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## RESEARCH ARTICLE

### LAND USE AND CROPPING PATTERN

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#### Abstract

The extent of land utilization depends on several factors like soil fertility, amount of rainfall facilities for irrigation, cultivation, practices etc. as such variations in their regard are likely to affect farm wages. If the land use pattern enables a more intensive use of lands for crop cultivations, involving labour absorption, the possibilities of higher employment generation and hence higher annual average daily wages are likely to be greater. A new appropriate cropping pattern should be suggested according to nature of soil, availability of water supply, topography and other local situation. In Moovanallur village, the process of maximum utilization of land has been increased. But at the same time, the cropping pattern is changed from irrigated crop to un-irrigated crops such as paddy to black-gram. A country must have a proper land use pattern which may avoid the malcombination of factors of production.

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#### Introduction:-

The term 'land' in Economics is often used in a wider sense. It does not mean only the surface of the soil, but it also includes all those natural resources which are the free gifts of nature. It therefore, means all the free gifts of nature. These natural gifts include: (i) river, forest, mountains and oceans, (ii) heat of sun light, climate, weather, rainfall, etc. which are above the surface of land (iii) minerals under the surface of the earth such as iron, coal, copper, water, etc., According to Marshall "By land is meant., materials and forces which nature gives freely for man's aid in land, water, air, light and heat." Therefore land is a stock of free gift of nature.

The extent of land utilization depends on several factors like soil fertility, amount of rainfall facilities for irrigation, cultivation, practices etc. as such variations in their regard are likely to affect farm wages. If the land use pattern enables a more intensive use of lands for crop cultivations, involving labor absorption, the possibilities of higher employment generation and hence higher annual average daily wages are likely to be greater.

#### Cropping Pattern:-

Cropping pattern refers to the proportionate area under different crops during a fasli year. Paddy, Cholan (Jowar), Cumbu (Bajra), Ragi, Maize, small millets, Pulses, Sugarcane, Spices and Condiments, Fruits and Vegetables constitute the Food crops. Fibers, oilseeds, drugs and Narcotics, Dyes, Fodder crops, Green-manure crops, Flower and other miscellaneous tree crops and Groves constitute Non-food crops.

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**Statement of the Problem:-**

Agricultural development is multidimensional in nature. It includes a variety of aspects like agricultural land utilization, intensity of cropping, crop productivity, crop concentration, crop diversification, crop combination, commercialization of agriculture, nature of agrarian relationship, and maintenance of ecological balance and so on. Agriculture plays an essential role in the process of economic development of less developed countries like India. Besides providing food to nation, agriculture provides employment and savings, contributes to market economy and earns foreign exchange. Agricultural development is an integral part of overall economic development. In India, agriculture is the main source of national income and occupation. It will be helpful to study the agricultural land use pattern and cultivation pattern of different crops on the same land.

**Objectives of the Study:-**

- To know the socio- demographic characteristics of the farmers
- To understand the land use pattern in the study area
- To analyze the different categories of land
- To analyze the cultivating pattern of the farmers in Moovanallur village
- To explain about the cropping pattern in the study area
- To analyze the marketing problems faced by the farmers
- To study the income and expenditure pattern of the farmers
- To suggest solutions to the problems of farmers

**Research Methodology:-**

The study is based upon the primary data. The data were collected through personal interview with the help of well structured interview schedule. To study the land use pattern 75 sample respondents were selected from Moovanallur village by adopting simple random sampling method. The collected data were categorized, analyzed and presented in the form of tables and diagrams at suitable places.

**Literature Review:-**

**Narendra Kumar I and Chandrasekar Rao G (2007)** have analyzed in the title on 'Impact of Irrigation on Employment' on the basis of micro study that irrigation reduces the risk and uncertainty inherent in the rain fed cropping. They conclude that there is no significant difference between canal and bore well irrigation within the human labor and bullock labor. The important suggestions are as follows: (i) The main canals up to farm lands are to be lined cement can be avoid leakage of water (ii) Ground water potentiality will be increased by different methods like check dams, watersheds and percolation tanks and (iii) Micro irrigation at every village level to save the previous water.

**Borges (2008)** pointed that LP models are effective tools to support initial or periodic planning of agricultural enterprises, requiring, however, technical coefficients that can be determined using computer simulation models. Constraints on monthly water availability, labor, land and production were critical in the optimal solution.

