Development of an Alternative Microfinance Scheme to Finance Entrepreneurship in Tea Smallholding Sector: A Success Story

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ABSTRACT

Though the contribution of tea smallholding sector to national tea production is about 65 percent, nonexistence of assessable financial packages to facilitate businesses prevents tea smallholders from undertaking private investments on the long-term agronomic practices such as replanting and rehabilitation, which determine both the productivity and sustainability of the industry. This article explores the success story of development of microfinance scheme (MFS) to overcome this pertinent issue which teams up those tea smallholders with the "end-user" of their product, i.e. a leading conglomerate involved in tea business in the region. A multiphase approach used to develop the MFS include an in-depth "Investment Appraisal" that utilized 20 years panel data from the Tea Research Institute of Sri Lanka to identify the levels of production and returns from the tea cultivated by the TSEs under three methods of soil rehabilitation practices (i.e. replanting after rehabilitation of the land; direct planting and maintenance without rehabilitation, and cultivation without replanting) followed by a "Gap Analysis", which used the data from 240 out of 800 TSEs belonging to 8 Grama Niladhari Divisions in four districts, to explore the constraints faced by TSEs to adopt the best agronomic practice selected. Based on the outcome of which the MFS was formulated encompassing the features of a revolving fund to cater to the two major categories of tea smallholders, namely: (a) "in-house man power users", and (b) "rented-man power users", under different levels of capital and rates of interests to which the funds were channeled by the end-user. The results show that the MFS increases not only the levels of adoption of good agronomic practices amongst these producers, but also their entrepreneurial skills.

KEYWORDS: Entrepreneurship, Good Agricultural Practices (GAP), Tea industry in Sri Lanka, Microfinance, Smallholding sector

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INTRODUCTION

The plantation sector which comprises mainly of Tea, Rubber and Coconut plays a key role in the Sri Lankan economy in terms of its extent of land cultivation, production, foreign exchange earnings, employment etc. (Central Bank of Sri Lanka, 2010) (Table 1). With the land reforms introduced in 1970s, a large number of these plantations were passed into the hands of the state which created several bodies to manage the bulk of this land. Later in 1977, entire plantations owned by the government were brought under two state corporations, namely the "*Janatha Estate Development Board*" (JEDB) and "*Sri Lanka State Plantations Corporation*" (SPC) and parts of the land acquired were distributed among the peasants in the villages.

Though the relative importance of industry in terms of its contribution to the Gross Domestic Product (GDP) has gradually declined over the years, the tea industry still plays a dominant role in the Sri Lankan economy in terms of foreign exchange earnings, employment generation and land utilization (Census of Tea Smallholdings in Sri Lanka, 2009) (Table 2).

In the year 2008, for example, it contributed 1.9 percent to the GDP and 13 percent to the merchandise export earnings while providing direct and indirect employment for about 2.2 million people altogether in production, trade, export, promotion, research etc. Approximately 3.5 percent of the total agricultural land was devoted to tea, making it the single most important crop in the Wet Zone agriculture where the plantation crops are confined (Statistical Bulletin, 2009).

Table 1: Performance of tea, rubber and coconut sectors in Sri Lanka (2008)

Description	TEA	RUBBER	COCONUT
Total Extent (Hectares)	212,716	116,477	394,836
Production (Million)	318.7 Kg	129.2 Kg	2909 Nuts
Export Income (Million Rs.)	137,585	72,320	28,094
Cost of Production (Rs.)	231.49 Kg	120 Kg	8,795 per 1000 Nuts

Table 2: Performance of JEDB, SLSPC and the RPCs (2008)

Description	JEDB	SLSPC	RPCs
No of Estates	17	12	396
Extent Managed (Ha)	11762	9696	225476
Extent Cultivated (Ha)	6215	6567	161334
Staff	393	331	12888
Labor	6055	5564	217035
Average Human Power / Estate	379	491	573
Extent of Tea I(Ha)	3930	3997	84181
Production of Tea (Million Kg)	2.69	1.31	129.74
Average Yield (Kg/Ha)	686	769	1357
Cost of Production (Rs/Kg)	227	219	275
Net Sales (Rs/Kg)	205	206	271

