
Constraints on Smallholder Credit Investment in the Farm: A Case Study of Tea Farming in South-Kisii District of Kenya

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I

INTRODUCTION AND THE PROBLEM

More than 80 per cent of Kenya's population live in rural areas where they derive their livelihood from small-scale agricultural production. The agricultural sector accounts for 25 per cent of Kenya's gross domestic product (GDP) with over 50 per cent of the sector's output being contributed by the small farms (Republic of Kenya, 2002). Agriculture also absorbs a majority of the labour force, provides nearly fully, national food requirements and is a major foreign exchange earner. The sector's performance and problems therefore are crucial determinants of the rate of progress of the economy and its ability to deliver improved living standards.

Tea is one of the most important cash crops grown in Kenya. In the world market, Kenya produces about 16 per cent of the total marketed black tea and ranks second after Sri Lanka in tea exports. It is the third largest tea producer in the world after India and Sri Lanka. From independence in 1963 to late 1980s, tea industry was considered one of the greatest successes in Kenyan agriculture (Nyangito, 1999). This is because tea planting and production expanded rapidly from 25,000 hectares and 18,000 metric tones in 1963 to 906,000 hectares and 197,000 metric tones in 1990. Small holders expanded the most with their contribution to total tea production rising from a mere 1.7 per cent in 1963 to 55.6 per cent in 1990 (Nyangito, 2001). This remarkable growth in the tea industry is attributed to two main factors: the land redistribution policy adopted by the government after Independence whereby large scale settler farms were sub-divided and given to small holders and the abolition of the policy that restricted the Africans from growing cash crops.

After the phenomenal growth in the decades before 1990, the successes in smallholder tea began to slow down. The average output growth rate, which stood at 12.3 per cent per year in the decades before 1990 dropped to 3.7 per cent annually over the years 1990-2000 (Nyangito, 2001). Similarly, the proportion of smallholder yield to Estate yield has continually declined in the 1990s from 62 per cent in 1990 to 49 per cent in 2000 (Table 1). This slowdown in production, however, has taken place despite continued expansion of area under smallholder tea cultivation (Table 1). The major factor responsible for this yield stagnation is low application of inputs such

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as fertiliser in the tea farms by small holders (Republic of Kenya, 2002; Nyangito, 2001). Why this is the case despite the fact that Kenya Tea Development Authority (KTDA) continues to supply credit to small holders (Table 2) for use in purchasing relevant farm inputs is the issue that motivated this investigation.

TABLE 1. TEA AREA, PRODUCTION AND AVERAGE YIELDS BY TYPE OF GROWER-1990-2000

Years	Area in '000 ha			Production in '000 tonnes			Yield in kg per ha		
	Small-holders	Estates	Total	Small-holders	Estates	Total	Small-holders	Estates	Small-holder (per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1990	67.00	30.00	97.00	110.00	87.00	197.00	1,945.3	3,132.8	62
1991	68.80	31.00	99.80	112.70	90.90	203.60	1,981.7	3,184.4	62
1992	72.16	31.34	103.50	99.81	88.26	188.07	1,729.8	3,033.4	57
1993	73.11	31.75	104.86	112.53	98.63	211.16	1,750.2	3,106.5	56
1994	73.84	32.07	105.91	119.08	90.34	209.42	1,672.7	3,016.9	55
1995	78.96	32.36	111.32	138.95	105.58	244.53	1,759.3	3,262.7	53
1996	81.16	32.52	113.68	144.07	113.09	257.16	1,825.3	3,477.6	52
1997	84.66	32.69	117.35	129.71	91.01	220.72	1,532.1	2,948.7	52
1998	85.56	33.09	118.65	175.63	118.54	294.17	1,822.1	3,582.4	51
1999	86.11	34.00	120.11	153.85	94.85	248.70	1,793.0	3,490.0	51
2000	88.30	34.40	122.70	145.55	90.75	236.30	1,747.0	3,553.0	49

Source: Republic of Kenya, 2002; Nyangito, 2001.

It is widely acknowledged that smallholders for the most part are unable to accumulate capital (Josef, 1968). Therefore, one way of enhancing farm productivity for smallholders is through provision of credit. Provision of credit is assumed to significantly contribute to an increase in output, employment, and per capita incomes besides turning small farms into modern economic enterprises (Wyeth, 1981; Republic of Kenya, 1965).

