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Impact of Erratic Rainfall and Mica Mines in a South Indian Village

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ABSTRACT This paper presents a case of a South Indian village where mica mining made a detrimental effect on agriculture which was already suffering from erratic rain fall. Together both the factors have affected the social system in the village so much so that the traditional social relations have dramatically changed. The failure of agriculture at times due to shortage, excess or untimely rains and high labour costs has weakened the dominant caste considerably. Initially though members of the dominant caste had become rich through mica mining they became poor with the fall of mica production within two decades. Also their attempts to cope up with the shortage of rain fall by bringing about agronomic changes were in vain. Hence, the dominant caste could no longer maintain the traditional social relations with the subordinates. But, having been freed from traditional roles, the subordinate castes entered into contractual relationships and improved their economic position through higher wages in the mines and by pursuing other occupations. The changed circumstances now enabled them to often exhibit open resistance to the caste domination. The paper discusses the impact of erratic rainfall and establishment of mica mines on agriculture and the disruption of traditional social relations in the village due to failure of agriculture.

Since Indian agricultural economy largely depends on rainfall, erratic rainfall has always been a major factor affecting the economy adversely. However, most often minor and temporary economic changes seldom affect the social system. Fro the social system develops resiliency, the economic shocks are easily absorbed and the system continues with no or a few changes which may not be noticeable. For instance, Pandian (1987) explains with the concept of 'productive force' that farmers in a Tamil village use different social and financial mechanisms to adapt to inconsistent rainfall as well as the problems of life during the non-productive period. But consistent shortage of rainfall most likely lead to an adverse effect. Further, if the suffering agricultural economy comes under influence of dominant industrial economy, visible changes are bound to occur in the social system.

It is a known fact that agricultural economy of traditional Indian villages integrates several segments of the village society through *jajmani system*[1] and encompasses the caste system as well (Dumont, 1980). Therefore, any exogenic or endogenic factor of change in an agricultural economy certainly impinges upon the social relations of the village community. This paper, attempts to describe and document how changes in the agricultural economy, and establishment of mica mines, caused perceptible structural changes in the social system of a traditional South Indian village. On analysing the processes of change it reveals human responses to ecological changes. It also attempts to contribute to the under-standing of social response to mines in South India because so far we know only of the changes that have occurred among the tribals of Bihar on setting up of mines (Jha, 1981; Vidyarthi, 1970).

First, I shall describe the social relations pertaining to agriculture and factors leading to failure of agriculture after giving a brief account of the village. Second, establishment of mica mines and its influence on agriculture will be discussed. Finally, the impact of failure of agriculture and mica mines together on the village community will be examined and the process of social change outlined. The data for this paper were collected during 1990-91 while doing field work[2] for doctoral dissertation in a village called Anthatipuram, a pseudonym, located in the mica belt of Nellore district, Andhra Pradesh.

Anthatipuram

It is a typical South Indian multi-caste village having a representation of 23 castes with a population of 2,211 in 475 households. Of the 23 castes (excluding Muslims and Christians since these are not caste categories) the Untouchables combining three castes - Madiga, Mala and Vettimala, form the largest category (32.2 per cent). However, the Madigas are the most numerous, both among Untouchables and the whole village, if castes are considered individually. The Madigas are followed by the Kammas who constitute the next largest group among the clean castes (17.18 per cent). About 38 per cent of the families in the village live mainly on mica mining, nearly 23 per cent on agriculture, 23 per cent on wage labour and 6 per cent on traditional and non-traditional occupations. Agriculture includes cultivators and agricultural labourers who are in the proportion of 15 and 7.6 per cent. The caste system in this village is not different from that of any other place in India.

AGRICULTURE

Most of the land surrounding the village is not very fertile. There is predominant dry land cultivation except for a few patches of land to which water is supplied from wells and tanks. There are two reservoirs/tanks which receive water from the streamlets formed by rains in the nearby hillocks and uplands. The total area of irrigation using tanks is only 203.26 acres, where the land under wells and rain fed is about 3,256 acres.

