

THE PERFORMANCE OF CONTRACT FARMING
SYSTEM : THE CASE OF MUSHROOM FARMING IN
MOYOG, SABAH



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SCHOOL OF SUSTAINABLE AGRICULTURE
UNIVERSITI MALAYSIA SABAH
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SYSTEM : THE CASE OF MUSHROOM FARMING IN
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DECLARATION

I hereby declare that the material in this thesis is my own except for quotations, excerpts, equation, summaries and references, which have been duly acknowledge.

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ABSTRACT

THE PERFORMANCE OF CONTRACT FARMING SYSTEM : THE CASE OF MUSHROOM FARMING IN MOYOG, SABAH

The concept of 'contract farming' is a smart partnership between developers and local farmers through joint-venture agreement with win-win situation. The purpose of the concept was to increase production by modernizing its cultivation method and also, guaranteed market for the produce. Generally, this research was to study the performance of the contract farming system in mushroom farming in Moyog, Sabah. Specifically, the objectives were to assess the performance of participation of farmers in mushroom contract farming on their income, to identify factors that significantly contributed to the income generated from the mushroom contract farming, as well as, to study the attitude of the contract farmers towards contract farming system. 54 farmers were selected in the study and they all lived in the Moyog area of Penampang District. A semi-structured questionnaire was developed to elicit information from the respondents. The questionnaire contained two types of data namely cross-sectional data and time series data. The cross-sectional data were obtained through face-to-face interviews, while the time series data were compiled from the monthly report of Korporasi Pembangunan Desa (KPD) which is the implementing agent for this mushroom contract farming project. The data collected were then analyzed using descriptive and inferential statistics (i.e. chi-square test and binary logistic regression).

The chi-square results showed that age group (≤ 41 years old and > 40 years old), duration of participation (≤ 5 years and > 5 years), type of participation (part time and full time) and farm scale (≤ 9000 pp bags and > 9000 pp bags) were significantly related to the category of average monthly income of the contract farmers (below and above poverty line income of Sabah). The paired samples t-test also showed that there was a significant difference of average monthly income of the contract farmers before and after participating in mushroom contract farming. Furthermore, the binary logistic regression analysis showed that factors such as, age group, duration of participation, type of participation and farm scale had significantly influenced the category of average monthly income of the contract farmers. In terms of attitude, the descriptive statistics showed that the majority of the respondents agreed that the contract farming system had successfully helped them in increasing and sustaining their monthly income especially in mushroom farming even though some felt that they should be given the chance to do their own marketing in order to fetch higher prices.

This contract farming project has successfully retain the productive group and the youth group from migration to urban areas. Most farmers are earning more income compared to their income prior joining the project. In order to achieve an income of RM 960 per month, the farmers need to have at least 9,000 pp bags of mushroom substrate per year and it would only be effective for those who had more than 5 years of participation.

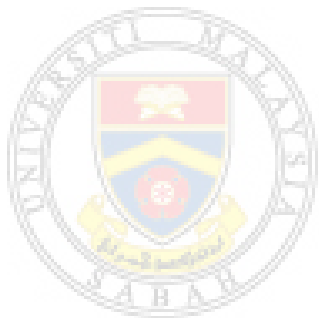
ABSTRAK

Konsep 'ladang kontrak' adalah perkongsian pintar antara pemaju dan petani tempatan melalui usahasama atau perjanjian perkongsian keuntungan dengan situasi yang saling menguntungkan. Tujuan menggunakan konsep tersebut adalah untuk meningkatkan pengeluaran dengan memodenkan kaedah penanaman dan juga, menjamin pasaran bagi hasil. Secara umumnya, kajian ini adalah untuk mengkaji prestasi sistem perladangan kontrak untuk penanaman cendawan di Moyog, Sabah. Secara khususnya, objektif adalah untuk menilai prestasi penyertaan petani dalam pertanian kontrak cendawan ke atas pendapatan mereka, untuk mengenal pasti faktor-faktor yang menyumbang dengan ketara kepada pendapatan yang dijana daripada perladangan kontrak cendawan, serta, untuk mengkaji sikap petani kontrak ke arah sistem pertanian kontrak. Secara keseluruhannya, 54 petani telah dipilih dalam kajian ini dan mereka semua tinggal di kawasan Moyog Daerah Penampang. Satu soalselidik dalam bentuk semi-struktur telah dirangka untuk mendapatkan maklumat dari para responden.. Kajiselidik dibahagikan kepada dua bahagian, iaitu keratan silang dan siri data. Data keratan silang telah diperolehi melalui temuduga bersemuka manakala siri data pula didapati dari rekod laporan bulanan Korporasi Pembangunan Desa (KPD) yang bertindak sebagai agen pelaksana dalam projek perladangan kontrak cendawan ini. Data-data yang telah dikumpulkan dikaji menggunakan sistem statistik deskriptif dan inferensial (seperti 'chi-square' dan 'binary logistic regression').

