

Plantation Farming of Cameron Highlands: Towards Promoting an Innovative and Sustainable Agriculture in Malaysia

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Abstract

Cameron Highlands, an enchanting mountainous region with steep slopes and hill peaks of Malaysia has an atmospheric support and ecological suitability which allows a group of enthusiastic entrepreneurs with considerable ability for an innovative agriculture in the region. Based on labour-intensive family farming, one conspicuous feature of these farms is that they employ a large number of foreign workers from neighbouring South East Asian and South Asian countries who understand the intricacies of this type of cultivation. The findings show that the entrepreneurs have been able to adapt by interacting and responding properly to the existing eco-environment of Cameron Highlands which has effectually kept alive continuous economic and commercial activities in this region through innovative and sustainable agriculture. The research however, cautions the overuse of chemical fertilizers bearing impact on human health for which it is suggested that chemical technification of cultivation should be minimized; instead, the entrepreneurs should focus more on the pre-existing local skills with labour-intensive organic farming.

Keywords: Cameron Highlands, plantation agriculture, sustainability, suggestive future protection.

Introduction and Background

Cameron Highlands is a mountainous region with steep slopes located in Pahang State in Peninsular Malaysia lying between 1070 and 1830 m above sea level. The land area of Cameron is 71,218 ha with an average rainfall of 2660 mm (see Aminuddin et al 2005). Since Malaysia does not have any winter season as such, it often becomes difficult to grow all types of tropical seasonal fruits and vegetables in large quantities throughout the country. From that context, Cameron Highlands is quite suitable for plantation-agriculture producing multifarious fruits and vegetables to meet up the domestic and international requirements. The accurate land distribution of Cameron Highlands indicates that out of the total land area of Cameron, only 5500 ha (8%) is used for agriculture, 2750 ha (4%) is occupied by the local inhabitants for their settlement and the remaining vast area of 60,000 ha (86%) is under forest cover (see Aminuddin et al 2005).¹ Topographical description of the region further indicates that tropical forests have circumscribed the prevailing natural ecosystem of Cameron Highlands in such a way that it allows the cultivators to find a very favorable environment for plantation agriculture. Compared to other parts of Malaysia, Cameron Highlands

has low temperature with sufficient rainfall making it very much conducive to produce specialized agricultural commodities in the form of fruits and vegetables. It is reported that of the total 5500 ha agricultural areas used for farming, vegetables occupy the largest fraction comprising 50% of the cultivation assigning the rest 40% for tea production and the remaining 7% and 2% respectively are used for growing flowers and fruits (see Aminuddin et al 2005). Over half of the Malaysian vegetable requirements are met by Cameron growers and additionally, it adds million dollars earning by exporting them outside the country (see Barrow et al 2009).²

Although Cameron was famous for tea plantations initially being started by the British colonial ruler during 1930s, but its production has now been reduced due to some uncongenial situations. On the other hand, vegetables, flower and fruit production have now expanded since 1960s receiving a special momentum due their recent demands which is expected to go on expanding further due to the intensification of this type of plantation farming. This is because of the initiatives taken by a group of entrepreneurs who have successfully turned them in the status of commercial agro-industries employing a huge number of foreign workers being attached to this sector of development (see Sandhu 1969; Voon and Khoo 1980; Freeman 1999; Karim *et al* 2017).

Although eco-environmental atmosphere contributes as a kind of natural privilege playing a positive role in flourishing the plantation agriculture of Cameron Highlands, but there is no denying of the fact that the initiatives and mechanisms adopted by the entrepreneurs in this context played an important role in plantation agriculture. Apart from using a number of theoretical research works so far carried out on Cameron Highlands as secondary sources of information, this paper however, relies heavily on empirical field data generated by extensive trips to the region in two phases during 2016 and 2017³. The paper thus uncovers important issues relating to this productive agricultural sector of Cameron Highlands narrating them in various delineations.

2. Methodology and Data Sources

The research set out in this paper is the outcome of extensive field data gathered in two phases between November 2016 through July 2017 in Cameron Highlands which include a survey of 200 labourers working in these agricultural farms who are directly involved in the production of fruits, vegetables and flowers in this region. To supplement the data further, ten farm managers were extensively interviewed who as entrepreneurs play significant role in moulding the success of plantation farming in Cameron Highlands. The interviews with the farm managers were structured and flexible yet sufficiently diversified to cover the aspects of plantation in Cameron Highlands with obvious issues relating to entrepreneurship and labour-issues as desired for our study. The research further relied on one FGD, and researcher's own observation and informal reporting of local inhabitants, visitors and tourists, making the research innovative and pragmatically significant.

