Livelihood Security of Agricultural Labourers in Andhra Pradesh, India

I. Venkata Reddy [a++*], T. Gopi Krishna [b#], P. V. Sathya Gopal [c†], Y. Radha [d‡] and V. Srinivasa Rao [e†]

[a] *Department of Agricultural Extension, Agricultural College, Bapatla, India.*
[b] *O/o Director of Extension, India.*
[c] *Department of Agri-Business Management, S.V. Agricultural College, Tirupati, India.*
[d] *A. N. G. R. Agricultural University, Lam, Guntur, India.*
[e] *Department of Statistics & Computer Applications, Agricultural College, Bapatla - 522 101, India.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

The present study was conducted in Andhra Pradesh state during the year 2018-20 with an objective to study the livelihood security of agricultural labourers in Andhra Pradesh. An Ex-post facto research design followed for the study. Three districts from the three regions of Andhra Pradesh, Srikakulam from North Coastal, Guntur from South Coastal and Kurnool from Rayalaseema region of the Andhra Pradesh state were purposively selected based on the highest number of agricultural labourers. Two mandals from each region were selected by using simple random sampling. From each of the selected mandal, four villages selected by using simple

_____

[++] *Subject Matter Specialist;*
[#] *Principal Scientist (Extension);*
[†] *Professor & University Head;*
[‡] *Director of Planning & Monitoring Cell;*
Corresponding author: E-mail: ivrextedu18@gmail.com;

random sampling procedure coming to a total of 24 villages. From each of the selected village, ten respondents were selected by using simple random sampling procedure thus coming at total of 240 respondents. The results indicated that majority of agricultural labourers in Andhra Pradesh had medium asset security (52.50%), food and nutritional security (41.25%), educational security (62.92%), habitat security (48.34%), social security (63.75%), clothing security (67.50%), (71.66%) health security (67.50%), transport security (60.00%) and information security (64.16%).The Overall Livelihood Security Index of agricultural labourers in Andhra Pradesh was medium (62.92).

1. INTRODUCTION

Around 51.00 per cent of India's geographical area is already under cultivation as compared to 11.00 per cent of the world average. The prevailing cropping intensity of 136.00 per cent was due to the recorded rise to the extent of 25.00 per cent since independence. Further, 65.00 per cent of the total net sown area found to be under rainfed Dry lands (https://icar.org.in).

Agricultural labourers comes under most exploited unorganized category of Indian rural population. Their level of income, wage rates and standard of living is very low [1,2]. The total numbers of landless labourers were 7.5 million during Census of 1881 and their number amplified to 21 million in 1921 which constituted 17.40 per cent of the overall working population of the country [3,2]. The number of agricultural labourers increased to 27.50 million in 1951, 31.50 million in 1961 and 47.50 million in 1971. In 1981, the total number of agricultural workers increased to 55.40 million which was only 22.40 per cent of the total working population. Total number of agricultural labourers increased to 74.60 million during 1991 census which constituted nearly 23.50 per cent of the total working population of the country. Moreover, the percentage of landless labourers as a proportion of rural labour force has increased from 18 per cent in 1964-65 to 25.00 per cent in 1981. About 61.00 per cent of the rural households either have no landholdings or uneconomic landholdings of less than 1 hectare. Further, 61.00 per cent of households in India own just 8.00 per cent of total cultivable area of the country. The increase in the number of agricultural labour has resulted from increase in the size of population, decline of cottage and village industries, eviction of small farmers, uneconomic holdings, growing indebtedness and growth of capitalist farming [4,5]. The percentage of agricultural labour households to overall rural households reduced from 30.40 per cent to 24. 50 per cent. The number of agricultural labour households with land declined from 15.20 % to 10.20 % and that of households deprived of land from 15.20 % to 14.30% [6].

The first Agricultural Labour Enquiry Committee of 1950-51 regarded those workers as agricultural workers who normally work for 50 per cent or more days in Agriculture Sector for their wages. The second Agricultural Labour Enquiry Committee, 1956-57 accepted a broad view and considered all those workers as agricultural labourers who were badly engaged in agriculture and allied activities like animal husbandry, dairy, piggery, poultry farming etc.