Hasil analisis 'chi-square' menunjukkan bahawa golongan umur (≤ 40 tahun dan > 40 tahun); jangkamasa penyertaan (≤ 5 tahun dan > 5 tahun); jenis penyertaan (separa masa dan sepenuh masa) serta keluasan ladang (≤ 9000 pp beg dan > 9000 pp beg) mempunyai hubungan yang signifikan kepada rata-rata pendapatan bulanan para petani kontrak (di bawah dan di atas garis kemiskinan di Sabah). Hasil analisis 'paired samples t-test' juga telah menunjukkan bahawa terjadi perubahan yang signifikan terhadap rata-rata pendapatan bulanan peserta kontrak di antara sebelum dan selepas menyertai Projek perladangan Kontrak Cendawan. Analisis lanjut menggunakan 'binary logistic regression' menunjukkan bahawa faktor-faktor seperti golongan umur, jangkamasa penyertaan, jenis penyertaan dan keluasan ladang mempunyai hubungan yang signifikan terhadap rata-rata pendapatan bulanan para petani kontrak. Dari segi sikap pula, analisa statistik secara deskriptif menunjukkan bahawa kebanyakan responden bersetuju bahawa sistem perladangan kontrak telah berjaya membantu meningkatkan dan mengekalkan pendapatan bulanan mereka khasnya untuk projek perladangan cendawan. Walau bagaimanapun, sebahagian responden merasakan bahawa mereka perlu diberi peluang

untuk memasarkan hasil cendawan mereka sendiri supaya boleh mendapatkan harga jualan yang lebih tinggi.

Projek perladangan kontrak ini telah berjaya mempertahankan kumpulan produktif dan belia dari berhijrah ke bandar. Kebanyakan responden memperolehi pendapatan yang lebih tinggi berbanding pendapatan mereka sebelum menyertai projek. Untuk mencapai pendapatan sebanyak RM 960 sebulan, peserta projek perlu memelihara sekurang-kurangnya 9,000 pp beg dalam setahun dan dan ianya hanya efektif kepada responden yang telah menyertai projek ini melebihi 5 tahun.



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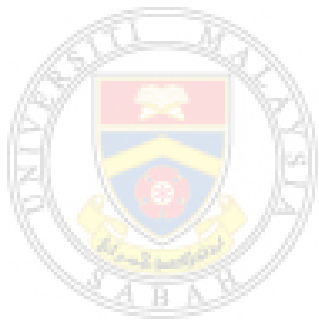
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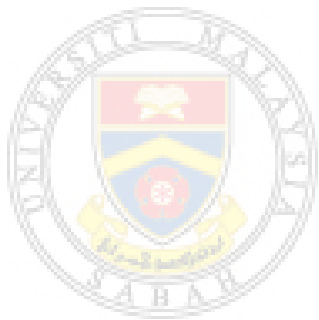


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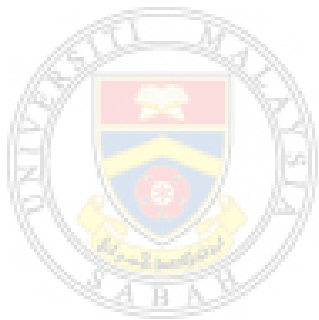
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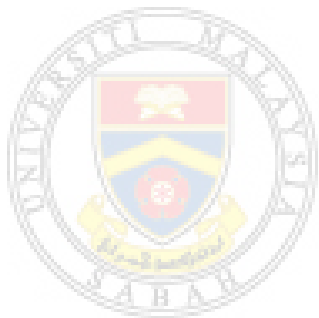
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LIST OF ABBREVIATIONS

| | |
|-------------|-----------------------------------|
| Kg | kampong |
| kg | Kilogram |
| p'p' | Polypropylene |
| KPD | Korporasi Pembangunan Desa |
| EPU | Economy Planning Unit |
| FAO | Food and Agriculture Organization |



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CHAPTER 1

INTRODUCTION

1.1 Mushroom Contract Farming in Moyog, Sabah

Korporasi Pembangunan Desa or Rural Development Corporation or more popularly known as KPD is a Sabah Government agency under the Ministry of Agriculture and Food Industry. KPD is directly involved in activities that are socioeconomic in nature, in particular projects that help the rural population to improve their standard of living. There are a number of projects which are currently implemented by KPD in implementing the government's effort to reduce the poverty rate in the state especially among the rural poor, particularly in agricultural activities. Among these are bee keeping, poultry farming, vanilla cultivation and mushroom cultivation. All these projects are carried out through the Contract Farming Concept.

