



IMPACT OF MODERNIZATION ON AGRICULTURAL LABOURERS: A SOCIOLOGICAL STUDY IN RAICHUR DISTRICT

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ABSTRACT:

After globalization, there is increase in technological developments in all the sectors including agriculture. These developments have aimed to get increased outputs, lower manual works, get economical costs of production, etc. Many of the people think that due to application of modern technology, there is lesser unskilled workload and there is fear of loss of works for manual agricultural labourers. Hence, present study is made to know the impact of modern technological applications on agricultural labourers. As the present study is empirical, the primary data is collected from 400 agricultural labourers working in Raichur district of Karnataka. Interview schedule is used to collect the primary data. It is found from the study that, there is no change in agricultural output and modernization is not economical. To conclude, though there is ease of agricultural operations after application of modern technology and decrease in workload, it is not economical for small farmers to go for mechanization and modern technological applications. Hence, there is no decrease in employment of manual labour in agriculture.

KEY WORDS: - Modernization , Agricultural Labourers , Sociological Study.

INTRODUCTION

Due to continuous improvement in technology, agricultural processes are also mechanized and modernized. Agricultural modernization is the world advanced level of modern agriculture and the behaviour and process of catching up with, reaching and maintaining the world advanced level of agriculture. It comprises the transition from traditional agriculture (self-sufficient agriculture) to preliminary modern agriculture (marketized agriculture), the transition from preliminary modern agriculture to advanced modern agriculture (knowledge agriculture), the continuous increase of agricultural efficiency and farmer income, the continuous improvement of farmer wellbeing, the assurance of agricultural product supply-demand balance and national food security, and the change of national agricultural status and international agricultural system.

The agriculture is modernized and increased productivity, it is due to use of modern machineries. The use of machineries in agriculture reduced manual employment in agriculture and those agricultural occupation based population has become unemployed or under-employed. Even many of the agricultural dependent families left their occupation and migrated to urban areas in search of employment. Those who are involved in agriculture in rural areas are depending on small land holdings, lower output, higher costs and consequent lower income and also poverty.

Labour is the most important input in increasing production in traditional agriculture. Majority of the agricultural labourers especially those in small isolated villages with around 500 population, may not have even heard of modernization of agriculture. Majority of them are generally conservative, tradition bound, totalistic and resigned to the insufferable lot to which according to them fate has condemned them. There is hardly any motivation for change or improvement (Padhi, 2007).

In India according to census 2011 among male workers, other workers constituted a major proportion i.e. 47.20 per cent of total workers. Similarly among female workers, agricultural labourers constituted a major fraction i.e. 55.21 per cent of total workers (Das, 2015). There is considerable impact of modernization and mechanization of agricultural activities as these workers who are depending on agriculture are feared of facing unemployment. Still, the nature of agriculture in India revealed that majority of the agricultural landholdings are small, marginal and scattered and hence, mechanization of agriculture is not suitable or not useful for these landholdings. Hence, the present study is made in Raichur district to study the impact of modern technological applications or mechanization of agricultural operations and activities on agricultural labourers and agriculture in terms of change in agricultural yields, production, productivity, economy, workload, technical expertise, etc.

OBJECTIVES OF THE STUDY:

The present study is made:

1. To study the socio-economic background of agricultural labourers in Raichur district;
2. To find out the awareness of agricultural labourers on modern technological applications or mechanization of agricultural operations;
3. To look into the changes in agricultural production and productivity due to impact of modern technological applications; and
4. To know about the changes in requirements of labourers due to impact of mechanization or modernization of agricultural processes.

UNIVERSE AND METHODOLOGY:

The study has been conducted in Raichur district. The population of district as per the Census of India, 2011 is 19,24,773 and it is spread across five talukas namely, Deodurga, Raichur, Sindhanur, Manvi and Lingsugur. Almost 50.34% of this population is working in agriculture directly or indirectly. The main crop of the district is paddy. The study is begun with collection of secondary literature on different keywords. The theoretical background is derived from published literature. The present study is mainly depending on the primary data collected from agricultural labourers working in Raichur district. To collect the primary data, interview schedule was used. It is found that, there are small farmers who are also working as labourers in others' fields and also landless labourers. It is not possible for the authors to survey all these labourers in the district, a sample survey of 200 small farmers who are also working as labourers in others' fields and 200 landless labourers has been made. The collected primary data is coded, tabulated, analyzed and interpreted as under.

RESULTS AND DISCUSSION:

The age is an important factor, which impact the work of these labourers. If labourers are young, then they can go for work in others' lands and performs all the agricultural activities and if the labourers are old in terms of age or females, they can perform selected agricultural operations. The collected primary data on age of the agricultural labourers is shown as under.