Prior to 1970, when the entire agricultural land of the village was cultivated, the landless labourers had sufficient work such as plowing, manuring, sowing of seeds, weeding, watering, transplanting, harvesting, and the like, from June to March. The quantum of work was so much during weeding and harvesting season that the labour force of the village was not adequate and therefore neighbouring villagers were also hired. But now labourers of the village itself are enough to carry out all agricultural operations. There is no need to go into the ethnographic details of the cultivation of crops but four aspects where different castes come together to perform caste specific roles with regard to the cultivation of lands need special mention: *kamathalu* (an institution of land lord and farm servant), manuring,, rituals of production and *bandeladoddi* (an institution for protecting crops from cattle).

Kamathalu

The main labour source for the Kamma landlords was the Madigas, who worked for them according to the traditional practice of *kamathalu*, rights of service. In this system, two clans had the rights of service out of more than twenty clans among the Madigas. These two clans shared the Kamma houses equally by dividing Kamma houses into two groups, based on the need for Madiga servants. This division depended on the extent of land and cultivation that the Kamma landlords had. Each of the Madiga clans selected one group of Kamma houses and then distributed the houses of their patrons within the clan members. After distribution of Kamma houses for six years, there was no change either in the group of the Kamma houses or the services of Madigas. However, the Madiga clan members who chose a particular group of Kammas could change their patrons for any reason if they found it necessary within six months after the distribution of the Kamma families. After the six years of service, while the Madiga clan members remained in the same clan, they reorganized Kamma houses into two new groups and shared them as before. During this period of service, the Madiga servant was not permitted to serve any one else other than the one allotted to him, and he remained at the beck and call of the master always.

Manuring

Until 1970, it was a regular practice, but not

so regular now. After the harvest of dry crops at the end of March, the land owners fertilize their lands before starting a new crop in June. The fertilization is done in two ways: letting sheep and goats stay on the land, and by sprinkling of cow and buffalo dung. The Golla caste members, traditional herdsmen of sheep and goats, assist the land owners to fertilize their lands. Usually, in May, the land owners request one of the Golla families to let the sheep stay for three to seven nights, depending upon the size of the land and take the herds to hillocks and other place for grazing during day and bring them back by evening. During the stay overnight the herd urinates and passes dung which forms a good manure.

Rituals of Production

There are three rituals connected to the bounty of crops. The *acharakapu* a member of the Kamma caste, collects small contributions of paddy when the crop is ready for harvest. This paddy is made rice and cooked to offer to a goddess called Kattalamma enshrined on the bank of the village reservoir/ tank. A sheep is also sacrificed by a Chakali man, and its blood is mixed with the cooked rice and sprinkled over all the rice fields by a Madiga. This is to please the goddess and seek her benevolence to provide them a good crop. In an another ritual, the priest of Munindamma, the village female deity, goes to Mudigedu village, fifteen kilometers away, to bring sand from the temple of the goddess Pakanatamma (also known as Mudigedamma). After returning, he mixes the sand with neem leaves and sprinkles the mixture on the rice fields when rice kernels are being formed on the rice plants. This is to enable the water to get into the kernels to produce a lot of grain and thus reap a good harvest. Another ritual is conducted when the harvested grains are gathered as a big heap. The priest of Munindamma temple visits with a basket containing a picture of the deity and neem leaves. After keeping the basket on the heap of the grain, he sprinkles the neem leaves, and once again attempts to make the heap with a winnowing fan. Then he takes the grain as much as the fan can hold. After which some grain is set apart for the Brahmin priest. The land lord then gives grains to Chakali and Mangali as per the mera (traditional annual remuneration for their services). In case of *kamatham*, the Madiga servant can take as much grain as he can, but he usually takes less grain than that given to Chakali and Mangali.

Bandeladoddi

When agriculture was done regularly, it was very important to protect the crops from animals such as cows, buffaloes, goats and sheep. These animals which were tended by old or young people on the hillocks and barren lands used to often trespass into the lands and graze the crops. For this, the village panchayat which was headed by the village headman, called as *grama munasab*, set up a cattle pound called *bandela-doddi* where the strayed animals were flocked. When the animals trespassed into a field, the land owner would bring the cattle and put them in the cattle pound. A village servant, a Madiga, would feed the cattle with the fodder provided by *grama munasab*. The owner had to pay a fine of two rupees for each cattle to get his animal released from the cattle pound, and if nobody claimed the cattle for a long time, they were auctioned by the *munasab*. The amount thus derived was spent on village festivals or a ritual called *Jathara*.

