

**Gender and Agricultural Supply Response to Structural Adjustment Programmes:
A Case Study of Smallholder Tea Producers in Kericho, Kenya**

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Abstract

The main objectives of this study are to investigate, analyse and evaluate factors influencing adoption, and production of tea among male and female smallholders in Kenya in the period 1985/86 to 1995/96, a period during which several adjustment programmes were introduced in Kenya; to investigate women farmers' perceptions of changes in their standard of living over the period in both tea and non-tea households; and to make policy recommendations to improve both supply response and the benefits to women farmers.

An assessment is made of empirical studies on smallholder sector in sub-saharan Africa in the context of structural adjustment programmes, noting that few studies focus on gender issues despite the important role women play in agriculture. A conceptual framework for the study is established by reviewing the work of Palmer, Collier and Elson. The performance of the Kenyan economy from independence to the period of structural adjustment programmes, 1964-1994 is reviewed noting that implementation of policy reforms was poor in the first (1980-84) and second (1985-1991) phases due to lack of government commitment, but better in the third phase (1992-1995). The main overall incentive for smallholder tea producer was the increase in tea prices over the period. There was no conditionality to Kenya Tea Development Authority (KTDA) to raise tea prices that farmers got. The direct effects of Structural Adjustment Programmes (SAPs) on smallholder tea producers were: changes in the exchange rate, tea payments, fertiliser prices which affected the production of maize and other staples, introduction of user charges in education and health and the rise in the price of consumer goods. Exogenous factors that affected smallholder

farmers included weather conditions and the 1992 tribal clashes in the research region.

Fieldwork was carried out in Kericho District, in 1995/96 following up an earlier study conducted by Bulow and Sorensen (1988) on "Gender Dynamics in Contract Farming: Women's Role in Smallholder Tea Production in Kericho District, Kenya". The rationale for choosing to build on a previous study was the existence of baseline data which provided basis for comparison of the situation before and after key agricultural adjustment measures. Out of 120 households studied in 1985/86, the 1995/96 study traced and interviewed 94 households, 79 male-headed households and 15 female-headed households. Out of a sample of 43 non-tea households in 1985/86, 17 households switched to tea by 1995/96. Data was collected by questionnaire survey and in-depth discussion with a subsample.

Key changes that were found to have taken place during the 1985/86 to 1995/96 period were declines in: average farm size, non-tea wage employment, use of hired labour, use of tractors and oxen for land preparation, and acres under maize production, many of the changes point to more demands on women's labour. The majority of women farmers in the sample did not feel better off, although the majority of women in households which had switched to tea did feel better off. The study analysed adoption of tea by smallholders using a logit method similar to that used by Bevan, Collier and Gunning (1989). The study found that female labour endowment was statistically significant and positively related to the growing of tea in 1995/96 during the period of economic reform and this may be interpreted as an increase in the importance of female labour constraint.

The study established that women were not given licenses by KTDA to grow tea in their own right, and that female headed households growing tea had inherited tea from husbands or fathers. An analysis of factors influencing average productivity of tea farms was carried out and it was found that productivity was negatively related to presence of children under five and households being headed by a widow, reinforcing the findings on the importance of constraints faced by women farmers.

This study recommends (based on the assumption that KTDA will continue playing its current role) that tea licenses should be given to women as well as men and that where the license is held by a male farmer his wife(s) should receive part of the tea payment in their own right.

Whether or not further liberalisation takes place in this sub-sector, the findings of our study suggest constraints on female labour are an obstacle to adopting tea, improving yields of tea, and combining expansion in tea production with expansion in food production. Complementary investment to relieve this constraint is the other important policy recommendation arising from this study.

The study recommends ways of expanding food production since this has implications on household food security.

1. Introduction

Agriculture plays an important role in the sub-Saharan African economies and will continue to do so in the future. Women play a very significant role in farming, providing most of the labour force required to produce food for local consumption as well as much of the labour for export production. However, women farmers in male-headed households very often do not directly receive any of the proceeds from selling crops for export: the money is paid

to their husbands. Because of their different roles and responsibilities, men and women are likely to react differently to economic reform. From both an efficiency and an equity perspective, successful policy formulation has to address the specificity of women's contribution and the constraints they face in the economy. This has been increasingly recognised by a number of development agencies including the World Bank (Blackden, 1993).

