic requirement. The destruction of betel leaf plantations entails a business loss of Rs.25 lakhs a day in Bhubaneswar and Cuttack alone. Certain varieties of betel leaves grown in some pockets of Balasore district, which are exported, cannot be produced before six months.

The cyclone also destroyed vegetable crops on one lakh hectares – 15,000 ha each in Puri and Jagatsinghpur, 34,000 ha in Kendrapara and 14,000 ha in



What is left of an industrial complex at Paradeep. More than large units, small- and medium-scale industries suffered heavy losses.



Cuttack. The average crop yield was eight to 10 tonnes a hectare. The damage to mushroom cultivation has affected 700 families in Nimapara (Puri district), Bhubaneswar and Khurda.

The State's rich dairy sector has also suffered severe losses. Besides the death of milch cows and the destruction of dairy farms, a large number of chilling plants and more than 200 artificial insemination centres were damaged. At least 500 milk cooperatives need assistance to restart their operations. The Orissa Milk Producers' Cooperative Federation (Omfed), which collected more than one lakh litres of milk a day and supplied it to Bhubaneswar, Cuttack and Puri, among other places, will now depend on supplies of milk powder from other States to maintain normal deliveries. The daily collection of milk dropped to around 10,000 litres. Omfed is likely to procure milk from Andhra Pradesh and West Bengal.

The National Dairy Development Board (NDDB), in association with the Anand Milk Producers' Union, despatched 200 tonnes of milk powder and 200 tonnes of cattle feed. The NDDB also sent vaccines and life-saving drugs for animals.

According to the State Small and Medium Entrepreneurs Association, nearly 700 small- and medium-scale units, which employed about 70,000 to 80,000 people, have been devastated in Bhubaneswar and Cuttack. The figure is expected to rise when information from other districts arrives. The association has urged the State government to provide interest-free loans of up to Rs.10 lakhs to the affected units and declare a five-year moratorium on loan repayment by them. Units with a paid-up capital of more than Rs.10 lakhs should be helped with grants and soft loans, it said. About 400 small-scale and 24 medium-scale units that survived the cyclone were looted by anti-social elements, it said.

In the Paradeep port area, fishing activities have come to a standstill. About 300 fishermen were killed; nearly 60 per cent of the 11,000 country boats were destroyed, marking a loss of about Rs.24 crores. In addition, 2,500 mechanised boats and 400 trawlers sank, causing a loss of another Rs.30 crores. About 500 trawlers, mostly belonging to fishermen from Andhra Pradesh, sank at Paradeep port. The export of marine products from Orissa has hence suffered a setback.

**E**LECTRICITY supply and telecommunications services are yet to be

## Paradeep's problems

SANTANU SANYAL

in Paradeep

**T**HE Paradeep Port Trust (PPT) authorities knew what was coming, thanks to the Internet. They lost no time in taking measures according to a contingency plan formulated by the Union Government in the wake of the cyclone havoc at the Kandla port two years ago.

"We did not rely much on the forecasts by the Meteorological Department, which were general in nature. Instead, we started surfing the Net and at least two sites gave us a clear picture of the projected route, movement and intensity of the impending storm. We were on the alert," PPT Chairman S.K. Mohapatra said.

"Having lived in Paradeep for more than 30 years, we have learnt one thing: never take a cyclone warning signal lightly," Dilip Misra, PPT Traffic Manager, said.

The first priority was to force the berthed ships out of the port. There were six such vessels. Five of these were moved to mid-sea where the effect of the storm on them would be less severe. The vessels returned to the port after the Navy declared the navigation channel clear for traffic on November 6.

A sixth vessel, Spar Opal, which was loading steel coil, refused to sail out. Its moorings snapped and it was pushed from one berth to another, but it suffered no major damage. As it happened, the vessel's onboard satellite telephone system was the only means of communication Paradeep had with the outside world.

Eight vessels were waiting outside the port for berths. All but one left as soon as the cyclone struck.

