Investigating Training Impact on Farmers' Perception and Performance

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Abstract

This research paper investigates the impact of training on Malaysian livestock farmers' capabilities and performance level in their farm practice. A total of 323 farmers and training personnel participated in this study as respondents. A multi-stage approach was used where data were primarily collected using mail survey followed by telephone survey and personal face-to-face feedback. This was then supported by semi-structured interviews with selected identified individuals on the basis of purposive sampling. Analysis of findings suggested that on a general account a positive trend has emerged from this study indicating the effectiveness of the training programs although with range of variations of benefits gained by the farmers. A majority of the respondents agreed that the program have been useful and had made them become better farmers. The impact of training on farmers can be summarized into six major benefits according to priority: (i) increased in work quality (ii) increased in farm products (iii) cost savings (iv) time savings (v) increased in income and finally (vi) increased in networking. Training provided to the farmers has not only helped them improved their individual capabilities (SKAs), but more important, boost their morale and motivation that clearly contributed to their positive performance level.

Keywords: farming practices, performance level, training, livestock farmers.

1. Introduction

This paper presents the findings of training impact on farmers farming performance and livelihood resulting from training courses conducted through various training centres located strategically around the country. These courses were aimed at building the competencies, skills and capabilities of farmers in order to improve their farm practices and productivity. Although such training programmes were said to be aimed at developing farmers to be productive, to what extent this primary objective has been achieved still remain to be answered. The impact of training in changing farmers' livelihood has not been explored extensively so far.

1.1 Background of Rural Farming in Malaysia

Especially in this case study in Peninsular Malaysia, majority of them are small farmers and beginners with 1 to less than 5 acres of land to work on. Before the 1990s the rural sector was almost synonymous with agriculture as more than 70% of her population engaged in agricultural activities including livestock and fishing. The rural sector plays a pivotal role in the country's economic growth, social and political development before 1970s, until industrialization took role to spur Malaysian progress to become developed nation. However, since almost half or the population still live in rural areas and majority are farmers, government effort to raise their income level continues. Malaysian Five Year Plans have always put emphasis on upgrading the rural sector.

Agrarian reform was the major strategy in the Malaysian Plan in transforming the rural sector. It was responsible in bringing structural and institutional changes in the rural farming sector, besides fostering greater equity in the rural and agricultural development. Some of the agrarian reform measures implemented were new land development schemes and settlement, new infrastructure development, transportation linkages and subsidies in the form of cash and kind. However, this approach could lead to a number of weaknesses, most importantly an over-reliance on state support, a dependence on large subsidy goods often operating in single-sectors and a consequent marginalisation of small-scale, local enterprises operating in diverse markets. Besides these agrarian transformations, the country also has implemented other programmes to complement the agricultural development like rural industrialisation and ensure a fully integrated development projects are being carried out such as technical advice, training and development of rural farmers to introduce new technologies, skills and methods.

Fatimah and Mad Nasir (1997) reported that some progress have been achieved in poverty reduction along with improvements in socio-economic indicators such as life expectancy, mortality rates, literacy rate, proportion of population supplied with safe drinking water and electricity and nutritional adequacy. However, the report also mentioned that there exists a disparity of income between and within the urban and rural sectors as poverty incidence is still high and serious in some sectors and region. Malaysia's fast growing population and industrialization of the economy from that based on commodities has result in outmigration of younger generation to towns and cities. In the rural villages in Peninsula Malaysia it is common to find those only within the age groups of 0-15 years and above 50 years. Many agriculture lands have been left idle and these plantation lands are rapidly being converted for use by industry and for residential purposes. The government also encourage the youth to participate in agriculture and agro-based activities as majority of farmers are aging farmers with many aged 60 years and above. Such move to overcome this situation is through the establishment of a comprehensive Agriculture Entrepreneurs Scheme which includes training, funding, land, marketing and other necessary assistance has been introduced to encourage graduates and younger people to embark into farming and modernise the sector (Mohd Mokhtar Ismail, 2010).

