CHAPTER III

Technology, Nature of Work and Patterns of Social Relations in 1929
TECHNOLOGY, NATURE OF WORK AND PATTERNS OF SOCIAL RELATIONS
IN 1929

The present chapter deals with the mode of work in agricultural operations along with technology, size of landholdings and castes in 1929 in the case of both the villages under examination. Relations amongst various social units, who participate in different agricultural operations, are also considered in this chapter. At the end of this chapter endeavours are made to establish similarities and differences between the modes of work, technology and patterns of social relations.

Organization of work can be defined as the composition of "individuals, their material goods, their groupings and their relations" (Gluckmann 1963: 210-213). A change in material goods not only effects change in the groupings of individuals but also relations among participants. The Coastal Andhra Pradesh (C.A.P.) village under examination in 1929 had mainly two modes of work: supervisory cultivation by the upper stratum 'Kamma caste' landowners and secondly familialistic and kin based reciprocal exchange type in the case of middle and lower strata of Kamma caste landowners. The second mode of work was in prevalence. These modes of work have been identified on the basis of four variables: agricultural operations, tools used in these operations and participants and their work in various agricultural operations. The participation in agricultural work has further been subdivided as manual and non-manual. Crops, generally
determine the number of operations to be carried out during the cultivation process. Participation in manual agricultural work was influenced by the size of landholdings within a caste, Kamma.

The (C.A.P.) village had 859 acres of land under cultivation. Nearly 15.5 per cent of the total cultivable land was covered by Maize and Jawar crops. Wet cultivation was in prevalence (84.5 per cent of total cultivable land) in the village where paddy was the main single crop. Three castes owned this total cultivable land. The agriculturalist, the Kamma, owned 55.5 per cent of the cultivable land, Brahmins 33.8 per cent and Komati (trader) 11.7 per cent. Eighty-four households owned the total cultivable land of the village in 1929; 583 acres of land was owned by 9 households who belonged to Brahmin (5 households, 281 acres) Komati (2 households owned 102 acres) and Kammas (2 households owned 100 acres each). Seventy-five Kamma households shared the remaining 276 acres of cultivable land. Forty-two per cent of the village households were landless. They belonged to Kammari (iron smith), Vadrangi (Carpenter), Kamsali (Goldsmith), Chakli (Washerman), Mala (Sweepers) and Madiga (Leather worker).

Vadrangi male household members prepared and repaired the wooden parts of plough, cart, sickle, axe and spade. Whereas the Kammari male household members repaired the iron parts of the plough, cart, sickle, axe, spade and crow bars for Kamma.
landowners. Members of both the Vadrangi & Kammari castes have been continuously working for Kammis for generations on Jaymani basis. The female members of these castes (Vadrangi & Kammari) chiefly participated in agricultural operations. Chakali caste, both male and female members everyday washes clothes on Jaymani basis for Brahmins, Komatis and Kammis. Kamsali rendered services through the preparation of gold and silver ornaments for landowners and silver ornaments for the landless Mala caste households. The Mala caste households worked as attached labour through generations (Palerulu) under the landowners of Kamma caste families whereas Madiga caste male household members prepared shoes, whip thread and other leather items for the landowners. Their female counterparts worked in the fields. Their main function was replantation, removal of weeds and harvestation of paddy crop.

Cultivation of crops required number of operations. These operations were same irrespective of the amount of the land holdings, but varied according to the crop under cultivation. Paddy was cultivated on wet land where irrigational facilities were available. Mainly five operations were required for the cultivation of paddy. They were (1) preparation of seedbeds and seedlings, (2) watering the ploughed lands and replantation, (3) removal of weeds from the paddy fields, (4) harvesting of paddy and finally, (5) threshing, winnowing and transportation of paddy to the homestead. Legumes were broadcasted 3 to 4 days prior to the harvestation of paddy. By March these legumes grow are ripened.
Removal of weeds, harvestation, thrashing and transportation of grains to the landowners homestead are the main operations required in the cultivation of legumes.

Maize and Jowar crops were cultivated in the dry lands. Cultivation of these crops required (1) ploughing and transportation of manure, (2) broadcasting of the seeds, (3) removal of weeds and protecting the crops from birds, and (4) harvesting, thrashing, winnowing and transportation of grains to the landowners homestead. The Brahmin and Komati landowners rented out the major part of their land and the other part was cultivated by the assistance of tenants labour. The landowner himself supervised agricultural work. The Upper stratum landowners of Kamma caste cultivated their land with the assistance of kins, neighbourous, landowners and palorulu. The landowners functioned only as supervisors in various agricultural operations. The middle and lower strata, landowners of Kamma caste cultivated land with the assistance of labour from kins, male family members of the landowner, neighbourous landowners, and palerulu. Later can be termed as familialistic and kin based reciprocal exchange mode of work. These modes of work have been derived from interactions between various kind of operations. Further these modes of work for each stratum have been illustrated.

**Upper Stratum Landowner of Kamma Caste:**

Household P.V. owned 100 acres of land in 1929. He had 70 acres of land under paddy cultivation. Maize and Jowar crops
were cultivated in 30 acres of dry land. The household possessed three pairs of bullocks, four wooden ploughs, two wooden carts, five spades, two crowbars, six sickles and one wooden cob and mortar. These tools were repaired by village artisans. Iron smiths repaired the iron parts and carpenter the wooden parts. New wooden carts and ploughs were prepared on the basis of contract between the landowner and the artisan. These tools were mainly operated by farm servants who were attached with the household through generations on the basis of debt. P.V. household had four such farm servants.

The household comprised of 8 members: a couple and their unmarried six children. The couple had five sons and a daughter. The eldest son in 1929 was 17 years old and the youngest was only 3 years. The daughter was fourth issue and only 12 years old. The head of the household not only owned but also controlled 85 acres of land. Fifteen acres of land was cultivated on tenancy basis by his farm servants belonging to Mala caste. Social units participated in the various agricultural operations and the relative role played by the landowners’ household in manual and non-manual work activities are presented below.

Preparation of Seedbeds & Seedlings:

Land nearer to the water tank was tilled for three to four times. In this process wooden ploughs driven by bullocks were used. Later completely decomposed compost was transported from the compost pits to the ploughed land. Wooden carts, spades, and
baskets were used to fill the carts and to unload compost in the ploughed land. Small heaps of compost were formed to be later broadcasted in the fields. Later the land was reploughed and the bigger mud pieces thrashed either with the axe's head or wooden logs. Later paddy grains were broadcasted in the plot. In order to cover the grains with mud a bunch of branches was tied together and driven by oxen on the soil. The big plot was divided into smaller plots (seedbed) and connected with comparatively smaller canals. Within 40 to 45 days depending on the fertility of land the seedlings will become ready for replantation. The seedbed was watered at least 3 to 4 times with an interval of a week or 10 days. Weeds were removed from the seedbed nearly a week prior to the removal of seedlings from the seedbed.

Farm servants filled the carts and the eldest son of the landowner drove the bullock cart to the fields while a farm servant walked ahead of the bullocks. The manure was unloaded by the paleru in the seedbeds. Palerulu broadcasted the manure in the seedbed and ploughed it with the aid of the neighbourous small landowners whose lands were located at a distance from the tank. The bigger mud pieces were crushed by the neighbourous landowners and by the palerulu. Paddy grains were broadcasted by the neighbourous landowners, whereas the farm servants brought a bunch of Accacia Arabica branches by cutting them from trees which were later driven by bullocks on the seedbed. The seedbed
was divided into smaller plots and connected with minor canals (bodelu) by palerulu and neighbourous landowners. Two palerulus operated a hand driven water pump and supplied water to the seedbed from the canal. Neighbourous landowners directed the water into different plots of the seedbed. Week to ten days prior to the replantation, the seedbed was weeded out by female counterparts of the palerulu's households. The landowner and his eldest son supervised these operations by standing of the bank of canal with an umbrella on their head in order to protect themselves from hot sun rays.

**Ploughing, Watering and Replantation of Paddy:**

With crowbars the manure in the compost pit was loosened and with spades the baskets were filled. Wooden carts were filled with animal compost with baskets. The carts filled with compost were driven by bullocks to the fields where the manure was kept in smaller heaps. It was broadcasted with sickles if it contained straw, otherwise with spades and baskets. The land was ploughed with the help of wooden ploughs. Later, in the month of June, fields were flooded with water by cutting a small portion of the canal bank, with a spade and a crowbar. Once the fields were flooded sufficiently weeds from the fields were removed with spades. The mud pieces were levelled and then the field banks were trimmed with spades. Thus the field was ready for replantation after the above mentioned operations.

