AWARENESS AND ADOPTION OF FARM WOMEN IN TRANSFER OF TECHNOLOGY IN ANDHRA PRADESH

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Introduction

Agriculture is the largest sector and women constitute a formidable part of that workforce. Yet any clear and precise estimate of the nature and extent of their contribution to this critical national sector eludes us to this day despite several efforts to rectify this deficiency. The estimates of Gross National Product bypass this section of producers who supply basic commodities like food, fibre and fuel to the economy.

Women play a significant and crucial role in agrl. Production and development processes. Even today, they perform a variety of agricultural operations physically, mostly drudgery filled. In crop farming, operations such as sowing, transplanting, weeding, scaring birds, harvesting, threshing, winnowing, drying and storing of seeds and food grains are physically performed by the women folk. In most places, the entire livestock production activities are managed by the women folk. Tending animals, collecting, carrying and cutting of fodder and feed for animals, milking the animals and marketing, preparing milk products, cleaning the cattle shed as well as cattle, are attended to exclusively by the rural women. Kitchen gardening and poultry keeping are also the exclusive jobs of women, besides the home making.

In the recent years, however, due to economic development in general and agriculture development in particular, the socio-economic scenario is getting changed fast especially in rural India. More and more women are educated and employed in monthly wage earning jobs in urban as well as rural sectors of the economy. They are also more exposed to the outside world due to media explosion. Therefore, there has been a general awakening world-over among women folk about their roles and rights in the society and hence there has been a general cry

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for the empowerment of women through economic independence, legal protection and organizational innovations. These life-style changes have been felt more not only in urban agglomerations, but also in the rural settings due to trickle down effect. Moreover as more and more of rural men-folk get wage earning jobs, there arises the necessity for the farmwomen to manage the farm operations. In this changing socio-economic scenario, the women have started playing more and more, a significant and crucial role not only in manual farm operations, but also in the farm supervisory as well as management activities.

Problem focus:

Andhra Pradesh is basically an agricultural state and its overall development is inter-wined with agriculture growth. Andhra Pradesh state has been taking innumerable number of steps towards boosting, agriculture production through productivity increase. All the crop and livestock production activities launched by the state have been technology driven. Probability, the pronominal growth of crop and livestock production in the state might be the end results of the past half-a-century of planned development. Ultimately, the state has made remarkable development not only in the production increase of paddy, maize and cotton but also in production increase of milk and poultry products. Similarly tremendous progress has been realized in horticulture development particularly in mango, grapes and citrus. All these could be possible through effective transfer of agriculture technologies from the agriculture university and its research stations to the lands of the farmers. Thus, the effective transfer of technologies has no doubt, transformed the traditional agriculture into modern agriculture, and tuned towards commercialization and export orientation.

The role in farm development is rather substantial and their involvement in the transfer of technologies is becoming more and more crucial due to the recently changing socio-economic environment. Therefore, at this juncture it becomes imperative to understand the awareness and adoption levels of farmwomen in the farm operations and in the transfer of farm technologies from the laboratories to the lands at large. It is with this perspective a study on 'Awareness and adoption levels of farm women in Transfer of Technologies' have been contemplated and the study area selected being the Andhra Pradesh state.

Objectives

The overall objective of the study is to analyze the nature and extent of awareness levels of farmwomen on transfer of Technology in farm activities. However, the specific objectives set forth are:

(i) to assess the awareness level of farmwomen on the latest crop and livestock production technologies.

(ii) To study the source of information on technology received by farm women

(iii) to suggest, if found warranted, the ways and means of making the farmwomen more knowledgeable and to adopt the improved technologies for increasing farm output.

Methodology

With a view to attaining unbiased estimate of the real-world situation, a scientific procedure was followed in selecting the sample, collecting information and analyzing the data. The sampling design followed, the method of collection of data and the methods of analysis followed have been described below.

Sampling Design:

The Andhra Pradesh state form as the universe for the present study. All the three regions (Rayalaseema, Telengana and Coastal, AP) of the state were considered and from each region two districts were selected by random sampling procedure. From each of the six sample districts, three sample mandals were selected using random sampling techniques. From each mandal three villages were randomly selected and from each village 17 farmwomen were randomly selected. Thus, the sample size was 918 farm women distributed in 54 sample villages of 18 sample mandals in six districts of all the three regions of the state. Thus, a multi-state, stratified random sampling technique was followed.