1.2 Training Evaluation

Many organisations have realized the importance of measuring the impact of training on their employees in order to determine the effectiveness of the training programmes. Some rationale to this measurement as highlighted by Bernthal, (1998) includes:-

- To justify the financial investment in the training and development programmes;
- To gather feedback for ongoing improvement as a programme is being delivered;
- To demonstrate the link between between HR program and the organization's objectives;
- To compare the effectiveness of two or more training programmes; and
- To meet requirements set by professional organizations or government regulations.

Most organizations subscribes to Kirkpatrick's four levels of evaluation as shown in Table 1, where the first level deals with trainees' perception or reaction on the overall of the programme. Also known as the *"happy sheet"* this level of evaluation assesses participants' views on the enjoyment of training *(emotional reaction)*, usefulness of training (*perceived value*) and difficulty of training *(understanding on training material)* [Warr and Bunce (1995]. The second level focuses on trainees' learning level, that is, assessing to what extent trainees' have acquired the necessary knowledge. In this context, Kraiger et al. (1993) identified three types of learning resulted from training:

- **Cognitive Outcomes** – measures immediate knowledge outcome or knowledge retention over time after training.
- **Skill-Based Outcomes** – can be measured by requiring the trainees to demonstrate their new skills.

The third level is about job application or behavioral change, that is, assessing trainees' ability to apply or practice those skills and knowledge acquired during training to workplace environment. This form of evaluation is to track whether training has been positively transferred to workplace or vice versa. The final level of training evaluation is to assess whether training intervention has been beneficial and has helped companies to improve their performance. Most analysts resort to cost-benefit analysis to calculate the ROI *(return-on-training investment).* Changes in results might appear in many forms such as productivity improvement, customer satisfaction, profitability, efficiency, employee morale and so on. Table 1 summarized the levels of measurement and initiatives.

1.3 Training of Farmers

Training for farmers has been proven to yield variety of results. Murshed-E-Jahan and Pemsl (2011) on their study on Bangladeshi small farmers concluded that building the capacity of farmers through training is more valuable than the provision of financial support in terms of raising production and income. Similarly, a study by Tripp and Hiroshimil (2005) confirms the importance of training can contribute to enhancement of farmers' skills in farming works. Studies on the effectiveness of training for farmers showed that not all programmers meet success as most failures of programmes in the developing countries were attributed to the tendency of excessively concentrating on a particular technology transfer rather than a broader spectrum of farmer empowerment including knowledge disseminations (Oreszczyn, and Carr, 2010; Yang et al 2008).

However, these gaps could be overcome by.carefully revising and designing the training to address the needs. It was also reported that some success stories were related to using non-formal education and focusing on learning-discovery approach, and filling in the gaps in farmers' knowledge misconceptions. (Sligo and Massey, 2007; Tripp and Hiroshini, 2005).

2.0 Methodology

This research aims to investigate the benefit gained and level of knowledge, skills and ability (KSA) gained by farmers through training. three objectives of this research are: to identify the level of productivity improvement after training, KSA transfer from training to workplace, and benefits and improvement to farmers. To undertake this research study, the researcher subscribes to a multi-stage approach where data were collected via a variety of methods. The main approach to data collection was the used of questionnaires. Three sets of questionnaires were distributed to the respondents namely, the pre-test, reaction and the post-test. The pre-test were given prior to the trainees prior to attending the courses. The reaction level questionnaires were distributed to the trainees immediately after completing the courses during the training session. In addition, the post-test questionnaires were mailed to the participants 3 to 6 months after completing the course.The second method deployed in this study was the used of semi-structured interviews. Interviews were conducted with a number of selected respondents. Purposive sampling was used in identifying the respondents where the researcher obtained those names given by the authorized personnel. The third method was the used of telephone interviews. The researchers had to personally contact the respondents via telephone in order to obtain data from the respondents.