However, most of the studies on structural adjustment and agriculture in sub-Saharan Africa do not focus on gender issues. The only empirical study that has addressed impact of policy reforms on smallholders in Kenya is Bigsten and Ndung'u (1992) covering the period 1979-1989. The study found that despite the improvements in agricultural pricing policy in Kenya during the period, there were still large administrative problems in the marketing of agricultural produce, supply of inputs and provision of credit. Delays in payments to the smallholders caused strong disincentive effects as a result of the uncertainty. That study argues that positive effects on agricultural productivity may result from both credit and extension advice; and also emphasised the importance of public services to the welfare of the smallholders. The study does not mention the gender dimensions of smallholder production and the gender implications of economic reforms.

There is thus no existing study that focuses on the gender dimensions of agricultural policy reform in Kenya. However, gender-based constraints can affect supply response and hold increases in production below what it could otherwise have been obtained. Moreover, gender inequalities can result in women failing to benefit from structural adjustment measures.

The present study aims to improve the current state of knowledge and understanding of gender and smallholder agriculture in the context of structural adjustment programmes. The focus is tea production, since tea remains Kenya's largest agricultural foreign exchange earner. The main objectives of the thesis are as follows:

To investigate, analyse and evaluate factors influencing adoption, and production, of tea

among male and female smallholders in Kenya in the period 1985/86 to 1995/96.

- ?. To investigate women farmers perceptions of the costs and benefits of structural adjustment programmes for both tea and non-tea producing households.
- ?. To make policy recommendations to improve both supply response and the benefits to women farmers.

The study focuses in particular to the following two questions: What are the constraints faced by men and women farmers in both tea and non-tea households? What impact will these constraints have on the adoption of tea and the productivity of tea farms in the context of structural adjustment programmes? Since women are at the centre of the agricultural production system, providing labour for both tea for export and for domestic food production (for sale and on- farm consumption), understanding the implications of structural adjustment for both women and men will be important for equity as well as for efficiency reasons.

This work is based upon both secondary and primary data sources. The primary data comes from fieldwork carried out by the author in 1995/96 which resurveyed households surveyed in an earlier study conducted by Dorthe von Bulow and Anne Sorensen of the Centre for Development Research, Copenhagen in 1985/86 on "Gender Dynamics in Contract Farming: Women's Role in Smallholder Tea Production in Kericho District, Kenya.

The rationale for choosing to build on a previous study was the existence of baseline data which provided a basis for comparison of farming practices before and after some key agricultural adjustment measures. Both qualitative and quantitative evidence from these two data sets is analysed. Information from household surveys and in-depth interviews is used to throw light on women's perception of changes of standard of living during the 1985/86 - 1995/96 period. This is contextualised using secondary data on food production, nutrition, health and education in Kericho District.

To investigate factors influencing tea adoption, before, after and during the economic reforms 1985/86 to 1995/96, we use a logit model, following the example of Bevan, Collier

and Gunning, (1989). To assess the factors affecting average productivity per bush in 1995, a simple regression analysis is used.

This paper has been organised in the following sections. Section 2 discusses methods of fieldwork and data analysis adopted in the 1995/96 study. The strengths and weaknesses of the research design are discussed in section 3. Section 4 looks at the findings of the study while conclusions and policy recommendations is in section 5.

2.Methods of Field Work and Data Analysis, 1995/96 study

The sources of information that were used in establishing the socio-economic context were: the 1985/86 study conducted by Bulow and Sorensen; discussions with the officials of the KTDA both in Nairobi and Kericho District; the Chief who facilitated access, KTDA field officers in Kericho; the farmers in the sample; the Tea Research Foundation based in Kericho, and the key informants who had co-operated with the 1985/86 study.

The first entry point in Kericho was the District Commissioner, who had to confirm that I had permission from the Office of the President to carry out research in Kericho. The Chief of the area was very helpful since he not only facilitated access but also introduced me to school students from whom I selected my research assistant. The Chief also gave me permission to use his office as a base. One of the key informants and his wife, who had cooperated with the 1985/86 study, were very helpful in the 1995/96 study. The Kericho Tea officer introduced me to the field officers and allowed me to confirm the farmers in the sample with the list at the KTDA Kericho office. We had discussions with the tea field officers on experience of field work and various cases of farmers who had experienced low productivity.

I was able to obtain from KTDA Kericho and Nairobi offices time services data on payments to tea farmers, and on output and bushes planted of a selected group of farmers.

The research methods used in 1985/86 study were structured and semi-structured questionnaires, in-depth discussion and participant observation. There was a different questionnaire for male and female farmers. The 1995/96 study also used structured questionnaires for male and female farmers, which were based on the previous survey but were modified in the light of the objectives of the study. The key differences in the two sets of questionnaires was that the one in 1985/86 gathered more detail information on historical and cultural changes. For example, the 1985/86 questionnaires asked about traditional labour groups while the 1995/96 survey did not.

