lock-lodge ratoon rice yield (3001 Kg ha^{-1}). On an average, as braiding and lodging the harvested stubbles involved manual labour, the cost of cultivation of lock - lodge ratoon crop increased by 12.5 per cent over conventional practice however stands at 75 per cent when compared to the main crop cost of cultivation (Table 2). Consequently, the C:B were substantially higher in the lock -lodge ratoon practice when compared to the conventional ratoon practice revealing its superiority and economic viability in the ratoon rice technology.

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Industrial locale : Facing threats to employment status in agriculture

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Abstract : The environmental deterioration is increasing with the acceleration of industrialisation and thus cause substantial harmful effects not only for the whole society but also for the very existence and survival of the farming community. The present study was carried out with the objective of analysing the changing trend, over a period of time and factors involved with regard to nature of occupation, extent of employment in agriculture and extent of cultivation, in the Pondicherry region of Union of Pondicherry. The observations were analysed in comparison with a non-industrialised zone, having similar agro-economic background. Factors favoring intensive and / or extensive agriculture were analysed and compared. Some remedial measures as suggested by the farming community are detailed to over come the problems. (*Key Words : Nature of occupation, Status of employment, Extent of cultivation, Industrialised zone, Non Industrialised zone).*

Since independence, India has emerged as a potentially powerful country, scientifically and technologically progressive, agriculturally self-sufficient and economically viable nation of the world. These gains are unfortunately associated with certain amount of deterioration in the quality of environment. Thus, exploitation and protection of the environment are the dual responsibility of the nation, which can be reconciled through rational resource planning. So that, the needs of the development can be met out and at the same time environment can be judiciously managed and protected. This environmental deteriorations is increasing with the acceleration of industrialisation and thus, cause substantial harmful effects not only for the society as a whole but also for the very existence and survival of the farming community. Hence, the present study was carried out with the objective of analysing the changing trend, over a period of time and factors involved, with regard to nature of occupation, extent of employment in agriculture and extent of cultivation, in the Pondicherry region of Union Territory of Pondicherry. Wherein, agriculture is quite intensive, highly diversified with many different types of cropping patterns. Besides, being a small region spread over 492 sq km; it consists of more than 5000 industrial units of various kinds, which in

turn has direct and indirect bearing on the farming community.

Nature of occupation

The occupational changes that had occurred over a period of time is presented in table 1.1 and 1.2. It could be inferred from the tables that there were no wide variation or shift among the occupation from one to another, in the non-industrialised zone and it remained almost steady over years. Whereas, the industrialised zone had registered high negative growth rate of -12.70 per cent for the agriculture occupation and positive growth rates for the remaining occupations. The highest positive growth rate could be seen in industrial labour (7.50%) followed by trade/business occupation (2.04%) and agricultural labour (2.00%). Only a meagre positive growth of 0.60 per cent was recorded in Government service.

The occupational increase in the agricultural sector was very poor. Whereas, the industrial and trade/business sectors had shown the highest, The reason for such a change might be attributed to the perception of the farming community that the agriculture occupation is becoming more problematic, uncertain, and cost intensive compared to the past due to salinised groundwater, increased soil salinity, pollution of water, lack of transport and marketing facilities etc. The reason for the highest growth rates registered in the industrial labour and trade / business sectors of the industrialised zone might be that the farming community was much reluctant of involving the younger generations in agriculture, owing to the uncertainty about the future of the agriculture in the industrialised zone. The other reason might be the aspiration to seek for jobs with assured, round the year income. Despite of negative growth rate in case of agricultural occupation, the agricultural labour sector had shown a positive growth rate of just 2.00 per cent in zone - 1. The reason might be that the resource poor farmers were found to be difficult to practice agriculture in the polluted atmosphere. As the result they have either reduced or given up their extent of land owned and turned to work in others fields as agricultural labourers.

Status of employment in agriculture

It could be noted from the results presented in the table 2.1 and 2.2 that in the non-industrialised zone though the growth rates were very marginal in all the categories. It had shown a negative trend in the partially employed and unemployed categories and a positive trend in the fully employed category. Whereas, in case of industrialised zone, in addition to the fact that all the categories had registered an impressive growth rates, it has shown quite opposite trends in respect of each category compared to non-industrialised zone.