In order to succeed, KPD as government implementing agency for project relating to the upliftment of the living standard of the poor, particularly in the rural areas, it is pertinent that participants in its project must be able to earn an average monthly income of at least RM 540.00 (EPU, 2007) for them to be out of the hardcore poor category or a minimum average monthly income of RM 960.00 (EPU, 2007) to pull them out from the poor category. Thus, there is a need to conduct a study to determine whether KPD is effective in helping the government to reduce the incidence of poverty in Sabah through contract farming system.

This study has chosen the Mushroom Contract Farming Project which was introduced to the farmers in Moyog in 1991. Moyog is situated at the hilly area between Penampang district in the West Coast of Sabah and Tambunan town in the interior area of Sabah. It is about 40 minute drives from the city of Kota Kinabalu. It has an altitude of between 800 to 1000 m above sea level. The study area is called Kg Togudon. All the residents in the area are of the Kadazan-Dusun stock. Generally, their education level is limited to Primary School. They are mainly

farmers planting hill paddy and vegetables for their own consumption. Where they produce extra paddy or vegetables, they usually sell it at the weekly tamu or by the roadside to get cash. This income is very uncertain and most of them earn between RM50.00 to RM200.00 per month (Basrun and Lee, 2006).

Shiitake Mushroom was introduced in Moyog as it meets the natural growing requirement where the surrounding environment must be cool and humid. Mushroom project is the first and only project introduced by KPD to the people in this area under government poverty eradication program. At the beginning of the project in 1991, the farmers in this village, who were newly exposed to government agency, were introduced with the mushroom cultivation as a source of additional income although they have no prior knowledge on mushroom farming. The project started with 10 participants and increased as time goes by.

Under this contract farming concept, KPD will transfer the Shiitake mushroom growing technology to the farmers by giving technical training, provide loans in the form of building materials and mushroom substrate for the farmers to start the project and a guaranteed market for all the mushrooms they produced. Farmers in turn will provide land and labour and sign a contract with KPD to ensure that they will sell their produce to KPD and allow KPD to deduct certain percentage of their sale proceeds as loan repayment. Theoretical training was conducted followed up with on the farm practical exercise. Free transportation services were also given for the delivery of input as well as for the buying of their produce at their farm (Basrun and Lee, 2007).

When KPD introduced the Shiitake Mushroom in 1991, many of the villages were very doubtful and had no confidence especially when they were asked to sign the contract farming agreement which to them is something new. However, some were prepared to take up the challenge to earn income since the project was introduced by KPD, being a government agency well known for implementing government poverty eradication projects in other areas of Sabah.

The project started by recruiting 10 farmers and was implemented as an extra income generating activity where each participant was given 3,000 polypropylene (p'p') bags. As Shiitake mycelium takes about 6 months to mature, the farmers had to wait for 6 months before they could get their income from the project. The production period for the p'p' bag last for between 4 to 5 months where the farmers will get their income at the end of every production month. At the end of the production period, the farmers/participants need to clean their mushroom huts before the next batch of p'p' bags being delivered to them for the subsequent planting cycle. However, the farmers have to wait for another 6 months before they could get their next income. Thus, there is at least a 6 months gap in between 2 productions period. Due to the 6 months waiting period, the participants tend to look for other sources of income. Thus, they leave their mushroom houses to other family members or sometimes they just abandon the harvesting schedule. Since mushroom grows very fast and in order to get good quality Shiitake, that is, the cap should not be over bloom, the farmers need to do the harvesting twice a day. Failing which, the quality would be downgraded and sold at a lower price or even rejected. As a result, the quality and the yield of the fresh mushroom will be affected (Basrun and Lee, 2007).

Another problem encountered was during the hill paddy planting season, the farmers/participants have to leave their house for considerable period of time to attend to their paddy fields which is usually quite a distance away. On other occasions, especially when there are festivities elsewhere, these farmers would normally leave their house for several days, thus leaving their mushroom farms unattended (Basrun and Lee, 2006).

Nevertheless, the villages who did not participate in the project in the beginning slowly started joining the project upon seeing their fellow villages (who had joined the project earlier) earning regular income from the project. They were attracted to join in the project since KPD is buying their produce at their farm where the payment is made monthly, thus they do not have to sell it at the weekly market (Tamu) or roadside. Besides, with the contract farming system, KPD is providing them with capital in the form of loan and delivers all the required

materials to their farm site, providing them the necessary technical knowhow and buying all their mushroom produce (KPD, 2008). With the increasing number of participants, KPD decided to build an office with a full time staff at the project site due to lack of interpersonal trust.

