ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF ECONOMICS

AN ECONOMIC EVALUATION OF FOOD GRAIN MARKETING AND PRICING POLICIES IN ETHIOPIA

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN ECONOMIC DEVELOPMENT & PLANNING

BY
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JUNE 1986

ADDIS ABABA UNIVERSITY

School of Graduate Studies

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The thesis has been submitted for examination with my approval as a university advisor.

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A K N O W L E D G E M E N T

Many people have assisted me in the process of this study. Listing all the names is difficult, however a few deserve a word of special gratitude. First, I would like to thank Ato Dejene Aredo, whose valuable suggestion, comments and encouragement has facilitated my progress. I am highly indebted to Ato Solomon Haile Marian who has taken the pain of editing and printing the document. I am also grateful to W/t Guenet Tafere, W/t Etse Mariam Muluneh, Ato Melaku Kifle who have assisted me in typing and editing the document.

Special thanks also due to Mr. Robin Syres of ELCA who has assisted me in processing the data and Dr. Osby who has read the manuscript carefully and gave critical comments and invaluable suggestions which have improved the clarity of the presentation.

ABSTRACT

Food grain marketing and pricing system in the pre-revolution period were analysed in terms of functions performed, influence over function and power relations. Comprehensive analysis of Addis Ababa, food grain wholesale prices has also been made. The results confirm the monopolistic nature of the system than its competitiveness. The system was incapable of closing the seasonal and temporal gaps in production and consumption. It did not motivate producers through price incentives and market infrastructures.

Far reaching institutional changes in the national food grain marketing and pricing system have taken place after the 1974 revolution. The creation of parastatal agency, the Agricultural Marketing Corporation (AMC) increasing role of service cooperative and "kebele" societies in procurement and distribution of food grain are elements of the new system in food grain marketing. The private sector also operate in parallel with the State and mass organizations although it has been subjected to strict control. The elements of the new system have been analyzed by comparing outcomes with declared objectives particularily for the state sector. The results suggest that there are ample rooms for improvement in the operation of the system before it yields positive results on production.

How the new marketing system influence production at the farm level has been analyzed using farm household level data obtained from sample survey. The analysis and results from the data have shown that the supply of consumer goods and non farm inputs, credit, relative price of output to input costs, storage and

packaging at farm levels, the capacity to remove produce inorder to avoid congestion and prompt cash payment for producers upon grain delivery need improvement if the system has to create positive inducement on producers. Producers are also responsive to prices and marketing changes.

Based on the assumption of responsiveness of producers prices elasticity of output has been estimated. The elasticity framework has been combined with the Marshallian Economic surplus theory of the standard partial equilibruim to study the welfare effects of the prevailing pricing and marketing system. The results show that an increase in producers prices will increase domestic production. Besides increasing production, it also conserve the public financial resources (reduces subsidy), save foreign exchange and plods the agriculture sector at a pace faster than its moves today.

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1. INTRODUCTION

1.1 BACKGROUND AND JUSTIFICATION OF THE STUDY

National policies evolve in the contest of social and economic development. Further, every policy change involves by definition some gainers and some losers. Policy analysis, therefore, has a strong welfare focus. Food grain marketing and pricing policies which have evolved in the past decades in most countries of Sub-Saharan Africa have shown similar patterns though prompted by a variety of considerations.

The widespread practices have been government intervention in the pricing and marketing mechanism with a desire to stabilize prices for producers, a need to tax agriculture, to produce more revenue for development, a greater equality of income distribution among farmers as a whole and among regions of the country, a desire to promote socialist society and to curb or eliminate the exploitative middlemen or trader and determination to keep down the cost of living especially for urban consumers.[1]

[1] John C. de Wide, Agriculture, Marketing and Pricing In Sub-Saharan Africa, Los Angeles University of California, African Study Centre and African Studies Association, 1984, p.3.

There are enough evidence that these policy measures have had a great impact on output and producers income. Many countries failed to establish adequate commercial structure and rationally organized marketing system which could sustain high level of activities in marketing and local trade. They paid less attention to the potential offered by rural markets and even blocked their operations. There have also been imbalances in investment between food marketing and productive sectors.[@]

The overall effect of this development has reduced the subsistence sector food output, loosened the link between the traditional and modern sector, extroverted the demand structure which generate supply response in advanced countries of the west; thus accelerating the food dependency of the region. These have been reflected in per caput food output decline for the Sub-Sahara as a whole at the rate of 1.1 percent in 1970's while population grew at 3 percent and urbanization at 6-8 percent yearly.[@] The decline in food

[@] UN Economic Commission for Africa: "Situation and prospects of Domestic Trade in Africa. A preliminary Revies" (Brazzaville, memeographed) Oct.1985, p.2.

[@] See for example, Uma Lele " The Role of Risk in Agricultural led strategy in sub-saharan Africa" American Journal of Agricultural Economics, vol.66, no. 5, Dec., 1944. p.667; Christopher L. Delgado and John W. Mellor, "Structural view of Policy Issues in African Agricultural Development"; American

production growth of population, fast rate of urbanization and income growth have resulted in rising imports at the rate of 7.5 percent annually in 1960-82 period and by 15 percent annually since the mid 1970's.

Projection of the present trend of food imports to the year 2000 also shows that it will reach a level as high as 40 million tons with its major potential problems of supply transport and financing.[4]

In Sub-Saharan Africa today, imports already satisfy about one-third of food demand in terms of calorie needs. It is estimated that cereals account for 80 percent of imported food.[5]

1.1.1. TRENDS IN FOOD GRAIN SUPPLY IN ETHIOPIA

Ethiopia is not an exception to the general food supply problem in Sub-Saharan Africa. Cereals (i.e., Teff, wheat, barley, maize and sorghum) constitute the major proportion of the population diet. It is estimated that, in the country, out of the daily

Journal of Agricultural Economics, vol. 66, No.5, Dec., 1984, p.665; Hartmut Bradt, "Causes and Consequences of inadequate productivity and development in sub-saharan Africa" Economics vol.29, 1984 p.119-120.

[4] Christopher L. Delgado and John Mellor op.cit.

[5] Uma Lele, op.cit.

calorie requirement about 93 percent is from cereals, pulses and oilseeds of which cereals constituted 72 percent, pulses 14 percent and oilseeds 7 percent.[6] Cereal grains are important wage goods which account for 80 percent of low and middle income households expenditure.[7] Cereals also account for 60 percent of the gross value of agricultural production[8] and five of the major cereals alone account for 75 percent of the total cultivated land. Accordingly, Teff occupies nearly 22 percent of total cultivated land followed by barley 16 percent, sorghum with nearly 15 percent, maize 14 percent and wheat 8 percent.[9] In terms of employment over 80 percent of rural households mainly concentrate on cereal production.

The food production sub-sector has shown very poor performance over the past two decades. The total average cultivated land declined between 1971/72 -

[6] NRDC & CPSC Domestic Trade Sector; Ten-year Perespectice Plan (1976-1985) Amharic, memeographed. Addis Ababa, 1975, p.20

[7] J. W. Mellor, " Food Prospects for Developing Countries", American Economic Review, Vol.73 No. 2, May, 1983, p.239.

[8] The Office of the National Committee For Central Planning (ONCCP), National Accounts Division.

[9] Mesfin Wolde Mariam, Rural Vulnerability to Famine in Ethiopia (1958-1977), New Delhi: Vikas publishing house pvt. ltd. 1984 p.82

1973/74 and 1977/78 - 1981/82 by 29 percent.[10] The average annual growth rate by volume of production between 1969 - 1970 and 1977 - 79 was 0.4 percent and per caput output declined at the rate of -1.7 percent. The country's food self sufficiency ratio dropped from 99 percent in 1964 - 66 to 93 percent in 1978 - 80.[11] Food supply met 87 percent of calorie requirement in 1970 and 76 percent in 1979 - 81. Such figures for low income African countries South of the Sahara was 88 percent and that of middle income was 95.7 percent for the same period.[12] Thus, the country's level of food production and marketed supply are even the lowest by standard of low income Sub-Saharan Africa. Many factors have contributed to the decline in food production of which drought and external economic situation account for a substantial share. However, drought and adverse external economic conditions can be minimized or averted under wisely articulated domestic policies particularly with regards to food production. Food marketing system and pricing policy have a significant impact on motivating production. The marketing system, is

[10] Technical Committee Report to the NRDC & CPSC, Major Problems in Grain Production, Marketing and Distribution and Necessary Policy Measures to Alleviate them." (Amharic, memeographed) Addis Ababa: August 1975 E.C. Annex 2.

[11] World Bank Ethiopia: Recent Economic Development and Future Prospects, May, 1984, No. 4683 a.ET. Vol. I p.10

[12] Ibid.

therefore, one of the contributing factors to the low level of production of food grain which requires close examination in a search for solution to the food problem.

A grain marketing system includes all elements that influence directly or indirectly, the movement, transformation and price of grain, once it leaves the farm of origin. The functions in the marketing system directly influence production. The function in the system includes primary collection, transportations, handling, storage, grading and standardization, financing, information, institutions which facilitated the functions of the system i.e. wholesale and retail as well private, cooperative and state institutions, the national policy environment which influences the marketing system such as the process of price determination, method of procurement and movement of grain and distribution.[13]

Relevant grain marketing and pricing policies can be a vehicle to the transformation of traditional agriculture by encouraging research, inciting small holders to adopt its output and drawing them into the national economic system. The national food production plan with ultimate objective of food self-sufficiency cannot be attained

[13] Alex F. Mecalla and Andrew Schmitz, "Grain Marketing System: The case of United States versus Canada", American Journal of Agricultural Economics, Vol. 61, No.2, May, 1979 p.200

without corresponding effective marketing and pricing policies. National plan aiming at food grain production expansion necessarily envisages investment in food grain sub sector and retaining resources in agricultural as well as creating favorable condition for efficient utilization of existing resources in the sector.

Extracting resources from agriculture using indirect mechanism and compulsory deliveries which are widely used in many developing countries may have negative impacts on development of agriculture and food supply. More serious, the food production problem is when the extracted surplus has not been used for the development of other productive sectors but to maintain unproductive parasatal created to undertake agricultural marketing. For example the complex parasitical agricultural marketing institution in Tanzania, Zambia, Ghana have incurred heavy financial losses which may amount to twice the recurrent budget for agriculture in their respective countries.[14] The parastatals pay low prices to producers, fixed by the government each year. The prices are neither related to term of trade nor to export and import parity prices. Such polices could have been effective if producers are irresponsive too to prices. But severalll empirical studies in developing

[14] See for example: John C. De Wilde, op.cit France Ellis "Agricultural Marketing and Peasant State transfer in Tanzania" The Journal of peasant studies, vol 10, No.4 July 1983, p.214

countries have confirmed that small holders are sensitive to prices and they are not willing to commit resources including their own labor unless they see some improvement in their welfare from the returns. While adequate incentives at the farm level will not guarantee that that all farmers will make the additional efforts needed to increase production, their absence will certainly mean that such efforts are unlikely to be made. Thus, a firm knowledge of producers response to various marketing arrangement will be imperative before designing food grain marketing and pricing policies.[15]

1.1.2. SALIENT FEATURES OF FOOD GRAIN MARKETING AND PRICING POLICIES

1.1.2.1 MAIN FEATURES OF FOOD GRAIN MARKETING SYSTEM IN THE PRE-REVOLUTION (1968/69 -1976/77

It has been indicated elsewhere that a national policy is the result of economic and social development. Prior to the revolution, the economic system was based on private ownership of the means of production and food grain marketing; and pricing policies were primarily based on this foundation. The marketing system was

[15] J.C. Abbott, "Marketing issues in Agricultural Development Planning, in Red Moyer and Stanley C. Hollander (eds.) Markets and Marketing in Developing Economies, Nobleton, Ontario: Richard Dirwin, inc; Home-wood, illinois Irwin-dresay, 1968, pp. 95-96.

mainly operated by the private sector. The system had a hierarchial structure with numerous intermediaries. Prices were determined by big merchants higher up in the marketing hierarchy on the basis of their subjective assessement of the level of supply and demand. Nonetheless, there were a few government institutions which were created to regulate, stabilize and introduce the system of standardization in the grain marketing systems.

Inspite of the existence of government institutions and regulations, the mass of illiterate producers were not protected against large number of small independent buying enterprises which on the face seemed perfect competition. Systematic market news service, advisory programs for producers and handlers on the choice of varieties, time of harvesting and selling, method of storage, organization and construction of supplementary marketing facilities, strict control of quality standards and sales practices and the training of operational marketing personnel were lucking.

1.1.2.2. CHANGES IN THE FOOD GRAIN MARKETING AND PRICING SYSTEMS IN THE POST-REVOLUTION

The Ethiopian revolution has brought about far reaching institutional transformation in all sectors of the economy. The major landmark in the institutional changes has been the rural land reform. The reform had profound economic and social dimensions. It had radically altered the fabrics of rural society by abolishing the power of the landlords and local government officials and creating self governing entities in the form of peasant associations.

The equitable distribution of land among peasants has created a favorable climate for development. The organization of peasants into peasant associations has created broader mass participation in rural development issues. The literacy campaign has increased the awareness of the possibilities for the rural poor for improving their standard of living. These measures would have created an inciting framework for expansion of food production and marketability. The measures were also aimed at unleashing the latent potentials and capabilities of the peasantry. However, the recent record of food production has not been satisfactory as

indicated elsewhere.

Far reaching changes were also brought about in the marketing and distribution of food grain since the revolution. The changes in this sub-sector were primarily based on the Declaration of Economic Policy of February 7, 1975.[16] In order to realize the Government's objective in the grain marketing field, the Agricultural Marketing Corporation (AMC) was established by Proclamation no. 105 of 1976 to intervene on the market. The principal objective of the corporation had been to execute the government's policy in the field of grain marketing procurement and distribution of inputs and maintain national grain reserve.[17] The government policy as indicated in the declaration of economic policy, is to stabilize price for basic consumption items and protect the e interest of the masses. Since grain is basic consumption items, the objective of AMC, necessarily becomes to stabilize the price of food grain and protect the interest of producers and consumers. The Corporation has also been entrusted with distribution of inputs and maintenance of f national grain reserve. Based on the government's grain marketing and pricing policies,

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[16] Government of Ethiopia, Declaration of Economic Policy of Socialist Ethiopia, Addis Ababa: Berhanena Selaam Printing Press, Feb.1975, p.5.

[17] Negarit Gazetta, Agricultural Marketing Establishment Proclamation, proclamation no. 105 of 1976.

the corporation objectives, therefore come close to the following:-

a) closely relate the seasonal and geographical price variation to costs and stabilize prices between years.

b) assure timely and efficient supply of inputs and to remove produce in such a way as to avoid congestion and give good service to farmers.

c) decrease marketing margin between the producers and wholesale level and thereby improve producers price and incentives.

d) promote sound marketing practices including proper weighing, grading and stock management.

e) maintain national grain reserve.[18]

With regards to manufactured goods the Ethiopian Domestic Distribution Corporation (EDDC) was established by legal notice no. 13 of 1975 to procure and distribute both domestically produced and imported manufactures to state and cooperative shops.[19]

Rural service cooperatives(RSC) were organized to market the products of their members and also to

...

