



## ANALYZING THE ROLE OF COMMUNITY AGRICULTURAL EXTENSION AGENTS OF DIR AREA SUPPORT PROJECT THROUGH THE PERCEPTION OF TARGETTED FARMING COMMUNITY

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### ABSTARCT

The focus of this study was to determine the agricultural activities and effectiveness of the Community agricultural extension Agents (CAEAs) in agriculture development under the Dir Area Support Project (DASP). DASP is a provincial project working in seven thehsils of the two districts Dir Lower and Dir Upper with the aim to alleviate poverty through agricultural and rural development. DASP along with agriculture extension department provides two weeks training to CAEAs to enhance their capabilities about modern agriculture. The training mainly focuses on vegetables production, proper use of fertilizer and orchard management. The total population of these trained CAEAs is 494. Among which, 18% sample size i.e. 88 respondents were randomly selected for data collection. Data were collected through questionnaire and analyzed by SPSS package. Results of the study reveal that majority of the respondents are educated up to only matriculation level and have small land size with low income. Majority of the respondents were satisfied from the training and willing to adopt the improved agricultural practices taught during the training. Respondents also pointed that DASP staff regularly monitor the activities and arrange refresher courses after the training.

**Keywords:** agriculture, community agents, extension services, farm inputs, improved practices.

### INTRODUCTION

The increasing demand for sustainable agriculture is predominantly dependant on agricultural research and extension services. The transformation of traditional agriculture into knowledge based agriculture requires expeditious transfer of research results from laboratory to field. Agricultural extension is a unique service that provides access to small rural poor farmers through non-formal education and information sources. That in turn helps these communities to increase productivity and income, alleviate poverty and improve food security. Extension should concern with dissemination of useful and practical information best suit for the rural life and situation (Supe, 2005).

As agriculture is one of the most important sectors of Pakistan's economy and majority of population directly or indirectly depends on this sector. Agriculture contributes 21.8% of GDP and provides 44.7% of the total employed labour force (Rehman *et al.*, 2012). Majority of the people live in rural areas of the country. Government of Pakistan for rural people, both at provincial and federal level launched different developmental extension programs from time to time. The basic perception of all these programs is to bring a valuable change in the life of poor communities in different aspects and improve their socio-economic status in the community especially better farming. Besides government, private sector also thrives to uplift the socio-economic status of the rural people and enhance agricultural productivity.

Khyber Pakhtunkhwa is located between 31o15' and 36o 57' North latitude and 69o 5' and 74o 7' East longitude. The maximum length of the province between

the parallels is 408 miles and the maximum breadth between the meridians is 279 miles (Room, 1991). The province has a broad range of physical and climatic conditions. Average annual rainfall varies in the range of 25 to 58 inches. Agriculture is the main source of livelihood in the province. The province has capability of producing a wide variety of crops, vegetables, fruits, floriculture and sericulture. In addition, some ornamental and medicinal plants are also found which are quite rare in the other provinces of the country. Main problems of the existing farming community are small holding size of the agricultural land, insufficient irrigation water, low rate of education and wide range of poverty, unavailability of extension and credits facilities, unavailability of good quality seeds, fertilizers, pesticides and absence and infrastructure (Khan, 2012).

DASP is a provincial project working under the sponsorship of International Fund for Agricultural Development (IFAD) supported by United Nation (UN) for development of those areas of the district Dir, which are free of poppy cultivation. The Project is supported by IFAD under a soft loan agreement (Nazir *et al.*, 2011). The basic perception of this project is improving farming and to alleviate existing poverty in rural life through agriculture and rural development in the area. Nazir *et al.* (2011) conducted a study to determine the role of micro-credit provided by DASP in the development of agriculture. They found that DASP successfully brought positive change by micro-credit in project area and the farmers significantly increased the yield of wheat, maize, potato and onion, rice, tomato, peas and okra crops through this credit scheme.



