

## **Food Production and Management in Malaysia**

Noraniza Yusoff<sup>1</sup>

<sup>1</sup>(School of Government, UUM College of Law, Government and International Studies (UUM COLGIS),  
06010 UUM Sintok, Kedah DarulAman, Malaysia)

---

**ABSTRACT :** *The study examined how the relationship between the management problem and the food production. The goal is show that the management problem is trying to overcome in the food production. This has been done by examining the food production concept to address the management problem. The study analyzes the management problem in food production through telephone number directory sampling of 53 farmers interviewed by telephone in 2014. Data collection and data analysis was used a quantitative approach through questionnaire survey. Upon the examination of the phenomenon, it becomes clear that the food production concept cannot deal with the management problem. Through showing that the food production concept not affects the management problem, this research highlights the importance of deal with the management problem.*

**KEYWORDS** -crop, food, management, Malaysia, production

---

### **I. INTRODUCTION**

The increase of people had drawn the concern on increase food production at low-priced and seemly more vital [1]. National yield is the main approach to assuring passage to low-priced food in poor states with restricted ability to import food [2]. The investigation on dissimilarities in biodiversity among organic and conventional farms was described by lower yields in organic farms and not by varied management practices basically [3]. The increasing corpus of literature related with contract farming had investigated its pertinent and connections among the amounts of variables in order to acquire a better understanding on being incorporated in contract farming and agriculture generally [4]. The literature on agricultural management examined contract farming as a new institutional planning including agriculture and industry which could help to decrease the risks and ambiguities included in agriculture [5]. Literature discusses that contract farming can perform an important role in enhancing the agricultural production of peasant farmers [6]. Nevertheless, the farmers were very shortage in the knowledge of marketing the agriculture production [7].

The study on food production by Grunowand van der Vorst[8] reports that a number of food security crises, the pattern and execution of traceability systems became a vital instruments for organizing security risks in the food industry. An effective management of food security risks demands the attention of the numbers of potentially recalled productions, influenced areas or users, and logistics attempts associated to resolution the security difficulty. The study presented a yield and dissemination program model for food supply network to deal with the problems. The weak connections along the food supply network challenged the food yield which had point out by Jeo[9]. Food is regard as to be secure if there is sensible manifested reality that no loss will happen from its consumption under awaited conditions of usage. The obligation for organizing the numerous institutions incorporated in food security managements' is based on the associated agencies.

In food supply network, the farmers have to employ Good Agricultural Practices, merchants of products or raw materials at local or international level have to employ Distributions Practices, and producers have to employ Good Manufacturing Practices. Food supply network workers have to employ either nationwide (obligatory) criterion or nonpublic (volunteer) criterion. Chain advocates contribute the required incentive while chain enablers contribute the command and rule. In spite of the existent lawful arrangement for food security and quality controls, many processed food outputs in the Kenyan market are of sub-criterion quality. The informal economy need to be very strongly monitored by the food security agencies to support the application of Hazard Analysis and Critical Control Points (HACCP) and impartial business because it is the main provider of food productions to the nationals markets. Security and quality management in the food supply network has cost implications and earnings are a restricting determinant for all the stakeholders and the accomplishment of food security management system. Poverty reduction would encourage the buying power of national users, subsequently promoting hygiene-based encouraging rather than price-based need for food [9].

In Malaysia, the food production permanents parks established to make certain the ability to be sustained of the country's food supply. The aim of the project is to create food production permanent region and produced entrepreneurs in the agricultural sector as well as to foster private sector involvement in the field of food production. The execution of this concept demands arrangements among the Federal Government and the

State Government to gazette the land that has been recognized as appropriate for growth. The federal government's role is to provide and build the basic infrastructures to run the project. After going through the process of evangelization, land will be leased to entrepreneurs or private companies for the cultivation of fruits and vegetables on a commercial scale. Among the types of crops planted are sweet, chili, corn, pitaya, watermelon, melon, tomato, jackfruit, papaya and more. The achievements show that the project has obtained encouraging results and great potential for expansion. Practicing farming technology used in the project is the latest and modern in line with the implementation of Good Agricultural Practices (GAP). The project was also able to increase the involvement of new entrepreneurs in the areas of crop production [10].