[18] Since AMC's objectives have not been clearly stated in official documents a synthesit of the statments regarding AMC's objectives in various documents has been made by the researcher. See, for example, Negarit Gazeta op.cit. Ministry of Domestic Trade, Grain Procurement Guidline (trans) Addis Ababa, 1972 E.C. memeographed, World Bank "Appraisal Report on grain storage and marketing project, Agricultural Marketing Corporation (Addis Ababa,1977) memeographed. Annex 3, p.1.

[19] Negait Gazeta, Ethiopian Domestic Distribution Corporation (EDDC) establishment, Legal Notice No. 13 of 1975.

distribute inputs (of the 742 RSC, 313 RSC in Shoa, Arssi, Sidamo, Wollo and Harrarghe regions have taken inputs distribution responsibility since 1981/82) and manufactures to their members. Kebele shops were organized to provide grain and basic manufactured goods to urban dwellers.

The government and cooperative institutions, however, have not replaced the private sector. Private traders in food grain and manufactures continue to operate with various forms of restriction n imposed upon them. In the case of food grains, AMC has taken over the responsibility of supplying six urban areas (Addis Ababa, Harar, Diredawa, Makele, Asmara, Assab) government institutions and interregional movement. Moreover, AMC's procurement price remained fixed at low level since 1980/81 for most of the food grains, and it is increasingly diverging from the rising parallel market prices (see annex II). In short, the development of AMC in to monopolistic parastatal institution in grain marketing, introduction of compulsory quota delivery system, restriction of the operation of private merchants, pan-territorial and seasonally invariant pricing system and increasing role of service cooperatives in bulking grain for AMC have become opperational policies in food grain marketing. The existing marketing arrangement and AMC's low procurement

price may have impact on production. Low output price might have led to lesser adoption of inputs such as fertilizer which might have led to decline in production and market supply. Restriction of grain movement by private operators and blockad of rural markets may have discouraged producers and minimized the effort to increase production, low grain prices may have encouraged increased on farm consumption. Thus, the evaluation of the present grain marketing and pricing system and assessment of its impact on the level of output and producers' income is in order.

1.2. STATEMENT OF THE PROBLEM

The food grain marketing system was primarily operated by private sector in the pre-revolution period. Though there were government institution established to regulate the market and stabilize prices, they were not effective due to lack of finance and government commitment. Food grain production had not kept pace with growing population and food grain prices were raising. The demand of consumers had not been effectively communicated to the producer through the marketing system.

In the post-revolution period, far reaching institutional transformation has been made through rural

land reform. The marketing and distribution of food grain and manufactures were also transformed institutionally. However, food production and marketability has not increased. Instead, there has been acceleration in the rate of decline of grain production and a sharp rise in prices.

The distributive network for manufactured goods and inputs and marketing of rural products may have not been at remunerative prices. It has been advanced further, that investment in research in Ethiopia will yield a return as high as 40 percent provided there is some rationalization of input costs and output prices.[20] No less evident is also the fact that the adoption and diffusion of existing technological packages have been constrained by low output prices in relation to import costs.[21] Available literature on the subject also indicate that with out appropriate incentive system agricultural producers will not be willing to adopt modern inputs and engage themselves in effective agricultural activity.

Leaving asside the effect of drought and external

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[20] Tenassie Nicola "Social Returns of Investment in Agricultural Research unpublished M.Sc. thesis, Addis Ababa, Oct, 1985.

[21] Itana Ayana, An analysis of factors affecting the adoption and diffusion patterns of packages of agricultural technologies in subsistence agriculture. A case study in two extension districts of Ethiopia (unpublished M.Sc. thesis, Addis Ababa Oct., 1985).

factors,it can be hypothesized that institutional changes in the marketing system has not brought about functional changes which motivate producers to increase production, producer's are responsive to prices and they do not commit resources including their own labor unless the returns out-weigh the costs. The present arrangement, besides affecting producers incentives also affect the urban poor and public financial resources. The problem is therefore to determine the relationship between sustained food shortage and marketing and pricing policies, producers response to the marketing and pricing arrangement, whether institutional changes have brought about changes in power relation.

1.3. THE SPECIFIC OBJECTIVES OF THE STUDY

The paper first of all aims at examining whether institutional changes in the marketing system have brought about functional changes and power relations among the participants, estimating producers response in incentives and to determin the extent to which the present marketing and pricing arrangements have contributed to food shortages. In particular:-

a) to analyze the temporal price behavior since 1968/69 in order to show the development of food grain supply and demand relationship overtime.

b) to evaluate the effectiveness of AMC in carrying out

its objectives, i.e:-

- to evaluate whether AMC has closely related the seasonal and geographical price variations to costs and has succeeded in stabilizing prices
- to assess whether AMC has been able to assure timely and efficient supply of inputs and has managed to remove produce, avoided congestion and has given good service to farmers
- to assess if AMC has decreased marketing margin between producers and wholesalers level and has there by improved producers prices and incentives.

c) to estimate output elasticity of marketable surplus, price elasticity of output and price elasticity of marketable surplus in order to determine the producers response to the existing pricing and marketing arrangements.

d) to estimate the impact of the recent food grain marketing and pricing policies on

- volume of output
- income of producers

1.4. IMPORTANCE OF THE STUDY

Three factors, among other things, make this study significant. Firstly, expansion of food production and increasing marketability requires substantial investment in rural areas. This necessitates retaining resources in agriculture and inducing its efficient utilization. Marketing and pricing policies play an important role to retain resources in agriculture and motivate its efficient utilization. Secondly, food production in Ethiopia is unevenly distributed. Four of the fourteen administrative regions i.e. Shoa, Gojam, Gondar and Arssi alone produce 79 percent of the major food grains.

The attainment of egalitarian society to which socialist Ethiopia aspires could only be possible through efficient movement of marketable surplus from surplus to deficient regions. This requires a rationally organized marketing system which sustain a high level of activities in marketing of rural products at remunerative prices. Finally the attainment of food self sufficiency, conserving public financial resources and efficient grain marketing system calls for proper evaluation of the existing practice for proper articulation of the future process.

1.5. METHOD OF THE STUDY

1.5.1. DATA COLLECTION

The study has involved collection of data both from primary and secondary source.

Primary Data:- Data from primary sources, for this study has been collected through personal interviews of selected farm households on the basis of structured questioners prepared for this purpose (see annex III). The procedure involved both non probability and stratified two stage random sampling. First three woredas were selected purposefully. The selection of the woredas were on the bases of pre-determined criteria, such as accessibility to alternative market outlets, strength of service cooperatives, infrastructural and institutional factors as well as cropping patterns. Detailed description of the procedures has been made in chapter 5.

Data from secondary sources:- Monthly wholesale price of cereals under consideration for Addis Ababa were obtained from the National Bank of Ethiopia and the Office of the National Committee for Central Planning (ONCCP). The data cover the period 1968-1984. The initial period corresponds to the beginning of comprehensive rural development projects such as Chilalo Agricultural Development Unit (CADU), Wollamo Agricultural Development Unit (WADU) and the third five

year plan (TFYP) of the pre-revolution period with its emphasis on the development of agriculture. Moreover,

- data on retail prices of food grain in selected towns were obtained from Central Statistical Office (CSO).
- data on area cultivated, yield and production of each crop covering the period 1974/75 - 1983/84 by region were also obtained from Ministry of Agriculture and CSO publications.
- AMC's purchase price, selling price, margin, storage capacity, transport and manpower data have been obtained from the corporation's annual reports.
- average rainfall in 31 surplus producing Awrajas were obtained from National Meteorological service.
- import of wheat have been obtained from AMC and foreign trade statistics.

1.5.2. METHOD OF ANALYSIS

The systems approach has been applied to evaluate the effect of food grain marketing and pricing policy on food production and producers income. Accordingly the main function performed by the marketing system both in the pre and post-revolution period, and the subjects responsible for the functions were analyzed. The influence structure in the system and the interrelationship between the functions has been shown

to test the capacity of the system to motivate production and consumption.

The capacity of the system to bridge temporal and spatial gaps in supply and demand in the pre-revolution has been analyzed by using time series model.

Comprehensive analysis of price data has been made by decomposing the price series into trend(T) seasonal(S), cyclical(C) and irregular(I) components. Thus,

$$Y = TSCI \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$Y = T+S+C+I \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where,

Y= the observed price

T = trend component

S= seasonal component

C= cyclical component

I= irregular component

The multiplicative form of the first model implies that the component parts of the time series data are outcomes of inter-dependent factors although they may be due to different causes. The model can be transformed into additive form by log transformation. The additive form as presented in (2) above, however, assumes that the four components have no interaction and are independent of each other. The appropriate model for the analysis has been chosen after looking tat the

scatter diagram of the series. Accordingly, the multiplicative model has been selected.

The grain marketing system after the revolution has been analyzed on the basis of institutional functions. The effectiveness of AMC in attaining its desired objective has been evaluated by analyzing each objective with respect to the outcome of performance. Thus, whether AMC has been able to closely relate the seasonal and geographical price variation and attained price stability has been evaluated.

a) by comparing the difference between seasonal lows and seasonal highs prior to AMC and after its formation;

b) by comparing Addis Ababa parallel market prices and corresponding months prices in regional markets;

c) by specifying the model of interregional price variation to test for the integrity of the market. Thus, the following model has been specified:-

$$C_{vpt} = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3$$

where,

C_{vpt} = is the coefficient of interregional variation of retail prices of three food grains (teff,wheat,maize)

X_1 = is a dummy variable having a value of zero in years of free movement and value of one in years of restriction

X_{2i} = is the total supply of a given food grain

X_{3i} = is an index of concentration of a given food grain

b_0, b_1, b_2 and b_3 are parameters to be estimated

The three (teff,wheat and maize)food grains have been selected on the basis of data availability and their share in cereals output.

d) whether AMC has managed to decrease marketing margin between the producer and consumer level and has improved producers incentives has been assessed by using the share of producers in the final consumers Birr.

e) other market functionaries such as service cooperative and private traders have been discussed based on the role assigned to them and limitations imposed on them.

f) the influence structure in the marketing system and relationship between function after the reform has been demonstratedin order to examine changes in the power structure and function that have occurred as the result of the reform.

Producers response to various marketing elements and price policies have been analyzed using percentage and ratios. Output elasticity of market supply has been

estimated by specifying the following model.

$MS = a_0 + a_1X_1 + a_2X_2 + a_3X_3$

where,

MS = marketed quantity of teff, wheat and barley

X_1 = output of the three cereals

X_2 = income of the household from other sources

X_3 = family size

a_0 , a_1 , a_2 and a_3 are parameters to be estimated

Price elasticity of output has been specified by the following Nerlovian Model:-

$A_t = f(A_{t-1} , P_{t-1} , W_t , Z_t)$ where,

A_t = area allocated to each of the food grains in hectares

A_{t-1} = area allocation lagged by one year

P_{t-1} = deflated wholesale price index of food grains

W_t = rainfall

Z_t = is institutional dummy with 0 before land reform and '1' after land reform

Description of the model has been made in chapter 5. Price elasticities of marketed supply has been estimated by multiplying output elasticity of market supply and price elasticity of output.

The impact of the recent food grain marketing and pricing policies on volume of output and producers

income has been estimated by combining the elasticity framework with the Marshallian economic surplus theory of standard partial equilibrium.

The basic analytical structure of the model has been given in the following formulae:-

Net income loss in production (NELP)=1/2(Q_b - Q_d)(P_b - P_d)

$$= 1/2\ t_p^e\ n_s\ V$$

Gain or loss of producers income (PI) = Q_d (P_b -P_d) -NELP

where,

Q_b = production at border price

Q_d = production at domestic price

V = value of production at domestic price

P_b = border price

n_s = elasticity of domestic supply

t = proportion of tariff in the domestic price at producer level

A slightly modified version of the model has been applied as shown in chapter 5 and results were obtained.

1.6. SCOPE AND LIMITATION OF THE STUDY

The study is limited to the impact of policy on

private producers and production. It does not cover producers cooperative and state farms. Producers' cooperatives are paid 5 Birr more per quintal for the same type and quality grain than private producers. The state farms are paid 17 Birr more (see annex II.2 and II.3) for the same type or even less quality grain than private holders. Producers cooperatives buy fertilizer (DAP) at 10 Birr less than private holders. Thus, the policy may have different results on the three groups. Therefore, it is justifiable to evaluate the impact of policy on private producers separately from the above two types of producers.

The study also covers only whole grain, processed grain is not included in the analysis. It is also left out purposely for most of the food grain is presented to consumers in whole form and processing is largely done by consuming households. Secondly, the study concentrates much on the impact of policy on production than on consumption.

Five cereals grains,(teff, wheat, barley, maize and sorghum) were studied because they account for a significant proportion of food supply and cultivated land area.

In evaluating the effect of policy on interregional price dispersion barley and sorghum were not considered because of lack of disaggregated data.

In the case studies also, only teff, wheat and barley were covered because sorghum and maize do not grow in the sample areas.

Analysis of the price series for the five cereals have been based on Addis Ababa wholesale price data. In the absence of national monthly average wholesale price series Addis Ababa has been taken as a proxy measure on the basis of the road network which connects it to the supplying regions and relatively liberalized nature of the market. However, the national food grain seasonal and regional price movement may be underststated because Addis Ababa is a central market with necessary facilities such as, storage, finance and transport to arbitrage the seasonal and temporal dimension of food supply. The joining of data from two sources, National Bank of Ethiopia (NBE) and the Ethiopian Grain Agency (EGA) may led to measurement errors, since the two use different method of data collection.

Estimation of the price elasticity of output for food grain has been based on Nerlovian Adaptive Expectation model. In this model, the lagged values of the dependent variable Y with random disturbances will give OLS estimators which are consistent, though baised. The combination of the two problems, however, throws OLS

off-beam and gives inconsistent estimators.[**] Thus, the estimators obtained from such models though unbiased are not efficient.

The partial equilibrium model of Marshallian economic surplus employed to ananyze the impact of policy on production and producers income also neglects cross substitution effects in production and consumption particularly for the household firm. Inspite of such limitation the model is widely applied in policy analysis.

1.7 ORGANIZATION OF THE PAPER

Folowing the introductory chapter a review of the relevant literature has been made. The conflicting views surrounding the grain marketing and pricing policies and the recent conceptualization of the problems have been discolsed. Chapter 3 of the paper looks into the organization, function of the marketing system and price behaviors in the pre-reform period. It also examines the influence structure and power relation during the transfer of title of ownership which is reflected in the process of price determination. The Fourth chapter deals with the changes in the food grain marketing system after the reform. It deals with the

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[**] J. Johnston, Econometric Methods (2nd ed.),New York: McGraw-Hill, 1982, p.307-309.

major changes in marketing and pricing of food grain and whether the reform has brought about functional changes and changes in the power relation in price determination. the output elasticity of marketable surplus, price elasticity of output and the elements that influence producers allocative behavior has been analyzed in the chapter five and the results have been employed in determining the impact of policy on production and producer's income. Chapter 6 presents the conclusions of the evaluation with recommendations.