Source: Census of Tea Smallholdings in Sri Lanka, 2009; Statistical Bulletin, (2009)

The extent of cultivation of tea in Sri Lanka at present, by both large-scale corporate sector and the smallholding sector is estimated to be 221,969 hectares. Based on where the tea is grown (i.e. elevation), tea lands are mainly classified into three categories, namely: (1) "*High Grown tea*" (above 1220 meters of mean sea level); (2) "*Medium Grown tea*" (610 to 1220 meters from the mean sea level), and (3) "*Low Grown tea*" (below 610 meters mean sea level). Under this classification, almost half of the tea lands in Sri Lanka are categorized as Low Grown areas, whilst comparatively lesser territory is encountered in High grown teas. The overall contribution of the Low grown tea to the national production was nearly 60 percent in 2010 (Census of Tea Smallholdings in Sri Lanka, 2009).

Large and small private tea estates mainly exist in High and Mid elevation areas while tea smallholdings (i.e. the tea cultivations with less than 10 hectares) are mostly confined to the Low country. Though the large-scale estate sector was previously dominated in the tea industry in terms of total production, the significant growth in production in the smallholding sector captures that position, for example the former is now reduced to 35 percent of the total land of the tea production, while the later occupies 65 percent of national tea production. The tea industry, the smallholding sector has always been an active, running comparable venture with the large-scale estate sector, and as a result, they had become a force to reckon with (Weerasinghe and Jayasinghe-Mudalige, 2008; Gajanayake *et al.*, 2006).

Nevertheless, the tea industry of Sri Lanka has undergone major changes during the last decade or two. The issues facing the industry are in several forms, but can broadly be divided into: (1) high cost of production compared to other tea growing countries; (2) low productivity at the level of the field and the factory, and (3) exodus of experienced managers for employment in other ventures threatening the corporate sector tea estates with impending decline and worker shortage, which is reckon as a very serious intimidation (Jayasinghe-Mudalige and Gajanayake, 2010).

Among these, low field productivity is seen to cause a significant hindrance in the tea smallholders' role play. It was observed that the tea bushes belonging to most of the tea plantations, irrespective of those managed by the Regional Plantation Companies (RPCs) and the smallholding sector, were planted more than 40 to 60 years ago. Given the fact that the best yield from a tea bush can be obtained up to 30 years and after that the yield starts deteriorating gradually, it is obvious that attention must be paid to increase the field productivity to maintain the sustainability of Sri Lankan tea industry.

Amongst several agronomic practices recommended for increasing the productivity, replanting of tea in a land that is undergone 18-month soil rehabilitation is recommended by the Tea Research Institute of Sri Lanka (TRI) to circumvent this problem. Here the soil rehabilitation for 18-month period is done through reconditioning of the soil by growing of the Gautamala grass, which is proven to improve the soil structure, aeration and moisture storage, adds organic matter and nutrients to the soil and increase the productivity of the micro organisms (Tea Hand Book, TRI, 2008). In fact, re-planting with rehabilitation has become an absolute pre-requisite for the tea industry, and in consequent, the Ministry of Plantation Industries of Sri Lanka has announced recently to increase the current re-planting rate of 0.5 percent per annum to at least 2 percent to overcome the problem of deteriorating land productivity.

However, the tea smallholding sector, in particular, is reluctant to replant with soil rehabilitation which accounts for a 5 year lag period during which they are not in position to pluck the leaves and colossal amount of money to be invested on it, which has no short-term visible output. The majority of tea smallholder entrepreneurs do not have access to credit facilities since they don't have any ownership of assets apart from their lands to provide as collateral. Although the government provides subsidies to promote replanting, the smallholders do not undertake replanting and rehabilitation properly given other issues including it is not enough to undertake a complete replanting, lack of other complimentary resources and time to be involved with intensive agronomic practices. All these highlight the importance of establishing an alternative arrangement to provide financial assistance to those smallholder entrepreneurs in order to promote this practice as well as other relevant practices in a more sustainable and profitable manner.