3. Plantation Agriculture and Cameron Highlands: A Brief Review of Some Related Literature

Ramasamy (1994) wrote a book which provided us with the historical evidences showing as to how the British rulers at the colonial time in the past extracted all the benefits from the agricultural sector in Malaysia attempting to make it a peasant-dependent agriculture in the country. With that purpose, the British officials initially hired Javanese labourers as an important source of their manpower, but since the recruitment of Javanese labourers became very costly and time consuming, they then decided to import Chinese and Indian labourers from outside as an alternative (see Ramasamy (1994). In this book Ramasamy (1994) mentioned that the first capitalized plantation industry in Malaysia was the sugar factory which flourished in the 1850s. In the same way, when coffee plantation in Malaysia was going to be ruined due to lack of manpower, British officials again hired Indian labourers for low wages in 1888. But they were not enough in number and thus the British had to recruit Chinese labourers as well. However, as the coffee plantation lost its profit gradually, both the British and Chinese planters left it and started to plant rubber using the same workers for wages. From Ramasamy's book, it was discovered that most of the Indian labourers at that time came from the southern part of Indian provinces who were typically descended from the lower caste group being psychologically alienated from the socio-religious structure of the mainstream Indian society. These Indian labourers however, were experts in agriculture because of their previous involvement and professional expertise in their country of origin. Ramasamy's (1994) writing gives us an indication that plantation in Malaysia since past was very much in need of the labour force because of the reluctance of the Malays to be involved in such works. The same situation has also been evident in the case of Cameron Highlands where the plantation workers are brought from the neighbouring South East Asian and South Asian countries including Bangladesh.

Aminuddin and his associates (2005) have published a paper on Cameron Highlands and mention that Cameron Highlands is the major grower of vegetables in Malaysia as it gets favourable climatic support from its agro-ecological region. Through a detailed investigation, the research also reports that 50% of the agricultural land of Cameron Highlands are occupied by vegetable cultivation and the remaining portion are used for tea and other crops (see Aminuddin, Ghulam, Abdullah, Zulkefli & Salma 2005). In their paper, they show that tea cultivation however, is gradually declining because of the shortage of technical man power causing many of the tea gardens to be taken over by vegetable farms. These researchers further add that like vegetation, the cultivation of flowers has also increased substantially in this region. The paper narrates the agro-eco system of Cameron Highlands showing an approximately 24-42 tons of soil erosion which occurs in Cameron Highlands due to vegetation every year, which is certainly alarming.

A similar situation is also found in Chan's (2006) study which identifies a group of farm producers mostly from private initiatives who are performing agricultural activities in Cameron Highlands. These activities are only supporting the domestic market and they could be utilized for exporting the commodities on a commercial basis. From

his writing, it is also discovered that since the beginning of colonial period until now, tea is the major agricultural product in Cameron Highlands. Gradually, other agro-products like vegetables and flowers are added later by the producers for commercial purposes, which inevitably increase earnings of foreign currency in the country but as a negative consequence, it causes tremendous environmental degradation. Chan (2006) also focuses on the ecological dimension from the sustainable development perspective. He states that to expand agriculture, farm producers need to clean the existing jungles and they have to construct new infrastructure which eventually will harm the ecology. A brief perusal of Aminuddin et al's (2005) and Chan's (2006) writings clearly reveal that they have not accorded much importance on the labour aspect, though both the studies are very much significant in the context to Cameron Highland's agriculture.

This research on plantation farming of Cameron Highlands is pragmatically significant and academically relevant as agriculture in Malaysia has always been a leading sector of development and prosperity of the country. Research on plantation farms in the past within and outside Malaysia often dealt on the economic perspective focusing on its productive value and economic exchange benefits (see Ramachandaran 1994)). There are also a few geographical studies stressing from the areal specialization perspective (see Gregor 1965; Freeman 1999). Both these dimensions however ignore the issues and challenges in production activities relating them with labour sector in a holistic manner; this paucity has thus encouraged us to take up this research from the socio-anthropological perspective.

3.1: Plantation Farms of Cameron Highlands: Aspects of Entrepreneurship and the Management

As indicated, the newly-devised plantation agriculture in Cameron Highlands is initiated and organized by entrepreneurs from three major ethnic groups in Malaysia with the private initiative to carry out these agricultural activities for economic gain in the region. The 5500ha of agricultural lands covered by the projects are wholly rural and stand in hilly slopes, giving each farm owner an allotment of roughly 3 to 5 acres of land for cultivating vegetables, fruits and flowers. We have interviewed ten such farm entrepreneurs/managers extensively to learn about the initiatives and mechanisms that they have undertaken in regard to innovating such successful economic ventures. To begin with, it is interesting to note that among the ten entrepreneurs, 2 (20%) were women which is positive in terms of gender participation. Among the 10 farm owners identified in this research, 5 of them (50%) were Malays, 4 (40%) were Chinese and the remaining 1 (10%) was an Indian. All the entrepreneurs were qualified educationally and they had achieved different grades: out of ten respondents, six had Bachelor degrees, one had a diploma, one entrepreneur had a Master's degree and the remaining two passed the SPM/STPM examinations. Moreover, in recent years, most educated persons attending tertiary education in Malaysia have had some access to agricultural knowledge as well. In terms of age, 80% of the entrepreneurs came from young and middle-aged groups showing dynamism in having motivation towards this type of plantation work. In evaluating their involvement in and management of farm activities in Cameron Highlands, it clearly appears that these farming activities

are mostly undertaken as private initiatives at the family level as 80% of these farms are identified as private enterprises. Apart from an economic gain, they are motivated by some traits and aptitudes to get involved in these farming systems.