2. LITRATURE REVIEW AND CONCEPTUAL FRAMEWORK OF ANALYSIS

Within the framework of neoclassical economic thought, marketing has been regarded as a technical system with the aid of which profits are maximized. It emphasizes the sale theory of marketing and is supplemented by analysis of supply and demand in product and factor markets.[23]

Marketing, however, is not just a technical system but a social network of elements which are concerned with corresponding exchange (transaction) of information, property rights, goods and units of value; and to this end undertake spatial and temporal transformation of goods,[24] and create a number of utilities such as place, time possession and form of utilities.

In developing countries, with respect to agricultural marketing, the aim of analysis is not cost minimization or profit maximization but to become acquainted with the systems in the context of their interdependence and effects in order to be able to influence them consciously to achieve social objectives. Marketing is also essentially concerned with the exchange of right of ownership and extension with the future disposition of

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[23] Gunter Lorenze, "Marketing and Agricultural Development", Economics , vol.8,1978,p.12.

[24] Ibid., p.15.

assets. The extent of these rights which is concentrated in the hands of individuals and groups is an important determinant of the power to stipulate terms of exchange or terms of value; eg. the price of goods and services.[25]

The form of marketing system depends largely on the national policies and economic structure of the country concerned, including the socio-economic structure of agriculture, landlord tenant relationship. These vary between the extremes of central socialist direction and near laissez-faire. Nevertheless, the need for conscious consideration and clear decision is there.[26]

2.1 MARKETING AND PRICING ISSUES IN AGRICULTURAL DEVELOPMENT

Marketing has been generally considered as an adjunct to the production process. It has been assumed as an adoptive set of activities to be given secondary consideration in development planning strategies with primary consideration being directed towards the expansion of agricultural production.[27] However,

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[25] Ibid. p. 14.

[26] J.C. Abbott, op.cit., p.91.

[27] See for example Frank Ellis, "Agricultural Marketing and Peasant State transfer in Tanzania ", The Journal of Peasant studies, vol. 10, Number 4, July 1983, pp. 214-242; Uma Lele, The Working of Grain Markets in Selected States of India, Cornell University,

there has been growing awareness that short comings in the marketing system can seriously delay development process and may, in fact, substantially nullify investment on other sectors of the economy.[88] There are enough evidence of cases when difficulties of marketing products discouraged producers from using assistances in improving their cultivation practices and even retreat from producing for the market.[89]

Besides outlets for their produce, access to consumer goods also play an incentive role in increasing production and productivity. Abbott observed that, in West Africa access to corrugated iron and cement for better housing has been important incentive in production for marketing. Access on favourable terms to supplies of fertilizer, insecticides and improved seeds is also of particularly importance to agricultural

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Occasional Paper No. 12, December 1968, p. 27, Harold M.Keley and Micheal T. Weber, Marketing in Developing Countries, Working paper no 6, Department of Agricultural Economics, Michigan State University, East Lansing, Michagan 1979, p. 2.

[88] Herbert C. Kruesek and others, Agricultural Marketing in Tanzania: Background Research and policy proposal, June 1970 p. 6.

[89] See for example H.H. Louwes, FAO "Organization of Markets and Marketing: Proceedings in Land Reform and Development Program", paper presented to the Mediteranean Social Science Research Council General Assembly, Cairo,1962. J.C. Abbott and J.P. Makelian, Agricultural Economics and Marketing in the Tropics, Wing Tai Chung Printing Company Ltd., 1979,p.38.

development.[30]

The marketing system communicates the demand of consumers to producers through the language of prices. Unless farmers have confidence that price will bear some minimum relationship to costs, they will hesitate before incurring additional work or expense to increase their output or raise its quality. [31] On the basis of prevailing prices, individual farmers are made aware how they should allocate their scarce resources so as to realize the greatest return. Likewise, consumers allocate their income on the basis of prices confronting them so as to maximize satisfaction. Clearly the marketing system must be considered as serving both production and coordinating role.[32] Irrespective of the economic system and the process of their determination, prices have a powerful influence on any country's rate and pattern of development.[33] Experience in Socialist Agriculture have now a days show that production generally reacts proportionally to changes in relative prices. In these economies there is

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[30] J.C. Abott, Op.cit. p. 103.

[31] Ibid. p. 99.

[32] Herbert C. Kriesel, Op.cit. p. 11.

[33] World Bank, "Pricing Policy" Chapter 3 in Investing in Development : Lesson of World Bank Expriance, World Bank, Washington D.C. 1985 (unpublished gally)

increasing belief that without the complete utilization of prices, it is impossible to secure the balance of production and consumption plans and to select the most economic variants.[34] It is a well established fact that it is primarily by means of incentives prices of products grown or to be grown in the largest volume that the government can create a material motivation for realizing the objectives of its production policy.[35] Prices are therefore an important instrument for coordination of plans and to eliminate scarcity or chronic glut of product on the market not only by expanding or curtailing their production but also by improving their quality.[36]

In poor countries, the public pricing policy must embody at least three dimensions; efficiency, equity, and revenue generation. Public policy aimed at pricing and marketing control therefore, require some carefully designed intervention to achieve the various objectives of development.[37]

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35 V.Volkonskie, "On principles of price formation" Problems of Economics, vol. XX, No. 5, September 1977.

[35] Bela Csikos Nagy, Socialist Price Theory and Policy (Budapest: Akademia Riado 1975) p. 23.

[36] Ibid. p. 30.

[37] World Bank Op.cit.

2.2 Aims of Market Controls

Market controls are aimed to establish specific limits on its outcomes and to influence the direction and purpose of the market activities. Market controls are not ends in themselves but are intended to facilitate the accomplishment of basic development goals, stimulating domestic production and consumption conserving foreign exchange and improving human welfare.

Irrespective of the form of government or property relation, rapid development of poor countries require some centralized administration of primary investment decision and basic subsistence supplies."[38]

- Centralizing some key marketing function or activities in state agency for control purposes,
- Establishing state enterprises to compete with private firms, or among themselves, and
- Supervising and regulating private marketing activities directly and some of the principal methods used separately or in combination in order to attain control objectives."[39]

Changes in the marketing system during the socio-economic development process are usually prompted

[38] Lee E. Preston, "Marketing Control in Developing Economies", Journal of Development Studies, 1967 - 68, vol.4.

39 Ibid. p. 491.

by the need for guided improvement of product and factor markets in the agricultural sector.[40] The free play of market forces in developing countries did not yield desirable results, and H.Myint while elaborating on this point states that "in practice the free play of economic forces in backward countries has resulted, not in division of labour according to individual abilities but in a division of labour according to stratified groups".[41] In poor agrarian countries food grain market controls is widespread because it is a critical element in their development. It bears upon the rate and structure of economic growth, the rate of inflation poverty and nutrition, the trade balance and government fiscal position.[42] The government of many poor countries have taken the responsibility to assure a regular flow of food staffs at reasonable prices to the urban population and other food deficit areas.

Almost all countries have attempted to accomplish this task by creating crop-specific or cereals parastals at the national and regional levels. In some

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[40] Gunter Lorenze;op.cit. p.2.

[41] H.Myint, "An interpretation of Economic Backwardness", in A.N. Agrawal S.P. Sing(ed), The Economies of Underdevelopment, London, Oxford, New York, 1968. p. 129.

[42] Mahidnddin Mahammed, "Development Strategy and Problem of Food Supply in Bangladesh", Bangladesh Development Studies, vol. 8, 1980, p. 71.

African countries governments have endeavoured set-up complete cooperative marketing system by administrative means. The new cooperatives were made sole monopoly agents and were made responsible to marketing boards' purchases and distribution of credit and fertilizer.[43] However cooperatives are said to be efficient if they are able to operate at a lower cost, or provide a better service at the same cost or just a slightly higher cost or even if they provide the same service at the same cost.[44]

In socialist oriented countries, the state take over of food grain marketing and the trade sector in general is stimulated by the belief that since trading is the simple matter its nationalization can provide and easy and rich source of development finance.[45] In many poor African countries (Guninea, Tanzania, Ethiopia) a state trading system inevitably involved greater centralization of decision making and large-scale, more complex organization. It, therefore, demanded more technical and managerial skills at least of kind

[43] Ibid.

[44] Ibid.

[45] Elliot J.Berg, "Socialist Ideology and Marketing Policy in Africa", in Reed Moyer and Stanley C.Hollander(ed), Markets and Marketing in Developing Economies, Ontario: Homewood, Illinois Irwin Dorsey, Limited, Nobleton, 1968, p. 25.

requiring formal training. To rationalize the trading structure, bigger inevntories, more and better warehousing facilities and more elaborate accounting procedure are required. More capital will thus, be required in the distribution sector. This has led to change in factor mix in trade, i.e., from labour intensive to capital intensive. This structure does not correspond to the level of production, i.e., highly centralized and complex marketing system with highly scattered small quantity of supply. The quantity supplied each time from each market does not correspond to the capacity created to absorb it. This results in underutilization of capacity and very high cost of marketing. High costs of marketing means lower price to producers which lowers efficiency in resource use.

2.3 Country Case Studies and Project Experience on the Impact of Marketing and Pricing Policy on Production and Producers Income

Positive and negative effects of marketing and pricing policies on food grain production have been recorded in country case studies and project experience.

In Kenya, the National Cereal and Produce Board (NCPB) is the sole agency authorized to import and

export maize and purchase maize from farmers at designated depots or buying centres at price set each year by the Ministry of Agriculture with the approval of the cabinet.[46] The board uses import parity prices which is attractive to farmers. It was found out that from 1966-1981 period the area planted to maize moved roughly in line with prices. In 1978 and 1979 the area planted decreased significantly because the NCPB curtailed purchase at official market price.[47] All in all Kenya used its marketing and pricing policy to create incentive for increasing agricultural production and meet its development goal of promoting small holders production.[48]

In Tanzania, the complex system of price policy and organization of the market institution discouraged agricultural production. Prices are set for a large number of goods which increased from 400 in 1972 to 3,000 in 1976. At farm level, prices are fixed annually for all "Scheduled" crops which may be marketed through parastatal agencies.[49] The parastatal agencies are organized into crop parastatal authorities, regional and

[46] John C.De.Wilde, op.cit.,pp.15-17.

[47] Ibid. p. 19.

[48] Catty L.Jabara, "Agricultural Pricing Policy in Kenya", World Development, vol. 13, nos. May 1985, pp. 623-24.

[49] John C.de.Wilde, op.cit. p. 34.

district corporations. Their contact points are the nuclear villages. Crop prices are neither related to terms of trade nor to import and export parities. Price policy aims at keeping consumer prices at lower level. The increasing cost of crop parastatals reduced the price paid to the farmers and the increased losses led to delayed payments to producers. This has led to decreased production and inevitability to the establishment of parallel markets for food staffs such as maize and rice.[50] The financial losses of agricultural parastatals in 1980/81 amounted to twice the recurrent budget for agriculture.[51] These losses are subsidized by the government, thus, leading to heavy drain on the budget which makes impossible to provide service like extension, research, rural infrastructure which increase the production capacity of the rural population.

In Zambia, the government fixes procurement prices for major food crops such as maize. The prices are pan-territorial and for all seasons. Maintenance of uniform buying prices throughout the entire marketing

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[50] See for example John C.de.Wilde, op.cit, pp. 33-34, Frank Ellis, "Agricultural Price Policy in Tanzania", World Development, vol. 10, no. 4, April 1982, pp. 263-283, Frank Ellis, op.cit.

[51] Kevin M.Cleaver, "The Impact of Price and Exchange Rate Policies on Agriculture in Sub-Saharan Africa", World Bank Staff Working Paper, no. 729, Washington D.C., 1985, p. 4.

year made it unprofitable to store crops on the farm and encouraged a tendency by farmers to sell immediately after the harvest, thus, over-taxing the buying, transport and storage facilities of the National Agricultural Marketing Board (NAMB). The NAMB has a monopoly power with respect to maize and is responsible for interprovincial trade as well as the import of maize and fertilizer while the Provincial Cooperative Union (PCU) are responsible for provincial trade at provincial level.[32]

Uniform pricing resulted in inefficient allocation of resources. In some areas remote from the principal centre of consumption, it encouraged the production of maize, which is bulky and costly to transport at the expense of cotton and groundnuts for which transport costs are relatively low.[33] The pricing system is not based on import - export parity price but mainly aimed at keeping down consumer prices. The government subsidized consumers and also producers through low fertilizer prices. The subsidy and inefficiency of parastatal led to heavy pressure on the government budget. It was estimated that in 1979 subsidies to parastatal are several times the Ministry of

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[32] John C.de.Wilde, op.cit, p. 67.

[33] Ibid.

Agricultures' recurrent budget.[54] This has led to inflationary pressure, decline in real value of crops and disincentive to production. The drain on the government budget also limited its capacity to provide most needed service in agriculture thus leading to stagnation.

Other countries such as Ivory Cost, Malawi and Cameroon achieved a satisfactory increase in agricultural productivity through positive marketing and pricing policies while countries like Nigeria, Ghana and Upper Volta have failed by adopting and obscured system of indirectly taxing agriculture, allocating a comparatively small proportion of budget to the agricultural sector and imposed severe restriction on agricultural buying and selling markets.[55]

A review of 27 agricultural projects undertaken by the World Bank also underscores the overriding importance of producers prices in affecting production outcome. It indicate that seven out of nine projects implemented under favourable prices achieved or surpassed their production objectives; 13 out of 18 under unfavourable price failed to do so.[56]

54 Kevin M.cleaver, op.cit.

55 Hurtmut Brandt, op.cit., p.121.

56 World Bank, Accelerated Development in Sub-Saharan Africa, An Agenda for Action, Washington D.C. IBRD, 1981, p.55.

2.4 Conceptual framework for evaluation food grain marketing and pricing policies

Many governments in developing countries have used agricultural marketing and pricing policies extensively in their development effort pursuing different goals with a variety of tools. It is widely agreed, however, that insufficient attention has been given to the effects of these policies.[97]

Evaluation of the policies with respect to their effects on food production and overall development objective is not possible within the framework of the traditional approach to agricultural marketing. The traditional approach uses descriptive and diagonistic assessment to test whether the grain marketing system can fulfill the textbook theoretical structures of free competition.

Descriptive studies have been conducted by geographers which can increase our understanding of the operation of the rural markets but such studies do not focus on major policy issues in marketing and pricing.

Broader diagnostic assessment of food system organization in developing countries have provided input to policy and programs but the major problem with the research framework is a lack of concern for the dynamic impact which marketing service can have both on

[97] John C.de.Wilde, op.cit, p.34.

production and consumption. The static focus of the research has been on whether price and cost relationship over space and time behave as predicted by the perfectly competitive model.[58]

Assessment of policy on the level of output and consumption requires extensive data on the level of production, marketable surplus, prices, institutional arrangements, marketing channels, margin, etc. However, in a relatively liberalized market monthly wholesale data combined with information on the channels of distribution and collection could give some indication of the impact of policy on producers and consumers. Such time series data could be decomposed into its components i.e., trend (T), seasonal (S), cyclical (C) and irratic (I) to explain the impact of marketing and pricing on producers and other market participants.

Effects of cornering supplies on production and producers income through movement restriction which is widely applied in many African countries can also be evaluated by using the coefficient of interregional price variation due to policy effects.

The above methods, however, do not give us the net social loss or gain in production due to marketing and pricing policies. Such measure can only be obtained by using the concept of economic surplus.