This has however, not been the case in Kenya especially smallholder tea production. As shown in Table 1, smallholder yield is around 60 per cent or less of Estate yield (Table 1) despite continued issuance of loans by KTDA (Table 2).

TABLE 2. LOANS ISSUED BY KTDA TO SMALL HOLDERS IN KENYA

Year (1)	Amount in '000 Kenya Pounds (2)	Percentage change (3)
1990	34.0	22.1
1991	41.5	-33.0
1992	27.8	-27.7
1993	20.1	-3.5
1994	19.4	-13.4
1995	16.8	-1.2
1996	16.6	** -4.2
1997	15.9	-5.7
1998	15.0	-6.0
1999	14.1	-0.7
2000	14.0	-0.7

Source: Republic of Kenya (1997, 2002).

Ministry of Agriculture, *Annual Reports*, 1994, 1997, 2002.

Previous studies on agricultural credit in Kenya (Mwabu, 1976; Wanja, 1979 and Nyangito, 2001) and outside Kenya (Bhattacharyay, 1994; Olomola, 1988 and Gershon *et al.*, 1990) have mainly centered on assessing the impact of credit on farm productivity. For instance Mwabu (1976) assessed the impact of small farm credit on productivity in Tharaka division, Meru district and found that credit failed to enhance farm productivity because most farmers diverted credit away from the farm. Similar findings were obtained by Wanja (1979) while assessing the determinants of poor loan repayment among smallholders in Western Kenya. Nyangito (2001) while carrying out an assessment of policy and legal framework for the tea sub-sector and the impact of liberalisation in Kenya identified credit diversion to alternative uses as the major cause for declining tea output in Kenya. This implies that the continued decline of smallholder tea production in Kenya (Table 1) despite continued extension of credit (Table 2) can be attributed to the small holder's behaviour to divert credit away from the farm to alternative uses.

It must be noted that while past studies have identified credit diversion as a contributory factor to declining tea output in Kenya, no study has been carried out to empirically identify the constraints limiting investment of credit in the farm by small holders. Answers to questions such as, what proportion of credit do small holders invest in the farm? How much do they divert? To which alternative uses do they divert the credit and why? have not been empirically explored. This neglected aspect is the one that motivated this investigation whose findings are reported in this paper.

While credit is a key element in the modernisation of agriculture, its contribution in enhancing farm productivity can only be realised if the credit is invested in the farm. Initially KTDA offered cash credit to farmers but had to change to credit in kind (fertilisers, wheelbarrows, fork jembes, etc.) after realising that farmers were not utilising the cash credit to buy the necessary farm inputs. The change to credit in kind has not been a solution either as farmers have been observed selling the credit in kind instantly at throwaway prices (Nyangito, 2001). As a result, majority of the smallholders who receive credit have loan repayment problems. Poor recovery of loans by KTDA has weakened its financial position and consequently the amount of loans issued is reducing year by year (Table 2). Similarly, the farmers' action of failing to invest the credit in the tea farm has not only adversely affected tea production (Table 1) but has also reduced the farmers' ability to repay loans. This is because credit is usually repaid through a check-off system from the member's tea account and therefore low tea production implies loan repayment-related problems.

It would not be proper to recommend discontinuation of smallholder credit. This is because credit not only removes a financial constraint but also helps accelerate the adoption of new technologies. Credit facilities are also an integral part of the process of commercialisation of the rural economy (World Bank, 1975). It has a positive impact on the use of modern material inputs and is essential for the improvement of farm productivity among smallholders. Therefore, what is required is an understanding of the factors limiting credit investment in tea farms by smallholders. This

can help provide a framework for policies that credit-issuing institutions can adopt to improve the use of credit in smallholder farms with a view of enhancing farm productivity. This investigation was therefore motivated by the urge to identify these factors constraining credit investment in the farm. The specific objectives of the study are: (i) To identify the factors limiting smallholder credit investment in tea farms, (ii) To measure the relative effects of the factors identified above and (iii) To draw up policy implications in the light of (ii) above.

II

THE THEORETICAL MODEL.