The engagement of the private sector is stimulated to develop into "anchor company" in the project. Yields Coagulation center or classifying center also developed for the purpose of facilitating the harvest gathered and marketed at an affordable price as well as have the guaranteed quality value. The Ninth Malaysia Plan targeted 60 projects with a total area covering 5,594 ha. The targeted production and participant in the project is 184,300 m.t with value of RM197 million and 1000 participants. As of July 2009, with an area 4,339 ha area has been developed with a total of 800 participants. While, the yields production of 110,000 m.t valued at RM113 million have been sold [10].

The contribution of this study was testing the variable are related to the concept of food production and management problem as shown in Fig. 1. The concept of food production related to cooperation between state government and federal government, infrastructure at farm, gazette land and plot of land for rent. Management problem related to price problem, disaster, relationship problem of participant, illegal immigrant, bris soil, the old mining shaft, steep land, and problem with land ownership. The research questions are how does the concept of food production affect the management problem? and how does the concept of food production differs in the management problem?

## **1.2 Literature Review**

Research such as conducted by Jeo[9] have shown that the informal economy that is small medium enterprise (SME) and food sellers in Kenya is the main producers of food productions to the national markets, moreover they manage in neglect of food security and quality controls. This is because inadequacy of capable workers, infrastructure and material needed for clean storage and administration of food productions throughout yield, dissemination and retailing. Well-coordinated food security management system in Kenya is found between the stakeholders that aim the export market and the channel to high-earnings national market. Security and quality management in the food supply network has cost consequence. Earnings are a restricting determinant for the total stakeholder and the accomplishment of food security management systems. Poverty reduction would encourage the buying power of national users, subsequently encouraging clean-based need rather than price-based need for food.

Malaysia is one of the numerous states where food self-sufficiency is reducing year by year. In sequence for Federal Agricultural Marketing Authority (FAMA) of Malaysia to address food yield problem, the planning on combine marketing and efficient supply network management have designed as a marketing agency. Food safety is getting more concern by world at present and the growing occupants' causes' instability with the state food yield leading to nearly all of the third world state facing food safety risk. The lack of the Malaysia's agricultural economy is that it generally harvests cash crops and not much food. Government agencies, agri-entrepreneurs and individual farmers are evenly vital in assuring adequate and quality food supply in Malaysia. FAMA is one of the major agencies subject to the Ministry of Agriculture and Agro-based Industry that included in expansion activities in food yield. The plan has stimulated local farmers and agri-entrepreneurs to enhance their food yield to fulfil local and world need [11].

Cameron Highlands farmers provide more than half of Malaysian vegetable demands and besides produce quite large foreign income (in 1996 among RM\$56 million and RM&100 million was made from vegetables and flower yield carry out a further RM&20 million. Since the Cameron Highlands have been resolved and in an intensive manner farmed for decades and have a comparatively well-developed substructure it is inclined that several of the model from examining them can be employed to other states as they grow and probable to lowland smallholders in peri-urban conditions. Previously the 1960s there were restricted amounts of smallholder farmers, various tea estates and diverse slash-and-burn farming by native populations. Most of the farmers and native populations were relocated throughout the 1950s to 1970s crisis to assure villages and the revival of command in the earliest 1970s was accompanied by a development of smallholders, mostly Malaysian Chinese. The farmers have established family assistance and frequently possess reasonable entrepreneurial capability. However, similar to upland farmers in various states, they are marginalized, rarely search for official assistance and are vulnerable from market prices changes, poor climate and yield illness. Farms are generally family-managed, even though several collaborative groups have formed. It is probable to obtain four or more yields a year of temperate vegetables and flowers. It is uncommon for land to be left uncultivated, even though yields are diverse [12].