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[58] See for example John C.de.Wilde, op.cit. pp. 33-34; Frank Ellis, op.cit, pp. 263-283

The concept of economic surplus is the basis of the Ricardian theory of economic rent, Marshallian theory of consumers surplus and is an important concept in welfare economics. It lies at the root also of the Marxian theory of surplus value.[55] It is a phenomenon necessarily associated with less than perfectly elastic demand and supply curves. The concept is particularly useful for measuring the welfare effect of deviation from an optimum.[56]

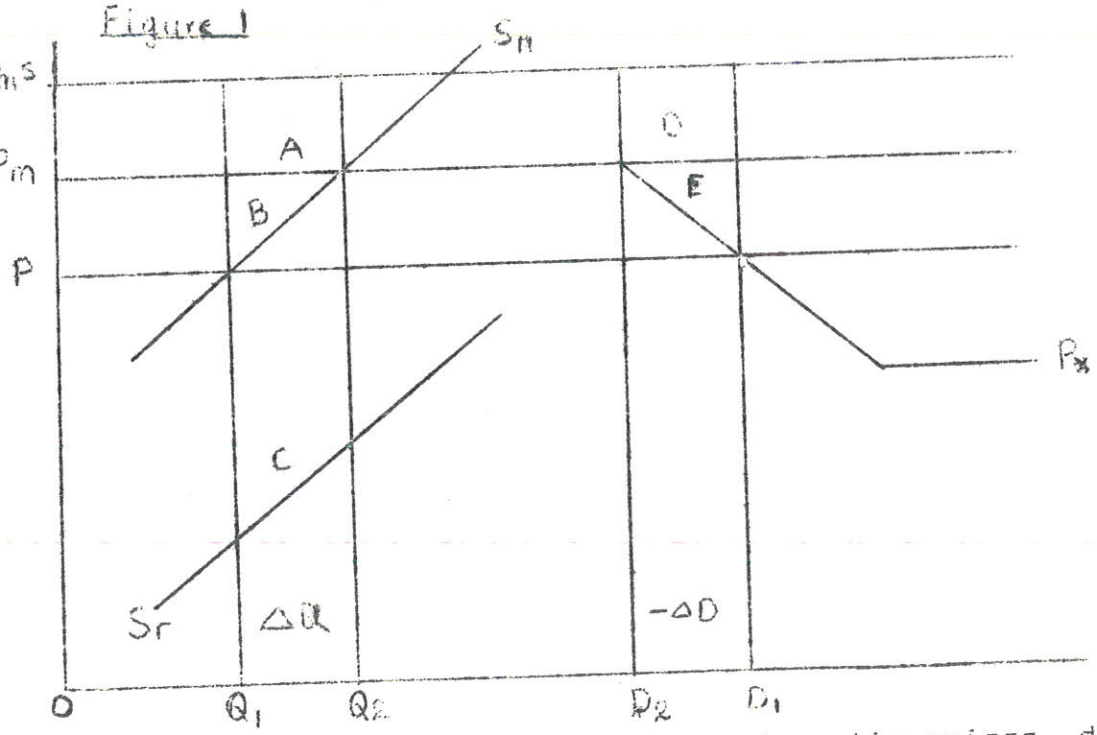
The effect of deviation from the optimum can be illustrated by using the following diagram. The diagram depicts that fixing prices at lower level than warranted by supply and demand discourages producers and a rise in domestic prices encourages the expansion of domestic production, decrease import and result in substantial improvement in the welfare of producers.

[55] Kevin M.cleaver, op.cit, p.4

[56] Helmers, F.L.C.H and Arnold C. Harberger, "Price Distortions in Market Economies and Critical Comments", Seminar paper no. 25, Economic Development Institute of the World Bank, Washington D.C. 1982, pp. 8-9.

The effects of increasing P to Pm

Figure 1



The gain from improving domestic prices depends on elasticity of domestic demand and supply.

It is assumed that a rise in price may not only attract new sellers, but may also encourage each individual seller to sell more. Similarly prices fixed on adhoc basis at an artificially low level will create dis-incentive effect on producers which result in less than optimal allocation of resources.

With in sub-optimal allocation, the effect of increase in price P to Pm can be shown using the above diagram. As shown on the diagram 1 domestic production is OQ_1, domestic demand is OD_1 and imports are D_1Q_1, import price of the good is Pm and the price of the local product is P. The domestic producers of the good do not receive the import price Pm, but the lower price

P. This may be due to import subsidy or price control. From the diagram it is clear that substantial net benefits would be derive if price P were increased to P_m because, the real cost of domestic production S, are lower than the nominal costs and the true shadow value of imports Pms is much higher than the nominal price.[61]

Economically, the domestic price P should be raised to the true economic value of the import which is P_mS. Governments do not welcome this increment because it implies the liberalization of foreign echange policy if it is applied to all tradeables. Governments may however be willing to accept for cetain goods a partial elimination of distortions up to the official echange rate price if sound reasons for such elimination exist.[62] Accordingly, the effect of increasing the domestic price P to official import price P_m are reasily ascertainable.

If the price P increases by ΔP to P_m, then domestic production will increase by ΔQ to Q_1 and domestic demand will decrease by ΔD to OD_1. Producers will gain $\Delta P \times Q_1$ on their old production and $1/2(\Delta P \times Q)$ on their additional production. Because of the new and higher price, consumers will lose a consumer surplus equal to $\Delta P \times D^1 - 1/2(\Delta P \times \Delta D)$. Since the government will no longer pay an import subsidy its gain will be $\Delta P(D_1 - Q_1)$. Totaling the gian and losses of the three parties we arrive at the net effect

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[61] Ibid, p.9.

[62] Pasquale L.Scadnizzo and Collin Bruce, Methodologies for Measuring Agricultural Price intervention effects, World Bank Staff Working Paper No. 394, June, 1980.

of 1/2 ($\Delta P. \Delta Q$) + 1/2 ($\Delta P, \Delta D$), i.e., the area B and E, respectively. To give this analysis some operational significance, we must estimate the quantity changes that will be induce by price changes. If we denote the elasticities of supply and demand be ed and ed, respectively, we have on production side:

$Q = (\Delta P/P) . ed. Q$ and on the demand side

$D = (\Delta P/P) . ed. D$. Hence if we know the respective elasticities we can calculate exactly how much each of the three parties will gain or lose.[63]

The elasticities of supply and demand are basic parameters needed to evaluate the impact of deviation from the optimum. These parameters quantify the responsiveness of producers and consumers to price movements and provide the basis for a forecast of production and consumption changes induced by the market intervention.[64]

Agricultural supply response have gained much attention in the last decade as development economies has focussed on problems of dual economies and food shortages. Other factor such as collective bargaining in agricultural export and income distribution policies

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[63] Ibid, p. 67.

[64] Pasquale L. Scandizzo and collin Bruce, Op.cit. p. 67.

have reinforced the necessity to increase our understanding on agricultural supply response.[65]

Supply response of subsistence farmers to changes in agricultural prices may be explained by income and substitution effects. A family firm may reallocate the total labour time between agricultural activity and leisure in response to price changes and incentives. The allocation of total time between agricultural labour and leisure in response to an increase in output price depends upon the family's valuation of leisure in relation to work. The family may value leisure as a normal good or as an inferior good. If leisure is an inferior good, an increase in -the price of agricultural labour (work) will decrease the demand for leisure. This will increase the working time on account of income effect. As a result agricultural output price increase, leisure may be substituted by work, hence the production response to price increase is positive as long as leisure is an inferior good.

If leisure is a normal good, an increase in output prince may increase the demand for leisure. This increase in the price of agricultural output may give the family labour the opportunity of enjoying more leisure since the objective of the household may be fixed income. The desired level of income may be attained by less work with negative response (decrease

[65] Ibid,

in production) to price if leisure is a normal good to the household. The substitution effect, however, works in opposite direction. The increase in the price of agricultural output (value work) may encourage the household to increase production. The out come depends on whether the income or substitution effect is greater. Since the theoretical basis for output response to prince changes is inconclusive it turned out to be purely an empirical question.

The objective of increasing production is to increase marketable supply. It is often deabated that at higher prices peasants sell less due to the fixity of their demand for cash income. Myrdal for example argues that the major instrument for extracting marketable output are the landlords and money lenders in South Asia and if cultivators are relieved of the toll they would not release the same proportion of their output for sale even at higher prices. According to him, the extent to which stimuli for change and improvements can be assimilated is a function of mass education and ability to change attitudes and institutions.[66] Huang also argues that farmers will make every effort to earn at least minimum subsistence amount, but above that level the marginal utility of income falls quickly and

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[66] Gunnar Myrdal, Asian Drama: An Inquiry into the Poverty of Nations, Vol. II (Armods worth, Middle sex: Penguin Books Ltd. 1968), pp. 1064-1203.

efforts are reduced... peasants tend to work just enough to earn a decent living, and not much more.[67]

The plausibility of perverse behavior is quite evident. Farm income level is positively related to price increase and as a result on farm consumption response to crop price increases can also be positive. This positive demand response can partly offset the production response and lower the net responsiveness of marketable supply to price changes. Thus, the responsiveness of marketed supply for crops, a substantial part of whose output is retained by peasants, must be measured separately from the responsiveness of output.[68]

Empitical and factual evidence now a days confirm the optimizing behaviour of peasant households to price changes than perversity. Scholars who align with the view point argue that peasants have unlimited cas needs, their demand for manufactured goods is elastic and they sell more output at higher prices than at lower prices. They also apply non traditional inputs rationally on the basis of relative prices of outputs. Schultz believes that:-

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[67] Yukon Huang, "Backward-Bending Supply Curves and the Behaviour of Subsistence Farmers" Journal of Development Studies, Vol. 12, nos. 1-4, 1975-76, p. 176.

[68] Raj Krishana, "Price Responsiveness in Agriculture", M.Meir (ed) Price Policy for Development Management, (Baltimore Maryland: The John Hopkins University Press) 19[illegible], p. 86.

> "Farmers the world over, in dealing with, costs, returns and risks are calculating economic agents. With in their small individual, allocative domain they are fine tunning enterpreneurs, tunning so subtly that many experts fail to see how efficient they are".[69]

The responsiveness of producers to marketing arrangements and to output price is a critical element in agricultural development and food supply policy formulation. It is argued that one of the major causes of food crises in sub-Saharan Africa is the distortion of agricultural incentives by governments which are largely based on the assumption that producers are irresponsive to prices. Schultz has pointed out succinctly the effect of distortion of prices on agricultural development and food supply by stating that:-

> the biological constraints on potential food production have been substantially reduced by advances in agricultural research and by availability of additional capital. But

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[69] T.W. Schultz as cited by Marc Nerlove, "The Dynamics of Supply: Retrospective and prospective" American Journal of Agricultural Economics, Vol. 61. nos. 1979, p. 874

> it has become increasingly evident that the adoption of research contribution and efficient allocation of capital are being seriously thwarted by distortion of agricultural incentives. It is clearly evident that where the price of fertilizer is 5 - 10 times higher than the price of grain, there is little point in research institution in undertaking research on methods of applying fertilizer or on crop varieties that will give a significant response to fertilizer. Similarly the supply of credit as well as the demand for it, is affected by farm output prices.[70]

The evidence from the role of price incentives clearly suggests that even when the government is doing its best restructure agriculture institutionally, and to expand the availability of knowledge, and inputs, it finds that output diminishs or remains stagnant until these measures are supplemented by positive agricultural policy. The engines of extension and institutional reform do not raise output fast enough without the stream of price incentives.[71]

The experience of countries with collective agriculture such as the Soviet Union, Vitenam and China clearly indicate that without adequate incentives to the producers, agricultural development, particularly food production, does not move forward. Finely, when

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[70] Inid., p. 885.

[71] Raj Krishana, Op.cit. p. 89.

emphasizing the contribution of price incentives to agricultural growth, it does not mean that agricultural transformation can be brought about primarily by price movements alone. It is quite evident that the transformation of traditional agriculture is primarily a techo-organixational episode. The point however, is that price movements can speed up the diffusion of innovation, the absorbtion of new inputs, the utilization of new capacity, and even institutional adjustment, unfavourable movement can slow down or arrest all these process.[72]

2.5 Grain Marketing and Pricing Studies in Ethiopia

Quite a substantial materials on grain marketing and pricing system in Ethiopia have been assembled over the past years. However, most of these materials are feasibility study types primarily intended to provide information necessary by government agencies and international financial institutions. Though the studies typically focus on economic feasibility of proposed project, they also give limited coverage to the essential elements of the grain marketing system.

Feasibility studies conducted the deficiencies in the grain marketing system can be corrected by improving some marketing facilities (information, storage, finance etc.) and increasing the role of the government to cooperatives in grain trade.[73] For example the Standford Research Institute (SRI), attributed the grain marketing system to

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[72] Ibid.

[73] See for example Alan R. Thodey, Marketing Grain and Pulses in Ethiopia, Menlo Park, California, April, 1969. Report no. 16, Bo. Wickstorm, Increasing Efficiency in the National Grain Marketing System of Ethiopia: A policy guideline. Oct. 1973. EPID Publication No. 14.

lack of credit and information.[74] It proposed that the Ethiopian Grains Corporation (EGC) should be strengthened to correct the deficiency. The study concentrates only on the collection and distribution of grain and does not include the supply of consumer goods and modern inputs to the rural population. Thus it fails to show us the impact of the system on producers in any meaningful way. Bo. Wickstorm notes that the marketing structure appears to be inadequate to ensure farmers and consumers economic growth and equity. He attributed the failure to market intelligence which leads to excessive margin for the grain traders.[75] He proposed that producers should be organized into marketing cooperative to benefit from the Extension project implementation Department (EPID) program. He indicated that producers are sensitive to price, but did not produce any evidence for believing so. The study concentrated only on how the market should be expanded and organized in order to accommodate additional production which was assumed to be given. Thus it did not indicate to us how marketing system affects the producers incentive and efficiency.

Manning also observed that the lower level of the marketing system was not competitive. He noted that the farmers are only informed with the past price and information on current price is available to them they arrive at the market, and they cannot make any pro-

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[74] Alan R. Thodey, Ibid.

[75] Bo. Wickstorm, Op.cit.

fitable decision on the basis of such information.[76] He believes that producers will respond to the existing price level and whether to sell or withhold their produce depend on the prevailing price level if they had a perfect knowledge of it. Thus, he did not show the effect of marketing and pricing on producers behavior in the long run. Instead he tried to show the competitive nature of grain marketing at higher levels in the gain marketing system.

The grain storage and marketing project appraisal by the World Bank identifies the imperfection of the grain marketing system which by and large worked against the producer's advantage. It proposed the formation of Agricultural Marketing Corporation (AMC) to overcome the deficiencies of the system.[77] The recent grain marketing study by SWED FARM indicated that the inefficiencies in the operation of AMC has resulted in high marketing costs and low prices to producers.[78]

As is the nature of feasibility studies the above ones have endorsed capital intensive technologies, in situations where labour and capital costs are such that labour intensive technologies would be more appropriate. The studies have misjudged the compatibility of new capital intensive infrastructure with existing patterns of production, distribution and consumption.

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[76] Winfried Manning, Marketing of Selected Agricultural Commodities in the Bako area of Fthiopia, Cornell University, November 1973, Occasional paper no. 66.

