Factors Related to Zimbabwe Women’s Educational Needs in Agriculture
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Abstract
The article describes selected participants, their perceived educational needs and barriers to Extension participation. Data were collected from 377 rural women in Shurugwi District, Zimbabwe using face-to-face interviews. A reliable and valid researcher-developed survey instrument elicited three categories of information from the participants: (a) demographic data, (b) perceived barriers participation, (c) assessments of self perceived amount of “knowledge” for agricultural production and assessments of self perceived level of “importance” in agricultural production. Perceived educational needs were assessed using the Borich (1980) needs assessment model. Findings revealed that rural women’s highest educational needs were in nutrition knowledge, access to land and credit, and outstanding barriers to Extension participation were transportation, lack of information, and time constraints. Results of the study can help AGRITEX in placing its priorities on the items that were ranked high to meet the needs of rural women, attract a wider audience, and lead to the success of Extension programs in Zimbabwe.

Introduction
Although women are the main actors in feeding the household, they often have little or no access to land, credit, education and technology. Little attention has been paid to alleviate women’s problems, particularly those in rural areas. Due to gender blindness that still prevails, agricultural policies, on the whole, do not address the needs of women farmers adequately (FAO, 1998). A total of 40% of the households in communal areas of Zimbabwe are female headed, as men leave their homes in search of jobs in urban areas (Zwart, 1990). Hence, the role of women in agriculture has tremendously increased. This trend has been called the “feminization of agriculture” and is most emphasized in Sub-Saharan Africa (World Bank, 1996). Extension educators are responsible for helping clients to accurately identify their educational needs. This is an important step in planning, developing and implementing programs. Programs are most often successful when they focus on clearly defined needs of the target group (Boldt, 1987). Therefore, the accuracy with which needs are identified for educational input is a crucial step toward meeting Extension’s objectives.

Purpose and Objectives
The primary purpose of this study was to describe selected demographic characteristics of rural women in Shurugwi District, Zimbabwe, to assess their perceived agricultural educational needs and perceived barriers to extension participation. For this study, four objectives were developed:

- To describe rural women in Shurugwi District, Zimbabwe, according to selected characteristics (age, marital status, level of education, land ownership, and family size).
- To determine the perceived educational needs of rural women in Shurugwi District, Zimbabwe.
- To determine perceived barriers to Extension participation by rural women of Shurugwi District, Zimbabwe.
- To determine the relationship between selected demographic characteristics of rural women and their perceived educational needs and barriers to Extension participation.

Methodology/Procedures
The research design employed in this study was descriptive correlational survey and, therefore, did not permit manipulation of variables or prediction of outcomes. A survey is a powerful, scientific research tool used to gather accurate and useful information as long as the samples have been drawn randomly from a large population (Salant & Dillman, 1994). Strengths and weaknesses of survey research
were considered during the selection of the study design. The target population for this study was rural women in Shurugwi District, Zimbabwe. A sample of 377 rural women was conveniently selected from five randomly selected wards/villages in Shurugwi District. The researcher developed the instrument, translated into the local Zimbabwe language (Shona), and tested for validity and reliability prior to implementation. Data were collected using face-to-face interviews. The survey instrument elicited three categories of information from the participants: (a) demographic data, (b) perceived barriers to Extension participation, (c) assessments of self perceived amount of “knowledge” for agricultural production and assessment of self perceived level of “importance” in agricultural production. The descriptors for “knowledge” and “Importance” scales were: “4” = “High knowledge”/“High Importance” … “0” = “No knowledge”/“No Importance.” Perceived educational needs, the dependent variable, were assessed using Borich (1980) needs assessment model:

\[ \text{Cal Aen} = (\text{In} - \text{Kn}) \times \text{Ig} \]

Where:
Cal Aen = calculated educational need.
In = importance of the item reported by the respondent.
Kn = perceived knowledge of the item reported by the respondent.
Ig = average importance of the item as rated by all the respondents.

Participants rated each educational need twice according to the four-point Likert type scale provided, first they rated it as to the amount of knowledge they currently possessed and secondly they rated it in terms of its importance in increasing agricultural production. Data were analyzed using the Statistical Package for Social Sciences (SPSS). Statistical analysis included descriptive, correlations and multiple regression. Missing item values were handled by using mean substitution (Travers, 1969).

