



Research Article

ATTITUDE OF PADDY GROWING FARMERS TOWARDS SUSTAINABLE AGRICULTURE

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Abstract: The study was carried out in Krishna district of Andhra Pradesh, India for identifying attitude of paddy farmers towards sustainable agriculture. A well structured schedule was used for this study. In Krishna district the major crop is paddy, that's why this district was selected for purposively for this study. The attitude of paddy growing farmers reveals that majority of the farmers were in general favorably disposed towards sustainable agriculture. This result was attributed by the significant relationship of attitude with selected characteristics of the farmers.

Keywords: Sustainable agriculture, Paddy, Attitude

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Introduction

Traditional agriculture is the agriculture that understands how to conserve soil and their fertility or how to create them. But modern agriculture that involves high yielding varieties requiring high amount of nutrients, involves use of synthetic materials as fertilizers, insecticides, pesticides, fungicides, weedicides etc. Dependence on synthetic materials was necessitated because of their quick, spectacular and quantitative response in overall production and productivity. Over the years of success, adverse effects are coming to light covering major areas such as soil productivity, product quality, environment and sustainability etc. Keeping this in view, the present investigation was undertaken with following specific objectives: To know the attitude of paddy growing farmers towards sustainable agriculture and to unearth the relationship between the selected characteristics of paddy growing farmers and their attitude towards sustainable agriculture.

Material and Methods

Ex-post-facto research design was followed for this study. The study was conducted in Krishna district of Andhra Pradesh. A total of 200 farmers were selected by proportionate random sampling technique from 12 villages covered by paddy area. The present study has made use of the scale developed by Beus and Dunlop (1991) [1] aimed at measuring the basic beliefs and values towards alternative versus conventional agriculture. The authors have used this scale again to study the relationship between attitude towards alternative or sustainable agriculture and the practice of agriculture [2].

In order to measure the attitude of farmers towards sustainable agriculture the scale was restandardised as it was restructured and adapted to Indian situations and used by Gowda (1996) was used for this study. The attitude scale consists of 20 statements. Each attitude item was provided with a five points continuum. Hence, the response categories were strongly agreeing, agree, undecided, disagree and strongly disagree. A score of 5, 4, 3, 2 and 1 for positive statements and the reverse for negative statements was given for respective responses on the continuum. In this way, maximum and minimum possible scores were 20 and 100, respectively.

Results and Discussion

Distribution of respondents according to their Attitude towards sustainable agriculture

Farmers were categorised into three groups namely less favourable attitude, favourable attitude and more favourable attitude groups based on mean and standard deviation and is presented in [Table-1].

Table-1 Distribution of respondents according to their attitude towards sustainable agriculture (n = 200)

SN	Category	Respondents	
		Frequency	Percentage
1	Less favourable	41	20.5
2	Favourable	104	52
3	More favourable	55	27.5
	Total	200	100

Mean = 59.65, S.D = 18.82

It could be observed from [Table-1] that majority of the farmers (52.00%) had favourable attitude towards sustainable agriculture, followed by more favourable attitude (27.50%) and less favourable attitude (20.50%).

The District Agricultural Advisory and Transfer of Technology Centre (DAATTC) were started during 1998-99 and from this period they might have reaped the benefits of adopting different sustainable farming practices. This might be the probable reason for majority of the to develop favourable attitude towards sustainable agriculture. The results indicate there need on the part of the extension agency to train and educate the farmers regarding the advantage of adopting recommended sustainable farming practices for decreasing the environmental pollution and getting quality products which in turn will help in developing high attitude among them. For this, special training programmes, demonstrations and educational tours may be undertaken by extension agency. This finding was in line with the findings of Gowda (1996).

Analysis of attitude of respondents towards sustainable agriculture

An attempt has been made to find out response of respondents towards set of statements of attitude towards sustainable agriculture varying degrees of positive and negative impressions.