[77] World Bank, Appraisal Report on grain storage and marketing project, Agricultural Marketing Corporation (Addis Ababa, 1977) (Mimeographed) Annex 3, p. 1.

[78] SWED FARM (AB) Grain Marketing Study (Ethiopia) Stockhol, October, 1984.

Some of the studies had adopted descriptive approach to the marketing system. Valuable qualitative information from eighty Awrajas of fourteen Administrative regions in 1971-72 was collected by the Ministry of Agriculture which can show us the principal grain flows and storage centres at the time.[79] Holmberg attempted a brief review of the marketing and price policy of food grain which evolved in 1976. He argued that the government, in an interest to motivate producers and protect consumers introduced minimum price for producers and its ceiling for consumers. His conclusion was, that the government food grain price policy failed because peasants withheld substantial amount of grain from the market and increased their farm consumption which in turn derived consumers prices up.[80] The activities of state commerce and service cooperatives in Kembata and Hadiya Awraja had also been described by Alemayehu Lirenso.[81]

All the above descriptive studies suffer from inability to offer normative solutions to questions concerning policy and planning of marketing system. Although some of them provide knowledge of the functioning of trade institutions, they underplay the potential dynamic impact of marketing institutions in achieving development goals regarding efficiency, equity, growth and employment.

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[79] Ministry of Agriculture Survey and analysis of Grain Marketing Structure in Eighty Awrajas, Addis Ababa, 1973.

[80] John Holmberg. Grain Marketing and Land Reform in Ethiopia, Analysis of Marketing and Pricing of Food Grain in 1976 After Land Reform (Scandinavian Institute of African Studies) Research Report 41m, Uppsala, 1977.

[81] Alemayehu Lirenso, State commerce and Service Cooperatives in Kembata and Hadiya, An Economic Geographic Analysis (Unpublished M.A. Thesis Addis Ababa June, 1984.)

The joint of Ethiopia and World Bank Mission has made a diagnostic and descriptive assessment of food grain marketing and pricing in Ethiopia.[82]

It recognizes the disincentive effects of the current pricing and marketing policy on farmers' willingness to adopt fertilizer and thereby on the level of output and income. The study used the benefit-cost ratio of using non farm input to output price to show the disincentive effects of the pricing system. However, it does not objectively show the responsiveness of producers to prices and the appropriate price policy that should be adopted by the government.

Shiferaw had analyzed the retail price index for Addis Ababa and wholesale prices of selected commodities for selected towns covering the period 1974-1979 and concluded that there has been persistent and significant increase in the price of most goods and services.[83] He attributed the causes to list of factors one of which is a deficiency in the market structure. He did not, however, show how the deficiency in the market structure contributed to price escalation.

By estimating output elasticity of marketed supply for different price regimes Mulat has concluded that peasants are responsive to prices and recommended that price policy should be designed in such a way as to motivate producers to adopt modern inputs which are essential for expansion of production and market supply.[84] Although many researchers had dealt with several aspects of the grain marketing and pricing system in Ethiopia, none of them have dealt with the implication of policy on the level of output and producers' income. Therefore, there is a serious gap in our knowledge concerning the impact of grain marketing system on the level of output and incomes.

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[82] Joint Government of Ethiopia World Bank Mission, Review of farmers' incentive and Agricultural Marketing and Distribution efficiency (Addis Ababa, March, 1985).

[83] Shiferaw Gurmu, "An empirical analysis of recent price trends in Ethiopia" Ethiopia Journal of Development Research Vol. 4. No. 2, October, 1980.

[84] Mulat Demeke, The Supply Response of Subsistence Peasants, The case of Teff growers in some Districts of Shoa (Unpublished MSc. Thesis, Addis Ababa, June 1984.)

3. The National Grain Marketing System of Pre-institutional Reform

The grain marketing system serves an important task of bridging the temporal and spatial gap between production and consumption, between supply and demand. The temporal and spatial dimension of the food grain marketing problem in Ethiopia arises due to two important factors:

A. Production is concentrated to 4-5 months (January - May) while consumption takes place continuously production is also highly variable due to variability in weather condition. Thus, the marketing system should be able to ration out supplies as evenly as possible from one harvest to another and also from bountiful years to years of shortages.

B. Consumption is relatively concentrated where as production is dispersed spatially which requires procurement, transporting, storage, distribution and financing. Moreover, food grain production in Ethiopia is highly skewed with imbalances in regional demand and supply.

The system connects millions of subsistence producers who dispose a small proportion of their output to the market. The way the subsistence sector enters relation with the market determines its impact on the level of output and producers income. The system aims at capturing the subsistence sector and draws it into the modern sector. The subsistence sector may resist capture by the market forces and continue its traditional autonomous form of existence,[86] unless attracted by positive inducements. The traditional peasant cannot easily be pushed in to the market. He

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[86] Dessalegn Rahmato, Agrarian Reform in Ethiopia, Scandinavian Institute of African Studies, Uppsala, Motalu, Gnafika, A.S, Motalu, 1984, p. 66.

must be pulled into it, encouraged, and enticed by positive inducement, among which the most effective way has been found to be a set of incentives, the possibility of higher income.[87]

The grain marketing system can be evaluated on the basis of its effectiveness in accomplishing the task of pulling traditional farmers in to the modern exchange system.

3.1 Organization the Grain Marketing System Before Institutional Reform

The national grain marketing structure in the pre-reform period was generally classified into four different levels according to size. The system, thus, consists 3 terminal markets (Addis Ababa, Asmara, and Nazreth), about 15 regional market towns (more than 20,000 inhabitants) and about 2,500 rural market villages. It was estimated that in the mid 1974 the system was connected to 4 million farmers.[88]

The system was mainly operated by the private sector save for a few gorvernment establishment meant to regulate and service the system so as to improve its performance. There were multitude of intermediaries such as assemblers, wholesalers, retailers, exporters, millers and processors. Besides, there were also agents and brokers[89] Bo Wickstorm estimate the number of grain dealers in 1974 to be 12,500 - 25,00 in rural areas, and 4,000 - 8,000 in towns.[90]

The type of market where exchange take place were

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[87] Elliot J. Berg, Op.cit., p. 41.

[88] See for example Bo Wicksform, Op.Cit., p. 9; Lars Haglund, The Grain Marketing System of Chilalo, A Descriptive and Normative Analysis. Research Task No. 12, Asella, July 1974, p. 11.

[89] Alan R. Thodey, Op.cit.,

[90] Bo. Wickstrom, Op.cit.,

also numerous. The process could start in the rural areas from farmers' house where exchange take place between neighbours. There were also road side stalls small rural markets, periodic town markets (urban), daily town markets, daily central markets.[91]

3.1.1 Principal Product Flows in the National Grain Marketing System in the Pre-reform Period

The grain flow in the marketing system originates from the farmer who after rent payment in kind to the landlord in area of tenancy, deducts the amount to be stored for his own consumption and seeds decide on how much to dispose on the market.[92] It was estimated that in areas under tenancy (which was estimated to be 40% of the total cultivated land) between 13 and 27 percent of the total agricultural output was extracted through land rent.[93] From this amount the landlords retain some proportion for their own consumption and market the substantial proportion.

The domestic demand had not been met only by the domestic supply. There were also substantial amount of food imports. Since the imported food grain -had been generally wheat, it directly went to the flour mills. Thus, the imported grain enters the marketing system at higher up in the heirarchy while domestically produced grain enters the system from the bottom. Grain flow with in the system is shown in the following diagram.

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[91] Ibid, p. 9.

[92] Ibid, p. 14.

[93] ILO/JASPA, Socialism from the Grass Root: Accumulation, Employment and Equity in Ethiopia, a report prepared by an employment advisory mission organized by ILO/JASPA, Addis Ababa, September 1982, p. 85.

Fig. 2: Product Flow in the Grain Marketing System

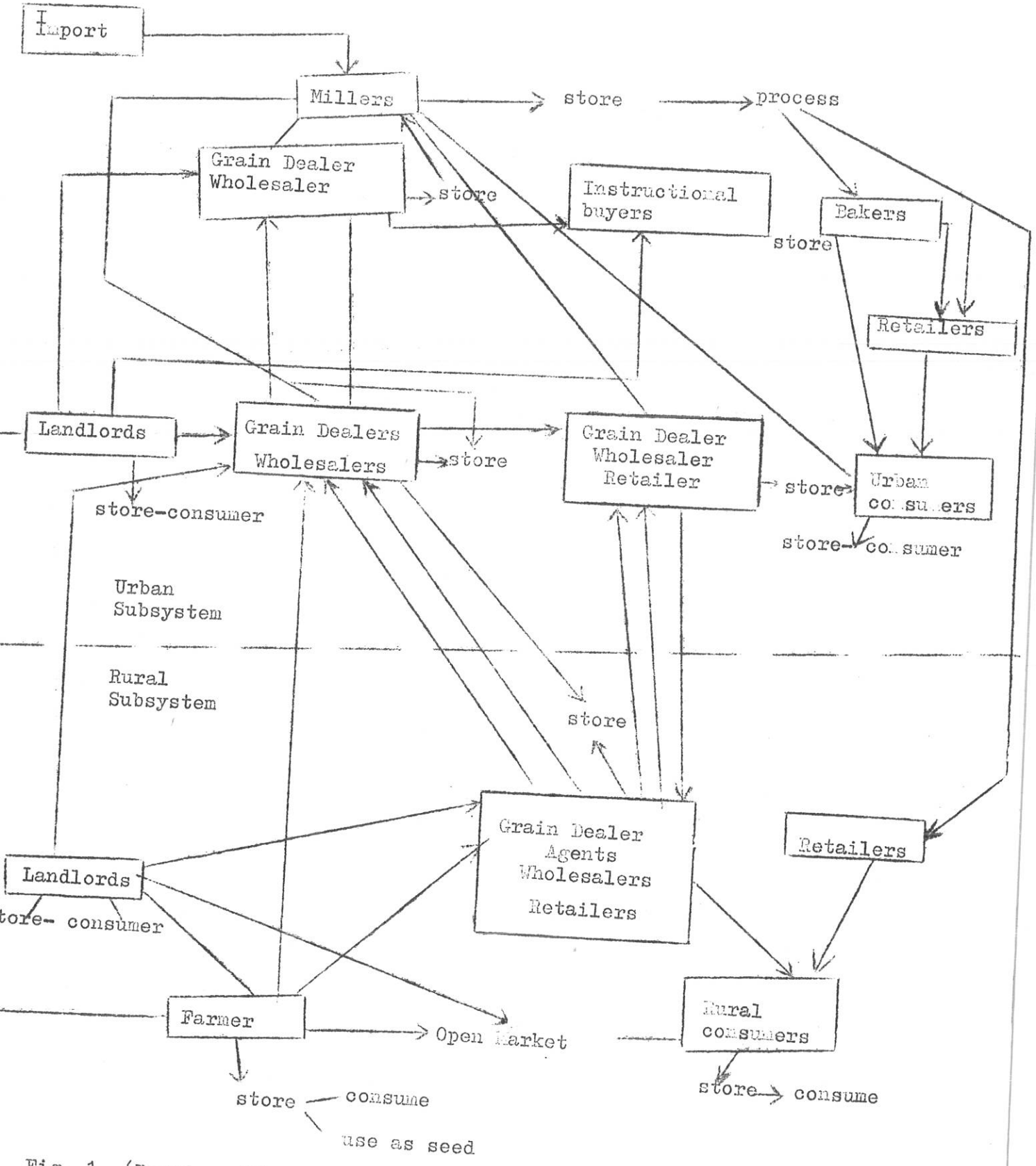


Fig. 1. (Based on BO Wickstorm: Product Flow in the Grain Marketing System with a few modification p.11.)

As shown in figure 2, the marketing system was divided into two sub-system i.e., the urban and the rural sub-system.

In the rural sub-system grain dealers, agents and retailers directly buy from the farmers and landlords. The farmers can also sell directly to rural consumers. The rural dealer move the grain up to the lower level of the urban sub-system where they sell to the wholesalers. The wholesalers at the lower level of the urban sub-system were also able to buy from farmers and landlords directly. After storing for sometimes or immediately, they transport the grain to the terminal markets where they sell with the help of brokers or to a fixed customer.

The higher level of the marketing system was well organized with storage facilities, financial capacities to be able to undertake long term storage. The wholesalers in the terminal markets supply the flour mills, urban retailers and instructional buyers.

Processing of food grain had been and still is entirely the responsibility of the consumers except for wheat. Wheat would be transformed into wheat flour which would be distributed to bakeries and in packaged form to retailers. Consumers buy processed wheat in the form of bread or packed wheat flour.

According to Wickstorm, in 1974 there were thirty big mills in terminal markets with a total capacity of 200 - 250,000 tones and about 4, 000 - 5,000 local mills in towns and villages which operate on fee basis. There were also 100 major bakeries in the terminal markets and unknown numbers in small market towns.[94]

3.1.2 Government Paricipation in the yrain Marketing System Before Institutional Reform

In an attempt to regulate the grain marketing system, prior to the revolution, the Ethiopian Grain

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[94] Bo. Wickstorm, Op.cit., p. 13.

Board (EGB) and the Ethiopian Grain Corporation (EGC) were established. The Agricultural and Industrial Development Bank (AIDB) and Agricultural Input and Marketing Service (AIMS) were also created to extend credit to farmers and supply inputs.

The Ethiopian Grain Board (EGB) was created with the purpose of (a) maximizing the export of grain, flour, pulses and oilseeds, (b) improving the quality and grade of these commodities entering into export trade and (c) to protect Ethiopia's foreign exchange position.[95]

The Board was empowered to (1) regulate the price at which grain, flour, pulses and oilseeds may be purchased and sold for export or domestic consumption, (2) designate the countries to which grains and oilseeds may or may not be exported, (3) counsel with the Ministry of Agriculture with respect to qualities and types of seeds to be planted and general planting and marketing problems, (4) licence and collect fees from qualified applicants to clean and grade grain, flour, pulses and oilseeds, and (5) licence and control all exports of grains, flour, and oilseeds from Ethiopia.[96]

The Board was defunct for 20 years due to lack of the government commitment to implement it and it was reactivated in 1970 due to increased pressure from external buyers and the demands of foreign trade. Since then, it had attempted to introduce a system of standardization and grading in collaboration with the Ethiopian Standard Institution[97] particularly for export crops.

The Board had also contributed in building up a market intelligence system of information on prices, supply and demand both in domestic and export markets.

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[95] Negarit Gazetaa, Proclamation for Establishing the Ethiopian Grain Board, Proclamation No. 113 of 1950 (as amended by Decree No. 30 of 1957).

[96] Ibid.

[97] Bo. Wickstorm, op.cit., p. 14.

The Ethiopian Grain Corporation (EGC) was created in 1960 as a share company with the Ministry of Finance and Commercial Bank of Ethiopia at share holders. The objectives of the corporation were to encourage increase in agricultural production throughout the country by stabilizing the market, improving the quality of agricultural products and exporting such products. Broad powers were given to the corporation to enable it to achieve its objectives. It could purchase, grade, process, mill, transport, store and sell grain, pulses and oilseeds, establish and operate purchasing stations throughout Ethiopia, determine the price at which to buy and sell, to make export sales, sells in domestic market, make contracts.[98]

There were also attempts to extend credit and supply inputs to producers though the major benifeciaries were the landlords. The Agricultural and Industrial Development Bank S.C. (AIDB) extended credit to farmers through EPID. The loans through EPID were available mainly in the form of fertilizer.