Microfinance is now promoted as a mean to solve the crushing poverty that faces at least a third of the world's population. Microfinancing aims to alleviate poverty by stimulating economic growth through entrepreneurial initiative. The availability of microcredit has opened access to capital, through billions of dollars in small loans, to millions of the world's poorest citizens. The promise of microfinance is that it spurs entrepreneurship and empowers borrowers to help themselves. The literature highlights that one of the major constraints in implementing best practices in the smallholder sector is the imbalances in credit demand and supply, among the majority smallholder farmers. Studies conducted in Kenya (Salasya *et al*., 1996; Odendo *et al*., 2002) point at inadequate smallholder credit as the main impediment to adoption of improved production

methods. Accessing loans from formal financial institutions has proved almost impossible. This has led to emergence of alternate Grameen type Micro-Credit Institutions that lend through groups to overcome collateral problems (Hossain, 1988; Rahman, 1999).

Given the importance and experiences of microfinance in enhancing production, this article explores the success story of an establishment of a microfinance scheme (MFS) for tea smallholding entrepreneurs (TSEs) to overcome the problem of lack of investments on replanting of tea in their small-scale cultivations, which, in turn, results a series of issues such as low levels of green leaves for local manufacturers and those involved in the marketing channel, both inputs and outputs. We will explore a special case of how the TSEs in a given area was teamed up with the "end-user" of their product, i.e. a leading conglomerate involved in tea business in this region, to build up a microfinance scheme to promote cultivation and increase the land productivity and emerge as a win-win solution for both in terms of profitability and sustainable continuity of the business.

METHODOLOGY

Study Area

A multiphase approach was adopted to develop the MFS, which involves review of literature, financial analysis using the secondary data, and implementation of the proposed method on pilot and real case basis in the smallholding sector. Covering four districts in the Low country of Sri Lanka where the tea cultivations are abundant (i.e. Galle, Matara, Ratnapura and Kalutara); the TSEs reside in 8 Grama Niladhari (GN) Divisions, including: (1) Neluwa; (2) Hingalgoda; (3) Kurupanawa; (4) Halwitigala; (5) Pasgoda; (6) Newpanawa; (7) Karawita, and (8) Broadlands were selected randomly to conduct this study. List of TSEs of each of these GN divisions were collected from the superintendents or the plantation managers of the bought leaf manufacturing factories of the area and 30 from each were selected using the Purposive Sampling technique (i.e. 30 x 8 = 240). It turned out that the respondents were from within proximity of up to 10 kilometers radius from the bought leaf processing companies.

Collection and Analysis of Data

Three TRI recommended methods are generally practiced by smallholding entrepreneurs for soil rehabilitation, namely: (1) Replanting after rehabilitation of the land; (2) Direct planting and maintenance without rehabilitation, and (3) Cultivation without replanting (control method). Therefore, it was needed to find out the best production practices out of these three practices. As a result, an in-depth "Investment Appraisal" was planned to identify the best production practice which gives the highest levels of production and returns from the tea cultivated by the TSEs. We have collected Twenty years of panel data on the tea enterprise expenses were obtained which were recorded in the Tea Research Institute of Sri Lanka. Three specific tools used in financial analysis, including the: (1) Net Present Value (NPV); (2) Benefit Cost Ratio (BCR), and (3) Internal Rate of Return (IRR) were employed with these data to appraise the investments on replanting under aforementioned three methods.

Once the best replanting practices to be used with these tea smallholding entrepreneurs were identified, a "Gap Analysis" was conducted in order to explore the constraints faced by them in adopting the particular practice. A formal structured questionnaire was administered for this purpose and data were collected by contacting each respondent through an interview (n = 240). Finally, an alternative Microfinance Scheme (MFS) was formulated encompassing the features of a revolving fund and introduced to TSEs (n = 100) which teams up them with the "end-

user" of their product, i.e. a leading conglomerate involved in tea business in the region and the government of Sri Lanka.