2. MATERIALS AND METHODS

In the present study, *Ex-post facto* research design was followed. An *Ex-post-facto* research design is a systematic empirical inquiry in which the scientist does not have any direct control of independent variables because their manifestations have already occurred or because they inherently cannot be manipulated [7]. The present study was conducted in three purposively selected districts of Srikakulam, Guntur and Kurnool districts in Andhra Pradesh state based on the highest number of agricultural labourers. Two mandals were selected from each district by using simple random sampling. Four villages were selected from each of the selected mandal by using simple random sampling procedure, thus making a total of 24 villages. From each of the selected village, ten respondents will be selected by using simple random sampling procedure, thus coming to total of 240 respondents. The data was collected by personal interview method through a structured interview schedule and analyzed by employing suitable statistical methods. In total, nine components namely asset, food and nutritional, education, habitat, social, clothing, health, transport and information securities to develop

composite livelihood security index were considered to measure the overall livelihood security of agricultural labourers. Each component of livelihood security was categorizes based on Mean and Standard Deviation.

Measurement of overall livelihood security of agricultural labourers: An index was constructed to measure livelihood security of agricultural labourers based on extensive review of literature and in consultation with the extension experts. The multi dimensional aspect of livelihood security comprises nine components viz., asset security, food and nutritional security, educational security, habitat security, social security, clothing security, health security, transport security, information security. The procedure for measurement of each component of livelihood security, operational definition, scoring pattern, maximum and minimum score for individual item worked out.

After arriving at index scores of all the nine components of livelihood security, the overall index score of livelihood security was calculated by using the formula:

$$\textbf{LSIS}_i = \frac{\sum_{j=1}^{9} X_{ij}}{MAX\left[\sum_{j=1}^{9} X_j\right]} \quad i=1.2.3\ldots\ldots n \text{ no. of samples}$$

Where X_{ij} = actual score of ith respondent to j^{th} indicator.

Max X_j = Maximum score permissible to J^{th} indicator.

The simple average taken by the author's results in taking average of average which is not correct.

3. RESULTS AND DISCUSSION

Overall Livelihood Security Index of Agricultural Labourers presented in Table 2 and Fig. 1indicated that the majority (62.92%) of the agricultural labourers in Andhra Pradesh had medium livelihood security index followed by those with low livelihood security index (19.16%) and high livelihood security index (17.92%). Similar findings were reported by Ramya *et al.* [8] and jadhav et al. [9].

1. Asset Security

The results shown the Table 3 and Fig. 2 revealed that majority (52.50%) of the agricultural labourers in Andhra Pradesh had medium level of asset security followed by those with above low security (26.66%), high asset security (20.84%).

Assets are the status of economic growth and development. Such assets help in meeting the home needs. Majority of agricultural labourers had medium to low level of asset security. This might be due to their low standard of living.
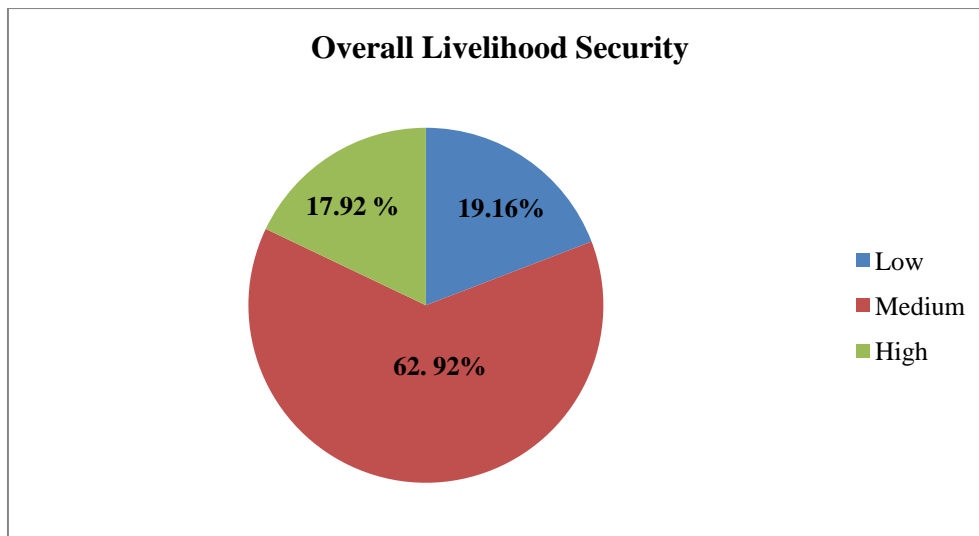

Fig. 1. Distribution of agricultural labourers according overall livelihood securityindex of agricultural labourers