Fertilizer import was under Agricultural Input and Marketing Service S.C. (AIMS) which was formed by AIDB. AIMS import, procure, distribute and sell agricultural inputs such as fertilizer, pesticides, herbicides, farm implements, etc. through international tender. It was not known whether AIMS was able to press prices down and supply farmers at the lowest possible price.[99]

Besides creating the above organization, there were systems of licencing and registration which were meant to regulate the grain market though not implemented in practice. All traders were required to be registered with the Ministry of Commerce and Industry and annual registration were made by a municipality. Cleaners were licenced by the Ethiopian Grain Board and

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[98] General Notice, No. 267 of 1960, as amended by Ethiopian Grain Corporation amendement order, 1964.

[99] Bo. Wickstorm, op.cit.

exports and millers were also registered with the Ministry of Commerce.

The unfair trade practices act theoretically makes it illegal for any one to tamper with free flow of commodities through the marketing system. A proclamation that established a standard system of weights and measures which was issued in 1970 was not operative until 1975 because associated regulations were not issued.[100]

Other institution such as the Ethiopian Highway Authority and Telecommunications Authority had important effects on the grain marketing system particularly in improvement and expansion of main roads, feeder roads and telephone network.

3.1.3 Function in the Grain Marketing System

The grain marketing system of the pre-reform performed several functions. Aided by the function of pricing, financing and information handling, the usual functions of the system were storage, transportation, negotiation, grading and cleaning.

Products were sotred at 11 levels in the marketing system varying in time and volume. Longtime storage made at higher level in the marketing system where storage facilities and working capital were available. The farmers holding capacity was not ascertained. Bo. Wickstorm estimates that each farm household could store between 7.5 to 10 quintals making the nations storage capacity around 4 million tons. The Stanford Research Institute (SRI) estimates that farmers could not store at all. They dispose of all their grain in excess of consumption between January and May. The market structure survey of the Ministry of Agriculture estimates the total storage capacity at different levels

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[100] Negarit Gazeta , The Ethiopian Standards Institution Establishment Procelamation, Proclamation No. 300 of 1970.

in the grain marketing system at around 370,000 tones.[101]

In general, there were low storage capacity at the lower level in the marketing system due to lack of capital and facilities. Storage costs consist of shrinkage loses due to molds, insects, vermin, etc., interest costs on value of grain stored and cost for depreciation and operation of storage facilities. Another important function of the marketing system is transporting products. Marketable supplies must be transported from surplus to deficit areas and the cost of transportation is one of the major determinant of the cost and efficiency with which the marketing system performs its functions. In addition, transportation largely determines the amount and location of the marketable surplus that can be effectively integrated into the marketing system.

In the pre-reform period, as it is today, transportation at the lower level of the marketing system was generally by pack animals and humans. de Young in his study of the market village of Sagure discovered that there were 4,000 pack animals on one major market day with an average load capacity of one quintal, with the possible load into the market of about 400 tons.[102] The movement higher up in the hierarchy were usually by trucks which were estimated to be about 3,500 of which 2,300 were with trailers in 1974.[103]

Transport rates vary with mode of transportation, road condition, season and direction of transportation. Pack animals were found to be more expensive than trucks where ever such alternatives exist. Rates on dry-weather roads were often 3-4 times as high as for

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[101] See for example Bo. Wickstorm, op.cit, Alam R. Thodey, op.cit., Ministry of Agriculture, op.cit.

[102] de Young M., Market Towns of Ethiopia, A report prepared for the Committee for Regional Development. Ministry of Planning and Development, Imperial Ethiopian Government. Addis Ababa, 1967, p. 15.

[103] Bo. Wickstorm, op.cit, p. 18.

all weather road. The rates were lower for longer distances than for shorter distances. In 1974 the entire road infrastructure serving the transportation system consisted about 8,000 kms. all weather road and 16,000 kms. unimproved roads.[104]

Products handling usually goes with storage and transportation of which loading and unloading is one aspect. Loading and unloading was by human which was Birr 0.10 per quintal.

The third important function of the marketing system is standardization and grading. This aspect of the marketing function was important for effective communication and also facilitate marketing operations. Standards were required for weights and measures and for quality.

In Ethiopia at the lower level of the marketing system particularly in the rural areas weight and measure vary and grading of grain were usually based on colour and origin which were often made by inspection. Higher up in the market system weight and standards were used.

The absence of uniform weight and measures as well as proper grading system exposes the producers to exploitation by the middle man.

Negotiation is another important function in the

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[104] Ibid., p. 19

grain marketing system. Negotiation takes place during the transfer of ownership title to the good at different levels in the marketing system. The Stanford Research Institute States that on the average there were about 2.6 transactions between producers and consumers in local grain trade. Negotiation also reflects the power structure or influence the market participants have on one another. During transaction, the farmer may negotiate with agents or assemblers. The agent besides his rewards from the principal, tries to push the price of the producer down wards so as to obtain extra benefits from the system. The farmer may bring his supplies to merchants and may negotiate for price offered. The farmer may take his product from one merchant to another until he get the best offer. Though superficially this may seem free competition (since the farmer is the price taker and his supply or withdrawal from the market does not affect the price level as some people may try to define,[105] it was not actually so. The presence of homogeneous sellers each selling only small lot with no influence on the level of prices is only one condition for the prevalence of free competition but not the only condition. Such condition as perfect information about prices, quality and

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[105] See for example Alan R. Thodey, op.cit., p. 6; Winfried Manning, op.cit., p. 18.

standards by both producers and buyers and absence of collusion among merchants which is another important assumption of a free competition was absent.

In the process of negotiation, all factors worked against the farmer. He did not have a place to store if he wanted to postpone his sells. He could not postpone his sells, because he may be in dire need of money to meet his obligation. He lacks information about regional and national market prices and their movements. The absence of grade and standards also place him in a weak position vis-a-vis the dealer. The dealer take advantage of the ignorance of the farmer and penalize him for unclean grain while he does not reward him for cleaned ones. The farmers may quite often were cheated by incorrect weights. It was shown that this could go as high as 12 percent of the value of the product.[106]

On the other hand higher up in the marketing hierarchy, both sellers and buyers were on equal footing. Sellers could postpone sales and speculate for better prices because they had storage facility and financial capacity. All in all, the terminal market merchants were in more advantageous position with respect to price negotiation. They were integrated with the mills (i.e., they were either shareholders, the flour mills or agents for the mills). They had

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[106] Loas Haglund, op.cit., p. 15.

sufficient financial and storage facilities and they could easily corner the market.

The fifth important function of the marketing system was the market intelligence. Effective operation of the marketing system require flow of information with in the system. Crop harvest forecasts, projected supply, actual supply situation and information on various local conditions were required at higher up in the marketing system. At the local level, volume traded, storage situation, price development and day to day price were required.

The lower level of the marketing system specially the farmers were highly at disadvantage with regard to information. Information on the past price and current price were available to him after he arrives at the market. He would be obliged to sell his grain even if the prices were below expectations because of immediate need for cash, difficulty of transporting back to the farm, and lack of storage facility at the farm.

The sixth function of the marketing system was financing. The marketing system need both investment and working capital. Capital was available at higher level in the marketing hierarchy for merchant could obtain credit both for investment and working capital from the banks. On the other hand there were no credit facilities for the farmers which may help them carry

over from one harvest to another. But such institutional credit was available only for fertilizer but not for other market transactions. Thus, the farmer borrows from private sources whose rate was several times the amount advanced and keeps him in perpetual indebtedness.

The impact of such marketing arrangements and pricing systems on the level of output and producer's income in the pre-system period may be further illuminated by analysis of price series.

3.2 The Behavior of Food Grain Prices in the Pre-reform Period

The behavior of prices in presponse to changes in marketing condition is one of the performance criteria of a market. Large fluctuations in prices while indicating the market's sensitivity to interacting forces of supply and demand are generally considered undesirable because of economic risk such fluctuations impose on individuals. On production side, these risks create serious disincentive and have a depressing effect on the national output. For planning purposes, the magnitude of price fluctuations signal deficiencies which can be eliminated through appropriate investment and policy measures.

Price behavior can be discerned by decomposing time series data into trent (T) , seasonal (S), dyclical (C), and irregular (I) components. Thus:-

$$Y = T\ S\ C\ I \quad \ldots\ldots\ldots\ldots\ldots \quad (1)$$

$$Y = T+S+C+I \quad \ldots\ldots\ldots\ldots\ldots \quad (2), \text{ where}$$

Y = The observed price

T = Trend component

S = Seasonal component

C = Cyclical component

I = Irregular component

The decomposition of the price series has been attempted by using the multiplicative model. The model can be transformed into additive form by log transformation.

$$\log Y = \log T + \log S + \log C + \log I \quad \ldots\ldots\ldots\ldots \quad (3)$$

The trend variation in the series is assumed to be a long-term movement in the price of the commodity under discussion around which other factors oscillate. It is expected to reflect basic and longterm change in supply and demand. This may be due to changes in production

patterns, movement in size and degree of market dependent population and shift in consumer taste.

The seasonal component in the price series is studied to see the capacity of the marketing system in rationing supplies from one harvest to another. The seasonal variability in price may create an incentive for producers and merchants to store commodity until supplies are generally scarce.

The cyclical variation in food grain price may result from variation in the level of agricultural output which may be due to weather and producers response to prices. Producers response to food grain prices may have powerful effect on generating the cycle and this will be discussed in detail in chapter 5.

The irregular price variations are those fluctuations that cannot be explained by any of the above three components. They are usually of short term nature.

3.2.1 The Data

Analysis of price behavior require series of price data for sufficient period of time. Food grain prices were used to be collected by various agencies[107] for

[107] Ministry of Commerce and Industry, Addis Ababa Retail Price, 1950, CSO, Addis Ababa Retail Price Index Starting 1965. Chamber of Commerce, the Ethiopian Grain Corporation since 1960. The National Bank of Ethiopia.

different purposes. Most of the agencies had stopped collecting price data after the institutional reform and the previous data were misplaced or destroyed and are not available for users. One of the most important organizations which used to collect, compile and disseminate grain price data was the Ethiopian Grain Board (EGB) which was liquidated in 1979 and its functions were distributed among AMC, the Ethiopian Oilseeds and Pulses Export Corporation (EOPEC) and the Ethiopian Standard Institution. The rich price data collected by the Board was lost in the process of transfer and at present there is a great difficulty to obtain price data for a long period of time, particularly on monthly basis. Whatever information available is largely for Addis Ababa.

Since one of the objectives of this paper is to show the effect of price policy on the level of output through analysis of price series, data on producers price, volume sold at different price level in a given market is required. However, such data is not available. (The CSO has started collecting producers price in 1980 and it has released information only for 1981). Data is also required on monthly basis to study the seasonality of commodity prices. Whatever scanty information available is one annual basis. However, the

National Bank of Ethiopia (NBE) has monthly wholesale price data for the selected food grains for Addis Ababa, Asmara and Nazreth for the years 1968/69-1974. Reports of the former grain agency to the Ministry of Domestic Trade and the Office of the National Committee for Central Planning also contain Addis Ababa wholesale price series. Although there were differences in the method of data collection (the National Bank collects data on 15 days basis while the Ethiopian Grain Agency collects on a daily basis for 26 days/month and averages it to arrive at monthly wholesale price). The price information from the two sources were compared for the same period and found to be more or less similar. Thus, the researcher has used Addis Ababa wholesale food grain prices from the two sources to analyze its behavior. The analysis covers the period between 1968/69-1976/77. During this period producers prices were in relative sense related to Addis Ababa prices due to the more or less liberalized nature of the market. Due to transport net work that links it to the supplying regions and its location, Addis Ababa wholesale grain price may represent the national wholesale grain price.

3.2.2. An Analysis of Price Behavior

3.2.2.1. The Trend Component

It has been indicated else-where that the trend movement in the price series is the fundamental movement around which other price movements oscillate.

The estimation of the trend variation from the price series has been attempted both by regression approach and moving average method. Linear trend equation of both arithmetic and logarithmic forms were fitted into the data. Thus:-

$$Y_t = a + b_t + e_t \quad \ldots\ldots\ldots\ldots\ldots (1)$$

$$Y_t = ab_t . e_t \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$\log Y_t = \log a + \log b + e_t \quad \ldots\ldots\ldots (2.1)$$

where:-

Y_t = observed per quintal price in month

t = time in months

a&b = parameters to be estimated, and

e = is the error term

TABLE 1

REGRESSION RESULTS OF ADDIS ABABA MONTHLY WHOLESALE PRICE MOVEMENT (1968/69-1976/77) FOR FIVE FOOD GRAINS.

Arithmetic form

Crop	a	b	R^2
1. Teff	8.593 ***	1.144*	78
	(8.076)	(0.076)	
2. wheat	23.65***	1.059***	65
	(5.01)	(0.200)	
3.Barley	13.73***	1.046*	76
	(4.36)	(0.545)	
4.Maize	10.327	1.11**	71
	(8.890)	(0.65)	
5.Sorghum	14.96	1.97	75
	(15.817)	(0.980)	

*** Significant at 1% level of significance

** " " 5% level of significance

* " " 10% level of significance

The number of observation is (n) 120 months; figures in the parenthesis are standard errors.

As can be seen from the table, there had been a

general upward trend in the price movement in the food grains over the period 1968/69 - 1976/77 . The monthly average increase in the price of teff, wheat, barley, maize, and sorghum over the period under consideration were 14, 6, 5, 11 and 97 cents per quintal respectively. The highest rate in price increase had been for sorghum and teff followed by maize. The least rate of increase in price had been for barley and wheat.

Log transformation of the observed series has also been made to improve the results. The results are presented in the table below.

TABLE 2

REGRESSION RESULTS OF ADDIS ABABA MONTHLY WHOLESALE PRICE MOVEMENT (1968/69 - 1976/77)FOR FIVE FOOD GRAINS

LOG FORM

NO.	CROP	$\hat{a}$	$\hat{b}$	R^e
1.	Teff	29.9	1.142***	89
		(7.183)	(0.121)	
2.	Wheat	23.7	1.012**	84
		(4.87)	(0.527)	
3.	Barley	15.3	1.062*	92
		(4.032)	(0.791)	
4.	Maize	11.5	1.318***	90
		(7.025)	(0.521)	
5.	Sorghum	15.5	1.142*	96
		(12.737)	(0.978)	

*** Significant at 1% level of significance

** " " 5% " " "

* " " 10% " " "

The number of observation (n) is 120 months. Figures in the paranthesis are standard errors. As can be seen from table 2, the log form of the regression model has improved the results. The R^2 from the model is quit high indicating that the equation is the best fit. All coefficients of b are highly significant.

Sorghum and teff have shown 8% rate of annual growth and maize 7.7%. Wheat price grew at the rate of 3.3% ,while barley had shown a 5% growth rate over the decade. (The b coefficients were converted to annual ratees to obtain the growth rate cited above).

