THE SHARE OF COFFEE PRODUCERS IN THE VALUE OF COFFEE EXPORTS

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I. Introduction

There are many participants in the Ethiopian Coffee Industry who share in the distribution of income from coffee export sales. The share of government taxation has been given a somewhat extensive treatment elsewhere[1]. The marketing margins for hullers, transporters, wholesalers, exporters and others involved in business are to a large extent subjects for future inquiry. The primary aim of this short note is to bring together evidence having a bearing on the income share accruing to coffee producers from coffee export sales. Without being unduly presumptuous, such inquiry may add to existing stock of knowledge regarding coffee income distribution in this country. There is no known published study on this subject. But the problem of coffee income distribution needs to be investigated for other reasons as well. Coffee constitutes the most important export commodity (and foreign exchange earner), covers up to 450 thousand hectares of land, and affects directly and indirectly the income of about a quarter of the nation's population[2]. A recent report estimates the number of peasant coffee farmers in the country (working for no more than 150 man-days a year on the farm) alone as nearly 700,000[3]. The Socialist goals and programmes of the state which have found continuing expression in many government proclamations in themselves suggest some degree of research focusing on income distribution issues to be necessarily relevant[4]. Furthermore, major reorganizations have taken place in the management of the coffee sector[5], and sizable investment projectes to improve the quality and volume of coffee output and export have been started in most recent years[6], with direct and immediate effects on the income of producers. The gradual rise in the export price of coffee during the early 1970's, and the unusual price increases experienced following the Brazilian frosts (first in July of 1975 and most recently in August of 1978)[7] make an investigation into the income share of coffee producers additionally worthwhile and timely.

II. The Income Share of Ethiopian Coffee Producers in Coffee Export Sales

Only rough estimates are available for the share of coffee producers in the value of coffee exports in Ethiopia. According to a 1967 estimate, the farmgate prices (i.e. what coffee producers get) "have been fluctuating between 40% and 65% of the F.O.B. export value"[8]. A 1969 estimate calculates producers' Shares at 64% and the share of government receipts (as taxes) at 15% of the F.O.B. export price[9]. This leaves 21% as exporters' commissions and for "second stage activities" such as internal marketing, storage, cleaning and drying, and other services. In 1971 a study by Teketel H.Mariam[10], using 1970 information as a base estimated exportes' margins, wholesalers' margins and "residuals" as constituting respectively 12%, 9% and 68% of the F.O.B. export price. The "residual" excludes taxes to the government and includes shares accruing to those whom the author listed as bulkers, assemblers, transporters, storage owners and brokers, as well as coffee producers. During the past few years additional estimates of producers' shares have been provided by the Coffee Production and Processing Agency (CPPA)[11] and other sources.

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One such estimate by the research staff of the CPPA gives a "theoretical" farmgate price of 59 Birr per *feresula*[12] (excludng middlemen's profits) and calculates the "expected" F.O.B. Djibouti price of that coffee at 7226 Birr per ton. This yields a net producers' share of 48% of F.O.B. export price for that period (i.e. 1976). In 1975 *The Coffee Improvement Project*[13] of the CPPA calculated that the farmgate price of coffee would be about 40% of the F.O.B. export price with the implementation of the "improvement projects".

Although there are differences in the results attained, the methods used in the estimation of these various producers' shares are essentially similar. The usual method includes detailed breakdowns of price (or cost) formation of exportable coffee. The observed or estimated coffee price at farmgate acquired from such breakdowns is then expressed as a proportion of the F.O.B. export price, to yield an estimate of the producers' share. The share accruing to any other party can of course be calculated from such detailed cost formations in a similar fashion. Once the details of costs and expenditures are known, the cost of each expenditure item (or of each category of cost) can be expressed as a ratio of total costs. Thus the producers' share is essentially the ratio of total expenditures at the farm level to total costs, where total costs are equal to the F.O.B. coffee export prices. The degree of accuracy of the producers' share, arrived at in this manner, is dependent upon how comprehensively and accurately the constituent cost or expenditure items are computed.

Additional complications are of course introduced when, instead of calculating various producers' shares for different time periods, the issue becomes one of estimating a national average per annum. The exercise is not, however too complicated, if we make allowances for variations in production and other costs from region to region. Costs are also dissimilar as, for example, between forest coffee, garden coffee, and plantations. There are cost differences between the various forms of marketed coffee (viz. dried cherries, hand-pounded beans, and fresh cherries for wet processing). Costs also depend to a varying extent on the "age" of coffee trees. What is needed here is to account for all such major sources of cost variations and to apply proper weighting and averaging to get at some workable average price formation estimate for the country. Needless to say, differences in factors considered and weights applied are among the likely reasons for much of the variations of estimated results reported in this study[14].

It must also be noted that all these reported estimates of the producers' share refer to a particular year (or to a shorter period). Long-term series of the producers' share were unavailable until 1977, when the Planning and Programming Unit of the CTDMA produced the first ever long-term series of producer prices of coffee, covering the period 1961-62 to 1976-77[15]. The computations of these series are based on (a) estimates of annual average prices (per ton) of coffee "arrivals" (i.e. coffee brought to Addis Ababa from the interior), and (b) estimates of "interior costs". In estimating average prices of arrivals, both weighted (using volumes of arrivals as weights) and simple unweighted (annual) average prices were computed, and it is reported that similar results are obtained in either case. Regarding "interior costs", total expenditures incurred (including transport, storage and processing charges as well as middlemen's commission, etc.) from farmgate to terminal markets in Addis Ababa and Dire Dawa have been estimated separately for dried cherries, hand-pounded beans, and for fresh cherries. Weighted annual average (interior) costs for the country as a whole were estimated using the volumes of coffee marketed in the three methods above as weights. Finally, current producer price is then computed simply as the difference between these two measurements of prices and costs (see Annex A).

Given these series of current producer prices, the relative share of producers in the F.O.B. exports can be easily estimated by dividing such producer prices by corresponding F.O.B. export values. Unfortunately, available coffee export series are based on calendar years, while the long-term producer price series are computed for coffee years[16]. We need to ascertain, in this case, that we are indeed dividing the producer price by the export price of *the same coffee*.