Methods of Data Collection:

The required primary data were collected in a pre-tested schedule. The data on awareness and adoption levels of crop and livestock production technologies, the technology needs, etc. were gathered in the schedule through personal interview method for the estimate sample viz the farmers. In addition, the secondary data required were gathered from the publications like season and crop report of Andhra Pradesh and the state agriculture extension machinery.

Methods of Analysis

The collected data were tabulated and analyzed applying both conventional and other methods.

RESULTS AND DISCUSSION

Agriculture development to keep going, agriculture technologies are to be constantly evolved in the research stations and transferred to the fields of the farmers. This lab-to-land transfer of agriculture technologies is affected mainly by the state agricultural extension machinery in addition to NGOs in a modest way. Through various methods of extension education to the farmers, till recently, men-folk alone were participating in the process of transfer of technologies. Only very recently women-folk also has become active and started participating in the process of transferring the technologies to the farms, particularly in the recent context of women empowerment and SHG movement. Therefore, it has become imperative to understand the Awareness and Adoption Levels in Transfer of Technology and towards which only the present study has a major thrust. This scenario of awareness and adoption in the transfer of technology was analysed in depth and the results of the analysis are presented and discussed under the following sub-sections.

Assessment of Impact Crop Yield:

The major source of income to the sample farmers is the crop enterprise the nature of crops grown, number of sample farmers grown those crops by the sample farmers and the impact of adoption of technologies on crop yields were assessed and discussed. First, the names of the crops cultivated and the number of farmers cultivated are listed in Table-a .

Table-a : Major crops cultivated and the number of sample farmers oriented the crop

Sl.No	Region and crop	No. of sample farmers cultivated the crop	Percent of sample farmers
1	**Coastal**		
1	Paddy	182	59.48
2	Redgram	57	18.63
3	Chilli	25	8.17
4	Cotton	49	6.01
5	Tobacco	32	10.46
6	Groundnut	13	4.25
7	Jowar	13	4.25
II	**Rayalaseema**		
1	Paddy	49	16.01
2	maize	3	0.98
3	Jowar	23	7.52

4	Redgram	16	5.23
5	Groundnut	270	88.24
6	Chilli	4	1.31
7	Tobacco	8	2.61
III	**Telangana**		
1	Paddy	250	81.70
2	maize	23	7.52
3	Jowar	189	61.76
4	Redgram	104	33.99
5	Groundnut	57	18.63
6	Chilli	34	11.11
7	Cotton	178	58.17
	Overall		
1	Paddy	481	52.40
2	Jowar	225	24.51
3	Maize	26	2.83
4	Red gram	177	19.28
5	Groundnut	340	37.04
6	Chilli	63	6.86
7	Cotton	184	20.04
8	Tobacco	40	4.36

From table-a, it could be noted that there were eight major crops viz paddy, maize, jowar, red gram, groundnut, chilli, cotton and tobacco grown in the sample farms of the area studied. Paddy was grown by the large number sample farmers in all the three regions, but localized highly in Coastal and Telangana regions and these might the due to better water facilities available. Jowar is grown in all the three regions , but more pronounced in Telangana region and maize is grown predominantly in Telangana region.

Red gram is grown more in Telangana and Coastal regions, while groundnut is extensively grown in Rayalaseema region. Chilli as an important spice crop is grown on a larger extent in Coastal and Telangana regions. Cotton grown both under irrigated and rainfed conditions extensively in Telengana and Costal regions. Tobacco is another important commercial grown extensively in Coastal and to a limited extent in Rayalaseema regions. Awareness and Adoption Levels in Transfer of Technology on different were given below.

Assessment of Awareness and Adoption Levels in Transfer of Technology

For the participation by farmwomen in the transfer of farm technologies, the high levels of awareness and adoption are the pre-requisites. Therefore, an attempt was made in this study to assess the extent of awareness among farm women and adoption of those improved technologies in the major crops viz., paddy, jowar, maize, red gram, groundnut, chili, cotton, red gram and tobacco in the sample farms and the results are discussed crop-wise.

1. Paddy : Paddy is the staple food of Andhra Pradesh state and hence it is cultivated by majority of the sample farmers. The awareness and adoption levels among sample farms were analyzed and the results are given in Table-1.