In the 1995/96 study, use was made of five research assistants, who were all form four school leavers, three females and two males, who were selected from a total of ten possible assistants. They could speak the Kipsigis language and Swahili fluently. I conducted three days training with them, which involved explaining the purpose of the study; the questionnaire, and techniques of administering questionnaires to the farmers; styles of introduction and ways of handling respondents who were reluctant to respond. There were no problems related to young men interviewing male farmers and young women interviewing women farmers. There were no major management problems faced with the research assistants who worked quite enthusiastically until the end of the research. On average, one questionnaire took almost 1 hour per farmer. I conducted the in-depth interviews myself, with the help of an interpreter¹, since this involved lengthy discussions of about 2 hours about gender relations at the household level.

We used to assemble in front of the Chief's office every morning at 8am and then plan which areas to cover during the day. Out of a total of six people, five research assistants and myself, we had three groups of two each. Each group had a list of farmers to trace and by 3pm we would meet at a central market place to compare notes before getting back to work. We would then meet again at around 6 pm. It was important to have two people together since during the process of administering the questionnaire, there was often a need clarify and amplify questions.

The questionnaire for women farmers in the 1995/96 study asked questions about household characteristics; decision making; control of resources; new activities engaged in during the period 1985-1995; division of labour in household work; time allocation and division of labour hours spent in tea and maize production. The questionnaire for male farmers asked questions about land size and technology of land preparation; bonus payment; labour in tea production; tasks in tea production; cropping patterns; decision making; livestock, off-farm wage employment; and income expenditure.

The in-depth discussions in the two studies were also slightly different in that the 1985/86 study discussed in detail historical and cultural changes. The in-depth discussions in my study focused on responsibilities and rights within marriage, access to resources and perceptions on improvements on the understanding of living standards.

There were a number of problems that I faced during the period of research in 1995/96 that were different from the problems faced by Bulow and Sorenson in 1985/86. I was unable to get accommodation in the research location so I had to stay in Kericho town. Bulow and Sorenson had accommodation in the research location and stayed there for a year with their families, and thus were able to spend more time with the people learning and documenting changes that had taken place in the research location.

Despite having a list of the farmers' names from the 1985/86 sample, tracing of the farmers was very difficult due to two main reasons. First, some farmers had changed their names or had different names to those recorded on the list. We had to confirm that the farmer had been interviewed in 1985/86 by asking them if they remembered the researchers who came then, and by cross-checking 1985/86 household characteristics against 1995/96 household characteristics. The second problem related to tracing farmers was that their homes were scattered over a large area and locating the correct homes of the farmers was very time consuming. It involved long hours of walking and the problem became worse during the

rainy season, when rain started falling around midday. It was easier to interview male farmers than female farmers. When interviewing male farmers, we would be seated, while the husbands ordered the wives to serve us with tea and food; while when interviewing female farmers, we had to help with the domestic chores and farm work. We observed that the wives looked much older than the husbands, although in fact they were generally younger.

Despite Kericho District being well served by roads except for Londiani Division in the northern part, the main problem with the roads in the District is that during wet season, they are impassable. The fieldwork revealed that transportation was poor in the area. Bulow and Sorenson did not experience transportation problem since they had a four wheel drive vehicle. During the field work period, I was able to use various vehicles, but they were small and could not pass through the roads in times of rain.

The other problem was that of language. In conducting my interviews with farmers, I had to use an interpreter because I do not speak the local language. In sum, many of the problems I faced in the 1995/96 study were different from those faced by Bulow and Sorenson in 1985/86 study and required perseverance.

One of the other main differences between the two studies was that Bulow and Sorenson used qualitative techniques of data analysis while I used both quantitative and qualitative techniques of data analysis. Descriptive statistics and cross tabulation were produced and regression analysis of productivity was conducted using Statistical Package for Social Sciences (SPSS). I also used LIMDEP statistical package to conduct a logit analysis of tea adoption.

The field work was conducted during the period May 1995 to April 1996 in the same

location, which was now in Ainamoi Division¹. Out of the 120 households studied in 1985/86, I was able to locate and interview 94; of these 79 were male-headed households and 15 were now female-headed households. There were 4 households which were traced but which did not wish to participate in the interviews. In total, my study traced 98 households, if we include the 4 households who did not participate. I interviewed 44 men and 54 women from tea households and 37 men and 36 women from non-tea households. In-depth, semi-structured interviews were conducted with a sub-sample of 11 households, of which 6 were tea and 5 non tea.