Information is available elsewhere on percentage distributions of total coffee exports by months[17]. These can be used to convert given calender-year coffee exports into export figures for coffee years (and vice versa). Although this conversion ensures that producer price and coffee exports are now of the same time periods, it does not necessarily mean that reference is made to "the same coffee" if there is speculative hoarding. However, two previous studies cover this problem adequately. The report on the long-term producer price series notes that small coffee farmers sell their produce immediately after harvest and that, even though in theory landlords had more hoarding and speculative capacity, they too in practice sold all their produce soon after harvest[18]. A seasonal analysis on coffee supply, prices and exports covering the periods 1960-61 to 1969-70, while corroborating the above patterns, adds that exporters also export all the coffee supply of a given coffee year during that same year[19]. It notes that a maximum lag of about 4 weeks exists between contracts and actual exports up to March, and that this lag is reduced to zero as the coffee year draws to its conclusion. The implication, then, is that the producers' share, computed as a ratio of producer price to F.O.B. export value for any coffee year, refers to *the same coffee*. These computations were performed and are shown in Table 1.

TABLE 1

Share of Ethiopian Coffee Producers in The Value of Coffee Exports

Coffee-Year	Producer Price(1) (Birr/ton)	F.O.B. Export Value(2) (Birr/ton)	Producers' Shares (Percentages)
1961-62	1040	1709.92	61
1962-63	1004	1658.96	61
1963-64	1353	2213.04	61
1964-65	1376	2153.90	64
1965-66	1394	2119.61	66
1966-67	1234	1935.60	64
1967-68	1271	1903.74	67
1968-69	1209	1962.96	62
1969-70	1690	2463.60	69
1970-71	1378	2218.70	62
1971-72	1409	2204.52	64
1972-73	1463	2460.16	59
1973-74	1692	2686.70	63
1974-75	1203	2657.60	45
1975-76	3010	4582.39	66
1976-77	3567	11001.00	32
1977-78(3)	2826	8314.00	34

Notes: (1) Taken from Planning and Programming Unit (CTDMA), *Producers' Prices of Coffee 1961-62 to 1976-77.* pp. 10-11.

(2) Export values (F.O.B.) converted from calendar year into coffee year equivalents. Export figures are obtainable from the same source as in (1) above and Central Statistical Office sources.

(3) The computations refer to the first eight months of a coffee year only, and were received from CTDMA sources.

Table 1 may give a general indication of the level of relative shares of producers from coffee export income. It is, however, inadequate to give sufficient meaning and significance to what Ethiopian producers actually receive. Besides the measure reported here, and for a fuller appreciation of the effective shares, other measures may have to be used. One such measure would be coffee producers' *per head* share, for example. Unfortunately no reliable information exists at the present time for computing such a measure[20]. However, it is obvious that, even if the relative share of exporters in the F.O.B. export prices are smaller than the share of producers, the per head share of exporters are far in excess of corresponding farmers' share due to the number of exporters being smaller than that of producers. Likewise, any increase in the volume of marketed coffee per farmer and/or increase of coffee prices paid to a producer would tend to improve the effective (as opposed to the "relative") incomes of producers, all other things being equal.

A wider appreciation of the relative share of Ethiopian coffee producers (reported in Table 1) may also emerge from a comparison with producers' shares elsewhere in the coffee exporters' world. At the present time there are 43 coffee-exporting countries that are members of an international grouping called the International Coffee Organization (ICO)[21]. In 1972 and in 1978 the ICO published information concerning coffee income distribution in member countries. Relevant data received from these sources are summarized in Table 2.

TABLE 2

Producer Price as a Percentage of (F.O.B.) Export Price for Some Countries and Years.

	Coffee Types*	1962	1965	1968	1970	1973	1974	1975	1976
Columbia	CM	50	42	47	45	55	54	58	58
Kenya	CM	94	82	84	83	95	91	99	99
Costa Rica	OM		70	79	72	83	68	71	74
Dominican Republic	OM	62	52			58	59	62	87
Ecuador	OM		43	38	63	67	67	68	76
El Salvador	OM	71	64	64	69	70	66	60	84
Guatemala	OM	84	86	82	82	74	74	80	93
Honduras	OM	75	79	77	77	67	78	73	98
India	OM	86	88	78	62	81	75	81	58
Mexico	OM	59	56	60	65	72	76	76	62
Nicaragua	OM	71	77	74	80	96	97	75	98
Brazil	UA	23	35	31	39	64	62	90	77
Angola	R		59	51	56	66	70	47	28
Cameroon	R	98	83	80	82	49	47	57	43
Ivory Coast	R	60	69	61	55		43	55	37
Malagasy Republic	R	61	67	64	48	61	57	58	57
Uganda	R	77	65	43	46	42	29	34	20
Zaire	R	77	26	46	56	28	35	37	56

*CM = Colombian Milds   OM = Other Mild Arabicas   UA = Unwashed Arabicas
R = Robustas.

A question that can now be raised is whether average producers' shares observed in Ethiopia differ from similar shares elsewhere. The necessary statistical tests using these data have been performed and summarized in Annex B. The conclusion is that the share of producers in Ethiopia do not differ significantly from producers' shares in other countries.

III. Ethiopian Coffee Producers' Income Share: Characteristics and Problems.

Although from the foregoing discussions the share of producers in the value of exports cannot be described as uniquely low (or high) in comparison with world-wide practice, they nonetheless possess structural weaknesses which may at some stage require the formulation of a corrective policy. The coefficient of variation of about 18 percent computed from the Ethiopian series may be considered too high, and indicates that producers' shares (even if not small) are certainly unstable.

(a) Inadequate Price and Fiscal Policy Means.

One problem with Ethiopian producers' shares is that they have been largely outside the control of producers. Price, fiscal and related policy means for indirect control have not been adequately developed for purposes of regulating, and if need be stabilizing, producer and other incomes. The available evidence shows that coffee export prices and producer prices are closely correlated[23]. This could well imply that any fluctuations in international coffee prices are transmitted immediately, causing producer prices to fluctuate as well. Likewise, examination of Ethiopian data reveals that any increase in coffee export taxation, itself a positive function of coffee export prices, is also passed on to the producer by exporters[24]. This possibility on the part of exporters and traders to shift any tax or low-price burdens on to the producers has, in the absence of mitigating circumstances, a potential for depressing and destabilizing producers' shares.

(b) Institutional Control Means

Other (and more direct) institutional control means are of course available, and coffee-exporting countries show diverse forms of their application. The problem, it must be noted, is not that of regulating producer or other income shares only. It is also often one of regulating coffee output and supply. All these are factors that are intimately related. If increases in international prices are allowed to be transmitted in significant measure to coffee farmers, coffee production (and supply) may be stimulated unless of course countermeasures are taken. The main issue of the "Coffee Diversification Fund" in the ICO is precisely that of combatting the undesirable features of overproduction and stockpiling, including the fluctuation and diminution of foreign-exchange earnings and depressed producer prices which oversupply is most likely to entail. The proper institution of control means is thus in order. The issue is exceedingly relevant for economies depending heavily on coffee for froeign-exchange, earnings, employment, government revenue, etc.

