

## Gender-Specific Perceived Training Needs of Farmers in Improved Rice Cultivation Practices

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### ABSTRACT

*Conducted in Maklang Gram Panchayat of Imphal West, this study aims to measure and compare the perceived training need of male and female farmers in improved rice cultivation practices. A total of 154 farmers, 76 male and 78 females were enumerated and stratified according to their land-owning status as farmers cultivating own land, sharecroppers and landless labourers. It was found that for both male and female farmers, the areas with high training need scores were seed selection and treatment, pest management and nutrient management with highest training need score in selection of pesticides. Most of the farmers have expressed very high level of training need in doses, time and method of application of chemical fertilizers. Male farmers expressed high training need in knowledge about seed treatment chemicals and their doses and female farmers in seed treatment and selection of healthy seeds for sowing. Among the male farmers, the sharecroppers were found to have higher training need score while among the female farmers it was those cultivating their own land. All the categories of farmers have similar training need in water, nutrient and pest management. Gender differences in training need are observed in land preparation, seed selection & treatment, water, weed, nutrient and pest management. The overall observation is that male farmers are more enthusiastic and motivated to be trained than their female counterparts.*

**Key words :** Training needs; Gender-specific; Rice farmer.

Rice is the staple food of the people of Manipur. However, every year there is acute shortage of rice in the State (Government of Manipur, 2010) which is met through import from other Indian states and neighbouring country Myanmar. One of the most important tools for bridging this gap is training. In rice cultivation both male and female farmers are actively involved, however, most agricultural policies and programmes do not differentiate between male and female farmers. Therefore, they often fail to recognize the differences between men's and women's work, knowledge, contributions and needs (FAO, 2004). Thus, there is need to explore the gender-specific needs and problems of farmers in relation to rice production technology and training thereof. Again, land tenure system is another social constraint which discourages actual growers to invest on farm improvement in the north-eastern states of India. Actual cultivators are generally tenants rather than owners (Pattnayak et. al., 2006). Considering these points, the study was initiated to measure and compare the training needs of different categories of male and female farmers in improved rice cultivation practices.

### METHODOLOGY

The study was undertaken in a rice growing area of Maklang Gram Panchayat of Imphal West District of Manipur. For selection of respondents, complete enumeration of all the rice growers of Lairam Loukol rice field was done. In the enumeration procedure, only farmers residing within the six villages of the Maklang Gram Panchayat were considered. Since, in the North Eastern states of India, diverse and variable rice-growing ecologies prevail even in a small geographical area of a village Panchayat or at Block level (Singh et. al., 2001), the sampling was done for

keeping the agro-ecological and socio-cultural condition of the respondents as uniform as possible. In this manner a total of 154 farmers were interviewed, 76 of whom were male and 78 female. The selected farmers were stratified into three categories according to their land owning status as,

**Farmers cultivating their own fields :** The farmers of those households which have paddy fields registered in the name of the head of the family or some other family member. To be considered for this category the respondent himself/herself should be engaged in rice cultivation.

**Sharecroppers :** These are tenant farmers who lease-in land from other farmers or land-owners residing in towns and cultivate rice in these fields. They give a share of their produce to the land-owner as rent which usually is about 20 bags (800 kgs) per sangam\* of land irrespective of the total yield. This category constitutes more than half of the total rice farming population of Imphal valley. (\*Sangam is a customary unit of area, which is approximately equal to 0.617 acre or one-fourth of a hectare.)

**Landless labourers :** This category of farmers does not have their own land or leased in land to cultivate rice. They mainly work as manual labourers in the fields of the other farmers on day-to-day payment basis. They are engaged in activities like land preparation, transplanting, intercultural operations, plant protection, harvesting and threshing. In off-seasons they are engaged in off farm activities for livelihood.

The number of respondents under each of the category of farmers is presented in Table 1.

#### i) **Delineation and selection of main areas of training :**

For identification of the main areas of training in relation to rice cultivation, different primary and secondary sources of information were used.