Except for some modifications, this paper's modelling approach closely follows the approach used by Gershon *et al.* (1990) in estimating the determinants of farm investment and residential construction in post-reform China.

The small holder is assumed to maximise utility over a two- period planning horizon. This is for simplicity purposes since borrowing is considered as a means of adjusting consumption over time (Iqbal, 1986). The two-period planning horizon is therefore preferred over an infinite one just for simplicity reasons. Utility is defined over a composite consumption good (C) and over housing services (H) so that the smallholder farmer's general utility is given as: $U = u(C, H)$. Housing services refer to other non-farm-related expenditures such as house construction. For further simplicity, we assume time separability of utility (Gershon *et al.*, 1990) so that;

$$T = U_0(C_0) + V_0(H_0) + U_1(C_1) + V_1(H_1) \quad \dots(1)$$

where T is the total utility, U and V are respectively the utilities from composite consumption and housing services and the numerical subscripts denote time periods. The time discount factor is omitted for simplicity and is assumed to be embodied in the definition of U_1 and V_1 .

Assuming a log utility function, equation (1) becomes;

$$T = \ln C_0 + \ln H_0 + \ln C_1 + \ln H_1 \quad \dots(2)$$

The smallholder is assumed to have an initial endowment of financial resources W_0 , which is augmented with borrowed funds L. These can be used for first period consumption (C_0), investment in the farm (I) and investment in housing services (h). The other initial endowments are capital (K_0), land (A_0) and housing (H_0). These are all assumed to be illiquid and therefore cannot be used to finance neither consumption nor investment. The budget constraint is given by:

$$W_0 + L = I + h + C_0 \quad \dots(3)$$

And the augmented objective function becomes:

$$\text{Max } Q = \ln C_0 + \ln H_0 + \ln C_1 + \ln H_1 + \lambda (W_0 + L - I - h - C_0) \quad \dots(4)$$

I, h, λ

In Period II, with no change in land endowment occurring, the augmented capital stock (that is initial plus first period investment) is combined with initial endowment to produce output via a neoclassical production function. Consumption in Period II is then the value of output less debt repayment thus:

$$C_1 = F(K_0, I, A_0) - (1+r)L \quad \dots (5)$$

where r is the interest rate and F is the production function of the form:

$$F = A_0 K_0^a I^{1-a} \quad \dots (6)$$

Linearising equation 5 we get:

$$\ln C_1 = \ln [A_0 K_0^a I^{1-a} - (1+r)L] \quad \dots (7)$$

$$\text{Knowing that } H_1 = H_0 + h \quad \dots (8)$$

$$\text{And that } \ln H_1 = \ln (H_0 + h) \quad \dots (9)$$

Then substituting equations 7 and 9 into equation 4, the optimisation problem becomes:

$$\begin{aligned} \text{Max } Q = & \ln C_0 + \ln H_0 + \ln [A_0 K_0^a I^{1-a} - (1+r)L] + \ln (H_0 + h) \\ & I, h, \lambda \\ & + \lambda (W_0 + L - I - h - C_0) \quad \dots (10) \end{aligned}$$

Taking FOC and solving, we obtain:

$$(1-a) A_0 K_0^a I^{1-a} = 1 / (H_0 + h) \quad \dots (11)$$

Equation (11) implies that the smallholder will invest his resources in such a way that the marginal utility from h and I are equal. Equality in this equation will only be disturbed by changes in the variables affecting h and I . The utility maximising smallholder therefore will ensure that equation (11) holds all the time.

$$\text{From equation (11); } I = f(h) \quad \dots (12)$$

This is because A_0 , K_0 and H_0 are all assumed to be illiquid and so would not be used to finance neither consumption nor investment. To improve the specification of the estimated model, other variables like the price of tea (P), household family size (Z), amount of credit received (L), number of schooling children (N), and smallholders' income (W_0) were included in the model giving rise to:

$$I = f(h, P, Z, N, L, W_0) \quad \dots (13)$$

Normalising equation (13) we obtain;