The period of analysis also correspond to the initiation and implementation of the Chilalo Agricultural Development Project with its emphasis on wheat and barley production. Increase in production and productivity in the project area might have influenced the supply to Addis Ababa market which is only 175 kms. away from the project area and connected to it by all weather road.

The upward movement in the price series of the five cereals reflect major imbalances between supply and

demand levels during the period. Efficient marketing system can stablize inter-temporal price movement by with drawing grain from the market during bountiful years and releasing during years of shortages. It can also play stablizing role by motivating producers through supply of consumer goods and efficient marketing service for their output at remunerative prices. The general upward movement in the price series therefore, imply failure on the part of the marketing system to bring about desireable outcomes. Had the marketing system been transparent,it could have communicated the demand of consumers to producers through prices which would have played an incentive role in increasing production.

The persistent increase in price over the period and the decline in food grain production imply that either the total benefit from upward movement in the price trend had gone to wholesalers higher up in the marketing hierarchy or producers were not responsive to price incentives. However, the later assumption is implausible since most studies during the period indicate that producers were responsive to prices.[108]

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[108] See for example Alan R. Thodey, Op.cit, p.11.;Bo. Wickstorm, Op.cit p. 20.

3.2.2.2 The Seasonal Movement

The seasonal variation in the price series of the five cereals can be best explained by seasonal index. The seasonal index emenates from the relationship between the oscillation of the average monthly price around the centered 12 month moving average. By assuming a percentage up ward or down ward seasonality bias in each month of the year, the ratio to moving average has been adopted for the estimation of seasonal index. Accordingly, the following symmetric filters have been used:

$1/12\ (Y_{t-5} + Y_{t-4} + \ldots + Y_{t+4} + Y_{t+5}) + 1/24(Y_{t-6} + Y_{t+6})$

Where Y_t represents the trend component cleared of mild fluctuations but still with higher ones. The division of the original series by Y_t and multiplying by hundred will give the percentage fluctuation of each month around the trend. However, to arrive at the seasonal index which best measures the seasonal variability in prices, each month's percentage fluctuations is summed over years and averaged over the number of years to give un adjusted seasonal index. The sum of the 12 months index must equal to 1200. If it is different, it must be adjusted accordingly. The total monthly index will be inflated or deflated based upon

its magnitude i.e., if it is greater, it will be deflated and if less, it will be inflated to correct for the difference.

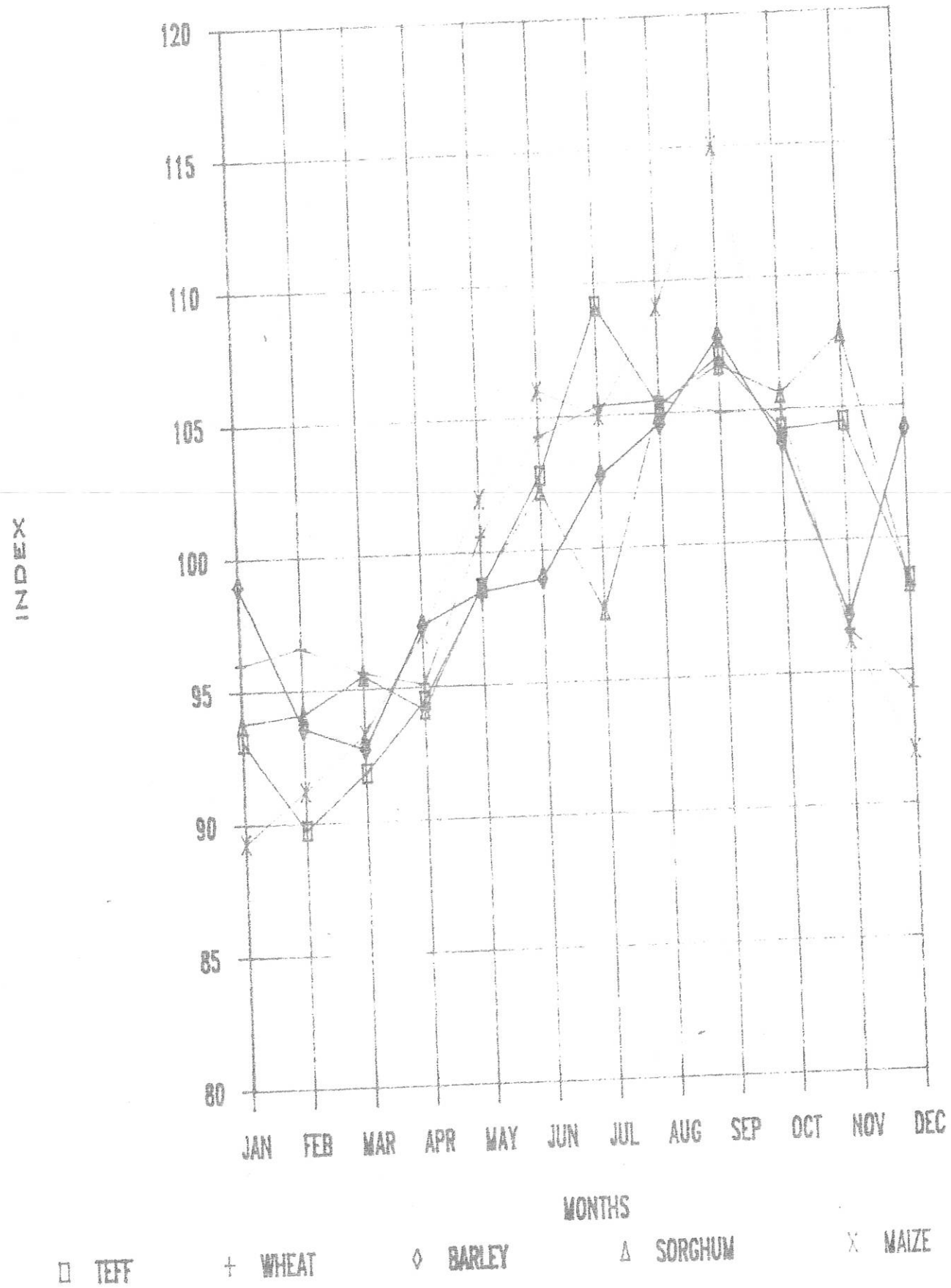
The seasonal index for Addis Ababa for the five major cereals computed from the available price series has been presented below.

Table 3

Seasonal Index

Year	Teff	Wheat	Barely	Sorghum	Maize
Jan.	93.11	96.03	98.95	93.81	89.3
	(1.07)	(10.48)	(7.69)	(10.09)	(9.38)
Feb.	89.74	96.61	93.55	94.11	91.2
	(7.00)	(8.85)	(8.76)	(5.72)	(6.56)
Mar.	91.85	95.62	92.71	95.50	93.3
	(4.6)	(7.5)	(9.13)	(6.0)	(9.57)
Apr.	94.51	95.11	97.21	94.16	97.0
	(5.6)	(5.2)	(8.66)	(4.52)	(5.77)
May	98.67	100.60	98.50	98.72	102.0
	(5.03)	(5.4)	(7.35)	(2.98)	(3.99)
June	102.82	104.29	98.91	102.28	106.0
	(3.05)	(8.14)	(7.61)	(9.04)	(3.99)
July	109.14	105.38	102.73	97.65	105.0
	(6.6)	(9.65)	(7.63)	(7.50)	(11.73)
Aug.	105.27	105.51	104.58	105.35	105.0
	(6.54)	(7.89)	(6.67)	(13.25)	(10.0)
Sept.	107.25	104.96	107.75	106.75	115.0
	(4.95)	(5.65)	(9.30)	(8.89)	(7.02)
Oct.	104.25	104.98	103.78	105.6	104.0
	(4.7)	(11.28)	(9.92)	(8.31)	(14.9)
Nov.	104.47	96.59	97.12	107.79	96.2
	(7.54)	(10.01)	(8.69)	(9.71)	(9.41)
Dece.	98.48	94.32	104.11	98.29	92.0
	(5.67)	(5.17)	(11.40)	(6.81)	(9.48)

Fig. 3. ADDIS ABABA FOOD GRAIN WHOLESALE PRICE SEASONAL INDEX (1968/69-1976/77)



It can be seen from the table that the grain market was characterized by high instability in the period under study. This instability in the seasonal price pattern resulted primarily from deficiencies in the marketing system itself. Chief among these were the relatively uncoordinated nature of storage, lack of a high degree of intermarket integration, the fact that most farmers' sales are crowded into short harvest period and general lack of capital available for investment in storage and marketing activities by private merchants particularly at the lower level of the marketing system.

In the case of barley, low price index for July and increasing index for December were observed probably because the main supply season for the crop may be the "belg" season. The "belg" rainy season users are northern Shoa, Arsi, Southern Gondar, Wello and Tegrai which are mainly barley producers.

Barley is also the only cereal which has shown an upward trend between November and December. The movement of the index and the price series which it explains largely depended on the marketing season and the index of barley has something to do with the harvest season. The low price and the index in general and for all crops coincide with the post harvest months December to April. The high price, and the index, as well fall

between the May and November.

The above exposition brings to light that the seasonal index is no more than an average of the seasonal price behavior of the price used in its computation. It is important therefore, to see how far the seasonal price index explains the seasonal price fluctuations which is the percentage ratio between the monthly price and the centered 12 month moving average price. This can be achieved by comparing the seasonal index with the coefficient of variation.

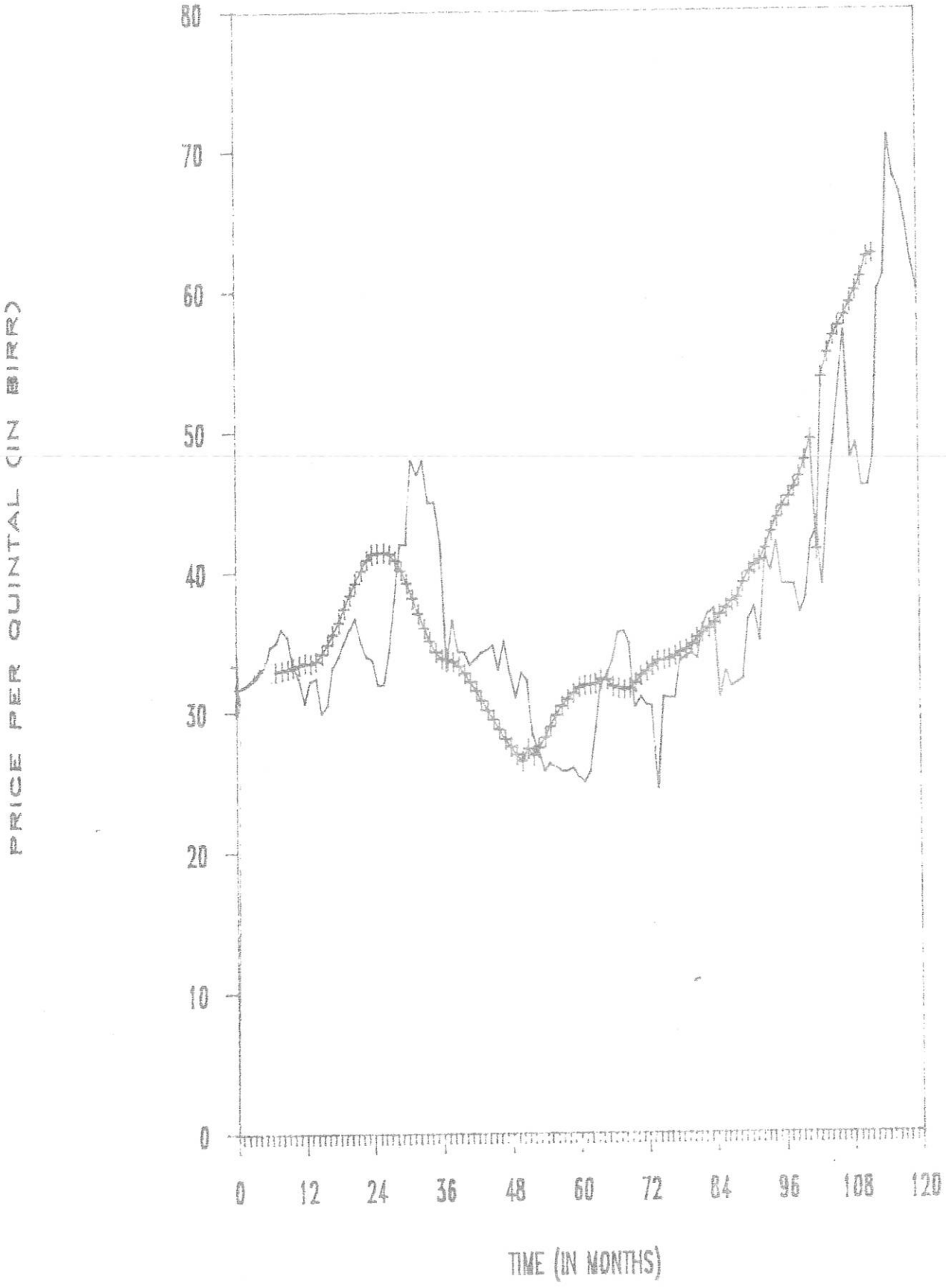
Table 4

Analysis of Seasonal Index Based on Original Price Per quintal as Percentage of Centered 12 Month Moving Average Price

Crop	Coefficient of Variation all observation	Seasonal index	Seasonal Index Months Low	High	Range	% explained by seasonal index
Teff	0.26	0.165	Feb.	Sept.	17.33	63.46
Wheat	0.20	0.147	Dec.	Aug.	11.19	73.5
Barley	0.32	0.144	Mar.	Sept.	15.04	45.94
Sorghum	0.30	0.153	Jan.	Nov.	13.97	51.00
Maiz	0.32	0.160	Jan.	Sept.	25.7	56.25

It can be seen from the above table that the seasonal index explains more than 50% of the variability for the cereals except for barley. In the case of barley, the index explained only 46 percent of the variation.

Fig. 4.A.A. MONTHLY WHOLESALE PRICE OF TEFF
CYCLICAL MOVEMENT
(1968/69-1976/77)



3.2.2.3 Cyclical Movement

The movement of whole sale price series for teff in Addis Ababa as computed by centered 12 month moving average has been shown by smooth curve. It has exhibited periodic cyclical movement which recur at more or less regular times.

The presence of trough i.e. period of low price and peak, period of high prices in the price series indicate to us the potential to remove some of the supplies from the market during downward movement and injecting it during upward movement in prices there by stabilizing the market.

The transfer of supplies between seasons would have dampening effect on the cyclical price oscillations.

3.3 Margins and Marketing Costs

Margins charged at different levels in the marketing system and the overall margin charged by the system is an important indicator of its efficiency. Margins are charged against the services rendered and activities performed which may entail costs to the participants. The costs may be hired labour, rent, transportation and

interest on working capital. Thus, the gross margin which is the difference between selling and buying price, besides covering costs must also provide the participant a return for own labour (including family labour), his invested capital, management service and risk.

There are various factors which go into the determination of marketing margin among which are:

a) the longer the distance between point of production and consumption, the poorer the road condition, the scarce the supply of transport in relation to demand, the higher the gross margin incorporated in the value of the commodity and vise versa.

b) The lower the level at which the producer enter the marketing system, the higher the marketing cost and the higher the margin and vise versa.

c) The more abundant the supply of the product on the market and the more there is a tendency of collusion among merchants the higher the margin and vise versa.

d) The more the market is integrated, the less the marketing margin and vise versa.

e) The longer the produce in the marketing system the higher the margin.

f) The greater the degree of transformation in the marketing system the higher the margin.