Then seedlings from the seedbed were removed along with
their roots and made into smaller bundles. While uprooting the seedlings water was driven into the seedbed either with the help of hand driven water pump or by cutting the bank of the canal into the fields. These bundles of seedlings were tied to the ends of a bamboo blades and were carried to the replantation site on shoulders or on headloads. The smaller bundles were spread in the replantation field. Lord Vinayak was worshipped by married and old aged women, Widowed women were not allowed to take part in this. Replantation beings after the prayers.

Naukars filled the carts with the help of spades via baskets. Neighbourous landowners P.S.P.P. and S.S. loosened the manure with the help of crowbars. One naukar walked ahead of every cart while the eldest son and the second son of landowner drove the carts from cattleshed to the fields. For the transportation of manure, the landowner's brother in law from wifes side supplied wooden carts and bullocks and palerulu. The operations were carried out by the neighbourous landowners. Palerulu and the neighborous landowners unloaded manure in the fields forming smaller heaps. Later the land was ploughed by the neighbourous landowners and palerulu. The upper stratum landowner P.V. supervised the ploughing process. The manure was broadcasted by the wife's brother's Palerulu. The fields were watered by Palerulu.

After the preparation of replantation paddy land, the seedlings were carried to the field by the male members of
neighbourous landowners P.S.S.S. and P.P. and Palerulu of the upper stratum P.V. Field banks were trimmed and weeds in the replantations fields were removed by the above mentioned persons. Seedlings from the seedbed were removed along with their roots by palerulu household male members and P.S., S.S., and P.P. landowners. Seedbeds were supplied with more water by the male members of palerulu household who operated the hand driven water pumps. These seedlings were made into small bundles and were later carried by male members of the above said social units either on their shoulders or on headloads to the replantation fields. While women of the palerulu household, of P.V. P.S., S.S. & P.P. landowners replanted the seedlings from 8 a.m. to 6 p.m. Two palerulu supplied the seedlings small bundles to the replanters while standing behind them. The landowner (P.V. or his eldest son occasionally) supervised the replantation process.

The third major operation was concerned with removal of weeds after 30 to 40 days from the day of the replantation. For this purpose sickles were used to uproot the weeds and the shoots were covered with mud by the feet. As a result, the roots of the weeds were exposed to sun, where as the shoots were driven into the mud. Mainly P.V. landowner’s palerulu and their female household members participated in this operation whereas the landowner occasionally supervised the operation.

Harvesting of paddy was the fourth major operation. Sickles, spades and bamboo sticks were used in this activity.
Paths (Kondarlu) were made in the paddy fields with bamboo sticks, through which legumes were broadcasted in the field with the help of P.S. & P.P. landowners. Low level water in the field, was removed through the minor canals (Chedulu) within the field made by palerulu, P.S. P.P. and S.S. male households members. These chedulu were connected to the major canal. Spades and sickles were used for this process. Three to four days after the removal of water from the fields, paddy was harvested (Kota) with sickles.

Social units who participated in this process were palerulu, their female household members, P.S., P.P. and S.S. household (Small landowners) male members. Then grains from 4 to 5 paddy bundles (Mopulu) were separated by thrashing on a wooden table at the homestead of the P.V. This straw was used in tying the other harvested paddy into bundles. The harvested paddy was allowed to dry up in the fields for 5 to 6 days. Then it was made into bundles by P.S., P.P. and S.S. male household members and male & female members of palerulu household. These bundles were stocked (Kuppalu) systematically at one place in the field. The owner (P.V.) only played a supervisory role during these operations.

Finally paddy was thrashed, winnowed and transported to the landowner's homestead. In this activity wooden flank, sickles rope, wooden table, cart, gunny bags and crowbars were used. Thrash yard (Kallam) was constructed at the very place where
paddy was stocked in a systematic manner (Kuppalu) by completely cutting the remnants of paddy with sickles. The soil was levelled with small wooden falnks, studded with wooden rods in the centre of the flank. So as to prevent grains being mixed in the soil, winnowed paddy part was spread in the thrash-yard. Grains were separated by thrashing the paddy on a wooden table. Cattle tied with ropes were made to walk on the unthrashed paddy. Then the grains were separated from paddy with hands. The obtained grain was winnowed with baskets on a cart. The winnowed grain was filled in gunny bags and tied with thin ropes or straws. These bags on carts were transported to the landowners courtyard. Then the transported grain was stocked in the graneries made of straw ropes and straw. The stored grain was chieftly meant for sale, besides fulfilling the needs of the family, palerulu and artisans.

Palerulu and the neighbourous landowners; P.S., P.P. and S.S., were mainly responsible in preparing the thrash-yard. The cattle and wooden carts were jointly supplied by the respondent’s brother-in-law and neighbourous landowners. The grain was separated by beating it on a wooden table. In this process palerulu and the neighbourous landowners were directly involved. The cattle were generally driven by palerulu and occasionally by landowner’s eldest son, while the others were taking meals. Women counterparts of the palerulu households supplied winnowable paddy in baskets to the neighbourous landowners who conducted winnowing. Straw ropes were prepared jointly by palerulu and neighbourous
landowner. Palerulu and neighbourous landowner (S.S.) prepared the graneries, while the other palerulu and neighbourous landowners transported the grains, from the thrash yard to the homestead, on wooden carts. The landowner's (P.V.) eldest son accompanied the carts and the owner himself stayed back at the thrash-yard to supervise the winnowing process and cleaning the thrash-yard.

In the meantime the legumes grow and by the end of March they are ready for harvestation. In January weeds were removed by palerulu together with their female counterparts and male members of S.S. family. The harvesting usually takes places during the early hours of the day. Palerulu, their female counterparts and P.S., P.P., S.S. male members were mainly responsible for the transportation of black and green grams to the P.V.'s courtyard.

In case of harvested Crotaleria Junsia crop small bundles were made, and later tied into bigger ones. The big bundles were systematically stocked, and was consequently used as dry fodder for cattle in summers, when there is carcity of green fodder. For harvesting crotaleria Junsia male members of P.P., P.S., S.S. households, palerulu and their female counterparts were chiefly engaged. Whereas other operations were dominated by men from the section was mentioned above. P.V.'s eldest son looked after the stocks and P.V. himself supervised the loading of carts with dried Crotaleria Junsia.

In the cultivation of dry crops such as Maize and Jowar the same people were instrumental and as usual
the supervision was done by the P.V.

From this example it can be derived that the upper stratum Kamma landowner engaged only in non-manual work. The landowner (P.V.) was controller and non performer of manual agricultural work. This pattern of work has been characterized as supervisory mode of work. Only 2 families with this mode of work existed in the village.

Relations vis-a-vis landowner (P.V.) and other social units, regarding the above mentioned mode of work were primarily based on familiarity, heredity and exchange of labour. This has been identified on the basis of returns which the participants got from the landowner (P.V.). Social units engaged in agricultural work, directly or indirectly, were: iron-smith, carpenter, their female counterparts, P.P., S.S., P.S. landowners, P.V.'s brother's-in-law, Palerulu, P.V.'s palerulu and their female counterparts. The iron-smith repaired the iron parts of the wooden ploughs, cart, sickles, crowbars and axe. The last two generations of the iron smith were also working for the same landlord. Ironsmith, in return for his services annually received 45 Kgs (100 Lbs) of paddy in the month of January every year. On festivals and marriages received extra rice from his master. The carpenter repaired the wooden parts of the plough, cart sickles, spade, axe, wooden cob and mortar. Again carpenter's previous generations were also attached to the same landowner's family. Carpenter annually received 50 Kgs (110 lbs.) of
paddy annually, besides extra-donations on certain festivals and marriage occasions. On the basis of piece rates new tools (plough & carts) were prepared by him to his patron. Their female counterparts were employed on the basis of daily wages by the landowner.