RESULTS AND DISCUSSION

Outcome of Investment Appraisal

The outcome of in-depth Investment Appraisal carried out using the Net Present Value (NPV); Benefit Cost Ratio (BCR), and Internal Rate of Return (IRR) are reported in Table 3. It shows that the 1st method, i.e. replanting after rehabilitation of the land produced the most favorable results.

The BCR of 1st method was 1.31 (i.e. greater than 1) and the Internal Rate of Return (15%) was greater than the discounting rate used in the analysis (i.e. 15%). The 2nd method also showed acceptable results (i.e. NPV is positive and BCR is greater than 1), but it was resolved to select the 1st method as the best method for recommending to the TSEs as the historical data proved to be the most accurate and accepted. It also suggested that 1st method (*recommend*) had the capacity to increase the "Field Productivity" measured in terms of green leaf production in kg per acre per annum in relation to the 2nd (*direct*) and 3rd (*control*) methods (Figure 1).

Table 3: Outcome of investment appraisal

Indicator	1st Method	2nd Method	3rd Method
Net Present Value (NPV) **(Rs.)**	170, 614	14, 032	-14,548
Benefit Cost Ratio (BCR)	1.31	1.12	-0.66
Internal Rate of Return (IRR)	15%	12%	-

Notes: 1st Method - *Replanting after rehabilitation of the land;*
2nd Method - *Direct planting and maintenance without rehabilitation;*
3rd Method - *Cultivation Without replanting*

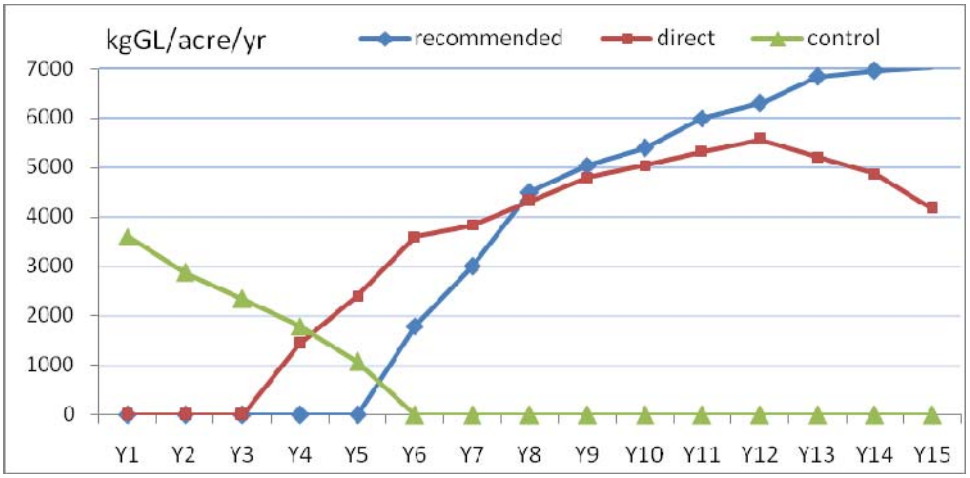

Figure 1: Field productivity (Kg of green leaves / acre / year)

Further, the data highlighted that the 1st method (*recommend*) produced better results than the 2nd (*direct*) and 3rd (*control*) methods with regard to the "Net Cash Flow" over time (Figure 2).

Outcome of Gap Analysis

The Gap Analysis identified the most hindering constraints faced by the tea smallholder entrepreneurs in implementing replanting with soil rehabilitation. Some of the major constraints are briefed, in turn.

Inadequate Manpower

Soil rehabilitation and replanting are highly labor intensive practices. Although smallholders mostly utilize family labor for their day-to-day practices, hired skilled manpower, which is offered to the industry at Rs. 405 per man-day, is essential for this type of agronomic practices to perform them timely and efficiently. Most of the TSEs who own a one acre of land employed family labor, which including of the husband and wife of the family.

Therefore, the numbers of man days was calculated at the rate of two laborers for replanting of one acre (Table 4). Activities such as uprooting, land preparation, soil conservation, establishment of shade trees and planting tea were identified as highly labor intensive critical practices that family labor solely cannot meet.