Some countries[25] (e.g. Guatemala, Dominican Republic, and to some extent Ecuador and Honduras) have instituted no definite measures for controlling the coffee sector. Minimum prices are not set for producers, no or only marginal taxes are applied on exports, and the government plays no significant role in the production, processing and marketing of coffee. In these "systems", producer incomes and coffee-export earnings, as well as the income shares of other participants

in coffee activities, are fully exposed to the exigencies of international market forces

In some other countries, while coffee production, processing and marketing are still kept in private hands and are subject to market manipulations, some degeree of government participation is observed, either by way of tax collection or even by way of direct participation in trading activities. In Kenya[26], for example, the government provides advisory services (for fees) and collects taxes on various coffee activities. However, these charges and taxes are reported to have merely revenue effects, and not controlling effects on producer and other income shares or on coffee production policy. In Venezuela[27] and Togo[28], on the other hand, the government participates through parastatal bodies in market trading, primarily to stabilize producer prices. It does so by buying coffee from producers and thus playing the role of a price leader.

One method of direct controls that is widely used by coffee-producing countries is minimum producer price fixing. Many countries (e.g. Burundi, Cameroon, Rwanda and Madagascar) have introduced such a scheme primarily to stabilize producer prices[29]. In Mexico[30], the Mexican Coffee Institute not only sets minimum producer prices but also buys (through its agents) up to ten percent of the total produce to stabilize these prices. In Costa Rica[31], other than setting minimum prices that processors must pay to producers, the government also fixes a ceiling for the profits of traders (including exporters). There is in this case a limitation on the incomes from export sales that can be passed on to the producers.

Another method of controlling the coffee sector (or some activities therein) would be through the granting of monopoly power in coffee processing and trading to government bodies. Uganda[32] introduced such a scheme in 1960 whereby full monopoly power for buying and exporting coffee was given to the Uganda Marketing Board. In Tanzania[33], the Tanganyika Coffee Board controls coffee trade through its appointment of Producer Associations to conduct all marketing operations.

Still other examples of institutional controls are provided by the *Indian Coffee Plan*[34]. In India a system of compulsory delivery of coffee output by producers to what is known as a "coffee pool" is enforced. The delivery is effected at a price set by the Coffee Board[35].

Most of the relatively more important coffee exporting countries use a fairly advanced and effective institutional control means both for purposes of stabilizing producer incomes and regulating all coffee activities. Brazil (which accounts for 30% of world coffee exports by volume) is a case in point. According to the Brazilian *Coffee Plan*[36], internal coffee prices for domestic consumers and prices paid to coffee farmers are effectively insulated from the direct international market influences by the activities of the Brazilian Coffee Institute. This Institute fixes a "guarantee producer price" which sets the official price-floor below which private offers to producers cannot fall. The Institute itself guarantees purchase of any amount from producers at this price. Likewise the Institute also determines "minimum export prices" for private exporters. The differential between actual export revenue and this fixed minimum export value goes into what is called a "Coffee Reserve Fund". It is this fund which is used by the government to finance its wide ranging activities in the sector.

In Ivory Coast[37] (which accounts for about 32% of the world Robusta exports) a somewhat similar development towards a self-financing coffee sector is observed.

There too, the institution of a parastatal body—the Caisse de Stabilisation—appears to have mitigated this problem of stabilization and controls. The Caisse is responsible for all marketing policy, guarantees all coffee producers a uniform "plantation price" for their produce and has introduced a system whereby internal coffee dealers operate on a fixed commission basis from the Caisse. Exporters too are guaranteed a set price and are required to surrender to the Caisse the balance between their revenue from exports and this guaranteed price. In general the fixing of exporters' price is effected at a level which often ensures that this balance is a positive sum. The resources acquired in this manner are reported to have enabled the Caisse to exercise its effective regulatory and controlling roles in the sector and to stabilize producer prices for years.

In Ethiopia the introduction of institutional control means has been of rather recent origin. The National Coffee Bord (NCB) was established by a governement proclamation in 1960, mainly to set standards and to facilitate in other ways the export of coffee from Ethiopia[38]. Although in 1960 and in 1966 decrees were issued[39] to legalize the establishment of cooperative societies in the rural sector, developments were slow, and, for the coffee sector at any rate, they have proved inefficient both in terms of securing benefits for members and in terms of contributing to the rational reorganization of the sector for controlled development[40]. During the Third Five-year Development plan period (1968-1973), commitments were made to set up as many as 300 multipurpose cooperative societies in agriculture[41]. Of the 152 that eventually materialized, only 23 included coffee producers' cooperatives. By the time of the land reform (1975), there were only 13 such cooperatives left. These coffee producers' cooperatives had many additional problems: They primarily embraced the larger farmers, lacked efficient management, and were only able to market less than one percent of the annual coffee suply.

Since 1974, important institutional changes have taken place in the coffee sector with direct implications for coffee producer income shares. By proclamtion[42], the NCB has been replaced by a new authourity, The Coffee and Tea Development and Marketing Authority. The incorporation of "tea" is significant in that it provides an enlarged basis for a comprehensive policy development in the field. The change also now allows the government body to take part in marketing, an area left out of the activities of the former National Coffee Board. Furthermore, a government corporation has recently been established[43] to purchase, process and market coffee, thus providing the state with an instrument to influence the the workings of the coffee market.

On the level of producers, too, important changes have been introduced which in conjunction with other means are expected to enhance the controlled development of the coffee sector including that of stabilizing or cushioning producer incomes. Prior to 1974, more than 50 percent of coffee farmers were tenants[44]. The Land Proclamation of 1975 removed tenancy from the fields[45]. In addition, the proclamtion on cooperatives issued recently[46] is expected to pave the way for the incorporation of these small non-tenant farmers into rationally instituted cooperative societies. Already by late 1978, of the planned 43 agricultural producer cooperatives and 2182 agricultural service cooperatives (together covering some 3 million farming households), as many as 21 and 343 respectively were registered throughout the country[47]. The vast majority of these registered societies are located in the coffee-growing regions and include mainly coffee producers cooperatives.