Table 1. Operational definitions and scoring pattern of different components of livelihood security

S. No	Components of livelihood security	Operational Definition	Maximum and Minimum score for individual item	Total Score of all Items of Individual Item	Formula
1.	**Asset Security**	Asset security of agricultural labourers was operationalized as the degree of possession of different household assets to meet their domestic family needs.	Asset Security consists of 12 items. • Maximum score for each item = 5 • Minimum score for each item = 0	60	**Asset Security Index =** obtained score/Maximum Possible Score score*100
2.	**Food and Nutritional Security**	Food and Nutritional Security of agricultural labourers was operationalized as the degree of consumption of different food items to meet the per day per capita requirement as prescribed by NIN	Food and Nutritional Security component consists of six items	100	**Food and Nutritional Security Index** =consumption/Requirement*100
3.	**Educational Security**	Educational Security of agricultural labourers was operationalized as the degree of existing educational status as well as the utilization of educational facilities by the family members.	Educational Security component consists of A, B & C (3) items • Maximum score for 8 item • Minimum score for each item 0	50	**Education Security Index** =obtained score/Maximum obtainable score*100
4.	**Habitat Security**	Habitat security of agricultural labourers was operationalized as the degree of possession and utilization of different facilities required for better home environment (housing with basic amenities).	This component consists of 15 items • Maximum score for item 1 • Minimum score for each item 0	49	**Habitat Security Index** =Obtained Score/Maximum Obtainable Score*100
5.	**Social Security**	Social security of agricultural labourers was operationalized as the degree of social contact,	Social Security component consists 14 social organizations were taken to measure the social security	70	**Social Security Index**=Obtained Score/Maximum Obtainable Score*100

S. No	Components of livelihood security	Operational Definition	Maximum and Minimum score for individual item	Total Score of all Items of Individual Item	Formula
		participation and representation in different institutions and developmental programs.	• Maximum score for each item is 6 • Minimum score for each item is 1.		
6.	**Clothing Security**	Health security of agricultural labourer was operationalized as Access and availability to number of pairs of clothing.	Clothing Security component consists of six items • Maximum score for each item is 6 • Minimum score for each item is 1.	42	**Clothing Security Index=** Obtained Score/Maximum Obtainable Score*100
7.	**Health Security**	Health security of agricultural labourer was operationalized as the degree of incidence of infant mortality, diseases and utilization of health services by the family members.	This component consists of occurance of common, epidemic, chronic diseases and access to health service facilities to the agricultural labourers (a total 0f 4 components) • Maximum score for each item is 5 • Minimum score for each item is 0.	23	**Health Security Index=**Obtained Score/Maximum Obtainable Score*100
8.	**Transportation Security**	Transportation Security of agricultural labourers was operationalized as the availability of various modes of transport and utilization of transport for mobility.	This component consists of eight items • Maximum score for each item is 1	8	**Transport Security Index=** Obtained Score/Maximum Obtainable Score*100
9.	**Information Security**	Information security of agricultural labourers was operationalized as the availability of various means of information and degree of utilization of different information sources.	Information Security component consists of ten items • Maximum score for each item is 1 • Minimum score for each item is 0.	66	**Information Security Index** =Obtained Score/Maximum Obtainable Score*100

Table 2. Overall Livelihood Security Index of agricultural labourers

S. No.	Overall Livelihood Security	Frequency	Percentage (%)
1.	Low (<43.15)	46	19.16
2.	Medium (43.15- 74.05)	151	62.92
3.	High (>74.05)	43	17.92
Total:		240	100.00
Mean		58.60	
SD		15.45	

Table 3. Distribution of agricultural labourers according to their asset security

S. No.	Asset Security	Agricultural Labourers	
		Frequency	Percentage (%)
1	Low (**<59.00**)	64	26.66
2	Medium (**59.00 to 83.00**)	126	52.50
3	High (**>83.00**)	50	20.84
	Total :	240	100.00
Mean= 71.59		**SD=12.02**	

2. Food and Nutritional Security

It is evident from Table 4 and Fig. 3 that the more than two-fifths (41.25%) of the agricultural labourers in Andhra Pradesh had medium food and nutritional security followed by the remaining low(35.00%)and high food and nutritional security (23.75%).Similar findings were reported by Jadhav *et al.* [9].

Majority of the agricultural labourers had lack of knowledge about nutritious food as well as recommended food requirements. Very few educated and well to do agricultural labourers under medium to low level of food and nutritional security.

