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NEW TECHNOLOGY IN AGRICULTURE: CHALLENGES OF AGRICULTURAL LABOURERS IN RAMANAGARA DISTRICT IN KARNATAKA

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ABSTRACT :

Change is the order of the day", the present economy is witnessing changes in all the sectors viz., agriculture, industry, trade and commerce. The main reason for change is the development of technology. The technological up gradation happening in the agricultural sector has resulted in many advantages which have led to the development of the sector. Apart from the advantages the sector is facing various challenges in the adoption of new technology in agriculture. The present paper is an attempt in showing the challenges faced by agricultural labourers in adopting new technology with reference to Ramanagara District of Karnataka. The data required for the study is collected trough questionnaire and other secondary sources. The study has identified that the labourers need training for the successful implementation of technology in the agricultural sector.

KEYWORDS : *Technology, Agriculture, Challenges, Labourers.*

INTRODUCTION:

The importance of agriculture can never be over-stated. Although the share of agriculture in India's GDP has been declining, yet agriculture and its allied sectors like forestry and fishing (but not including mining and quarrying) contributes nearly 14 percent to India's GDP, accounts for about 11 percent of our exports, and supports half of our population's livelihood, besides also being the source of raw material for a large number of industries. Accelerating to a higher agriculture growth rate is critical for a variety of reasons – attaining food security, achieving an overall 8 percent growth rate in GDP as envisaged in the 12th Five year planned enhancing rural income, which presently is abysmal low. Irrespective of the relative contribution, the average growth rate in the agriculture sector in the last five years till 2013- 14 (taking into account the advance estimates for 2013-14) has been 4.1 percent. India's food grain production crossed 250 million tonnes during the year 2011-12. Rice production crossed 100 million tonnes and wheat production crossed 90 million tonnes. As of 2011, India's arable land area of 159.7 million hectares (394.6 million acres) is the second largest in the world, after the United States. Its gross irrigated crop area of 82.6 million hectares (215.6 million acres) is the largest in the world. Despite its declining relative share in GDP, several innovative steps and measures are being undertaken and the sector has done reasonably in the last few years. However, one of the major bottlenecks that has emerged and can become an insurmountable problem in the foreseeable future is the issue of shortage of agricultural labour.
Agriculture provides employment to not only the adult males of households but also to women on the households. Women work extensively in production of major grains and millets, in land preparation, seed selection and seedling production, sowing, applying manure, weeding, transplanting, threshing, winnowing and

harvesting. Agriculture plays a significant role in overall socio-economic development. Therefore, fostering rapid, sustained and broad-based growth in agriculture remains key priority for the country. With the decreasing labour force in agriculture, increasing yield or productivity is the key to growth, which has to be accelerated. Shortage of labour and finding solutions thereof should become a major focus. India's crop yields are yet only 30 percent to 60 percent of the best crop yields achievable in the farms of developed as well as other developing countries. Improved seed varieties, widespread extension services and farm mechanization remain three critical areas of intervention and focus.

Employment data is generated from the National Sample Survey organization's (NSSO) Rounds on employment and unemployment. Data used pertains to the 55th Round (1999-2000), 61st Round (2004-05), 66th Round (2009-10), and the 68th Round (2011-12). Data shows that India's overall employment growth since 2004-05 has been anemic. At an average, only around 2 million people were added to the workforce since 2004-05 compared to around 12 million people that were added to the workforce every year as an average between 1999-00 and 2004-05.

However in reality, the magnitude and pace of the shift away from agriculture has been substantial as has been evidenced here. It also has begun to make an impact as the shortage in agricultural labour is currently not being compensated by adequate measures to reduce the overall labour intensity of the sector. As a result, the primary sector in many Indian states is experiencing severe labour shortage and escalation in farm wages which are adversely impacting the profitability of the farmer. Especially in Karnataka State agriculture labour availability in 2004-05 was 17.60 million and in 2011-12 it was 12.91 million respectively and the reduction rate of labour was -4.69 million during the same period from 2004- 05 to 2011-12 . (NSSO Reports 61st and 68th Rounds, Census of India, KPMG Analysis) The analysis clearly highlights that between 2004-05 and 2011-12, a large percentage of the agricultural workforce across states moved away from agriculture.

In the study area (Ramanagara district) the agriculture is the major occupation of majority of the population with a work participation of 49.1 per cent holds the 7th position in the State of Karnataka. The work participation rates for Male were 62.8 and Female population was 35.0 respectively in the district. Among the total workers in the district 86.3 percent are Main workers and 13.7 percent are Marginal workers and of the total work force of the district, 58.5 percent are engaged in Agricultural sector i.e. Cultivators (39.2 percent) and Agricultural Labourers (19.3 percent). Cultivators constitute 39.2 percent of the total workers in the district and the district holds 3rd rank in the State. In the district 38.2 percent are other workers and 3.3 percent of the total workers are engaged in Household Industry. About 50.9 percent of the total population in the district is non-workers.