Table No. 1. Age of the Agricultural Labourers

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Up to 20 Years	23	11.5	28	14.0	51	12.75
21-40 Years	86	43.0	72	36.0	158	39.50
41-60 Years	75	37.5	93	46.5	168	42.00
More than 60 Years	16	8.0	07	3.5	23	5.75
Total	200	100	200	100	400	100

Age group of all the labourers surveyed revealed that, 168 (39.50%) are between 41-60 years followed by, 158 (39.50%) are between 21 to 40 years, 51 (12.75%) are of up to 20 years and the remaining 23 (5.75%) are of more than 60 years respectively. It shows that, majority of the labourers are of middle aged groups.

There is increasing participation of females in agriculture and the researcher has also surveyed female agricultural labourers. The gender-wise distribution of agricultural labourers is as under.

Table No. 2. Gender-wise Distribution of Agricultural Labourers

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Male	132	66.0	88	44.0	220	55.0
Female	68	34.0	112	56.0	180	45.0
Total	200	100	200	100	400	100

Above table made it clear that, 220 (55.0%) of the total labourers surveyed are males, whereas only 180 (45.0%) are females. Though there is increasing participation of females in agriculture, due to social restrictions to women, they are not responded to the survey and hence, more males are surveyed.

Caste plays significant role in determining social background of the agricultural labourers. The primary data collected on the castes of the agricultural labourers is shown as under.

Table No. 3. Caste of Agricultural Labourers

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Scheduled Caste	35	17.5	51	25.5	86	21.50
Scheduled Tribe	19	9.5	23	11.5	42	10.50
Other Backward Class/ Minority	92	46.0	111	55.5	203	50.75
Others	54	27.0	15	7.5	69	17.25
Total	200	100	200	100	400	100

Among all the agricultural labourers surveyed, 86 (21.50%) belongs to scheduled castes, 42 (10.50%) belongs to scheduled tribes, 203 (50.75%) belongs to other backward classes including minorities and 69 (17.25%) are from other or forward castes.

It is noted that profit or income from agriculture is lowest and as such, the daily wages paid in agriculture is also lowest compared to other business or industries. The collected primary data on daily wages paid to agricultural labourers is as under.

Table No. 4. Daily Wages

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Less than Rs. 150	--	--	--	--	--	--
Rs. 151 to Rs. 250	26	13.0	31	15.5	57	14.25
Rs. 250 to Rs. 400	79	39.5	116	58.0	195	48.75
More than Rs. 400	53	26.5	25	12.5	78	19.50
Depending on Seasons/ Nature of Work	42	21.0	28	14.0	70	17.50
Total	200	100	200	100	400	100

As stated by all the agricultural labourers surveyed, 57 (14.25%) are getting daily wages between Rs. 151 to Rs. 250, 195 (48.75%) are getting daily wages between Rs. 250 to Rs. 400, 78 (19.50%) are getting daily wages of more than Rs. 400 and 70 (17.50%) are getting wages depending on the seasons and nature of work in agriculture.

As discussed above, the income from agriculture is lowest and as such, majority of the agricultural labourers are working in other occupations, especially during off-seasons. Still, it is observed that they are poor. Hence, the information was collected from these labourers on the annual income of their families from all the sources and presented in the following table.

Table No. 5. Annual Income of Family from All Sources

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Less than Rs. 36000	--	--	40	20.0	40	10.00
Rs. 36001 to Rs. 48000	38	19.0	56	28.0	94	23.50
Rs. 48001 to Rs. 96000	52	26.0	46	23.0	98	24.50
Rs. 96001 to Rs. 120000	67	33.5	30	15.0	97	24.25
More than Rs. 1.2 lakhs	43	21.5	28	14.0	71	17.75
Total	200	100	200	100	400	100

Of all the respondents surveyed, 40 (10.00%) have agreed that their annual family income is less than Rs. 36000, 94 (23.50%) have stated that their family annual income from all sources is between Rs. 36001 to Rs. 48000, 98 (24.50%) have expressed that their annual family income is between Rs. 48001 to Rs. 96000, 97 (24.25%) have stated that their family income is between Rs. 96001 to Rs. 1.2 lakh per year and the remaining only 71 (17.75%) have remarked that their annual family income is more than Rs. 1.2 lakh in a year.

As the prime focus of the present study is impact of modernization on agriculture as observed by agricultural labourers, it is essential to know the awareness of the agricultural labourers on the modern technological applications on agriculture and collected primary data is as under.

