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HETEROGENITY, MOBILITY AND DYNAMICS OF
CONTRACTUAL ARRANGEMENTS IN THE AGRICULTURAL
LABOUR MARKET IN AN IRRIGATED DISTRICT.

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1. Introduction

The theories of developing country agricultural economies that have evolved over the last three decades or so have shaped the course of studies on labour markets. The pre-occupation of the models and theories with surplus labour, labour market dualism, rigidities of real wages and the deviation of the same from marginal productivity of labour and such other stylised facts led to the study of issues like nutritionally based efficiency wages, determinants of family labour supply, market imperfections, and linkages among factor markets to the neglect of labour market diversities. It is only through the market imperfections and linkages that studies have come to take up questions of diversity of labour contracts and the varying terms of the contracts across regions and over time. In the neo-classical theorising these are thought to be maximising responses to environments of heterogeneous labour and market imperfections.

Since the mid-1970s there has been a perceptible shift of interest towards the question of labour contracts. Clay (1976) documented the case of declining real wage situations in Bangladesh operating through shifts in the mix of labour contracts - shift from harvest share payments to cash payments or harvesting with gang labour. Bhalla (1976) showed that rising real wage situation in Haryana, India led to longer term labour contracts. Bardhan (1981), Bardhan and Rudra (1981) explained a

number of variations in labour contracts by relative demand for securing timely labour, demand relative to supply, credit linkage, alternative employment and borrowing opportunities..etc. Kikuchi et.al.(1984) reported the case of declining real wage payments for harvesting in Javanese villages operating through the reduction in harvest shares followed by restricted entry to the number of labourers. All these studies consider demographic pressure, the stagnancy or growth of agriculture and technological change as the major background factors.

Binswanger et.al. (1984) went on to take up the details of labour relations in the semi-arid tropics of India. They distinguished regular farm servants from the irregular markets; daily rated labourers from contract jobs, with piece-rated work falling under the latter. Their findings were that regular farm-servants were mostly males and with the exception of harvesting daily rated tasks were sex-specific. Further, the very nature of daily rated market ruled out tied transactions, especially labour - credit linkages. K. Bardhan (1984) and others studied the heterogeneity of labour, especially segmentation by sex and by caste. When farm labourers were almost entirely from a community different from that of the farmers women distinguished themselves by segregating from tasks which lower caste women carried out. Boserup (1970) and Srinivas (1966, 1978) were the first to investigate these aspects of the labour market.

Despite such attempts, the major concern of studies in the area has remained the analysis of average wage rates over time and space, labour-use in agriculture and such other issues with a definite quantitative bias to the neglect of the underlying qualitative base. The qualitative base is the mode of labour contracts - their diversity as well as varying terms. This was lamented upon by Binswanger and Rosenzweig (1984) as "the neglect of a number of important features and issues concerning the rural labour market" (p.29) and was pointedly referred to in the Conference of Indian Agricultural Economists in 1987 as "important changes occurring in labour hiring practices (such as a shift from 'time' to 'piece' rate) should be considered in studies dealing with labour absorption" (Indian Journal of Agricultural Economics, p.530). It is to this neglected area that this paper addresses itself.

Among the neglected topics listed by Binswanger and Rosenzweig (ibid) this paper takes up, (a) the dynamics, or flexibility of labour market characteristics, institutions, and arrangements; (b) the heterogeneity of labour, particularly as evidenced by sex differences in employment; (c) the geographical dispersion of wages and mobility of labourers. The area taken up for study is the district of Kanyakumari in the state of Tamilnadu, India. The selection of this particular district was governed by the significant shifts in cropping pattern - from seasonal field crops to perennial tree crops - that have taken

place in the district in the recent past, the high literacy rate, mobility, and the specific caste composition of the population, all of which have their implications to the issues under discussion. However, any study of the issues concerning the rural labour market would require information to be collected from both farmers and labourers. This paper confines itself to the analysis of the information collected from labourers, the information collected from the farmers being reserved for a subsequent paper on a related theme.

The paper is organised in nine sections including this introduction and a conclusion. Sections two and three are in the nature of providing background material for the discussion in terms of the characteristics of the district, sample villages and the socio-economic characteristics of the sample households. Sections four to eight discuss shifts in cropping pattern and their effect on the number of days of employment of labourers, strategies adopted by the labourers for augmenting employment and income, labour mobility in its relation to dispersion of wages, heterogeneity of labour, and the dynamics of labour contracts in that order.

II THE DISTRICT AND THE SAMPLE VILLAGES

The district of Kanyakumari located in the South-Western part of the Indian peninsula having an area of 1684 square kilometres is one of the Tamil districts with very high

population density. It is also the district with the highest decadal growth of population among all the Tamil districts.

The district is ahead of the state in literacy. The percentage of literate population has steadily gone up in the district over the last three decades (see Table 1). Especially noteworthy is the high literacy rate among the female of the population.

Table 1: Percentage of Literate Population

Year	Tamilnadu			Kanyakumari		
	Persons	Male	Female	Persons	Male	Female
1951	20.85	31.73	10.06	38.46	46.80	29.94
1961	31.41	44.54	18.17	48.57	56.24	40.73
1971	39.46	51.78	26.86	58.21	64.12	52.14
1981	46.76	58.26	34.99	63.85	68.55	59.0

Source: District Census Handbook (various issues).

The higher literacy rate implies that a sizeable population at the lower age group are kept out of the workforce as students who constitute a substantial segment of the non-workers. The percentage of non-workers in the population is over two-third in the district (70.96) compared to 58.27 for the state. Although part of the difference is due to the significantly higher percentage of non-workers among females in the district - 90.66 compared to 73.48 for the state - the percentage is higher for males as well - 51.56 compared to 43.42 for the state, which is owing to the higher rate of literacy. Among the workers, the percentage falling under the category of

household industry and other workers is higher for Kanniyakumari at 51.56 compared to the state average of 39.05. The bulk of it could be explained by the higher incidence of female labour in household industry and other workers. Despite a high percentage of workers being in non-agricultural work, agricultural labourers as a percentage of main workers is significantly higher for the district (Table 2), 38.40 per cent of the main workers are agricultural labourers compared to the state average of 23.24 per cent.