$$I/L = f(h, P, Z, N, W_0) \quad \dots (14)$$

where I/L is the farm investment-credit ratio whose determinants was the core of this investigation. Equation (14) expresses the ratio as a function of non-farm related expenditure (h), price of tea (P), family size (Z), number of children in school (N) and household income (W_0). The variables h , Z and N are from theory expected to have an inverse relationship with farm investment-credit ratio while variables P and W_0 are expected to have a direct relationship with I/L . Therefore, the linear relationship between variables in equation (14) take the form:

$$I/L = a_1 P - a_2 h - a_3 Z - a_4 N + a_5 W_0 \quad \dots (15)$$

The log-linear form of equation (15) becomes:

$$\ln(I/L) = a_1 \ln P - a_2 \ln h - a_3 \ln Z - a_4 \ln N + a_5 \ln W_o \quad \dots (16)$$

Equation (16) was utilised for empirical estimation. This was preferred mainly because of the understanding that the heteroskedasticity problem that is prevalent in cross sectional observations is solved by estimating a regression in log-linear form (Maddala, 2001). It also permits interpretation of coefficients directly as elasticities.

III

THE DATA

In order to understand the factors constraining smallholder credit investment in tea farms in Kenya, data was collected from South-Kisii district of Kenya. The district is endowed with rich agricultural soils that support a variety of crops and most farmers practice both subsistence and cash crop production. Due to the high population density in the district, land has been sub-divided and fragmented leaving 89,776 small holdings ranging from 0.5 to 4.5 acres of land (Republic of Kenya, 2002). The choice of the district was dictated by two main considerations: (i) It is one of the leading smallholder tea producing districts in Kenya with over 70,000 households engaged in tea production (Republic of Kenya, 1994). The contribution of tea production from the district to National output is also very significant. In the year 2000 for instance, the district contributed 14.4 per cent of the total national tea output (Republic of Kenya, 2002). The implication here is that continued reduction of tea production in the district is a national issue. (ii) All the farms in the district are small in size (Republic of Kenya, 2002) thus making it appropriate for a study involving the behaviour of smallholders.

The data utilised in this investigation was gathered from both secondary and primary sources. This is because no single source could provide all the information required. For instance, data on the amount of credit received by each smallholder in 2000 could only be obtained from secondary sources while data on the amount of credit invested by each small holder in the tea farm, the amount he/she diverted and the alternatives to which the credit was diverted plus reasons for the diversion could only be obtained through a survey.

Therefore, data on the amount of loan received by each small holder in the year 2000, loan repayment records and quantity of tea delivered by each small holder to the factory was collected from secondary sources like Loans Officer's office at Tendere and Nyamache tea factories and factory tea delivery records. Similarly, data in Tables 1 and 2 was collected from secondary sources like National Development Plans, Economic Surveys, Statistical Abstracts and District Agricultural Reports.

Primary data were collected by use of questionnaires from the sampled smallholders in Majoge Chache location in South-Kisii district. A list of smallholder farmers who had taken credit in the year 2000 was obtained from the loans officers in the only two factories (Tendere and Nyamache) in the district. The year 2000 was

selected deliberately because this is the year when national smallholder yield reached the lowest level (49 per cent) of Estate yield (Table 1). Even overall agricultural real GDP growth rate was negative at 2.4 per cent in 2000 after a series of positive growth rates starting 1994 (Republic of Kenya, 2002). Following the list of loanee farmers obtained from the Loans officers, systematic sampling procedure was employed in picking a sample of 100 smallholders. Every *fifth* loanee smallholder beginning with loanee farmer number one was picked until a sample of one hundred small-holders was obtained.

A total of 582 smallholders from Majoge Chache location had taken credit from the co-operative union in the year 2000. The sampled smallholders were visited at their farms and questionnaires were administered on household heads to obtain data on size of the family, household income besides credit, number of children in school, amount of credit actually invested in the tea farm and amount of credit diverted to non-farm related activities. Administration of questionnaires on sampled smallholders was carried out over the period May 2001 to September 2001. The information appearing in Tables 3 and 5 was generated from the data collected through the survey.

The survey was successful and reliable data were gathered as confirmed by the empirical results. Those farmers who admitted in the survey to have diverted the credit to alternative uses had indeed low tea deliveries to the factory (as per factory records) and loan arrears (as per records of the Loans Officer). Similarly, those farmers who invested the entire credit in the farm had a good quantity of tea delivered to the factory (as per factory records) and had no loan arrears (as per records of the Loans Officer). Therefore, there was very minimum exaggeration if any, by the small holders in their interview responses.