A rather impressive development in this regard is noted in the case of washed coffee management in Sidamo. After the nationalization of land, the government

placed all washing stations with the newly created cooperatives, and during the current coffee year (1977-78) a total of 108 washing stations are controlled and operated by 58 coffee producer cooperatives[48]. These cooperatives not only process the output of members, they also transport and market internally the processed coffee. By controlling these activities themselves, producers are obviously in an improved position both to stabilize and to increase their relative income shares.

It must be realized that a controlled development of the coffee sector (assumed in itself a desirable goal) calls not only for the institution of separate legal bodies, setting out detailed rules and regulations governing all sectoral activities such as the institutions of fiscal, price and allied policies, but also for the provision of a working framework within which the proper interaction of these items can be perceived. Even in the development of the contributary items, there are areas as yet untreated. Nothing new has been introduced in regard to price and fiscal policies. Minimum producer prices are not fixed. On the other hand, the new institutions created have problems. For example, inadequate capital means, poor transportation and lack of trained manpower to manage the cooperatives are recorded as pressing points is the growing lists of problems encountered by the young cooperatives only recently formed[49]. One would expect a reasonable lapse of time before a totally synchronized, well coordinated, effectively controlled and properly functioning coffee sector comes into being. Only then can it be ascertained that the income shares of producers, among other considerations, are made effectively predictable and are fully controlled.

(c) Large Service Sector

Another major destailizer and depressor of producer income shares is the share accruing to "coffee servicing activities". These activities include cleaning and grading, storage, packaging, marketing (including exporting), transportation, etc. All are tasks performed by license holders and paid for from coffee sales. In Ethiopia as many as 15 such activities are identified in marketing alone[50]. No comprehensive census has ever been taken, but experts in the field estimate the number of persons involved to be considerable.

In some sense the effects of these large volumes of service activities on the income shares of producers are easily perceptible. By definition, the relative shares of "services" vary in inverse proportion to the shares of producers and taxes put together. It is also obvious that the large numbers and the diversity of licence holders make the task of control relatively difficult.

A relatively useful exercise for policy, however, would be the determination of the direction of associations of relative shares. Are the observed changes in producers' shares related to changes in the shares of "services" or to changes in the shares of taxes? Attempts have been made to probe this issue using cross-sectional data and time-series estimates of income share distributions in Ethiopia.

Cross-country evidence indicates that, of the total combinations of the relationship of pairs of variables, the correlations between producers' shares and the shares of "services" are consistently significant[51]. However, the computed correlation is unstable in that it shows significant variations between different samples[52]. On the other hand, the Ethiopian time-series estimates on income shares suggest that observed overtime changes in producers' shares appear to be related more

closely to changes in the shares of government tax receipts than to changes in the income shares of "services"[53]. Of course this latter result simply summarizes historical data and cannot be a useful guide as to how to stabilize or augment producer income shares in the future. We need to bear in mind too that institutional, ideological, and other variants can no longer be assumed constant for extrapolation purposes.

T A B L E 3.

Income Shares from Coffee Exports (percentage distributions)

	(2)	Producers' Shares			Share of "Services"			Govt. Tax Shares		
		1962	1965	1970	1962	1965	1970	1962	1965	1970
Colombia	CM			45			4			51
Kenya	CM			70			6			28
Tanzania	CM			81			9			10
Burundi	OM			40			32			19
Costa Rica	OM		70			23			7	
Dominican Republic	OM		52	58		48	42		0	0
Ecuador	OM		43	63		49	24		8	13
El Salvador	OM	71	64	69	18	21	14	11	15	17
Guatemala	OM	84	86		7	3		9	11	
Haiti	OM		39	49		29	23		32	28
Honduras	OM	75	79		14	12		9	9	
India				62		18				20
Mexico	OM		56	65		37	18		7	17
Nicaragua	OM	71	77	80	21	16	14	8	7	6
Rwanda	OM		69			25			6	
Venezuela	OM			76			24			0
Brazil	UA	23	35	39	8	8	8	69	57	53
Paraguay	UA		78			7			15	
Angola	R		59			22			19	
Cameroon	R			82			1			17
Ivory Coast	R	60	69	55	23	16	24	17	15	21
Malagasy Republic	R		67			16			17	
Sierra Leone	R		85			5			10	
Togo	R	52	59	32	38	33	52	10	8	16
Uganda	R	77	59	46	15	18	41	8	23	13
Zaire	R			56			33			12

Source: as in Table 2.

(2) Coffee types as defined in Table 2.

In fact, contrary to what a possible extrapolation of the time series results suggest, the stabilization and strengthening of producer income shares are most likely to come out of activities that have the opposite effect on the income shares of private persons in "Services". There are many advantages to be derived from a possible transfer of incomes from "services" to other shares (including producer income shares), and in general from a programme aimed at streamlining the "coffee servicing activities". These activities often involve the mere transfer of coffee from chains of smaller traders to larger ones, resulting not in a net value addition as such, but in causing the prices of coffee to rise by cumulative additions of commissions. Streamlining may in this case raise producer incomes directly. If the coffee farmers were to bring their produce to the auctions themselves, their incomes would increase by the amount of cumulative commissions for middlemen, for example. Streamlining might also imply reducing the numbers of various licence holders, and their possible release for other more productive (and less competitive and duplicative) activities. It may also be noted that of all the items constituting "interior costs" (see Annex A), it is "middlemen's profits" that constitute the largest and the most unstable cost component. Here again, streamlining could remove or bring

under control this significant destabilizing factor of producer incomes.

Moreover, present policies favour such developments. In the case of washed coffee processing, it has already been pointed out that all of the "servicing activities" have been placed under the control and management of producer cooperatives. The organization of small coffee producers into cooperative societies, as well as the transference of warehouses, cleaning facilities, etc., to these societies, is reported to be a continuing and developing process in the majority of the other coffee-growing regions of the country. Cooperative societies are also expected to play an ever-increasing role in the internal marketing of coffee. The overall effects of these developments will be to help stabilize and/or improve producer incomes by expanding their activities at the expense of "servicing activities" previously carried out by non-producers.