FAILURE OF RAINS

The data from 1970 onwards for the district show that the rain has been either considerably less or more than required. The rainfall in 1983-84 and 1985-86 seemed to be more than adequate, but in fact, it was the result of excessive and unseasonal showers which led to a great loss. Andhra Pradesh Year Book comments on the 1983-84 rains, "...the district was lashed by unseasonal rains damaging crops" in the Nellore district (Anonymous, 1985:168).

On the 1985-86 rains it says, "Cyclone and floods devastated Nellore, Chittoor and Prakasam districts" (Anonymous, 1988 : 457). During the remaining years, the rainfall has been far below the average. The District Agriculture Officer notes that the Nellore district has been experiencing either excessive or inadequate rains every three or four years for the last ten years. This has caused hardships for the farmers (Reddy, 1990).

The result of this erratic rainfall in the extent of land cultivated from about 1970. The data gathered in the village clearly indicates a decline of agriculture. The total cultivable land or the land which was cultivated before 1970 was 3,256 acres dry and 203.26 acres wet, but in 1990 only 1,833.17 acres of dry and 10.00 acres of wet land was cultivated. The percentage of land under cultivation in a span of thirty years shows a significant decrease in both dry and wet land cultivation.

The other two important factors that have contributed to the fall of agriculture are: expensive labour costs due to competition created by the mica industry and labourers' preference of self employment by making charcoal. In 1970, the wages paid to agricultural labourers was two rupees for a man and one rupee and fifty paise for a woman but in the mica industry ten rupees for a man and eight rupees for a woman were paid. The labourers were therefore attracted to the mica industry. Since then, there has been a steady increase of wages in the mica industry.

Charcoal provides an alternative energy for firewood, kerosene and gas. There is a tremendous demand for charcoal in tea shops, for ironing clothes and making gold and silver ornaments. The charcoal is now made of widely grown thorny bushes called *thumma chettu* which grow on any barren land, tank bunds and so on. Those involved in making charcoal can earn twenty rupees a day where the agriculture wage is only fifteen. More over, there is no supervisor and no fixed hours to work. Hence, several prefer to work in charcoal making (23 per cent of the workers depend on it).

As the production costs of agriculture increased, the crop production decreased. Added to these, another discouraging factor is the menace of stray cattle. With the diminishing trend of agriculture, maintenance of cows and buffaloes became difficult, hence most of the farmers gave up raising cattle, just keeping those which were essential. These once domesticated cattle became stray animals, foraging on anything and it became big menace for those who wanted to raise crops. All these factors together have resulted in abandonment of agriculture in some cases and reduction of it in some other cases. Twelve per cent of the Kammas who owned 55 per cent of the land in the village have given up agriculture totally.

In this situation, the farmers are left with three options: use their own family manpower to the maximum extent, minimize the extent of cultivation and make an agronomic change in which there will be less need for rain or labourers. The second option can be applied only in the case of large land holders. Also, the unpredictable rains do not motivate people to practice agriculture.

Agronomic Change

With regard to third option, the farmers have attempted to cultivate tobacco. Beginning 1975, tobacco was cultivated for five years on about two hundred acres. In the first two years, the yield was very good but subsequently, even tobacco did not come up well. Thus, many farmers who derived gains in the beginning lost huge amounts in the later years. It was because tobacco cultivation was a labour intensive agriculture activity demanding high capital investment, and when the crop failed the farmers incurred heavy loses. Beginning in 1980, the farmers attempted to grow lemons. About 213 acres of land was made into lemon plantation. The lemon gardens are less labour intensive as compared to tobacco, but they require more water. The gardens are grown around the wells; the existing wells have been

either deepened or bores have been drilled in the wells to obtain more water. The headman's elder son was trying to grow a hybrid variety of tamarind as well as soap nut trees which can withstand the drought conditions.

The impact of mica mining industry on agriculture has already been indicated. Further analysis of this industry in brief shows the following. It provides another scenario of economic rise and fall of Kammas in the village which later affected the social system.

MICA[4] MINING

Mica mining began in 1887 (Prasad, 1974; Alluri, 1990 : 81) around the villages of Marupuru, Thatiparthi, Inukurthi, Anthatipuram, Kalichedu, Ootukuru, Thalupuru and Sydapuram, located in the Guduru and Rapuru talukas in Nellore district. By 1940, there were more than 240 leases of mica mines in this area.