Although most farmers were initially hesitant to provide information especially relating to the amount of credit they diverted away from the farm, they eventually gave the information after being convinced that the information was needed purely for academic purposes and not to be used against them by government authorities. The empirical results reported in the following section are therefore based on the gathered data from the sampled smallholders.

IV

EMPIRICAL RESULTS

Since the paper deals with constraints to smallholder credit investment in the farm, then farm investment-credit ratio is the dependent variable. The ratio refers to the amount of credit invested in the tea farm divided by the total amount of credit received by the smallholder, i.e.,

$$I/L = \frac{\text{Amount of credit invested in the tea farm}}{\text{Total credit received}}$$

The data obtained from the sampled smallholders in South-Kisii district yielded the following results (Table 3) concerning the farm investment-credit ratio (I/L).

TABLE 3. SMALLHOLDER FARM INVESTMENT-CREDIT RATIO IN SOUTH-KISII DISTRICT

Ratio category (1)	Number of smallholders (2)	Per cent of total sample (3)	Cum. per cent (4)
0.01- 0.25	40	40	40
0.26- 0.49	22	22	62
0.50- 0.75	20	20	82
0.76- 1.0	18	18	100
Total	100	100	

Source: Survey data.

It is clear from the Table that 62 per cent of the sample farmers invested less than one-half of the credit they received in the tea farms in 2000. Only 38 per cent of the sample farmers invested one-half or more of the credit in tea farms. This confirms our findings of previous studies (Mwabu, 1976; Wanja, 1979; Nyangito, 2001, etc.) that most smallholders divert credit meant for farm investment to alternative uses. Accordingly, therefore, the drop of tea output in South-Kisii district and Kenya as a whole can be attributed to this aspect of credit diversion by most smallholders. The factors, which determine the ratio of credit invested in the tea farm, are the explanatory variables. These variables are as specified in the estimated model (equation 16). The estimated results of the log-linear regression model are presented in Table 4.

TABLE 4. REGRESSION MODEL RESULTS

Variable (1)	Coefficient (2)	T-Ratio (3)
Constant	-0.58	
H	-0.74	-3.52
P	-0.46	-0.96
Z	-0.63	-2.73
N	-0.72	-3.31
W ₀	0.18	1.23
R ²	0.83	

A test for heteroskedasticity involving regression of the squares of residuals on explanatory variables and their squares and cross products (White's test) was carried out but the problem was not detected. This could be because the log-linear equation used in estimation had fully solved the problem.

The R² of 0.83 shows that 83 per cent of the changes in farm investment-credit ratio is explained by the changes in the variables listed. This leaves only 17 per cent of the variations in farm investment- credit ratio unexplained. All the variables except the price of tea have the expected signs and all but the price of tea and household income are statistically significant at 5 per cent level. The price of tea has the wrong sign and is insignificant because high producer prices do not reach smallholder

farmers. This is especially so in this era of liberalisation whereby institutions in the tea marketing chain are making huge deductions from tea sales to meet their operation costs thereby leaving farmers with very low earnings per kilogram (Nyangito, 2001). The withdrawal of government support to tea marketing institutions during the era of liberalisation has raised operating costs of these institutions thereby necessitating the raising of deductions from the dues of the farmers to meet the costs. As a result, prices actually paid to smallholders per kilogram of tea delivered have been very low. This is why a number of smallholders interviewed (86 per cent of the sample) pointed at low tea prices as the major reason behind their lack of interest to invest credit received in the tea farms.

The smallholder's level of income has the expected sign but is insignificant. This is because majority of the smallholders in rural Kenya are poor and with no other sources of income. The family size (Z) variable has the expected sign and is significant at 5 per cent. The negative sign implies that an increase in family size by 1 per cent is followed by a 0.6 per cent drop in farm investment-credit ratio. This conforms to expectations since the larger the family size, the higher the level of consumption and hence the more likely the household to divert credit from the farm into consumption. Indeed 99 per cent of the smallholders who invested less than one-half of the credit they received in the farm had a family size of more than 10 members and 60 per cent of them were polygamous. It is however, not unique to have a large family in rural Kenya as the poor argue that "money is the rich man's riches while children are the poor man's riches". The poor in rural Kenya therefore get as many children as possible for that is their richness.