Table-2 Analysis of attitude of respondents towards sustainable agriculture (n=200)

SN	Statement	SA	A	UD	DA	SDA
1	Sustainable farming should be done so as to maximize profits even if it threatens long term productivity of land	--	--	24 (12.00)	69 (34.50)	107 (53.50)
2	Large quantity of inputs should be used in sustainable farming as long as it is profitable	--	--	4 (2.00)	49 (24.50)	147 (73.50)
3	The primary goal of farmers should be to improve the quality of the products produced in the farms	141 (70.50)	58 (29.00)	1 (0.50)	--	--
4	Good sustainable farming demands personal experience and better knowledge of the land	111 (55.50)	79 (39.50)	10 (5.00)	--	--
5	Agricultural scientists and policy makers should expand efforts to develop innovations to increase production through sustainable farming	89 (44.50)	97 (48.50)	14 (7.00)	--	--
6	Healthy rural communities are essential to make the successful sustainable farming	95 (47.50)	99 (49.50)	6 (3.00)	--	--
7	Farm traditions and culture are of little use in sustainable farming	63 (31.50)	131 (65.50)	6 (3.00)	--	--
8	Farming is first of all a way of life and then a business	67 (33.50)	129 (64.50)	4 (2.00)	--	--
9	Farmers should use primarily synthetic fertilizers and pesticides in order to maintain adequate levels of production	--	--	10 (5.00)	75 (37.50)	115 (57.50)
10	Most farms should include both crops and livestock for sustainability	92 (46.00)	97 (48.50)	11 (5.50)	--	--
11	Modern farming is a major cause of ecological problems and must be greatly modified to become ecologically sound	135 (67.50)	64 (32.00)	1 (0.50)	--	--
12	Crop rotations and diversifications are not essential for successful sustainable farming	--	--	6 (3.00)	75 (37.50)	119 (59.50)
13	Farmers should produce as many of their own goods and services	79 (39.50)	109 (54.50)	12 (6.00)	--	--
14	Soil and water are basic factors of production and should be exploited for large production	113 (56.50)	71 (35.50)	16 (8.00)	--	--
15	The key to initiate successful farming lies in learning to imitate natural ecosystem and farm in harmony with nature	71 (35.50)	119 (59.50)	10 (5.00)	--	--
16	Farm labour should be replaced whenever possible by more efficient machines	--	--	6 (3.00)	69 (34.50)	125 (62.50)
17	Processing and marketing of the produce is best done at local and regional level	85 (42.50)	96 (48.00)	19 (9.50)	--	--
18	Farmers should farm as much land as they personally care for	75 (37.50)	113 (56.50)	12 (6.00)	--	--
19	Most people should live in cities of struggling all through life in farming	--	--	4 (2.00)	63 (31.50)	133 (66.50)
20	The abundance of the production is an indicator of correct way of farming	--	--	2 (1.00)	55 (27.50)	143 (71.50)

Note: 1. SA = Strongly agree, A = Agree, UD = Undecided, DA = Disagree, SDA = Strongly disagree. 2. Figures in parentheses indicate percentages.

Related data were furnished accordingly on the nature and magnitude of the attitude statements in [Table-2]. [Table-2] indicated that majority of the farmers (53.50%) had strongly disagreed to the statement, 'Sustainable farming be done so as to maximize profits even if it threatens long term productivity of land', whereas 34.50 per cent of respondents were disagreed and 12.00 per cent of respondents were undecided to the statement. 73.50 per cent of respondents strongly disagreed with the statement, 'Large quantity of inputs should be used in sustainable farming as long as it is profitable', followed by 24.50 per cent and 2.00 per cent of them were disagreed and undecided with the statement respectively. Majority of the respondents (70.50%) strongly agreed with the statement, 'The primary goal of farmers should be to improve the quality of the products produced in the farms; 29.00 per cent were agreed and 0.50 per cent of them had undecided with the statement. More than fifty per cent of the respondents strongly agreed with the statement, 'Good sustainable farming demands personal experience and better knowledge of the land', while 39.50 per cent were agreed and 5.00 per cent of respondents had undecided with the statement. 48.50 per cent, 44.50 per cent and 7.00 per cent of the respondents agreed, strongly agreed and undecided respectively with the statement, 'Agril. scientists and policy makers should expand efforts to develop innovations to increase production through sustainable farming'.