**Findings**

**Demographic Characteristics**

Characteristics of participants in this study are summarized in Tables 1 and 2. Table 1 presents the means and standard deviations for the demographic characteristics that were measured using ratio scales. The mean age of rural women in this study was 44 years. The youngest respondent was 19 years of age and the oldest was 74. A majority of the participants had completed 1 to 7 years of schooling and almost one-quarter never attended school. The average period of time spent in school was 5.80 years with the minimum being 0 and maximum being 15 years. A majority of households (58%) in this study had 6-10 members, and 9% had more than 11 members.

### Table 1

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>44.33</td>
<td>11.91</td>
</tr>
<tr>
<td>Years of Schooling</td>
<td>5.80</td>
<td>3.80</td>
</tr>
<tr>
<td>Household Size</td>
<td>6.85</td>
<td>2.90</td>
</tr>
<tr>
<td>Number of Dependents</td>
<td>1.99</td>
<td>1.97</td>
</tr>
</tbody>
</table>

Table 2 presents the frequency and percentages of the background characteristics of the participants that were measured using nominal scales. Data revealed that majority of rural women (68%) in this study were married and 17% were widows. In respect of land ownership, 42% of the rural women jointly owned land with their husband, 25% owned land separately, and 26% did not own land. Most of the participants (74%) in this study could read and write and 25% could not.

### Table 2

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>259</td>
<td>68.7</td>
</tr>
<tr>
<td>Divorced</td>
<td>29</td>
<td>7.7</td>
</tr>
<tr>
<td>Separated</td>
<td>17</td>
<td>4.5</td>
</tr>
<tr>
<td>Single</td>
<td>8</td>
<td>2.1</td>
</tr>
<tr>
<td>Widow</td>
<td>64</td>
<td>17.0</td>
</tr>
<tr>
<td>Land Ownership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife</td>
<td>95</td>
<td>25.2</td>
</tr>
<tr>
<td>Husband</td>
<td>98</td>
<td>26.0</td>
</tr>
<tr>
<td>Jointly</td>
<td>159</td>
<td>42.2</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>6.6</td>
</tr>
<tr>
<td>Ability to read and write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>280</td>
<td>74.3</td>
</tr>
<tr>
<td>No</td>
<td>97</td>
<td>25.7</td>
</tr>
</tbody>
</table>
Agricultural Educational Needs

Using the Borich’s model (1980), a higher mean indicates a greater educational need. The ranks, means and standard deviations of 16 highest educational needs of rural women are provided in Tables 3. As shown in Table 3, the highest educational need was controlling of livestock diseases. Seven among the top 16 highest educational needs were related to nutrition, and six to access to land and credit. Table 4 provides ranks, means, and standard deviations of 14 lowest educational needs of rural women. As illustrated in Table 4, 12 of 14 least important educational needs were related to crop production.

Table 3

Rank Order of the Calculated Educational Needs

<table>
<thead>
<tr>
<th>Statements</th>
<th>Rank</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to control livestock diseases.</td>
<td>1</td>
<td>5.52</td>
<td>5.64</td>
</tr>
<tr>
<td>Special dietary needs.</td>
<td>2</td>
<td>5.15</td>
<td>5.12</td>
</tr>
<tr>
<td>How to determine when to sell.</td>
<td>3</td>
<td>4.91</td>
<td>5.33</td>
</tr>
<tr>
<td>Interested rates on loans.</td>
<td>4</td>
<td>4.90</td>
<td>4.63</td>
</tr>
<tr>
<td>Choosing best loan(s).</td>
<td>5</td>
<td>4.89</td>
<td>4.77</td>
</tr>
<tr>
<td>Repayments schedules.</td>
<td>6</td>
<td>4.77</td>
<td>4.72</td>
</tr>
<tr>
<td>How to access loan(s).</td>
<td>7</td>
<td>4.76</td>
<td>4.52</td>
</tr>
<tr>
<td>Plan and prepare balanced meals.</td>
<td>8</td>
<td>4.60</td>
<td>4.68</td>
</tr>
<tr>
<td>Rural women credit facilities.</td>
<td>9</td>
<td>4.57</td>
<td>4.63</td>
</tr>
<tr>
<td>Food sanitation.</td>
<td>10</td>
<td>4.43</td>
<td>5.17</td>
</tr>
<tr>
<td>How to access land.</td>
<td>11</td>
<td>4.38</td>
<td>4.48</td>
</tr>
<tr>
<td>Understanding food safety.</td>
<td>12</td>
<td>4.35</td>
<td>4.92</td>
</tr>
<tr>
<td>Healthy food choices.</td>
<td>13</td>
<td>4.35</td>
<td>4.79</td>
</tr>
<tr>
<td>Food preservation.</td>
<td>14</td>
<td>4.30</td>
<td>4.81</td>
</tr>
<tr>
<td>Prevention of malnutrition.</td>
<td>15</td>
<td>4.28</td>
<td>4.70</td>
</tr>
<tr>
<td>Book keeping methods.</td>
<td>16</td>
<td>4.28</td>
<td>4.70</td>
</tr>
</tbody>
</table>