**Periasamy, G and Dharmalingam S (2010)** in their article on 'Erratic Monsoon and Indian Economy' pointed out that erratic monsoon has impacted in Indian Economy in the form of distress to farmers and their families, commodity trading and price movement and food inflation. The important suggestion advocated by them is to promote through Gram Sabhas community food and water security systems. They should involve establishing at the village level seed, grain and water banks. Seed banks will help to introduce alternative cropping strategies and contingency plans to suit different rainfall patterns. Also they have hoped that the recommendations of the Punchhi Commission would enable the central government to take proactive decisions on the issue facing the water sector.

**Singh, and Vivek Kumar (2011)** viewed tribal regions are experiencing agricultural intensification, the market forced one also influencing the cropping system and crop specialization as result of ecological economic changes as well as impact of public policy of technology transfer and resource use demand.

**Profile of the Study Area:-**

Moovanallur panchayat is located in Mannargudi taluk of Thiruvarur district at a distance of 3km from Mannargudi and 20 km from Thiruvarur. According to 2011 census, the total population is 1927 consist of 993 males, 974 females and 165 children. The majority of farmers cultivate by the conventional farming methods because chemical fertilizer and pesticides are easily available, Even though they are willing to use organic methods they are not easily

available. The crops cultivated in Moovanallur village are Paddy, Ground nut, Black gram, Green gram, Coconut and Sugar cane. The sources of irrigation are 177 bore wells, 3 tanks, 1 lake and a canal.

## Results and Discussion:-

### Social Profile:-

53% of the respondents belong to the age group of 31-40 years, 40% of them are above 40 years and 7% of the respondents are under the age group 21-30 years. 99% of respondents are from backward community. Remaining 1% respondent is from most backward community. The caste group of 99% of respondents is kallar. Only 1% of the respondent is barber. 93% of the respondents are married and the remaining 7% of the respondents are unmarried.

47% of the respondents are qualified with primary education. 24% of respondents are illiterates, 16% of the respondents are qualified with secondary education and only 13% are the respondents are degree holders.

### Economic Profile:-

The size of the family is less than 5 for 81% of the respondents. There are 5-10 members in 19% of the respondent's families. 88% of the respondents live in nuclear family, whereas 12% of the respondents live in joint family.

34% of the respondents earn income half yearly, 27% of them earn income quarterly, 24% of them earning monthly income, and remaining 15% of the respondents earn the income annually.

71% of the respondents spend the monthly expenditure from Rs. 5000 to Rs. 10000, 19% of the respondents spend the monthly expenditure between Rs. 10000 to Rs. 15000, 9% of the respondents spend less than Rs.5000 for monthly only 1% of the respondents spend more than Rs. 15000 per month.

**Table No 1:-** Land Use Pattern.

S. No.	Size of land (in acres)		Cultivable land		Uncultivable barren land		
		Frequency	%	Frequency	%	Frequency	%
1	Less than 2	24	32	35	47	24	55
2	2-4	22	30	21	28	15	34
3	4-6	16	21	12	16	5	11
4	6-8	13	17	7	9	0	0
	Total	75	100	75	100	44	100

Source: Primary Data

All the land for cultivation in study area belongs to the category "current fallow land". Lands that are kept fallow out of the net area sown during the previous year are classified as current fallow for the reporting year.

**Table No 2:-** Factors Influencing Land Use And Cropping Pattern.

FACTORS	PARTICULARS	FREQUENCY	%
Sources of Borrowing	Bank	18	24
	Local traders	9	12
	Money lenders	7	9
	SHG's	11	15
	Relatives	5	7
	Government	12	16
	Co operative society	13	17
Type of land	Current fallow land	75	100
Cropping pattern	Paddy	66	88
	Millets	-	-
	Ragi	-	-
	Milo	-	-
	Others	9	12
Sources of irrigation	Canal	1	1
	Open well	12	16
	Tube well	62	83