Table 1: Sample Size 1985/86 and 1995/96 Studies

	1985	1995
Survey Period	March 1985 -April 1986	May 1995 - April 1996
Sample Size	120 households (63 tea and 57 non- tea)	94 households (51 always tea and 43 which were non-tea in 1985; of these, 17 switched to tea by 1995)
Female- Headed Households in the sample	7 tea households headed by widows	15 households* (10 tea and 5 non-tea)
In-depth interviews with men and women	14 households (8 tea and 6 non-tea)	11 households(6 tea and 5 non-tea)

Source: Bulow and Sorensen (1988) and 1995/96 Survey.

Notes:

*Out of the 15 female- headed households, 14 were widows and 1 household was headed by a single female who inherited tea from dead parents. Since the brothers were young, relatives were helping in the tea management.

3. Strengths and Weaknesses of Research Design

An important problem I faced was that of trying to investigate complex issues concerning intra-household relations in a relatively short time, since I was unable to spend a long time in

¹Belgut division was divided into two in 1992 to form Ainamoi and Belgut Divisions.

the field due to resource constraints.

Bulow and Sorenson were much better resourced and were able to spend longer time in the field doing ethnographic research. The other major problems concern design of studies to investigate impact and responses to changes in the policy environment. Studies which use "before and after" data may be criticised on the grounds that their methodology implicitly assumes that all the other things are equal in the "before and after" situations, and attributes differences to the policy changes. However, other non-policy factors (such as weather or international prices) may also change.

A control group approach partly overcomes the deficiency of the "before and after" approach by attempting to distinguish between the programme and non-programme determinants of outcomes. A World Bank Study grouped countries into the following three categories: Early Intensive Adjustment Lending (EIAL), Other Adjustment Lending and Non Adjustment Lending and compared the performance of the three groups in an attempt to isolate the effect of the Bank supported adjustment programmes (World Bank, 1992).

The approach compares average change in performance variables for both programme and non-programme countries. The difference is attributed to the effect of the programme. The key weakness of the control group approach is that it assumes that all countries are subject to the same non-programme influences i.e. facing the same external environment. It also assumes that the effect on the performance of these other determinants is same for all groups of countries. The approach also ignores the effects of the programme, and other country-specific characteristics on performance and may therefore be subject to a "sample selection bias". The Modified Control Group approach minimises sample selection bias and takes account of the changing external environment of each country.

The approach recognises the nonrandom selection of the programme countries, identifies the specific differences between programme and non-programme countries in the preprogramme period and then controls for these differences in the comparison of subsequent economic performance. (World Bank 1990:24)

The control group approach (modified or not) is well suited to comparisons of macroeconomic and sectoral outcomes across countries. But it is not well suited to investigations of underlying micro-economic processes of change. This work focuses on the micro-economic level, but it draws a lesson from the control group approach in terms of the importance of using cross-section as well as time series data. So although this thesis does make use of "before and after" data, it does not attempt to draw simple uniform conclusions about the impact of adjustment measures on men and women farmers. Rather, it aims to investigate differences in household experiences, perceptions and decisions in the context of a shared policy and natural environment. In both the "before" and the "after" period, the research is designed to use cross-sectional data comparing different households and investigating the household-level factors, specially gender relations, which may influence the response to, and experience of, adjustment.

The issue of causal links between policy measures (such as structural adjustment) and outcomes can never be completely resolved. Ultimately there will always have been a judgement on the basis of circumstantial evidence e.g whether tea output increased after tea payment to smallholder rose given due allowance for conditions and changes in international market price of tea. The research design adopted here aims to collect and analyse evidence in ways that will enable us to make well-founded judgements about whether there is a case for modifying adjustment measures.

4. Findings

In the subsequent analysis, we distinguished always-tea households which had grown tea in 1985/86; and tea-switchers which were households which had switched to tea during the period between the surveys and never-tea households. Out of the 68 tea households in 1995/96 survey, four always-tea households were dropped from the subsequent analysis. This was because two households had incomplete information and two were outliers. One

outlier, being substantially richer than others. The other outlier was a single female who had inherited tea from dead parents and her relatives were helping her with the tea management.

Thus the total number of tea-households in the analysis was 64 while there were 26 households which had never grown tea in the 1995/96 sample; out of these, two cases were dropped from the subsequent analysis due to incomplete information. The analysis thus covered 24 never-tea households. Thus the statistical analysis covered 88 households both in the 1985/86 and 1995/96 surveys (except for the analysis of tea adoption in 5.6, from which, for reasons which will be explained, the female-headed households were excluded).