The project along with existing agriculture extension department provides two weeks training to the CAEAs. During the training different aspects of farming like vegetables production, agronomic crop husbandry, fertilizer use and integrated pest management techniques are discussed in detail. The main focus of this training is to create awareness in the community agricultural extension agents about modern agriculture and assist them for maximum utilization of available potential agricultural development. The CAEAs (trainees) are then further supposed to disseminate their acquired knowledge to the rest farming community.

The purpose of this study is to identify the farming pattern of the respondents in the area and agricultural activities of CAEAs. This study will also discover the techniques and services provided to farmers by CAEAs for the agriculture development. The significance of the study is to determine the impact of the DASP on the farming communities. In addition this study will also explore the forthcoming vision of CAEAs to farming communities.

## MATERIALS AND METHODS

This section discusses the mechanics of the research work. It explains the universe of the study, sampling technique, data source and analytical techniques used.

### Universe of the study

District Dir lower Khyber Pakhtunkhwa is the Universe of the study. Dir district is situated along the sides of river Punkora with scattered households in the north west of KP. It is a mountainous area with forest and small agricultural land. Agriculture and livestock is one of the main occupation along with small enterprises like village shops, fuel wood trading and fertilizer dealers also exist to facilitate the local dwellers. Most of the farmers have small land holding with tenancy status of owner and tenant in mix. Major livestock are sheep and goats raised by the farmers in herd.

### Sampling technique and sample size

From the whole district Dir lower two organizational units i.e., Timergara and Samar Bagh were selected purposely. As these two organizational units are comparatively developed and have good infrastructure along with transportation. The total number of the community agricultural extension agents in these two organizational units was 494 (267 in Timergara and 227 in Samar Bagh). The results will be surly more accurate if the total number of CAEAs were selected for data collection. However concerning time limitation, unavailability of the CAEAs and nature of the study using simple random sampling method 18% sample size from both organizational units were selected for data collection. In this way 88 respondents out of 494 i.e., 48 respondents (18% out of 267 CAEAs population) from Timergara and 40 respondents (18% of 227 CAEAs population) from Samar bagh were selected for interview schedule with the assumption to represent the whole of population.

### Analysis of the data

A comprehensive interview schedule was prepared for data collection in the light of objective of the study for respondents. Data were collected through face to face meeting from the respondents. During filling the interview schedules each and every question and their purpose was explained to respondents that accurate and reliable information could together. The collected data were put in computer through SPSS package. After arranging data according to nature and objective of the study descriptive statistics techniques like frequencies, averages, their comparison and percentages were analyzed using SPSS package.

## RESULTS AND DISCUSSIONS

Human's behaviors vary from person to person although seems alike while have abilities of changeable passions. Many variables like psychological and environmental factors can affect the learning and performance of individuals (Hansen, 2000). In Pakistan the literacy rate is 45 percent while in the study province only 38 percent (WB, 2005). Generally it is considered that educated individuals can successfully accomplish a task as compared to uneducated. Information in the given figure1 indicates that 6.8% of the respondents were illiterate and 63.6% of the respondents were matriculate and only 20.5% were having graduate level education. While 9.1% respondents were having other education i.e., diploma etc. It is expected that the response of the literate audience may play more vital role in agricultural development than that of illiterate due to adoption of improved farm technologies and utilizing extension services more efficiently.

As compared to Punjab and Sindh provinces of Pakistan the socio-economic status of the population in KP is poor. Majority of people are of low economic status particularly in rural area. In the existing scenario about 37% of the population lives below poverty line and 40% of adult are unemployed in the province (WB, 2005). The same results were also found during this study. Monthly income is the more important factor for the respondents in agriculture development. Figure-2 shows that the income of the majority of the sampled population (43.2%) was in the range from Rs. 1500-3000 per month. While income of 27.3% respondents varied in the range Rs.3000-5000, 23.9 % were in the range of Rs. 5000-10000 and only 5.7% were in the income group of more than or equal to Rs. 10000 per month.