It could be further noted from zone-I that the numbers of farmers in the partially employed categories were increased by 10.90 per cent and 8.20 per cent respectively. Whereas, the fully employed category had shown a negative growth rate (-23.80 per cent). It was also clear from the table 2.1 that in the industrialised zone the total number of persons of the sample farm households employed in agricultural sector was declined gradually over years from 424 to 405 during the period of study. In contrary to this finding, it was almost steady over years, in case of non-industrialised zone. This finding also draw support from the secondary data presented that the proportion of increase in the cultivators category had been negative and the proportion of increase in the agricultural labour category had been high as well as almost equal to the proportion of increase in the total main workers of most of the villages selected for the study in the industrialised zone. The reason that were attributed for the changes in the nature of occupation hold good for the changes in the status of employment in agriculture.

Extent of cultivation

It could be inferred from the tables 3.1 and 3.2 that the actual land owned had shown a marginal positive growth rate of 2.73 per cent, whereas, a very marginal declining trend (-0.025% and -0.080%) could be observed with respect to 'leased-in and 'leased-out' lands respectively in the case of non-industrialised zone. The tendency of restricting the cultivation to their own land was prevailing among the farmers of the non-industrialised zone, due to the gradual decline in the availability of quality ground water for irrigation. Which in turn due to over exploitation of groundwater for agricultural purpose and by the industries of adjoining areas. As the result, most of the farmers were neither interested to take further land on lease nor to increase their total operational area. This might be the possible reason for the result.

In case of industrialised zone, the actual land area owned had shown a high negative growth rate of -22.98 per cent followed by leased in land (-5.50%) and leased out land (-2.50%). From the results it was obvious that the farmers were neither interested in increasing the actual land owned nor interested in taking land on lease and thereby to increase their total operational area. It could be further inferred that the farmers who had already taken the other land on lease were also found

Table 1.1 Nature of Occupation - Industrialised zone (Zone I)

Category	1989		1990		1991		1992		1993		Growth rate
	No	%	No	%	No	%	No	%	No	%	
Agriculture	386	78.14	372	75.00	354	71.95	343	69.02	337	68.22	-12.70
Agrl. Labour	18	3.64	22	4.43	22	4.47	26	5.23	26	5.56	2.00
Industrial labour	24	4.86	36	7.26	43	8.74	51	10.26	54	10.93	7.50
Trade / Business	26	5.26	26	5.24	31	6.30	34	6.84	34	6.88	2.40
Govt.Service	18	3.64	18	3.63	19	3.86	19	3.82	19	3.85	0.30
Total	494	100.00	496	10.00	492	100.00	497	100.00	494	100.00	-

Table 1.2 Nature of Occupation - Industrialised zone (Zone II)

Category	1989		1990		1991		1992		1993		Growth rate
	No	%	No	%	No	%	No	%	No	%	
Agriculture	215	83.93	213	82.83	215	82.38	216	82.44	214	81.68	0.1
Agrl. Labour	5	1.95	6	2.33	5	1.92	5	1.91	6	2.29	0.1
Industrial labour	6	2.34	8	3.11	8	3.06	8	3.05	8	3.05	0.4
Trade / Business	14	5.47	14	5.45	15	5.75	15	5.73	15	5.73	0.3
Govt.Service	9	3.52	9	3.50	11	4.21	11	4.20	12	4.58	0.8
Others	7	2.74	7	2.73	7	2.68	7	2.67	7	2.67	0.00
Total	256	100.00	257	100.00	261	100.00	262	100.00	262	100.00	-

returning the land to the owners and those who were actually owning the land were involved reducing the extent of land owned, by disposing the excess land for other purposes. The productivity of the land was found declining over years due to the pollution of air, water and land resources in the industrialised zone. As the result, practicing agriculture was gradually becoming more problematic, uncertain and cost intensive than ever before. Moreover, the process of conversion of land for non-agricultural purposes, especially for industrial purpose was also escalating. All these might have served as the reasons for the result.

Factors for not favouring intensive and/or extensive agriculture

A perusal of the table 4 shows that in case of non-industrialised zone hike in the cost of agricultural labour, non-availability of adequate skilled labour in time, declining labour efficiency and morality, were the most important reasons as expressed by the farmers for not favouring intensive and / or extensive agriculture in their locality. Whereas, the factors such as gradual decline in the availability and increase in the salinity of groundwater, hike in the cost of agricultural labour, non-availability of adequate skilled labour in time and declining fertility status, soil health and subsequent loss of soil life, increased farm expenditure coupled with uncertainty in performing farming were identified as the prime important reasons by the respondents of industrialised zone. It is to be noted here that the farmers of zone-II regarded such problems as less important. The other important problems as reported by the respondents of zone-I were reduction in crop yield over years, declining labour efficiency and morality, lack of transport and marketing facilities, more political interference in farming affairs and resultant divisions among farming community, social disharmony and excessive dependence on high cost external inputs.