**Table 1**  
**Distribution of the respondents according to their land-owning status**

Category	No. of respondents	Percentage
Farmers cultivating their own land (M <sub>1</sub> )	20	12.99
Male Sharecroppers (M <sub>2</sub> )	34	22.08
Landless farmers (M <sub>3</sub> )	22	14.29
Farm -women cultivating their own land (F <sub>1</sub> )	14	9.09
Female sharecroppers (F <sub>2</sub> )	36	23.38
Landless farm -women (F <sub>3</sub> )	28	18.18
<b>Total</b>	<b>154</b>	<b>100.00</b>

Primary sources of information included field observation, discussion with farmers, experts of Central Agricultural University (CAU), Imphal and officials of the Manipur State Department of Agriculture (DoA). The secondary sources were publications by CAU, DoA, KVKs, books, journals, etc. On the basis of the information obtained, a list of 16 (sixteen) main areas of training were identified. The list was given to the rice experts of CAU including breeder, agronomist, pest specialists and extension personnel to scrutinize with a view to point out vague and ambiguous and overlapping and to suggest rephrasing of the areas wherever required. As per the suggestions and light thrown by the experts, eight main areas were finally selected.

**ii) Selection of sub-areas of training :** Under each of the eight main areas of training a list of sub areas were prepared with the same process adopted in the selection of main areas of training. The selected main areas of training and the number of sub-areas under each of the main areas are presented in Table 2.

**Table 2**  
**Main areas of training and number of sub-areas under each main areas of training**

Sr. No.	Main areas of training	No. of sub-areas of training
1.	Land Preparation	5
2.	Seed Selection and Treatment	4
3.	Sowing and Transplanting	5
4.	Water Management	4
5.	Weed Management	4
6.	Integrated Nutrient Management	6
7.	Integrated Pest Management	9
8.	Harvesting and Storage	5

**iii) Measurement of training needs:**

The training needs of farmers in the main areas and sub-areas of training in relation to rice cultivation as perceived by them were measured by using a five point response categories as most needed, needed, somewhat needed, less needed and not needed. The responses were given a score of 5, 4, 3, 2 and 1 respectively.

The relative needs for training in the major

areas and sub-areas as perceived by the respondents was studied by working out the weighted mean score (WMS) and rank-order of the WMS and computing Kendall's Co-efficient of Concordance for testing agreement among them. This method was earlier used by Roy and Prasad (1974). The weighed mean score (WMS) of training needs in an area of rice cultivation is the ratio of the total training needs score obtained by 'n' respondents in that particular area, to the total maximum possible score of 'n' respondents, expressed in a grade scale of 5, i.e, the highest score in the response categories.

## RESULTS AND DISCUSSION

**Training needs of different categories of rice-farmers in the selected main areas of rice cultivation**

**The training need score of the different categories of farmers in the main areas of rice cultivation are presented in Table 3. The Table shows the WMS obtained by each category of respondents against each of the main areas. The main areas are then ranked according to the WMS. While ranking, as per Siegal (1956), when tied scores occur, each of the tied observations is given the average of the ranks they would have had if no ties had occurred. It is observed that almost all the categories of farmers, except for the female sharecroppers, have ranked Seed Selection and Treatment the areas where training is most needed, with farm-women cultivating their own land scoring the highest WMS of 4.59. Pest management ranked first by female sharecroppers while for the other five categories, it is second. Highest WMS in Pest Management is observed in male sharecroppers (4.36). Nutrient Management is the second area of training need for female sharecroppers, while for others, it is third. In Nutrient Management, highest WMS (4.21) is recorded for male sharecroppers and landless farmers. Bajpai et. al. (2007) and Chewang and Jha (2010) while studying the training needs of rice growers found that plant protection measures got first rank. Training needs in Sowing and Transplanting is expressed by female farmers and Land Preparation by male farmers indicating their area of involvement. Water and Weed Management received moderate score of training needs**