3. Educational Security

From the Table 5 and Fig. 4, it could be concluded that less than half (48.34%) of the agricultural labourers in Andhra Pradesh had medium level of educational security followed by those had low (38.33%) and high (13.33%) educational security. These findings were in conformity with the findings of Jadhav *et al.* [9].

Currently, education gaining importance and also provide a better employment than agriculture labour. Now days, everyone had increased awareness about education and given top priority for educating their children.

Table 4. Distribution of agricultural labourers according to their food and nutritional security

S. No.	Food And Nutritional Security	Agricultural Labourers	
		Frequency	Percentage (%)
1	Low (<33.33)	84	35.00
2	Medium (33.33to 66.66)	99	41.25
3	High (>66.66)	57	23.75
Total :		240	100.00

Table 5. Distribution of agricultural labourers according to their educational security

S. No.	Educational Security	Agricultural Labourers	
		Frequency	Percentage (%)
1	Low (**<28.45**)	55	22.92
2	Medium (**28.45 to 36.29**)	150	62.50
3	High (**>36.29**)	35	14.58
	Total:	**240**	**100.00**
Mean=32.37		**SD=3.92**	

4. Habitat Security

The result presented in the Table 6 and Fig. 5 indicated that less than half (48.34%) of the agricultural labourers had medium habitat security followed by those had low (38.33%) and high (13.33%) habitat security.

Majority of the agricultural labourers were under medium to low level of habitat security due to lack of necessary facilities and their poor economic status as well as lack of awareness on hygiene. The government shall create necessary facilities, improve their economic status must create awareness on hygiene. These findings were similar to the findings of Harshitha and Prasad [10].

5. Social Security

The result presented in the Table 7 and Fig. 6 indicated that two-thirds (63.75%) of agricultural labourers had medium social security followed by those had low (20.00%) and (16.25%) had high social security in Andhra Pradesh.

Some of the agricultural labourers were the members of post office, church, SHGs and gram panchayats. For medium to high social security, keenness of agricultural labourers in taking advantage of prevailing social organizations for securing some improvement in their social status because of their education was the reason. For low social participation, the reason might be illiteracy which is making them to take no attention in the activities of the organization.

Hence, efforts are needed to support social and voluntary institutions contributing their myth for improving of educational facilities for agricultural labourers.

6. Clothing Security

The result presented in the Table 8 and Fig. 7 clearly indicated that majority (67.50%) of the agricultural labourers in Andhra Pradesh had medium clothing security followed by remaining with low (15.41%) and high (12.91%) clothing security.

This might be due to their asset security, habitat security, poor socio - economic Status. Similar findings were reported by Ram *et al.* [11].

7. Health Security

The result presented in the Table 9 and Fig. 8 indicated that less than three-fourths (71.66%) of the agricultural labourers in Andhra Pradesh had medium health security followed by those had low (18.76%) and high (9.58%) health security.

Lack of health facilities is the major threat for the agricultural labourer. Utilization of available health services by some of the agricultural labourers might have shown above medium health security. Majority of the agricultural labourers had medium to low level of health security. These findings were in line with the findings of Harshitha and Prasad [10] and Ram *et al.* [11].

Table 6. Distribution of agricultural labourers according to their habitat security

S. No.	Habitat Security	Agricultural Labourers	
		Frequency	**Percentage (%)**
1.	Low (**< 49.16**)	92	38.33
2.	Medium (**49.16 to 61.92**)	116	48.34
3.	High (**<61.92**)	32	13.33
	Total:	**240**	**100.00**
Mean=55.54		**SD=6.38**	

Table 7. Distribution of agricultural labourers according to their social security

S. No.	Social Security	Agricultural Laborers	
		Frequency	**Percentage (%)**
1	Low **(<34.75)**	48	20.00
2	Medium **(34.75 to 48.35)**	153	63.75
3	High **(>48.35)**	39	16.25
Total:		**240**	**100.00**
Mean=41.55		**SD=6.80**	

Table 8. Distribution of agricultural labourers according to their clothing security

S. No.	Clothing Security	Agricultural Laborers	
		Frequency	Percentage (%)
1	Low (<**75.51**)	37	15.41
2	Medium (**75.51to90.15**)	162	67.50
3	High (>**90.15**)	31	12.91
Total:		240	100.00
Mean=82.83		**S.D=7.32**	

Table 9. Distribution of agricultural labourers according to their health security