Table 1 : Awareness among farm women about paddy production technologies and their adoption in the sample farms

(Multiple responses)

S. No.	Technologies Relating to	Coastal (n=182)*		Rayalaseema (n=49)*		Telangana (n=250)*		Overall (n-481)*	
		Awareness	Adoption	Awareness	Adoption	Awareness	Adoption	Awareness	Adoption
1	Seeds	94 (51.64)	91 (50.0)	17 (34.59)	14 (28.57)	88 (35.20)	84 (33.6)	199 (40.47)	189 (37.39)
2	Fertilizers	71 (39.01)	71 (39.01)	15 (30.61)	15 (30.61)	58 (23.2)	56 (22.4)	144 (29.93)	142 (29.52)
3	Pesticides	49 (26.92)	49 (26.92)	19 (38.77)	19 (38.77)	94 (37.6)	94 (37.6)	162 (33.6)	162 (33.6)
4	Irrigation	90 (49.45)	87 (47.8)	22 (44.89)	22 (44.89)	71 (28.4)	71 (28.4)	183 (38.05)	180 (37.42)
5	Implements & machineries	45 (24.72)	43 (23.62)	18 (39.13)	18 (39.13)	67 (26.8)	53 (21.2)	130 (27.02)	114 (23.70)
6	IPM	31 (17.03)	21 (11.53)	1 (2.04)	1 (2.04)	36 (14.4)	36 (14.4)	68 (14.13)	58 (12.05)
	Overall	63 (34.79)	60 (33.15)	15 (31.67)	14.83 (30.66)	69 (27.6)	66 (26.27)	147 (30.56)	140.53 (29.22)

* Worked out based on the number of farmers cultivated.

(Figures in parentheses indicate percentages)

Note : Overall sample size is 918, region wise sample size is 306.

It could be inferred from Table 1, that at the overall level, the awareness level about technologies relating paddy crop production among the sample farm women worked out to 29.22 per cent. Among the regions, the awareness level was the highest in Coastal with 34.79 per cent, followed by 31.67 per cent in Rayalaseema and 27.6 per cent in Telangana region. Comparatively, the high level of awareness in Coastal region might be due to extensive cultivation of paddy and on the other hand, the low level of awareness in Telangana might be due to illiteracy, ignorance, less information source and lack of involvement of women in

technological aspects. Among the various technological components, awareness was more pronounced in seeds, fertilizers, pesticides and irrigation. However, in IPM the awareness was very low. This in a way reflects the low knowledge level of the farm women on improved technologies. In sum, the extension machinery requires to create more awareness among large number of paddy growing farm women.

Further perusal of the table revealed that in overall the adoption level (29.22 percent) was more or less the same as that of awareness level (30.56 percent) and hence there existed no vivid gap between awareness and adoption and this in a way showed that once the farm women are made aware of the technologies , immediately they try to put in the fields without any lapse of time. Therefore, all that needed is to create awareness on the latest technologies among as many farmwomen as possible without loss of time, particularly in paddy, which is a staple food.

2. Jowar : Jowar is an important cereal crop that finds place, especially in the poor men's diet. The industrial use of jowar is also steadily increasing in the recent years. Since the food habits are undergoing a metamorphosis in the recent years, the share of jowar in common men's diet is getting reduced. Therefore, the area of jowar had been reducing drastically due to crop diversification. Therefore, there exists the need to raise the per acre yield of jowar through the application of science and technologies. Hence the study analyzed the awareness and adoption levels of production technologies in jowar and the results obtained are portrayed in Table 2.

Table-2: Awareness among farm women about jowar production technologies and their adoption levels in the sample farms

(Multiple responses)

S. No.	Technologies Relating to	Coastal (n-13)*		Rayalaseema (n-23)*		Telangana (n-189) *		Overall (n-225)*	
		Awareness	Adoption	Awareness	Adoption	Awareness	Adoption	Awareness	Adoption
1	Seeds	7 (53.84)	5 (38.46)	8 (34.78)	8 (34.78)	30 (15.87)	29 (15.34)	45 (20.00)	42 (18.6)
2	Fertilizers	3 (23.07)	3 (23.07)	7 (30.43)	7 (30.43)	22 (11.64)	22 (11.64)	32 (14.2)	32 (14.2)
3	Pesticides	-	-	2 (8.69)	2 (8.69)	11 (5.82)	11 (5.82)	13 (5.7)	13 (5.7)
4	Irrigation	-	-	5 (21.73)	5 (21.73)	26 (13.75)	26 (13.75)	31 (13.7)	31 (13.7)

