

Sustainable Agriculture Endeavors: Perceptions of Farmers and Extension Agents

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Abstract: The study sought to describe farmers and extension agents' views about sustainable agriculture practices in District Hyderabad. Sustainable agriculture in this article is viewed as a system of agriculture that involves the efficient use of resources to satisfy various human needs, and at the same time protecting the environment. A questionnaire was developed after literature review and experts advise in this field. Sixty (60) Extension agents and 100 farmers were identified as sample. Majority of the respondents were not familiar with the concept of sustainable agriculture. Demonstration method was perceived as the most effective method in understanding the concept.

Keywords: Sustainable Agriculture, Perception, Extension Methods

Introduction

World agriculture has undergone drastic changes during the last few decades. Agricultural production has increased and world food supplies are 18% higher than 30 years ago. Between 1960 and 1990, per capita food supplies in developing countries increased 27% (Alexandratos, 1995). To achieve social and economic development and to feed growing population, increased agricultural production is considered a major concern in Pakistan. To increase agricultural production, new technology has been introduced and transferred to the farmers for their adoption and application. According to Alonge and Martin (1995), the first step towards adoption of new ideas by farmers is to provide information on sustainable agricultural practices.

Extension agents have been an important element in transferring knowledge. Recent approach in developing countries such as Pakistan calls for extension as a sustainable learning system (Brown, 1981). Extension agents should be trained in area of sustainable agriculture, so as they can improve their perceptions, competencies, and abilities in order to transfer concepts dealing with sustainable agriculture to various agricultural procedures (Agonga, 1995).

Sustainability is a dynamic concept that reflects changing needs. To achieve sustainable agriculture, resources must be successfully managed to satisfy changing human needs, to conserve natural resources and to maintain or improve the quality of the environment. These efforts will, however, not be fruitful unless obstacles in the ways of development will be removed. Modern technologies have enabled farmers to obtain amazing yield increases from the conventional agriculture. However, these technologies have also led to fundamental loss of equilibrium as they made it easy for the farmers to forget the importance of maintaining the balance between human needs and the laws of nature. Modernization in agriculture has entailed massive environmental damages (FAO, 1988). However, the transition from conventional to a more sustainable agriculture is presently constrained by inadequate conceptual frameworks for assessing the best strategy to pursue (Hill & MacRae, 1995).

Sustainable agriculture is getting attention throughout the world and Pakistan is no exception. In order to achieve sustainability, extension agents and farmers in Pakistan must be trained in this area recognizing the fact that the soil fertility is decreasing and environmental pollution is increasing day by day. Focusing on the perceptions, attitudes, desires, and beliefs of extension agents and farmers are the most important factors in any extension activity.

Purpose and Objectives: The concept of sustainability

in agriculture emerged with growing public concern over global warming, environmental pollution, toxic waste etc. In addition, very little efforts are being made to focus on sustainable agriculture awareness among extension agents and farmers. Realizing this fact, it was inevitable to conduct such kind of study to understand the farmers and extension agents' perception regarding sustainable endeavors. Therefore, the primary purpose of this study was to identify perceptions and attitudes of extension agents and farmers regarding sustainable agriculture in Hyderabad District of Sindh. Following objectives were set forth for this study:

Determine whether extension recommendation were aimed at achieving sustainable agriculture development; Describe the farmers perception about extension work; and Compare perception of farmers and extension agents regarding sustainable agriculture endeavors.

Materials and Methods

Survey research is commonly used in the field of education. A wide range of educational problems can be investigated in survey research (Gall, Borg, Gall, 1996). The target population for this study consisted of all extension agents, and farmers of district Hyderabad. Sixty (60) extension agents and 100 farmers were specified as a sample. Sample selection was made on random basis using a table (Cochran, 1977).

The sample was divided into two homogenous groups than a simple random sampling was done to select the sample from the groups. This sampling is called stratified sampling (McMillan, 1999). Because the groups were not equal in size, disproportional stratified sampling was performed. Disproportional stratified sampling ensures that a sufficient number was selected from each group when groups are not equal in size (McMillan, 1999).

A questionnaire was developed through review of literature, guidance from the subject specialist in the area, and highly officials of Agricultural Extension. The first part of the questionnaire included the questions regarding selected demographic information. The second part of the questionnaire consisted of seven (7) extension activities and eleven (11) sustainable agriculture strategies for which extension agents could have helped. The data were collected through personal interviews. The data collected were tabulated and analyzed to arrive at the scientific conclusions. A computer statistical package was used (SPSS/PC).

Results and Discussion

Selected demographic characteristics of the respondents such as age, educational level, and professional experience were inquired. The results are presented in Table 1.