S.No.	Health Security	Agricultural Labourers	
		Frequency	Percentage (%)
1	Low (**<35.47**)	45	18.76
2	Medium (**35.47 to 60.13**)	172	71.66
3	High (**>60.13**)	23	9.58
Total:		**240**	**100.00**
Mean=47.80		**SD=12.33**	

Table 10. Distribution of agricultural labourers according to their transport security

S. No.	Transport Security	Agricultural Labourers	
		Frequency	Percentage (%)
1	Low (**<32.39**)	46	19.16
2	Medium (**32.39-83.31**)	144	60.00
3	High (**>83.31**)	50	20.84
	Total:	**240**	**100.00**
Mean=57.85		**SD=25.46**	

Table 11. Distribution of agricultural labourers according to their Information Security

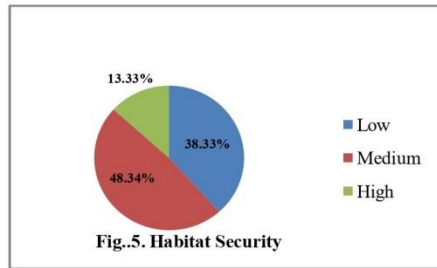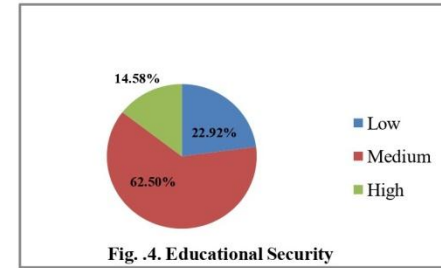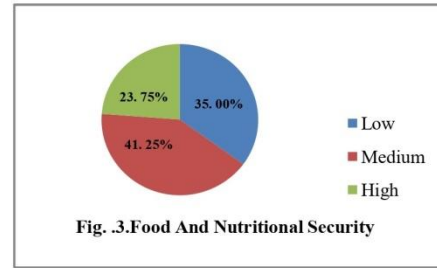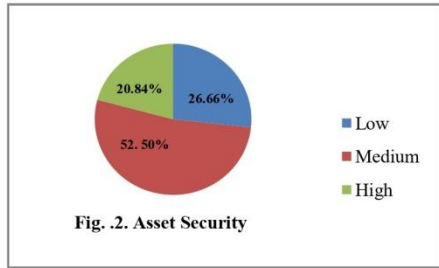| S. No.	Information Security	Agricultural Laborers	
		Frequency	Percentage (%)
1	Low (**<34.48**)	50	20.84
2	Medium (**34.48-56.34**)	154	64.16
3	High (**>56.34**)	36	15.00
	Total:	**240**	**100.00**
Mean=45.41		**S.D=10.93**	

8. Transport Security

The results presented in the Table 10 and Fig. 9 clearly revealed that majority (60.00%) of the agricultural labourers in Andhra Pradesh had medium transport security followed by those had high (20.84%) and low (19.16%) transport security.

Transport is the mandatory for mobility of agricultural labourers from remote villages to nearby town. It is the factor which influences the culture of people. Medium to high level transportation security is the result of above factors.

9. Information Security

The results presented in the Table 11 and Fig. 10 revealed that nearly two-thirds (64.16%) of the agricultural labourers in Andhra Pradesh had medium information security followed by those had low (20.84%) and high (15.00%) information security in all the selected districts of Andhra Pradesh.

This condition might have due to their low to medium education, habitat Security and asset security would be such output. These observations were in substantial conformation to that of the findings of Dhanushkodi *et al.* [12], Ram *et al.* [11] and Jadhav and Pirabu [9].