Plastic rain covers decrease rain and sunlight destruction and allow yields diversification and simple insect control. The governments have been trying to control pesticide use for decades. The Cameron Highlands plantations harvest tea and their amount has been secure for more than 40 years encompassing around 2800 ha in 2007. There have been several inventions in the previous five years with hand-picking replacement mechanical-clipping to decrease costs. Earlier than the 1940s several estates investigated with coffee and cinchona (origin of quinine) nevertheless for numerous causes neglected these. In the 1980s there were endeavors to generate citrus but illness effects failure. There has been new consideration that herbal prescriptions might be cropped in idea of the profitable market for such yields gathered from local woods. In the Cameron Highlands most farmers have concentrated yield and in doing so have made several alterations which decrease environmental destruction and may assist maintain yield. The major inventions are plastic rain-covers, sprinkler irrigation, compost and fertilizer, advanced seeds, pesticides and fungicides, a change from vegetable yield to flower cultivating [12].

Worldwide food investors are nowadays changing their concern to halal food yield and transfer to acquire a large market share in the halal industry. The research planned to explore the real halal food practices in the food industry to understand to what degree the existent of halal food growers and suppliers organize their work place subject to the demand of Malaysian Standard MS1500:2004. Halal practices are considered as a sensitive matter between food growers and workers as there are numerous differences on the halal interpretations. The end halal productions must be hygienic, secure, well look of, with product performance, served in a right method and of quality for everyone. The company must emphasize the hygiene of instruments, transportation, yield section and surrounding section succeeding with Good Manufacturing Practice. Each operator is needed to practice the rules of morals and acceptable cleanliness [13].

The Malaysian authority has at every point stimulated the engagement of adolescence in entrepreneurship as it is succeeding with the state plan. As fixed in Tenth Malaysia Plan, it is demanded for the native populations to increase their engagement in Malaysian sectors and it will be concentrating to reinforce the native populations' entrepreneurship to assist generate competitory business in great effect economy. In Ninth Malaysia Plan, efficient methods will be embarking on to enhance earnings between smallholders, farmers and fisherman by enhancing the yield within the agricultural sub economies. The local entrepreneurship industry has been also reinforced through the foundation in 1995 of a ministry called the Ministry of Entrepreneurship and Co-operative Development. There are sufficient amounts of agricultural program provided by government agencies for example the Agricultural Certificate Course in Agriculture Institute, the Youth Agriculture Entrepreneurship Scheme subject to TKPM (*Taman KekalPengeluaranMakanan*/Food production Permanent Parks), and agricultural ability program with the National Agriculture Training Council etc. Agriculture entrepreneurship up to this time unsuccessful to incline concern from the young people age groups and an amount of reasons has been recognized [14].

Succeeding with authorities' endeavors to further grow the agriculture industry, some great-effect agriculture program for example TKPM, High-impact Project-Aquaculture Industrial Zone (HIP-ZIA), Agropolitan and contract farming have been initiated. Export for this industry has been documented at nearly more than 10 million US Dollars in 2010. Being founded on the data collected from the numerous states, it has been proved that agriculture is the major determinant in terms of reinforcing economic growth. Nevertheless, Malaysia is now facing recent challenges related to producing recent results that will assist to increase the Malaysian agriculture and food economy to a greater level. Thus, a large number of attempts is demanded to assure that the agriculture economy can advance the economic growth of Malaysia [14].

The concept of the food production permanent park program has been implementing by Malaysian government as show in Fig. 2 [15]. Certainly agriculture can be the major mechanism for poverty elimination. Likewise, agriculture has the capability to deal with occupation issues and increase the society socio-economic level. Malaysia is one of the states that acquire advantages from agriculture. Therefore, as a means to assure that agriculture will remain to favor this state, an amount of great effect of agricultural plans have been launched; the plans are TKPM, HIP-ZIA and Agropolitan. Lately, the Malaysian authority has proclaimed a new Agropolitan program that will be planned in Mukah, Sarawak. Nearly USD 8 million will be consumed to initiate the several plans. MukahAgropolitan plan will grow into the fourth Agropolitan plan after AgropolitanBanggi Island in Sabah and AgropolitanGahai and AgropolitanChenomoi in Pahang. The AgropolitanChenomoi is now subject to the growth advancement. Every Agropolitan program was now growing subject to the observation of Land and regional Development Unit, Ministry of Rural and regional Development (MRRD). Every great agricultural plan admittedly contributes a high effect mainly in delivery modifications to the local society. Plan arrangement is certainly a vital element for agricultural growth. It is a decision-making procedure that interprets a set of associated actions that generate an educational plan formula particular to one or more patronage. Programing design is vital to place the difficult decision-making procedure into a methodical method of execution. This is important in order to fulfil the aim of a recent and inventive plan [16].

