

FARMERS BELIEFS ABOUT INDIGENOUS FARMING PRACTICES AND SUSTAINABLE AGRICULTURAL DEVELOPMENT

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ABSTRACT:- The study was conducted in the village Dagal, Rawalpindi District by using the statistical technique in which the sample of 187 farmers were drawn out of the population of 3680, to cultivate insight and beliefs regarding the indigenous farming practices and how it is related with sustainable agricultural development. During the study a mixture of qualitative techniques including interview guide(s), focus group discussions (FGDs) and case study were used. The study revealed that indigenous knowledge is a long term process and demands a complete approach to achieve destined goals. On the other hand it was also found that the lack of knowledge is a hindrance to achieve required outcome(s) from modern techniques. Thus, the public institutes need to be strengthened so that the transitional lag may be bridged and farmers may also get required production.

Key Words: Farmers; Indigenous Agriculture; Traditional Practices; Sustainable Agriculture; Pakistan.

INTRODUCTION

Indigenous knowledge encompasses spiritual relationships, relationships with the natural environment and the use of natural resources, relationships between people, and is reflected in language, social organizations, values, institutions and laws. These knowledge systems are usually embedded in naturalistic epistemologies and belief systems, which differ radically from those of scientific systems (IUCN, 1997).

Peoples with indigenous and traditional knowledge have long associations with nature and a deep understanding of it. Often, they have made significant contributions to the maintenance of many of the earth's more

fragile ecosystems, through their traditional sustainable resource use practice and cultural-based respect of nature. Therefore, there should be no inherent conflict between the objectives of protected areas and the existence, within and around their borders of indigenous and other traditional peoples (Beltran, 2000).

In the context of sustainable agriculture development, indigenous knowledge which deals with the farmers adaptive strategies to the natural, physical and socio-economic environments of an agro ecosystem has gained prominence (Bonny and Vijayaragavan, 2001).

Traditional agriculture in Africa is seen as an indigenous agricultural system that has developed over time

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with cropping patterns based on an agricultural knowledge system, expressed in the local language, viewed to be in dynamic equilibrium with the environment, influenced by innovations emerging from within the system as well as those adopted from other indigenous systems and the national and international agricultural systems (Warren and Cashman, 1988).

Time tested practices in nature, strategies and techniques developed by the local people to cope with changes in their socio-cultural are environmental conditions and accumulated by farmers through constant experimentation and innovation (Rajasekaran, 1993; Kaplowitz, 2001).

The farmers have developed a set of strategies to select the seeds, maintain seed stocks and anticipate climate changes (Sibanda, 1998 Kieft, 2001). The indigenous paddy varieties have become an integral part of the farming system and are maintained and developed on account of indigenous ways (Singh, 2003). Due to the lack of appropriate varieties, resource-poor tribal farmers have developed and conserved location specific indigenous paddy varieties to cope with the changes in socio-cultural and environmental conditions and food security needs (Kaihura et al., 2003).

Agriculture in Pakistan is undergoing transition from traditional to modern methods of production. Government experts estimate that about 25% of the farmers still use traditional methods such as oxen or hand ploughs, about 55% use a mix of traditional and modern methods and remaining 20% have adopted modern technology and equipment. These practices effect the cost of

production, therefore, the government level of support prices, the level of farming technology affects farmers choice of crops, vulnerability to pests disease, crop and livestock yields and income (FAO, 1996).

Recent agricultural practices around the world shows that mechanized farming and use of latest technological advancements in agriculture sector will not be as appropriate method as indigenous practices, which will be helpful to achieve the target of sustainable agricultural development. The objective of this study was to extract knowledge and concern(s) regarding the indigenous farming practices and associated beliefs of farmer with indigenous practices.