Although the distribution of workers across categories in the district is replicated in the four taluks as well, the differing numbers and the area under cultivation has resulted in considerable variation across the taluks as regards the number of cultivators and agricultural labourers per hectare of gross cropped area (Table 3). Both are lower for males in Thovala and Agasteeswaram, the predominantly rice growing taluks of the

Table 2. Distribution of Main Workers, 1981 (percentages)

Categories		Tamil Nadu	Kanyakumari
Cultivators:	P	29.22	11.68
	M	31.75	13.07
	F	22.76	2.75
Agri. Labourers:	P	31.73	36.76
	M	23.24	38.40
	F	53.43	26.26
Household Industry:	P	4.72	4.47
	M	4.10	2.55
	F	6.30	16.77
Other Workers:	P	34.33	47.09
	M	40.91	45.98
	F	17.51	54.22
Total (for all)		100.00	100.00

Source: Same as in Table 1.

P = Persons; M = Male; F = Female.

district, and higher in the other two taluks. The variation across the taluks is of the same order although the figures themselves are different for male and female. The density of male agricultural labourers is significantly lower in Thovala and Agasteeswaram but not so for females. As we shall see below, this has led to seasonal migration of male labourers from Vilavarcode and Kaikulam to Thovala and Agasteeswaram.

Table 3. Cultivators and Agricultural Labourers per Hectare of Gross Cropped Area, 1971.

	Cultivators per HGCA		Agrl. Labours per HGCA	
	Male	Female	Male	Female
Agasteeswaram	0.47	0.01	0.67	0.11
Thovala	0.27	0.01	0.46	0.12
Kalkulam	0.50	0.004	1.22	0.05
Vilavancode	0.68	0.01	1.48	0.08
Kanyakumari	0.50	0.01	1.02	0.08

Source: Same as in Table 1.

The district has a wide network of canals and canal-fed tanks. The level of irrigation is about 40 per cent and the intensity over 1.60. The agricultural change taking place in the district was marked by its own specificities. Between 1956-57 and 1973-74 both net sown area (NSA) and area sown more than once showed a steady increase. This was also the period when paddy and tapioca, the two food crops, dominated the crop spectrum accounting for nearly 60 per cent of the NSA. The period since the mid-seventies showed not only a marginal decline in the NSA and a sharp decline in the area sown more than once, but also a distinct move away from the food crops - paddy and tapioca - to perennial cash crops like coconut and rubber. However, the phase during which shifts away from paddy has taken place also witnessed increasing adoption of high yielding varieties (HYVs) of paddy, the level reaching the 40 per cent mark by the mid-eighties.

While discussing crop shift, paddy, coconut and banana need to be considered together in one group and the rest separately. Within the first group, area under paddy may go over to banana in particular years and the process is reversible. The area under banana or paddy may also go over to coconut which however, is irreversible. What has happened in Kanyakumari is a clear shift from paddy to banana and coconut over the period 1960-61 to 1984-85. Paddy which accounted for 37.90 per cent of the NSA in 1960-61 showed a steep decline to 28.56 per cent by 1984-85 while banana and coconut showed increases from 1.57 and 11.17 per cents to 2.70 and 21.11 per cents respectively. This shift to coconut has taken place in all the taluks of the district. Among the other crops, the next gainer is rubber and all the other crops have been losing. Rubber showed an increase from 4.65 per cent of the NSA in 1960-61 to 16.41 per cent in 1984-85 whereas tapioca showed a decline from 19.65 per cent to 14.08 per cent during the period. The increase in the area under rubber has taken place in the northern two taluks of Vilavancode and Kalkulam.

Keeping these changes taking place at the district level in mind we have selected four villages for our survey. Two are selected from Kalkulam (V2,) and one each from Thovala (V1), and Agasteeswaran (V4) taluks. V1 and V3 are head reach villages and V2 and V4 are tail-end villages. The four villages show distinct characteristics as regards caste composition and cropping

pattern. V1 is a predominantly Vellala village whereas V1 is basically a dual caste village with Sambavars as the numerically less significant caste; the other two villages are multi-caste villages. V1 and V2 are predominantly paddy growing villages where paddy accounts for almost 100 per cent of the irrigated area. V3 has 64 per cent of the irrigated area under paddy and the rest under banana, and V4 71 per cent under paddy and 28 per cent under coconut. While V1 and V2 are surrounded by villages growing coconut V3 is very close to vast tracts under rubber.

The pattern of land-ownership varies widely across the villages (see Table.4) In V2 60 per cent of the households are landless; the per centage being much lower in the other three villages. (But V4 being a dry village this does not mean much). The percentage of households owning 50 cents and below is 80 in V3 around 45 in V1 and V4 and less than 25 in V2. The percentage of households owning above 50 cents is the highest in V4 at 44.25 to be followed by V1 at 28.39.

Table 4 Distribution of Land Across the Sample Villages

Land Ownership Type	Per cent of households Across Villages			
	V1	V2	V3	V4
Landless	27.74	59.68	2.45	7.16
Less than 50 cents	43.87	23.38	80.20	48.59
Above 50 cents	28.39	16.94	17.15	44.25
T o t a l	100.00	100.00	100.00	100.00

Source: Field Survey.

The caste composition together with land ownership and cropping pattern have shaped the pattern of employment and income of the households in the villages. As is evident from Table 5, wage labour is the primary source of income for a sizeable proportion of the households in all the villages; it is over 60 per cent in V2 around 40 per cent in V1 and V3 and 27 per cent in V4. The role of agriculture is insignificant in V2 while it is as important as wage labour in the other three villages.

Table 5 Primary Source of Income of the Households (percentage)

Villages	Agri- culture	Wage Labour	Salaried employment	Self employ- ment	Remi- tance	Others	Total
V1	37	40	14	7	1	1	100
V2	9	61	17	11	2	0	100
V3	37	41	8	11	3	0	100
V4	29	27	14	6	23	1	100

Source: Field Survey

In order to collect relevant information regarding labour contracts from a sample of households a listing of all the households in the village was carried out. The listing contained information relating to demographic details, landholding, source of income.. etc. This listing was used to identify households deriving more than 50 per cent of their annual income from wage labour. A sample was drawn from this group using the technique of simple random sampling and information on various aspects of their employment was collected.