With growth in population the demands for agricultural yield also increases within available natural resources. Globally there are 500 million small agricultural farmland holders having less than 2 hectares land, which produce 80% of the food that is consumed in Asia and Africa (IFAD, 2011). Although agriculture is the main occupation of the respondents but their structure is thin and weak. Majority of the land is hold by the landlords. Within the entire province the fragmentation of land into small parts is the main problem in the farming communities. Figure-3 implies that majority (54.5%) of the respondents fell in the range having less than 5 acres of



land, 29.5% respondents were operating between 5-10 acres and 10.2% of the respondents were having 11 to 15 acres while only 2.3% of the respondents were having above 15 acres of land.

Almost everywhere in developing world the crop yield in irrigated areas is higher than the yields in rain-fed areas (Hussain and Hanjra, 2004). Around the world about 17% of the total land is irrigated which provides about 40% to the world's production of cereal crops (WCD 2000). Most of the land of project area is suitable for agricultural production while little acreage of land is left uncultivated. Figure-4 show that 92% of CAEAs were using their land for agricultural purposes while 4.5% respondents were not using their land for agriculture purpose. Only 3.4% of the respondents have no land for cultivation.

Figure-5 shows that 80.7% of the respondents were owner of the land, 13.6% were owner-cum tenant and 5.7% of the respondents were purely tenant. Previous studies by Himayatullah 1995 revealed that generally owner operators are relatively more efficient technically than tenants.

Figure-6 shows that 20.5% of the respondents hold meetings of their village organizations weekly while majority 75% of the respondents holds monthly meetings, 2.3% respondents were holding meetings annually or never held meeting of their village organization. These results were in contrast to (Muhammad 1981), who studied working of agriculture department (extension) in Sakhakot area of KP. He found that majority of the respondent 96% were of the view that most of the extension workers did not visit the farmers regularly while 75% respondents of the CAEAs shows that they meet monthly to farming community to performing their duties in agriculture production.

The given Figure-7 shows that 6.8% respondents of the CAEAs were focusing for marketing problem, 11.4% respondents to increase production technology, 27.3% respondents stressed that preparation of land, good variety seeds and proper spray are necessary for vegetables production in the project area. About 6.8% respondents for production technology and storage system, 15.9% respondents were for marketing and good seeds, 8% respondents indicated the marketing and proper use of fertilizer, 21.6% respondents were of the opinion that sowing time, proper marketing and proper fertilizers were important for production of vegetables and 2.3% respondents focused irrigation and proper fertilizer use. These results shows similarity with (Khan 1999), who pointed out that improvement in agriculture production can be brought about by adopting modern scientific of farming that include technological components as well as used of improved variety seeds which has resistance to insects/diseases, improved cultural practices, chemical fertilizers and proper irrigation.

Extension is the transformation of innovation to farmers. This innovation may be a new research product such as new improved crop variety or just an idea like the proper use of particular inputs such as timing and intensity of fertilizer (Byerlee 1998). Figure-8 clarifies that 29.5%

respondents viewed that proper use of fertilizer is necessary while 31.8% respondents viewed that balance use of fertilizer on proper time is necessary, 8% respondents states that the amount and method of fertilizer application is important while 30.7% respondents mentioned that amount of fertilizer, method of application on proper time is important in case of fertilizer use.

The climatic conditions of KP are generally quite congenial for the production of stone fruits (Zahid *et al.*, 2015). Figure-9 explains that 11.4% respondents pointed that pruning of trees was necessary for high orchard production, 13.6% respondents viewed that irrigation and maintenance of proper plant-plant distance are responsible for high orchard production, 29.5% emphasized the pruning and proper planting pattern were important components for orchard production. The opinion of the majority of the farmers regarding the pruning is in coincidence with various earlier research for instance that of Khatkhat *et al.*, (2011); showing the efficacy of pruning on the improvement of horticultural crops. Only 7% explained that irrigation, hoeing and plant-plant distance were the main factors contributing to higher production while majority of the respondents (38.6%) pointed out that pruning, irrigation and weeding are the more critical factors responsible for proper orchard management.

It is highly desirable that extension personnel working with farming communities should focus on a broader scale comprehensive approach taking into consideration the overall problems of the target community. They are responsible to bring desirable change in agriculture through traditional technology transfer to research based and technology development in rural life (Worth, 2010). Figure 10 shows that 51.1% of the respondents were utilizing more than 75% improved agricultural techniques, 44.3% were utilizing more than 50% agricultural techniques while 3.4% were using less than 50% of recommended agricultural techniques.