Palerulu families worked with the landowner for last two generations. They were generally under and tenancy relations with the landowner. Besides agricultural work, palerulu also were engaged in domestic work, like cleaning the cattle shed, fetching water, fodder, wood and chopping the wood for fuel. They got 75 Kgs of paddy from their master per month. In addition they received a bundle of unthreshed paddy, left over of paddy after bundling, paddy and legume grain left behind in the thrash yard after winnowing. On marriage and festive occasions in the master's family he got food. On the occasion of marriage in his own house he was presented a pair of new clothes and Rs. 250/- loan. Palerulu were considered as an asset not only at the time of agricultural operations but also proved their worth during disputes. The women counterparts of palerulu also functioned as domestic servants for the landlord. They were engaged in all sorts of work: making cattle dung cakes, cleaning the courtyard, cleaning utensials, dehusking of paddy etc, for which they received food and broken rice. For their work in agricultural operations they got ¼ to Rs. ½ per day. In order to work at other places, their masters consent had to be sought.
The neighbourous land owners helped each other on reciprocal basis. The P.P. owned only a cart, plough and a bullock. This small landowner procured the other bullock from P.V. and in exchange supplied him labour and his cattle and tools whenever P.V. was in need. P.S. landowner did not own any tools, plough or cattle, when in need he procured them, and in return, supplied him his own labour. The landowner S.S. had a pair of oxen plough and a paleru. He too had reciprocal exchange pattern of relations with P.V. P.V.'s brother-in-law during the peak days of work imparted with his tools, cattle and palerulu and inturn got tools, cattle and palerulu from the P.V. Palerulus received payments from their respective masters. Relations in agricultural production in 1929 were based on familiarity, formal and personal in nature between the different social units who participated in various agricultural operations, on P.V.'s land.

The middle and lower strata landowners also followed the same pattern, as far as the cultivation of land was concerned, despite the fact, that the size of their land holdings varied. The mode of work is defined as familistic and on mutual exchange basis. The landowner was also coworker with the farm servants. This aspect has been further elaborately dealt with.

A Case of Middle Stratum Kamma Caste Landowner:

In 1929, P.A. owned 25 acres of land. Twenty acres of this land was under paddy cultivation and the remaining portion was used for the cultivation of the dry crops. Cultivation of paddy
depended on the irrigational facilities available, whereas dry crops (Maize & Jowar) on monsoons. The household possessed two pairs of oxen, two wooden ploughs, one wooden cart, a pair of spades, one crowbar, four sickles, and one wooden cob and mortar to dehusk paddy. These tools were repaired by village artisans: ironsmith and carpenter. New wooden ploughs and carts, were prepared by carpenters on contract basis. The household had two farmservants of Mala caste. These above mentioned agricultural implements were operated by the male members of the landowner's family, neighbourous landowners and farm servants.

The household comprised of 4 members, a couple and two children. The eldest son was 18 years old and the youngest daughter was 13 years. The daughter was married to a landowner owning 12 acres in 1930. The later had bilateral relations with the P.A.'s father-in-law's family and also with other neighbourous landowners. The main participants in various agricultural activities were the male members of the P.A. 's family, his kins: father-in-law, brother-in-law & cousins, small neighbourous landowners of the village (P.S.N. and A.R.) and their farm servants. These social units were identified on the basis of operators of agricultural tools and performers of manual and non-manual work in various agricultural operations. Later relationship of the above mentioned constituents with the means of production has been studied.
depended on the irrigational facilities available, whereas dry
crops (Maize & Jowar) on monsoons. The household possessed
two pairs of oxen, two wooden ploughs, one wooden cart, a pair
of spades, one crowbar, four sickles, and one wooden cob and
mortar to dehusk paddy. These tools were repaired by village
artisans: ironsmith and carpenter. New wooden ploughs and carts,
were prepared by carpenters on contract basis. The household
had two farmservants of Mala caste. These above mentioned
agricultural implements were operated by the male members of the
landowner's family, neighbourous landowners and farm servants.

The household comprised of 4 members, a couple and two
children. The eldest son was 18 years old and the youngest
daughter was 13 years. The daughter was married to a landowner
owning 12 acres in 1930. The later had bilateral relations with
the P.A.'s father-in-law's family and also with other neighbourous
landowners. The main participants in various agricultural activi-
ties were the male members of the P.A.'s family, his kins: father-
in-law, brother-in-law & cousins, small neighbourous landowners
of the village (P.S.N. and A.R.) and their farm servants.
These social units were identified on the basis of operators of
agricultural tools and performers of manual and non-manual work
in various agricultural operations. Later relationship of the
above mentioned constituents with the means of production has
been studied.
Preparation of Seedbed and Seedlings:

Preparation of seedbeds and seedlings was one of the main agricultural operations in the cultivation of paddy. In this process wooden ploughs were used to plough a plot of field three to four times. This piece of land was located near a water tank, which served as a reservoir, for the seedbeds and also for the daily requirements of the inhabitants. Completely decomposed compost was brought from compost pits, on wooden carts, to the ploughed plots. These carts belonged to the landowner and to the neighbourous landowners. Bigger mud pieces were broken into smaller ones with axe’s head and wooden rods. Paddy grains was brought in gunny bags and broadcasted in the plot. After it a big bunch of branches tied with a rope was dragged by bullocks on the plot, in order to cover the seeds with a thin layer of soil. Later the plot was sub-divided into smaller plots, which were well connected with a system of canals (Bodelu). After watering the seedbed 3 to 4 times, weeds were removed. Normally 7 to 10 days after the removal of the weeds, replantation takes place.

Main participants, in these minor operations, were the male members of the household, neighbourous landowners palerulu and their female counterparts. The landowner loosens the decomposed manure with a crow bar. The loosened compost was loaded in the bullock carts by two farm servants and two neighbourous landowners. One wooden cart belonged to the landowner. The two neighbourous
landowners provided a bullock cart each for the transportation of compost to the ploughed plot. One bullock cart was driven by the landowner's son, while one farm servant walked ahead of the bullocks. The remaining two were driven by their respective owners. The compost was unloaded the farm servant and by the neighbourous landowners, to be later broadcasted by the farm servants, neighbourous landowners and the landowner himself. Paddy seeds were broadcasted by the landowner, while his son regulated the supply of seeds in small baskets. The two neighbourous landowners broadcasted seeds in their allocated plots from the ploughed plot.

In the meantime the farm servants brought the branches of Accacia Arabica tree which were tied in the farm of a big bunch at the ploughed plot. This bunch of branches was dragged by bullocks, which belonged either to the landowner or to the neighbourous landowners. The bigger mud pieces were broken into smaller pieces by a farm servant and by the two neighbourous landowners. After the completion of the sowing process, the landowner divided the plot into smaller ones and connected them by means of canals. After the completion of these operations, hand operated snail shaped pumps were used to bring water from the main canal. This canal linked the water tank and the seed-bed. The pumps (2) were operated by the two farm servants of the landowner and by the two neighbourous landowners. The landowner in unison with his son directed the water into minor plots of
the seedbed. At least four waterings were required. Weeds in the seedbed were removed by the landowner, his son, farm servants and their female counterparts. Whereas the neighbourous landowners sons weeded their portion of the seedbed.

Ploughing, Watering and Replantation:

A week after the preparation of the paddy seedbed manure from compost pits was transported into the fields on wooden carts driven by bullocks. Four carts were in operation. They belonged to the landowner, one to the neighbourous landowner and one to his brother-in-law. The landowner and his son loosened the manure with the aid of crowbards, and the farm servants and the neighbourous landowners loaded the carts. The manure filled wooden carts were driven to the fields by the neighbourous landowner, by the farm servants and by the landowner's son. These carts were unloaded in the fields, in the form of smaller heaps with the help of spades, if the manure was in decomposed form, otherwise with sickles and hands. A week after the first showers the land was ploughed by the wooden ploughs, which belonged to the landowner (2) and the neighbourous landowners (one each). Ploughing was carried out by the landowner's farm servant, neighbourous small landowners and by the landowner himself. After the ploughing manure was broadcasted in fields by the landowner, his son and farm servants. The ploughed land was watered through canals in the last week of June. Wooden flanks driven by bullocks were employed to level the water-filled fields, followed
by the removal of weeds with spades. In this operation the landowner, his son, farm servants and the two neighbourous landowners were the main participants. The banks of the fields were trimmed.

The seedbed was flooded with water availed either by means of hand driven snail shaped water pumps or directly from the canal, depending on the water level in the canal. The level of water in the seedbed was slightly higher, than in the replantation fields. The seedlings along with their roots were removed with hands and made into small bundles. For a while, these bundles were kept on the banks of the field to reduce the water content from the seedlings. These bundles were further shifted to the replantation fields. In the process of removal of seedlings and their shifting the landowner, his son, farm servants and the two neighbours landowners played an active role.

The neighbourous landowner's farm servants households were informed about the replantation a day before it was supposed to take place. The farm servants female counterparts replanted the seedlings, while the farm servants and the neighbourous landowners levelled the fields together with his son. The landowner supervised the replantation process and distributed the seedling bundles amongst the replanters.

A month of after the replantation, weeds were removed from the fields with sickles. The landowner, his son, farm servants, their female counterparts and the neighbourous landowners partici-
pated in this operation. The weeds were removed along with their roots and were made into bundles and were covered under the mud with roots upwards and shoots downwards. A part of the weeds was used as fodder for the cattle.