According to Man and Mohd.Nawi[17], contract farming is perceived as a method of developing smallholder engagement in recent great-value production markets and increasing quality standards, therefore growing and contributing stability to smallholder earnings. The result shows that farmers are concerned in contract farming as it assists them obtain well knowledge in farming practices, acquire access to marketing knowledge, market their product and employ farm sources. Nevertheless, contract farming or contract planning can be a useful resource of knowledge that can be utilized to increase their production.

Demeke et al. [3] show that the achievement of the food yield economy in Sub-Saharan Africa (SSA) is crucial for an amount of causes. National yields are the main channel to make certain access to low-priced food in poor states with restricted ability to import food. The multiplier impact of sustainable food yield on the economy is great as it has direct connection with other actions for example transportation, marketing, tourism and local business. In states where the development of food yield outdistances need, social, political harmony and macroeconomic stability can be sustained, paving the way for maintained economic development. Various states have organized to fulfil a food yield development rate in excess of 3 percent per annum (per year). Yearly food yield achievement averaged 3 percent or more in 60 percent of the sample states pursuing the policy improvements. However, rates of production development diverse from one time to the other and the new enhanced achievements were fulfilled not only by unsustainable enlargement of land undergoing farming but also unsuccessful to meet the speedily development food need. With national yield lagging behind, nearly all states have experienced overly expensive food import charges. Addressing political instability and constructing institutions that encourage cooperation among authorities, farmers, traders and other workers along the food value chain to overcome market unsuccessful and unskillfulness in input, output, credit and risk management is crucial to assure food availability, accessibility and stability in SSA.

Rong and Grunow[18] show that an amount of food security risks, the model and execution of traceability systems grow into a vital instrument for dealing with security crises in the food industry. An effective management of food security crises requires the consideration of the numbers of likely recalled productions, influenced the areas or the users and logistics endeavors associated to resolving the security issue. Ogato et al. [19] indicate that the female farmers supply more than their male fellows in the crop yield and management. The triple functions of the female farmers are not well acknowledged or valued in the region. White et al. [20] indicate that the soil maintains nearly all existing organism, being the final resource of their mineral nutrients. Fine management of soils assures that mineral components do not grow into lacking or toxic to plants and those suitable mineral components enter the food chain.

Sagar[21] indicate that dissimilar components may be utilized as a portion of united crises management plan for address with numerous agricultural crises utilizing a leading on case-based method. The dissimilar components recognized for example the advising facilities, the credit opportunities and the making agricultural inputs available at affordable prices can assist in dealing with the numerous issues and challenges being faced by the insurance corporations for example low engagement from farmers, shortage of the financial viability and enable the farmers to organize their crises more efficiently. The usage of financial derived by the insurance corporations on the behalf of the small or small farmers can assist in extenuating the price crisis efficiently. The united arrangement for crisis management in agriculture has been advanced by inductively examining the numerous components that may be effectively interconnected with the crop insurance to deal with the numerous agricultural crises more effectively and successfully. The usage of united method of the crisis management and the dissimilar components has been recognized to enhance the effectivity of the crop insurance for recent production growth in agricultural crisis management.

Pardossi et al. [22] show that crop irrigation employs a greater amount than 70 percent of the world's water and therefore enhancing irrigation effectiveness is influential to maintain the food need from fast-growing worldwide occupants. At the plantation level, irrigation is principally arranged based on the farmer's experience or on the resoluteness of soil water stabilize (weather-based approach). An alternative method requires the evaluation of soil water position. High-priced and advanced root zone sensors (RZS) for example neutron investigates, is available for the usage of soil and plant scientist, while low-cost and practical instruments are demanded for irrigation management in mercantile crops.