This method has helped the researcher to gather more data from the respondents due to the reason that some of them were live too far away to be reachable within the research period, not able to complete the questionnaire due to their low level of literacy where they were not able to understand the questions asked. The telephone interview assisted them to answer the question as each of the questions was explained in a simple language and immediate explanation was given if they have questions. Informal interview was also conducted during the telephone conversations. The final approach was the farm visit and observation. Here the researchers visited several selected farms owned by the farmers who were respondents themselves. The purpose of this visit was to gain first hand information and to observe the extent of knowledge and skills applied to the farm practice. A total of four farms were visited and interviews and farm activities were video recorded by the researchers. From the total of 525 questionnaires distributed nationwide, the researchers were able to collect and gather about 323 completed forms from the participated respondents. This number represented about 61.5% in which this rate of return can be considered as high although the researchers faced difficulties and failed to convince some of those respondents to return the questionnaires in particular the third set (*the post-test*). Some of the reasons for this poor response were due to incorrect home addresses, low level of literacy among the farmers and lack of commitment and obligation from the respondents themselves.

2.1 Reliability of Measure

Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. Cronbach's Alpha is computed in terms of the average correlations among the items measuring the concept. According to statistical interpretation, the closer the reading of Cronbach's Alpha to digit 1, the higher the reliability is in internal consistency. In general, reliabilities less than 0.60 are considered to be poor, those in the 0.70 range, acceptable and those over 0.80 good. There are three objectives from this study as shown in the Table 2**.** Questions were designed based on these objectives namely: 'productivity improvement after training' (10 questions); transferable of training to workplace' (6 questions); and thirdly, 'benefits and improvement to farmers' (15 questions). Lastly, the overall job application was measured from these 31 questions given. The results from analysis indicated that the Cronbach's Alpha value for the 10 items for productivity improvement after training measured was 0.771. For the second objective, which was the transferable of training to workplace, the value for the 6 items measured was 0.797. While benefits and improvement to farmers had 15 items and the value measured was 0.758. On the overall, all the items measured showed that there was internal consistency reliability as indicated in Table 3 above with the value of 0.878. This suggested that the internal reliability in this study was acceptable and signified to be good.

2.2 Respondents' Profile

Analysis of data indicated that of the 323 respondents that participated in this research, 291 of them or 90.1% were males and the remainder 22 or 9.9% were females as shown in Table 3. What can be concluded from this research finding implied that men still dominated in the farming jobs in the country. One of the obvious reasons to explain this domination by males is because most of the farming jobs demand great physical effort and traditionally it was male-dominated profession. In term of race breakdown, majority of the respondents in this research were Malays with a total of 278 farmers or 86.06%, followed by Indians which make up another 40 of them or 12.38%. The remainder 5 farmers or 1.5% were Chinese. (*see Table 4 below*). This suggested that Malays still form bulk of the ethnic group that dominated in the agriculture farming in Malaysia and followed by the Indians.

Table 5 shows the age composition of the respondents that participated in this study. From the 323 total number of respondents, 55 of them or 17.03% were young farmers within the age of 25 and below. Another 61 of the respondents or 18.8% were in the category of 26 – 30 years of age. A total of 74 farmers or 22.92% were within the age of 31-40 years. A bigger portion of the farmers with a total of 83 of them or 25.69% were in the range of 41-50 years of age. The rest of the farmers totaling 50 of them or 15.48% were in the age of 51 and above. On the composition of respondents' age profile, it was shown that a bigger chunk of the farmers representing a total of 190 or 58.8% were found to be of 40 years and below. This suggested that interestingly majority of them were young adults who had venture into farming as their profession. This implies that the government effort to encourage more young population to embark into farming profession has yielded some positive responses.