<b>Expectation from Agricultural Department and Government</b>	To increase loans & subsidies	11	15
	To provide right kind of education which will breed poultry farmers	28	37
	Change National poultry policy which will favour small scale units	21	28
	To increase the range of marketing	15	20
<b>Main problems faced in paddy cultivation by new farmers</b>	Lack of sufficient infrastructural facilities	-	-
	Absence of market facilities for the products	-	-
	Inefficient marketing system and market information	-	-
	Lack of proper training and knowledge	1	100
	Lack of sufficient guideline and counseling	-	-
<b>Agencies providing large amount of loan facilities</b>	Government	32	43
	Private	14	19
	Cooperative society	29	38
<b>Availability of loan at right time from the commercial banks</b>	Yes	55	73
	No	20	27
<b>Reasons for the delay in providing loan</b>	Heavy security offered	6	30
	More time for processing of application	7	35
	High rate of interest	2	10
	Low scale of credit amount	5	25
<b>Subsidy from the Government</b>	Yes	27	36
	No	48	64
<b>Motivational factors expected from Government</b>	Marketing	25	34
	Finance	24	32
	New technology	13	17
	Low cost of raw material	13	17
<b>Location of land for cultivation</b>	Within the village	66	88
	Outside the village	9	12
<b>Problems faced at the time of cultivation</b>	Finance	28	37
	Labour	17	23
	Other natural problem	30	40
<b>Sources of information about the fertilizers</b>	Through Agricultural Officers	22	29
	Private dealers	20	27
	Farmer friends	13	17
	Advertisement in news papers	18	24
	Advertisement of the Fertilizer company	2	3
<b>Fertilizer brands used by the respondents</b>	SPIC	11	15
	FACT	22	29
	Madras fertilizers	21	28
	Kothari	11	15
	Parry India	10	13

<b>Name of paddy seed used by the respondents</b>	Ponni	11	17
	CR 1009	27	43
	ATT 45	18	29
	IR 36	7	11
<b>Awareness about bio – fertilizer</b>	Yes	19	30
	No	44	70
<b>Sources of purchasing bio-fertilizers</b>	Government Agricultural departments	6	32
	Private retail shops	5	26
	Cooperative societies	8	42
<b>Reason for the preference of particular brand</b>	Nearness	6	8
	Credit facility	28	37
	Good quality	19	25
	Fair price	5	7
	Services	12	16
	Others	5	7
<b>Type of pest attacks on the crops</b>	Yellow stem borer	14	19
	Swarming caterpillar	29	38
	Fungal disease	21	28
	Green bug	11	15
<b>Frequency of cultivating paddy crop per year</b>	1 time	21	34
	2 times	15	24
	3 times	27	42
<b>Availability of electricity for agricultural activities</b>	Yes	33	44
	No	42	56

Source: Primary Data

37% of the respondents expect to provide right kind of education which will bread poultry farmers, 28% of the respondents expect the change in National poultry policy which will favour small scale units, 20% of the respondent expect to increase the range of market, remaining 15% of the respondent expect to increase loans & subsidies.

43% of the respondents avail loan facility from Government organization, 38% of the respondents avail loan facility from Cooperative society, and remaining 19% of the respondents avail loan facility from Private sector.73% of the respondents received loan from Commercial banks and remaining 27% of the respondents have not received loan from Commercial banks.35% of the respondents feel that the processing of application takes more time. 30% of them are unable to get loans from commercial banks because they have to give heavy security. 25% of them give reasons that credit amount is very low. 10% of the respondents give reasons as the high rate of interest.

64% of the respondents received no subsidies. Remaining 36% of the respondents received the subsidies from government.34% of the respondents expect the efficient marketing facilities from government, 32% of them expect financial assistance; 17% of them expect the facilities of new technology and remaining 17% of them expect low cost of raw material.88% of the respondents have land for cultivation within the village; remaining 12% of the respondents are cultivated outside the village.40% of the respondents faced natural problems like flood at the time of cultivation. 37% of them have finance shortage and the remaining 23% of them face the problem of labour scarcity.

A majority 29% of the respondents get the information form Agricultural officers, 27% of the respondents avail information from Private dealers, 24% of the respondents avail from advertisement in news papers, and other 3% of the respondents from Fertilizer company. A majority of the respondents (29%) used FACT brand of fertilizer, 28% of them used Madras fertilizers, 15% of the respondents are used SPIC brand of fertilizer, 15% are used Kothari company fertilizers and only 13% of the respondents used Parry India company fertilizer.

A majority of the respondents (43%) used CR1009 brand of paddy for cultivation, 29% use ATT 45 varieties of seed, 17% of the respondents use Ponni varieties of seed and the remaining 11% of the respondents use IR36 varieties of paddy seed.70% of the respondents are not aware of bio fertilizers. Remaining 30% of the respondents aware of bio-fertilizers in paddy crop.42% of the respondents buy the fertilizers in Cooperative societies, 32% of the

respondents buy the bio-fertilizers in Government agricultural department, and remaining 26% of the respondents purchase the bio-fertilizers in Private retail shops. 37% of the respondents prefer the specific brand because of Credit facility, 25% of the respondents prefer for Good quality, 16% of the respondents prefer for Services, 8% of the respondents prefer for Nearness, 7% of the respondents prefer for Fair price and remaining, 7% of them for Other reason like relatives.