Table 1: Demographic Characteristics of the Respondents

| Demographic Characteristics | Categories | No | % |
|-----------------------------|----------------|----|-------|
| Age | 21-30 Years | 35 | 02.19 |
| | 31-45 Years | 74 | 46.2 |
| | 45-above Years | 51 | 31.9 |
| Education | Illiterate | 12 | 07.5 |
| | Primary | 28 | 17.5 |
| | Higher | 34 | 21.3 |
| | University | 58 | 36.2 |
| | ATI Diploma | 28 | 17.5 |
| Experience | 1-10 Years | 58 | 36.2 |
| | 11-20 Years | 46 | 28.8 |
| | 21-above Years | 56 | 35.0 |

The results presented in Table 1 indicate that majority (46.2%) of the respondents belonged to the age group of 31-45 years followed by the age group of 46 and above years (31.9%). Majority (36.2%) of the respondents had university level education. Only 7.5% of the respondents had no formal education. Majority (36.2%) of the respondents had 1 to 10 years of professional experience followed by 35% who had 21 and above years of professional experience. Information regarding respondents' familiarity with the concept of sustainable agriculture was sought. The results are presented in Table 2.

Table 2: Perception Regarding Familiarity of Sustainable Agriculture

| Familiarity | Farmers | | Extension Agents | |
|-------------|---------|------|------------------|------|
| | No | % | No | % |
| Yes | 10 | 10.0 | 45 | 75.0 |
| No | 90 | 90.0 | 15 | 25.0 |

Results indicated that Majority of the farmers (90%) were not familiar with the concept of sustainable agriculture. However, 75% of extension agents were aware of this concept. Respondents were asked to the extent of importance of extension activities/ service. Table 3 reports the results.

Table 3: Importance of Extension Activities

| Extension Activities | Farmers | | | Extension Agents | | |
|----------------------|---------|-----|---|------------------|-----|---|
| | M | SD | R | M | SD | R |
| 1. Personal Visit | 2.7 | .57 | 2 | 2.4 | .72 | 5 |
| 2. Farm Visit | 2.6 | .54 | 3 | 2.5 | .62 | 4 |
| 3. Field Days | 2.5 | .67 | 4 | 2.6 | .49 | 3 |
| 4. Farmers Days | 2.2 | .47 | 6 | 2.5 | .48 | 4 |
| 5. Wall Chalking | 1.9 | .79 | 7 | 2.3 | .62 | 5 |
| 6. Literature | 2.3 | .51 | 5 | 2.7 | .51 | 2 |
| 7. Demonstration | 2.8 | .53 | 1 | 2.8 | .45 | 1 |

Note:- M = Mean, SD = Standard Deviation, R = Rank; Scale:- 1 Not Important, 2 Important, and 3 Very important

The results presented in Table 3 show that farmers and extension agents preferred demonstration method among other extension activities and was ranked one. The least perceived extension activity by the farmers was farmer's days and was ranked sixth. The least perceived extension activity as perceived by extension agents was personal visit. However, farmers ranked personal visit as the second most important extension activity.

Table 4: Importance of Sustainable Practices/Activities

| Sustainable Practices/Activities | Farmers | | | Extension Agents | | |
|--------------------------------------|---------|-----|----|------------------|-----|----|
| | M | SD | R | M | SD | R |
| 1. Maintenance of soil fertility | 2.67 | .54 | 4 | 2.67 | .53 | 7 |
| 2. Proper use of irrigation | 2.47 | .57 | 6 | 2.74 | .44 | 2 |
| 3. Environment protection | 2.31 | .70 | 9 | 2.43 | .61 | 10 |
| 4. Preservation of natural resources | 2.43 | .72 | 7 | 2.44 | .62 | 11 |
| 5. Maximum yield per acre | 2.83 | .37 | 1 | 2.67 | .50 | 8 |
| 6. Livestock management | 2.13 | .79 | 10 | 2.46 | .56 | 9 |
| 7. Crop rotation | 2.50 | .67 | 6 | 2.71 | .49 | 4 |
| 8. Mechanical pest control | 2.42 | .68 | 8 | 2.69 | .53 | 6 |
| 9. Natural control | 2.50 | .64 | 5 | 2.72 | .48 | 3 |
| 10. Modern machinery | 2.73 | .52 | 3 | 2.69 | .49 | 5 |
| 11. Use of farmyard manure | 2.78 | .44 | 2 | 2.85 | .35 | 1 |

Note:- M = Mean, SD = Standard Deviation, R = Rank; Scale:- 1 Not Important, 2 Important, and 3 Very important

Respondents' perceptions regarding importance of sustainable agriculture strategies/practices were recorded. The results are presented in Table 4. The results indicated that farmers ranked "maximum yield per acre" as number one important sustainable agriculture practice/strategy while extension agents ranked "use of farm yard manure" as number one sustainable practices. "Proper use of irrigation" ranked second by extension agents while the extension agents were least concerned with "preservation of natural resources." Farmers were also interested in using farmyard manure and ranked this sustainable practice at number two. The least perceived sustainable practice by the farmers was "livestock management."

Conclusions/Recommendations

The study found that there exists a communication gap between extension agents and farmers. This gap must be narrow down through open discussions and increased flow of information in both directions, i.e. extension agents to farmers and farmers to extension agents. The study revealed that farmers are very interested in obtaining information regarding sustainable agriculture practices through demonstration. Similar type of studies should be conducted so as to help extension policy makers in designing and implementing sustainable programs through out the Sindh Province. This will enable policy makers to effectively transfer the technology for sustained growth and will enhance farmers understanding about the concept of sustainable agriculture.

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