PARTICIPATION OF RURAL WOMEN IN RICE PRODUCTION ACTIVITIES AND EXTENSION EDUCATION PROGRAMS IN THE GILAN PROVINCE, IRAN

Mohammed Chizari, Assistant Professor and Head of Agricultural Extension and Education Department 
Tarbiat Modarres University 
P.O. Box 14155-4838 
Tehran, Iran 
9821 2578605 
9821 8006544 (fax)

James R. Lindner, Research Associate 
The Ohio State University 
Piketon Research and Extension Center 
1864 Shyville Road 
Piketon, Ohio 45661-9749 
(614) 289-2071 
(614) 289-4591 (fax) 
jlindner@magnus.acs.ohio-state.edu

Rasool Bashardoost, Extension Specialist 
Ministry of Agriculture 
Tehran, Iran

Abstract

Iran’s northern provinces, including the Gilan Province, comprise 26% of the nation’s farmland. Although dramatic and widespread increases in rice yields have been achieved, Iran is still dependent on rice imports. More than 75% of rural women in the Gilan Province are engaged in agricultural activities. But, Iran’s extension service has been ineffective in reaching rural women farmers. In particular, limited access to extension programs by women rice producers has restricted further gains in rice production. Factors associated with participation of rural women in rice production activities in the Gilan Province were studied. Using cluster sampling procedures, 142 rural women farmers were selected. It was found that size of rice field, income, and education levels of rural women farmers affected their participation in rice production activities. Opportunities for the extension service to better meet the unique educational and technological needs of rural women rice farmers are suggested.

Introduction

Historians believe that women domesticated crop plants, thereby initiating the art and science of farming (Satio & Weidman, 1990). While men went hunting in search of food, women gathered seeds from the native plants and began cultivating those of interest for food, fiber and fuel.

A study conducted by Poats (1990) emphasized the importance of rural women's participation in agricultural activities and food production. Even in countries where farm families are male-dominated, drastic changes in cropping practices take place because of female influence (Lionberger & Gwin, 1990).

Although women are engaged in a wide range of agricultural activities in many developing countries they continue to be systematically subjugated, undervalued and unrecognized. In
some parts of the Islamic Republic of Iran, particularly in the northern provinces, women play a prominent role in agricultural activities. The northern provinces of Iran include Gilan, Mazandaran, East Azarbaijan, and West Azarbaijan. They comprise 10% of Iran’s land, 26% of the agricultural farmland, and 23% of the population. In the northern provinces, 75% of rural women are actively involved in agricultural activities (Mirikhoozani, 1993). Women’s participation in agricultural activities is higher in the Gilan Province.

Most women farmers in Iran have limited access to extension programs designed to increase farm productivity and income. Because the official census in Iran only counts heads of farm households, who are males, the unpaid responsibilities of women farmers are not recorded. As a result, the needs of women farmers are not being addressed in extension education programs (Mirikhoozani, 1993).

Women farmers, who are also responsible for household and child rearing duties, are often not included in education programs (Van den Ban & Hawkins, 1988). Inclusion of women in education and training programs will result in increased agricultural production (Van den Ban & Hawkins, 1988). According to Buford, Bedeian and Lindner (1995), ensuring equal access to and participation in extension education and training programs by minorities and diverse groups is an essential role of an extension service. These authors maintain that extension services are expected to be socially responsible and should be held accountable for their actions. If the needs of women farmers and other disadvantaged groups are to be served effectively, extension services need to develop specific programs and mechanisms targeted to the specific needs of women farmers (Swanson, 1990). Participation in extension programs is necessary for women to gain access to current production methods and technology (Satio & Weidman, 1990). Women farmers, particularly those in female-headed farm households, have different technological and educational needs than do similarly situated male farmers (World Bank, 1990). Women have many demands on their time and few resources, which results in low levels of productivity.

Rice is an ancient and staple food for over half the people of the world. After wheat, rice is the main source of food in Iran. Although dramatic and widespread increases in rice yields have been achieved within a 14-year period in 13 provinces, Iran is still dependent on rice imports. The Gilan Province with 730,000 hectares is the leading producer of rice in Iran.