Table 4

Rank Order of Bottom 14 Educational Needs

<table>
<thead>
<tr>
<th>Statements</th>
<th>Rank</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitable animals to keep.</td>
<td>51</td>
<td>2.53</td>
<td>3.38</td>
</tr>
<tr>
<td>Amount of fertilizer for crops.</td>
<td>52</td>
<td>2.60</td>
<td>3.70</td>
</tr>
<tr>
<td>Select suitable-harvesting methods.</td>
<td>53</td>
<td>2.59</td>
<td>3.82</td>
</tr>
<tr>
<td>Determining suitable planting dates.</td>
<td>54</td>
<td>2.46</td>
<td>6.58</td>
</tr>
<tr>
<td>Correct fertilizer for crops.</td>
<td>55</td>
<td>2.36</td>
<td>4.03</td>
</tr>
<tr>
<td>Transporting crops, field to home.</td>
<td>56</td>
<td>2.34</td>
<td>4.32</td>
</tr>
<tr>
<td>Information on profitable crops to grow.</td>
<td>57</td>
<td>2.30</td>
<td>3.80</td>
</tr>
<tr>
<td>How to control weeds.</td>
<td>58</td>
<td>2.21</td>
<td>3.84</td>
</tr>
<tr>
<td>How to select appropriate breed to keep.</td>
<td>59</td>
<td>2.20</td>
<td>3.36</td>
</tr>
<tr>
<td>Choosing high quality seeds.</td>
<td>60</td>
<td>2.11</td>
<td>4.10</td>
</tr>
<tr>
<td>Identify weeds that affect crops.</td>
<td>61</td>
<td>1.85</td>
<td>3.40</td>
</tr>
<tr>
<td>How to plant crops.</td>
<td>62</td>
<td>1.84</td>
<td>3.63</td>
</tr>
<tr>
<td>Selection of suitable crop varieties.</td>
<td>63</td>
<td>1.80</td>
<td>4.12</td>
</tr>
<tr>
<td>Preparation of land for planting.</td>
<td>64</td>
<td>1.65</td>
<td>3.56</td>
</tr>
</tbody>
</table>
Perceived Barriers to Extension Participation by Participants

The third objective of the study was to determine the perceived barriers to Extension participation by rural women. Table 5 provides ranks, means, and standard deviations of the perceived barriers to Extension participation by rural women. Barriers to Extension participation scores ranged from a mean of 1.79 to a mean of 2.66. As illustrated in Table 5, the highest barriers were: 1) lack of transportation, 2) lack of information about Extension activities, 3) time constraint, 4) permission by husband, and 5) lack of access to credit.