Table 1: Entrepreneurs' Views on Aspects of Cultivation in Cameron Highlands

<p>The entrepreneurs mentioned that the weather and soil in Cameron Highlands are pleasant which makes it favourable for growing vegetables, fruits and flower.</p> <p>Cameron is the only hilly steep slopes in Malaysia producing template plants which is very positive for the country in terms of its economy.</p> <p>The prospects of this region have further been improved by government initiatives, as they develop infrastructural facilities including better transportation facility which allows for smooth movement of goods. The entrepreneurs mentioned that it eventually helps them to create good business at the national and international levels.</p> <p>Furthermore, it is also beneficial to get work-support from foreign labourers in this plantation sector including the Bangladeshis, Indonesians, Pakistanis, Nepalese and Indians.</p>
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Most of the farm owners also mentioned that they find these hilly areas as most suitable for plantation agriculture because of the year-long cool climate and abundant rainfall. Many of them opined that this is the only hill station in the country that produces temperate plants which according to them could strategically be used to maximize production. Another advantage of these farms is that they are greatly enhanced by the availability of foreign workers especially the Bangladeshis who work hard to boost agricultural farming (see Karim et al 2017). For many years now, it has been observed that most of the local Malays recently have some disinclination to farming for which they are now very reluctant to accept these manual works of Cameron Highlands⁴. Since Bangladesh is predominantly an agricultural country, the workers especially coming from its rural areas have some additional skills; hence, making these farms in Cameron Highlands can utilize their expertise to the fullest⁵. As these farms are very small in size, not many executive staff are employed; instead, field level supervisory roles are given to experienced workers who have been attached to the farms for about 8 to 10 years. The overall supervision however, is done by the entrepreneurs themselves who keep their eyes on all aspects of agricultural production without creating an unusual executive cadre for the maintenance of the farms, resulting with low price of the produce.

3.2: Plantation Agriculture in Cameron Highlands: Their Production, Types and Varieties of Produce

The idea of these plantation farms is to organize various agricultural activities to produce different types of vegetables, fruits and flowers. In this respect, the economic activities related to these farms are not directed to any specific work, rather they are diversified. The whole plantation work is the combination of multifarious works performed by the labourers which comprise activities like preparing of the soil for plantation, harvesting the plants, clearing unwanted weeds, protecting plants with insecticide and the whole process of cultivation which the workers and farm

owners regard as ‘gardening’. Since Cameron plantation is not heavy agriculture, very traditional tools and equipments are used for furrowing and cultivating the soil like sickles, spades, big scissors, etc. In addition, plantation of fruits and vegetables also requires enough irrigated water and sufficient fertilizers and manures. Chemical fertilizers like urea, phosphate, potash, Super mix, Alaska and M3 are used extensively to fertilize the land. In responding to our question, most of the workers mentioned that Cameron Highlands requires high doses of chemical fertilizers which eventually create problems on land fertility. Since Cameron farmers usually do not keep the land fallow, it is therefore quite likely that they have to use more fertilizers to maintain land productivity. The overuse of chemical fertilizers necessitates more water for irrigation. Ground water is pumped in through mechanical irrigation and then channelled through the pipes to each plot and farm. With regard to utilising organic fertilizer, a few respondents from the managerial staff and/or owners mentioned that many farms simultaneously use traditional manure with addition to chemical fertilizer. To safeguard the produce, farmers also use chemical pesticides usually imported from Thailand and China. But it appears from our cross-checking interviews with the farmers working in those lands that the use of organic fertilizer is becoming simply impractical because of soil degradation in Cameron Highlands due to overuse of chemical fertilizer and also for other reasons. But on the basis of our personal observation and farm owners’ statements, we are inclined to say that a huge requirement of irrigation water pumped in mechanically into these lands is clear proof of extensive use of chemical fertilizers in Cameron Highlands. Most farmers use glasshouses often built right next to roads and rivers to protect the crops and soils.