Goals of extension programs can be only practically realized if proper feedback from the respondents is received. This feedback not only helps in critical analysis of the intended activity but is also handy in future planning. Figure-11 clearly depicts that majority of the respondents participated in the agriculture extension services provided by DASP. It also depicts that most of the respondents were satisfied with the services provided by DASP while just a minute proportion were dissatisfied with the project services. It further shows that DASP staff regularly monitored the activities of the respondents and after some months refresher courses were arranged for monitoring of CAEAs. While a few respondents reported that there is no monitoring of CAEAs after two weeks training.

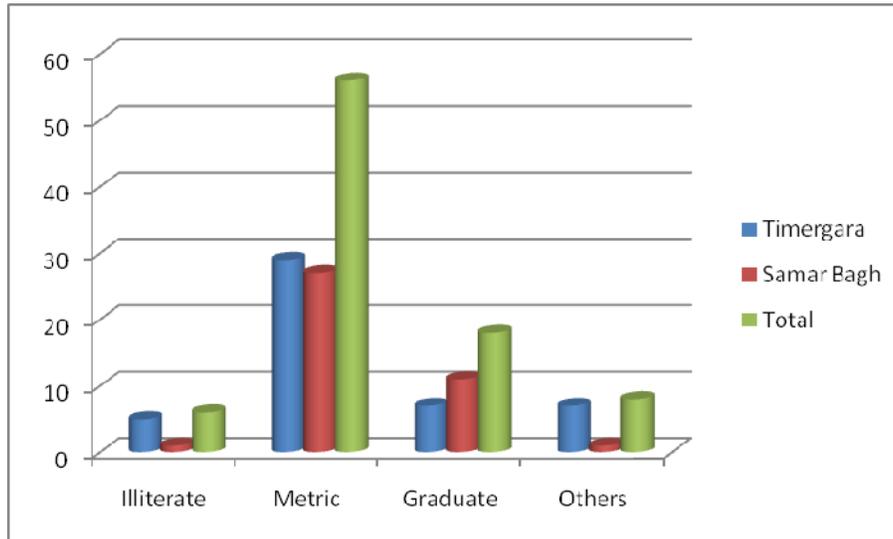
## CONCLUSIONS

Most of the CAEAs trained by DASP were quite young having low educational background in the study area. Main components focused by CAEAs during training programs were vegetables production, orchard management, agronomic crop husbandry and some problems related to fertilizer usage. Most of the CAEAs

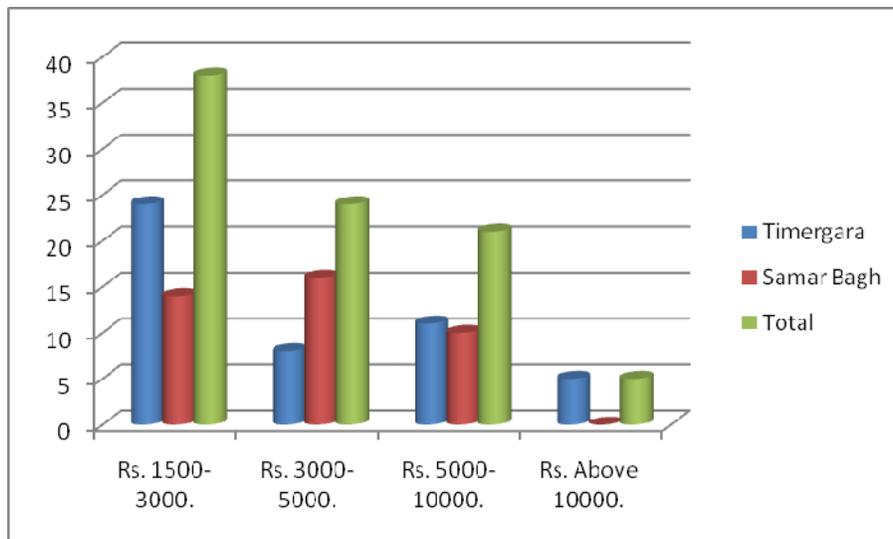


were satisfied with the training programs provided by DASP and found it useful in bringing desirable changes. Increase in training duration along with the provision of financial assistance and farm inputs availability will improve the role of DASP in agriculture sector of the target area. Increase in the trainees (CAEAs) number and provision of financial support to them are necessary for

better performance in agriculture development of the study area. CAEAs should be made well aware of the objectives of the project in order to avoid any confusion among the farming community. The CAEAs who are trained by the DASP through department of agriculture extension should be remunerated for their services.