III: SOCIO-ECONOMIC CHARACTERISTICS OF THE SAMPLE HOUSEHOLDS

The sample households adequately capture the caste-composition and wage-labour participation of the households in the different villages. The households in three villages (V2, V3 and V4) belong to scheduled and intermediate castes while in one of the villages (VI) nearly one - third of the households are from the upper caste (see Table 6). While the scheduled and intermediate castes have traditionally been the agricultural labourers in the district the entry of the upper caste into wage labour is a phenomenon observed in recent years.

Table 6: Caste Composition of the Sample Households

Caste groups	Percentage of households in different groups			
	V1	V2	V3	V4
Scheduled Caste	68	7	27	46
Intermediate Caste	2	93	73	54
Upper Caste	30	0	0	0
Total:	100	100	100	100
(No. of Households)	(44)	(27)	(26)	(57)

The average family size across the villages is 4.8 with very little inter village variation, it is only in V3 that the size is 5.9. The average number of children per family is 1.4 with the variation being from 1.2 to 1.6 across the villages.

As regards the educational attainments of the sample population, it may be seen that among adult males illiteracy varied between 18 to 58 percent and among females between 27 and 66 percent. The difference is significant only in V4-21 for males and 66 for females. For most of them education stops at the secondary level, with 3 percent in V2 and 6 per cent in V4 among males and 3 percent in V2 and 2 percent in V4 among females having studied beyond the secondary level (see Table 7).

Table 7: Educational Attainment of the Sample Population
(PC to Total)

Educational attainment	Percentage of population reporting			
	V1	V2	V3	V4
A. <u>Adult males</u>				
(a) Illiterate	18	58	30	21
(b) Primary	44	14	38	42
(c) Secondary	38	25	32	31
(d) Higher secondary and above	0	3	0	6
Total	100	100	100	100
B. <u>Adult females</u>				
(a) Illiterate	27	63	34	66
(b) Primary	38	10	47	26
(c) Secondary	35	24	19	6
(d) Higher secondary and above	0	3	0	2
Total	100	100	100	100
C. <u>Children</u>				
(a) Male	69	69	65	78
(b) Female	61	67	64	82

Educational attainments recorded for the sample population is very high compared to the wage labour households in other parts of the state of Tamilnadu. In this respect the sample villages are similar to the neighbouring villages of Kerala.

It is also significant that the percentage of children attending schools is very high for the sample population. We have computed these percentages taking all the children, if the children below the age of 5 are excluded, then the percentages

are close to 100 in all the villages. What is striking is that the percentages are high for both male and female children.

Table 8: Work Participation Rate (Percentage of workers to Total Population)

Caste groups	Participation Rates			
	V1	V2	V3	V4
Scheduled Caste				
Male	52	60	54	44
Female	65	40	13	49
Intermediate Caste				
Male	33	68	63	44
Female	0	20	10	14
Upper Caste				
Male	48	0	0	0
Female	9	0	0	0
Total				
Male	50	67	61	44
Female	43	21	11	30

As is evident from Tab. 8, variation in participation rates across villages is greater for females than males, the levels themselves being lower for females than males. The difference between participation rates for males and females is not wide in V1 and V4 compared to V2 and V3. This is largely because of the insignificant difference between participation rates for males and females among the scheduled castes and the higher proportion of scheduled caste labourers in villages V1 and V4. Among the intermediate and upper caste females work participation rates are very low. Thus, among caste groups wage labour seems to be the preserve of scheduled caste women.

Table 9 Distribution of Households by Number of Workers

Village	Number of Households Reporting Workers					Average Number of Workers per reporting household	
	0	1	2	3	4		
V1 Male	1	34	7	2	0	1.26	1.23
Female	12	27	3	1	1	1.25	0.91
V2 Male	1	18	5	2	1	1.41	1.40
Female	13	11	2	0	1	1.36	0.70
V3 Male	0	11	10	3	2	1.85	1.85
Female	20	5	0	1	0	1.33	0.31
V4 Male	3	48	6	0	0	1.11	1.05
Female	27	26	4	0	0	1.13	0.60

Participation rates are nothing but the average number of workers per household divided by the family size. Turning to the average number of workers per household it may be seen that for males the numbers are larger in V2 and V3 compared to V1 and V4 (see Table 9). For females the average is the lowest in V3 corresponding to the lowest value of female participation rate. This gets reflected in the distribution of households by number of workers. The percentage of households having one male worker are 78, 67, 42 and 84 in the villages V1, V2, V3 and V4 respectively. Similar percentages for female workers are 61, 40, 19 and 46 respectively. The percentage of households not reporting any female workers are 27, 48, 77 and 47 respectively. The percentage of households reporting at least one male and one female worker are 70, 48, 22 and 47 respectively. This pattern corresponds well with the aggregate pattern provided by Table 3

above regarding the density of male and female workers.

It is generally argued that possession of land and housesites makes a lot of differences to the economic and social status of the labour households. While a sizeable percentage of our households do not own any land - 100 in V1, 85 in V2, 81 in V3 and 65 in V4 - the percentage of households owning housesites is quite significant - 59 in V1, 78 in V2, 88 in V3 and 95 in V4 (see Tables 10 and 11). Although 35 percent of the households own land in V4 its productive value is rather low as it is dry land; V4 being a village located in the rainshadow region. The low percentage of households owning housesites in V1 conceals the fact that the rest of the households are hutment dwellers with their huts erected on public land.

Table 10: Ownership of Land by Labour Households

Size class (in cents)	Number of households reporting ownership			
	V1	V2	V3	V4
Below 10	0	0	0	0
10 - 25	0	1	3	2
25 - 50	0	3	1	5
50 - 100	0	0	1	7
Above 100	0	0	0	6
Total	0	4	5	20
(% to total)	(0)	(15)	(19)	(35)

Table 11: Ownership of Housesite by Labour Households

	V1	V2	V3	V4
1. Number of households owning housesites	26 (59)	21 (78)	23 (88)	54 (95)
2. Number of households not owning housesites	18 (41)	6 (22)	3 (12)	3 (5)
3. Number of households working for the site-owner	0	3	0	1

Note: Figures in parantheses are percentages.