No piece of major equipment at the port was damaged. Mohapatra said that the port authorities did everything possible to protect the equipment. The projecting parts of large equipment were

lowered and fastened with bolts and the equipment was removed to safer places. However, some losses were inevitable. For example, the roofs of the transit sheds were blown off. Sea water damaged transformers and electric motors. Sand-casting has reduced the depth of the channel by about two metres: the channel has to be dredged. Navigational lights are gone, so are the pylons.

What has caused the most concern is the damage to the railway tracks between Rahama and Paradeep on the Cuttack-Paradeep section of the South Eastern Railway. The movement of bulk items such as coal and ore to and from the port has been hampered. Bulk items constitute more than 95 per cent of the port's traffic. Coastal shipment of thermal coal for the Tamil Nadu Electricity Board (TNEB) and other consumers could be resumed as nearly 2.5 lakh tonnes of ground stock was lying at the port. Thermal coal accounts for seven million tonnes of the port's total throughput of 13 million tonnes. The TNEB's share in the thermal coal traffic is more than five million tonnes.

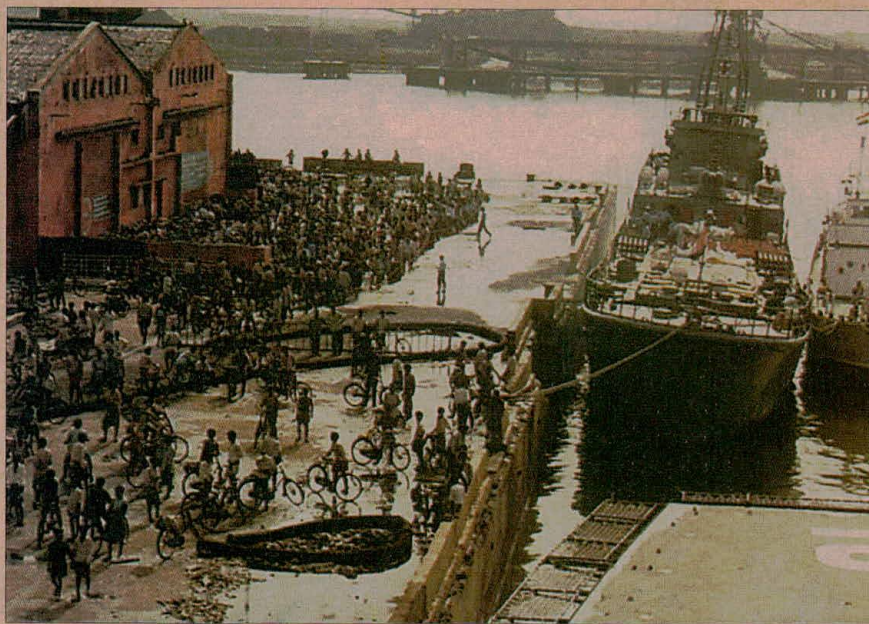
The problem that coking coal importers such as the Tata Iron and Steel Company (Tisco) and Steel Authority of India Limited (SAIL) faced was even greater. The imported coking coal lying at the port premises cannot be evacuated unless the railway lines are repaired. To solve the problem, Tisco chartered a vessel to ship it to Haldia for onward movement by rail. Thus, part of the coking coal stock was shifted, though at a cost.

"We estimate the loss of port property at Rs.80 crores," Mohapatra said, pointing out that several private firms that undertook port projects on contract had complained of a combined loss of Rs.20 crores. "We will request the Centre to provide funds to meet the additional expenditure," he said, adding that the suspension of normal port operations entailed a loss of income of about Rs.60 lakhs a day.

restored in the 12 affected districts. Cescos, an undertaking of AES Corp, of the United States, had planned to give power connections to all applicants by November 14. The plan has gone haywire. AES Corp, which runs a power distribution system in eight districts of

Orissa, has sought a tariff hike to offset the losses, estimated at Rs.300 crores. Cescos plans to appeal to the State government for compensation. If the government declines to oblige it, it will approach the State-level power regulatory authority, the Orissa Electricity





**At the Paradeep port. Ahead of the cyclone, the port authorities had almost all the ships moved out of the berths to mid-sea.**

Rebuilding work to facilitate early resumption of normal operations took a back seat as the port authorities were forced to devote themselves to relief work. A large number of people living in shanties on port lands and the residents of villages close to the port were badly affected. Moreover, the port authorities had to coordinate the relief work undertaken by various government and non-governmental agencies. For this reason, they could not pay continued attention to the work on the Asian Development Bank-aided coal handling plant. The commissioning of the plant will now be delayed by at least six months.