**Harvesting:**

In the month of December, the paddy stocks which had fallen on the banks of fields, were turned towards the fields with bamboo sticks. Then in the paddy fields provisions were also made for the broadcasting of legumes. From the lower levels of fields water was removed through the minor canals. These operations were carried out by the landowner, his son and farm servants. The son and one farm servant assisted the landowner by suppling legumes. The landowner and his other farm servant was incharge of the broadcasting of legumes. Three to four days after the broadcasting of legumes paddy was harvested.

The farm servants, artisans, and the neighbourous landowners were in advance informed about the harvestation day by the landowner. The farm servants, the female counterparts of the carpenter and ironsmith, male members of the neighbourous Kamma landowners and the male members of landowner were instrumental in the harvestation process.

The harvested paddy was stocked and a part of it was made into bundles. These bundles were carried to the landowners house, where the grains were separated by beating the paddy panicles on a wooden table. A kind of ropes were made from the paddy stocks
by tying them with each other, which were later used for tying the paddy bundles. The harvested paddy was allowed to dry up for 6 to 7 days, and then were systematically stocked jointly by the farm servants, the landowner, his son and the neighbourous landowners.

Thrashyard preparation, thrashing, winnowing and transportation activities were undertaken after harvestation process was complete. Sickles and a small wooden flanks studded with a wooden rod were used in the preparation of the thrashyard. Wooden table was used to separate grains from paddy stocks. Wooden carts were used for the transportation of paddy from fields to the courtyard. Paddy was filled in the gunny bags. Baskets were used for winnowing the grains. Straw was utilised in the making of ropes which were later utilized for granaries. The remanants of paddy stocks and other plants were removed from the land upto the groundlevel with the help of sickles, while the land was drying up. The land was levelled with flank, studded with a wooden rod. The land was covered with a thick layer of straw, so as to prevent it from cracking. Because with the cracking of land the grains enter in it, which as a result would be accompanied by mud after thrashing, thereby affecting the quality of grain. The landowner and his son took part in the removal of paddy stock remanants and weeds from the thrashyard. Farm servants levelled the thrashyard with wooden flanks stugged with wooden rods. Latter the thrashyard was covered with straw. The landowner
later visited his kins (wife's brother, father-in-law and cousin brothers) places to inquire about the availability of his kins cattle and farm servants, and accordingly he informs the neighbourous landowners about the thrashing day.

A day before the thrashing, the thick layer of straw on the thrashyard was removed by the farm servants and the landowner and water was sprinkled. The farm servants brought water from the tank or the canal to the fields and the landowner did the sprinkling. Paddy husk or winnowed paddy was brought on the same evening, and a thin layer of it was spread by the next morning before the thrashing actually commenced. The farm servant, landowner, his kin's farm servants and the neighbourous landowner himself were responsible for the spreading of the winnowed paddy. After which only thrashing started on a wooden table. One of the reasons for the urgency in thrashing was to make room for the stocks. The remaining stocks were spread in the thrashyard. In the meantime the landowner and his son brought six bullocks, 2 of them belonged to the landowner, 2 to his kin and one each belonged to the two neighbourous landowners. The cattle were made to trample on the paddy stocks in a clock-wise direction. Meanwhile the landowner and his son made arrangements for food from his own residence for all the comrades. The grains were manually separated from the straw by the farm servants (4) and by the neighbourous landowners (2) after the morning meals. Mid dry meals
were taken after 1 P.M. After the conclusion of the thrashing the grains were gathered at one place and were later winnowed by the two neighbourous landowners. The landowner swept the thresh yard. While one of the farm servants separated the grains, the other along with the kins supplied the grains in baskets to the winnowers. The landowner's farm servants prepared the path for the bullock carts to pass. The obtained grain was filled in the gunny bags and transported to the landowner's homestead. In the meantime the other workers made straw ropes which were to be used in the preparation of granaries. The transported grain was stored in the granary by the landowner. Social units who played a pivotal role in these operations were the landowner, his son, landowner's farm servants, landowner's kins farm servants and the two neighbourous landowners. The two neighbourous landowners had reciprocal exchange of labour with the middle stratum landowner. The middle stratum landowner sent his farm servants to the two neighbourous landowners to assist them in agricultural operations and also to his kin's agricultural work. But he never played a pivotal role in various agricultural operations of the neighbourous landowners. Who were active partners in the former's agricultural operations.

Relations in this mode of work were personal and based on familiarity, and reciprocal exchange of labour among social units. This has been identified on the basis of returns which the participants got from the landowner (P.A.). Social units which played
a pivotal role in various agricultural operations were iron
smith, carpenter, and their female counterparts, P.S.'s house-
hold male members, his farm servants households, both male and
female and respondents father-in-law, brother-in-law and his
cousin brother's palerulu and the two neighbourous landowners
( P.S.N and A.R. )

Iron smith repaired the iron parts of wooden ploughs, carts, sickles, spades, crowbars and axe. He was attached to
them since the previous generation. Thirty-five Kgs. ( nearly 78
Lbs ) of paddy was paid to the iron smith in the month of January,
and also was offered food on festive and marriage occasions in
his family. The female household members were given daily wages
for their services on the patrons land, by the landowner ( P.A. )

Wooden parts of plough, cart, wooden cob and mortar were
repaired and new wooden parts for sickles, spades and axe were
prepared by the carpenter. Payments for these services were made
in kind annually i.e. 40 Kgs ( 82 Lbs ) of paddy by the patron.
On the basis of piece rates new tools like wooden ploughs (20 Kgs
of paddy ) and cart ( Rs.150-200 ) were prepared by him. The
carpenter's female counterparts worked in the landowners land on
daily wage basis earning Rs.\frac{1}{2} to \frac{3}{4} per day.

The two farm servants of Mala caste worked with the land-
owner from one generation i.e. from their father's generation.
They had debt relations with the landowner. Palerulu ( farm
servants ) served the landowner not only in various agricultural
operations as shown above but also in household work, like cleaning the cattle shed, fetching fodder, fuel wood and chopping it. They got 50 Kgs. of paddy per month from their master. In addition to this they received a paddy bundle, after harvesting, remnants of paddy in the field after bundling it, Paddy and legume grains which were left out on the thresh yard after winnowing. On marriage and festive occasions the whole family of farm servants got food from their master's household. At the time of marriage in his own household for his son he got a pair of clothes and a loan of Rs.350/-.

Women members of the farm servants household worked in their masters household. They prepared dung cakes, cleaned the court yard and utensils, de-husked paddy, ground Chilly powder... with the landowner's household female members and operated the wooden cob and mortar. For these activities they received food and broken rice. They not only assisted the landowner's female members in domestic work, but also in various agricultural operations on their master's land. They received daily wages for their services, rate of Rs.1\textsuperscript{1/2} to Rs.1\textsuperscript{1/4}. First priority was given to the agricultural work in their master's land. Only with his consent they could serve other families in agricultural operations at the rate of Rs.1\textsuperscript{1/4} to Re.1/-. 

The neighbourhood small landowners had reciprocal exchange of labour relations with P.A. landowner. The two small Kamma landowners did not acquire all the tools. They possessed only a
bullock cart (wooden) and a plough. These small landowners acquired bullocks and labour from the P.A. The two small landowners supplied their cattle, tools and labour whenever P.A. was in need. P.A.'s kins i.e. brother-in-law and cousin brothers provided tools, cattle, and farm servants only for certain agricultural operations like ploughing, thrashing and in the preparation of granaries. The kins borrowed cattle, tools and palerulu from the P.A. The palerulu was provided food from his immediate employer and the monthly payments from their respective masters. Hence in 1929 the relations in agricultural production were familiar and personal. In 1929, there were five Brahmin landowners in the village. They had 281 acres of land. 191 acres were covered by paddy cultivation and 90 acres with maize and legums. They possessed no agricultural implements. They rented out the land to small Kamma caste landowners. Kamma caste landowners cultivated the Brahmin landowner's land on the basis of reciprocal exchange with other Kamma landowners. Though Brahmins were the landowners. They took no interest either in the direct or indirect agricultural activities. But when the tenants became a threat they removed the smaller tenants, and employed one of the tenants on permanent basis to look after the land. He completely financed the cultivation of land, got his land ploughed by the tenant. This particular tenant was given extra land which was free of tenancy rights. The tenants
employed labour for this purpose. The tenant supervised the operations on the land. They were paid by the Brahmin landowner Rs.5/- per one acre ploughing, Rs.4 to 5 for plantation, weeding and harvesting per labour, bag of paddy for thrashing. The tenant acted as a supervisor (Nigamaan controller) on Brahmins land which was not under tenancy.