In sum the labour households mostly belong to the scheduled and intermediate castes and the participation rate among women is low in general but it significantly higher for scheduled caste women. Although ownership of land among labourer households is low ownership of housesites is fairly widespread.

TV

CROP SHIFT AND NUMBER OF DAYS OF EMPLOYMENT

Having provided the necessary background information in terms of the cropping pattern and crop shifts in the district and the work participation rates and the density of labourers we may attempt at relating these magnitudes. This has to be in terms of the number of days of employment by operations. Ideally such an exercise would require data for two time points, one prior to the shift and one posterior to such shifts. In the absence of such data the best we could do is to attempt a cross-sectional

comparison using the information collected from the sample villages.

The data gathered from the individual workers show that the number of days not worked by male and female workers are more or less the same in two villages (V1 and V2) but are significantly lower in V3 and significantly higher in V4. The differences are more marked for female workers than male workers (See Table 12). The coefficient of variation is higher for lower values of number of days not worked. Again there is a marked difference in the case of female workers, the values being fairly close for V1, V2 and V3 and significantly lower for V4. The diverse cropping pattern across villages are showing up in the number of days of employment, with V3 reporting the lowest number of days not worked and V4 reporting the highest.

Table 12: Average Number of Days not Worked across Villages

	V1	V2	V3	V4
1. Total number of respondents				
(a) Male	54	43	49	61
(b) Female	40	12	8	34
2. Average number of days not Worked during the year				
(a) Male	166	153	134	181
(b) Female	168	174	129	230
3. Coefficient of variation (pc) of the number of days not worked:				
(a) Male	25	32	52	21
(b) Female	29	32	33	10

The break-down of the number of days not worked according to reasons shows that non-availability of work was the principal reason for both sexes over all the villages (see Table 13). Morbidity and weather conditions were also important reasons explaining the number of days not worked but the importance of morbidity was subdued in this district when compared to the situation existing in many other districts of India. It is significant that morbidity had greater importance in explaining the number of days not worked among males compared to females.

Table 13: Reasons for not Working

Reasons	Percentage of days not working							
	V1		V2		V3		V4	
	Male	Female	Male	Female	Male	Female	Male	Female
1. Work not Available	73	80	57	64	60	76	64	66
2. Sickness	14	12	22	20	19	9	33	26
3. Bad weather	13	8	9	16	12	15	3	8
4. Social Functions	0	0	12	0	9	0	0	0
Total	100	100	100	100	100	100	100	100

Having gone over the question of number of days not worked let us take up the distribution of the number of days of work over crops and operations. As far as male workers are concerned the four villages show distinct patterns (see Table 14). The crops providing more employment are banana and rubber in V3, paddy and coconut in V4 and V1, and paddy in V2. The cropping pattern in the different villages come through these employment

patterns. It is also evident that workers move out of their villages in search of employment. Within this overall pattern we may observe that a very high percentage of male workers reported employment in harvesting in V1 and V2 and very low percentage reported employment in harvesting in V4. Especially conspicuous is the predominance of harvesting in V2. These patterns in terms of employment by operations are not explainable by the diversity of cropping pattern as such and other factors need to be brought in as we shall show later.

Table 14: Percentage of Male Workers Doing Different Agricultural Operations with Average Number of Labour Days of Employment Per Reporting Worker.

Operations	V1		V2		V3		V4	
	PMW	ALD	PMW	ALD	PMW	ALD	PMW	ALD
1. Ploughing	44	85	2	72	4	80	40	10
2. Transplanting and sowing	4	55	-	-	-	-	6	4
3. Weeding	-	-	-	-	-	-	7	13
4. Harvesting	63	51	40	76	20	49	4	5
5. Irrigation	-	-	-	-	-	-	-	-
6. Pre-planting* and after care operations for coconut	43	59	16	110	8	82	80	11
7. Banana cultivation	-	-	-	-	53	69	-	-
8. Tapioca	-	-	-	-	12	78	-	-
9. Coconut	-	-	-	-	6	18	-	-
10. Rubber (tapping)	-	-	-	-	22	253	-	-

Note: * Includes the labour days used for raising intercrops.
 PMW = Percentage of Male Workers
 ALD = Average no. of labour days.

The picture is more uniform across villages for female workers. The diversity of crops and operations providing employment which was observable in the case of males is not

observable here. Firstly, it is paddy cultivation which is the predominant source of employment for female labourers. Secondly, transplanting and weeding are the operations providing most of the employment; harvesting also provides some employment in three of the villages, but not in V3. A further aspect of female employment is that in both V1 and V4 it was more or less the same workers who carried out transplanting and weeding but not so in V2 and V3, in the latter two villages they were distributed over the workers. In such a situation the number of days of employment available per worker should have been lower in V2 and V3. Equivalently, the number of days not worked should have been higher in V2 and V3. It is high in V2 but not so in V3 and it is here that work participation and density of workers comes into the picture. The participation rates are the lowest for females in V3 (See Table 8 above).

Table 15: Percentage of Female Labourers doing Different Agricultural Operations with Average Number of Days per Reporting Worker

Operations	V1		V2		V3		V4	
	PFW	ALD	PFW	ALD	PFW	ALD	PFW	ALD
1. Transplanting	85	64	42	59	50	64	71	64
2. Weeding	95	43	33	63	50	91	86	53
3. Harvesting	43	55	17	62	-	-	30	67
4. Irrigation	-	-	-	-	-	-	-	-
5. Pre-planting and after care operation for coconut	5	55	8	50	-	-	21	79
6. Banana	-	-	-	-	62	122	-	-
7. Tapioca	-	-	-	-	13	35	-	-
8. Coconut	-	-	-	-	-	-	-	-
9. Rubber	-	-	-	-	-	-	-	-

Note: PFW = Percentage of female Workers
ALD = Average number of labour days.

The pattern of employment of agricultural labourers by crop production activities indicates the direction in which employment opportunities for agricultural workers must have moved with the shift in cropping pattern. As the requirement of labour in coconut cultivation falls sharply after the initial years the shift in cropping pattern must have reduced the employment opportunities of male labourers. Since female labourers are largely dependent on paddy cultivation even small shifts away from paddy would affect them adversely. This was confirmed by the reasons given by the workers for the decline in the employment (see table 16). Village V3 is different because the shift is from paddy to banana which does not affect them so adversely.