MATERIALS AND METHOD

The study was conducted in village Dagal, Rawalpindi District. According to 1998 census, the total population of Dagal was 3045 comprising 1579 men and 1466 women. Total area of Dagal is 2320 acres (Union Council of Adiyala). The data was collected through a mixture of qualitative and quantitative methods including interview guide, FGDs, and case study method. Out of total population of village (3680) a sample size of 187 was drawn through statistical sampling technique. Data collection was done by approaching the community through the support of Key Informant. The respondents were randomly interviewed with their oral consent by focusing on rapid assessment technique. After the data collection, the information was converted into codes by using a code plan and was then entered in Epi Data software, for detailed analysis. SPSS

was also utilized.

RESULTS AND DISCUSSION

Data showed that 42% respondents had not attended the school in their lives, 10% cleared their primary education, 15% were middle passed, 18% achieved the status of matriculation, 10% were able to complete Intermediate and 5% got graduation and above education (Figure 1).

Regarding on the division of labor among respondents, wage labor was reported by 6%, government servant were 20%, having their own business were 8% while 53% were actively involved in agriculture (Figure 2).

The livestock ownership status of the respondents revealed that poultry was owned by 21%, goat by 17%, donkey by 14%, cow by 22% oxen by 8% while 3% owned none (Figure 3).

The existence of Agricultural Indigenous Knowledge (AIK) is threatened by the development process and that indigenous knowledge systems are 'at risk of becoming extinct' (Ahmed, 1994). Kothari (1995) attributes this to the fact that oral paths are being blocked and people are no longer staying in homogenous community blocks. AIK systems in rural communities are rarely docu-

mented. Method of preservation and perpetuation be disrupted, there is a risk that within one generation, the knowledge could be lost forever (Warren and Rajasekaran, 1993).

Indigenous knowledge system means old knowledge or beliefs on traditional behavior, status and treatment. Most farmers in the village were practicing both methods and a majority were engaged in using modern methods. On the other hand fewer population were using traditional methods. Moreover, several farmers were also willing to learn about modern technology and wanted to incorporate it.

A majority of the population is engaged in agricultural activities. It was observed that the Government and their associated development plan(s) have not been as proactive and have not launched much development programmes or provided facilities to the farmers. Technology has created a notable impact on village life and also farming. It is also observed that individuals use their time in different ways due to modern technology that has changed the consumer expenditure patterns in general. The traditional farmers still heavily rely on human labour; others use modern machines while recently

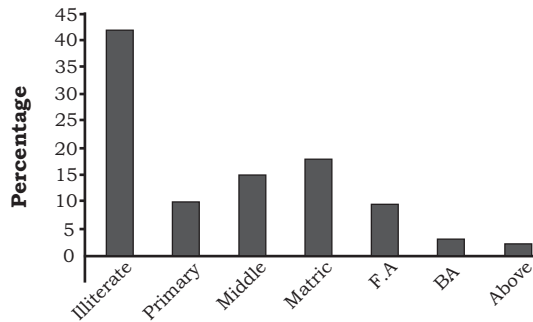


Figure 1. Respondents education level

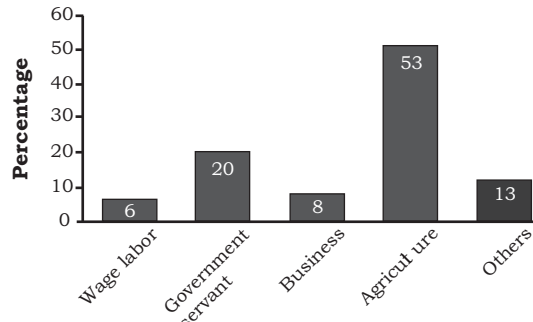


Figure 2. Respondents division of labor

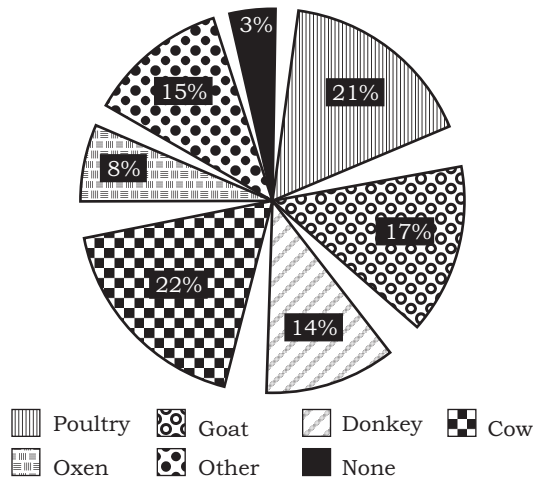


Figure 3. Respondents with regard to their livestock

farmers have been using both methods. Profile of two farmers is as follows:

- Haji Muhammad Mushtaq a 45 year old man was very affectionate to agriculture. His wheat crop was damaged due to heavy rain in February, a nearby season to harvest, hence the rain was not suitable for wheat crop. He winched a rope between the fields from both sides so that air and light passes from it and fungus may be reduced by repeating that procedure thrice. He got better results after harvesting due to above mentioned technique. The upper parts of leaves were brown in color and lower parts were green. The crop was suffering from bunt disease fungus called *Tilletia indica*.
- Mr. Abdul Rehman a 49 year old farmer was middle pass. He told that last year he used 5-8 chemical fertilizers. This year, after observing his field, he used commercial pesticides only thrice and bio-pesticides like neem and *Aloe*

vera twice with organic fertilizer. The crop looked better than last year and he had saved the money spent on the pesticides.

Indigenous practices usually pass down from generation to generation in the fields. Farmers work together and share their respective experiences especially by imitating what other farmers did and by association with neighboring farmers.

Most farmers said that people move towards new methods because most interestingly they are embarrassed to use old and traditional methods and most of those farmers adopted new technologies which were considered economically well and were also considered as king pin of society.

Respondents observed that during harvesting, the work load increases, which could not be managed by a single person, so to save time and reduce work load their immediate or extended family helps them. However, if family is not willing or around to support, the farmers hire labour to work with them in the fields for 8 h @ Rs. 300 and two meals a day. On the other hand, in normal days only farmer work in fields and sometimes his wife would help him for a few hours. It was also shared that the traditional farmers maintain their indigenous crop varieties by keeping seed stocks at home; therefore the need to buy seeds from outside was not the only option.

The local people are well aware about the importance of seeds and their correlation with the production of crop. There are many ways and means by which farmers across the world conserve seeds and maintain the genetic purity for sustainable cropping (Winarto, 1997). Indigenous

farming system, once prevalent all over the world is now almost vanished from the developed countries and confined to some tribal dominated regions of developing countries occupying more than half of arable land (Thurston, 1992).

Respondents also agreed that mechanized agriculture practice is more effective, as it requires less labor; saves time and gives production in limited time period. It was also shared that it costs much as it is modern technology. It is worth mentioning that the respondents shared that their families' lifestyle are changing with the adoption of new technologies and eventually results in having more productive crops. On the other hand it was also shared that modern technology would change the life style of the farmers and also of their respective families, leading to mainly health issues and others due to getting less engaged in agricultural activities.

Indigenous knowledge provides the basis for problem solving strategies for local communities, especially the poor and is an underutilized resource in the development process (World Bank, 1998). Production in traditional agriculture is based on sustainability in long terms rather than maximizing the yield in short terms (Koocheki, 1994; 1996). The main strength of old methods of cultivation practices for sustainable development is that they have evolved in close contact with nature and environmental conditions. Certain traditional techniques have proved to be sustainable over a long period.

It is concluded that the traditional farmers are willing to use modern methods but they have apprehensions towards the techni-

ques with changing life style. Farmers are still not sure if they can adopt new methods especially achieving benefits attached with them. Most of the farmers shared that those using modern methods are also not benefiting out of it, due to lack of knowledge and information.

Government should also provide all the required information and devise an easy system both for grasping information and applying for credit on easy terms so, that the farmers can cultivate their fields in the way that may create a friendly environment and acquire maximum production. It was also found that, If farmers have access to knowledge to organic farming they will be able to get more production, and escaping health hazards. The traditional knowledge is surely an underutilized strategy due to lack of research both at local and national level, therefore the agriculture in the village is still undergoing a transition and cultural lag from indigenous to modern methods of cultivation.

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