Conclusions

In order to combat the problems faced by the farming community of the industrialised zone, and to restore agriculture in its original viability so to keep on the farming generations in farming itself, several sustained efforts are needed on continuous basis. The efforts may thus includes (1) Regulation on groundwater utilisation by industries and for agricultural purpose. (2) Impact assessment prior to conversion of agricultural land for non-agricultural purposes. (3) Strengthening of soil reclamation measure. (4) Popularising integrated pest and disease management and Integrated nutrient management

Table 2.1 Status of employment in agriculture - Industrialised zone (Zone I)

Category	1989		1990		1991		1992		1993		Growth rate
	No	%	No	%	No	%	No	%	No	%	
Fully employed >300 days	320	75.47	294	70.17	261	63.66	252	61.46	222	54.81	-23.80
Partially employed 53-300 days	68	16.04	79	18.85	92	22.44	96	23.42	114	28.15	10.90
Unemployed <53 days	36	8.49	46	10.98	57	13.90	62	15.12	69	17.04	8.20
Total	424	100.00	419	100.00	410	100.00	410	100.00	405	100.00	-

Table 2.2 Status of employment in agriculture - Non - Industrialised zone (Zone II)

Category	1989		1990		1991		1992		1993		Growth rate
	No	%	No	%	No	%	No	%	No	%	
Fully employed >300 days	168	74.34	168	74.01	170	74.56	170	74.24	170	75.22	0.60
Partiallyemployed 53-300 days	49	21.68	47	20.70	47	20.61	48	20.96	47	20.80	-0.30
Unemployed <53 days	9	3.98	12	5.29	11	4.83	11	4.80	9	3.98	-0.10
Total	226	100.00	27	100.00	228	100.00	229	100.00	226	100.00	-

Table 3.1 Extent of cultivation - Industrialised zone (Zone I)

Category	1989		1990		1991		1992		1993		Growth rate
	No	%	No	%	No	%	No	%	No	%	
Owned	786.50	84.51	770.00	85.51	739.50	85.44	721.25	86.09	696.00	86.46	-22.98
Leased in	114.00	12.28	103.50	11.49	98.00	11.32	94.50	11.28	91.00	11.30	-5.50
Leased out	28.00	3.01	27.00	3.00	28.00	3.24	22.00	2.63	18.00	2.24	-2.50
Net operated area	872.50	100.00	846.50	100.00	809.50	100.00	793.75	100.00	769.00	100.00	-

Table 3.2 Extent of cultivation - Non - Industrialised zone (Zone II)

Category	1989		1990		1991		1992		1993		Growth rate
	No	%	No	%	No	%	No	%	No	%	
Owned	428.50	84.68	429.50	84.88	437.25	85.23	437.25	85.23	438.25	85.60	2.73
Leased in	65.00	12.85	64.00	12.65	65.25	12.72	65.25	12.72	64.25	12.55	-0.02
Leased out	12.50	2.47	12.50	2.47	10.50	2.05	10.50	2.05	9.50	1.85	-0.80
Net operated area	481.00	100.00	48.00	100	492.00	100.00	492.00	100	493.00	100.00	-

Table 4. Factors for not favouring intensive and/or extensive agriculture

Particulars	Zone I		Zone II	
	%	Rank	%	Rank
Gradual decline in the availability of quality ground water due to increase in its salinity	10.00	I	38.00	VI
Hike in the cost of agricultural labour	100.00	I	98.00	I
Non-availability of adequate skilled labour in time	10.00	I	85.00	II
Increased farm expenditure coupled with uncertainty in performing progressive farming	98.50	II	26.00	IX
Declining soil fertility status, soil health and subsequent loss of soil life	98.00	III	29.00	VIII
Decline in labour efficiency and morality	82.00	IV	76.00	III
Gradual reduction in crop yield over years	82.00	IV	30.00	VII
Lack of marketing and transport facilities	75.50	V	73.00	IV
Greater involvement of middle man and low price for agricultural commodities	75.00	VI	63.00	V
More political interference in farming affairs over years, leading to social disharmony and divisions among farming community	72.00	VII	-	-
Excessive dependence on high cost external inputs	70.00	VIII	25.00	X
Inadequate availability of organic manures	24.50	IX	20.00	XI

strategies. (5) Promoting Integrated Farming System (IFS) to suit to different categories of farmers of the polluted locality, coupled with organised training to the farmers and (6) Encouraging perennial cropping with horti-silvi culture etc., as required by the respondents of the study locale.

If proper attention is not paid to this at the present moment there is a strong likelihood that both the present and the future farming generation are likely to face a serious threat to their very existence in the industrialised locality.

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