Table 5

Rank Order of Perceived Barriers to Extension Participation

<table>
<thead>
<tr>
<th>Statements</th>
<th>Rank</th>
<th>M*</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of transportation.</td>
<td>1</td>
<td>2.66</td>
<td>1.05</td>
</tr>
<tr>
<td>Lack of information about Extension activities.</td>
<td>2</td>
<td>2.46</td>
<td>1.19</td>
</tr>
<tr>
<td>Heavy loads of household tasks/Time constraint.</td>
<td>3</td>
<td>2.28</td>
<td>1.16</td>
</tr>
<tr>
<td>Roads to Extension training sites are poor.</td>
<td>4</td>
<td>2.18</td>
<td>1.17</td>
</tr>
<tr>
<td>Permission by husband.</td>
<td>5</td>
<td>2.04</td>
<td>1.08</td>
</tr>
<tr>
<td>No access to credit.</td>
<td>6</td>
<td>2.11</td>
<td>1.10</td>
</tr>
<tr>
<td>Extension agents do not often organize training programs for rural women.</td>
<td>7</td>
<td>1.98</td>
<td>1.02</td>
</tr>
<tr>
<td>Extension training sites are far from where most women live.</td>
<td>8</td>
<td>1.97</td>
<td>1.08</td>
</tr>
<tr>
<td>Women’s inability to read and write.</td>
<td>9</td>
<td>1.96</td>
<td>1.10</td>
</tr>
<tr>
<td>No land or access to land.</td>
<td>10</td>
<td>1.96</td>
<td>1.05</td>
</tr>
<tr>
<td>Lack of child-care facilities.</td>
<td>11</td>
<td>1.95</td>
<td>1.01</td>
</tr>
<tr>
<td>Lack of female Extension agents.</td>
<td>12</td>
<td>1.92</td>
<td>1.02</td>
</tr>
<tr>
<td>Extension training programs do not include women’s training needs.</td>
<td>13</td>
<td>1.82</td>
<td>0.95</td>
</tr>
<tr>
<td>Social and cultural customs prevents rural women from attending Extension</td>
<td>14</td>
<td>1.79</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Note. *Scale ranges from 1– 4; 1 = Strongly Disagree; 2 = Disagree; 3. = Agree; 4 = Strongly Agree.

Demographic Characteristics and Agricultural Educational Needs

The fourth objective of the study was to determine the relationship between selected demographic characteristics of rural women and 1) their perceived educational needs in the six areas and 2) their perceived barriers to Extension participation. Using Borich’s model (see p. 4) an overall educational need score was computed for each of the six areas of domain. An overall mean score of each of 14 barriers was computed. These mean scores were treated as interval data. Correlations coefficients were calculated among the mean scores of the calculated needs, the barriers and the selected demographic characteristics.

Table 6 reports correlation coefficients among selected demographic characteristics and the six areas of perceived educational needs. A low association (.10) existed among crop production and years in school. Negligible associations existed among livestock production and age, years in school and resource management and marketing. The correlation among nutrition knowledge and age was negligible. Crop production, marketing, resource management and access to land and credit, had negative association with age. Negative associations existed among years in school and livestock production, nutrition knowledge and access to land and credit.
Table 6

Correlation Coefficients among Selected Demographic Characteristics of Rural Women and the Six Areas of Educational Needs

<table>
<thead>
<tr>
<th>Area of Agricultural Educational Needs</th>
<th>Correlation Coefficients (r)</th>
<th>Age</th>
<th>Years of Schooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop Production</td>
<td>-.09</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Livestock Production</td>
<td>.03</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>-.05</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Nutrition Knowledge</td>
<td>.06</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Resource Management</td>
<td>-.07</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>Access to Land and Credit</td>
<td>-.05</td>
<td>-.02</td>
<td></td>
</tr>
</tbody>
</table>

All the barriers were negatively associated with age except for one barrier (women’s inability to read and write) with a negligible association of .06. The following barriers had low associations with number of years in school: 1) no access to credit (.14) and 2) Extension agents do not often organize training programs for rural women (.15). Two of the barriers (bad roads and women’s inability to write and read) had negative association with years of schooling and the rest had negligible associations ranging from .02 to .09. The three selected independent variables (marital status married, land ownership other, and barriers) significantly explained approximately 9% of the variance in educational needs of Shurugwi rural women.

Conclusions and Implications
The following conclusions and implications were drawn from the research findings and are applicable only to the subjects of the study. From the analysis of the findings three majors conclusions were drawn: 1) rural women’s highest educational needs are in livestock production, nutrition and access to land and credit, 2) the perceived educational needs scores and the selected demographic characteristic of the rural women are independent of one another, and 3) rural women’s outstanding barriers to Extension participation were 1) transportation, 2) lack of information about Extension activities, 3) heavy loads of household task and time constraints, 4) poor roads, and 5) permission from husband.