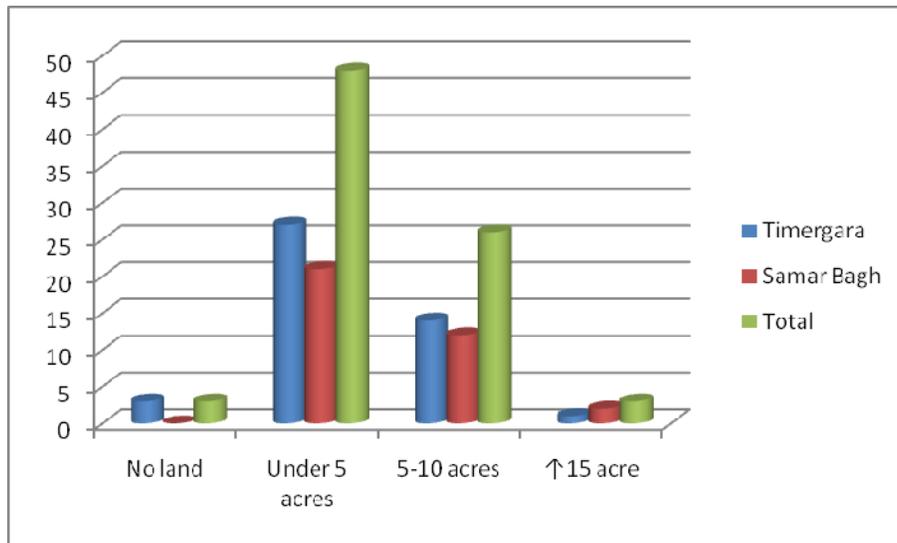
**Figure-1.** Distribution of respondents regarding educational level.



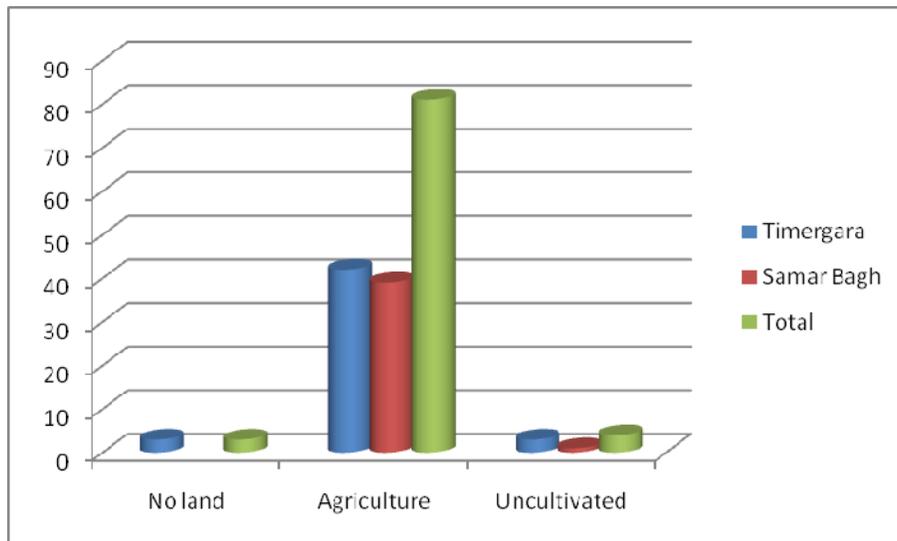
**Figure-2.** Distribution of the respondents regarding monthly income.