A majority 38% of the respondents viewed that swarming caterpillar pest mostly attack the crops, 28% of the respondents opined that fungal disease is the main problem of crop cultivation, 19% of the respondents viewed that yellow stem borer pest attack, remaining 15% of the respondents said that green bug is the main problem of crop cultivation. 42% of the respondents answered that they cultivated paddy 3 times per year. 34% of respondents cultivate for 1 time and the remaining 24% cultivate twice a year. 56% of the respondents use electricity in agricultural activities, 44% of the respondents are not using electricity in agricultural activities.

#### **Suggestions:-**

- ❖ In order to improve water use efficiency the farmers have to plan their cropping pattern well in advance on the basis of water availability. This necessitates selection of appropriate variety of crops especially in Paddy. Farmers can go for short duration and High Yielding Varieties in the tail-end regions to optimally use the water available to them.
- ❖ The farm mechanization and type of irrigation must be modernized. Instead of flooding which is a popular method of irrigation farmers can switch on to sprinkler irrigation for Paddy and drip irrigation for Sugar cane and Vegetables.
- ❖ The cropping pattern presents a mono cropping of paddy in all the regions. Instead of Paddy if the farmers opt for Groundnut and Vegetables it will improve their income and employment.
- ❖ The conversion of agricultural land for non-agricultural purpose and conversion of paddy fields into coconut cultivation is enormously taking place in the study area. It will certainly result in food scarcity. The government should take steps to control land conversion. Unless land conversion is controlled forthwith, there will be absolutely no paddy cultivation at all in the district in the near future.
- ❖ Financing of farm ponds is required to facilitate water and recharge of ground water.
- ❖ Waste land development program and micro irrigation system has to be implemented for increasing the agricultural produces by way of more food and income per drop of water in view of the limited water resources in the districts.
- ❖ Evaluate physical, chemical and biological effects of in stream mining on a river basin scale, so that cumulative effects of extraction on the aquatic and riparian resources can be recognized and addressed at various levels for proper remedial measures.
- ❖ There is an urgent need for strengthening multidisciplinary studies on the rivers for providing adequate scientific information to river restoration and management activities.
- ❖ A new appropriate cropping pattern should be suggested according to nature of soil, availability of water supply, topography and other local situation

#### **Conclusion:-**

Land is one of the important factors of production, which provides food and raw materials for industries. This way land forms the most important wealth of a country. The appropriate use of land is a matter of utmost concern to its people. The land utilization as per its capability ensures good result in production of a country. The improper and limited use of it can lead to economic deterioration. Hence, it is necessary to utilize land in an efficient and significant way. For this purpose, a country must have a proper land use pattern which may avoid the mal-combination of factors of production.

It is very clear from the discussion that intensive use of land have been increased. The significant changes have been observed in cropping intensity and intensity of area sown more than once. This shows that in Moovanallur village, the process of maximum utilization of land has been increased. But at the same time, the cropping pattern is changed from irrigated crop to un-irrigated crops such as paddy to black-gram.

**References:-**

1. **Dharmalingam S. and Periasamy G. (2010)**, “*Erratic Monsoon and Indian Economy*”, Southern Economist, Volume48, Number 18, January 15, pp.8-10.
2. **Dr.N.Rajalakshmi**, *Tamil Nadu Economy*, Business publications Inc., Mumbai, 1999, P.21
3. [http://shodhganga.inflibnet.ac.in/bitstream/10603/32019/10/10\\_chapter%203.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/32019/10/10_chapter%203.pdf)
4. [http://shodhganga.inflibnet.ac.in/bitstream/10603/3230/9/09\\_chapter%202.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/3230/9/09_chapter%202.pdf)
5. **M.L.Jhingan**, Micro Economic Theory, Vrinda publication (P) Ltd. Mayur Vihar, phase-I, Delhi 6<sup>th</sup> edition 2007, P.265
6. **Narendra Kumar I. and Chandrasekar Rao G. (2007)**, “*Impact of Irrigation on Employment*”, Southern Economist, Vol.46, No.7, August 15, pp.13-14.