Nutrition and access to land and credit were the two areas that received the highest educational need scores. Seven items in the area of nutrition were among the top 16 ranked very high educational needs. Women are the key to household nutritional and food security. In Zimbabwe, many organizations affirm women’s role in household food security, hence, have promoted and provided relevant programs (Muchena, 1994). The researcher recommends a multidisciplinary dialogue among Subject Matter Specialists in Extension to create programs in nutrition that meet the needs and interests of rural women. Six items in the area of access to land and credit were the top 16 rank high educational needs. Participants in this study perceived to possess very little knowledge about access to credit and land. The findings indicated that this area was a major educational priority for Shurugwi rural women. Educational courses should be planned that meet the identified needs of the rural women. Despite rural women’s valuable contribution in agricultural production, they still have limited access to credit and land. A positive relationship is expected between land ownership and increased agricultural productivity. Also, individualized land rights can enhance the credit merit of rural women and improve their chances of obtaining credit.

Rural women indicated a lack of knowledge in the area of controlling livestock diseases. From the above findings, Extension agents involved in planning programs must realize that rural women in Shurugwi District need education in the area of nutrition, access to land and credit and livestock production. Extension program will be more effective as they focus on the educational needs of the rural women.

One-quarter of respondents in this study had never attended school and the majority (44%) had only 1 to 7 years of schooling, indicating that rural women in Shurugwi District were a disadvantaged group of individuals, who have limited educational opportunities.
Women’s access to agricultural extension and their ability to comprehend and use technical information are lower when they lack education. Women have been excluded from Extension programs because literacy was used as a requirement for access to training programs. More men than women are enrolled in training programs and gain more from developmental programs (FAO, 1994; World Bank, 1991). Low investment in female education reduces productivity, efficiency and economic progress, inside and outside the household (World Bank 2000).

A majority of the women in this study did not own land as individuals. Land was either jointly owned or belonged to the husband (World Bank, 1991). The problem with this arrangement is that when divorce takes place, particularly in the rural areas, a woman traditionally has no rights to her husband’s land. In Zimbabwe, legal instruments were put in place soon after 1980 to give women rights to property ownership, but local customs may still override these laws. The uncertainty of women’s access to land makes it a problem for them to obtain the credit they might need to fully put into practice extension advice. Therefore, women continue to have poor control over a range of resources, such as land, credit, education, and information. Rural women in this study did not perceive barriers to Extension participation. This suggested that extension services in Zimbabwe are reaching women, as supported by Pazvakavambwa (1994), that Zimbabwe has developed a strong agricultural extension services accessible to communal people.

This researcher ranked educational needs for each item under the six-domain areas. This information can help AGRITEX in placing its priorities on the items that were ranked high. Targeting planning will help meet the needs of rural women, attract a wider audience, and lead to the success of Extension programs. Educational courses should be planned that meet the identified needs of the rural women, with emphasis given to those needs ranked highest.

**Recommendations**

The recommendations are based upon the findings and conclusions presented. The findings of this study could be useful to the AGRITEX in its endeavor to focus on rural women’s needs, as a guide in developing educational materials; and in-service training for Extension agents.

The researcher recommends that developing of Extension programs for rural women take into account the barriers they face in accessing land and credit. The researcher makes the argument that women’s needs cannot be separated from barriers as they help explain, shed light and making needs more dimensional. It is, therefore, essential to understand the nature of barriers rural women face and the implications of these barriers for extension programming.

The selected demographic characteristics of the participants in this study could not predict the needs of rural women, giving the possibility of drawing a conclusion that in principle Shurugwi rural women were similar. But there was some diversity in terms of age, educational level, land ownership, and marital status. Rural women are not a homogeneous group and treating them the same can bring about inappropriate solutions and causing disadvantages for others. The researcher recommends appropriate target planning of Extension programs that address the needs and take into account the existing diversity within rural women, such as age, educational level and land ownership.

**Further Research**

This study could be replicated in other communal areas that are in Natural Region III, and IV, throughout Zimbabwe, and other sub-Saharan countries. The studies could focus on the relationship of selected demographic characteristics and educational needs, in order to verify if there are differences or common patterns in findings. Similar studies could be conducted with other variables, such as size of land/plot, years of farming experience, farming status full or part time, and use of hired labor to find out if there are common patterns or differences.

The researcher recommends a further study that investigates credit schemes in Shurugwi District to find out the percentage of credit that is directed to rural women. Policies
and laws are not in themselves, sufficient enough to do justice to the complicated social, cultural and economical lives of rural women. Considering that the majority of the women in this study did not own land as individuals, the researcher recommends policy-relevant research on how rural women are affected by changes that have taken place in land rights/land reforms. A follow-up study is recommended to determine if Shurugwi rural women’s needs have changed and barriers to extension still existed over time.

References