3. Results and discussion

According to Kirkaptrick (2006:22) behavior can be defined as the extent to which change in behavior has occurred as a result of training. This level of evaluation actually determines whether training has been applied to workplace setting. In other words, the third level assess to what extent participants are able to practice what they have learned. Many organizations failed to implement this third level evaluation because the transfer of training is not immediate. Trainees should be given a certain duration of time and in reality the transfer of training could only be determined after a lapse of 3 to 6 months. In the case of this study, the trainees were assessed after a period of 6 months.

3.1 Farmers perception and practices resulting from training

Analysis of findings from farmers nationwide revealed that the impact of training has been positive and had made them become better managers in their farm practice. What was found from this research was that all of them indicated that they were able to gather and share information through networking to improve their farming jobs (refer to Table 6). When asked about change in behavior, majority of them replied that they have acquired the SKAs and that they can do their job better as compared to before training. Similarly, majority of the farmers or 90.7% responded that their job performance level has increased as a result of the training (73.3% Agree and 20% Strongly Agree). It was also noted from the findings that 84% said that they were able to do their jobs much faster now as compared to before training. Both these findings concurred with the analysis as highlighted in Chart 3 where majority of the farmers agreed that they can now work on their farms more effectively and efficiently. Not only that, what emerged from the findings also indicated that their motivational effort and attitudes towards their farming has also improved after training as responded by 85.4%.

This research also explores the level of SKAs being transferred to farmers after training (refer to Table 7). Majority of the farmers noted that the training had been very beneficial as they now become better farmers. In addition to that, they felt that that they are highly motivated and that training had increased their job satisfaction. 85.4% agreed to the statement that they can apply almost everything learned at their farm. However, the transfer of learning only limited to self improvement as only 48% were confident enough to become coach to other farmers. In short, what surfaced from the findings implied that the impact from the training is not limited to the farmers' improvement in SKAs, but also training has brought about improved in the farmers performance level and their self-efficacy. Further investigation on whether training has been beneficial to farmers reveals positive notes from farmers (refer to Table 8). Majority of respondents agree or strongly agree to statements that they become better farmers and increase job satisfaction after attending the training. As mentioned in Table 7, 48% of farmers felt that they can coach others. However, in terms of sharing, bigger percentage (93.3%) willing to share information gained from training with others.

3.2 Impacts on Farmers' Productivity As A Consequence of Training

This section analysed the findings with regards to the farmers' respond as to whether they have benefited from the training courses. As shown in Table 9, almost 68.5% agreed that they have acquired 70% or more skills, knowledge and abilities (SKAs) as a result of attending the training courses (Also refer to Chart 1). This implies that the training has been successful and beneficial to majority of the farmers. When probed on the application of those skills and knowledge (SKAs), 81.4% said they were able to apply and practice more than 50% of those acquired SKAs back to their farm. This suggested that the farmers actually had benefited from the training courses they attended and as such majority of them were able to practice them at their farm fields. Not only that, analysis of findings also indicated that majority of the farmers or 79% agreed that they were able to work much faster and easier on their farms as compared to before attending the training courses. This showed that the farmers were able to save more time and become more productive. In short, it can be said that without attending those training courses, the farmers would not be able to improve their productivity.

Hence, via this training programs, such positive impact resulted from it has helped improved the farmers SKAs and their livelihood. Chart 1 illustrates that majority of the trainees which actually represent about 68.5% agreed that they have acquired more than 70% new skills and knowledge as a result of attending the training courses. Such analysis indicated that the impact of training on the farmers had been positive.

From another perspective, Chart 2 shows that majority of respondents representing about 81.4% agreed that they were able to apply and practice more than 50% of the new skills and knowledge they acquired back to their farm fields. What this finding suggested was that that the training courses they attended had benefited them and that the training has been effective.

Chart 3 shows that about 79% of the respondents positively replied that the training had turned them to become better farmers. These farmers agreed that they can now complete their farming job much faster and easier. What emerged from these findings suggested that the impact of training has been positive and that their farming jobs become more effective and efficient. Hence, they become more productive in utilizing their time of working hours.