TABLE 4
Coffee Exports: Percentage Shares by Exporters*

	Foreigners	Ethiopian (Private)	Ethiopian (Govt.)	Total
1965-66				
Unwashed Coffee	83	17	0	100
Washed Coffee	100	0	0	100
1970-71				
Unwashed Coffee	81	20	0	100
Washed Coffee	98	2	0	100
1975-76				
Total Exports	55	21	24	100
1976-77				
Unwashed Coffee	57	17	26	100
Washed Coffee	67	33	0	100
Total Export	57	23	20	100
1977-78**				
Unwashed Coffee	53	17	30	100
Washed Coffee	60	2	38	100
Total Exports	49	21	30	100

Source: CTDMA sources
 * The percentages for 1965-66 and 1970-71 are calculated from volume figures, while those for 1975-76, 1976-77 and 1977-78 are computed from export value figures. However, percentages from value and volume figures do not differ much.
** Covers the period October 1977 to August 1978 only.

The share of government taxes and incomes from coffee activities is also most unlikely to diminish. The role of the government in areas such as coffee marketing, inspection and controls, provision of technical and material assistance to farmers, etc. is on the increase, and more funds will be needed to finance the growing state activities in the sector. All these items may have to be paid for from coffee sales, and the outcome of greater state participation will therefore be to raise its income shares also. Such an increase in the government share of activities and incomes is not nesessarily incompatible with the growth and/or stabilization of producer incomes. If anything is to be learnt from the cross-country evidence, it is that effective designs to control the sector activities (including that of stabilizing producer incomes) necessarily imply increased shares in government activities and incomes. In the case of Ethiopia the expected growth in the income and activity shares of the government is also most likely to come about primarily at the expense of private shares in "coffee servicing activities". Perhaps the best indicator of this trend is the recent increase in the share of exports by the government sector. Whereas before 1974 all coffee was exported by private (and mainly foreign-owned) firms, today the Ethiopian Government exports about 30 percent of the total (see Table 4).

The government share is even greater in the case of washed coffee exports - an item highly favoured by the *Ethiopian Coffee Plan* for future expansion. Since coffee exporters margins have been estimated to be relatively large and quite unstable, state participation in this case may have, among other positive results, a stabilizing influence on producer income shares.

(d) Producers' Participation in Coffee Marketing

The problems with producer income shares cannot totally be explained by the failings of the price mechanism, organizational bottlenecks, the presence of large volumes of coffee servicing activities, or the absence of quick and coordinated government action. Sometimes failure on the part of producers to take advantage of existing rules and regulations results in a further depression of producer incomes. The early National Coffee Board Regulations (essential features of which are still retained in present regulations)[54] require that coffee trnasactions take place at designated market centres and that they be carried out by licence holders (or producers). An important consideration on the part of policy makers has been, in this case, that coffee farmers should benefit from competitive price offerings by traders and consumers. A pilot survey carried out by the NCB, however, shows that failure to trade at approved local markets results in a possible reduction of producer prices and incomes. These results of the survey are summarised in Table 5. The results (a) indicate that there is a large incidence of coffee sales at farmgate, and (b) show that in all observed cases average coffee prices at market centres are higher than at framgate[55].

T A B L E 5.
Coffee Sales at Farm gate and Variations in Average Prices

Region	Awraja	Wereda	Cases of Coffee sales at farmgate (as percentage of total sample size)	Average price of coffee (Birr/Kg.)		Price difference as percent of farmgate price
				Farmgate	Local Market	
Hararge	Chercher	Tulo	40	1.46	1.75	20
		Habro	0	1.45	1.46	1
Kaffa	Limu	Goma	70	0.56	0.66	18
		Limu Saka	75	0.50	0.59	18
Sidamo	Derassa	Yirga Ch.	65	0.60	0.70	17
		Bulle	50	0.50	0.98	96
	Wollamo	Bolosso	0	1.00	1.12	12
		Sodo Z.	40	1.28	1.35	5
Illubabor	Gore	Alle	10	1.18	1.32	12
		Hollu	60	0.89	1.03	16
Wellega	Gimbi	Guliso	30	0.74	1.28	73
		Gimbi	10	0.69	0.94	36
Average farmgate sales			37			
			(0.26)			
Overall average price (Birr Kg.)				0.90	1.10	
				(0.35)	(0.34)	
Overall average price difference						27.00
						(27.39)
Coefficient of variation			0.70	0.38	0.31	101

* Computed from data obtained from NCB, *Pilot Survey*, 1972.
Note: The values in brackets are standard devaitions.

IV. Summary and Concluding Remarks

Incomes from coffee export sales can be disaggregated on the basis of recipient shares. Three such shares are identified: producers' shares, the share of "coffee servicing activities" and government tax (or income) shares. This short paper is primarily concerned with the income shares of coffee producers in Ethiopia.

Examination of historical data reveals that the revlative share of producers in the value of coffee exports is comparable with similar shares in other coffee-exporting countries. However, these shares are also found to be unstable. Among the destabilizers and possible depressors of producer incomes important factors are the inadequacy of policy instruments for indirect controls, the slow developments and apparent neglect of direct institutional control means, the presence of large volumes of coffee servicing activities in private hands, and the apparent inability of disorganized, small and largely tenant farmers to take advantage of marketing possibilities.

The policy issues with regard to producer incomes generally and primarily include the "stabilization" and "controls" of the effective producer income shares. In their institutional requirements and manner of implementation these policy issues are necessarily intertwined. The question of personal income stabilization in any sector may have to be treated in the context of general incomes policy for a socialist state and requires for its effective implementation the implanting and development of varied forms of state institutions, procedures and policies. The issue of controls too requires similar developments.

In most recent years far reaching institutional changes and reorganizations haven taken place in Ethiopia with a direct bearing on these policy issues. The reorganization of the coffee authority, the abolution of tenancy and the forging of peasant coffee farmers into rationally instituted producer cooperatives are important institutional rearragements and innovations affecting producer income shares. Furthermore, producer incomes are likely to be affected by the inroads into "servicing activities" made by both coffee producers and the government. Already the bulk of washed coffee processing and internal marketing activities in Sidamo have been transferred from "non-producing" private persons to coffee farmers' cooperatives. This transference directly raises the level of producer incomes. The government, which in the past took no part in coffee trading, is now a major coffee exporter. This too raises the level of government income shares from coffee exports. But there is also an additional positive incomes policy effect from this participation. As a byproduct such activities by the government would also improve its capacity to play active regulatory and controlling roles - necessary tasks in the controlled development of the coffee sector.

Discussions on policy are necessarily incomplete at the present time. Only the saliant features of the development of policy means can be outlined. It is a bit premature to be definitive about end results. The point is already made that to bring producer incomes under effective control and make them perfectly predicable may well herald the genesis of a fully synchronized, effectively controlled and efficiently functioning coffee sector. At the present time we see only the parts in the making, and it would take sometime for a total picture yet to emerge.