Inadequate Financial Resources

The recommended method does not make financial returns on the investment for the lag period of 5 years and the total expenditure incurred was Rs. 662,299 per acre, which was a high and unaffordable amount for the smallholders (Table 5).

The government subsidy given to these TSEs was Rs. 80,971 per acre, which was only a 12 percent of the total cost. The material cost was a significant factor in this regard. The highest cost incurred for good quality planting materials and fertilizer and foliar application, were 30.5 and 63.5 percent of the total material cost, respectively (Table 5).

Tea is the sole income source for some of the TSEs and they were not in position to invest colossal amount of money on huge income returns in ten years time.

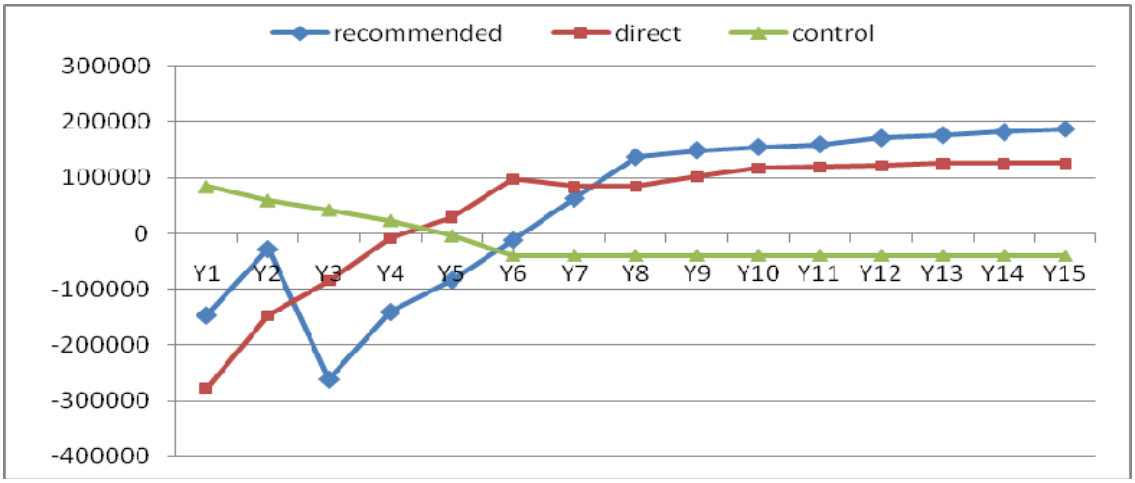

Figure 2. Net Cash Flow over time

Table 4: Required man days for replanting of 1 acre (with 2 men/acre)

Activity	Year (5 year lag period)				
	1Y	2Y	3Y	4Y	5Y
Uprooting and land preparation	65	-	-	-	-
Soil conservation	40	1	2	3	3
Planting grass	38	9	3	-	-
Establishment of shade	30	12	67	47	45
Planting tea	-	-	120	40	
Pests and diseases	-	-	4	4	4
Fertilizer and foliar application	1.5	2	19	18	18
Other	-	-	9	21	22

Table 5: Material cost for the development stage per acre

Activity	Year (5 year lag period)						
	1Y	2Y	3Y	4Y	5Y	Total (Rs)	%
Uprooting and land preparation	-	-	-	-	-	-	0.0
Soil conservation	-	-	-	-	-	-	0.0
Planting grass	-	-	-	-	-	-	0.0
Establishment of shade	227	-	-	-	-	227	0.2
Planting tea	-	-	50,607	-	-	50,607	30.5
Pests and diseases	-	-	642	642	642	1,926	1.2
Fertilizer and foliar application	6,193	8,401	25,638	30,000	35,000	105,231	63.5
Other	-	-	5,060	2,530	-	2,590	4.6

Lack of High Quality Planting Materials

The TSEs do not have an access to high quality planting materials. As a result of using poor quality plants, high casualty rates were reported, that led into a considerable cost of operation, and in turn, the overall profit. It was found that TSEs use bed plants and did not maintain healthy nurseries to produce good planting materials.