**Table 3**  
**Training needs scores of different categories of rice farmers**

Main Areas of Rice Cultivation	Male farmers								Female farmers							
	M <sub>1</sub> (n=20)		M <sub>2</sub> (n=34)		M <sub>3</sub> (n=22)		Pooled (n=76)		F <sub>1</sub> (n=14)		F <sub>2</sub> (n=36)		F <sub>3</sub> (n=28)		Pooled (n=78)	
	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank	WMS	Rank
Land Preparation	3.96	5	4.05	5	4.16	4	4.00	5	3.93	7	3.46	8	3.35	8	3.51	8
Seed Selection & Treatment	4.34	1	4.49	1	4.44	1	4.38	1	4.59	1	4.04	3	3.95	1	4.11	1
Sowing & Transplanting	3.84	6	3.82	8	3.67	7	3.73	7.5	4.19	3	3.58	7	3.62	4	3.71	5
Water Management	3.13	8	3.99	6	3.91	6	3.89	6	4.05	6	3.71	5	3.49	6	3.69	6
Weed Management	3.99	4	4.09	4	4.06	5	4.00	5	4.05	6	3.92	4	3.50	5	3.79	4
Nutrient Management	4.18	3	4.21	3	4.21	3	4.15	3	4.06	4	4.06	2	3.66	3	3.91	3
Pest Management	4.31	2	4.36	2	4.22	2	4.25	2	4.28	2	4.23	1	3.79	2	4.08	2
Harvesting & Post Harvest	3.69	7	3.94	7	3.61	8	3.73	7.5	3.76	8	3.63	6	3.40	7	3.57	7

while most categories of farmers expressed low training needs in harvesting and post harvest activities. In order to find out the agreement in the ranking of the training need scores in the main areas of rice cultivation by the different categories of farmers, Spearman's rank-order correlation ( $\rho$ ) was worked out (Table 4). It is observed that among the three categories of the male farmers, there is significant agreement in the ranking as indicated by significant ( $\rho$ ) values. Among the female farmers also there is significant correlation in ranking except between farm-women cultivating their own land and female sharecroppers.

**Table 4**  
**Spearman's rank-order correlation matrix of the training needs score of the different categories of farmers**

Farmer Categories	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>
M <sub>1</sub>	1.000	.905**	.905**	.719*	.690	.786*
M <sub>2</sub>	.905**	1.000	.952**	.599	.786*	.690
M <sub>3</sub>	.905**	.952**	1.000	.683	.667	.690
F <sub>1</sub>	.719*	.599	.683	1.000	.611	.946**
F <sub>2</sub>	.690	.786*	.667	.611	1.000	.786*
F <sub>3</sub>	.786*	.690	.690	.946**	.786*	1.000

\*\*Significant at 1% level of confidence

\*Significant at 5% level of confidence

**Gender specific training needs of the respondents in the sub-areas of training :** The WMS of the training needs score of male and female farmers in the different sub-areas of training are presented and ranked in Table 5.

**Land preparation :** Both male and female farmers expressed highest training need in preparation of nursery. Tillage operations are mainly performed by males hence they are more interested in learning new aspects of it while females have shown little interest in it. Females, mostly the hired labourers are engaged in puddling. Hence they have expressed higher training

need in this area. The overall training need of female farmers in this main area is very low indicating their lesser involvement in this area.

**Seed selection and treatment :** Male farmers seem to be more interested to gain knowledge about seed treatment chemicals and their doses. While female farmers have expressed more training needs in seed treatment and selection of healthy seeds for sowing. This clearly indicates the gender role here. While male farmers play the decisive role about what to use and how, female farmers are in charge of manually executing the decision. However, both the genders take interest and share roles in this main area as implied by their higher training needs scores.

**Sowing and transplanting :** Female farmers have expressed highest training needs in spacing & plant population, followed by collecting of seedlings and transplanting while male farmers have ranked best time of sowing as the area where training is mostly needed followed by method of sowing. Transplanting is basically performed by females. Female farmers perceive themselves to be well skilled in transplanting; however, they would like to learn more about spacing and how many seedlings should be planted per hill for better yield. Sowing is done mostly by male farmers. In the study, a good number of farmers practice direct sowing mainly because this saves time and labour. The number of farmers practicing direct sowing increases when there is scarcity of water or when the monsoon arrives late. Thus, the male farmers, most specifically the sharecroppers who do not have access to water pumps would like to know more about the when and how of sowing. Collection of seedlings is done jointly by male and female farmers. Farmers practicing transplanting as well as direct sowing are keen to learn how and when healthy seedlings can be collected and prepared for transplanting.

