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Annals of Biological Research, 2013, 4 (3):55-59
(http://scholarsresearchlibrary.com/archive.html)

Annals of Biological Research
Scholars Research Library
ISSN 0976-1233
CODEN (USA): ABRNBW

Investigating the effect of extension facilities on attitude of rice milling industry owners to reform and renew their units in Guilan Province

Mehdi Rasouli[1*], Mohammad Chizari[2], Iraj Malekmohammadi[3] and Mohsen Ebrahimpour[4]

[1]*Department of Agricultural Development, Science and Research Branch, Islamic Azad University, Tehran, Iran*
[2]*Department of Agricultural Extension and Education, Tarbiat Modarres University, Tehran, Iran*
[3]*Department of Agricultural Extension and Education, Tehran University, Karaj, Iran*
[4]*Agricultural Planning Economic and Rural Development Research Institute, Tehran, Iran*

ABSTRACT

The present research was aimed to study the role of extension services regarding the attitude of owners of rice milling industry to reform and renew their units in Guilan province. This research was an applied study and performed according to correlative descriptive method. The population included owners of rice milling industry which were studied by enumeration method. In this regard a questionnaire was made and information collected from 149 owners of rice milling industry. Statistical analysis of data showed that the variable "extension publications" with a confidence level of 95% had a significant relationship with the attitude of industry owners toward moving from traditional to modern method of rice milling. This hold true for other variables such as "participation at learning courses", "extension visits", "mass media programs (radio- television)", "contact with technicians of agricultural Jihad" and "reference to extension agent" with a confidence level of 99%. In general results obtained from this study indicated that extension activities had a significant role in attitude of owners of rice milling industry to reform and renew their units.

Keywords: paddy rice, reforming and renewing rice milling process, extension facilities, Guilan, Iran

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INTRODUCTION

In Iran, agricultural sector accounts for 23% of occupation and more than 13% of gross domestic product [20]. Also about 80% of the food needed by people and about 90% of raw materials required by food factories are supplied with agricultural section. In fact agriculture has an important role in national economy and forms one of the important production bases of the country [14]. Rice is one of the most important food products in the world which supplies the food of approximately 2.5 milliard people and millions of people in the world receive the major proportion of their income from rice production [3]. Rice is also the second most important food source of Iranians [23] and Guilan province containing about 238000 ha as area culture of paddy rice supplies 35% of rice consumed in Iran [13]. Since most of the agricultural products are processed before consumption and consequently undergo physical and quality changes [18], use of technology for production of agricultural products has been of interest in recent years. Regarding that grain has important role in agricultural production, therefore post-harvest technology can lead to higher yields and improve quality and quantity of the product [19]. In post- harvest stages of paddy rice approximately 15 to 20% of grain is lost and performance of the product is reduced due to following factors: retardation in harvesting, unavailability of labor in harvest season, inappropriate drying (traditional method under direct sunlight), losses caused by pests and disease, absorption of moisture into open traditional storage systems, old rice milling factories and obsolete techniques of processing [5]. In Iran processing operation of paddy to white rice