5	Implements & machineries	-	-	-	-	13 (6.87)	12 (6.34)	13 (5.7)	12 (5.3)
6	IPM	-	-	1 (4.34)	-	7 (3.70)	7 (3.70)	8 (3.55)	7 (3.11)
	Overall	5 (33.00)	4 (28.57)	4.6 (20.00)	4.4 (23.89)	18.16 (9.61)	17.83 (9.43)	23.6 (10.5)	22.8 (10.14)

* Worked out based on the number of farmers cultivated.
(Figures in parentheses indicate percentages)

Note : Overall sample size is 918, region wise sample size is 306

A peep into the data in Table 2, indicated that the awareness and adoption levels were uniformly very poor for the sample as a whole and among the regions. Though the awareness was very poor uniformly, the picture seems to be slightly better in Coastal region and this might be due to cultivation of jowar by a less farmers of 13 sample farm women. More number if Telangana farm women (189 farmwomen) were cultivating Jowar as a rainfed crop. The awareness and adoption level of Telangana sample farmers were very less (9.61 and 9.43 percent respectively). However, no vivid gap between awareness and adoption could be observed. Nevertheless, the extension machinery may have to take note of poor awareness and adoption levels and strive hard to push up the same through effective methods of extension education.

3. Maize : The cultivation of maize is localized in Telangana region and it spreads like wild fire throughout the region, as it is a raw material for the fast growing poultry industry in the state. Therefore, the awareness and adoption levels among the sample farm women were assessed and the results are furnished below in Table 3.

Table 3: Awareness about production technologies of maize cultivation and their adoption in the sample farms

Sl.No	Technology dimension	Telangana region (n-23)	
		Awareness	Adoption
1	Seeds	6	6
2	Fertilizers	3	3
3	Pesticides	3	3
4	Implements	2	2
5	Irrigation	8	8
	Overall	4.4	4.4

The maize production technologies were known to very few sample farm women (23 farm women), as could be visualized from the table above. Maize is a new crop spreading on more area in the recent years. As long as the poultry industry is growing, the demand for maize would be on the up-trend. Therefore, the extension education to disseminate the maize production technologies needs a new strategy especially to reach the farm women in Telangana as well as other regions of the state.

4. Groundnut : Ground nut is a mono-crop extensively grown in lakhs of acres under rainfed condition in the Rayalaseema region of the Andhra Pradesh state. It is also grown to a considerable extent in Coastal area. The Rayalaseema region, where the crop cultivation is localized, the awareness level over all the components was about 44 per cent and it was as high as 66 per cent in seeds , as could be noted from Table 4.

Table-4: Awareness among farm women about groundnut production technologies and their adoption levels in the sample farms

(No. of respondents)

Sl. No.	Technologies Relating to	Coastal (n-13)		Rayalaseema (n-270)		Telangana (n-57)		Overall (n-340)	
		Awareness	Adoption	Awareness	Adoption	Awareness	Adoption	Awareness	Adoption
1	Seeds	12 (92.12)	12 (92.12)	240 (88.88)	236 (87.40)	4 (7.01)	4 (7.01)	256 (75.29)	252 (74.12)
2	Fertilizers	8 (61.53)	8 (61.53)	202 (78.88)	202 (78.88)	1 (1.75)	1 (1.75)	211 (87.9)	211 (87.9)
3	Pesticides	8 (61.53)	8 (61.53)	172 (63.70)	172 (63.70)	2 (3.5)	2 (3.5)	182 (53.52)	182 (53.52)
4	Irrigation	12 (92.23)	12 (92.23)	76 (28.14)	76 (28.14)	4 (7.01)	4 (7.01)	92 (27.05)	92 (27.05)
5	Implements & machineries	5 (38.46)	5 (38.46)	59 (21.85)	59 (21.85)	2 (3.5)	2 (3.5)	66 (19.41)	66 (19.41)
6	IPM	2 (15.38)	2 (15.38)	58 (21.48)	58 (21.48)	-	-	60 (17.64)	60 (17.64)
	Overall	7.83 (60.23)	7.83 (60.23)	134.5 (49.81)	133.8 (49.55)	13 (22.8)	13 (22.8)	155.33 (45.69)	154.63 (45.47)

* Worked out based on the number of farmers cultivated.
(Figures in parentheses indicate percentages)

Note : Overall sample size is 918 and region wise sample size is 306

A few farmwomen (13 sample) was cultivating groundnut in coastal region; however, the awareness and adoption levels were very high. In other two regions the awareness levels were

very low particularly in Telangana region. In this crop also the gap between awareness and adoption was almost nil. The awareness level no doubt needs further improvement in the technological component of IPM in all three regions. But many efforts are needed to make aware of many farmers about improved technologies and their adoption.