ANNEX A — Addis Ababa Producer Prices 1961-62 to 1976-77

Coffee Year	Addis Ababa Prices (Birr/ton)	INTERIOR COSTS (BIRR/TON)							Producer (Current) Price (Birr/ton)
		Transport to Hulling Stations	Hulling and grading	Handling	Bag	Transport to Addis Ababa	Middlemen's Profit	Total	
1961-62	1307	60	29	18	3	26	131	267	1040
1962-63	1267	60	29	18	3	26	127	263	1004
1963-64	1655	60	29	18	3	26	166	302	1353
1964-65	1680	60	29	18	3	26	168	304	1376
1965-66	1700	60	29	18	3	26	170	306	1394
1966-67	1456	55	29	18	3	30	87	222	1234
1967-68	1496	55	29	18	3	30	90	225	1271
1968-69	1430	55	29	18	3	30	86	221	1209
1969-70	1941	55	29	18	3	30	116	251	1690
1970-71	1610	55	29	18	3	30	97	232	1378
1971-72	1650	50	29	18	5	40	99	241	1409
1972-73	1707	50	29	18	5	40	102	244	1463
1973-74	1951	50	29	18	5	40	117	259	1692
1974-75	1431	50	29	18	5	40	86	228	1203
1975-76	3259	55	29	18	5	44	98	249	3010
1976-77	3864	65	35	18	6	57	116	297	3567

Source: Planning and Programming Unit (CTDMA), *Producers Prices of Coffee*: 1961-62 to 1976-77, Addis Ababa, October 1977 (draft), Table A.4.

Annex B

Tests Concerning Differences in Relative Income Shares of Producers

B. 1. **Non-Parametric Test**
    (1) Test: Rank Sum Test
    (2) Sample Sizes: 17;138
    (3) Test Result: $Z = 1.5088 < Z_{0.05} = 1.96$
    (4) Conclusion: The population from which the two samples are drawn have equal means. We accept the null hypothesis that the average producers' shares observed in Ethiopia and elsewhere are the same (at a level of significance of 0.05).

B. 2. **Parametric Tests**
We cannot on an *a priori* basis dismiss the possibility that the two samples are from normal populations. The appropriate test, in this case, depends on what can be assumed regarding the population variances.

B. 2.1. **A Test Concerning Differences Between Two Normal Population Variances**
    (1) Sample Sizes: 17;138
    (2) Test Results: $F = 2.8429 > F_{0.01} = 2.75$
    (3) Conclusion: We reject the null hypothesis that the population variances are the same at a a level of significance of 0.02.

B. 2.2. **A Test Concerning Differences Between Two Means Drawn from Normal Populations with Unknown and Unequal Variances**
    (1) Sample Sizes: 17;138
    (2) Test Results: (Welch Approximation) $t = 2.10862$,

$t_{0.995} = 2.7500$ with degree of freedom calculated as 30.

(3) Conclusion: On the basis of the above assumptions (normality and unequal population variances) the data show that the average income shares of producers in Ethiopia do not differ from similar shares in other countries.

FOOTNOTES

1. See Teshome Mulat, *Coffee Taxation*, Addis Ababa, September 1972 (stencil).

2. There are a few sources for these and related estimates. See, for example, the National Coffee Board (NCB), *The National Coffee Plan of Ethiopia*, Addis Ababa, December 1969, p.2. See also Coffee and Tea Development and Marketing Authority (CTDMA), *The Role of Coffee in the Ethiopian Eeconomy*, publication No.7, June 1978, p.14. Coffee area estimates are also provided in the Ministry of Agriculture and Settlement, *Land Utilization and Crop Production: Report on Small-Scale Agricultural Sample Census 1976/1977 (1969 E.C.) — Volume I*, (Planning and Programming Department, Addis Ababa, June 1977), pp. 14, 15, 20-23. Note, however, that area estimates in these sources vary.

3. See Planning and Programming Unit (CTDMA), *Coffee and Tea Policy*, Addis Ababa, September 1977 (Draft).

4. See, for example, the Provisional Miltary Government of Socialist Ethiopia, *Programme of the National Democratic Revolution of Ethiopia*, Addis Ababa, 1976. The most important proclamations include Proclamation No.31 of 1975: "Public Ownership of Rural Lands Proclamation", and Proclamation No.71 of 1975: "A Proclamation to Provide for Organization and Consolidation of Peasant Associations."

5. See Proclamation No.134 of 1978: "Coffee and Tea Development and Marketing Authority Establishment Proclamation"; General Notice No.59 of 1978: "Ethiopian Coffee Marketing Corporation Establishment Regulations"; and Proclamation No.138 of 1978: "Cooperative Societies Proclamation".

6. The start of the implementation of the *Coffee Improvement Project* (with an estimated project cost of 32 million Birr), *The Coffee Processing Project* and *The Spraying Programmes Against Coffee Berry Diseases*, are all noted in the CTDMA, Publication No.7, op.cit., pp. 15-18. For details, copies of the projects and programmes themselves are available with the Planning and Programming Unit (CTDMA).

7. The price increases can be read from indices of the International Coffee Organization (ICO) indicator prices reproduced below:

ICO Indicator Price Indices for Coffee
1964-65 — 100

Coffee Year	Unwashed Arabicas	Composite Index (1968 Agreement)
1964-65	100	100
1970-71	110	117
1971-72	111	120
1972-73	149	150
1973-74	169	172
1974-75	174	168
1975-76	290	297
1976-77	642	626
1977-78*	464	456

*Covers first 11 months only.

Source: Planning and Programming Unit (CTDMA), *Coffee Statistics Handbook*.
Reports regarding the unusual price increases are contained in the well-known daily, *Complete Coffee Coverage*, by George Gordon Paton & Co. Inc. (182 Front Street, N.Y. 10038, New York).
Ethiopia exports mainly unwashed Arabicas. The composite index is computed for all coffee types taken as a whole, using the different coffee price quotations and a weighting formula provided for by the ICO in a 1968 agreement.

8. International Coffee Organization (ICO), *Ethiopia — Country Study No.29*, August 1967 (London).

9. National Coffee Board (NCB), "Cost Formations for Ethiopian Coffee", Addis Ababa, 1969 (Stencil).

10. Teketel H.Mariam, *The Production, Marketing and Economic Impact of Coffee in Ethiopia.* An unpublished Ph.D. Thesis, Stanford University, 1973.