A majority of the respondents (49.50%) agreed with the statement, 'Healthy rural communities are essential to make the successful sustainable farming', while 47.50 per cent strongly agreed and only 3.00 per cent of respondents had undecided with the statement. 65.50 per cent of the watershed area farmers agreed with the statement, 'Farm traditions and culture are of little use in sustainable farming', while 31.50 per cent and 3.00 per cent strongly agreed and undecided with the statement respectively. 64.50 per cent of the respondents agreed with the statement, 'Farming is first of all a way of life and then a business', whereas, 33.50 per cent were strongly agreed and only 2.00 per cent of respondents had undecided with the statement. A majority of the respondents (57.50%) strongly disagreed with the statement, 'Farmers should use primarily synthetic fertilizers and pesticides in order to maintain adequate levels of production', while, 37.50 per cent disagreed and only 5.00 per cent of respondents had undecided with the statement. 48.50 per cent of respondents were agreed with the statement, 'Most farms should include both crops and livestock for sustainability', whereas, 46.00 per cent of respondents strongly agreed and 5.50 per cent were undecided with the statement. 67.50 per cent of respondents strongly agreed with the statement, 'Modern farming is a major cause of ecological problems and must be greatly modified to become ecologically sound', while 32.00 per cent agreed and 0.50 per cent were undecided with the statement. A majority of the respondents (59.50%) strongly disagreed with the statement, 'Crop rotations and diversifications are not essential for successful sustainable farming', whereas, 37.50 per cent disagreed and only 3.00 per cent were undecided with the statement. 54.50 per cent of respondents agreed with the statement, 'Farmers should produce as many of their own goods and services', while 39.50 per cent strongly agreed and 6.00 per cent were undecided with the statement.

Majority of the watershed area farmers (56.50%) strongly agreed with the statement, 'Soil and water are basic factors of production and should be exploited for large production', whereas, 35.50 per cent agreed and 8.00 per cent were undecided with this statement. 59.50 per cent of the watershed area farmers agreed with the statements, 'The key to initiate successful farming lies in learning to imitate natural ecosystem and farm in harmony with nature', whereas, 35.50 per cent agreed and 5.00 per cent were undecided with the statement. Majority of the watershed area farmers (62.50%) were strongly disagreed with the statement, 'Farm labour should be replaced whenever possible by more efficient machines', while 34.50 per cent disagreed and 3.00 per cent were undecided with the statement. 48.00 per cent of the respondents agreed with the statement, 'Processing and marketing of the produce is best done at local and regional level', whereas, 42.50 per cent strongly agreed and 9.50 per cent were undecided with the statement.

A majority of the respondents (56.50%) agreed with the statement, 'Farmers should farm as much land as they personally care for', while 37.50 per cent agreed and 6.00 per cent were undecided with the statement. 66.50 per cent of the watershed area farmers strongly disagreed with the statement, 'Most people should live in cities of struggling all through life in farming', whereas, 31.50 per cent disagreed and 2.00 per cent were undecided with the statement. Majority of the respondents (71.50%) strongly disagreed with the statement, 'The abundance of the production is an indicator of correct way of farming', while, 27.50 per cent disagreed and 1.00 per cent were undecided with the statement.

Further result on analysis of attitude towards sustainable farming reveals that majority of the farmers expressed agreed and strongly agreed response towards attitude statements. Very little percentage of respondents had expressed undecided response. From this it could be concluded that majority of the farmers showed the favourable attitude towards the sustainable farming practices, since they were convinced about the benefits of sustainable farming practices. In case of the respondents who were expressed undecided response, they can be convinced by organizing more training. Therefore, there is a need to motivate and educate the farmers about the sustainable farming practices through trainings and other sources of information particularly the field level of extension personnel who have better rapport with farmers.

Relationship between selected characteristics of paddy growing farmers and their attitude towards sustainable agriculture

The relationship between selected independent variables of the paddy growing farmers and their attitude towards sustainable agriculture was found by correlation coefficient and the computed 'r' values were presented in [Table-3].