Although the Navy deployed seven vessels and cleared the navigation channel, work could not resume. Even two weeks after the cyclone, Paradeep had no power supply. Since the public sector Paradeep Phosphates Ltd (PPL) was hit badly, the berth dedicated to it did not receive vessels.

Absenteeism, in view of the cyclone and the scare of ammonia leaks, was another factor that stood in the way of the resumption of normal work. Rumours of

leaks in the PPL's ammonia storage tanks (the plant had released small quantities of ammonia in order to ensure the safety of the tanks) led to a virtual exodus of workers. Significantly, only one port employee died: he lived in a thatched hut, having subtlet his official quarters.

Several fishermen living along the Paradeep coast were killed. Although not employed by the port, they used the fishing harbour, which is part of the port complex. As soon as the cyclone warning was received, the port authorities had urged the people living in the shanties in the port area to move under pucca structures. Most of them allegedly ignored the warning.

**T**HE PPL bore the brunt of the cyclone. Its phosphoric acid and sulphuric acid plants were damaged. Between 5,000 and 6,000 tonnes of di-ammonium phosphate (DAP) worth about Rs.6 crores, stored in silos, was destroyed. The boundary walls of the plant and the township collapsed. Attempts were being made to resume DAP production in November itself. However, H. Mishra, Chairman and Managing Director, told *Frontline*

that the acid plants would not resume production immediately. An assessment of the loss suffered by PPL would take time. The condition of the equipment would be known only after power supply was restored, Mishra said.

Mishra appealed to the Centre for special assistance. The appeal, it is learnt, has not gone totally unheeded. The Centre has before it a financial restructuring proposal for PPL. However, the sanction of grant would depend on the assessment of loss. As per the proposal, the accumulated loss of about Rs.256 crores would be knocked off from the book of accounts. The present equity size of Rs.214 crores would be reduced to Rs.2.14 crores and the loan of Rs.230 crores converted into equity. The interest on the loan too has to be waived by way of book adjustments. "Once the restructuring plan is implemented, PPL will start afresh, on a clean slate," Mishra said.

The loss suffered by the DAP plant of Oswal Chemicals & Fertilisers is put at Rs.100 crores. The two-million-tonne plant, estimated to cost Rs.2,000 crores, was due for commissioning in November. Now the commissioning has been deferred until January. Abhay Oswal, its Chairman, said that the exact extent of the loss would be known after the insurance company assessed the extent of the damage. The project's prime consultant, United States-based Jacobs, Humphreys and Glasgow, was involved in the assessment exercise.

The company, Oswal said, did relief work in 180 villages under 47 panchayats, with a total population of four lakhs. "We distributed about 1,000 tonnes of foodgrains and we will distribute another 3,000 tonnes," he said. Saris, dhotis and materials for shelters had also been distributed. The Oswals propose to spend Rs.10 crores on relief work and have involved their employees from all over the country in the operation. "We have a commitment to the people of the place where we have put up such a huge plant with so much investment," Oswal said. ■

Regulatory Commission, with a request to pass the burden on to the consumers. Power consumers are angry with Cesco's plan. The loss, they say, is largely owing to the failure of the company to insure its assets. Some consumers have threatened to take the matter to the streets. "Why

should the consumers and the State government be made to pay for the loss suffered by a private concern," asked one consumer. Interestingly, some sections of the State government are for compensating Cesco suitably and have accordingly taken up the issue with the Central gov-

ernment. (see Column by Jayati Ghosh on page 76)

The loss to the telecom circle is estimated at Rs.50 crores, with a large number of telephone exchanges washed away and microwave towers – at Nimapara, Paradeep, Kakatpur and Jajpur – uproot-

ed.