5. Red Gram : The details on the awareness levels of production technologies of red gram was assessed and the results are given in Table-5, that follows.

Table 5 : Awareness about red gram production technologies among the sample farm women and their adoption

(No. of respondents)

S. No.	Technologies Relating to	Coastal (n-57)*		Rayalaseema(n-16)*		Telangana (n-104)*		Overall (n-177)*	
		Awareness	Adoption	Awareness	Adoption	Awareness	Adoption	Awareness	Adoption
1	Seeds	21	21	5	5	67	67	93	93
2	Fertilizers	21	21	3	3	67	67	91	91
3	Pesticides	10	10	4	4	66	66	80	80
4	IPM	3	3	4	4	22	16	29	29
5	Implements	9	9	3	3	15	15	27	27
6	Irrigation	5	5	4	4	12	12	21	21
	Overall	14.33 (25.15)	14.33 (25.15)	3.83 (29.49)	3.83 (29.49)	41.50 (39.09)	40.50 (38.94)	53.50 (30.22)	53.50 (30.22)

* Worked out based on the number of farmers cultivated.

(Figures in parentheses indicate percentages)

Though red gram is grown in all the three regions, its cultivation is highly localized in Telangana region. The awareness about production technologies -of red gram was found among 30.22 per cent of sample growers in overall as could be witnessed from Table 5. In Telanagana region the picture was some what better with 39.09 per cent. But the awareness level was very low in the regions of Coastal and Rayalaseema. It is astonishing to note that the awareness was very low among the farmers of Rayalaseema region, where the red gram is grown on larger areas. This aspect must be taken note of by the state extension machinery to do the needful to spread improved technologies among large number of farmers. As in other crops, there was no gap between awareness and adoption. However, the awareness and adoption of IPM technologies and improved implements were low compensatively in the costal region as well.

6. Chilli: As an important commercial crop, chilli is grown on larger acrerage in both Coastal and Telangana regions but majority in Telengana region and the awareness level in telangana region was assessed and the results are presented in Table 6.

Table 6: Awareness among sample about chilli production technologies and their adoption levels.

(No. of Respondents)

Sl.No	Technology dimension	Coastal Region (n-25)		Telangana region (n-34	
		Awareness	Adoption	Awareness	Adoption
1	Seeds	7	5	6	6
2	Fertilizers	8	8	3	3
3	Pesticides	7	5	3	3
4	Implements	7	7	8	8
5	Irrigation	8	8	2	2

* Worked out based on the number of farmers cultivated.

Table-6 again showed a very poor level of awareness among the sample women about the chilli production technologies, especially in Telangana and coastal regions, where the chilli cultivation is highly localized. This again warrants the agriculture extension machinery to bestow much effort in disseminating the information on improved technologies among the chilli-growing farmers of all the three regions.

7. Cotton: The details on the number of sample farmwomen farmers who were aware of the cotton production technologies were analyzed and the results were tabulated and presented hereunder in Table-7.

Table- 7 : Cotton production technologies awareness and adoption

(No. of respondents)

S. No.	Technologies Relating to	Coastal(n-49)		Telangana (n-178)	
		Awareness	Adoption	Awareness	Adoption
1	Seeds	8	8	51	30
2	Fertilizers	9	9	45	45
3	Pesticides	1	1	31	30
4	IPM	-	-	6	5
5	Implements	9	9	45	45
6	Irrigation	1	1	31	29
		5.6 (11.42)	5.6 (11.42)	34.83 (19.56)	30.66 (17.22)

* Worked out based on the number of farmers cultivated.