11. Formerly called the National Coffee Board (NCB). See, for example, D.R.Kohli's note of 6 December 1976 on "Coffee Price Structure, November 1976 and December 1976" (Stencil).

12. One *feresula* is about 17 kg.

13. National Coffee Board (NCB), *Coffee Improvement Project*, Addis Ababa, September 1975.

14. At the present time detailed information for an exercise of this sort is not available. However, the problem is likely to ease if and when well-designed farm management studies are instituted on a permanent basis.

15. Planning and Programming Unit (CTDMA), *Producers' Prices of Coffee 1961-62 to 1976-77*, Addis Ababa, October 1977 (Typed).

16. A coffee year covers the period 1 October to 30 September.

17. See, for example, CTDMA, *Coffee Statistics Hand-Book*, 1961-62 to 1975-76, Addis Ababa, July 1977, Table E.8 on page 26.

18. Planning and Programming Unit (CTDMA), *Producers' Prices of Coffee 1961-62 to 1976-77*, op.cit., p.3.

19. See Asrat Teferra, "Seasonal Analysis of the Supply, Export and Prices for Ethiopian Green Coffee Beans — Research Paper No.1", National Coffee Board, May 1971 (Typed), pp.4-6, 13.

20. In 1976-77 coffee production was estimated at 193020 tons (see CTDMA, Publication No.7, op.cit.) and the number of coffee farmers were estimated by the CTDMA as 700,000 to one million. Given these figures and producers price for 1976-77 in Table 1, we compute coffee income for producers as 688.23 to 985.57 Birr per head per annum.

21. See International Coffee Organization (ICO), *International Coffee Agreement* 1976 (London).

22. Statistical notes, mission reports, discussion papers on coffee plans of member countries and the plans themselves were the important sources for the two publications cited. These final sources used in this study note some differences in the coverage of producers' shares between countries. For example, few countries are reported to include processing costs (which are estimated to be marginal for non-Colombia Milds) in the computation of producer prices. For most countries, the price and cost services are produced for some years only. Nothing else of significance is noted to prevent use of the income share indices for cross-country comparisons.

23. There are two possible measures (indicators) of Ethiopian coffee export prices. One, computed from coffee export value and volume figures, is reported in Table 1. Until recently Ethiopian coffee export taxation was based on the New York Price quotations for "Santos 4". Hence "The New York spot prices for Santos 4" constitute another measure (index) of Ethiopian coffee export prices. Using these two possible measures of Ethiopian coffee export prices and the producer prices (reported in Table 1), the following results are obtained:

   r_a = 0.970838 (t = 15.68397, df = 15)

   r_b = 0.637966 (t = 3.09982, df = 15)

   where r_a = Correlation coefficient between producer price (Birr per ton) and New York spot prices for "Santos 4" (US.c/lb). Note that the figures for 1977-78 are ICO indicator prices. Since August 1977 the government export taxes have been based on these indices (and not on price quotations for "Santos 4"). (See Legal Notice No.54 of 1977: "Surtax (Amendment) Regulations".) All these price lists are available in CTDMA, *Coffee Statistics Hand-Book* Addis Ababa.

r_b = Correlation coefficient between producer price and export price (also in Birr/ton) — both reported in Table 1.

df = Degrees of freedom (= No. of observations minus 2).

t = Computed t value (to test the null hypothesis that the population parameter ρ = O).

Both results are significantly different from zero (at the 0.01 level of significance).

24. Government tax receipts from coffee include land taxes, agricultural income taxes, and taxes and charges payable by middlemen, other traders, hullers, transporters, and exporters as well as coffee warehouse owners. Measures (or estimates) of tax receipts from total coffee activities (i.e. from all these sources) are unavailable. However, it is possible to estimate from value, price and volume figures for coffee exports and from coffee tax laws the levels of "coffee export taxes" in past years. Equation systems for computing these are already provided in Teshome Mulat, "The Revenue Effectiveness of the Ethiopian Coffee Export Taxation", Occasional Paper No.11, Department of Economics, Addis Ababa University, 1976 (Stencil). The following series are obtained by these means:

Coffee Year	Estimates of Coffee Export Tax Receipt (Birr/ton)	Coffee Year	Estimates of Coffee Export Tax Receipts (Birr/ton)
1961-62	272	1970-71	414
1962-63	264	1971-72	412
1963-64	378	1972-73	694
1964-65	391	1973-74	788
1965-66	355	1974-75	791
1966-67	319	1975-76	2017
1967-68	306	1976-77	6135
1968-69	314	1977-78	1454
1969-70	491		

These series and the coffee producer prices (in Table 1) are correlated. (The figures for 1976-77 and 1977-78 are from CTDMA sources.) The computed r=0.84740 (t=5.5766, df=15). The indications are that producer prices (i.e. what producers receive for their coffee) vary directly with coffee export taxation.

25. See ICO, *Guatemala: Part II — The Report of the Executive Director*, DF B 35/70(E), London, May 1970, p.2.
———, *Dominican Republic (Part II)*, DF B 34/70(E), June 1970, p.16.
———, *Ecuador (Part II)*, DF B 75/70(E), February 1971, p.20.
———, *Honduras: Part I — Summary of the National Coffee Plan*, DF B 66/70(E), October 1970, p.15.

26. See ICO, *Kenya (Part II)*, DF B 24/70(E), April 1970, pp.29-31.

27. ICO, *Venezuela (Part II)*, DF B 67/70(E), November 1970, p.16.

28. ICO, *Togo (Part II)*, DF B 50/70(E), August 1970, pp.18-19.

29. See, for example, ICO, *Burundi (Part I)*, DF B 77/70(E), March 1971, pp.3-17.
———, *Cameroon (Part II)*, DF B 76/70(E), March 1971, pp.22-23.
———, *Rwanda (Part II)*, DF B 55/70(E), August 1970, p.21.
———, *Madagascar (Part II)*, DF B 49/70(E), August 1970, pp.3, 20-21.

30. ICO, *Mexico (Part II)*, DF B 32/70(E), December 1970, pp.25-26.

31. ICO, *Costa Rica (Part II)*, DF B 31/70(E), April 1970, p.20.

32. ICO, *Uganda (Part II)*, DF B 78/70(E), April 1971, p.19.

33. ICO, *Tanzania (Part II)*, 82/71(E), April 1971, p.24.

34. ICO, *India (Part II)*, DF B 33/70(E), June 1970, pp.16-17.

35. Among the issues considered in the determination of minimum prices are international price levels, production and delivery costs, state policy, etc. Similar compulsory delivery schemes are also contemplated in the Indonesian coffee plan, ICO, *Indonesia (Part II)*, DF B 25/70(E), May 1970, p.22.