**Water management :** Male farmers have ranked critical stages of water requirement as the area having most training needs while female farmers have given first rank to time and method of irrigation followed by critical stages of water requirement. The study area is mostly rainfed with some

**Table 5**  
**Gender-specific training needs of rice farmers**

Sr. No.	Areas of Rice Cultivation	Male (n=76)		Female (n=78)	
		WMS	Rank	WMS	Rank
1	<b>Land Preparation</b>				
	i. Correct time to start ploughing	4.04	2.5	3.31	4
	ii. Tillage and land preparation	4.04	2.5	3.28	5
	iii. Use of tillage equipments	3.93	4	3.41	3
	iv. Preparation of nursery	4.22	1	3.71	2
	v. Puddling	3.75	5	3.76	1
2	<b>Seed Selection &amp; Treatment</b>				
	i. Selection of healthy seeds for sowing	4.34	3.5	4.15	2
	ii. Knowledge about seed treatment chemicals	4.45	1	4.01	4
	iii. Doses of chemicals	4.41	2	4.03	3
	iv. Method of seed treatment	4.34	3.5	4.23	1
3	<b>Sowing &amp; Transplanting</b>				
	i. Optimum time of sowing	3.95	1	3.41	5
	ii. Method of sowing	3.75	2	3.51	4
	iii. Collection of seedlings	3.72	3	3.74	2.5
	iv. Transplanting	3.54	5	3.74	2.5
	v. Spacing and plant population	3.71	4	4.12	1
4	<b>Water Management</b>				
	i. Water level in nursery	3.71	4	3.45	4
	ii. Water level at time of transplanting	3.74	3	3.47	3
	iii. Critical stages of water requirement	4.13	1	3.82	2
	iv. Time and method of irrigation	3.97	2	4.03	1
5	<b>Weed Management</b>				
	i. Identification of weed	3.58	4	3.55	4
	ii. Knowledge of preventive cultural and mechanical practices	4.11	3	3.68	3
	iii. Knowledge of chemical weedicides	4.18	2	4.01	1
	iv. Method of use and doses of weedicides	4.20	1	3.94	2
6	<b>Nutrient Management</b>				
	i. Use of organic manures with fertilizers	4.03	5	3.42	6
	ii. Knowledge about the nutrient content of fertilizer	4.05	3	3.60	5
	iii. Knowledge of soil testing	4.01	6	3.87	4
	iv. Doses of fertilizers	4.49	1	4.27	1.5
	v. Time and method of application of fertilizers	4.39	2	4.27	1.5
	vi. Compost pit	4.04	4	4.05	3
7	<b>Pest Management</b>				
	i. Identification of insects and diseases	4.21	4.5	4.37	2
	ii. Selection of pesticides	4.62	1	4.54	1
	iii. Method of application and doses of pesticides	4.36	2	4.22	3
	iv. Time of application	4.21	4.5	4.03	5
8	<b>Harvesting and Post Harvest Activities</b>				
	i. Time of harvesting	3.91	1	3.47	4
	ii. Threshing and winnowing	3.63	5	3.38	5
	iii. Preparation of grains for storing	3.67	3	3.59	3
	iv. Making of storage bin	3.64	4	3.60	2
	v. Control of pests and rodents under storage condition	3.84	2	3.82	1



portion of it receiving irrigation through the *Thabi-lok* stream. Thus in times of drought and times when monsoon is late, farmers could not even sow. They have to rely on water pumps for drawing water from the stream but it is not cost effective considering the high cost of hiring the pumps as well as petrol required to run the engine. Thus, they perceive that they need training in knowing the critical stages of water requirement in rice.

**Weed management :** Most of the farmers are well versed in identifying the common local weeds in rice and hence both male and female farmers have ranked this aspect the last. The areas with high training needs are knowledge of chemical weedicides and their method of using and doses. The farmers seem to mostly rely on chemical weedicides. It was observed that most of them could tell the name of at least one weedicide but don't know was the answer when and how it should be used.

**Nutrient management :** Most of the farmers have expressed very high level of training needs in doses, time and method of application of chemical fertilizers. The farmers of the study, like majority of other farmers' believe that fertilizers will improve crop health and yield. But they were also aware that there is certain doses and timing for application for better results. It was observed that almost all the farmers apply fertilizers in split doses but mostly the wrong fertilizer at wrong time or in wrong proportion. This, they attribute to the high cost of fertilizers or unavailability at the right time. Many have also accepted that it is due to their ignorance and limited knowledge. Female farmers seem to be interested in learning about compost pit not for paddy fields but for vegetable cultivation in winter months. Knowledge level and perceived needs of average farmers with regards to use of organic fertilizers and soil testing is poor.