Poor extension education efforts and lack of training for female farmers have restricted further gains in rice production in the Gilan Province (Moetamed, 1993). The extension service has an opportunity to make a substantial positive impact on the production of rice by including women in training and education programs. Extension educators need to understand the inevitable role and importance of rural women’s participation in rice production (Moetamed, 1993).

**Purpose**

The purpose of this study was to determine the level of participation of rural women in selected rice production activities and extension education programs in the Gilan Province of Iran. Specifically, the study sought to determine differences in participation of women farmers in the production of rice by their age, size of rice field, annual household income, level of education, and participation in extension education activities.

**Methodology**

The research design for this study employed a descriptive survey method.

The target population included rural women farmers in the Gilan Province, Iran. Cluster sampling procedures were used to draw the sample. Gilan Province has 11 townships, and each township has 6 villages. Two townships, Somaesara and Kasht, were randomly selected. Then, four villages were chosen at random from each township, or a total of eight villages was
included in the sample. From each village, 20 women involved in rice farming were randomly selected. Therefore, the targeted sample was 160 rural women. During the interview process, however, the researchers only had access to 142 women, since 18 women would not participate due to cultural practices and religious beliefs.

A questionnaire was developed from the review of literature. Data were collected through personal interviews with women farmers in the rice fields. The questionnaire included both open-end and fixed-choice questions. Open-end questions were used to gather information not covered by the fixed-choice questions, and to encourage participants to provide feedback. Face and content validity of the instrument were established using an expert panel of three faculty members in the Department of Agricultural Extension, Tehran University, Iran. The instrument was pilot-tested with 15 rural women in two townships which were different from the study townships. As a result of the pilot test, minor changes in wording were made in the questionnaire.

The dependent variable in the study was level of participation of rural women in rice production. Three rice production activities were followed, i.e., sifting and cleaning seeds, harvesting rice, pulling off crucible seedlings from nursery plots. For each activity, the level of participation of women was categorized and graded as follows:

<table>
<thead>
<tr>
<th>Extent to which activity is done by women/men</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only done by women</td>
<td>100</td>
</tr>
<tr>
<td>Mostly done by women</td>
<td>80</td>
</tr>
<tr>
<td>Done equally by women and men</td>
<td>50</td>
</tr>
<tr>
<td>Mostly done by men</td>
<td>20</td>
</tr>
<tr>
<td>Done only by men</td>
<td>0</td>
</tr>
</tbody>
</table>

Each respondent in the study received grades for all three activities to reflect the extent of participation. The dependent variable was analyzed for (a) frequency distribution for each practice on extent of participation, (b) mean participation score for each practice and overall participation score for all three practices, and (c) analysis of variance of overall participation in rice production activities compared to selected independent variables of respondent characteristics, i.e., age, size of rice field, annual household income, level of education, and participation in extension education activities.

The analysis of variance procedure was used to test five null hypotheses of no difference between level of participation of women in rice production in Gilan Province and age (H01); size of rice field (H02); annual household income (H03); level of education (H04); and participation in extension education activities (H05). The alpha level for statistical significance was set \( a \ priori \) at .05. The analyses were done with the Statistical Package for Social Sciences (SPSS, Inc., 1986).

**Findings**

**Characteristics of Respondents**

The age of women farmers in this study ranged from 16 to 69 years. Twenty-three percent of them were 30 years or younger, and a majority (51%) were 40 years or older. More than 90% of the respondents were married, 2% were widowed, and 5% were divorced. More than 66% of the respondents had three or more children. Ten percent of the respondents stated that their rice field was three hectares or larger. More than 75% of the respondents said that their household income was 20 million rials or less per year (1 U.S. dollar = 3,000 rials, approximately). A majority of the respondents (51%) were illiterate, 30% had an elementary education, 11% secondary, and 8% post-secondary and higher.

**Participation in Rice Extension Education Programs**

Sixty-five respondents (46%) said they had participated in rice extension education programs. The extent of participation in the different programs is shown in Table 1. The highest level of participation was in the land preparation program (n=20, 30.9%) and the...
lowest (n=3, 3.9%) in each of the water
management, fertilization, and pest and disease
control programs.

Participation in Rice Production Activities

Table 2 shows the participation of women
farmers in selected rice production activities.
Over 40% of the respondents indicated that
sifting and cleaning was done solely by women,
and nearly 34% indicated it was done equally
with men. By contrast, 65.4% of respondents
indicated that harvesting was done equally by
women and men, and none of the respondents
said harvesting was done only by or mostly by
women. Nearly 35% of the respondents
indicated that pulling off crucible seedlings
from nursery plots was done solely by women,
and 27.4% indicated it was done equally by
women and men.