36. ICO, *Brazil (Part II)*, DF B 30/70(E), May 1970, pp.43-45.

37. ICO, *Ivory Coast (Part II)*, DF B 26/70(E), 1970, pp.18-19.

38. See Decree No.28 of 1957: "The National Coffee Board Decree", and Proclamation No.178 of 1961: "The National Coffee Board Proclamation".

39. See Decree No.44 of 1960: "Farm Workers' Cooperatives" and Proclamation No.138 of 1978: "Cooperative Societies Proclamation".

40. The National Coffee Board (NCB), *Coffee Improvement Project*, op.cit., Annex 6.

41. *Ibid.*

42. Proclamation No.134 of 1978: "Coffee and Tea Development and Marketing Authority Establishment Proclamation".

43. See General Notice No.57 of 1978: "Ethiopian Coffee Marketing Corporation Establishment Regulations".

44. Planning and Programming Unit (CTDMA), *Producer Prices of Coffee 1961-62 to 1976-77*, op.cit., p.3.

45. See Proclamation No.31 of 1975: "Public Ownership of Rural Lands Proclamation", and Proclamation No.71 of 1975: "A Proclamation to Provide for the Organization and Consolidation of Peasant Associations".

46. Proclamation No.138 of 1978: "Cooperative Societies Proclamation".

47. See Ministry of Agriculture and Settlement (EPID), *Cooperative Development Report* (Periodic). This particular information is reported in the daily, *The Ethiopian Herald*, Vol. XXXIV, No.923, Saturday, 9 September 1978.

48. See Planning and Programming Unit (CTDMA), "Production of Washed Coffee in Sidamo, 1977-78", September 1978, pp.2-3, 5.

49. See the regular reports on this matter by the Cooperative Department of Ministry of Agriculture and Settlement, EPID.

50. See, for example, G.S. Lombard, "An Interim Report on the Structure and Functioning of the Ethiopian Sun-dried Coffee Marketing System Based on a Study of Eight Selected Areas and a Sample of Coffee Exporters", Addis Ababa, 1976 (Stencil). See also CTDMA, "Table 7: Number of Coffee Market Functionaries by Type and Region" (Source: Tenker — Structure of Coffee Marketing in Ethiopia), D.R.K. atz 1-8-78. This source records a total of about 50,000 perennial and seasonal dealers and brokers in 7 coffee-growing regions of the country. No information is provided, however, on the coverage of these statistics.

51. The following results are computed from the data in Table 3:

Data	Zero - order Correlation Coefficient		
	r_{ps}	r_{pg}	r_{gs}
1965 Cross-Country data (n=19)	−0.5877 (2.9948)*	−0.5411 (2.6527)*	−0.3623 (1.602f)
1970 Cross-country data (n=19)	−0.5538 (2.7420)*	−0.4006 (1.8027)	−0.4135 (1.8724)
Pooled time series and cross-sectional 1965, 1970 (n=38)	−0.5926 (4.4137)*	−0.4798 (3.2812)*	−0.2152 (1.3219)
Pooled time series and cross-sectional 1962, 1965, 1970 (n=46)	−0.4887 (3.7157)*	−0.5894 (4.8398)*	−0.3604 (2.5626)*

Note: n = number of observations.

r_{ps} = correlation coefficient between producers' and services' shares.

r_{pg} = correlation coefficient between producers' shares and the share of government taxation.

r_{gs} = Correlation coefficient between the shares of government taxes and services.

* indicates significance at the 0.01 level. The figures in brackets are computed t statistics for the null hypothesis that the true population correlation (ρ) is zero.

52. To test whether or not the correlation coefficients remain stable as sample size changes, we compute (x/σ). See, for example, F.E. Croxton and D.J. Cowden, *Applied General Statistics*, London: Sir Isaac Pitman & Sons Ltd., 2nd Printing 1956, pp.724-725.

	Differences between:	Computed Values of (x/σ)		
		ps	pg	gs
(a)	Values of (r) for 1965 and 1970	−0.144	−0.518	−0.172
(b)	Values of (r) for 1965 and pooled (r) value (1962, 1965, 1970)	−0.481	−0.245	−0.008*
(c)	Values of (r) for 1970 and pooled (r) value (1962, 1965, 1970)	−0.308	−0.869	−0.215

* Difference not significant at the 0.01 level.

53. If we assume government tax shares (other than those receipts shown in footnote 24) to be trivial in the computations of relative shares, and taking the estimates reported in Table 1, the following distribution table can be constructed for Ethiopia:

Income Shares from Coffee Exports
(Percentage Distributions)

Coffee Year	Share of Producers	Share of "Services"	Government Tax shares
1961-62	61	23	16
1962-63	61	23	16
1963-64	62	21	17
1964-65	64	18	18
1965-66	66	17	17
1966-67	64	19	17
1967-68	67	17	16
1968-69	62	22	16
1969-70	68	12	20
1970-71	62	19	19
1971-72	64	17	19
1972-73	59	13	28
1973-74	63	8	29
1974-75	45	25	30
1975-76	66	3	32
1976-77	32	12	56

The following results are obtained using the data in the Table above:

r_{ps} = −0.10113 (t=0.38034) r_{gs} = −0.49669 (t=2.14125)
r_{pg} = −0.81305 (t=5.22528)*

54. See Legal Notice No.218 of 1959: "The National Coffee Board Regulations";
Legal Notice No.324 of 1966: "The National Coffee Board Regulations (Amendments)";
Legal Notice No.441 of 1973: "Coffee Board Regulations"; and for retained regulations in Proclamation No.134 of 1978: "Coffee and Tea Development and Marketing Authority Establishment Proclamation".

55. Why producers behave in this way is not adequately explained. However, it is known that the designated (or approved) markets are very close to the farms surveyed, and the farmers go there for routine transactions. It is also known that the taking of coffee to these markets does not involve significant additions to material costs. There is certainly delay and associated inconvenience in selling at local markets. Besides, farmers do not in general sell all their produce (or supplies) in one trip and to a single buyer with the result that all economic advantages associated with bulk sales are lost. Perhaps the differentials may represent such costs. But given the average productivity estimate of 193 to 276 kg. per farmer (see footnote 20), these differentials add up to a considerable loss to the farmers.