Table 16: Percentage of Respondents Reporting Decline in Agricultural Employment by Reasons

Villages	No. of respondents	Percentage of respondents reporting decline in employment	Reasons for decline	
			changes in crop mix	other reasons
V1	94	82	62	38
V2	55	77	69	31
V3	57	46	41	59
V4	95	92	74	26

V STRATEGIES FOR AUGMENTING EMPLOYMENT AND INCOME

In the phase of falling employment in crop production activities the responses from employers and labourers were seen to be many and varied. The agricultural labour households in our

sample villages have responded in various ways to increase their quantum of employment and income. These strategies include (1) leasing in land; (2) maintaining bullocks; (3) seasonal migration to adjacent villages for work; and (4) migration of family members to distant places for non-agricultural work. In this section we shall provide a brief discussion of the relative importance and some of the salient features of these activities among the sample households.

In all the villages, the percentage of labour households leasing in land is more now than in the past (see table 17). However what is more interesting to note is that a majority of these households do not possess land for own cultivation. The average extent of leased in land varied from 11 cents in V3 to about 40 cents in V1. The duration of the lease in most of the cases is for an year. In V1, all the lessee cultivated paddy. In other villages most of them cultivated banana or plantain and this gave the lessee employment through out the year and reduced the seasonality of work pressure on own cultivation and wage labour. Since banana is a high valued crop, the income that they can derive from its cultivation is also higher than that from the cultivation of paddy.

Table 17: Households Leasing in Land: Past and Present

	V1	V2	V3	V4
1. No. of households leasing in land at present	11 (25)	10 (37)	5 (19)	7 (12)
2. No. of households leasing in land in the past	5 (11)	3 (11)	4 (15)	3 (5)
3. Average extent of leased in land (in cents)	40	21	11	36

(Figures in brackets indicate the percentage to total)

Ownership of bullocks is often cited as a necessary prerequisite for agricultural labourers for leasing in land. Our data suggest that this is true in V1 where all the households who reported ownership of bullocks were tenants. However, such a relationship was not seen in V2 and V3. In V4, 37 percent of the sample households owned bullocks. They, used their bullocks in increasing their employment opportunities in two ways: (i) by undertaking ploughing work on piece rate and by (ii) using bullocks in harvesting and thrashing. In ploughing alone, those with bullocks were able to get employment for about 90 days in V1 and V2 and 126 days in V4 (see table 18). It is interesting to note that none of the sample households in 3 villages (V1, V2 and V4) reported ownership of milch animals; they were more interested in acquiring bullocks as they helped them to augment their employment opportunities. The pattern of ownership of bullocks by agricultural labour households explains the pattern of employment in ploughing (see Table 14 above) reported by the male labourers across the villages.

Table 18: Ownership of Bullocks in the Sample Households

	V1	V2	V3	V4
1. No. of households owning a pair of bullocks	11(25)	1(4)	2(6)	22(37)
2. No. of households reporting additional employment due to bullocks	11	1	2	16
3. No. of days of employment due to bullock ownership (8 hour man day)	89	90	60	126

Note: Figures in Parantheses are percentages to total

As regards ploughing three changes have come about in recent years. Firstly, a market has developed for straw with significant demand from Kerala. Consequently, the price has been showing a steady upward trend. Secondly, the availability of subsidised credit under IRDP schemes has facilitated the buying of bullocks by many landless households. Thirdly, tractors have made an appearance in a few places in the district and can be hired for ploughing. These factors have made many owner cultivators and tenants to make much finer computations of the economies of keeping bullocks. So there has developed an active market for plough labour with bullocks.

Migration during the cultivation and harvesting period to adjacent and distant villages is another way in which the labour households augmented their employment opportunities. Because of the rainfall pattern and the delay in getting irrigation water the possibility for such migration is enhanced in the coastal

villages. This is reflected in our survey data, the percentage of households reporting seasonal migration is significantly higher in the coastal villages of V2 and V4 (see Table 19).

Table 19: Incidence and Nature of Seasonal Migration

Nature of Migration	Incidence Across Villages (percentages)			
	V1	V2	V3	V4
1. Households Reporting Seasonal Migration	50	78	46	74
2. Households Reporting Migration to Adjacent villages (less than 5 km)	41	33	33	35
3. Households Reporting Migration to distant villages (more than 5 km)	20	44	12	39
4. Households Reporting Migration to Kerala	14	30	42	23

Those who worked in the adjacent villages were daily commuters. Most of these workers were males who performed mainly operations like ploughing and land preparation. In the case of migration to distant villages, the workers did mostly harvesting and threshing operations. Usually the workers migrated in small gangs consisting of 5 or 6 males, one or two females and pair of bullocks. Until the completion of harvesting and threshing in the distant villages the gang resides in the distant village.

Migration of male labourers in search of agricultural employment altered the pattern of employment of labourers by operations. The pattern of employment which synchronised with the cropping pattern in the respective villages in the case of

female labourers showed no such relationship in the case of male labourers, except possibly in V3 (c.f. Tables 14 and 15 above).

The lack of employment opportunities has driven out workers from the sample villages to the neighbouring state of Kerala in search of construction work. This phenomenon began to occur on a large scale from the mid seventies consequent to the construction boom in Kerala. 14 percent of the sample households in V1, 30 percent in V2, 42 percent in V3 and 23 percent in V4 reported migrant workers in Kerala. Most of the migrants were young males who worked mostly as helpers in construction activities. These workers are a source of regular income to their households.

We may note here that none of these strategies except perhaps that of leasing in land, are of any relevance as far as female labourers are concerned. They are basically "male" strategies.