Multiple types of vegetables, fruits and flowers are produced in Cameron Highlands. Vegetables such as chillies, tomatoes, radishes, cabbages, lettuce, eggplants, pumpkins and broad beans are produced. But at present, Cameron farmers are very much specialized in producing tomatoes, cabbage and lettuce in bulk, as there is high demand in and outside the country. As for fruits, apples, grapes and strawberries are grown, but there is a monopoly of growing strawberries which captures the whole market in and outside the country. While talking to a numbers of visitors and consumers, it is learned that although the fruits and vegetables of Cameron are slightly cheaper compared to produce from other parts of the country, their taste is not similar perhaps because of the suspected overuse of fertilizers⁶. Meanwhile, flowers are highly demanded in Japan, China and Singapore so a few farmers are emphasizing on flower production, specially roses, chrysanthemums and orchids.

Table 2: Plantation Items Produced in Cameron Highlands*

Vegetables**	Fruits	Flowers
Chilli	Strawberry	Rose
Tomato	Apple	Hibiscus
Radish	Grapes	Fuchsia
Cabbage		Dahlia
Lettuce		Carnation
Eggplant		Gladioli

Pumpkin		Chrysanthemum
Broad beans		Geranium
		Orchid
		Lavender
		Camellia

*Based on field research conducted in Cameron Highlands during 2016-2017** Since the main focusing of this research is on production of vegetables, fruits and flowers, the issue of tea plantation has not been included here in the discussion.

Conclusions

Although the environmental atmosphere of Cameron Highlands plays a positive role in enhancing plantation agriculture in this region of Malaysia, it has to be admitted that the local entrepreneurs have taken certain steps to accelerate this specialized farming through their own initiatives. The whole production system of Cameron Highlands has effectually kept alive continuous economic and commercial activities in this region and over the years this has added enormously to the procurement of foreign currency and increase in employment for the global population. At present, it looks quite prospective as the whole cultivation produces a huge amount of vegetables, fruits and flowers to meet local as well as international demands. But paradoxically, this boost in production has entirely been dependent on using excessive and uncountable amount of chemical fertilizers which are often very much unsuitable in terms of land productivity. Such indiscriminate application of chemical fertilizers further threatens the consumers with side effects on their health. To preserve long term land fertility and to regain its top soil loss, it is also suggested that certain portions of the land in Cameron Highlands be kept fallow for a certain period of time. Contextually, the government and policy planners should make such provision and also at the same time, caution farm owners about the dangers of using unmeasured chemical fertilizers; otherwise, the chief beneficiaries will always be the rich entrepreneurs and the victims will be the consumers. Based on my personal observation at the field level, I reiterate the view that if we have to sustain long term economic benefit from Cameron Highlands, the chemical technification of cultivation should be limited, and instead, we should focus more on the pre-existing local skills with labour-intensive organic farming system of production.

Endnotes:

1. The forest cover of Cameron Highlands is declining very sharply over the years due to the impact of urbanization and infrastructural expansion in the forms of roads and highways, and pipelines for delivering the water supply for vegetation and other purposes (see Kumaran and Ainuddin 2006).
2. To get an estimate of foreign currency earning, we may document here the statistics provided by Barrow et al (2009) who mention that in 1996, between 56 to 100 million ringgit were earned from vegetables and another 20 million ringgit were procured from flower production (see Barrow et al 2009).
3. The principal researcher of this study, Prof Dr.A.H.M.Zehadul Karim had visited

Cameron Highlands in Pahang, Malaysia several times to interview and informally talking to many of the Bangladeshi labourers and farm managers working in these commercialized plantation farms. While talking to a cross section of people, it was learned that the plantation sector of Cameron Highlands is facing tremendous difficulty in recruiting and retaining the domestic workers due to several factors, and to fill the gap, most of the farms in Cameron Highlands have employed foreign workers from Bangladesh, Indonesia, Nepal, and also from a few South-East Asian countries to work for them (see Karim et al 2017:375-383).

⁴ It is learned that the Malays have traditionally been living in the villages (*kampong*) remaining content with their socio-cultural and religious adjustment without being bothered about making transitions (Clifford 1961). It is often blamed that in social terms, they prefer to enjoy leisure time as their value system discourages them pursuing individual gain (Silcock 1965:183). Although these views are often regarded as biased, untrue and racist in attitude, in the case of Cameron Highlands local Malay farmers are reluctant to accept such menial works perhaps because the recent extraordinary economic and infrastructural development of the nation has attracted them to other urban professions (see Karim et al 2017).

⁵ This research on commercialized farming of Cameron Highlands also interviewed ten farm managers and entrepreneurs who have provided us with enormous data on this aspect of the research. Almost all the management people have expressed their satisfaction over the performance of Bangladeshi workers. This view has also been endorsed by other writers of this area of study (e.g. Abdul-Aziz 2001; Dannecker 2005; Karim 1999, 2013).

⁶ Since strawberries in Cameron Highlands are not as sweet as those which are found in other western countries for that reason, many Cameron farmers are reported to adding some sugary powders to make them tastier; it may be injurious for health.

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