The main changes observed in always-tea households between 1985/86 and 1995/96 were increase in number of adult females and males in the household and total farm size; and declines in acres under tea, number of bushes, acres under maize and livestock keeping. The main changes observed in tea-switchers between 1985/86 and 1995/96 were increases in adult male in the household and children attending school; and declines in total farmsize, children under five years of age, acres under maize and livestock keeping. The number of adult females remained the same among the tea-switchers during the period. The main changes observed in the never-tea between 1985/86 and 1995/6 were increases in adult female in the household, children under five years and children attending school; and declines in total farmsize, acres under maize and livestock keeping. The number of adult males remained the same among the tea-switchers during the period.

Comparing the always-tea households to never-tea households in 1985/86, always-tea households were older, had larger farms and more children attending school. Always-tea households in 1995/96 were generally older than never-tea households, had larger farms and more adult males and females in ten household compared to never-tea and tea-switchers. In 1995/96 tea-switchers had lower total farmsize, less children under five and less livestock compared with always-tea and never-tea households in 1995/96.

There were some similarities in the experience of all three types of household. The first similarity was that the pattern of wage employment had declined for all the three groups. The decline in wage employment may have resulted from withdrawal from work due to old age and retirement; higher incomes from tea, or fewer wage employment opportunities. The second similarity among the three groups was decline in use of hired labour. In 1985/86 half of the tea households used hired labour on a regular basis while the other half depended on family labour except for pruning which was done by hired specialists in many cases. By 1995/96, 62 per cent of always-tea households hired labour in land preparation and an increase in the use of the hoe. As a result of these changes, it seems likely that there was more reliance on family labour in 1995/96 than in 1985/86, placing more demands on women's time.

The gender division of labour had not changed during the period 1985/86-1995/96. Women continued manage domestic work alone or get help from other female relatives, mainly sisters-in-law and mothers-in-law, and female children, particularly when schools are closed. Men were hardly involved in domestic work. A few households were well-off enough to afford maids.

With regard to the gender division of control in production, income and expenditure, the majority of women interviewed in 1995/96 had rights to use part of their husbands' land for food production. Husbands took the decisions on how much land to allocate for different crops, purchase of new land, purchase of farm inputs, hiring of labour and marketing of food crops. Sons also contributed to farm decisions particularly with regard to farm inputs, hiring labour and planting. The two studies found maize production to be important in the survey area with strong link between maize production and food security. There were no major changes regarding women's perception of who takes farm decisions during the period 1985/86-1995/96.

In most households, husbands alone decided on how income from tea should be used.

Husbands involved their wives in decision making in a few households but the wives had no idea of the exact income from tea. Almost all the women from male-headed tea growing households indicated that their husbands controlled the bonus payment and use. The misuse of income from tea (e.g. on alcohol) was revealed through in-depth interviews, and the researchers' own observations, but not expressed in the questionnaire survey either by male tea farmers or their wives. Many farmers mentioned school fees and other school contributions as an expense covered by bonus and a few farmers mentioned medical treatment. In the survey, no woman mentioned men's use of the tea bonus for personal expenditure. The women indicated that they would work more on tea production if directly paid part of the bonus.

The study asked women farmers whether their perceptions of standard of living had changed in 1995/96 compared to 1985/86. Half of the women felt worse off ($n=44$ out of 88 or 50 per cent), while 31 per cent ($n= 28/88$) felt better off and 18 per cent ($n= 16/88$) perceived that their life had remained the same. The majority of women from always-tea perceived that their standard of living had worsened, while the majority of women from tea-switcher households perceived that their life had improved. The study found that effects of life cycle changes (such as children growing up) were compounded by effect of economic reforms, in particular cost sharing in education, and health services, and rising food prices. It is important to note that there was variation within and between the three groups. This implies that perception of the standard of living is influenced more by changing economic environment for some households and more by changing household characteristics for others. The main reasons for improvements in standard of living were given as better earnings from wage employment, tea production and sale of maize, and diversification of farm activities. The main reasons given for worsened standard of living was burden of school fees, increase in the number of children and rise in food prices. Some of the reasons for improvement or deterioration were personal to households and were associated with the stage in their life. For instance, households with more school going children in 1995/96 had to meet more expenses than those with grown up children.

Neither survey collected information on income, but both collected information on land and livestock. Given the decline in average farmsize and number of livestock, it is not surprising that only 31 per cent felt better off.

This finding was supported by secondary data on the annual increase in consumer price index in the Rift Valley Province in which the research location is situated. Declines were observed in the annual price of maize in the same Province and tea payments fluctuated. The prices that are paid to farmers did not keep pace with the increase in consumer prices, it is not surprising that the majority of women felt no better off in 1995/96 compared to 1985/86.