3.3 Impact in Terms of Benefits Gained From the Training Course

Chart 4 shows that majority of farmers agreed that the courses they attended has brought about various benefits. From the list of six major benefits asked in the survey questionnaires, increase in work quality was considered by 51% of the respondents to be the most beneficial to the farmers. This was followed by increased in farm products (45% of the respondents), cost savings (38% of the respondents), time savings (36% of the respondents), increased in income (32% of the respondents) and lastly increased in networking.(27% of the respondents).

4.0 Conclusion

In conclusion, what surfaced from this analysis of findings suggested that generally the training intervention provided was seen as imperative and timely in that this study found that it has brought about positive impact to the farmers. Although immediate impact cannot be measured and quantified, evidence gathered implied that majority of these farmers could now be considered themselves as better farm managers. Results from this research study also revealed that training has been effective in enabling the farmers to develop their SKAs and transfer them to their farm fields. Not only that, the impact of training has also enabled the farmers to do their jobs much faster and easier and that they were highly motivated as well as satisfied with the possession of new SKAs. Hence, what appeared from the research showed that the impact of training on majority of the farmers has been positive and effective. Such consequence implied that the government's effort to improve the farmers' performance and capability through the training intervention had been meaningful as this initiative had not only brought positive impact to the farmers themselves but, to a larger extent, had indirectly contributed to the economic development of the country.

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TABLE AND CHARTS

Table 1 : Levels of Measurement for Evaluating Training Impact

LEVEL	**AREA OF INVESTIGATION**	**WHAT TO MEASURE**	**TYPE OF QUESTIONNAIRE/ WHEN**
Level 1 Reaction	How did participants respond to the training?	Measure respondents immediate responds to training	Post-session questionnaire using Simple Happy Sheet Immediately after training feedback.
Level 2 Learning	To what extent trainees have learnt and acquired those skills & knowledge?	Measure effectiveness of learning process in terms of skill or knowledge.	Pre-test/post-test change scores. Before and after training.
Level 3 Behaviour (Job Application)	Does behavioural change takes place at workplace setting?	Measure Behavior change.	Pre-test/post-test Requires a lapse of time e.g. 3-6 months to evaluate training application and behavior change.
Level 4 Result (Return-on-Training Investment)	What is the indicator for change in performance that occurred?	Training yields (dollars or intangible benefit).	Many factors come into play and sometimes difficult to measure. Given a period of time for training to take effect.

(Adopt and Adapt from Bernthal, 1998: 6)

Table 2 : Cronbach's Alpha Value for Variables

No.	Variables	No. of Items	Cronbach's Alpha
1.	Productivity Improvement After Training	10	0.771
2.	Transferable of Training to Workplace	6	0.797
3.	Benefits and Improvement to Farmers	15	0.758
4.	Overall Job Application for Farmers	31	0.878

Table 3 : Composition of Gender

Gender	Numbers	Percentage
Male	291	90.1%
Female	22	9.9%
Total	323	100%

Table 4 : Breakdown of Respondents According to Ethnicity

Ethnicity	Numbers	Percentage
Malay	278	86.06%
Indian	40	12.38%
Chinese	5	1.5%
Others	0	0%
Total	323	100%

Table 5 : Breakdown of Respondents' Age Composition

Age group	**Numbers**	**Percentage**
Below 25 years old	55	17.03%
26-30 years old	61	18.88%
31-40 years old	74	22.92%
41-50 years old	83	25.69%
51 and above	50	15.48%
Total	323	100%

Table 6: Farmers' Perception On Productivity As A Consequence of Training

Statements	**Percentage**					**Mean**	**Std. Div**
	1	**2**	**3**	**4**	**5**		
I increase my networking	0.0	0.0	0.0	65.3	34.7	4.35	.479
The knowledge and skills acquired enable me to perform my job better	0.0	0.0	6.7	73.3	20.0	4.13	.502
My job performance level has increased after training	0.0	2.7	6.7	66.7	24.0	4.12	.636
I am more motivated towards my job now	2.7	4.0	8.0	54.7	30.7	4.07	.890
I can complete my work faster	0.0	4.0	12.0	61.3	22.7	4.03	.716