Table No. 6. Awareness on Modern Technological Applications on Agriculture

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Yes	72	36.0	56	28.0	128	32.00
No	18	9.0	25	12.5	43	10.75
Partly Aware	110	55.0	119	59.5	229	57.25
Total	200	100	200	100	400	100

As stated by all the agricultural labourers, 128 (32.00%) are fully aware about modernization of agricultural operations, whereas 43 (10.75%) are unaware about such modernization and 229 (57.25%) are partly aware about the modernization of agricultural operations and activities.

Majority of the farmers and agricultural labourers are illiterates or low-educated. Hence, it is difficult to get technical know-how about the modern technological applications. In this regard, it was asked to the agricultural labourers that whether the farmers are aware about modern technological applications and collected primary data is as under.

Table No. 7. Awareness of Farmers on Technological Applications to Agriculture

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Higher	37	18.5	25	12.5	62	15.50
Medium	79	39.5	65	32.5	144	36.00
Lower	84	42.0	110	55.0	194	48.50
Total	200	100	200	100	400	100

Among all the agricultural labourers surveyed, 62 (15.50%) have agreed that farmers have stated that farmers have higher knowledge on modern technological applications, 144 (36.00%) have felt that farmers have medium level of knowledge and the remaining 194 (48.5%) have agreed that farmers have lower level of knowledge on modern technological applications.

There are certain requirements that are needed to be fulfilled for the successful applications of modern technology to agriculture. For instance, there is need of more financial investment, technical expertise, technical applications only to selected crops (specialization), etc. It was asked to the agricultural labourers on the expectations of farmers to adopt and apply modern technology and collected primary data is presented in the following table.

Table No. 8. Expectations of Farmers to Apply Modern Technology

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%

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Experts	48	24.0	64	32.0	112	28.00
Spend More	111	55.5	93	46.5	204	51.00
Specialized (Grow Selected Crops)	35	17.5	43	21.5	78	19.50
Any Other	06	3.0	--	--	06	1.50
Total	200	100	200	100	400	100

On the expectations of farmers and agricultural labourers from mechanization of agricultural operations, 112 (28.00%) have agreed that there is need for more technical expertise for farmers to apply modern technology, 204 (51.00%) have felt that there is need for more investment to apply modern technology to agriculture, 78 (19.50%) have opined that modern technology may be applied to grow selected crops and 06 (1.50%) have given other opinions on expectations of modern technology to agriculture.

As the present study is made to study the impact of mechanization or modernization on agricultural labourers, one of the most advantage of mechanization and modernization of agriculture is higher yields per acre. It is essential to know whether the agricultural output is increased due to modernization and collected primary data in this regard is presented in the following table.

Table No. 9. Impact of Modernization on Agricultural Yields Compared to 10 Years Back

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Higher Output	54	27.0	66	33.0	120	30.00
No Change in Output	114	57.0	105	52.5	219	54.75
Lower Output	32	16.0	29	14.5	61	15.25
Total	200	100	200	100	400	100

Of all the agricultural labourers surveyed, 120 (30.00%) have agreed that there is higher output compared to 10 years back, whereas 219 (54.75%) have felt that there is no change in output and 61 (15.25%) have opined that there is lower output though there is modernization of agriculture.

In terms of economical effects, the technological applications have made the agricultural work costlier or a few of the agricultural processes cheaper. Hence, the information was collected from the agricultural labourers and presented in the following table.

Table No. 10. Economical Effects of Modern Technological Applications in Agriculture

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Costlier	82	41.0	69	34.5	151	37.75
No Change	57	28.5	74	37.0	131	32.75
Economical/ Cheaper	61	30.5	57	28.5	118	29.50
Total	200	100	200	100	400	100

On the economical effects of modern applications in agriculture as stated by all the agricultural labourers surveyed, 151 (37.75%) have agreed that the modern technological applications are costlier, 131 (32.75%) have felt that there is no change in economy or costs and the remaining only 118 (29.50%) have

agreed that there is cheaper costs or economical costs of using modern technological applications to agriculture.

Modern technological applications are needed expertise; especially technical knowledge is essentially needed for farmers. Hence, it was asked to the agricultural labourers that whether the farmers are needed training in applications of modern technology to agriculture and collected information is tabulated as under.

Table No. 11. Training Needed for Modern Technological Applications to Agriculture

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Yes	176	88.0	163	81.5	339	84.75
No	24	12.0	37	18.5	61	15.25
Total	200	100	200	100	400	100

As mentioned by 339 (84.75%) of all the agricultural labourers, training is needed to apply modern technology to agriculture, whereas 61 (15.25%) have disagreed to the same.