The number of children in school (N) variable has also a negative sign and is significant at 5 per cent. The negative sign is in accordance to expectation.

Investment in housing (h) variable has a negative sign as per expectation and is significant at 5 per cent level. It means that a 1 per cent increase in non-farm related investment leads to a fall in farm investment-credit ratio by about 0.7 per cent. The data collected from sampled smallholders showed diversion of credit away from tea farms to non-farm related activities shown in Table 5.

TABLE 5: NON-FARM ACTIVITIES TO WHICH CREDIT IS DIVERTED IN SOUTH-KISII DISTRICT

Non-farm activity (1)	Number of smallholders (2)	Per cent of sample (3)
School fees	36	36
Construction of housing	20	20
Medical bills	12	12
Hiring of grazing land	10	10
Others, e.g., clothes, cows for dowry, etc.	16	16
No diversion	6	6
Total	100	100

Source: Survey data.

It can be seen from the Table that the non-farm activity to which most farmers diverted credit is payment of school fees (36 per cent) followed by construction of

houses (20 per cent) and then others like the purchasing of clothes and cows for payment of dowry (16 per cent). Specifically, seven smallholders (7 per cent of the sample) used the credit meant for investment in the tea farm to pay dowry for their second wives. Only six smallholders (6 per cent of the sample) invested the entire credit received in the tea farm by way of purchasing the relevant farm inputs. A closer look at the records of the loans officer at the co-operative union revealed that these six farmers had no loan arrears and in fact they were the leading in the amount of tea delivered to the tea factory. This confirms the positive contribution of credit in boosting farm productivity when strictly utilised in purchasing the essential farm inputs. This observation however, contradicts the findings of Gershon *et al.*, (1990). In their investigation of determinants of farm investment in China, they concluded that credit was not significant in enhancing farm productivity. This could have been as a result of credit diversion away from the farm- an aspect they ignored in their investigation.

V

POLICY RECOMMENDATIONS

From the above analysis, it is clear that small holders in Kenya divert credit away from the farm to noble causes such as payment of school fees, house construction and payment of medical bills. This behaviour could be attributed to: the fact that the poor small holders have no any other means of meeting these basic and pressing needs besides credit, and that, tea production is not attractive following the low prices offered to smallholders in the liberalisation era.

Based on the above, it can be argued that efforts aimed at catering to the basic needs of small holders and making tea production attractive stand a good chance of curbing credit diversion away from farms by small holders in Kenya. One way that could help control credit diversion therefore, is to direct government effort towards the development of the social sector so as to ensure availability of basic services and facilities to all citizens. Indeed to this end, efforts by the new government of Kenya led by His Excellency President Mwai Kibaki needs to be commended. The government has taken note of the fact that properly skilled human resource is an asset to effective management and utilisation of resources for increased productivity (Republic of Kenya, 2002). Accordingly, therefore, the government has boldly introduced free and compulsory primary education. This policy has been fully implemented since January 2003 and has not only improved accessibility for all Kenyans to education but it is also hoped that it will help enhance smallholder farm productivity. This is because education is the main cause to which credit is diverted (36 per cent of the sample) and so with the government taking care of education, there is a strong possibility that *ceteris paribus*, this proportion of the sample will invest the credit in the farm thereby enhancing productivity. In addition, education for all has future positive implications on agriculture. The future smallholders will

have the education necessary for grasping better methods of cultivation and effective utilisation of land resources, all of which will help enhance production.

The new government has also planned to initiate a National Health Insurance Scheme for all Kenyans. Although this scheme was supposed to be launched officially in July 2004 (*East African Standard*, 2004), this is yet to be done following a nationwide opposition from the public and trade unionists. Under the scheme, the government through the Ministry of Health intends to set up a Fund, which will be augmented with monthly contributions from all the citizens. The contributions will be such that the poor will contribute a bare minimum while the well-to-do will progressively contribute in accordance to their level of income. Through the Fund, the government plans to stock medicines and other relevant facilities at all government hospitals nationwide for free supply and use by the sick. While the objective of the scheme is not to directly curb credit diversion but rather to make health services accessible to all, it will however, if implemented as planned help reduce the diversion of credit towards settlement of medical bills and consequently small holder production will be enhanced assuming that more of the credit will be invested in the farm. The scheme however, will require a lot of commitment and transparency from those who will be entrusted with the responsibility of managing the medical fund and drugs at various hospitals.