Lack of knowledge

Many of the TSEs are traditional growers and they are well experienced in the tea cultivation. However, they posses less scientific knowledge in certain practices and adhere to their traditional methods. They also show less affinity in changing their beliefs, attitudes and practices towards novel methods.

Proposed Alternative Microfinance Scheme

The outcome of Gap Analysis clearly suggests that lack of manpower and financial assistance act as the major constraints curtailing the adoption of the recommended best practice for replanting that lead to the issue of diminishing field productivity. Therefore, the action has been taken by a leading conglomerate involved in tea business in this region to establish a MFS, which encompasses the features of a revolving fund to cater to the two major categories of TSEs, namely: (a) “in-house man power users”, and (b) “rented-man power users”.

The justification for involvement of the business leader in the area to establish an MFS was on the ground that several tea manufacturing factories operating in this are belonging to this

particular business; thus, any issue leading to low productivity of tea would have direct repercussions on the manufacturing facilities belong to this particular business as such would affect the production cycle of these factories. Also, exit of TSEs from the tea leaf production or their involvement with any other organization that provides funds for investments in agronomic practices (e.g. non-governmental organizations, semi-governmental organizations etc.) can have a negative impact on the business, as such an initiation would come with certain prerequisites to supply green leaves to a contracted processing facility.

As a solution for both inadequate manpower and financial resources, the proposed MFS for the TSEs is called for replanting of 1/3rd of their land with the funding provided while keeping the other 2/3rd of land with the existing cultivation for their daily means. When 1/3rd is replanted, the TSE will be able to overcome labor shortages during critical practices and high material cost incurred for planting tea and fertilizer and foliar application. But the practices such as uprooting and land preparation, soil conservation and establishment of shade trees require skilled laborers and incur a cost of Rs. 62,345 for materials. Therefore, the financial support need to be provided in these critical points by means of microfinance to tea smallholder entrepreneurs, and initially, 100 out of 800 potential TSEs were screened based on the proximity for supervision, age of the plantation and experience in tea planting to provide the loan.

In designing the loan amount required compensating the total expenditure for replanting; three aspects were taken into considerations, including: (1) Government subsidy given to TSEs for replanting; (2) Expenditure incurred for the replanting of 1/3rd of the land, and (3) Contribution of the TSEs for the development of their own land (Figure 3). Finally a loan scheme was proposed to satisfy all stakeholders, including the TSE, the government its national objective of achieving replanting rate of 2 percent) and the corporate sector (who purchase the green leaf for further processing). For the two major categories of TSEs, i.e.: (1) “in-house man power users”, and (2) “rented-man power users”, two different levels of capital and rates of interests, i.e. (1) Rs. 50,000 with 12 percent and (2) Rs. 70,000 with 15 percent interest rate, respectively, were proposed to channel by the funding agency of the MFS (the leading conglomerate in tea business in the area). Also, the infrastructure and institutional set-up required to utilize these funds effectively, was established, for example, to distribute fertilizer at a subsidized rate and contract nurseries to produce quality planting materials.

As the TSEs do not possess clear cut ownership for their assets apart from their small piece of land, mainly because that they were used to either borrowing or lease the equipment they needed, there was no sufficient collateral to obtain the loan. Therefore, an alternative arrangement was made to provide microfinance as a pledge loan, where the recovery was made through provision of green leaf to the originator of MFS. The payback period of the microfinance loan is calculated to be 5 years, which is attractive for both the TSEs and the end-user of their product. The outcome of mid-term impact evaluation of the MFS, which was carried out in the recent past, highlights that it increases not only the levels of adoption of good agronomic practices amongst the TSEs, but also their entrepreneurial skills.