## **1.2 Methodology**

The study collected primary data on food production through survey method using questionnaire. Crop production concept regarded as independent variable and management problem in food production regarded as dependent variable. The questionnaire to collect data regarding food production and management problem was using Likert scale. The Likert scale utilizes a graded response to every of the statement in five numbers which is Do Not Know, Strongly Disagree, Disagree, Agree and Strongly Agree. Every statement is then arranged in relation to the meaning of the statement. Where the statement is in favor of the thought in question, the scores will be 1 (Do Not Know), 2 (Strongly Disagree), 3 (Disagree), 4 (Agree) and 5 (Strongly Agree). Discriminant validity of the test result through analysis showed that the variables are significant which is  $p$  value was less

than 0.05. Significant value ( $p$ ) less than 0.05 indicate that there was a relationship between the variables analyzed. Result of the analysis of reliability analysis was 0.995, namely reliability tests and studies involving ordinal and interval scale was excellent and reliable. Approximately 53 respondents interviewed by telephone in 2014. The respondents were TKPM program participants who are located in various states in Malaysia including Selangor, Kedah, Penang, Perak, Kelantan, Terengganu, Johor, Negeri Sembilan, Melaka and Kuala Lumpur. Telephone interview method was used for the purpose of completing the survey. Kruskal Wallis and Spearman's rho correlation statistical test used to analyze the data on food production and management problem. Data analysis was based on the null hypothesis Ho1: There was no significance difference between the concepts of food production and management problem; and Ho2: There was no significant relationship between the concept of food production and management problem.

## II. RESULT AND DISCUSSION

Table 1 and 2 shows the Kruskal Wallis  $\chi^2$  statistic is not significant,  $\chi^2$  (df = 2) = 0.020,  $p = 0.990$  ( $p > 0.05$ ), with the mean rank management problem score of 26.25 for Strongly Disagree, 27.10 for Disagree, 26.26 for Agree. The significance value ( $p$ ) is greater than 0.05, which indicates that there was no significant difference between the concepts of food production and management problem. Thus the null hypothesis is rejected and there were no difference between the concepts of food production and management problem. Tilman et al.[23] indicates that enhancements in the control of weak competitors of yields, crop disease and pathogens, and herbivores could importantly enhance productions. Three cereals as wheat, rice and corn supply 60 percent of human food. These yields obtain from once-rare weedy species; have change into the three richest plants on earth. The amount of illness and the illness incidence should enhance equivalent to host great amount and this distracting likelihood exhibit the probable imbalance of a worldwide program of food yield in which merely three yields account for so great ratio of yield. The comparative deficiency of eruptions of illness on these yields is evidence to plant reproduction and farming practices. For all three cereals, stock farmers have been fortunate at enhancing fighting to abiotic stresses, pathogens and illness, and at employing these protections in space and time in order to sustain production stableness in spite of low crop variety in continued cereal systems. Allied insect management and biotechnology that recognizes enduring immunity via various gene resources should pay progressively vital function.

A Spearman's rho rank correlation was run to determine the relationship between the concepts of food production and management problem among 53 TKPM's participant. There was no correlation between the concepts of food production and management problem which was statistically no significant ( $r_s = 0.067$ ,  $p = 0.632$ ). Table 3 shows that the concepts of food production and management problem do not reaching statistical significance at the level of  $p < 0.05$ . Thus the null hypothesis is rejected and there were no relationship between the concepts of food production and management problem. Jermar[24] show that the effectiveness of irrigation water utilizes is the fundamental difficulty of intensive agriculture. Irrigation programs are in the early phase if operation needed serving short-run goals for example to attain local self-sufficiency in food yields. Their operation should in the long-term however be based on water-utilize concept and should manifest the valuable growth of agriculture consequence from the demand for further concentration and diversification of yield. The shortage of trained water management workers on sites that are frequently distant from inhabitants centers, shortage of technicians and other workers of lower phase of proficiency and the nonexistence of farmers' experience in irrigation methods outcome in small performance effectiveness and decrease the advantages anticipated from the programs. Flachsbarth et al. [25] show that harvest enhancements rely on the adoption of different conventional and agro-ecological administration practices containing the usage of great-yielding cultivars and improved administration practices to decrease abiotic and biotic plant pressures. John and Fielding [26] show that The International Maize and Wheat Improvement Center (CIMMYT) examined panelists with provincial proficiency for 12 of the 15 food-unstable and drought-inclined cultivation arrangements focused by to recognize the most important of ten yield restrictions for maize farming in every of the cultivation arrangements. While drought were indicated to be a usual limitations for all of the cultivation arrangements in the investigation due to the diversity that occurs among cultivation arrangements, CIMMYT intended to utilize the implied knowledge of maize study and expansion specialists. The panel of specialists evaluates the comparative significance of some groups of yield limitations which could be classify into four groups: biotic, abiotic, crop administration and socio-economic limitations.