The mean participation scores for the three
practices shown in Table 3 indicate that women
did much of the work of sifting and cleaning
seeds, and pulling off crucible seeds from
nursery plots, but did much less in the
harvesting of rice.

Differences in Participation of Women in Rice
Production Activities by Selected
Characteristics

One-way analysis of variance is used to test for
statistically significant differences in means,
when only one independent variable is
manipulated (Borg & Gall, 1983).

The first hypothesis in this study was to test for
statistically significant differences in level of
participation of rural women in rice production
activities by age. At an alpha level of .05, the
null hypothesis was not rejected, $F(3, 138) = 1.70$,
and it was concluded that age did not have a
significant effect on participation.

The second hypothesis was to test for
statistically significant differences in the
participation of women in rice production
activities by size of rice field. At an alpha level
of .05, the null hypothesis was rejected, and it
was concluded that size of rice field had a
significant effect on participation. As shown in
Table 4, the mean participation score was
highest for women with one hectare or less
(63.7), and lowest for those with more than
three hectares (52.1).

The third hypothesis was to test for statistically
significant differences in the participation of
women in rice production activities by income.
At an alpha level of .05, the null hypothesis was
rejected, and it was concluded that income had a
significant effect on participation. As shown in
Table 5, the mean participation score was
highest for women in the income category 10
million rials per year (64.7), and lowest for
those in the income category of more than 30
million rials (49.7).

The fourth hypothesis was to test for statistically
significant differences in the participation of
women in rice production activities by level of
education. At an alpha level of .05, the null
hypothesis was rejected, and it was concluded
that level of education had a significant effect
on participation. As shown in Table 6, the mean
participation score was highest for women with
an elementary education (59.7), and lowest for
those who had post-secondary education (51.9).

The fifth hypothesis was to test for statistically
significant differences in the participation of
women in rice production activities by their
participation in extension education programs.
At an alpha level of .05, the null hypothesis was
not rejected, $F(1, 140) = 0.04$, and it was concluded
that participation in extension education
programs did not have a significant effect on
participation.
### Table 1

Participation of Women Farmers in Rice Extension Education Programs.

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of participants</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land preparation</td>
<td>20</td>
<td>26.0</td>
</tr>
<tr>
<td>Selection of seeds</td>
<td>13</td>
<td>16.9</td>
</tr>
<tr>
<td>Nursery preparation</td>
<td>9</td>
<td>11.7</td>
</tr>
<tr>
<td>Weeding</td>
<td>8</td>
<td>10.3</td>
</tr>
<tr>
<td>Transplanting</td>
<td>7</td>
<td>9.1</td>
</tr>
<tr>
<td>Sowing</td>
<td>7</td>
<td>9.1</td>
</tr>
<tr>
<td>Nursery maintenance</td>
<td>4</td>
<td>5.2</td>
</tr>
<tr>
<td>Water management</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>Fertilization</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>Pest and disease control</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>77&lt;sup&gt;a&lt;/sup&gt;</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<sup>a</sup> Total exceeds 65 women farmers because some of them participated in more than one program.

### Table 2

Participation of Women Farmers in Selected Rice Production Activities.

<table>
<thead>
<tr>
<th>Level of participation</th>
<th>Sifting and cleaning</th>
<th>Harvesting</th>
<th>Pulling off crucible seedlings from nursery plots</th>
<th>Average (n=426)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Only done by women</td>
<td>58</td>
<td>40.8</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mostly done by women</td>
<td>18</td>
<td>12.8</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Done equally by women and men</td>
<td>48</td>
<td>33.8</td>
<td>93</td>
<td>65.4</td>
</tr>
<tr>
<td>Mostly done by men</td>
<td>4</td>
<td>2.8</td>
<td>24</td>
<td>16.9</td>
</tr>
<tr>
<td>Done only by men</td>
<td>14</td>
<td>9.8</td>
<td>25</td>
<td>17.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>142</strong></td>
<td><strong>100.0</strong></td>
<td><strong>142</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 3

Mean Participation Score of Women Farmers in Selected Rice Production Activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mean participation score&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sifting and cleaning seeds</td>
<td>68.45</td>
</tr>
<tr>
<td>Pulling off crucible seeds from nursery plots</td>
<td>64.72</td>
</tr>
<tr>
<td>Harvesting</td>
<td>36.11</td>
</tr>
<tr>
<td>Overall</td>
<td>56.42</td>
</tr>
</tbody>
</table>

<sup>a</sup> 100=only done by women; 80=mostly done by women; 50=done equally by women and men; 20=mostly done by men; 0=done only by men.