Note: 1=Strongly Disagree, 2=Disagree, 3=Unable to Judge, 4=Agree, 5=Strongly Agree

Table 7 : Ability of Farmers to Transfer SKAs From Training to Workplace

Statements	**Percentage**					**Mean**	**Std. Div**
	1	**2**	**3**	**4**	**5**		
The course content is relevant to my job	0.0	1.3	6.7	57.3	34.7	4.25	.639
Almost everything learnt can be applied at work	0.0	5.3	9.3	66.7	18.7	3.99	.707
It is not difficult to practically apply what has been learnt	1.3	16.0	12.0	62.7	8.0	3.60	.900
I found that the skills and knowledge that can be applied is high	2.7	24.0	10.7	54.7	8.0	3.41	1.028
I feel that I can coach other farmers.	0.0	21.3	30.7	34.7	13.3	3.40	.973

Note: 1=Strongly Disagree, 2=Disagree, 3=Unable to Judge, 4=Agree, 5=Strongly Agree

Table 8 : Farmers' Perception on Whether Training Has Been Beneficial

Question	**Percentage**					**Mean**	**Std. Dev.**
	1	**2**	**3**	**4**	**5**		
This course should be given to all farmers	1.3	0.0	1.3	36.0	61.3	4.56	.663
I would certainly attend following courses	0.0	2.7	1.3	60.0	36.0	4.29	.632
I have benefited from this training	0.0	5.3	2.7	50.7	41.3	4.28	.763
I am able to share information with other trainees	2.7	2.7	1.3	57.3	36.0	4.21	.827
The course has made me a better farmer.	0.0	1.3	4.0	66.7	28.0	4.21	.576
My job satisfaction level has increased after attending the course.	0.0	2.7	1.3	72.0	24.0	4.17	.578

Note: 1=Strongly Disagree, 2=Disagree, 3=Unable to Judge, 4=Agree, 5=Strongly Agree

Table 9 : Farmers' Perception on the Extent of Benefits, Knowledge and Skill Gained From Training

No.	**Items**	**Percentage**										**Total**
	%Benefit gained	10	20	30	40	50	60	70	80	90	100	%
1.	% of new skills/ knowledge gained	0	1.4	4.3	4.3	17.2	4.3	28.6	27.1	10	2.8	100%
2.	% of new skills/ knowledge practiced	1.4	2.8	7.14	7.14	20	8.57	17.2	25.7	8.57	1.4	100%
3.	% of time savings for work completed faster and easier	3	4.5	6	7.5	29.8	7.5	16.4	14.9	10.4	0	100%