Thus in the C.A.P. village, in the year 1929, the main modus operandi (tools) with regards to agriculture was based on manual labour, predominantly acquired through reciprocal exchange relations amongst the landowners.

The western Uttar Pradesh Village in 1929 had 498 acres of land under canal and persian wheel irrigation. Two hundred and sixty eight acres of land were kept as banjar land. The total agronomic land (498 acres) of the village was owned by an abseneted landlord, Baniya Zamindar. Jat, Brahmin, Badhai and Chamar households were the main controllers and cultivators of Zamindari land. The magnitude of land under cultivators control was subsumed into two main categories. A jat household played the role of Zamindari agent in the collection of tenancy from Sirdars. For these services the Jat household got 1/16th of a rupee as commission. In addition to this he got 240 bighas or 58 acres of land for tenancy from the Zamindar. Secondly, other cultivator households of different castes, too, dibbled the land on tenancy. In this category there were two sub-categories. Firstly, the middle stratum controllers of land who had 30 to 100
bighas i.e. 6 to 20 acres of land under their control and cultivation. Secondly, lower stratum of land controllers, who had less than 6 acres under their control. In the middle stratum of land controllers there were 46 households, and 70 households in lower stratum.

The amount of tools owned by the controllers and cultivators of Zamindari land modulated along with the magnitude of land under their control. The absentee landlord, Baniya zamindar, neither owned any agricultural implements nor cultivated the land under his direct supervision. So this case belonged to the category of owner of means of production, a non-owner of tools of production and extractor of surplus in the form of land rent from his tenants. The revenue agent of Baniya zamindar was non-owner of means of production (land) but a controller and cultivator of land with their own family labour, with both male and female household labour. He too received a share from the extracted surplus in the form of commission from the Zamindar. He himself was also a supplier of surplus to the Zamindar. He owned three pairs of oxen, two pairs of wooden ploughs, a pair of wooden carts driven by oxen, a horse-driven cart, seven sickles and two pairs of spades. In addition to these farm implements, a persian wheel and a cane crusher was owned at kin group level to water those fields which were cultivated by them. Sirdars of middle stratum, owned a pair of bullocks, wooden cart and plough, 4 to 5 sickles and 2 to 3 spades at every household level. This stratum produced
surplus which in major proportion went into the hands of Zamindar and in minor proportion to the Zamindar’s agent. This stratum had land under their control and owned tools of production. Tenants of lower stratum had only partial amount of agricultural implements in order to cultivate the land under their control i.e. either wooden plough or cart and one oxen. Four kin groups inhabited the village. These kin group members were in these two strata of Sirdars. Each kin group collectively owned a sugarcane crusher and a persian wheel.

Maize, Jowar, Bajra, sugarcane, cotton, paddy, wheat and gram were the main crops under cultivation in 1929. Nearly 60 per cent of total cultivable land was occupied by bajra, jowar maize and paddy crops. On the remaining cultivable land sugarcane (in 20 per cent) and cotton (20 per cent) crops were under cultivation. In addition to these crops wheat occupied 60 per cent and grams as only 20 per cent on the village cultivable land. Put together all these percentages it went beyond 100 per cent i.e. 160 per cent. In order to explain this excess of percentage, endeavours are made for the comprehension of crop cycle.

Sugarcane crop occupied the land for two years minimum and cotton for 4 months, maize and paddy crops were under cultivation from July to November. Wheat and grams were under cultivation from November to March. From March to June the land, on which wheat and grams were cultivated was left barren in 1929. But now such land is minimized to zero by the cultivation of maize,
and jowar crops from April to July. Such rotation of two crops on 80 per cent of the total cultivable village land was found even in 1929.

Cultivation of various crops required a number of operations. Number of operations remained same for the three starta. They varied on the basis of crops under cultivation, but some operations remained constant for each crop. Cultivation of land for various crops required ploughing, manuring, watering and reploughing before sowing the crops. All these operations can be termed as preparation of land for cultivation of various crops. In the cultivation of sugarcane crop, sugarcane pieces were sown in the plough furrows. Then the field was flooded with water. One month after this the soil between rows of sugarcane plants, was loosened with wooden ploughs driven by oxen. Weeds between the sugarcane shoots were weeded out with spades operated by human power. The fields were flooded with water at an interval of 15 to 20 days between two waterings. Sugarcane crop was harvested, tied into smaller bundles and the bundles were transported on bullock carts to the sugarcane crusher; juice was extracted which was later processed into Joggery for both household consumption and to the market.

Cultivation of Bajra and Jowar crops required relatively fewer operations. A piece of land was ploughed and it was flooded with water. Immediately after flooding the fields with water, seeds were broadcasted on the land and the fields were watered
repeatedly with an interval of 2 to 3 weeks between two waterings. As Bajra and Jowar crops grow, some portion of it was used as green fodder for cattle and the remaining portion was left to bear inflorescences and seeds. These inflorescences after ripening were harvested from the stocks, thrashed and winnowed in the gher. The dried stocks were used as fodder for cattle.

More operations required in the cultivation of paddy. They were preparation of seedbed and seedlings, replantation of seedlings, removal of weeds from the paddy fields, harvesting, thrashing, winnowing and transportation of grains to the cultivators' gher.

Cotton seeds were sown on the land which was prepared for its cultivation. Then the land was flooded with water and weeds were removed from the cotton fields after a month. Then the fields were watered with an interval of 4 to 5 weeks between two waterings. The plants bear fruits, cotton from the ripened fruits was removed by women and was left to dry up in the gher. Then seeds from cotton were separated. Then, gunny bags were filled with cotton and stored in the gher.

In the cultivation of grams, seeds were broadcasted on the prepared land. Then fields were watered at least once before its harvestation. Then the crop bears fruits. The fruits were left to dry up. The dried crop was harvested, thrashed, winnowed and grains were stored at gher. In the cultivation of wheat, revovation of weeds and number of waterings were more in addition to the above mentioned operations.
In all the above specified agricultural operations, there were mainly two modes of work among these cultivators. It modulated along with the amount of tools owned by these households. In the first mode of work, the agent of Baniya Zamindar developed a part of land under his control with male and female members of his household labour and also with artisans, subtenants, debtors and other land controller who had partial amount of agricultural implements. He gave a part of land under his control on sub-tenancy to naukars, debtors and artisans. The agent of Baniya Zamindar occasionally provided supervision. This mode of work can be termed as familistic supplemented with occasional supervision. Secondly, the middle stratum of land controllers relatively with sufficient set of agricultural implements have cultivated the land mainly with the help of their own family labour i.e. both male and female members of household, artisans and kins on reciprocal exchange who own partial agricultural implements. Such mode of work can be eponimized as familistic and reciprocal exchange type. These two types are exemplified with case material.

Badhai caste male household members repaired the wooden parts of agricultural implements like the wooden plough and cart, sickles, spades and yoke. Whereas lohar prepared the iron parts of agricultural implements. They also cultivated land under subtenancy with their own household male and female members. The female members of their household worked on the land of zamindar's
agent. Both these castes provided their services on Jajmani relations. Brahmins, Jats and some Chamar households cultivated the land of zamindar on tenancy. Other castes along with their household members worked on the land owned by the Zamindar’s agent, as bonded labour.

The Case of Zamindar’s Agent:

The household had 58 acres of land under his control in 1929. It had 45 acres of land under canal and 13 acres under Persian wheel cultivation. Sugarcane, wheat and paddy crops were under canal cultivation. Cotton, maize, jowar and gram were cultivated by the combination Persian wheel and canal. In these fifty-eight acres, the household cultivated sugarcane in 10 acres, cotton 8 acres, paddy in 10 acres, maize and jowar crops in 30 acres of land. Wheat was under cultivation in 48 acres of land. The crop cycle depicted a model of two crops rotation on 48 acres of land whereas a single crop was under cultivation on only 10 acres of land. He owned three pairs of oxen, two pairs of wooden ploughs, a pair of wooden carts driven by oxen, a horse-driven cart, seven sickles, two pairs of spades and a grinder to grind wheat. These tools were repaired by the village artisans. The lohars repaired the iron parts. Badhai repaired the wooden parts. These tools were mainly operated by the bonded labourers and by the male members of the household. There were five bonded households attached with the agent’s household. There were five more share
croppers who cultivated the maize crop on five acres of land controlled by the agent.

The household comprised of 6 members: two couples and their two sons below 5 years. The social units, who participated in various agricultural operations and the relative role played by the cultivator’s household in manual and non-manual agricultural work activities are presented below.