Table 4

Participation of Women in Selected Rice Production Activities by Size of Rice Field.

<table>
<thead>
<tr>
<th>Size of rice field&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mean participation score&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 1 hectare</td>
<td>63.7</td>
</tr>
<tr>
<td>&gt; 1 - 2 hectares</td>
<td>56.8</td>
</tr>
<tr>
<td>&gt; 2 - 3 hectares</td>
<td>53.1</td>
</tr>
<tr>
<td>&gt; 3 hectares</td>
<td>52.1</td>
</tr>
</tbody>
</table>

F<sub>(3, 138)</sub> = 26.5.

<sup>a</sup> 1 hectare = 2.47 acres.
<sup>b</sup> 100=only done by women; 80=mostly done by women; 50=done equally by women and men; 20=mostly done by men; 0=done only by men.

Table 5

Participation of Women in Selected Rice Production Activities by Annual Income.

<table>
<thead>
<tr>
<th>Annual income (million rials)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mean participation score&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>64.7</td>
</tr>
<tr>
<td>&gt; 10 - 20</td>
<td>57.3</td>
</tr>
<tr>
<td>&gt; 20 - 30</td>
<td>53.9</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>49.7</td>
</tr>
</tbody>
</table>

F<sub>(3, 138)</sub> = 20.85.

<sup>a</sup> 1 U.S. dollar = 3,000 rials, approximately.
<sup>b</sup> 100=only done by women; 80=mostly done by women; 50=done equally by women and men; 20=mostly done by men; 0=done only by men.
Table 6

Participation of Women in Selected Rice Production Activities by Level of Education.

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Mean participation score&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>55.4</td>
</tr>
<tr>
<td>Elementary</td>
<td>59.7</td>
</tr>
<tr>
<td>Secondary</td>
<td>58.4</td>
</tr>
<tr>
<td>Post-secondary</td>
<td>51.9</td>
</tr>
</tbody>
</table>

<sup>a</sup>100=only done by women; 80=mostly done by women; 50=done equally by women and men; 20=mostly done by men; 0=done only by men.

\[ F_{(3,138)} = 4.35. \]

Conclusions

Based on the findings of this study, the following conclusions were drawn.

Women farmers play an important role in producing rice in the Gilan Province, Iran. This was borne out by the finding that women did most of the work in two of the three practices, namely sifting and cleaning seeds, and pulling off crucible seedlings from nursery plots, and some of the work in the third practice, i.e., harvesting of rice. The reason for lower participation in harvesting is that the culture of rural society requires that all family members participate.

Despite the important role of women in rice production observed in this study, their participation in extension education programs is low. Study findings showed that less than half of the respondents had participated in extension education programs. Furthermore, their participation in specific programs ranged from 4 to 30%. Low participation in extension education programs is due, in part, to lack of women agricultural agents, and the religious beliefs that make women uncomfortable talking with men.

The level to which women participate in rice production activities is related to size of rice field, annual household income, and level of education, but unrelated to their age, and participation in extension education activities.

This conclusion is based on the finding that women who had the smallest rice fields (1 hectare or less), the least annual income (10 million rials) and the highest level of education (post-secondary or higher) had the lowest participation scores compared with women who had larger sized rice fields, greater incomes, and less education. The implication of this finding is that the extension service in Iran has the opportunity to design education programs to meet the needs of rural women rice farmers operating small farms, with a low level of income. Women at varying education levels also need the assistance of the extension service.

Very little research has been done on women farmers in Iran. Research findings, such as those reported in this study, can assist the extension service and government officials make decisions about resource allocations, and the education and technology needs of women farmers. The results of this study may also help guide extension agents in the Gilan Province of Iran in preparing and conducting better education programs.

References