**Pest management :** Pest management is one area which farmers think is of utmost importance taking into account the damage and lost due to pest and disease. Both male and female farmers have given highest training needs score to selection of pesticides. Method of application and doses of pesticides have been ranked second by the male farmers while female farmers have ranked identification of insects as second. Farmers are mostly interested in use of chemicals and the most common error committed by the farmers is administration of wrong chemical on wrong pest. Farmers are also interested to learn about the precautions to be taken and the probable effects of using chemical pesticides. Almost all the farmers have given very low training needs score to cultural, biological & mechanical control, concept of Economic Threshold Level (ETL) and rodent control.

**Harvesting and post harvest activities :** Male farmers are particularly interested to know the optimum time for harvesting because there were cases of loss of grains due to too ripe grains or problem in threshing due to unripe grains. For female farmers,

their main areas of training needs was control of pest and rodents during storage and how to make effective low-cost storage bin. Loss in the stored grains due to pest and rodents is a common problem for most households. Thus, farmers were very much interested in receiving training in this regard. Threshing and winnowing is one area where all the farmers, particularly the male farmers think they are well skilled and hence less training need. However, use of modern harvesting and threshing machines is alien to the area.

**Gender specific level of training needs of the farmers :** The gender-specific level of training need of the respondents in each of the eight identified main areas of rice cultivation is presented in Table 6. It is observed that in almost all the main areas, the percentage of male farmers having high and medium training needs were much higher than the females. And the percentage of female farmers having low level of training needs was higher in all the main areas of rice cultivation. Only in the main areas harvesting and post harvest activities the percentage of female farmers having medium level training needs (73.08%) was found to be relatively higher than that of male farmers (61.84%). The overall observation is that male farmers are more enthusiastic and motivated to be trained than their female counterparts. This is in contrast to the findings of Bishwakarma (2003) where the training needs of women in rice cultivation is more than men.

**Kendall's coefficient of concordance of training need scores of the main areas of training by the male and female farmers :** In order to find out if there is any agreement in the ranking given by the different categories of farmers in each of the main areas of training, Kendall's co-efficient of concordance (W) was used. W values were calculated for the three categories of farmers within the male and female farmers as well as for the pooled farmers with six categories. Since, for all the categories of farmers n is larger than 7, the significance of W is tested by converting its value into  $\chi^2$  (chi-square). Details are presented in Table 7.

It is observed that for the main area Land Preparation, the W value of the male farmers 0.86 is significant at 5 per cent and *df* 4. However, for the female and the pooled farmers, it was found to be non significant. This indicates that there is agreement between the rankings of the sub-areas by the different categories of male farmers. In the main areas Seed Selection & Treatment and Sowing & Transplanting, for all the three groups – male, female and pooled farmers, the W value was found to be non-significant. This indicates that there is no significant agreement between the rankings of the sub-areas by the farmers. Their preference of training need within the group varies. The W values of the training needs in the sub-areas of Water management, Nutrient Management and Pest Management for all the group of farmers were



**Table 6**  
Gender-specific level of training needs of rice farmers

Main area of training	Level of training needs	Male farmers (N=76)		Female farmers (N=78)		Mean	SD
		Frequency	%	Frequency	%		
Land Preparation	Low (below 16)	1	1.32	26	33.33	18.89	2.82
	Medium (16 to 21)	50	65.79	47	60.26		
	High (above 21)	25	32.89	5	6.41		
Seed Selection and Treatment	Low (below 15)	5	6.58	26	33.33	17.08	1.90
	Medium (15 to 19)	56	73.68	47	60.26		
	High (above 19)	15	19.74	5	6.41		
Sowing and Transplanting	Low (below 16)	13	17.11	17	21.79	18.72	2.26
	Medium (16 to 21)	53	69.74	55	70.51		
	High (above 21)	10	13.16	6	7.69		
Water Management	Low (below 13)	7	9.21	16	20.51	15.27	1.92
	Medium (13 to 17)	56	73.68	55	70.51		
	High (above 17)	13	17.11	7	8.97		
Weed Management	Low (below 14)	8	10.53	25	32.05	15.69	1.84
	Medium (14 to 17)	51	67.11	43	55.13		
	High (above 17)	17	22.37	10	12.82		
Nutrient Management	Low (below 22)	6	7.89	24	30.77	24.50	2.22
	Medium (22 to 26)	52	68.42	44	56.41		
	High (above 26)	18	23.68	10	12.82		
Pest Management	Low (below 34)	5	6.58	20	25.64	37.73	3.80
	Medium (34 to 41)	55	72.37	53	67.95		
	High (above 41)	16	21.05	5	6.41		
Harvesting and Post Harvest Activities	Low (below 15)	16	21.05	19	24.36	18.36	2.58
	Medium (15 to 21)	47	61.84	57	73.08		
	High (above 21)	13	17.11	2	2.56		