From the [Table-3] that the computed 'r' values of education, farming experience, training undergone, family status, occupational status, social participation, material possession, land holding, annual income, risk orientation, innovativeness, economic motivation, decision making pattern, mass media status, extension participation, participation in development programmes, and communication behavior were found to be positively significant at 0.01 level of probability.

Combined effect of all the selected independent variables on attitude of paddy growing farmers towards sustainable agriculture

Further, in order to determine the combined effect of all the selected independent variables in explaining variation attitude of the respondents, multiple linear regression analysis was carried out and the results were presented in [Table-4]. Seventeen independent variables fitted in regression equation, variables training undergone and family status were found to be contributing positively and significant at 0.05 and 0.01 levels of probability with the attitude, respectively.

Table-3 Correlation co-efficient between the attitude level towards sustainable agriculture and independent variables of the paddy growing farmers

SN	Independent variables	'r' values
X ₁	Education	0.6758**
X ₂	Farming experience	0.7343**
X ₃	Training undergone	0.7833**
X ₄	Family status	0.8139**
X ₅	Occupational status	0.5864**
X ₆	Social participation	0.7178**
X ₇	Material possession	0.7765**
X ₈	Land holding	0.7152**
X ₉	Annual income	0.7841**
X ₁₀	Risk orientation	0.6588**
X ₁₁	Innovativeness	0.7269**
X ₁₂	Economic motivation	0.7534**
X ₁₃	Decision making pattern	0.7610**
X ₁₄	Mass media status	0.7277**
X ₁₅	Extension participation	0.7711**
X ₁₆	Participation in development programmes	0.7301**
X ₁₇	Communication behaviour	0.7310**

**Significant at 0.01 probability level.

Table-4 Regression co-efficient of selected independent variables with the attitude towards sustainable agriculture

SN	Independent variables	Regression co-efficient	Standard error	't' value
X ₁	Education	0.4487	0.8686	0.5166
X ₂	Farming experience	-0.4926	2.1248	0.2318
X ₃	Training undergone	6.4707*	2.7982	2.3124
X ₄	Family status	1.8906**	0.7209	2.6225
X ₅	Occupational status	-0.7497	1.0408	0.7203
X ₆	Social participation	0.1476	0.4628	0.3191
X ₇	Material possession	0.2586	0.1329	1.9458
X ₈	Land holding	-0.1183	0.9534	0.1241
X ₉	Annual income	2.5851	1.7044	1.5167
X ₁₀	Risk orientation	-0.5297	0.514	1.0306
X ₁₁	Innovativeness	-0.0824	0.4681	0.1761
X ₁₂	Economic motivation	-0.26	0.8814	0.295
X ₁₃	Decision making pattern	-0.1504	0.7142	0.2105
X ₁₄	Mass media status	-0.3638	0.4058	0.8966
X ₁₅	Extension participation	0.6101	0.4888	1.2481
X ₁₆	Participation in development programmes	1.1322	0.9662	1.1717
X ₁₇	Communication behaviour	0.0034	0.2229	0.0154

$R^2 = 0.71$, 'F' ratio = 26.342**

* Significant at 0.05 probability level, ** Significant at 0.01 probability level.

Co-efficient of multiple determination (R^2) was found to be 0.71 indicating that all the independent variables put together could explain variation in the dependent variable, attitude to the extent of 71.00 percent. The 'F' test of statistics showed that the variation was significant at 1.00 per cent level of significance.

Conclusion

The study pointed that majority of paddy growing farmers had favourable attitude towards sustainable agriculture. Hence, there is a need on the part of extension officials to educate and motivate the farmers about the benefits of sustainable agricultural technology through organizing training programmes, demonstrations and exhibitions which in turn will help in developing more favourable attitude towards sustainable agriculture.

Application of research: More attention should be given to the organization of on-farm trials with the farmers to enhance their technical and managerial abilities.

Research Category: Agricultural Extension and Rural Development.

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Study area / Sample Collection: Krishna District.

Cultivar / Variety / Breed name: Paddy

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

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