VI LABOUR MOBILITY AND DISPERSION OF WAGES

It is often argued that geographical dispersion of wages of agricultural labourers is owing to lack of knowledge and low mobility of labourers. Having identified a district where labourers are highly mobile it should be of interest to take a look at this hypothesis. For this purpose we use the wage data

obtained from the District Statistical Office for seven villages*

Kanyakumari is one of the districts reporting fairly high mobility of labourers. Both educated and uneducated as well as skilled and unskilled have been migrating - seasonally or permanently - to other Tamil districts as well as Kerala over the decades. Migration of construction workers to Kerala has shown a sharp increase in the last decade or so. Along with such outmigration there is also evidence of high mobility of workers within the district. Agricultural labourers not only move to adjacent villages but also to distant vilages in search of employment as discussed above.

Harvesting and threshing are the main operations carried out by mobile labourers. Ploughing, land preparation and weeding are also carried out but to a lesser extent. Labour mobility is not a recent phenomenon in this district and is over two decades old (see Table 20). But labourers from different locations carry out specific operations. For instance, labourers from V2

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* The wage data reported in the season and Crop Reports are averages of the operation specific wage data on the different months of the year collected from a few centres. Although the Centre-wise data are not published the source could be obtained monthwise from the District Statistical Office for the period 1983-85.

specialise in harvesting and those from V3 in threshing and they move in gangs. The formation of gangs is a relatively recent phenomenon in V1 and V4, both of which are located in Nanjilnadu

Table 20: Some Aspects of Labour Mobility

	Villages			
	V1	V2	V3	V4
A. <u>Mobility in Gangs</u>				
1. Operations carried out	Harvesting	Harvesting, ploughing, transplanting weeding	Threshing	Ploughing Land Preparation, Threshing
2. Number of Years working as members of gangs	2 to 6 years	15 to 20 yrs	10 to 20 yrs	1 to 5 yrs
3. Changes in the area of operation of the gang	remained the same	remained the same	remained the same	expanded
B. <u>Individuals</u>				
1. Operations carried out	N.A	Rubber tapping tapicca-cultivation	N.A.	Work in coconut gardens.
2. Mode of travel	-	by bus and by cycle.	-	by bus

(the region consisting of Agasteeswaram and Thovala taluks) the rice bowl of the district which was attracting lot of migrant labour. Although mobile gangs operate mostly in the rice economy of the district, mobile individuals go in search of varied types of work, especially the new types of work such as rubber tapping

and work in the coconut gardens.

If the hypothesis regarding the relationship between labour mobility and wage rates were valid then we should expect less dispersion in the wage rates across the villages of the district. The seven villages for which wage data are available are distributed across the taluks of the district. Three villages are located in Kalkulam taluk (D, E and F), two in Vilavancode (G and I) and one each in Thovala (A) and Agasteeswaram (B). In all the villages transplanting and weeding were mainly carried out by female labourers and harvesting and ploughing by male labourers. However, in harvesting both males and females participated with male participation rates far higher than female participation rates.

Table 21: Daily Wage Rates for Male and Female Labourers in Kanyakumari District (Peak Season 1984)

Villages	Daily Wage Rates (Rs.)				
	Ploughing (Male)		Harvesting	Weeding	Transplanting
	without Bullocks	with Bullocks	(Male)	(female)	(female)
A	12.00	25.00	24.00	10.00	8.00
B	12.00	40.00	18.00	7.00	8.00
D	12.00	20.00	17.50	5.80	9.35
E	10.00	35.00	17.50	6.00	8.00
F	12.00	36.00	16.00	5.00	8.00
G	12.00	40.00	14.40	7.00	8.00
I	15.00	35.00	14.00	6.00	8.00

Source: District Statistical Office.

Coming to the question of dispersion of wages it may be observed that wages for ploughing and weeding varied very widely across the villages of the district (see Table 21). The lowest wages were 50 to 30 per cent lower than the highest wages. The dispersion was more in the case of weeding compared to ploughing (without bullocks). Considering that mobility among male labourers were greater compared to female labourers the lower wage spread for ploughing could possibly be explained by this factor. But the same logic when applied to the case of transplanting leads to a puzzle: the dispersion of wages is very much lower in the case of transplanting carried out by relatively less mobile female labourers. As per the information collected by us transplanting is a piece-rated operation all over the district. The piece rates themselves vary as also the length of the working day - longer in Thovala and Agasteeswaram compared to Kalkulam and Vilavancode. Now, the figures given in Table 21 must have been arrived at by converting these piece-rates into daily wages using a standard, and the lower dispersion is a creation of the statistical factor. The question then, is, should the comparisons be in terms of the rate specific to the mode of labour contract, here piece rate, or should it be in terms of the artificial daily rates. The conclusions will be different depending upon the rates used.

This statistical aspect is brought out much more sharply in the case of harvesting. Harvesting and threshing are two

operations for which uniform modes of labour contract prevail all over the district and the payment is in terms of paddy. The wage rates - not the daily rates but the rates per unit of land (see section viii below) - are also uniform and have evolved largely in response to the historically significant mobility of labour. However, the length of the working day does vary - from 8 hours in V1 to 3 hours in V3 - and the price of paddy also shows some variation across villages. Hence, when the wage is converted into daily rates (as reported in Table 21) the dispersion is rather great showing no relationship with mobility at all. The need for incorporating the modes of labour contract in the analysis of wage data cannot be brought out better.

VII THE HETEROGENITY OF LABOUR

It was shown earlier that work participation rates varied widely across villages and across sex. The variation in participation rates was due to the disparate participation rates across caste groups. This was particularly so for female labourers. Although participation by caste groups was introduced into the discussion in section iii, the later discussion through sections iv to vi was again in terms of aggregate population disaggregated at the level of operations. Now, let us turn to the relationship between the two under the head of heterogeneity of labour.

In all the villages transplanting of paddy was traditionally being carried out by scheduled caste women while such exclusive association was not to be seen in the case of weeding. Over the years this has been changing. The upper and intermediate caste women are entering the agricultural labour market. For instance, in V1 the upper caste Vellala women were mostly confined to their households till a few years back, handpounding of rice and child care taking most of their time. With the introduction of rice mills since the late 1960s handpounding has practically disappeared. The lower family size has further reduced their domestic chores. Added to this was the economic compulsion of declining size of landholdings. So, they come to compete with the scheduled caste women in agricultural operations. This was observed in V2 also. But in V1 they are discriminated against; transplanting is considered a skilled operation and the upper caste entrants are not considered skilled in transplanting and are offered wage rates lower by about 25 per cent.

