

A SCALE TO MEASURE ATTITUDE OF FARMERS TOWARDS SUSTAINABLE AGRICULTURE

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ABSTRACT

Successful management and conservation of natural resources which ensure the attainment and continued satisfaction of human needs for the present and future generations. A number of activities involved in managing and conserving the resources, which in turn is reflected by their attitude toward it. The clear understanding of the magnitude of psychological components that comprises sustainable agriculture lead to development of a scale to measure the attitude of the farmers towards the sustainable agriculture in the watershed environment. So, a scale to measure attitude towards sustainable agriculture has been constructed. Future researchers in conducting the other performance and evaluation studies on the sustainable agriculture may use the attitude scale constructed.

KEY WORDS: Attitude, Sustainable Agriculture, Watershed, Farmers

INTRODUCTION

Sustainable Agriculture and Natural Resource Management activities seek to increase agricultural productivity through adoption of practices that maintain the long-term ecological and biological integrity of natural resources. Activities in this sub-sector cut across the rural, social, and environmental issues of natural resource management to sustain significant increases in farm productivity through the efficient use of land and other resources. The goal is to provide better economic returns to individuals and contribute to the quality of life and economic development. The concept of sustainability lies in maintaining between buoyancy dynamism in agriculture growth for meeting basic human needs along with emphasis on protection and conservation of natural resources. If the vitality of natural resources is impaired because of neglect of misuse, agricultural sustainability, environmental quality and the linkage between them in the quest for

human survival will be at stake. Sustainable agriculture is the successful management of resources to satisfy the changing human needs, while maintaining or enhancing the quality of environment and conservation of natural resources. The fundamental aim of sustainable agricultural development is the management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. The need for an integrated scientific approach for watershed development that defines the distributing and flow of rainwater as inseparable natural entity. Watershed development hence, serves two major objectives;

A sustainable increase in the agricultural productivity on one hand and working dry land farming viable enterprise on the other. The clear understanding of the multitude of psychological components that comprises sustainable agriculture in the watershed environment has immense necessary. Attitude is a pre-conditional factor for any action. Attitude of an individual plays an important role in determining his/her behaviour with respect to a particular psychological object. As corollary of this fact, the attitude towards sustainable agriculture will largely determine the nature and extent of their involvement in maintaining the natural resources. Thus, the study includes the attitude scale construction to measure the attitude of farmers towards sustainable of agriculture.

METHODOLOGY

To measure the degree of farmers like or dislike for the sustainable agriculture an attribute scale was developed. From among various techniques available for attitude scale construction the method of "Summated Rating" given by Likert (1932) was used. The procedure followed for scale construction was as follows.

1. Collection of Items—The first step in the construction of the attitude scale was to collect statements regarding the sustainable agriculture. Available relevant literature, learned agricultural scientists, experts and officers of the state department of agriculture were consulted. A total of 50 statements were pooled and they were then edited on the basis of formal criteria suggested by Edwards (1969). Out of 50 statements collected initially, 40 statements were retained after editing.

2. Selection of Items: According to the criteria established, all the 40 statements selected after editing were presented to the judges who are assessed to respond

Table 1. Statement Selected for Inclusion in Attitude Scale

S. No.	Statement No.	Statement	t' Value
1	15	The most significant aim of farmers should be to maximize the productivity through sustainable farming.	5.24
2	32	Inadequate and indiscriminate use of pesticides will not effect on the environment.	5.16
3	14	Cultivation strategies should be in line to protect the long terms productive capacity of the land.	4.97
4	5	Recycling of farm waste in agriculture enhances the soil health and thereby productivity.	4.85
5	27	Efficient use of water and soil conservation practices will not ultimately lead to sustainable yields of crops.	4.72
6	2	As modern technologies are dangerous in nature, the low cost and eco friendly practices are viable in nature.	4.51
7	8	Diversification of farming systems is a boon to maintain the equilibrium in ecosystem and thus sustainability.	4.45
8	25	Crops and livestock both should include at most farms for sustainability.	4.37
9	37	Organic farming practices provide efficient utilization and reprocessing of farm waste.	4.23
10	3	To feed the growing population without looking the degradation of the natural resources farmers should produce higher yields.	4.13
11	11	Sustainable agricultural development needs the balanced strategy on both farm and non-farm sectors.	3.86
12	29	The future agricultural development depends on the knowledge of eco-friendly practices and their application at field level.	3.70
13	30	Soil and water conservation practices are not followed by majority of the farmers	3.61
14	40	Organic farming and natural farming are not boost up farmers' confidence.	3.56
15	20	Small and marginal farmers have less contribution in sustainable agricultural development, as they are resource poor and in turn non-adopting of modern agricultural technologies.	3.48
16	35	High input farm practices have security of natural resources like land and water.	3.44
17	12	Pleasant soil health is absolutely essential for agricultural development in the country.	3.37
18	18	Farm scientists and policy makers should expand their efforts to develop innovations to increase production through sustainable agriculture.	3.25
19	38	Vegetative cover on the field bunds has no effect on soil and water conservation and so to be ignored for sustainable farming.	3.19
20	31	Differential use of modes and techniques in farm production is essential to get more profit.	3.14

to each one in term of their own agreement or disagreement with the statements on five point continuums response.