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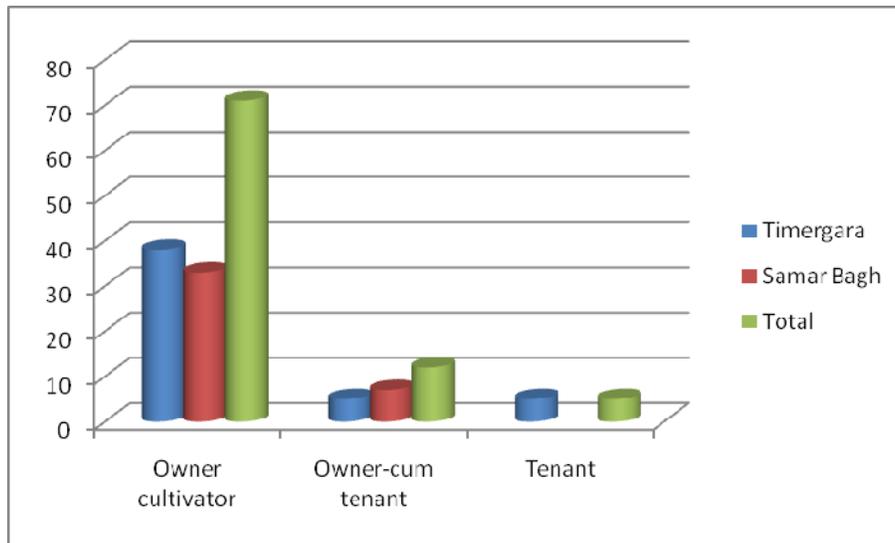
**Figure-3.** Distribution of the respondents regarding size of land holding.



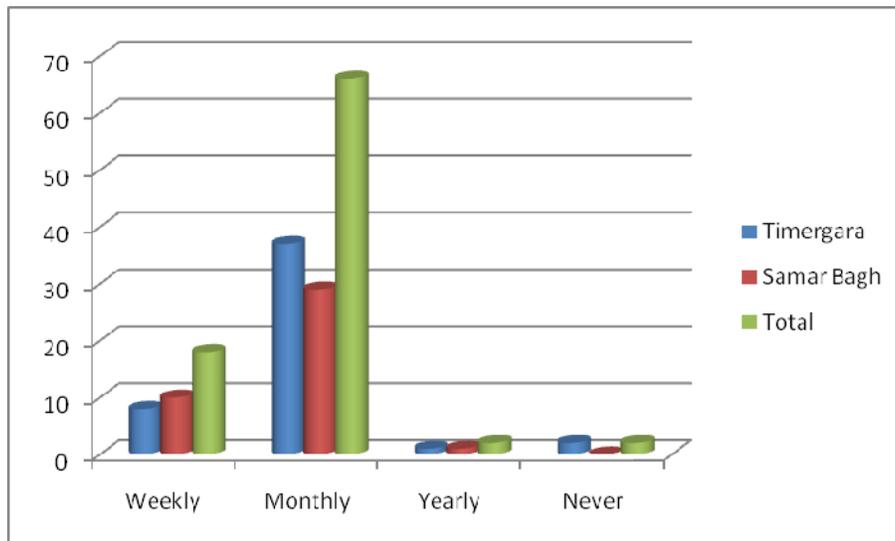
**Figure-4.** Distribution of respondents regarding land utilization.



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**Figure-5.** Distribution of respondents regarding tenure status.