In the same village, - Vellala men are also entering the agricultural labour market. Instead of entering the paddy field operations many of them have gone in for carrying out other operations. One such operation is that of making straw bundles. Since V1 is a predominantly rice growing village the quantum of straw available is large. This has found a ready market in the neighbouring state of Kerala providing increasing employment

opportunities to the Vellala men. Such an entry keeps the caste identity of the Vellala men on the plane of labour market as well without bringing in any notion of wage discrimination in their case.

Other than such caste segregation of agricultural operations there are sex and age segregations as well. Considering the main crop of paddy, land preparation and ploughing are solely male operations and transplanting and weeding are female operations. Harvesting and threshing are also predominantly male operations. Harvesting does accept females but threshing excludes females in all the villages except V2. But in both harvesting and threshing females are discriminated against in wage sharing. In dividing the total quantum of grain across members of the gang in harvesting while male labourer gets one share the female labourer gets one-half, two-third, or three-fourth of a male share in different villages. This is the case in threshing as well wherein they are equated with bullocks, both getting only one-half the male share.

Over and above caste and sex segregation, age segregation was also observed in these villages. Land preparation is being mostly carried out by younger men while ploughing is being increasingly reserved for older men. The emergence of piece rated contracts for land preparation has a lot to do with this (along with the entry of upper caste men who despise

supervision). Between harvesting and threshing also there is some segregation based on physical strength. Threshing is mostly reserved for labourers who cannot carry headloads for harvesting involves not only cutting the harvest but also carrying the load to the threshing yard.

What is often talked about in the earlier studies is 'Sanskritisation' or withdrawal of uppercaste from manual labour, but what we observe here is a reverse process. The reverse process has not been simple. Often the entrants from upper caste are discriminated against. Female labourers have fewer opportunities to escape such discrimination whereas males try to enter relatively newer operations or operations in which such situations do not arise.

VIII: THE DYNAMICS OF LABOUR CONTRACTS

The dynamics of labour contracts was examined by investigating the incidence of changes in work arrangements, wherein such changes include not only changes in the mode of labour contracts but also changes in the length of the working day, wage rates...etc. The incidence of such changes was seen to be fairly high in all the villages except V3 (table 22), the information pertaining entirely to paddy field operations.

Table 22: Spread of Changes in Work Arrangements

Operations	Percentage of Workers reporting changes			
	V1	V2	V3	V4
1. Land preparations	68	96	0	56
2. Ploughing	0	20	0	80
3. Transplanting	100	14	0	33
4. Weeding	100	83	0	9
5. Harvesting	31	10	0	50
Average	62	29	0	44

Among paddy field operations, land preparation is one of the operations reporting significant changes in work arrangements. We get a clue to the nature of these changes in Table 23. Land preparation which was traditionally a time-rated operation (daily wages) is increasingly turning into a piece-rated operation. The employers find in this a way of reducing the task of supervision and the labourers, especially the able-bodied, find in it a way out of the restrictions of daily rated work. Instead of working from, say 9 in the morning to 3 in the afternoon - the length of the working day in some of these villages - they could work from 6 to 10 in the morning and 4 to 7 in the evening with fewer gaps thereby increasing their earnings.

Table 23: Incidence of piece and time rate

Operations	Percentages of workers reporting piece and time rate							
	V1		V2		V3		V4	
	PR	TR	PR	TR	PR	TR	PR	TR
1. Land preparations	64	36	8	92	0	100	22	78
2. Ploughing	4	96	100	0	100	0	90	10
3. Transplanting	94	6	100	0	100	0	100	0
4. Weeding	13	87	0	100	0	100	22	78
5. Harvesting	94	6	100	0	100	0	100	0

PR - Piece Rate TR - Time Rate

Compared to land preparation ploughing has not attracted such changes in work arrangements. Only in V4 does 80 per cent of the labourers report changes. This has come about with changes in ownership of plough cattle. In V2 and V3 few owned plough cattle and ploughing had emerged as a piece-rated operation for a long time, and in V1 many cultivators still own plough cattle and hence the predominance of time rate. It is in V4 that number of owners of cattle among cultivators has come down in the recent past and more and more are depending on hired labour (with bullocks). Along with such dependence has come about the shift from time-rates to piece-rates.

Transplanting has been a piece-rated operation in all the villages and the payment was a rupee for so many bundles of seedlings transplanted. This mode of contract has undergone a change in V1. Now, the payment is per unit area transplanted- so many rupees per kurni (a local area measure equal to 4.75 cents). This has taken the burden out of the employer for

organising the whole operation. It is now the responsibility of the group of workers to organise work and share the wages. In the past the distance between seedlings did make a lot of difference to the yield and hence close supervision was necessary but with the introduction of chemical fertilisers greater distance was beneficial to the cultivator. Even weeding, a traditionally time-rated operation difficult to quantify is being slowly turned into a piece-rated operation in V1 and V4 (see Table 23).

Threshing is carried out by gangs of workers having male, female and child workers with the help of bullocks. The wage is a share of the paddy outturn. The work arrangement which is uniform all over the district has undergone no change whatsoever but for the doubling of the wage share in the last ten years. The work arrangement for harvesting has also got stabilised over the years. No change was reported except the doubling of the wage rates. Harvesting is carried out by gangs predominated by males for which the wage is arrived at in a rather complicated way taking into account the quality of land, yield and quantum of work. There is a certain floor rate to be paid per acre of land even if the yield is poor - the current rate being one kottah* of paddy per acre. For yields above a certain minimum level one marakkal per kottah of paddy has to be given.

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(* one kottah = 16 marakkal = appx. 70 to 80 Kgs. These volume measures vary across villages)

This, again, varies depending on the distance between the field and the threshing yard; greater the distance higher is the rate. The rate varies between one to two marakkal in our villages.

Thus, the labour contracts show wide variations across operations and not only the nature but also the terms of the contracts change owing to various factors. The employers aim at reducing their supervisory tasks and costs by these changes. The differentiation among cultivators does not alter this aim to any great extent. But the labourers being segregated by caste, sex, age,...etc. are guided by factors such as regularity of employment maximising earnings during the season...etc. It is the interaction between these two sets of factors within a background of increasing population, crop shifts, technological changes that determines the dynamics of labour contracts.