**Table 7**  
Kendall's coefficient of concordance of training needs scores of the main areas of training by the male, female and pooled farmers

Main areas of training	Male (n=76)		Female (n=78)		Pooled (N=154)	
	W	Chi-sq	W	Chi-sq	W	Chi-sq
1. Land Preparation	.86	10.37*	.63	7.66	.39	9.39
2. Seed Selection and Treatment	.10	.93	.17	1.55	.003	.05
3. Sowing and Transplanting	.63	7.59	.22	2.69	.24	5.76
4. Water Management	.98	8.79*	.89	7.97*	.86	15.41**
5. Weed Management	.66	5.89	.98	8.79*	.71	12.79**
6. Nutrient Management	.75	11.18*	.95	14.21*	.79	23.82**
7. Pest Management	.84	20.10**	.65	15.64*	.67	31.98**
8. Harvesting and Post Harvest	.54	6.51	.57	6.83	.47	11.27*

\*\*Significant at 1% level of confidence \*Significant at 5% level of confidence

found to be significant. Thus, it is proved that the ranking given by different categories within each group in the main areas are in agreement. If we see the main area Weed Management, the W value for male farmers is non-significant.

However, for the female and pooled farmers it was found to be significant at 5 and 1 per cent, respectively. This implies that for female and pooled farmers there is association between the scoring of the sub-areas given by the different categories within each group. In the main area Harvesting and Post Harvesting, the W value for both male and female farmers were found to be non significant. However, for the pooled farmers, the W value was found to be significant at 5 per cent level of significance. Hence, there is no agreement between the within group scores

of the male and female categories.

**Comparison of the mean training scores of the male and female farmers :** To find out the significant difference in the mean score obtained by the male and female farmers for the main areas of training, Mann-Whitney U-test is used and results are shown in Table 8. It is observed that the U values for Land Preparation, Seed Selection & Treatment, Water Management, Weed Management, Nutrient Management and Pest Management are significant at 1per cent level of significance. That is to say that for these main areas of training, there is significant difference between the training needs score of the male and female farmers. As for the main areas Sowing & Transplanting and Harvesting & Post Harvest Activities, the U value is found to be non-significant. Thus, there is no



significant difference between the mean training needs scores of the male and female farmers in these two areas.

### CONCLUSION

This study attempted to find out if there are any differences in training needs of male and female farmers belonging to different land-owning classes in improved rice cultivation practices. Gender need

**Table 8**  
Mann-Whitney U test of the mean training scores of the male and female farmers

Main Areas of Training	Main Training needs score		Mann-Whitney U
	Male (n=76)	Female (n=78)	
1. Land preparation	20	17.53	1279.00**
2. Seed selection and treatment	18	16.42	1802.00**
3. Sowing and transplanting	19	18.53	2678.00
4. Water management	16	14.77	2155.00**
5. Weed management	16	15.18	2056.00**
6. Nutrient management	25	23.49	1863.00**
7. Pest management	39	36.72	2073.50**
8. Harvesting and post harvest	19	17.85	2507.00

\*\*Significant at 1% level of confidence

differences in rice farming and are often heard of and are confirmed by these findings. Gender differences in training needs scores were observed in the areas of Land Preparation, Seed Selection & Treatment, Water Management, Weed Management, Nutrient Management and Pest Management. An interesting finding was that the level of training needs of female farmers was lower than the male farmers in all areas. Significant differences in training needs score were also observed within the different land-owning categories of each gender. However, the rank-order of the training need score is almost consistent with all the categories of farmers scoring high training needs in Seed selection & Treatment, Pest Management and Nutrient Management. Thus, it may be concluded that there are differences in the perceived level of training needs of farmers according to their gender and land-owning status which may vary according to their sense of belongingness and control in the process of rice cultivation as well as their confidence and motivation to learn. Nevertheless all the categories considered here have their own position and role in the rice production scenario and their needs cannot be neglected.

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