**Preparation of land:**

Preparation of land was the first major operation in the cultivation of various crops. In this operation, firstly, the land was ploughed with wooden ploughs driven by oxen. Then manure was transported from compost pits to the ploughed lands on bullock carts. In this work his kin's ( A, B and C ) also assisted him with their carts. The compost deloaded on the ploughed fields was broadcasted with the help of spade and hands. Then the manured fields were flooded with water. The water flooded fields when dried up were reploughed. Then different crops cultivation was initiated by the cultivator. The two brothers, his kin and three bonded labourers to the cultivator were the main participants. The other two bonded labourers took care of the milk cattle while driving them into the barren fields. Three extra ploughs were supplied by the cultivator's kin. After lands were ploughed compost from compost pits, located at gher, was loaded in bullock carts by the use of spades and baskets. These baskets were filled by
croppers who cultivated the maize crop on five acres of land controlled by the agent.

The household comprised of 6 members: two couples and their two sons below 5 years. The social units, who participated in various agricultural operations and the relative role played by the cultivator's household in manual and non-manual agricultural work activities are presented below.

Preparation of land:

Preparation of land was the first major operation in the cultivation of various crops. In this operation, firstly, the land was ploughed with wooden ploughs driven by oxen. Then manure was transported from compost pits to the ploughed lands on bullock carts. In this work his kin's (A, B and C) also assisted him with their carts. The compost deloaded on the ploughed fields was broadcasted with the help of spade and hands. Then the manured fields were flooded with water. The water flooded fields when dried up were reploughed. Then different crops cultivation was initiated by the cultivator. The two brothers, his kin and three bonded labourers to the cultivator were the main participants. The other two bonded labourers took care of the milk cattle while driving them into the barren fields. Three extra ploughs were supplied by the cultivator's kin. After lands were ploughed compost from compost pits, located at gher, was loaded in bullock carts by the use of spades and baskets. These baskets were filled by
one year the sugarcane crop was allowed to grow, then it was harvested with sickles. The harvested sugarcane was tied into smaller bundles which were loaded on carts. The harvested sugarcane on carts was de-loaded at a cane crusher which belongs collectively to the kin's group. Then juice was extracted from sugarcane. The extra-acted juice was boiled on an iron pan till it transforms into a semi-solid state.

Deeper furrows in the soil were made by the bonded labourers of the cultivator. In these deeper furrows sugarcane pieces were sown by the male members of cultivator's family and by his three kins. In sowing, five sub-tenants of the cultivator too participated by supplying the sugarcane pieces through baskets to the sowers. In loosening the soil between sugarcane rows the five members i.e. two male members of cultivator's household and his three kins took active part in driving the wooden plough. Weeds between sugarcane plant's rows were removed with spades by bonded labourers (5) and sharecroppers (5) of the cultivator. After the removal of weeds from sugarcane field the field was flooded with water by one of the male member's (6) of cultivator's family and their bonded labourer. The bonded labourer with the help of oxen operated the persian wheel whereas the male member of the cultivator's family diverted the stream of water into sugarcane fields. On some occasions the reverse method was also noted i.e. the cultivator operated the persian wheel with oxen whereas the bonded labourer diverted
water into the sugarcane fields. The sugarcane fields were harvested after a period of 10 to 12 months. In the harvestation of sugarcane sickles were under use. The tip position of the cane leaves was used as ladder for cattle. In the harvestation of sugarcane male members of household, his three kin members, 5 bonded labourers and sub-tenants (5) of the cultivator played active role. The harvested cane was tied into smaller bundles. These bundles were loaded on bullock carts and transported to the cane crusher (Kolu) owned by his kin group in the village.

Then the crusher was operated with a pair of bullocks. One person put the cane into the crusher. The juice is extracted from cane and collected in a pot. Another person supplied cane bundles to the person who put cane into the crusher. As the pot was filled with the juice, the juice was transferred into the iron pan, which was on hearth, by the cultivator's younger brother. Then the juice was boiled. Then joggery was prepared by the cultivator. In the cultivation of sugarcane crop the following social units played an anchorial role (1) the male members of cultivator's family (2) his male kin members, (3) bonded labourers, and (4) sub-tenants. Sugarcane crop cultivation required minimum two years in order to complete its cycle. In the second year too, in the cultivation of cane the same social units played active part.

Cotton crop cultivation was continued for four months.
After the preparation of land cotton seeds were sown in the field. In sowing the cotton seeds the male household members of cultivator and his bonded labourers took part. In the cotton seeds sown fields, water was flooded from the canal after 5 to 10 days. A month to 45 days after sowing the seeds weeds were removed from the fields with male and female members labour of the cultivator's family and his bonded labourers household female-labour. After the removal of weeds, the field was flooded with water. The plants grow and bear fruits. As the fruits reach the stage of maturity, they open and expose the cotton to the atmosphere. Then cotton was collected in baskets by male and female labour of the cultivator's family, male bonded labourers and their counterparts. In addition to this the sub-tenants of the cultivator and their counterparts and male and female kins were the main participants. Seeds from cotton were removed with the help of same social units. After the completion of cotton collection the plants were removed from the soil by cultivator's male kins, cultivator's male household members and bonded labourers. In short it can be said that in the cultivation of cotton main participants were the male and female members of the cultivator's family, his male and female kins, bonded labourers and the sub-tenants of the cultivator.

Maize and Jowar crops were cultivated under sub-tenancy. The sub-tenants mainly belonged to the Chamar caste. In this case the land was prepared by the cultivator. On the prepared
land maize and jowar seeds, supplied by the controller of land, were sown by the sub-tenants. The field was flooded with water after 10 days with the zamindar's agent's persian wheel. After 35 to 40 days the weeds were removed from the field by the sub-tenants household's male and female members. The crop was harvested by the sub-tenant household, thrashed by the male household members of the zamindar's agent and winnowed by the sub-tenants. This mode of work can be epinomized as familistic mode of work.

After the preparation of land in June, paddy seedlings from seedbed were uprooted and were tied into smaller bundles. These paddy seedlings were transported on wooden carts to the fields which were made ready for replantation by flooding water from canal. Then paddy seedlings were transplanted. In these operations mainly the male members of the cultivator's family and his bonded labourers both female and male, sub-tenants(male and female members) and his male kin members were the main participants. In the removal of weeds from the paddy fields mainly the first two units and the last one were the main participants. In the harvestation of paddy and its thrashing by cattle the cultivator's male family members and his cattle, his male kin members and their cattle, cultivator's bonded labourers were the main participants. In the cultivation of paddy crop too the cultivator's male family members, his male kins, his bonded labourers and sub-tenants were the main social
units who participated in different operations.

For the cultivation of wheat crop, land was prepared by the end of October after the harvestation of maize, jowar and paddy crops. Then wheat seeds were sown in the wooden plough furrows by walking behind the operator of plough. In this operation 15 persons per day took pivotal part. The five bonded labourers made furrows, the cultivator’s male family members and his male kins (3) walked along separate furrows behind the ploughers of land by dropping wheat seeds in the furrows. Then five sub-tenants of the cultivator supplied the wheat seeds in smaller baskets to the sower of wheat. Then with the use of same social units labour, the wheat sown fields were levelled and made into smaller plots so that water can be kept in every part of wheat field. Then in the removal of weeds, along with same social units female members belonging to the cultivator’s family, his kin’s, bonded labourer’s families took active part. The wheat crop was harvested with the help of sickles and were bounded by the use of male labour from the cultivator’s family, his kins, both male and female members of bonded labourers and sub-tenant’s families participated in this operation. Then thrash yard was prepared and the wheat crop was thrashed with the help of cattle. Then the wheat grains were separated from wheat stocks. Later the grains were winnowed. The winnowed grains were filled in gunny bags which were transported to gher.

In these operations the cultivator’s male and kins male family
members were the participants along with their cattle and bullock carts. In addition to these the cultivator's bonded labourers and his sub-tenants contributed their own labour to the zamindar's agent. Male and female members of the cultivator's family, his kins, bonded labourers and sub-tenants families were the main participants who participated in different operations of wheat cultivation.

After the preparation of land, grams were broadcasted by the male members of Jat cultivator's family and his three kins. They were assisted by the bonded labourers and sub-tenants in the preparation of small plots. In the removal of weeds and harvestation also they helped him. In thrashing, winnowing and transportation operations he received cattle and wooden carts from his kins, labour was provided by his bonded labourers also in these operations. In the removal of weeds female members of the Jat household along with his female kin household members took part. In the agronomics of grams male and female family members of Jat cultivator, his kin's families male and female members, bonded labour of the Jat cultivator and his sub-tenants were the main participants.