Since 1950, the mining industry saw a revolution in mechanization due to the introduction of pneumatic drilling, jack hammers operated by air pressure, inclined haulages or winders, mechanical ventilators and heavy duty compressors (Prasad, 1974). Mining was started with crude technology by open quarrying using gunpowder and bailing out water with *kapilalu* and *motalu* drawn by bullocks which are used for irrigation of crops. By 1950 all the mines were electrified. Oil engines were replaced by electric motors. Supply of air through compressors made the underground work comfortable.

The period between 1950-1965 was considered to be the golden period of the mica industry, despite a slump in the market. The production of mica rose from 596 tons in 1944 to 7,000 tons in 1961 (Saibaba, 1984:80) But since 1970, production of mica has steadily decreased. It was 3,200 tons in 1974 and came to 1,550 only in 1988-89. The number of mines during the Second World War fell to 144; by 1974 it was only 30, and today there are only 14 mines in production. The main reasons for the decrease of mica mining is partly the uncertainty of mica deposits, a discouraging market and unhelpful government attitude towards the mica industry. Until 1960, there were twenty two mines in the vicinity of Anthatipuram village owned by Kammas, but now only six mines are running and one is being closed. All the mines running at present are owned by members of Reddy caste from different towns and villages, who had bought from Kammas.

A comparative analysis of work in agriculture and mica mine will illuminate the social premises on which the employer and employee or land lord and servant/wage labourer interact. Almost all the workers, except the technical staff, are from low or Untouchable castes who were originally agricultural labourers subjected to the domination of high castes.

First of all, mine work does not recognize caste relations, and in this sense, low castes and Untouchables stand in a position of social equality. Second, working conditions in the mines are far better than those of agriculture and working in the mines is comparatively easy, though mining is hazardous. They argue that accidents can be avoided and occur mainly due to negligence or human failure.

It seems that the miners are not worried much about their health; they are attracted to lucrative wages and other benefits.[5] In agriculture, one has to work in the scorching sun, sweating profusely in the humid air and often getting wet in the rain. Whereas in the mines, either underground or in the mica factory one works in a cool place and is thus protected from sun and rain. Further, in agriculture there is a close watch by the owner so that the workers can not while away the time. In the case of mines, there is not such a close watch. Given the preference of occupation, in a survey it is revealed that a majority, 134 (88 per cent), prefer mining, the main reason being continuous employment and certainty of work. Only 13 out of 152 (9 per cent) prefer agriculture that too only if there are timely rains and good

harvest. They say that agriculture is unreliable, as it depends on rains and other factors.

The Impact of Mines : Fundamentally, mining has ushered in a capitalist mode of economy replacing the traditional economy predicated on "use value." The paternalistic relations between the employer and the worker in the field or house became almost extinct and the workers began to look at their services with a commercial orientation. The labourers used to be in the fields from early in the morning to sun set. But now they work according to time; it is found and reckoned very easily with the striking of a bell every hour at all the mines throughout the day.

Working in the mines has minimized caste distinctions because all of the employees are categorized as mine workers. Their ascribed caste status has been replaced by their achieved status. The low caste supervisor in the mine has to be respected properly, or one may lose one's job. An individual's ability is recognized, rather than his/her caste status in obtaining higher position in the mines. Higher incomes enable a low caste man or woman to dress like a member of the high caste. Clothes which have been indexical symbols of caste status have lost their significance. The school contributed well in increase of literacy rate, especially among the low and Untouchable castes. The concern for the welfare of mine labourers by the government resulted in the establishment of an elementary school, a hospital and a high school. Secular education has emphasized egalitarian values and it has enabled several persons to obtain secular jobs outside the village. As there was a need to supply electricity to the mines, the village also received electricity as early as 1953. In order to supply protected water to the mica labourers, the government provided the village with a protected water supply scheme which slightly improved their standard of life. The mines and other institutions have brought in a variety of people, and along with them have come modern ideas. This has had a serious impact on the domination of the Kamma landlords these immigrants violated the local norms of deference because they were government employees or school teachers or mine workers. Following these immigrants, even the natives have started deviating from the age-old practices of deference to the high castes. Thus, there is a substantial impact of mica mining not only on the outlook of the village but also on caste ideology and interpersonal relations.