CONCLUSIONS AND POLICY IMPLICATIONS

This study reveals the essential role of microfinance as an effective tool for promoting the adoption of mostly neglected

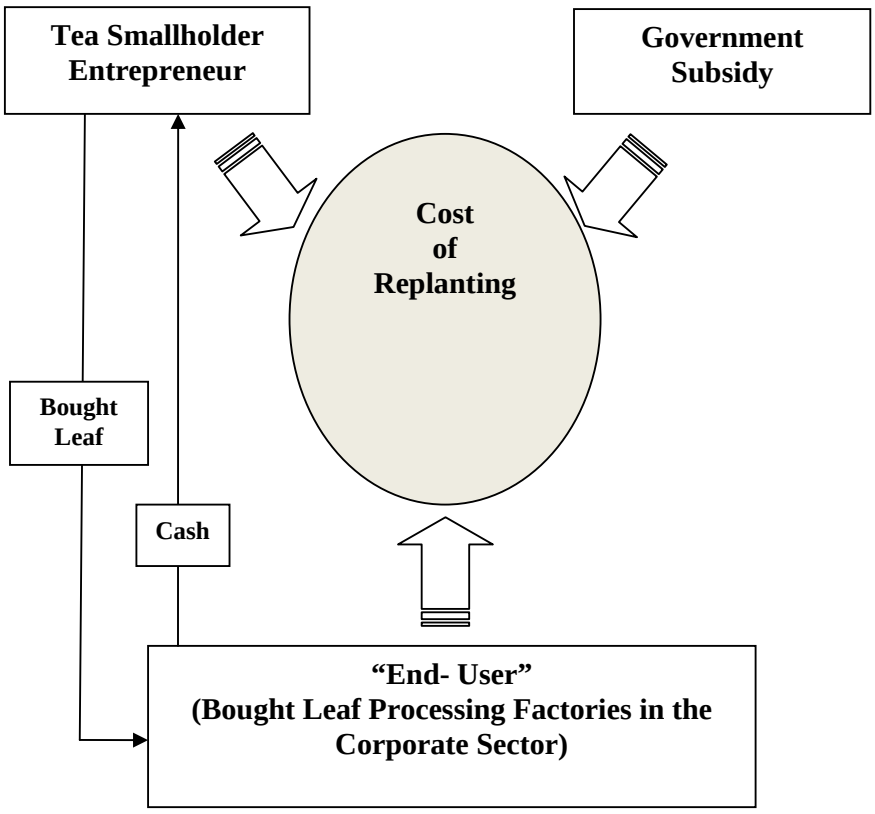

Figure 3. Proposed Model of the Microfinance Scheme

agronomic practices by the small-scale agricultural entrepreneurs which are essential for higher productivity. Specially, the introduction of financial packages where the finance is coming from a third party, in this case the firm that collects the product for further processing, can be considered innovative. Given that repayment of agricultural loans was very weak, historically we have observed that private sector financial institutions are not keen to invest on agriculture related activities and the government possess very limited money to allocate on these ends. Also the growers themselves are reluctant to obtain these loans due to reasons such as lack of collateral, high interest rates etc. Therefore, the formation of an alternate microfinance scheme of which both the lender and the receiver have equal benefits of the scheme beyond the traditional interest collection was seen to be effective in developing entrepreneurial skills of the small-scale enterprises and to make sure the marketing channels are functioning with appropriately set contracts on input supply and continued purchase of output.

Depending on the characteristic of receiver, there are two main reasons why microfinance and informal micro entrepreneurship becomes attractive to agricultural enterprises, especially those small-scale operations in the poor rural areas. The first reason is the possibility to exploit a potentially good business opportunity given microfinance as a source of capital (opportunity driven entrepreneurship), while the other reason is to do with finance for survival (survival driven financing). Since the proposed alternative microfinance fulfills both these aspects, MFS would create a win-win situation in the years to come, which can be explained as follows. The TSEs continue to benefit by accessing reliable credit that is assumed to be beneficial for the

development of the cultivation and grower welfare. The private and corporate sector bought leaf tea factories, while making huge profit in the future, should see it as the responsibility to invest in the plantations to develop the land and improve a sustainable production in the tea industry. The proposed alternative microfinance scheme is an effective and an innovative mean of smallholder financing which the RPCs and other leading conglomerates which own the bought leaf factories could practice also as a Corporate Social Responsibility (CSR) perceived as a national contribution.

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