The study contextualised the farmer's perceptions of changes in living standards by considering available data on agricultural output in Kericho District. The study found declining per capita production of staple crops. Given this, it is not surprising that despite increases in production of non-staple export crops, the majority of women felt no better off. Since there is competition for women's labour between the two types of crops, the constraints on women's labour availability may be a key reason why there was not simultaneous expansion of both types of crops.

The study analysed adoption of tea by smallholders using a logit method similar to that used by Bevan, Collier and Gunning (1989) but with important differences in the treatment of gender. Bevan et al (1989) had a variable GENDER which took the value of unity if the household head was female and 0 if not, on the grounds that the environment in which decision takers operate is biased against women in terms of extension advice, credit, and membership of marketing cooperatives. Bevan et al (1989) found that FEMALE labour was the only case in which labour endowment was significant and that female headed households had only half the propensity of male headed households to adopt tea. They concluded that households with more women are more likely to adopt tea, yet households headed by women are less likely to do so

The analysis we conducted did not have a separate variable for gender of the household

head. This was because women do not grow tea in their own right. The bias against women is even stronger in tea growing in Kericho. Licenses to grow tea are given to male head of households since they own the land, and women work in tea fields as unpaid family labour.

Decisions to adopt tea are primarily made by male farmers. There were some female-headed tea growing households in our sample, but they had inherited tea from their husbands (in one case, their father). Because of this, we dropped female-headed households from the analysis.

Our study found that FEMALE labour endowment was always positive in the 1985/86 - 1995/96 period but not always significant. However, it was positive and significant by 1995/96 in determining whether or not a male-headed household grew tea.

This could be interpreted as an increase in significance of female labour during the period of economic reforms. Female labour was a constraint during the period due to the following reasons: First there was the decline in hired labour during the period. The decline in hired labour may have possibly been due to the tribal clashes in 1992 which meant that non-Kalenjin migrant labour had left the region. Due to the big rise in the price of maize as a result of drought years, women may have preferred to spend more time in maize production. There was an incentive to grow maize for consumption needs since maize price had gone up. There was also less use of tractors and cattle in the in land preparation. Land had to be prepared every year for maize though not for tea and all tea farmers grow maize. Introduction of user charges particularly in health implied that women had to spend more time nursing the sick at home. We found that the smallholders found difficulties in paying for user charges in both health and education. Households who could not afford the hospital fees relied on female members of the household to take care of the patient while when the patient was discharged earlier, there was also reliance on female labour.

The reasons discussed above in relation to constraint of female labour can be categorised in Structural Adjustment Programmes (SAPs) related and non-structural adjustment related. While we can say that the decline in use of hired labour and rise in maize prices caused by

drought are not SAPs related, all the other reasons such as decline in use of fuel and tractors (resulting from increases in fuel prices and rise in cost of spareparts) and user charges are SAPs related.

Considering the factors discussed above, we can say that there was an increase in importance of female labour constraint during the period of the study. Some factor resulted from SAPs while others were non SAPs. This finding reinforces the earlier findings on more reliance on family labour, and less use of tractors and ploughs.

The variable NON-TEA WAGE EMPLOYMENT was significant and negatively related to the likelihood of tea growing. This result indicates that involvement in non- tea wage employment is a competing activity with tea growing, rather than a source of capital for growing tea. Linking at this finding to what was happening to SAPs we find that there had been a decline in manufacturing growth in the economy and public sector employment during 1980-84 to 1992-94 period. The decline in public sector employment can be linked to structural adjustment programme of retrenchment. There was therefore fewer opportunities for wage employment in 1992-94 compared to 1980-84. The variable FARMSIZE was significant and positive which implies that the likelihood of tea growing increased with farm size. That is not surprising since, tea competes for land with food crops such as maize and millet. This finding is not directly related to structural adjustment programme. The variable MAIZE was significant and negatively related to the likelihood of tea growing. This is not surprising since tea competes with maize. This finding is not related to SAP since the weather conditions such as drought contributed to the rise in the price of maize. As we discussed, maize can be for either for home consumption, sale or both and all farmers grow maize. Since maize competes with tea for land and labour, this finding has implications for food security and nutrition. The variable MAIZE is a "bearer of gender" since maize growing is particularly demanding on women's time.