III. FIGURES AND TABLES

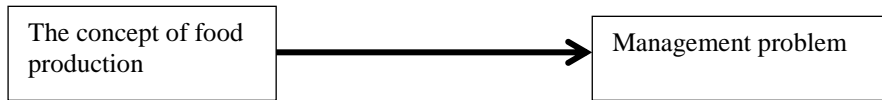


Figure 1: Conceptual framework of the relationship between the concept of food production and management problem

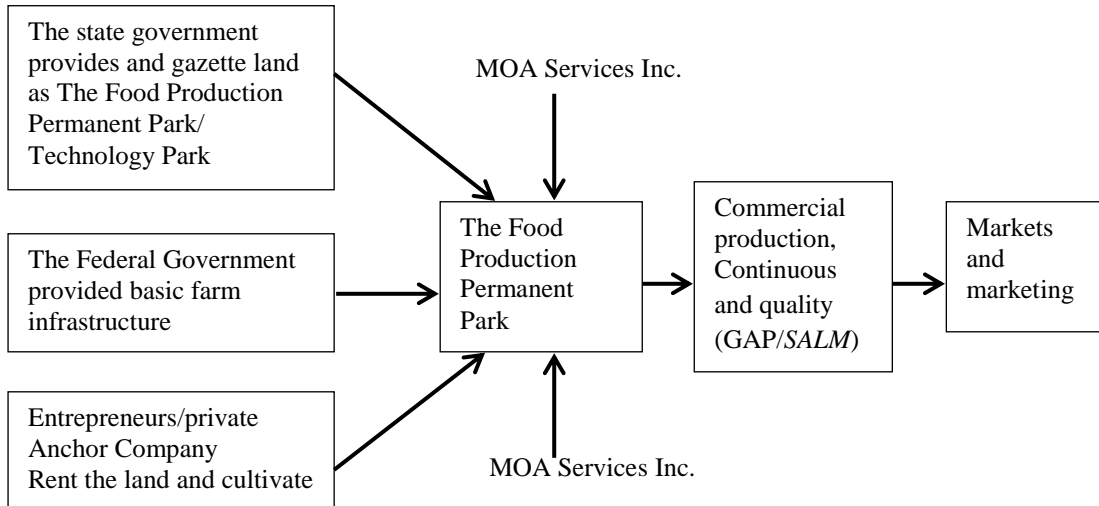


Figure 2: The implementation of food production permanent park program concept in Malaysia

Table 1: Ranks Of The Concept Of Food Production And Management Problem

The concept of food production	N	Mean Rank
Management problem		
Do Not Know		
Strongly Disagree	2	26.25
Disagree	47	27.10
Agree	4	26.25
Strongly Agree		
Total	53	

Table 2: Test Statistics

	Management problem
Chi-square	0.020
df	2
Asymp. Sig.	0.990

Table 3: Correlation Between The Concepts Of Food Production And Management Problem

			The concepts of food production	management problem
Spearman's rho	The concepts of food production	Coefficient correlation	1.000	0.067
		Sig. (2 tailed)		0.632
		N	53	53
	management problem	Coefficient correlation	0.067	1.000
		Sig. (2 tailed)	0.632	
		N	53	53