is carried out in rice milling factories. It begins with drying paddy followed by grading white rice. The more intact the less cracked the rice, the more will be its acceptability, therefore investigation of loss due to breaking of rice grain as well as its implication for economy of rice growers can be effective in tendency of policy makers toward reforming the present structure and improving rice quality. It should be mentioned that the amount of cracked rice is varied with different systems of processing. Also innate cracking characteristics of different varieties of rice during processing should not be ignored [12].Zamani and Alizadeh(2007) believed that losses due to different factors (before harvest until processing) reduce commercial value of the product significantly. However a major part of post-harvest losses is related to inappropriate conversion system and establishment of them in conversion line. Therefore improving the systems present at rice milling factories through optimization and replacement of advanced machines for old ones along with training man forces occupied at rice milling units are effective ways of reducing losses[23]. Alizadeh Shayeq(2009) states that the major part of rice losses happens during post harvest stages due to wear of rice milling factories (most of them are more than 40 years old) and use of traditional methods. He emphasizes on the necessity of applying "plan of reforming and renewing rice milling factories" as a way of reducing losses of conversion stage[1]. Todaru(2005) believes that man sources have a major role in the process of development of a country and that in order to obtain a permanent extension, training experienced and efficient man forces needed by the society seems necessary[21]. Based on Peyman study, insufficient and inappropriate investment for training man forces as well as for producing technological machinery in industry section (including rice processing) has led to wear of machinery. On the other hand worn and old machinery has decreased efficiency of man forces and enhanced losses[12]. Department of integrated industries, agricultural section , knows "insufficient training to rice milling employers" as a common problem of rice milling industry[2]. In view of Javadzadeh(2010) ,some of training problems faced with rice milling factories of Guilan province are as follows: 1.There is lake of knowledge about modern systems of rice processing 2. The owners of rice milling units and employers haven't enough knowledge of adjustment, service and maintenance of machines 3. Traditional and preferential management in applying machinery of conversion and processing line 4. Imitation and inefficiency of public section in offering specific learning's and lack of activity of private section for training 5.Lack of enough knowledge about properties and nutritional value of rice varieties especially brown rice[8]. However Gallagher (2002) believes that involvement of individuals in carrying out of plans and activities is depended on their knowledge, attitude, dutifulness and accountability [4]. International rice research institute (IRRI) (2008) reported that in some regions of India important attempts have been carried out for reforming and renewing integrated rice industries in addition to establishing training classes for rice growers and employers of rice milling industry [6]. Mahbubi et al., (2012) found that the major reasons why women don't participated in training classes are that they aren't aware of celebration of respected courses, these courses are long and boring and they haven't enough time to participate in classes. Having different occupational and social responsibilities have also been stated [10]. Shahidi Zandi and Mirzaei (2007) showed that factors such as education level, age and number of household members had significant effect on tendency of people toward extension and learning activities[15]. Wetengere (2009) used probit model for research and concluded that adoption of technology were influenced by gender, age, formal learning, religious beliefs , field size, income, the number of family members and adventurism[22]. Subashini and Thyagarajan (2002) reported that education level, field size, social partnership, socio- economic status and contact with extension institutions had a positive and significant relationship with adoption of tapioca farming technology. Also there was a significant relationship between use of mass media and adoption of tapioca farming technology [17].Based on Sharma et al., (2002) annual income, education level and use of mass media had a positive relationship with adoption of technology[16]. Research findings of Karami Dehkordi (1998) showed that researchers who had more experiences about research activities, more collaboration with extension employers, management position, lower scientific status and more participation at extension seminars and conferences all had more positive attitude toward collaboration with extension employers. Furthermore researchers who had obtained research ideas based on the farmer's needs and their finding were used more by the farmers showed a more positive attitude to collaboration with the farmers [9]. Jamshidi et al., (2010) reported that water availability, secondary job, the amount of income and technical knowledge had the most effect on the attitude of rice farmers toward cropping and extension of area culture[7]. In a study by Mohammadzadeh (2001) it was found that extension employers had a positive attitude to collaboration with farmers and researchers [11]. Correlation analysis of variables showed that individual characteristics, receiving collaborative information, use of researchers and farmers ideas in extension-research plans, participation in collaborative approaches, and collaborative experience with farmers, job satisfaction and management system had a significant relationship with the attitude of the extension employers. General aim of this research was to investigate the role of extension activities in the attitude of the owners of rice milling industry to reform and renew their units, and specific aims were as follows: 1.To consider extension activities carried out for the owners of rice milling industry in the field of reforming and renewing 2. To consider the relationship between availability of extension facilities and the attitude of the owners to reform and renew 3. To identify the most appropriate extension strategies for creation of positive attitude to reform and renew.