The local chambers of commerce have estimated the loss to industry, big and small, at Rs.500 crores. They emphasise the importance of early normalisation of the affected units. This process could be accelerated if an interest holiday is declared for one year on loans issued by commercial banks, according to them. They also want the repayment period should be extended. Fresh working capital should be made available to industry at a concessional rate and the requirement of margin money on fresh loans should not be insisted upon, the chambers have suggested.

Following the cyclone havoc, the Reserve Bank of India and the Union Finance Ministry directed all banks to provide immediate assistance to the affected people to help them raise new crops and purchase farm implements, seeds, fertilizers and insecticides. Banks and other financial institutions were told to extend loans to rebuild houses.

The State government has sought a Central assistance of about Rs.350 crores to reconstruct about 1.2 million dwelling units. It has also urged the authorities concerned to build houses under the Indira Awas Yojana. The Housing and Urban Development Corporation (HUDCO) has announced that it would provide Rs.187.5 crores towards the reconstruction of about 75,000 dwelling units.

Sharda Singh, Chairman and Managing Director of UCO Bank and convener of the State-Level Bankers' Committee (SLBC), led a team of senior bankers and top executives of financial institutions to Orissa and held meetings with the Chief Minister, the Finance Minister, the Chief Secretary and other senior officials in order to assess the kind of assistance the banking sector would be required to provide to raise new crops, rebuild houses and restart businesses and factories in the small and medium sectors. The Government at that time did not have a correct estimate of the losses or the kind of assistance that would be required. These aspects are likely to be finalised at an SLBC meeting in the near future.

Another factor causing concern is the financial situation of the State government. Doubts have been expressed in certain quarters that the money received for relief and rehabilitation might actually be used to pay the salaries to government employees. The critical financial situation of the Government had earlier forced the RBI to clamp restrictions on overdraft. The restrictions have since been lifted. ■

## ■ COLUMN

# Cyclones, power and social responsibility

**A multinational company seeking to triple power tariff in already suffering coastal Orissa, claiming that the cyclone has hit its facilities, which had been left uninsured, raises questions regarding the rationale for and pattern of privatisation in the country, and consequent monopolistic practices that impinge on the lives of ordinary people.**

**T**HE cyclone that ravaged the coast of Orissa was one of the worst to affect the subcontinent in this century. The scale of devastation that has occurred is unimaginable: already the official death toll is close to ten thousand people, although the situation has been so dire that no formal enumeration of the dead has yet been undertaken. More than 20 million people are said to be affected, and agriculture and industry in the region have been ravaged.

Around ten lakh houses are said to have been damaged, many beyond repair, as well as more than 30 lakh *kutchha* houses, rendering millions of people homeless. Nearly three lakh farm animals were killed, the extent of the crop area affected (with standing crops destroyed) exceeds 12 lakh hectares, and preliminary estimates of property loss range upwards of Rs. 1,000 crores.

Calamities as extreme as this will take years if not decades to recover from, even in terms of the most minimal reconstruction and repair. Quite apart from the enormous loss of human life, simply replacing physical infrastructure in a State that was already one of the most absolutely poor and backward in the country is a task of huge proportions. The enormity of the requirement of providing immediate relief has clearly exposed both public and private agencies as being inadequate, and lakhs of people in at least nine districts continue to be in great distress, deprived of the

most basic amenities and sometimes even of the means of survival.

In the wake of such a major disaster, the natural expectation is that all sections of society, especially those with the finances to make a difference, would step forward to contribute to the recovery and reconstruction effort. This expectation is even higher *vis-a-vis* large industrialists and multinational companies (MNCs), which are increasingly prone to publicise their sense of "social responsibility". This is why some recent news reports of the response of at least one multinational company comes as a shock, even to hardened critics accustomed to expecting the



**Linesmen repair power cables in Jagatsinghpur, two weeks after the cyclone.**