The government has also put up plans to lower prices of building materials such as cement, ballast and iron sheets. While the government has not specified how it intends to achieve this, it must be acknowledged that if fully implemented, it will lower the cost of construction to levels that can be met out of crop income without touching credit meant for farm investment. The assumption in this case is that credit diversion to house construction is done to supplement other earnings (crop income) to ensure completion of house construction. Therefore, if the cost of construction would be lowered via the reduction in prices of construction materials, then there is a possibility that crop income will be able to sufficiently cover house construction expenses thus leaving the full credit for farm investment.

To further support and ensure realization of the government's goal of enhancing smallholder farm productivity, the Kenya government may consider the following:

First, attempts to initiate through the Central Bank and Co-operative Bank, some revival credit package scheme for smallholder tea growers like the one initiated by the Reserve Bank of India (RBI). The two nations (Kenya and India) have a number of features in common. For instance both countries were under the British rule and tea industry is an important agro-processing industry employing a large number of the population in both Nations (Republic of Kenya, 2002 and Reserve Bank of India, 2003). Similarly, like Kenya, the tea industry in India has faced several problems including credit diversion. Accordingly, the RBI formulated a special credit package for smallholder tea growers. The package comprises a special tea term loan with a repayment period of five years, a moratorium of one year and an interest rate of only 9 per cent (<http://pib.nic.in/release>). In a similar fashion, the Central Bank of Kenya

should consider formulating a similar package for channeling loanable funds to smallholder tea growers at a minimum rate of interest.

In the current development plan (2002-2008), the Kenyan government acknowledges that credit is key to agricultural development and accordingly proposes to improve access to credit through support to the micro-financial institutions. However, this is yet to be achieved due to the poor performance of the Agricultural Finance Corporation and the economy as a whole (Republic of Kenya, 2003). In addition, a number of small holders in Kenya often fail to secure credit from banks due to lack of collateral (Republic of Kenya, 2002). Therefore, to facilitate easy flow of credit to the poor small holders, it is hereby recommended that the Kenyan government should consider borrowing lessons from one or other important credit scheme in India - the Kisan Credit Card Scheme (KCC). Under this scheme, farmers are provided with credit cards, which enables them to readily draw credit for the purchase of inputs (such as seeds, fertilisers, pesticides, etc.) up to a fixed limit based on operational landholding, cropping pattern and scale of finance. Each drawal is repaid within a maximum of twelve months and rescheduling of loan is allowed whenever crops fail due to natural calamities (<http://www.nabard.org>). The Kenyan government therefore, should study the operation of this credit card scheme in India with a view of implementing a similar one so as to promote access to adequate and timely credit to small holders.

Second, smallholder tea farmers need to be educated on the importance of applying inputs such as fertiliser in their farms. It needs to be impressed upon them that farm productivity can only be enhanced through continued application of fertiliser in the farms especially given that land expansion is constrained by population growth. Such education can be effected through intensification of extension services through the Ministry of Agriculture. It has to be made clear to the smallholders that loan repayment would not be an issue given the enhanced production from their farms.

Third, the production of tea should be made attractive to the smallholders by offering better prices of produce. The morale of most farmers in rural Kenya towards tea production is low because of the low prices they are receiving. The low prices are partly due to corruption among society/factory management and partly due to increased operation costs following withdrawal of government support to these institutions during liberalisation era. Efforts must be made to get rid of corruption from these institutions so as to win back the farmers' confidence in tea production. One way of clearing corruption from these institutions is to ensure that only people with integrity are elected into the management of tea factories. The other way of making tea production attractive to smallholders is to pay them reasonably 'good' prices for the tea they deliver to the factories.