MATERIALS AND METHODS

This research was functional and performed according to correlative-descriptive method. Statistical society included owners of rice milling industry of Guilan province who have carried out reforming and renewing plan on their units. Based on statistics of agricultural Jihad organization of Guilan province published in 2012, 186 units have been attempted to reform and renew by their owners who were assessed in this research by enumeration method. In this regard a questionnaire was presented whose validity was confirmed by experts of agricultural Jihad organization of Guilan province and other authorities. To assure of reliability of the questionnaire, preliminary assay was performed outside the studied area and required modifications were carried out on the questionnaire based on the obtained results. Ultimately 149 persons of statistical society responded to the questionnaire. Statistical analysis of data was based on analytical and descriptive approaches. For descriptive analysis percent, frequency, mean and standard deviation of responses were determined followed by presenting respected table. For analytical analysis the relationship between tendency (attitude) of the owners of rice milling industry to reform and renew with different extension facilities were evaluated followed by measuring their correlation coefficients. Data analysis was performed using SPSS software.

RESULTS AND DISCUSSION

Descriptive data of this research showed that age of respondents averaged 49.67 with **S**tandard **D**eviation of 9.99. Regarding level of education most of respondents (41.6%) had diploma degree and have been working in rice milling industry for 18.34 years on average; The most and the least records were 56 and 1 years respectively. On average 4.81 persons of households responded to the questionnaire with standard deviation of 1.68. Yearly average income of 51.7% of rice milling units before reforming and renewing was less than 900.000.000 Rials and yearly average income of 40.3% of rice milling units after reforming and renewing was less than 900.000.000 Rials; i.e. 10.4% of these individuals were upgraded to higher income groups. Table 1 shows different extension facilities for the owners of rice milling industry.

Table1. Enjoyment from extension facilities by the owners of rice milling industry

Extension facilities		Never	Seldom	Little	Average	High	Very much	Mean	Standard Deviation
Participation in education courses	Frequency	58	12	5	21	41	12	2.07	1.90
	%	38.9	8.1	3.4	14.1	27.5	8.1		
Use of extension publications (journals)	Frequency	74	35	11	15	8	2	0.99	1.31
	%	49.7	23.5	7.4	10.1	5.4	1.3		
Extension visits	Frequency	11	12	10	28	61	25	3.30	1.44
	%	7.4	8.1	6.7	18.8	40.9	16.8		
Use of mass media (radio and television programs)	Frequency	77	49	6	8	3	-	0.68	0.94
	%	51.7	32.9	4.0	5.4	2.0	-		
Contact with technicians of agricultural Jihad	Frequency	4	3	12	30	64	33	3.68	1.13
	%	2.7	2.0	8.1	20.1	43.0	22.1		

During ***l***ast year 24.8% of respondents have referred to extension agents for 6 to 10 times with average and SD being 2.83 and 1/41 respectively. Also 25 persons (16.8%) of the owners of rice milling units stated that before reforming and renewing they were very much aware of its advantages. 87 persons (58.4%) were much aware of advantages of reforming and renewing. Also 21 persons (14.1%), 11 persons (7.4%) and 3 persons (2%) were averagely, little and very little aware of the advantages respectively. Furthermore 136 persons (91.3%) of respondents were not involved in codifying guidelines and terms of reforming and renewing plan of rice milling industry. Mean responses to this question were 3.82 with SD of 0.87. The owners of rice milling industry expressed their interest in movement from traditional to modern method of rice milling as follows: One person (0.7%) didn't show any interest; one person (0.7%) had very little interest; Four persons (2.7%) showed little interest; Ten persons (6.7%) felt average interest and 75 (50.3%) and 56 (37.6%) persons had much and very much interest in movement from traditional to modern method of rice milling respectively. Average responses were 4.27 with a SD of 0.83. Table 2 shows results obtained from measuring correlation coefficient between extension facilities and attitude of the owners toward modern method of rice milling.