Chart 1 : Percentage of New Skills/ Knowledge Gained From Training

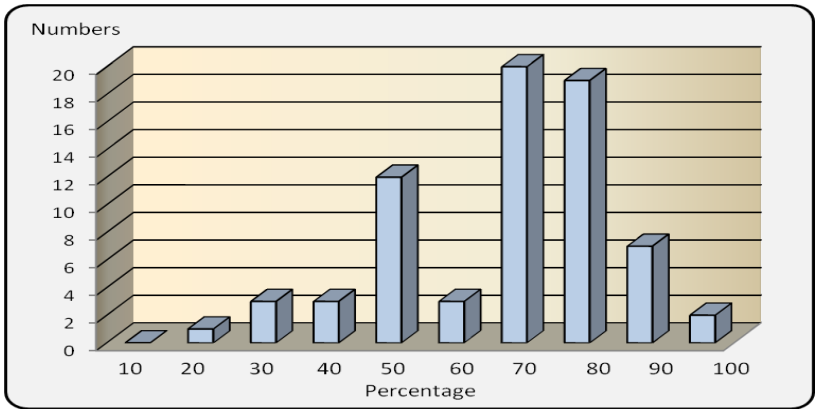


Chart 2 : Percentage of New Skills/ Knowledge Applied to Farm Practice

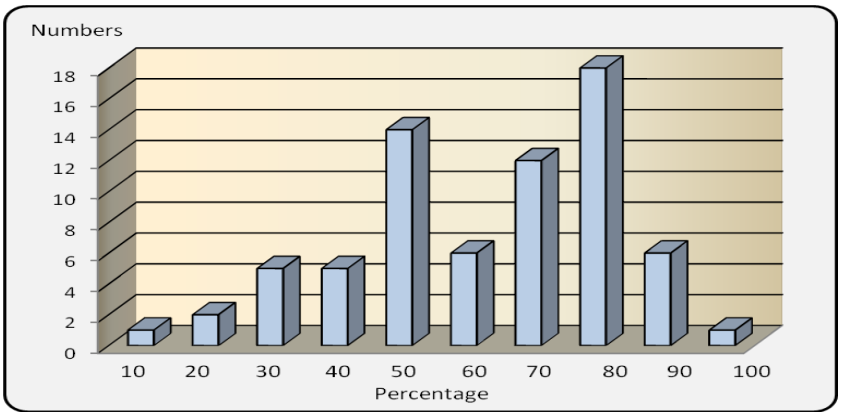


Chart 3: Percentage of Work Done Effectively and Efficiently

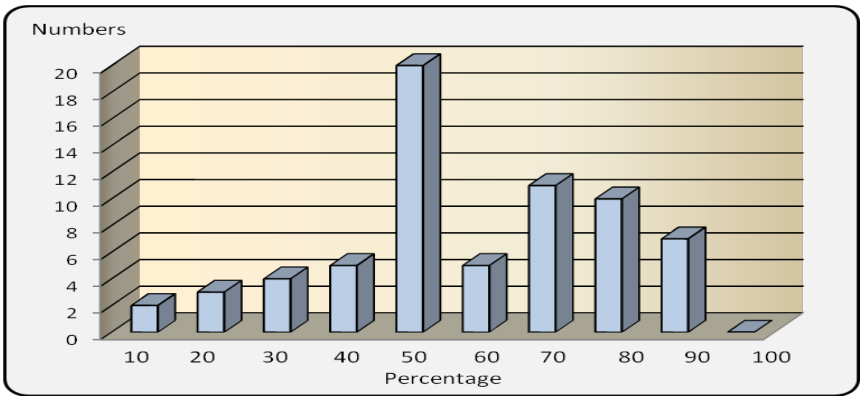
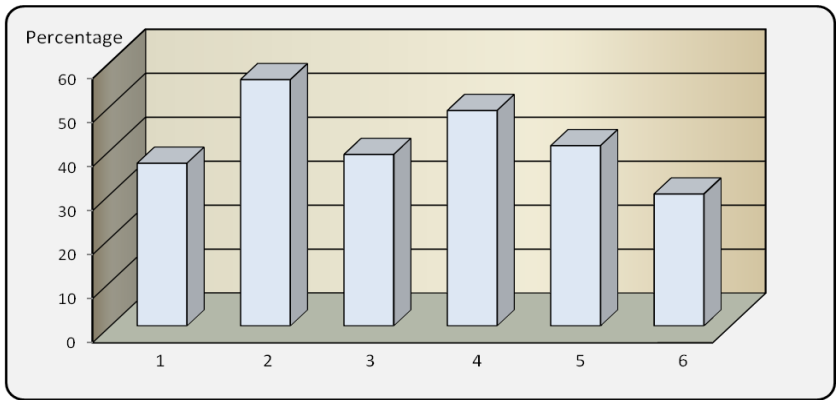


Chart 4 : Impact Gained by Farmers From the Training Course Attended



1. Increase in income
2. Increase in work quality
3. Time savings
4. Increase in farm products
5. Cost savings
6. Increase in networking