We analysed the determinants of output of tea per bush for a sub sample of households for

which output data had been supplied by KTDA. The analysis found that factors that were statistically significant in influencing productivity were age of the farmer (-), Age² (+), acres under maize crop (-), acres under tea crop (+), young children under five years of age (-), previous experience on tea employment (+), farmsize (-), and widows (-). (In this case it was appropriate to include female-headed households, because the dependent variable was productivity, not the decision to adopt). It is not surprising that presence of children under age five negatively affects productivity. Due to the child care responsibilities, women with young children may not put in as many hours of tea farm work as those with older children, and this is likely to negatively affect average productivity. Wolde et al (1997) also found out that output is lower in households with children compared to those without children. Households headed by widows also had lower productivity. This may have been due to either insufficient knowledge of tea growing, or insufficient labour or conflicts with sons about how to manage the tea farm.

In drawing a link between structural adjustment measures and the findings, clearly some did find it worthwhile to switch to tea but there was a decline in average tea production from farms already growing tea.

We found that availability of women's labour is a constraint on the responses of households to incentives to grow tea. Our evidence does support the concerns about gender and efficiency in adjustment in the smallholder sector in sub-Saharan Africa.

From the equality point of view, we have found through the analysis of the perception of standard of living that the majority of women felt no better off in 1995/96. Women's work burden may well have increased during the period and they remain dependent on the "husbands" income. We established that although there had been expansion of tea production, there was a decline in food production. This has negative implications on food security and nutrition and needs further investigation.

5. Conclusions and Policy Recommendations

The main overall incentive for smallholder tea producer was the increase in tea prices over the period. The increase in tea prices resulted mainly from changes in the international tea prices than from structural adjustment programmes. In the review of structural adjustment programmes, there was no conditionality to KTDA to raise tea prices that farmers got. The international price of tea improved during the period under review. The response as indicated by the national figures indicated that there was an increase in tea production but tea yield stagnated. The case study showed that 17 male headed households switched to tea during the 1985/86- 1995/96 period but no farmer switched out of tea during the period.

The policy change that directly affected the smallholder tea farmer was the devaluation of the Kenya shilling which resulted in the rise of tea prices in Kenya shillings at the Mombasa Auction during the period. First or monthly payments to smallholder tea producers increased by 137 per cent during the 1984/85 to 1994/95 period, from Ksh 1.90 per kg of green leaf delivered to Ksh 4.50 respectively. The second payment rose from Ksh 1 per kg in 1980/81 to Ksh 6.2 in 1994/95, with a peak at Ksh 16 in 1993/94. The international price of tea at the London Auction in terms of pence per kg fell during the period under review from 172.6 pence per kg in 1985 to 103 pence per kg in 1995. The international price at the Mombasa Auction (Kenya shillings per kg) rose from 26.5 in 1985 to 55.2 shillings in 1992 (Kenya Tea Development Authority). This rise in international price of tea at the Mombasa Auction resulted from the devaluation of the nominal exchange rate.

We found that most of the smallholders growing tea also grow maize both for sale and consumption. Maize production was important in both tea and non-tea producing households since they were both sellers and buyers of the crop. What was happening to the maize crop during the period was also important in terms of reforms related to price movements of inputs such as fertiliser and the marketing of maize.

We concluded from the available information that despite rise in prices paid to tea

households during the period, this did not compensate for rise in price of maize by consumers. Moreover, there was annual increase in the consumer price index during the period. This increase was due to price decontrol of many other food items, which included fats and edible oils, rice, tea and milk leading to increased prices of these commodities. Smallholder farmers were also affected by introduction of user charges in health and education.

The direct effects of SAPs on smallholder tea producer were changes in the exchange rate, tea payments, fertiliser prices which affected the production of maize and other staples. Other Structural adjustment programmes that affected smallholder farmers were: introduction of user charges in education and health, rise in the price of consumer goods. The exogenous variables that affected the smallholder farmers in 1985/85 compared to 1995/96 were weather condition which led to droughts in 1984/85, 1992/93 and 1995/96. Tribal clashes in 1992 also affected production of both crops and livestock keeping.

The distinction between SAP and non SAP influence is important since we recognise that the causal links between policy measures such as structural adjustment and outcomes can never be completely resolved. There will always be a judgement on the basis of circumstantial evidence such as whether output of tea rose given due allowance for conditions and changes in the international market prices of tea. We noted that one limitation of the study was attempting to research complex issues concerning intra- households relations in a short time. Another limitation concerned the possibility of attributing causal relations between outcomes and adjustment measures. However, the study succeeded in providing a unique data set in two points in time that allowed for comparison of the experience and behaviour smallholder producers, some of whom responded to new incentives by adopting tea.