Fig. .2. Asset Security

Fig. .3.Food And Nutritional Security

Fig. .4. Educational Security

Fig..5. Habitat Security

Fig. .6. Social Security

Fig. .7.Clothing Security

Fig. .8. Health Security

Fig. .9. Transport Security

Fig. .10. Information Security
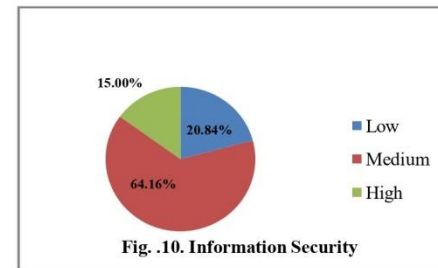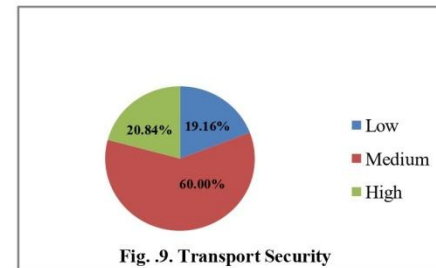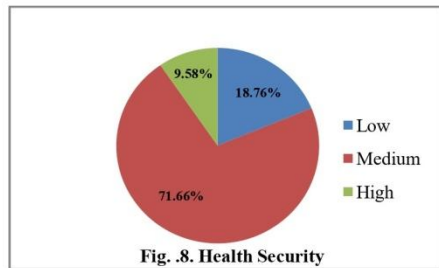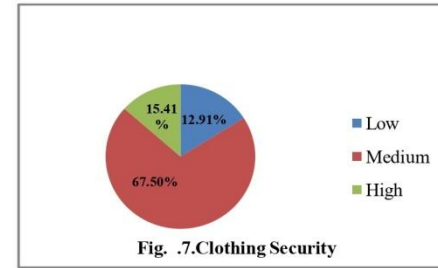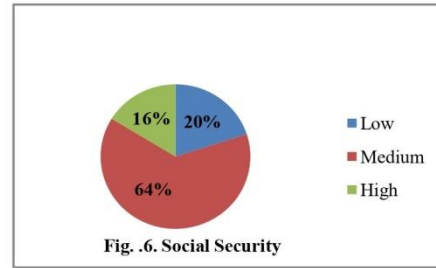
Figures indicating different components of livelihood security index

4. CONCLUSION

From the above results, it could be concluded that medium livelihood security index was due to the medium level securities of the various sub - components such as; asset security, food and nutritional security, educational security, habitat security, social security, clothing security, health security, transport security and information security. Livelihood security indices were medium due to their limited employment Opportunities. Thus, it is fundamental to provide year round employment opportunities through increased irrigation facilities and strengthening of employment generation programmes such as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mahadik RP, Sawant PA. Livelihood security of tribal people in thane district of Maharashtra. Rajasthan Journal Extension Education. 2012;20(1):39-43.
2. Malangmeih G, Dey and Sagolsem S. Rural livelihood system in Manipur with special reference to cultivation of king chilli. Journal Crop and Weed. 2015; 11(1):144-151.
3. Dhanushkodi V, Padmadevi K, Amuthaselvi G, Ravi V. Contribution of integrated farming system for livelihood security of tribal's in Pachamalai Hill of Tiruchirappalli district. Asian Journal of Agricultural Extension, Economics & Sociology. 2017;21 (4):1-5.
4. Ram HB, Kumar SJ, Rai CK, Yadav R. Assessment of livelihood security of tribal farmers: A case study from tribal area of Madhya Pradesh. International Journal of Current Microbiology and Applied Sciences. 2018;7(3):1135-1141.
5. Jodha R, Dahiya M. Livelihood problems of small and marginal farm families in rural areas of Haryana State. International Journal of Current Microbiology and Applied Sciences. 2018;7(1):1624-1629.
6. Bharti R, Sagar MP, Deepa S, Kishor KP. Contribution of backyard poultry in livelihood security of rural women of Bundelkhand region of Uttar Pradesh. Multilogic in Science. 2018;8(2):56-74.
7. Chaturvedani AK, Niranjan L, Khalid. Livelihood security for tribal household through backyard poultry rearing in Chhattisgarh. International Journal of Extension Education. 2015;11(4):46-48.
8. FICCI-KPMG Report. Agro sector faces mass migration-work force reduced by 30.57 million, federation house, tansenmarg, New Delhi; 2015.
9. Kerlinger NF. Foundations of Behavioural Research. 1st Edition. Surjeet Publications, New Delhi; 1983.
10. Ramya HR, Gopal PVS, Sailaja V, Prasad SV. Livelihood security and system analysis of tribal farmers. Multilogic in Science. 2018;25(8): 95-101.
11. Jadhav and Pirabu. JV. Role of KVK in strengthening of livelihood security of self help group tribal farm women in Palghar district. International Journal of Current Microbiology and Applied Sciences. 2019;8(8):1151-1157.
12. Harshitha D, Prasad MVL. Livelihood security of women headed households practicing family farming in Tumakuru district. Mysore Journal of Agricultural Sciences. 2018;52(3):493-501.