**Figure-6.** Distribution of the respondents regarding availability of CAEAs for village organization.



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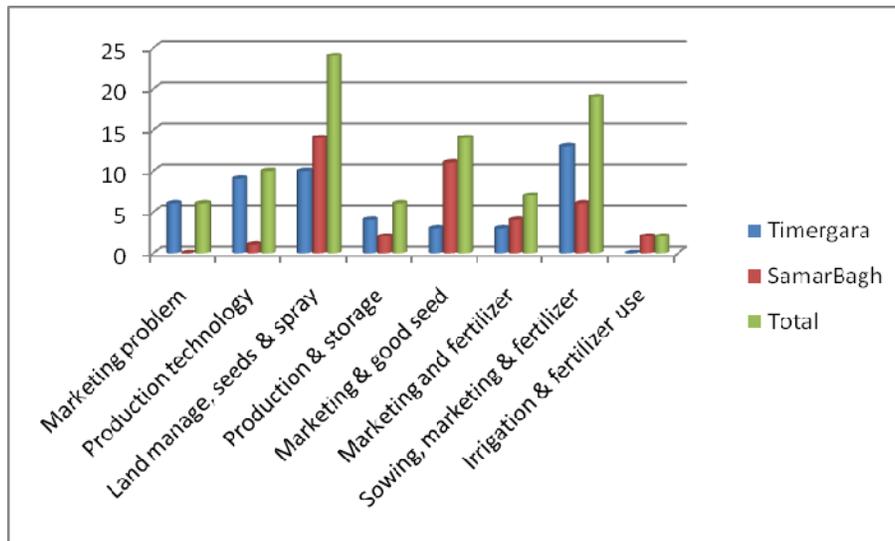


Figure-7. Distribution of components focused by CAEAs regarding vegetable production.

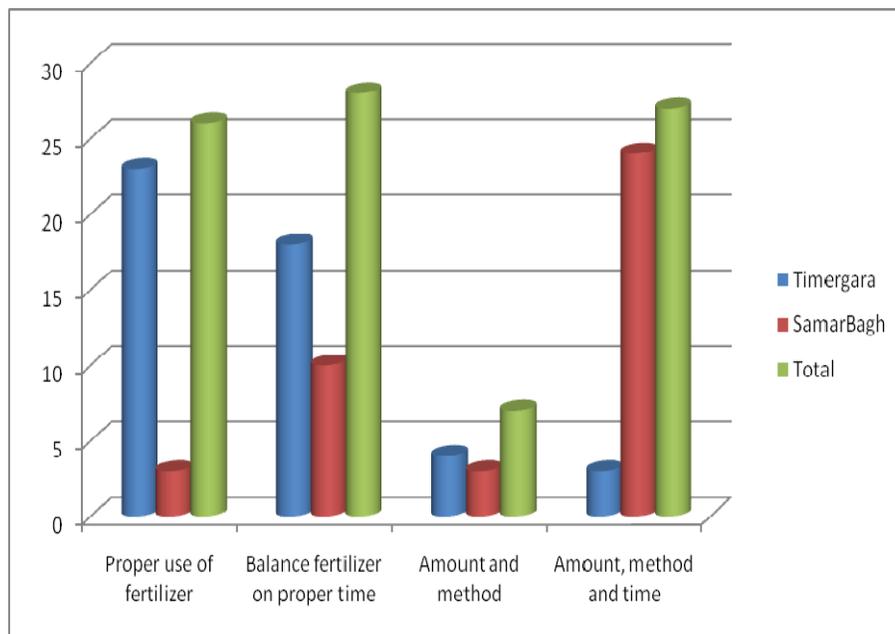


Figure-8. Distribution of components focused by CAEAs regarding fertilizer use.



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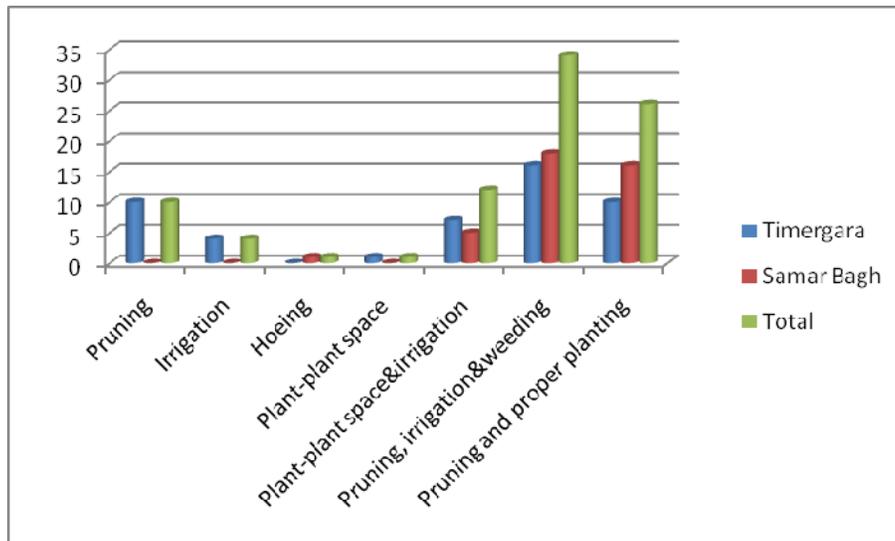