Fourth, tea factories should explore possibilities of commencing the issue non-farm loans to smallholders. Such non-farm loans would help farmers in case of emergencies or any other pressing non-farm needs like payment of school fees or

house construction. As a policy, farmers may be asked to apply for such loans from the tea society to meet such pressing non-farm needs. Such loans should be repayable within a year just like emergency loans in most co-operative societies. The policy must be clear as to what should be considered as an emergency and the amount of non-farm loan to be applied for must be pegged to the quantity of tea delivered by the farmer to the factory in the particular year. It is hoped that once the farmers' pressing non-farm needs are taken care of through this arrangement, farmers will invest the whole, if not a lion's share, of the farm credit in the tea farm.

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REFERENCES

- Bhattacharyay, B.N. (1994), "Performance and Rural Credit Systems" in 'Savings and Development', *Quarterly Review*, Vol. 18, No. 2.
- Gershon, F., J.L. Lawrence, L. Justin and L. Xiaopeng (1990), *The Determinants of Farm Investment and Residential Construction in Post-Reform China*, World Bank Working Paper, The World Bank, Washington, D.C., U.S.A.
- <http://pib.nic.in/release/rel-> Press Information Bureau, Ministry of Finance and Company Affairs, Government of India.
- <http://www.nabard.org/roles/kcc.htm>
- Iqbal, F. (1986): "The Demand and Supply of Funds among Agricultural Households in India" in I.J. Singh, L. Squire and J. Strauss (Eds.) (1986), *Agricultural Household Models, Extensions, Application and Policy*, The John Hopkins University Press, Baltimore.
- Josef, V. (1968), *Small Farm Credit and Development: Some Experiences in East Africa with Special Reference to Kenya*, Afrika Studien 53, JFO-institut für wirtschafts forschung, Munich, Welform, Verlag.
- Maddala, G.S. (2001), *Introduction to Econometrics*, Third Edition, John Wiley & Sons Ltd., England.
- Mwabu, G.M. (1976), "Finance in Smallholder Agriculture in Tharaka, Eastern Kenya - A Case Study of Small Farm Finance", M.A. Thesis, University of Nairobi, Nairobi.
- Nyangito, H.O. (1999), "Agricultural Sector Performance in a Changing Policy Environment" in P. Kimuyu, W. Mbuvi, and O. Abagi (Eds.) (1999), *Kenya's Strategic Policies for the 21st Century*, IPAR, Nairobi.
- Nyangito, H.O. (2001), *Policy and Legal Framework for the Tea Subsector and the Impact of Liberalization in Kenya*, Policy Paper No. 2, KIPPRA, Nairobi.
- Olomola, A. (1988), "Agricultural Credit and Production Efficiency - A Case Study of the Ekiti Akoko ADP", *MISER*, Monograph Series, No. 4, Ibadan.
- Republic of Kenya (1965), *Statistical Abstract*, Central Bureau of Statistics, Nairobi.
- Republic of Kenya (1994), *National Development Plan 1994-1996*, Government Printer, Nairobi.
- Republic of Kenya (1997), *Economic Survey*, Central Bureau of Statistics, Nairobi.
- Republic of Kenya (2002), *National Development Plan 2002-2008*, Government Printer, Nairobi.
- Republic of Kenya (2002), *Statistical Abstract*, Central Bureau of Statistics, Nairobi.
- Republic of Kenya (2002), *Economic Survey*, Central Bureau of Statistics, Nairobi.
- Republic of Kenya (2003), *Economic Survey*, Central Bureau of Statistics, Nairobi.
- Reserve Bank of India (2003), *Statement on Monetary and Credit Policy for the Year 2003-2004*, Mumbai.
- The East African Standard Newspaper (2004), June 11th, *Budget News*, Nairobi.
- Wanja, H.J. (1979), *Analysis of the Factors Affecting Loan Repayment on the Million Acre Schemes*, Working Paper No. 35, IDS, University of Nairobi, Nairobi.
- Wyeth, P. (1981), "Agricultural Productivity and Development" in Tonny Killick (Ed.) (1981), *Papers on the Kenyan Economy*, Heinemann Education Books Ltd., Nairobi.
- World Bank (1975), *Agricultural Credit*, Sector Policy Paper, Washington, D.C., U.S.A.