OBJECTIVES OF THE STUDY:

The study is mainly based on the following objectives

1. To study the current scenario of agriculture and its workforce in India and Karnataka.
2. To examine the major challenges facing by the agriculture labour and farmers in the usage of new technology in the study area.
3. To suggest suitable measures in improving the socio-economic conditions of the agriculture labour and farmers through the usage of new technology in farming.

METHODOLOGY:

The primary data has been collected from field survey in Ramanagara district of Karnataka state. The sources of secondary data for the study are; existing literature and data in websites, various publications of Central and State, especially State Level agriculture farmers Committee, NSSO reports and other sources like books, magazines, newspapers, reports, articles, seminar papers published by universities and research institutions. Apart from the published material, study is also based on discussions with some resourceful people in study area.

DATA ANALYSIS AND INTERPRETATION:

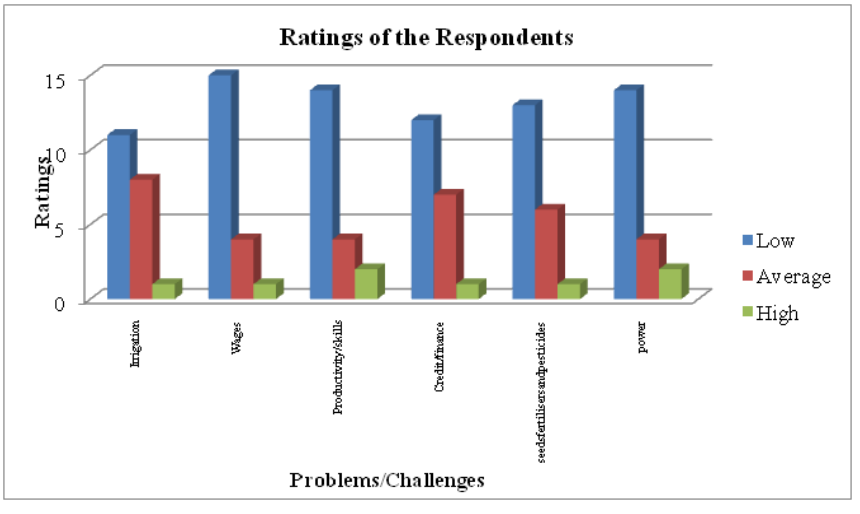
The following data which is obtained from the primary sources through a structured questionnaire and interview conducted for the respondents in the study area in order to examine the challenges/problems facing by the agriculture labour and farmers in regarding of the implementation of new technology and modern methodology in the farming especially in the study area.

Table-1: Problems/challenges of the agriculture labour

Problems	Ratings							
	Low		Average		High		Total	
	No, of respondents	Percentage	No, of respondents	Percentage	No, of respondents	Percentage	No, of respondents	Percentage
Irrigation	11	55	8	40	1	5	20	100
Wages	15	75	4	20	1	5	20	100
Productivity /skills	14	70	4	20	2	10	20	100
Credit/finance	12	60	7	35	1	5	20	100
Seeds, fertilizers, and pesticides.	13	65	6	30	1	5	20	100
power	14	70	4	20	2	10	20	100
Total	79	65.83333	33	27.5	8	6.666667	120	100

Source: primary data.

Graph-1: Problems/challenges of the agriculture labour



Source: Primary data of the study area.

The above table-1 and graph-1 clearly shows that the facts about the various problems and challenges facing by the agriculture labour in the study area related to availability of irrigation facilities, wages, credit/finance, seeds, fertilizers, pesticides, power and productivity/skills in the study area. Nearly 55 percent of the respondents rated that the availability of irrigation facility was very low, 40 percent were rated average and only 5 percent were rated marginally high availability of irrigation facilities respectively. Similarly, 75 percent of

the respondents ranked that the availability of wages was very low, 20 percent were ranked average and only 5 percent were ranked high availability of wages respectively in the study area. Nearly 70 percent of the respondents ranked that the availability of irrigation facility was very low, 20 percent were ranked average and only 10 percent were ranked marginally high availability of irrigation facilities. Among 60 percent of the respondents rated the productivity/skill level was very low, 35 percent were rated average and only 5 percent were rated marginally high respectively. Nearly 65 percent of the respondents rated that the availability of credit/finance facility was very low, 30 percent were rated average and only 5 percent were rated high availability of credit/finance facilities and about 70 percent of the respondents rated the supply of power was very low, 20 percent were rated average and only 10 percent were rated as high supply of power respectively in the study area. Moreover, nearly 66 percent of the respondents ranked very low, 27.5 percent were ranked average and only 6.6 percent were ranked high in the above said facilities in relates to the agriculture in the study area.

Table-1.1: Education level of the respondents in the study area.

Statistics

Education Level

N	Valid	20
	Missing	100
Mean		2.40
Std. Error of Mean		.222
Median		2.00
Std. Deviation		.995
Minimum		1
Maximum		4

Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Illiterate	4	3.3	20.0	20.0
	Primary	7	5.8	35.0	55.0
	Higher	6	5.0	30.0	85.0
	Other	3	2.5	15.0	100.0
	Total	20	16.7	100.0	
Missing	System	100	83.3		
Total		120	100.0		

Source: primary data.