The judges comprised of expert scientists from all the agricultural universities in the country who specialized in extension education or sustainable agriculture research, extension functionaries of Meghalaya state department of agriculture. The experts were requested to indicate whether each of the statements sent to them were relevant and suitable for inclusion in the scale to measure the sustainable agriculture.

3. Construction of Scale—Initially, 142 such judges have been requested to indicate their opinion, but the responses were finally received from 78 experts and their rating were used in calculation of 't' values. For each subject a total score was calculated by summing up the scores for the individual items. The total score had considered the frequency distribution of scores based upon the responses to all statements. Then the 25 per cent of the subjects with the highest total score and also the 25 per cent of the subjects with the lowest total score were taken which provide the criterion groups to evaluate the individual statement. The 't' value for each statement was worked out by using the following formula.

$$t = \frac{X_H - X_L}{\sqrt{\frac{\sum(X_H - X_H) + \sum(X_L - X_L)}{n(n-1)}}}$$

Where,

X_H = The mean score on a given statement of the high group.

X_L = The mean score on a given statement of the low group.

n = The number of subject in each group.

$$\sum(X_H - X_H) = \sum X_H^2 - \frac{(\sum X_H)^2}{n} \text{ and}$$

$$\sum(X_L - X_L) = \sum X_L^2 - \frac{(\sum X_L)^2}{n}$$

The value of 't' is a measure of the extent to which a given statement differentiates between the high and low groups. As a crude and appropriate rule of thumb, any 't' value equal to or greater than 1.75 as indicating that the average response of the high and low groups to a statement differs significantly. Hence, the statements with 't' value of equal or greater than 1.75 were selected as attitude items. Finally, on the basis of their 't' values, twenty statements, which had the highest 't' values, were

selected for inclusion in the attitude scale. The final selected statements with their 't' value were given in Table 1.

4. Scoring Techniques—The attitude scale could be administered based on likert method. Each attitude item was provided with a five-point continuum. Hence, the response categories were strongly agree, agree, undecided, disagree and strongly disagree. An item, which was favourable to the object, considered and scored as 5, 4, 3, 2 and 1 respectively. For those items that were negative to the object, the scoring procedure was reversed. The cumulative score of each respondent for all the statements was considered as attitude score. The maximum possible score could be 80 whereas the minimum score possible would be 20 to each individual.

5. Reliability of Attitude Scale—In order to find out the reliability of the attitude scale according to split half method the scale was administered to 36 respondents in the non-sample area. The scale administered to 36 respondents was divided into two halves, based on odd and even numbered questions. The two sets of scores of same respondents were calculated. The coefficient of correlation was found to be 0.78, which was found to be significant at 1 per cent level of probability indicating high reliability of the scale.

6. Validity of Attitude Scale—Content validity in the current study was established in two ways. First the items selected for inclusion in scale were based on extensive review of literature. Secondly, the opinion of

the panel of judges was obtained to find out whether the items suggested were relevant for inclusion the scale or not. In this process, the judges were requested to express their judgment regarding the extent to which the universe of content covered the domain of sustainable agriculture. Judges expressed their judgment by selecting any one of the four response categories. Out of 20 judges included in the panel, expressed the "more exhaustively covered the subject" was by the majority i.e., 85.00 per cent of judges. Hence, it was concluded that the scale was valid owing to the opinion given by the majority of the judges regarding content validity.

CONCLUSION

Successful management and conservation of natural resources which ensure the attainment and continued satisfaction of human needs for the present and future generations. A number of activities involved in managing and conserving the resources, which is turn is reflected by their attitude toward it. The clear understanding of the multitude of psychological components that comprises sustainable agriculture lead to development of a scale to measure the attitude of the farmers towards the sustainable agriculture in watershed environment. Hence, a scale to measure attitude towards sustainable agriculture has been presented in this paper. Future researches in conducting the other performance and evaluation studies on the sustainable agriculture may use the attitude scale constructed.

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