From this example it can be derived that the Jat family, who played the role of revenue collection on behalf of the Baniya Zamindar from Sirdars, male members participated in various agricultural operations associated with different crops. He was simply a non-owner but cultivator of land with his family labour.
This family in some agricultural operations, received the assistance of his female family members. Apart from his family, the Jat received labour services from his kin's, bonded labourers and sub-tenants families. The Jat family male members occasionally provided supervision to other social units. Such mode of work has been characterized as familistic supplemented with supervision mode of work.

Relations in this mode of work with the Jat cultivator and other social units were based on permanency with bonded labourers and sub-tenants and reciprocal exchange of tools among kins. This has been identified on the basis of returns which the participants received from the cultivator. Social units participated in the cultivation of land were (1) the Jat cultivator's family male and female members (2) his kins' male and female members, bonded labourers, sub-tenant's families, Lohar and Badhai.

Sub-tenants had familiar, personal and formal type of relations with their leaser of land. They took land from the Jat cultivator in order to cultivate maize crop. The cultivator gave his land to sub-tenants after the preparation of land for cultivation. Then the sub-tenant received maize grain also from the Jat cultivator. The sub-tenants provided their family labour in the cultivation of maize. They got the help of his kins' families (sub-tenants) on reciprocal exchange of labour. The jat cultivator received 7/8th of the crop from his sub-tenants.
There were three kin families of the Jat cultivator in the village. They had reciprocal exchange of tools, cattle and labour with the Jat cultivator. These three kin's families cultivated 10 to 15 acres of land. They had a pair oxen, a wooden plough and a cart, 3 to 4 sickles, two spades and a hand grinder each. Their household size was 4 to 5 members per family. In addition to this, the kin group owned a persian wheel and cane crusher collectively. The families mentioned above supplied their cattle, tools and labour when agricultural operations were in process in the Jat cultivator's land. They in turn received cattle and tools from this Jat cultivator's family. Along with the tools and cattle they got a bonded labourer of the Jat cultivator. These kin members for their services were given relaxations when Nazrana and revenue were collected. They were not only given more time to pay the revenue and Nazrana but also the later at a lower rate (4 Kgs per in acre) in comparison to other cultivators (5 Kgs per acre). In the case of non-kin cultivators, the N.S. had applied his muscle men in the collection of these two types of payments, but only through persuasion in the case of his kin families. In the case of the supply of labour services to the Baniya Zamindar and to his super ordinates the services of non-kin-households were more forced on priority and later his kin families. At the time of world war II cultivators of the village supplied their labour and bullock carts in the transportation of ammunition and food.
to the British army. For this they received Rs.½ per day.

Artisans of the village too had immigrated into the village along with Jats from Muradnagar and Moradabad. They provided services in the form of repair of farm implements and received payment in kind at the rate of 5 Kgs wheat, 15 Kgs maize and 10 Kgs of Joggery per annum. In addition to this, they got food from the Jat cultivator, on the eve of marriage and festive occasions.

The Bonded labour too immigrated into the village along with the Jat cultivator. They had lender and debtor relations with the Jat cultivator from one generation. They worked with the Jat cultivator as labourers. They provided labour per a week within a year free of payments. They worked with the Jat cultivator in order to repay the debt which they failed to to so upto two generations. These relations were strengthened as a result of sub-tenancy relations with the cultivator. They received Rs.20 to Rs.25 per month. In addition to that the bonded labour got 25 Kgs of food grains. A part of cash payment was deducted by the cultivator as a pay back of his debt. These relations were continued as a result of contingent expenditure in the labourer's household. Female members got payments for their work in cash i.e. 5 to 8 annas i.e. 30 paise to 50 paise per one day's work.

The Jat cultivator paid 2/3 of the product as tenancy to the Baniya zamindar. In addition to this, the Baniya zamindar
got 12 Lbs of wheat per acre as Nazarana and 6 to 7 Lbs of wheat or maize as peshkash. For the latter types of payments the jat cultivator collected 2 lbs, in excess, of wheat or maize from other cultivators. In the collection of this excessive amount he used his musclemen. This excessive collection of grains was paid by the Jat cultivator to the Baniya zamindar as the former's share in Nazrana and peshkash. For the collection of all these payments from the Sirdars of the Baniya zamindar, the jat cultivator got 1/16th of total collection as his commission from the Baniya zamindar.

A Middle Stratum Cultivator of Land:

Though the middle and lower strata land controller differed on the basis of the size of land under their cultivation but they had similar mode of work in the cultivation of various crops. Mode of work in these two strata was familistic in nature. This was supplemented by mutual exchange of labour, tools and cattle among kins. This has been exemplified with case material.

The household (D.R.S.) had 8 acres or 40 bighas of land under its control. The household cultivated 5 acres of land with canal water and three acres with persian wheel. The household had 9 families in his kin group. In these eight acres of land the household cultivated sugarcane (2 acres) cotton (1 acre) maize and jowar (3 acres) and paddy (2 acres) crops. From November onwards wheat seeds were sown on 5 acres of land. The household had a pair of oxen, a wooden cart and plough, 4 sickles,
2 spades, in order to cultivate these crops, and a stone grinder to grind wheat. Village artisans repaired these tools. These farm tools were mainly operated by the male members of the family. The family had no bonded labourer and no sub-tenants.

The household comprised of four members, a couple and their two unmarried sons aged 14 and 8 years respectively. Both these sons were helping his father-in minor agricultural operations. The household owned a cane crusher and a persian wheel collectively with his kins. Social units, which played a pivotal role in the cultivation of various crops, are presented below.

Preparation of land was the first major operation in the cultivation of every crop. In this operation the land was first ploughed with wooden ploughs driven by bullocks. Animal manure from gher was transported with wooden carts to the ploughed field and the manure was deloaded in the ploughed fields in the form of smaller heaps. These smaller heaps of manure were later broadcasted on the ploughed land. Then the manured fields were flooded with water. While the water flooded fields were dry, they were reploughed. The number of ploughings were dependent on the soil and also on the type of crop under cultivation. For wheat and sugarcane cultivation the fields were ploughed four to five times whereas in the case of maize minimum two times. After the completion of these different operations different crops' cultivation was initiated by the cultivator.

The family head, his two sons and his kin families male
members were the main participants in the preparation of land. The household head got the land under his control ploughed with three wooden ploughs. One wooden plough was owned by the cultivator, the other two were provided by his kin's families (cousin brother). These two kins rendered their ploughs, bullocks and also their labour in ploughing. After the completion of ploughing, animal manure from compost pits was transported with the help of three carts driven by oxen. One bullock-cart belonged to the cultivator's cousin and the other to his brother. The baskets were filled with manure by the cultivator's eldest son and by his cousin. The manure filled baskets were uplifted with hands and the manure in the baskets were emptied into the wooden carts. As the carts were filled with manure they were driven to the cultivator's land by the cultivator and by his brother. The manure was deloaded on the ploughed lands in the form of smaller heaps. After the completion of transportation, the smaller heaps of manure was broadcasted by the cultivators sons whereas the cultivator along with his farm tools and cattle provided labour to his cousin and brother. After the broadcastation of manure the land was flooded with water by the cultivators eldest son. After this the land was left to dry up. As it was getting dry the watered land was reploughed by the cultivator and by his kins. Thus in the preparations of land for the cultivation of crops though remained same as in the case of Baniya Zamindar's agent household, but the participants in this operation were
different. In the case of middle stratum the role of the controller of land, family male members and his kin households male members role became significant but in the case of Baniya zamindar’s agent (Jat) household bonded labourers and sub-tenants provided their labour. In the case of middle stratum land controller, the bonded labour and their sub-tenants participation was non-existent. After the preparation of land different crops were cultivated.