#### IV. CONCLUSION

The results confirm that the concepts of food production did not affect management problem and no significant difference between the concepts of food production and management problem. An implication of the research is generating strategy to enhance water productivity [27]. Due to restricted water supply in the resource of several irrigation arrangements particularly in the non-rainy season extension of irrigated regions in remain irrigation arrangements must draw from savings obtained from good water administration. Acquiring a stable water supply from the arrangement is one of a main difficulty [28]. Supplemental irrigation is one of the techniques to retain rainwater which can be formulated differentness. The farmers required to develop a section for water collecting and storage for example a little water-gathering pond for irrigation. Supplementary irrigation may be interpreted as the addition of restricted volumes of water to basically rain-fed yields, in order to enhance and balance productions throughout times when rainfall fails to supply adequate water for normal plant growing. Supplementary irrigation is an efficient reaction to reducing the destructive impacts of water content pressure on the production of rain-fed yields throughout drought. A deficiency of water content in the dry rain-fed sections frequently take places throughout the near all responsive phases of crop growing (blossoming and cereal filling). As an outcome, rain-fed yield growing is inadequate and subsequently the production is insufficient. Supplementary irrigation with a restricted volume of water utilized mostly throughout the crucial harvest growing phases; result in a large enhancement in production and water production. Supplementary irrigation in rain-fed sections is based on three fundamental characteristics which is water is utilized to a rain-fed harvest that would generally generate several production without irrigation; second, because rainfall is the primary resource of water for rain-fed harvests, supplementary irrigation is merely utilized when the rainfall unsuccessful to supply basic water content for enhanced and steady yield. Third, the volume and period of supplementary irrigation are optimum timetable not to supply water content stress-free states during the growth season, but instead to assure that a lowest volume of water is available throughout the crucial phases of harvest growth that would allow optimum production [29]. The advantages of this research is has broad geographical access because it using telephone interviews and the limitation of this research is has no feeling on the situation situated because lowlikelihood to generate a good interview setting [30].

#### V. Acknowledgements

The research was funded by Research Acculturation Grant Scheme/RAGS, S/O number: 12739.

#### REFERENCES

- [1] Chakraborty, A. J., Nandi, A. K. and Bera, B.K. (2015). A study on economic viability of tomato (*Solanum lycopersicon*) cultivation by organic system of farming. *Journal Crop and Weed, 11 (Special Issue)*, 62-66.
- [2] D'Silva, J. L., Mohamad Shaffril, H. A., Uli, J. and Abu Samah, B. (2009). A review of contract farming and factors that impinge youths acceptance to contract farming. *European Journal of Social Sciences, 11(2)*, 328-338.
- [3] Demeke, M., Di Marcantonio, F. and Morales-Opazo, C. (2013). Understanding the performance of food production in sub-Saharan African and its implications for food security. *Journal of Development and Agricultural Economics, 5(11)*, 425-443.
- [4] Gabriel, D., Sait, S.M., Kunin, W. E. and Benton, T. G. (2013). Food production vs. biodiversity: comparing organic and conventional agriculture. *Journal of Applied Ecology, 50 (2)*, 355-364.
- [5] Singh, S. (2013). The practice of contract farming in India: making it inclusive and effective. *Food Chain, 3(3)*, 137.
- [6] Parirenyatwa, K. T. and Mago, S. (2014). Evolution and development of contract farming in Zimbabwe: a reflection for agribusiness. *Mediterranean Journal of Social Sciences, 5(20)*, 237-244.
- [7] Banakara, S. and Kote, A. B. (2012). An empirical analysis of marketing of oilseeds in Haveri District of Karnataka state of India. *International Journal of Current Research and Review, 4(11)*, 16-29.
- [8] Grunow, M. and van der Vorst, J. (2010). Food production and supply chain management. *OR Spectrum, 32*, 861-862.
- [9] Joe, O. (2010). Food safety and quality management in Kenya: An overview of the roles played by various stakeholder. *African Journal of Food, Agriculture, Nutrition and Development, 10(11)*, 4379-4396.
- [10] KementerianPertanian&IndustriAsasTani Malaysia. (2015). *Projekberimpakbesar*. Retrieved 14 July 2015. from <http://www.moa.gov.my/web/guest/projek-berimpak-besar>
- [11] MdRazak, M. I., Mohd Amir Hamzah, A. S., Abas, N., Idris, R. and Ibrahim, Z. (2013). Sustaining food production for food security in Malaysia. *Journal of Economics and Development Studies, 1*, 19-25.
- [12] Barrow, C. J., Weng, C. N. and Masron, T. (2009). Issues and challenges of sustainable agriculture in the Cameron Highlands. *Malaysian Journal of Environmental Management, 10(2)*, 89-114.
- [13] Soong, S. F. V. (2007). *Managing halal quality in food service industry*. UNLV
- [14] Abdullah, F. A. and Abu Samah, B. (2013). Factors impinging farmers' use of agriculture technology. *Asian Social Science, 9(3)*, 120-124.
- [15] JabatanPertanianNegeri Perak. (2015). *Taman KekalPengeluaranMakanan (TKPM) (di bawah kendalianJabatanPertanian)*. Retrieved on 14 July 2015, from <http://www.pertanianperak.gov.my/index.php/fokus/projek-berimpak-tinggi-hip/tpkm>
- [16] Mohamed Shaffril, H. A., Abdul Nasir, A. F., Idris, K., Uli, J. and D'Silva, J. L. (2010). Agriculture project as an economic development tool to boost socio-economic level of the poor community: the case of Agropolitan project in Malaysia. *African Journal of Business Management, 4(11)*, 2354-2361.
- [17] Man, Norsida and MohdNawi, Nolila. (2010). The practices of contract farming among fresh fruit and vegetable suppliers in Malaysia. *American Journal of Agricultural and Biological Sciences, 5(3)*, 321-330.