There are other factors as well which impinge upon the terms of labour contracts. The seasonality of operations in paddy cultivation, the size of operational holdings are points of strength and weakness for the cultivators and labourers at various points of time. While during the peak season length of the working day may be shorter under pressure from workers, the employers may try to lengthen the same during the slack season. In some of our sample villages it was reported that during the slack season labourers were compelled to work say, from 8 to 1 instead of from 8 to 12 in the peak season. Similarly employers

who provide regular employment compel workers to work longer hours. On the other side, as harvesting and threshing are time bound and are also subject to uncertain weather provide opportunities for the labourers to demand higher wages, often 50 per cent above the normal rates.

Along with the changes in work-arrangements, there has come about a fairly high rate of labour turnover. Almost all the workers in our sample are casual workers with the freedom to choose their employers. A very high percentage of the workers, both male and female in all the villages work for many employers with their percentage being relatively low in V2 (for females) and V3 (for males) (see Table 24). The high percentage of male workers in V3 reporting their wage relationship with single employers may be explained by the regular and continuous employment available in the nearby rubber plantations. But that for female workers in V2 has no such explanation.

Table 24: Incidence of Working for Single or Many Workers

Villages	Percentage of workers reporting working for			
	Single employer		Many employers	
	Male	Female	Male	Female
V1	15	3	85	97
V2	30	64	70	36
V3	42	22	58	78
V4	0	0	100	100

The information in Table 24 is for the reference year. The information on long term relationship was collected by asking the question: Do you work for the same set of employers. The answer is tabulated in Table 25. As is evident, while most of those workers working for a single employer continue to do so year after year a small percentage of those working for many employers also continue their relationship. But a sizeable percentages of the workers do not work for the same set. This is true of both male and female workers. What are the reasons for staying with or changing employers?

Table 25: Incidence of Mobility among workers

Villages	Percentages of workers working for the			
	Same set of employers		Different set of employers	
	Male	Female	Male	Female
V1	15	3	85	97
V2	25	3	75	63
V3	33	28	67	72
V4	20	6	80	94

One of the often mentioned reasons for continuing to work for the same employer is the obligation of one sort or another, or the inter-linking of the labour market with the other markets. In our sample villages the percentage of workers continuing with a single employer itself is low (table 24) and those continuing with the same set on account of obligation is still lower; 22, 23, and 20 in the three reporting villages respectively (see

table 26). The owners who continue to work for the same set of employers do so because of availability of regular work.

Table 26: Distribution of workers by reasons for continuing with the Same set of employers

Village	Percentage of workers by reasons			Total
	Obligation	Regular work	Others	
V1	22	78	0	100
V2	23	77	0	100
V3	0	100	0	100
V4	20	60	20	100

The workers who change their employers seem to be doing so annually or at longer periods. Within a year, or for two seasons the workers seem to be sticking to the same set of employers. But there is a distinct difference between V1 and the other three villages. In V1 the workers who change employers do so at intervals longer than a year (see table 27).

Table 27: Distribution of workers by Frequency of changing Employers

Villages	Percentage of workers reporting change			Total
	Seasonally	Annually	Others	
V1	0	0	100	100
V2	0	96	4	100
V3	0	85	15	100
V4	0	95	5	100

Now, there seems to be some sort of a relationship between the incidence of time - rated work arrangements and the percentage of workers working for the same set of employers. For instance, both in V2 and V3 weeding is entirely time rate and the percentage of female workers continuing to work for the same set of employers are also higher. Similar is the relationship between time - rate in land preparation and continuance of male workers. Thus, closer supervision, because of time-based work arrangement seems to be related to the continuance of the employee-employer relationship between persons.

IX: CONCLUSIONS

Changes in cropping pattern affect the number of days of employment of agricultural labourers. When the shift is from seasonal field crops to perennial tree crops the number of days of employment tend to fall. The labourers respond to the situation by adopting various strategies for augmenting employment and income such as leasing in land, owning bullocks and seasonal migration. Both leasing in land and ownership of bullocks can operate only within restricted spheres whereas migration can be more pervasive.

The segmentation or heterogeneity of labour is often discussed in terms of certain castes withdrawing from certain operations. We have observed the 'reverse' process. An analysis

of the causes of the 'reverse' entry was not our concern here but its effect was observed to be varied. In the case of female agricultural labourers this has resulted in direct competition with lower caste labourers and the upper caste labourers are discriminated against. In the case of males such 'competitive' entry was not to be observed to any great extent and consequently discrimination was rare. Still whenever 'competitive' entry had taken place the result has been the same - the upper caste men were considered less suitable. Whether this did result in lower wages for them depended on various other factors.

Turning to the crucial question of the relationship between changes in wage situations and changes in contractual arrangements, we note that the whole thrust of contractual arrangements was in moving away from time-rated arrangements. In essence this meant the elimination of supervision all together. This had evolved for paddy field operations of harvesting and threshing years ago and is fast coming about in land preparation, transplanting and ploughing. The thrust of changes in contractual arrangements being what they are it may not be meaningful to talk in terms of changes in number of days of employment or wage rates. On the labourers' side, number of days of employment might have fallen and the wage rate might have increased - both derived by converting the piece or contract rates - yet the income derived from a particular operation, say land preparation, during a season might have increased for some labourers and might have fallen for others. On the

employers' side even when daily wage rates - again derived by proper conversion - for a particular operation show increases the cost incurred need not show any increase for the changes in contractual arrangements might have eliminated supervisory labour all together. Introduction of HYV seeds, chemical fertilisers and the knowledge of light ploughing might come in handy in this. So the question of interest is not, 'how wage rates change in a situation of changing labour contracts' but is a different one depending upon whether the process is viewed from the labourers' end or from the employers' end. In the former case it is on the lines of how a particular change in the contractual arrangement affects the income derived by different caste, sex, and age groups and in the latter case how the change affects the cost incurred on a particular operation. This arises questions regarding the use of published data on wage rates. An understanding of the qualitative base, that is the nature of contractual arrangements prevailing for different operations and changes over time, is a must for any meaningful analysis of the changes in wage rates.

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