In the cultivation of sugarcane, deeper furrows were made, wooden ploughs. Deshi sugarcane pieces were sown in these furrows with the help of human labour. The sugarcane sown fields were then watered. The soil between the sugarcane shoot’s rows was loosened with wooden ploughs one month or 45 days after sowing sugarcane. Then the weeds between the sugarcane plants were removed with spades. From then onwards the sugarcane field was watered at an interval of 15 to 20 days between every two waterings. For one year to fourteen months the cane was allowed to grow. It was harvested with sickles after this period. The harvested sugarcane was tied into smaller bundles and the bundles were later loaded on bullock carts. The sugarcane bundles on carts were transported to the cane crusher’s site, which belonged to his kin group, collectively cane juice was extracted by operating the crusher and by putting the cane into the crusher. The extracted juice was boiled in an iron pan till the juice transforms into a semi-solid state. Then it was allowed to dry up to be converted into Joggery.
Deeper furrows in the prepared land were made with wooden ploughs drawn by oxen. The middle stratum cultivator under inquiry and one of his kin members operated the wooden ploughs in making the furrows. The sugarcane pieces were sown in the furrows by two more kin members. The cultivator's sons supplied the cane pieces in small baskets to the sowers of sugarcane pieces in the wooden plough furrows. The sugarcane sown field was flooded with canal water by the cultivator himself. The cultivator and two kins loosened the soil between sugarcane plant's rows with the help of wooden ploughs. Then weeds between cane plants within a row were removed by the cultivator with four male kin members. Then the weeded sugarcane field was flooded with canal water by the cultivator himself. The sugarcane field was harvested on the basis of mutual exchange with his kins. The harvested sugarcane was tied into smaller bundles by the cultivator's two sons. Sickles were used in harvesting the sugarcane crop. These bundles were loaded on three bullock carts by the cultivator and were transported to the cane crusher's site by the cultivator and by two of his male kin members.

The cane crusher was operated by three persons i.e. the younger son of the cultivator under inquiry walked behind the oxen driving the crusher, the cultivator put cane pieces into the crusher and the eldest son supplied cane pieces to his father. Two old male kin members participated in the preparation of joggery by feeding the hearth with fuel and mixing the juice in
the iron pan with a wooden stick. The cultivator and his two sons, his kin members along with their farm tools and cattle were the main units participating in the cultivation of sugarcane crop.

In the cultivation of maize and jowar crops, seeds were sown in the land after its preparation. Then the fields were watered after the germination of seeds at an interval of 2 to 3 weeks by operating the persian wheel which was owned at kin level. After a month the weeds from the maize fields were removed with the use of Khurpi. As maize crop bears cobs it is protected from the birds and cattle. As the cobs ripe and bear seeds, they are dissociated from the plants and are dried. Then the cobs are tharashed with the help of wooden sticks and winnowed with baskets. Maize and Jowar seeds were sown by the cultivator whereas his eldest son supplied smaller quantities of maize and jowar seeds in bags. The eldest son operated the collectively owned person wheel whereas his father diverted water into the maize crop fields. The cultivator's youngest son accompanied his mother while bringing food for their family members at work. The total family i.e. the cultivator, his sons and his wife along with a kin's family (Brother, his wife and his two daughters) participated in the removal of weeds from the maize field. The two sons looked after the crop in rotation i.e. up to lunch time the eldest son of the cultivator and after it the younger son up to 4 P.M. and later the eldest son from 4 P.M. to 7 P.M. Then the maize cobs were
separated from the maize plants by the cultivator's family members (four). Then cobs were transported to gher by a bullock cart which were thrashed by the male members (two sons of the cultivator). The grains were winnowed by their father while the former supplied the grains in this process. A portion of the grains (35 lbs) was paid as Nazarana. This mode of work is termed as familistic supplemented with reciprocal exchange of labour, tools and cattle with kins.

For the cultivation of wheat crop, land was prepared from the end of October after the harvesting of maize, jowar and paddy crops. Then wheat seeds were sown in the plough furrows by walking behind the plough. In this operation just six persons took active part, two persons operated the wooden ploughs (two male kins) the cultivator along with another male kin member sown the wheat seeds. The cultivator's sons supplied the seeds in small quantities to the sowers of wheat. Later they were levelled with the help of wooden flank drawn by oxen. Two persons (cultivator and his one kin member) driven the bullocks which were tied to the wooden flank with ropes. Then smaller plots were prepared with the help of spades by six members: 3 male members from the cultivator's family and by three male kins. The fields were watered after 7 to 10 days of sowing wheat. A month to 40 days later weeds were removed from the wheat fields with male and female (4) members of the cultivator's family. Wheat crop was harvested with sickles and was tied into smaller
bundles. In this operation the cultivator's family, both female and male, members and three kin families took part. Then the harvested wheat was spread on a thresh yard in layers and was threshed. In this operation the sons of the cultivator driven the cattle on the wheat layer. Their father (cultivator) and his three male kins participated in the separation of wheat straw from grams, spreading the harvested wheat on thresh yard and also in winnowing the grains. A portion of winnowed grains (50 lbs) was paid as Nazarana, Peshkash and pan to the zamindar and the remaining portion was stored at the cultivator's gher. In different operations related to the agronomics of wheat, male and female members of the cultivator's family and his three kins' families were the main participants. This mode of work can be termed as familialistic along with reciprocal exchange of labour, cattle and farm tools with kins.

In the agronomics of grams too land was prepared and gram seeds were broadcasted. Then with wooden flank driven by oxen, the grams broadcasted land was levelled. Smaller plots were prepared with the use of spades. Then depending on the climatic conditions the field was watered maximum ones before its harvestation. Weeds from the field were removed and the ripened gram crop was harvested, threshed and winnowed. In the cultivation of grams too the same social units formed a work group as in the agronomics of wheat.

In the agronomics of cotton, seeds were sown in the prepared land by the Jat cultivator with the help of his eldest son. Then after 5 to 7 days the cotton seeds sown land was
watered either with canal water or with water dragged by the Persian wheel. After a period of 30 days weeds were removed from the cotton crop, by the male and female family members of the cultivator and also by his kins' families members. As the fruits ripen and break, cotton from such fruits was collected mainly by female members of the cultivator's household and his kins' families. Seeds from cotton were removed by women at their residential place. In the cultivation of cotton crop, female family members of the cultivator under inquiry and his kins played a pivotal role along with their counterparts.

In the case of middle and lower strata cultivators, the cultivator's families and his kins were the main participants in the cultivation of various crops. They were non-owners of means of production but owners of tools of production. They were contributors of manual labour in different operations. They got assistance from the village artisans in the repair of tools.

Relations between the cultivator and other social units in this mode of work were based on personal, formal familiar and reciprocal exchange of labour, tools and cattle. In the case of middle and lower strata cultivators the cultivator's family members, both male and female and the cultivator's kin families, both male and female and the village artisans were the main participants.

Relations between the cultivator and his kins were guided
by mutual exchange of farm tools, cattle and family labour in different agricultural operations. Relations between artisans and the cultivator were based on Jajmani, which continued for more than two generations. These relations were also guided by familiarity. In this context of familistic mode of work social relations were based on familiarity. In the animate sources of tools of production the relations between the owner of the tools and the repairer of tools were also based on the same grounds. These tools were also exchanged between kins. The cultivators paid revenue to the Baniya Zamindar through his agent in the village. In addition to the land revenue the cultivators paid Nazarana Peshkash and pan to the Zamindar. Payments for these items were made in the form of kind. Each cultivator in addition to these payments rendered their services freely whenever there was some calamity. These facts show elements of personal and familiar nature in relations between the tiller of the land and owner of the land.

Finally it can be concluded that the Western Uttar Pradesh village had mainly animate tools of production with familistic mode of work in 1929. In the familistic mode of work relations were guided by reciprocal exchange of labour, farm tools and cattle among kins.

The data of Coastal Andhra Pradesh when kept in comparison to the Western Uttar Pradesh village we can find similarities on three counts: (1) similar mode of work, i.e. familistic and
reciprocal exchange among kins, was in prevalence in 1929; (2) tools operated by animate sources of power, wooden plough, carts, sickles, spades, wooden pumps and Persian wheel (in U.P.) were in predominance, and (3) social relations were guided by familiarity in both the situations.

Though the above mentioned similarities were prevalent but they differed in following respects even in 1929. They were firstly, cultivator was an owner of land in majority of cases in the C.A.P. village whereas in the W.U.P. village they were not owners of means of production but only tools of production. Secondly, women of Kamma caste in the C.A.P. village had no tradition to participate in the direct agricultural operations whereas even women of Jats and Brahmins in the W.U.P. village participated directly in agricultural operations. Thirdly, Brahmins in the C.A.P. village were owners but no participants in various agricultural operations. They gave their land mainly on tenancy and some portion of land they cultivated under the managernship (supervisor) of one of his tenants. In addition to the Brahmins and Komatis, upper stratum landowners of Kamma participated only in non-manual activities associated with the cultivation of land. Fourth, attached labourers or bonded labourers (palerulu) were associated with majority of landowners in the C.A.P. village in 1929. But in the W.U.P. village only the zamindar's agent had such labourers and he is the only person who on some occasions provided supervisory role in the cultivation
of land. Fifth, the C.A.P. village had proportion of land under dry cultivation but had no banjar land whereas the Western Uttar Pradesh village had 30 per cent banjar and sandy soils.