(Figures in parentheses indicate percentages)

Cotton is the most important risky commercial crop cultivated on a large scale particularly in Telangana and coastal regions, where more awareness and adoption could be

found among 20 percent in Telangana and 11 percent of the sample farmwomen in coastal region. However, in Telangana region there existed sizable gap between awareness and adoption and this might be due to high costs of pesticides technologies and BT cotton and other varieties.

8. Tobacco: The Virginia cigarette tobacco is cultivated mostly in Coastal region and hence the awareness and adoption levels in Coastal region was assessed and the results are presented in Table 8, that follows.

Table 8: Awareness and adoption levels about technologies in the production of Tobacco

(No. of respondents)

Sl.No	Technology dimension	Coastal region (n-32)*	
		Awareness	Adoption
1	Seeds	28	26
2	Fertilizers	28	26
3	Pesticides	28	26
4	IPM	19	19
5	Implements	22	21
6	Irrigation	20	20
		24.17 (75.53)	23 (71.87)

* Worked out based on the number of farmers cultivated.

(Figures in parentheses indicate percentages)

The awareness and adoption levels are considerably high among the sample farmers and very little gap existed between awareness adoptions. Still there existed scope to improve the awareness and adoption levels.

9. Milch animal : Livestock enterprise occupies a strategic position in the farm enterprises mix. It not only supplements the income of the farmers, intermittently, but also compliments the crop production activities. Therefore, the extent of awareness among sample farm women about improved milch animal production technologies and their adoption levels were assessed and the results are presented below, in Table 9.

Table- 9: Awareness of production technologies in raising milch animals and their adoption levels among the sample farm women

(No. of respondents)

S. No	Technologies Relating to	Coastal (n-157)		Rayalaseema (n-94)		Telangana (n-182)		Overall (n-433)	
		Awareness	Adoption	Awareness	Adoption	Awareness	Adoption	Awareness	Adoption
1	Feeding	141 (89.80)	141 (89.80)	37 (39.36)	37 (39.36)	126 (69.23)	126 (69.23)	304 (70.20)	304 (70.20)
2	Breeding	133 (84.71)	133 (84.71)	9 (9.57)	9 (9.57)	107 (58.79)	104 (57.14)	249 (51.02)	242 (51.02)

3	Health	58 (36.94)	58 (36.94)	8 (8.51)	7 (7.44)	25 (13.73)	25 (13.73)	91 (21.06)	90 (20.78)
4	Management	41 (26.11)	31 (19.74)	11 (11.7)	10 (10.6)	27 (14.83)	17 (9.3)	79 (18.20)	58 (13.39)
	Overall	93.25 (59.39)	90.75 (57.80)	16.25 (17.28)	15.75 (16.76)	71.25 (39.15)	68 (37.36)	180.75 (41.74)	173.5 (40.06)

* Worked out based on the number of farmers cultivated.
(Figures in parentheses indicate percentages)

Out of 918 sample 433 (47.16%) farmwomen rearing milch animals. The overall awareness about milch animal rearing technologies was found among 42 per cent of the sample farmwomen as could be deduced from Table-9. Among the technologies relating to four dimensions of animal rearing considered, awareness regarding feeding technologies was found among 70 per cent of the respondents. With reference to breeding technologies, awareness could be observed among 51 per cent of the respondents. Further about 20 percent of the respondents was aware of the technologies relating to health and 18 percent about management technologies. In general, the awareness level on the technologies relating to milch animals management was very low and especially in the breeding dimension, much thrust was found to be necessary. Among the regions the awareness level was found be better in coastal region. It could also be inferred from Table -9,that very little or almost nil gap existed between awareness and adoption and this clearly showed that the creation of awareness must be given importance in extension education to farmers, as the adoption follows suit automatically.

Sources of Information on Technologies

To seek information on agriculture technologies the farmers in general depend upon many sources, particularly in this era of information technologies. Therefore, the details on the sources from which the information was sought for by the sample farm women were gathered and analysed. The results are presented in Table 10, below.