Any type of modernization to any sector is aimed to improve work style and to get increased productivity and production. In this regard, modern technological applications to agriculture are also aimed to get more productivity and agricultural output. In this regard, the information was collected from the agricultural labourers on the advantages and merits that are achieved in terms of agricultural output from applications of modern technological applications and presented in the following table.

Table No. 12. Advantages/ Merits of Modern Technological Applications to Agriculture in Terms of Output

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Increase in Output	83	41.5	67	33.5	150	37.50
Increase in Productivity	35	17.5	40	20.0	75	18.75
No Change	82	41.0	93	46.5	175	43.75
Decrease in Productivity & Output	--	--	--	--	--	--
Total	200	100	200	100	400	100

It is observed from the above table that, of all the agricultural labourers, 150 (37.50%) have agreed that there is increase in output due to applications of modern technology to agriculture, 75 (18.75%) have felt that there is increase in productivity in agriculture and 175 (43.75%) have agreed that there is no change in agricultural productivity or production though the modern technology is applied to agriculture.

Of course, the productivity or production in agriculture may no change after applications of modern technology to agriculture. Still, many of the agricultural processes may be made easier by controlling labour fatigue or limiting workload of labourers. The labourer's workload after modern technological applications to agriculture is shown as under.

Table No. 13. Impact of Modern Technological Applications to Agriculture in terms of Workload

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
Excess Stress & Fatigue	04	2.0	11	5.5	15	3.75
Difficulty to Operate	38	19.0	53	26.5	91	22.75
No Change	44	22.0	56	28.0	100	25.00
Ease of Agricultural Processes	114	57.0	80	40.0	194	48.50
Total	200	100	200	100	400	100

The opinions of all the agricultural labourers on impact of modern technological applications to agriculture in terms of workload shows that, 15 (3.75%) of the labourers have agreed that there is excess stress and fatigue after application of modern technology to agriculture, 91 (22.75%) have remarked that there is difficult to operate modern technological applications to agriculture, 100 (25.00%) have felt no change in application of modern technology to agriculture and 194 (48.50%) have agreed that there is ease of agricultural processes after application of modern technology to agriculture.

Many of the farmers and agricultural labourers have felt that, compared to earlier, the application of modern technology needed more workers including the technical experts and operators of modern technology. The impact of modern technological applications to agriculture on the requirements of workers or labourers is disclosed as under.

Table No. 14. Impact of Modern Technological Applications to Agriculture on Requirements of Labourers/ Workers

Particulars	Small Farmers with Outside Labour		Landless Labour		Total	
	Frequency	%	Frequency	%	Frequency	%
More Workers Required	13	6.5	29	14.5	42	10.50
Need for Technical Experts in addition to Workers	54	27.0	41	20.5	95	23.75
No Change	39	19.5	54	27.0	93	23.25
Less Workers Required	94	47.0	76	38.0	170	42.50
Total	200	100	200	100	400	100

Above table made it clear that, 42 (10.50%) of all the agricultural labourers have mentioned that more workers are required though there is applications in agriculture, 95 (23.75%) have remarked that there is need for technical experts in addition to workers, 93 (23.25%) have stated that there are no changes in the requirements of agricultural workers after modernization and 170 (42.50%) of all the agricultural labourers

have opined that less numbers of workers are required after modern technological applications are made to agriculture.

SUGGESTIONS:

Following suggestions are made from the present study:

1. It is not economical for the small farmers to go for mechanization or application of modern technology to the agricultural activities and if at all these farmers wish to go for mechanization, then cooperative farming by consolidation of small agricultural lands of few of the farmers is suggested.
2. Only a few of the modern technological applications such as HYV seeds, chemical fertilizers, tractors, etc are more useful for small and medium farmers to get higher agriculture yields. Hence, they may adopt only these technological applications.
3. It is suggested to the Government and banks to provide financial assistance to farmers to go for mechanization of agricultural activities.
4. It is suggested to the Universities of Agricultural Sciences, Krishi Vigyan Kendras, mass media, etc to increase awareness of farmers in application of modern technological applications to agriculture.

OBSERVATIONS AND CONCLUSION:

As discussed above, modern technological applications in terms of mechanization is essential for overall development of agriculture. But, it is noted that there is requirement of huge investment and not suggested for small farmers. It is observed that, many of the agricultural labourers are working in large agricultural lands owned by landlords. It is suggested to these labourers to learn the skills to modernize and mechanize agricultural operations. In this context, the mechanization is useful to reduce work overload, fatigue and stress among the agricultural labourers. Of course, there is no decrease in demand for labourers in agriculture, but increasing modern technology based skills are essential to learn new technological applications to survive and earn their livelihood.

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