In drawing a link between structural adjustment measures and the findings, the study found that availability of women's labour is a constraint on the responses of households to

incentives to grow tea. This evidence supports concerns about gender and efficiency in adjustment in the smallholder sector in sub-Saharan Africa. In addressing the equality issue, we found that women's work burden seems likely to have increased during the period and they remain dependent on the husbands' income. We established that in the region as a whole that although there had been expansion of tea production, there was a decline in food production. This has policy implications for food security.

Policy Recommendations

This study makes specific policy recommendations on tea and maize production. Taking tea production first, this study makes specific policy recommendations based on two assumptions. The first set of policies is made based on the assumption that KTDA will continue playing a key role in providing services to the smallholder tea farmers. The second set of policies is made on the assumption that the liberalisation of the smallholder tea sector will take place, and the role of KTDA will change.

Based on the assumption that KTDA will continue playing this role, the two main issues that should be addressed in the light of the findings of the study are the issues of tea licensing and distribution bonus payment. Taking the issue of tea licensing first, we recall from the findings in both 1985/86 and 1995/96 surveys, that the typical license holders were men or their sons. Virtually all female-headed tea growing households had inherited tea from husbands, or fathers, rather than deciding for themselves to adopt tea. We also confirmed that gender barriers are so strong in tea that women are not generally able to take decisions to adopt tea, but only decisions about how much time they will spend on tea. Women were virtually disbarred from adopting tea both as a result of the policy of the KTDA, and as a result of deeply entrenched social norms.

This study therefore recommends that tea licenses should be given to women in their own right as well as men, and the KTDA should play an active role in supporting women to grow

tea in their own right.

This study found that women in male-headed households do not directly receive any of the bonus payment or monthly payment from KTDA. Women from male-headed households work in tea fields mainly as unpaid family labour and their lack of payment and control of income from tea is likely to negatively affect their incentive to work in tea fields. Women's labour constraint prevented a tea production response, until 1991 tea production was increasing, it would have even been greater without this constraint. Women from male-headed tea households said that they would devote more time to tea production if they were paid part of the bonus payment. This study recommends, based on the assumption that KTDA continues playing its current role of providing services to smallholder tea farmers that KTDA should arrange payments to be made in a way that gives some direct access to women. For instance it might be paid into joint account from which wife as well as husband can withdraw the money or a portion might be put in a specific account for payment of education and health service user charges. The local government, women's groups, tea farmers and the chiefs can liaise with KTDA District officers to ensure that women have access to bonus payments.

It is noteworthy that gender concerns have not been mentioned in the discussion of the liberalisation of smallholder tea sector. It is important both for equity and efficiency reasons that women should be incorporated in the liberalisation and that their voices should be heard in the new structures. Whether or not liberalisation takes place in this sub-sector, our study suggests that female labour remains a constraint to smallholder tea producers. My own participant observation indicated that women spent a lot of time fetching water, both for domestic and livestock uses, collecting firewood, and walking to market carrying heavy loads on their heads. It is noteworthy that the women farmers looked older than the men farmers, even though they were, in fact typically younger.

This study therefore recommends that more consideration should be given to ways of saving

time for women farmers. Local Government Authorities, Non-Governmental Organisations, Churches and the local Community should work together in providing better access to water, fuel and transport, and alternatives to the use of the hoe.

The study found that maize was an important crop for both tea and no-tea households. The smallholders are both producers and consumers of maize depending on maize prices and household consumption needs. There was an incentive to grow more maize if prices increase in prices of maize paid to producers was higher than tea payments. Women preferred to spend more time in maize production since this is the main staple. Since tea competes with maize for land and labour and maize is particularly demanding on women's time, this study recommends that there should be ways of expanding maize production since this has implications for food security.

The study raised the following issues as areas for further research:

Decline in the use of hired labour. This is an important issue for further analysis since unpaid family labour in general, and female labour in particular has become more important in the households during the reform process. The high demand on female labour has implications for the ability to combine expansion of food and export production.

- ?. Reduction in the use of tractors and ploughs for land preparation. It would be important to investigate factors that have led to the reduction of the use of tractors and ploughs. This is an important research particularly in relation to increasing demands on unpaid family labour.
- ?. It would be worth investigating the decline in total farm size, acres under maize and number of livestock. Declines in livestock and land may signal falling wealth, and increasing vulnerability. Declines of acres under maize may have household food security implications especially among export growing households.
- ?. There is need for further analysis on factors affecting productivity at the household level, with a focus on the role of intra-household resource allocation.

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¹In-depth discussions were very detailed and most respondents felt comfortable explaining issues in Kipsigis language rather than Swahili. I used an interpreter who was the tea field officer in the area.