- [18] Rong, A. and Grunow, M. (2010). *A methodology for controlling dispersion in food production and distribution*. DTU Orbit – The research information System. Research-peer-review-Journal article-Annual report year, 957-978.
- [19] Ogato, G. S., Boon, E. K. and Subramani, J. (2009). Gender roles in crop production and management practices: a case study of three rural communities in Ambo District, Ethiopia. *J Hum Ecol*, 27(1), 1-20.
- [20] White, P. J., Crawford, J. W., Alvarez, M. C. D. and Moreno, R. G. (2012). Soil management for sustainable agriculture. *Applied and Environmental Soil Science*, 2012.
- [21] Sagar, S. S. M. (2012). Integrated risk management in agriculture: an inductive research. *The Journal of Risk Finance*, 13(3), 199-214.
- [22] Pardossi, A., Incrocci, L., Incrocci, G., Malorgio, F., Battista, P., Bacci, L., Rapi, B., Marzialetti, P. and Hemming, J. (2009). Root zone sensors for irrigation management in intensive agriculture, *Sensors*, 9(4), 2809-2035.
- [23] Tilman, D., Cassman, K. G., Matson, P. A., Naylor, R. and Polasky, S. (2002). Agricultural sustainability and intensive production practices. *Nature*, 418, 671-677.
- [24] Jermar, M. K. (1989). Water management for food production: strategy plan. *Water resources management*, 3, 299-313.
- [25] Flachsbarth, I., Willaarts, B., Xie, H., Pitois, G., Mueller, N. D., Ringler, C. and Garrido, A. (2015). The role of Latin America's land and water resources for global food security: environmental trade-offs of future food production pathways. *Plos ONE*10(1).
- [26] John, A. and Fielding, M. (2014). Rice production constraints and 'new' challenges for South Asian smallholders: insight into de facto research priorities. *Agriculture & Food Security*, 3(18).
- [27] Mancosu, N., Snyder, R. L., Kyriakakis, G. and Spano, D. (2015). Water scarcity and future challenges for food production. *Water*, 7, 975-992.
- [28] Sharma, K. R. (2008). Food production: the critical role of irrigation water. *Hydro Nepal: Journal of Water, Energy and Environment*, 3, 1-3.
- [29] Oweis, T. and Hachum, A. (2012). *Supplemental irrigation: a highly efficient water-use practice*. Syria: ICARDA.
- [30] Opendakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum: Qualitative Social Research*, 7(4).