Figure-9. Distribution of components focused by CAEAs regarding orchard management.

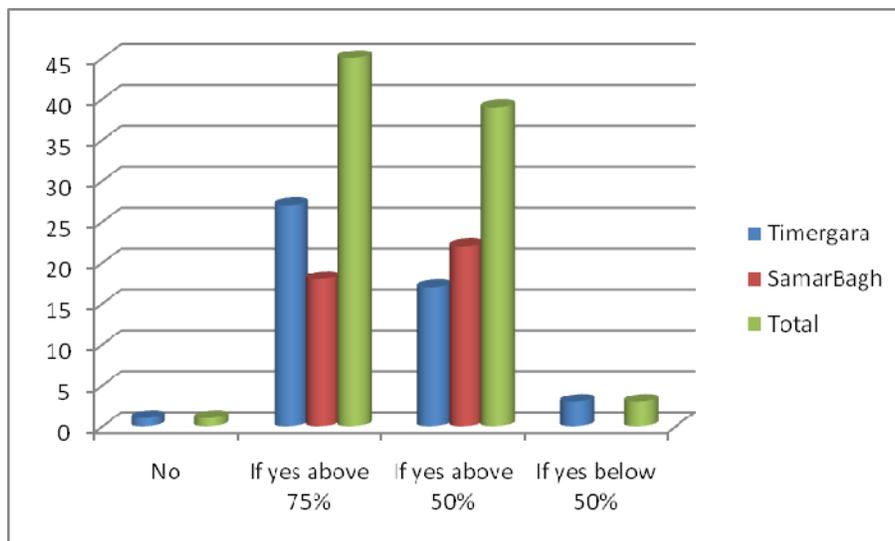


Figure-10. Distribution of respondents regarding adaptation of improved agricultural practices.

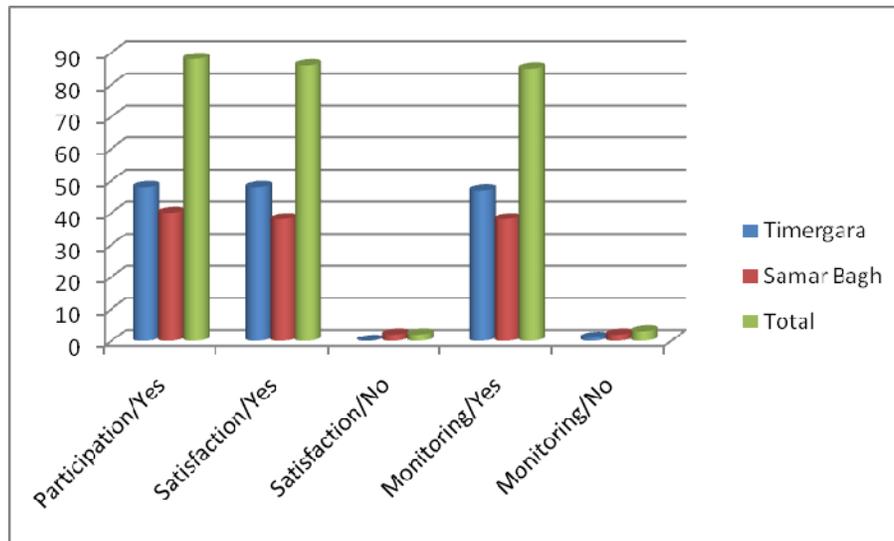


Figure-11. Distribution of respondents regarding participation, satisfaction and monitoring.

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