The table 1.1 reveals the facts about education level of the agriculture labour in the study area. The total percentage of the literacy rate among the respondents was 16.7 percent, in that illiterates were 3.3 percent, primary education holders was 5.8,higher and others was just 5.0 and 2.5 percent respectively.

Table- 1.2: Irrigation facilities availability in the study area.

Statistics

Irrigation

N	Valid	20
	Missing	100
Mean		1.60
Std. Error of Mean		.134
Median		2.00
Std. Deviation		.598
Minimum		1
Maximum		3

Irrigation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	9	7.5	45.0	45.0
	Average	10	8.3	50.0	95.0
	High	1	.8	5.0	100.0
	Total	20	16.7	100.0	
Missing	System	100	83.3		
Total		120	100.0		

Source: primary data.

The table 1.2 reveals the facts about The total percentage of the irrigation facilities available in the study area among the respondents rated was 16.7 percent, in that low availability of irrigation facilities was 7.5 percent, 8.3 percentage were rated as an average and just 8.0 percent were rated as high rate of availability of irrigation facilities in the study area respectively.

Table-1.3: Land holdings of farmers.

Statistics

Land Holdings

N	Valid	20
	Missing	100
Mean		2.10
Std. Error of Mean		.204
Median		2.00
Std. Deviation		.912
Minimum		1
Maximum		4

Source: primary data

Land Holdings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No land	5	4.2	25.0	25.0
	below 1 acre	10	8.3	50.0	75.0
	between 1 to 2 acre	3	2.5	15.0	90.0
	above 2 acres	2	1.7	10.0	100.0
	Total	20	16.7	100.0	
Missing	System	100	83.3		
Total		120	100.0		

Source: primary data.

The table 1.3 reveals the facts about the total percentage of the available land holdings among the respondents were 16.7 percent, in that no land was 5 percent, below 1 acre was 10 percent, 1 acre to 2 acre was 3.0 and above 2 acres was just 2 percent respectively in the study area.

FINDINGS:

The major findings can be briefly summarized as under:-

- Nearly 55 percent of the respondents rated that the availability of irrigation facility was very low, 40 percent were rated average and only 5 percent were rated marginally high availability of irrigation facilities respectively.
- Similarly, 75 percent of the respondents rated that the availability of wages was very low, 20 percent were rated average and only 5 percent were rated high availability of wages respectively in the study area.

- The 70 percent of the respondents rated that the availability of irrigation facility was very low, 20 percent were ranked average and only 10 percent were ranked marginally high availability of irrigation facilities.
- Among 60 percent of the respondents rated the productivity/skill level was very low, 35 percent were rated average and only 5 percent were rated marginally high respectively.
- The 65 percent of the respondents rated that the availability of credit/finance facility was very low, 30 percent were rated average and only 5 percent were rated high availability of credit/finance facilities.
- Almost 70 percent of the respondents rated the supply of power was very low, 20 percent were rated average and only 10 percent were rated as high supply of power respectively in the study area.
- About 66 percent of the respondents rated very low, 27.5 percent were rated average and only 6.6 percent were rated high in the above said facilities in relates to the agriculture in the study area.
- The total percentage of the literacy rate among the respondents was 16.7 percent, in that illiterates were 3.3 percent, primary education holders was 5.8,higher and others was just 5.0 and 2.5 percent.
- The total percentage of the available land holdings among the respondents were 16.7 percent, in that no land availability was 5 percent, below 1 acre was 10 percent, 1 acre to 2 acre was 3.0 percent and above 2 acres was just 2 percent respectively in the study area.

CONCLUSION:

The study has been concluded that the condition of agricultural workers is not so good in the study area, their living standard and income is very low. For improve the conditions government should take proper steps for various aspect for agricultural labors, like wage reforms, new methods for agriculture, hours of works, improve the living conditions etc. This paper examined the underlying determinants of agricultural technology adoption by rural households in Ramanagara district, Karnataka. Access to credit, higher levels of education, access to extension advisory services, and members of agricultural associations are more likely to adopt new agricultural technologies. Technological change has been the major driving force for increasing agricultural productivity and promoting agriculture. The choice of technologies and their adoption was to increase production, productivity and farm incomes. Over many decades, policies for agriculture, trade, research and development, education, training and advice have been strong influences on the choice of technology, the level of agricultural production and farm practices. Finally, the study concluded that agriculture labour and farmers with easy access to land are less likely to adopt new technologies, particularly purchased inputs, points to the need for selectivity and a firm economic basis for the choice of technology. Land saving technologies, such as fertilizers and pesticides, are less likely to be adopted where land is abundant. However, the governments need to take some steps further to promote the implementation of new technology with proper training programmes for agriculture labour and its utilisation in the field of agriculture.

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