CHANGES IN THE SOCIAL SYSTEM

The 'productive force' lost its significance because the non-productive period, either due to shortage of rainfall or flood, is very limited because of mica mining. This enabled the land lords to easily dispose of labourers when they stopped intensive agriculture. Because of their economic downfall and high cost of labour in agriculture, it became hard to maintain the Madiga *kamathalu*, and therefore, this practice was put to an end. The Madigas undoubtedly have become free, but they have also lost patronage of the Kammas. The labourers are paid in cash instead of grain for the days they work. The interdependency among different castes and between landlords and servants has disintegrated. In other words, the landlords have failed to patronize dependent castes. The Kammas who used to demand services for free or for less wages from the service castes can no longer make this claim.

The land lords have also discontinued the practice of keeping farm servants. For instance, the *grama munasab* had two servants, a man and his wife who belonged to the Balija caste and who were paid one thousand for the man and eight hundred rupees for the woman, in addition to free food and two pairs of clothes, every year till 1978. Besides them there were also two men of the Madiga *kamathalu* as servants. The *munasab* had four pairs of bullocks and a tractor. But now this family has sold all the cattle and the tractor to someone outside the village. The eldest son

had a car which was also sold in Guduru. There are no farm servants now.

Since the rituals at the paddy fields have been stopped, the ritual interdependency of the Chakalis, Madigas, Gollas and Kammas, expressed at the respective rituals, has disappeared. Thus, there is a disruption of the ritual integration of different castes in the village. The Kammas have stopped contributing generously to the village rituals and festivals.

The shortage of rain has diminished foliage in the lands and hillocks, by early summer the lands become dry which forces the sheep and goat herders to emigrate to the banks and islands of the Penna river near Nellore. They return to the village only after the onset of rains. Because of the emigration, the earlier practice of soil fertilizing has been done away with. This has caused the Gollas to lose some income, and the lands remained unfertilized.

As the villagers stopped taking care of cattle, the institution of *bandeladoddi* became irrelevant and was finally abandoned. With this, the villagers stopped hiring servants to take care of the animals, and the position of the village servant for the *bandeladoddi* was also abolished. Another effect of giving up cattle raising is concerned with domestic economy. Earlier, women used to take care of cattle and the money derived from this went for their personal use. Now only a few families maintain one or two buffaloes.

CONCLUSION

The foregoing analysis sufficiently indicates occurrence of several easily noticeable changes in values, attitudes, *jajmani* system, interpersonal and social relations across castes in Anthatipuram within the last two decades. Shortage or untimely rains or floods severely affected the agricultural economy and it became worse with the development of mica mines. However, from the sociological point of view, the mica mines have played a significant role to checking the response of dominant land lords to turn the non-productive period in their favour so as to keep the subordinates remain dependent on them. Mines facilitated the land lords to easily dispose off their clients or dependents and put an end to the traditional patronage and interdependency of castes. The low castes and Untouchables no longer accept the domination of high castes, display various "everyday forms of resistance" (*cf.* Scott, 1989, 1990) and question the wisdom of hierarchical caste system (Rao, 1993, n.d). These have serious implications with reference to 'consensus' of status and caste ideology based on "purity and pollution" principles propounded by Dumont (1980), Moffatt (1975, 1979a, 1979b) and others. It appears that economy plays a pivotal role is holding different segments of the society together but not religion or ritual obligations.

NOTES

1. Wiser (1936) first time coins the term the *jajmani* system to the social relations based on the caste and economic transactions. This has been widely discussed since then and some have pointed out its various forms across the country. For instance, Harper (1959) describes how it is different in western Karnataka. Bronger (1975) and Benson (1976) have examined the differences between South and North Indian Systems.
2. The field work was conducted with a junior fellowship from the American Institute of Indian Studies, Chicago, USA.
3. Out of the eighteen Golla families, three of them have more than two hundred sheep and about fifty goats on an average. The rest of them have each around twenty-five to thirty sheep and less than ten goats, except for six families.
4. Mica is a thin, transparent, pure mineral which can be split into colourless very thin layers. Mica is available in the states of Bihar, Andhra Pradesh and Tamilnadu in India. In Andhra Pradesh, it is found mainly in the Nellore district.
5. Free medical aid is provided in the hospital of Ministry of Labour for all employees. Casual and earned leave and Provident Fund for permanent employees is also available.

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