Table 10 : Sources from which information was sought for by the sample farm women

S. No.	Sources of information	Coastal		Rayalaseema		Telangana		Overall	
		Fully	Partly	Fully	Partly	Fully	Partly	Fully	Partly
1	AEOs	104 (33.99)	50 (32.68)	121 (32.35)	190 (66.01)	51 (16.67)	184 (43.79)	276 (30.06)	424 (46.19)
2	KVKs	11 (3.59)	10 (32.68)	60 (19.61)	102 (33.33)	18 (5.88)	67 (21.90)	20 (2.18)	179 (19.50)
3	Input dealers	104 (33.99)	100 (32.68)	99 (32.35)	202 (66.01)	181 (16.67)	134 (43.79)	384 (41.83)	436 (47.49)
4	NGOs	57	8	12	90	62	66	77	241

		(18.63)	(2.60)	(3.92)	(29.41)	(20.26)	(21.57)	(8.39)	(26.25)
5	Television	2 (0.65)	152 (49.67)	121 (39.54)	160 (52.29)	129 (42.16)	118 (38.56)	307 (33.44)	430 (46.84)
6	Radio	5 (1.63)	67 (21.90)	101 (33.01)	9 (2.94)	55 (17.97)	73 (23.86)	158 (17.21)	140 (15.25)
7	Print media		98 (32.03)	108 (35.29)	67 (21.90)	40 (13.07)	130 (42.48)	153 (16.67)	295 (32.14)
8	Village secretary	8 (0.63)	40 (13.07)	15 (4.90)	146 (47.71)	40 (13.07)	108 (35.29)	55 (5.99)	294 (32.03)
9	Neighbours	5 (1.63)	43 (14.05)	158 (51.63)	48 (15.69)	224 (73.20)	73 (23.86)	401 (43.68)	164 (17.87)
10	Village leaders	19 (6.21)	129 (42.16)	13 (14.25)	113 (36.93)	113 (36.93)	61 (19.93)	137 (14.92)	250 (27.23)
11	Husband	241 (78.76)	57 (18.63)	279 (91.18)	2 (0.65)	283 (92.48)	17 (5.56)	803 (87.47)	76 (1.74)
12	Any other	34 (11.11)	25 (8.17)	-	10 (3.27)	43 (14.05)	29 (9.48)	77 (8.39)	64 (6.97)

(Figures in parenthesis indicate percentages)

Among the various sources listed in Table 10, the source of 'HUSBAND' topped as the foremost source of information to the sample farm women. The next important source was 'Neighbours'. The next two important sources follow in order were the "input dealers", "Television' and the 'Agriculture extension officers'.

The sample farm women partly tap the sources of print media, local leaders, and officials as well as could be inferred from Table 10. Therefore the extension workers can make use of the mass-media like TV, print media to pass on the information on technologies to farmers. In addition, individual contact by the extension agency also forms as the information sources. Input dealers and opinion leaders may also form as the sources of information in passing on the massages concerning agriculture technologies.

Summing Up:

The results of the analysis on awareness and adoption of production technologies indicated that fairly large number of sample women were aware of improved production technologies in paddy, groundnut and tobacco and adopted the same. In all other crops the percentages of sample women aware of production technologies and adopted were very low. There existed little gap between awareness and adoption in almost all the crops considered. In the regions, where the cultivation of particular crops is localized, the awareness and adoption levels were lower than that in the other regions. The overall awareness and adoption of

livestock rearing technologies were found among 41 per cent of the sample women and they were higher in Coastal region with 59 per cent and poor in the other two regions.

In livestock production technologies also less than one fourth of the sample farmwomen were aware of and adopted on health and management aspects. The picture was very poor in management technology. There again, existed scope for vast improvement in awareness and adoption among the farm women

Very high percentage of sample farm women expressed that they were highly in need of appropriate and latest production technologies and the trainings, Marketing information and marketing of produce was the major focus among the sample farmwomen

The major sources of information on Technologies, the sample farmwomen tapped were:

- Husbands and neighbourers (peer group farmers) formed as the major source.
- Agri. Extension Officers, input dealers and television formed as the next important sources
- NGOs and local officers were also tapped
- Radio and print media also found as the sources of information to sizable sample women

The Implications emanated from the study are:

(1) To increase the awareness and adoption levels the organizational restructuring by positioning adequate and appropriate personnel at the village / contact level.

(2) The extension education thrust must be more on plant protection aspects including the concept of IPM, INM

(3) The need for crop and location specific extension education programmes to push up the yield frontier and

(4) The village information resource centre may be strengthened with more access to women folk and

(5) Training programmes on skill development transfer of production technologies and farm management.

(6) The need of appropriate and latest production technologies and the trainings, Marketing information and marketing of produce was the major focus among the sample farmwomen

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