Interpersonal trust in business-to-business relationships is rarely offered spontaneously, rather, it results from an extended period of experience with an exchange partner (Lane, 2000; Dwyer *et al.*, 1987; Anderson and Weitz, 1989). And the duration of the grower's relationship with their preferred market agent will have a significant positive impact on trust (Batt, 2003).

After receiving the payment of the proceeds from the sale of their produce at the end of every production month, it is normal for them to give themselves and their family a treat whenever they happen to be in town. There is also a drinking habit of the people in this area, drinking is a representative culture and it becomes a social status in this area. When they have started spending money, they will enjoy spending money for more things and more often and frequency of the tamu trip would increase from say once a month to every week. As a result, they require more money all the time. Thus, they will quietly sell their mushroom produce at the weekly tamu to earn more instant cash.

Due to the high demand for fresh mushroom, it is easy for the farmers to sell their produce at the weekly market (Tamu) for instant cash. As a result, KPD always have less than the projected production from the farmers.

Meanwhile, market demand for fresh Shiitake mushroom is rapidly increasing with the production unable to cope with the demand. This is probably due to the awareness of the consumers on the nutritional and medicinal value of the mushroom through publicity and the electronic media besides book and other publications. Since the area for Shiitake farming is limited and to meet up the demand, KPD encouraged the famers to expand their farm by gradually increasing the number of p'p' bags (substrate) from 3,000 to 6,000, 9000, 12,000 and eventually to increase to 24,000 bags per farmer. With the increase in the number

of p'p' bags each farmers has to handle, they eventually became full time mushroom farmers and thus, ceased being shifting cultivators. Besides increasing their income, the introduction of the contract farming also helped to minimize the damage to the environment due to open burning for the hill paddy cultivation.

The farmers involved in the project are poor farmers with family income below poverty line. Initial survey indicated that the average income per month per family was around RM 50.00 to RM 200.00 (Basrun and Jamilah, 2006). With a population of 465 people, they are staying far from the nearest town and market with no electricity supply, government water supply or public transportation available (IDS, 2007). Even though the area is accessible by road but residents faced difficulty accessing public transportation. Most of them do not own vehicle and depend on others for their transportation to the town or market. Due to the lack of reliable transportation, perishable product could not be brought to the market on time, thus reducing its value.

Seeing the constraints of the farmers in the village, KPD decided to introduce the Mushroom Contract Farming Project, where farmers will receive their required inputs right at their farms and having their mushroom produce collected at their respective farms. Farmers need not worry about their produce getting spoiled. It helps to solve their main problem in marketing fresh mushroom. As mentioned by Bijman(2008), smallholders can benefit from contract farming, because it provides access to market, inputs, technical assistance and credit.

1.2 Contract Farming

Contract Farming referred as a system in production and supply of produce between contractor and farmers, where producing and selling on a contractual basis is a common arrangement in agriculture all around the world (Bijman, 2008).According to Ramesh(1999), contract farming refers to contractual arrangements between farmers and companies whether oral or written, specifying one or more conditions of production and or marketing of an agricultural product. Perhaps from the farmer's point of view, contract farming helps to improve their income and reducing some of their risk in production and marketing. While from

the contractor's point of view, contract farming provides great control over yield and quality consistency.

Study found that contract farming tended to be effective in raising income of small farmers (Miyata *et al.*, 2009; Singh, 2002; Bolwig *et al.*, 2009) and has the potential to raise income of the poor and promote rural development (Key and Rusten, 1999). According to Charles and Andrew (2001), contract farming is becoming an increasingly important aspect of agribusiness, the approach would appear to have considerable potential in countries to be widespread, as in many cases small scale farmers can no longer be competitive without access to the services provided by the contract farming companies.

It was stated in an article published by Food and Agriculture Organization, FAO (1998), in most of the places in Asia, agriculture is still under small family scale, seasonal production with traditional cultivation practices, where agricultural marketing is still undeveloped with overlapping channels, poor infrastructure and lack of price information. Also problems like lack of postharvest and packaging expertise.

While most villagers in Sabah, Malaysia are still grow vegetables almost entirely for home consumption, even though the other economic activity of rural peoples in Sabah such as small enterprise as well as "kedai kampung" or rural shop that is registered under the local registration authority had been carry out. This means, meeting basic household food needs is still the priority of most farmers in Sabah (Mansur *et al.*, 2009)

1.3 Problem Statement

With an average income of RM 50.00 to RM 200.00 per month (Basrun and Lee, 2006), farmers in rural area such as Moyog grow their own vegetables and hill paddy mainly for their own consumption and only sell it while there is an extra. This area has no access of electricity and government water supply. It is situated far from the credit and transportation facilities and farmers here doing their agricultural activities using traditional way. By seeing the problem facing by the