Table 2. The results obtained from measuring correlation between variables related to extension facilities and variable "the attitude toward movement from traditional to modern method"

Independent variable	Research variable	Spearman coefficient of correlation	Significance level
Participation in education courses	**the attitude toward movement from traditional to modern method**	0.233**	0.004
Use of extension publications (journals)	**the attitude toward movement from traditional to modern method**	0.171*	0.04
Extension visits	**the attitude toward movement from traditional to modern method**	0.360**	0.00
Use of mass media (radio and television programs)	**the attitude toward movement from traditional to modern method**	0.327**	0.00
Contact with technicians of agricultural Jihad	**the attitude toward movement from traditional to modern method**	0.375**	0.00
Reference to extension agent	**the attitude toward movement from traditional to modern method**	0.436**	0.00

** Indicative of significant relationship at probability level of 5%*
*** Indicative of significant relationship at probability level of 1%*

Wetenger (2009) believed that extension trainings had an important role in acceptability of technology [22]. In this research it was also shown that all extension activities performed to reform and renew rice milling units led to improvement of attitude the owners of rice milling industry to modern rice milling. As one can see from Table 2, extension publications had a significant relationship with the attitude of the owners of industry to reform and renew their units at a confidence level of 95% and the other extension variables also showed significant relationship at a confidence level of 99%. According to Table 1 it may be said that the reason for lower correlation of extension publications with the attitude of the owners of rice milling industry to reform and renew respected units compared with other variables is that , individuals have been very little subjected to extension publications as well as mass media (radio and television) programs.

Results of the present study emphasized on the positive influence of extension publications as well as mass media programs on the attitude of individuals toward modern rice milling. These results were in line with researches of Subashini and Thyagarajan (2002) and Sharma et al., (2002)[17,16]. As it can be found from Table 1 mass media programs and extension publications are two variables of which respondents had the least enjoyment. The only variable which had a relationship with the attitude of the owners of rice milling industry to modern rice milling at a confidence level of 95% was extension publications; the reason was probably shortage of the extension publications related to rice milling. Also based on studies carried out in Guilan it was shown that respected organizations haven't produced and broadcasted enough appropriate mass media programs related to rice milling. Since contact with technicians of agricultural Jihad by the owners of rice milling industry of the province was more feasible than other extension facilities, it reflected significant role of the extension agents in the attitude of those individuals to reform and renew rice milling units. Based on descriptive data of the present research annual income of just a few farmers was increased after reforming and renewing rice milling process. It is noteworthy because reforming and renewing plan could not increase annual income of rice milling units which might be due to high costs of rice milling units after reforming and renewing which in turn caused by enhanced costs of energy (gas, power) as well as of spare parts, maintenance of machinery, tax etc., and reduced working capacity of rice milling units due to decrease in production of rice paddy during recent years.

Recommendations

-Regarding the importance of contact of the owners of rice milling industry with technicians of agricultural Jihad organization of Guilan province it is recommended that conditions should be created in order that the owners of rice milling industry can consult with experts and experienced extension agents in place of their factories and avoid one side reference to respected offices and organizations. In this way experts and extension agents can be aware of problems deficiencies and conditions of rice milling units.

-Furthermore the owners of rice milling units no longer have to refer to agricultural Jihad when they are very busy and their presence in factory is necessary.

-Technicians and extension agents should participate in learning courses and training while on duty to improve their knowledge as well as their experience through consultation with authorities in the area of rice milling industry.

-Appropriate extension publications satisfying the needs of rice milling units should be presented with the aid of private section and become available to the owners of rice milling industry.

-Production and broadcast of useful attractive radio and television programs related to issues of rice milling industry should be considered which needs for collaboration of agricultural Jihad organization, universities, industry department and other respected organizations with audio- visual organization.

-Based on the needs of rice milling units of the province there should be appropriate learning courses in different fields such as maintenance of machinery, marketing, management of energy consumption and other issues related to rice milling industry.

-The owners of rice milling industry should be provided with different extension visits inside and outside of the country depending on their needs and interests.

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