There are no sufficient information on the basis of which one can evaluate whether the marketing system in the pre-reform period had operated reasonably well according to the above criteria. However, from the scanty information available from various research works, it might be possible to have rough idea of the system with regard to margins.

In the grain marketing system we can look at the assemblers, wholesalers and retailers margins. The assemblers procure supplies in small lots in one market and sell large lots in another location, while wholesalers buy supplies from assemblers or other wholesaler from lower level of the marketing hierarchy, store and distribute to retailers. Retailers on the other hand distribute the products to consumers.

The study by Stanford Research Institute (SRI) indicate that in January 1968 wheat was priced Birr 6 higher at Iteya than at Hurata with only 17 kms distance from Asela.[107]

The study also compares the Debre Zeyt price with Addis Ababa price for the five cereals and found out the assembling margin was quite higher than 20% which was considered as standard performance based on the

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[107] Alan R. Thodey, Op.cit, p. 76

operation of the Ethiopian Grain Corporation (EGC) [110]

A rough estimate of producers wholesale margin was also made below.

Table 5

PRODUCER AND WHOLESALE MARGIN

FOR VARIOUS YEARS

Place	Crop	Distance from A.A. (kms)	Average margin BIRR/ KMS.	TIME
Shenkora	Maize	247	4.5	0.0187 1970/72
	Teff	247	22.65	0.0917 1970/72
Assela	Wheat	175	5.06	0.0289 1968/74
	Barley	175	4.93	0.0282 1971/73
Huruta	Wheat	150	3.80	0.0253 1968/74
	Barley	150	5.38	0.0359 1971/74
Bokoji	Wheat	235	6.47	0.0275 1968/74
	Barley	235	6.10	0.026 1971/74
Assassa	Wheat	300	6.66	0.0222 1971/74
	Barley	300	7.28	0.0243 1971/74
AVERAGE:				0.0320

Source: Various.

[110] Ibid.

Producers prices were obtained from Chilalo Agricultural Development Unit (CADU) reports and Manning study of the Bako area of Ethiopa and the difference to Addis Ababa whole sale price have been calculated to establish an average margin during the main buying season after harvest. The unweighted average price per quintal kilometer was Birr 0.032. This was higher than transport and handling costs which was estimated at Birr 0.014 .[111]

Retail margin for Addis Ababa has been shown in the table below by comparing wholesale price series of the Ethiopian Grain Corporation (EGC) and CSO retail price series.

Table 6

Wholesale and Retail Prices, and Retail Margin

Average for 1970 - 1974 (Birr/q)

	Prices		Margin	
Crop	Whole Sale	Retail	Absolute	%of whole s.p.
Wheat	24.98	38.74	13.36	53.5
Barley	18.96	21.63	2.67	14.1
Maize	17.63	20.00	2.37	13.4
Sorghum	23.70	27.53	3.83	16.12
Teff(brown	32.47	31.02	-1.45	-0.04

Source : Grain Marketing and Storage Project.

[111] See for example Winfried Manning, op.cit., CADU Report, no.12.

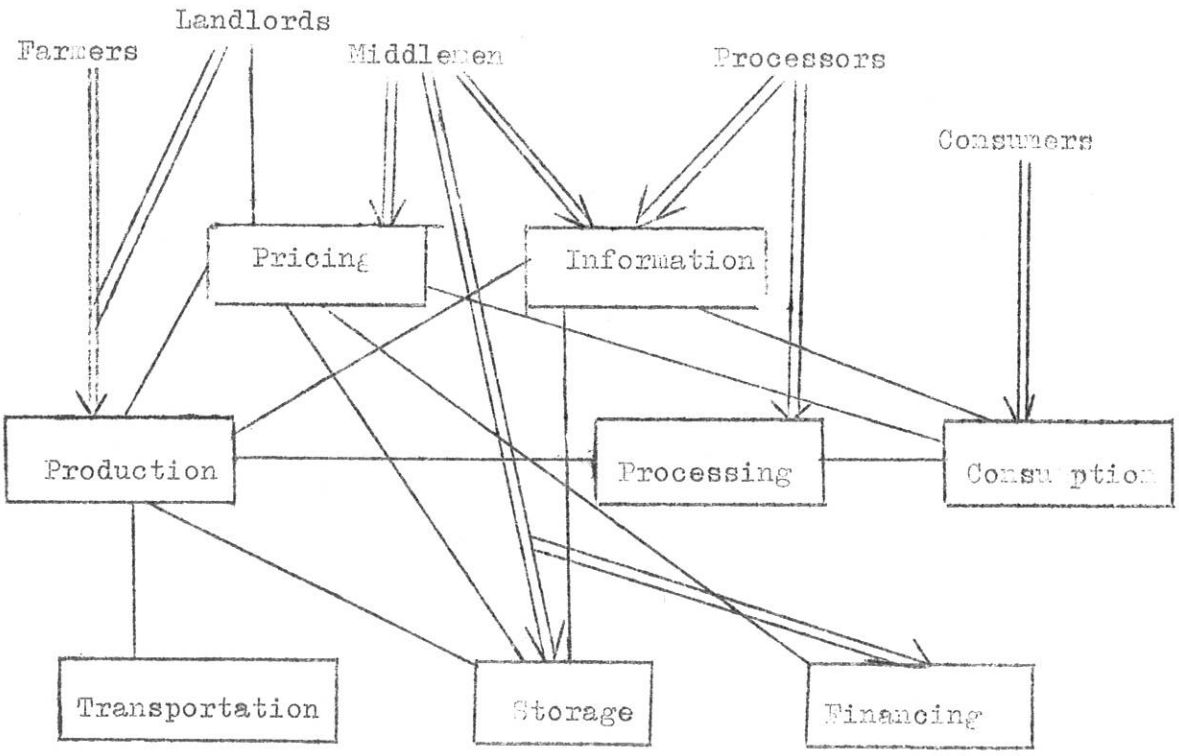
Margins vary between commodities as indicated in the table above. The highest margin is for wheat while the three food grains barley, maize and sorghum have closer margins. The margin for brown teff as revealed by the available information was negative. With reservation of the accuracy of the data, it could have been so for reasons the farmers near Addis Ababa sell their teff in the market at prices lower than wholesale level and might have purchased cheaper quality grain like barley, maize and sorghum. Except in case of brown teff in Addis Ababa retail margin, the overall margin in the marketing system was found to be higher than due to the service rendered and activities performed.

3.4 Power Relationship in the Marketing System in the Pre-reform Period

The preceding discussion can be presented diagramatically to show the power relation in the grain marketing system in the pre-reform period. It has been shown that the functions performed by producers were to produce, store, transport grain to the market. Merchants at different level in the marketing system, negotiate, buy, store, transport, finance and in some cases particularly at higher level in the marketing hierarchy, process food grain. Information about supply

and demand situation and current and past prices in the terminal and regional markets were also available higher up in the marketing system. On the basis of these information, the influence structure in the marketing system and the interrelationship between the systems function can be depicted diagramatically in figure 5.
As shown in figure 5, farmers had no influence on prices. The most powerful and beneficiaries of the marketing system were the middlemen . The system did not motivate producers to increase output and marketablity. Instead it supplemented the archaic tenure system in extracting more surplus from the rural poor thus aggravating mass poverty.

Fig. 5: The Influence Structure in the Marketing System and the Interrelationship between the System Function



4. INSTITUTIONAL CHANGES IN THE NATIONAL GRAIN MARKETING SYSTEM

Changes in internal marketing, food grain marketing included, were gradual and not even so radical (compared to the other sectors of the economy) in the initial years of the revolution. The changes were reflected in declaration and proclamations as well as organizing and revitalizing institutions which effectuate the declared policies. However, operational practice are at variance with the declared policies and they have been mostly shaped by default rather than by design.

4.1. GOVERNMENT POLICIES AFFECTING GRAIN MARKETING AND PRICING SYSTEMS

A number of proclamation and declaration had been issued by the revolutionary government to rationalize internal trade which have significantly affected food grain marketing. The first in the series was the Declaration of Economic policy of Socialist Ethiopia in 1975. The declaration envisaged that the government may where-ever necessary participate in wholeslae and retail trade to estabilize price and protect the interest of the masses.[112] The policy declaration implied that internal marketing including food marketing would, by and large be the domain of private sector and government

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[112] Government of Ethiopia, Declaration of Economic policy of Socialist Ethiopia, Addis Ababa: Berhanena Selaam Printing Press, Feb. 1975. P.5.

interference may be necessary in case of distortion or deviation from competitive equilibrium which may result in high prices to consumers or low prices to producers and greater margin to middlemen than warranted by marginal productivity of factors. In line with the declared policy, it had created the Agricultural Marketing Corporation (AMC) in 1976 to implement its policy with regard to food grain and the Ethiopian Domestic Distribution Corporation EDDC in 1975 to effectuate policies with regard to marketing of manufactured goods. The main functions of the two corporations as envisaged at their establishment had been to stabilize prices by competing with the private sector.

With regard to the role of private sector the National Democratic Revolution of Ethiopia of 1976 forsee the necessity of giving incentive to local businessmen and industrial lists and to all citizens engaged in individual enterprises useful to the society. The program however, envisages that the private individuals operate within the guideline of the national plan.[113]

The government had also endeavored to lay down the general framework for the operation of private sector in internal marketing. In proclamation no. 76 of 1975 relating to commercial activities which may be

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[113]Addis Zemen,"The National Democratic Revolution of Ethiopia." May 20, 1976.

undertaken by the private sector it had limited the working capital to three hundred thousand (300,000 dollars), but it indicated that the wholesalers in agricultural products could employ more capital than set by the ceiling.[114]

Along with state and private sector in food grain marketing, rural service cooperatives and urban Kebele Shops were also organized to participate in food grain marketing. Proclamation no. 71 of 1975, which provide for the organization and consolidation of peasant Association also provide for the establishment of Cooperative Societies[115] by two or more adjacent peasant associations. The objectives of the cooperative society as envisaged in the proclamation includes among other things, marketing of produce of members at fair prices, giving loans at fair interest rates supplying consumer goods to members according to their needs, supplying improved agricultural implements. Accordingly 3651 service cooperatives with 817 registered and 2834 unregistered had been organized up to 1983.

The declaration and proclamations issued with regard to private, government and cooperative participation in grain marketing had not brought about marked changes in the system up to the formation of the National

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[114]Negarit Gazeta. "Proclamation Relating to Commercial Activities which may be undertaken by the Private Sector proclamation no. 76 of 1975.

[115]Negarit Gazeta, Proclamation for the Organization and Consolidation of Peasant Association, Proclamation no. 11 of 1975.

Revolutionary Development Campaign and central planning supreme council (NRDC & CPSC) in 1978.

Some new ministries were established after NRDC & CPSC with the aim of improving the Management of the economy. The Ministry of Domestic Trade (MDT) was created from the former Ministry of Trade and Tourism. AMC and EDDC with other trading institutions were brought under the domain of the new ministry. Functionally, grain procurement and distribution has become the subject of central decision. Accordingly, grain purchase and sales targets were set for AMC in the first annual campaign and guideline for procurement was also issued. The guideline in the first annual campaign required all wholesalers in food grain to deliver 30% of their annual purchase to AMC while peasant associations were to deliver a minimum of 100 quintals from one of three important cereals grown in their village. This mode of procurement was assumed to strengthen the ties between producers and AMC while ensuring enough supply for the market. However, AMC was able to perform only 30% of its target in the first year of annual campaign thus, failing to meet the demand for cereals and stabilize parallel market prices.[116]

The weak procurement performance of AMC in 1978 led to its revitalization into 8 zones, 20 branches, 120 purchase centers in 1979. Besides strengthening AMC

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[116]Ministry of Trade & Tourism - "Report of the Minister to the Council of Ministers" Oct. 22, 1970 E.C.

organizationally a grain purchasing task forces have also been organized from the central level down to the Woreda administration and further to peasants association to see to it that peasant deliver the assessed quota and to control the activities of private grain merchants. State farms, producers cooperatives and settlement farms have also been required to channel their marketed output through AMC. The task forces initiate service cooperatives to take part in grain trade and also agitate peasant members to sell grain to their service cooperatives than to private merchants.

After 1979 private grain merchants were required to deliver 50% of their purchase volume and renewal and revocation of their licence had also came under the jurisdiction of grain purchasing task forces.

4.1.1. Food Grain Pricing and Price Policy

The rising food prices in the major urban areas became a point of serious concern immediately after February 1974. The then Ministry of Industry, Commerce and Tourism issued legal notice No.1 in May 1974 providing for the establishment of committees which determine the prices of food grain. The local committees in all regional administrations were given the power to revise the prices of food grain whenever the need arises. Such pricing system introduced a serious distortions in the grain marketing system by hampering the movement of grain from surplus to deficit

region. Sometimes price competition to attract more marketable surplus ocurred while other times prices were fixed far below the supply demand relation and creating unwarranted problem to both producers and consumers. In subsequent years food grain prices were fixed centrally by the council of Ministers each year. The Ethiopian Grain Agency sees to it that the prices fixed by the government were respected by private merchants. After the liquidation of the Ethiopian Grain Agency responsibility was transferred to the task forces and mass organizations.

Initially eight terminal markets were selected i.e., Addis Ababa, Dire Dawa, Jimma, Gondar, Dessie, Mekele, Ghimbi and Shashemanne and food grain price were fixed for each town. The prices in other markets were determined based on the location of the market from terminal market. It also allows for seasonal adjustment of prices. However the basic problem with the pricing system was that there was no reliable data on which to base the price paid to the producers. There were no proper crop forecast, cost or production was not also known and crop prices were neither related to import parity prices.

The geographically differentiated and seasonally variable price of food grain was replaced by para-seasonal and para-territorial prices in 1980. Since then the divergence in parallel market price and controlled market has been widening (annex II).

4.1.2. The Rational for Establishing AMC & its Organizational Structure

One of the major change in the National Grain Marketing System is the establishment of AMC. The idea of creating a new parastatal grain marketing organization was initiated before the revolution in relation with the implementation of the minimum package projects. The Grain Marketing Structure was seen as a constraint to the effectiveness of the MPP Program and intensification of efforts for the development of peasant farming.[117] A thorough assessment of the grain marketing before the formation of AMC was made and its establishment was rationalized. According the national grain marketing system before the formation of AMC was characterized by:-

- high transport cost; double transport due to lack of local capital and storage facilities,
- incapacitation of the producer because of his need to sell immediately after harvest to meet debt and rent payments;
- restricted facilities for on farm storage-
- restricted choice to the producer, due to the fact that he virtually had no option except to sell his produce on the day when he brings to the primary market-
- lack of relevant price information;
- lack of competition between buyers;

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[117] World Bank Mission, op.cit., p.1.

- uncontrolled weights and measures which operate to the traders advantage;
- labour intensive market operation;
- numerous title transfer in the marketing chain;
- non existence of grading quality standards leading to most traded lots having a high impurity content (up to 15%) which adds to the transport cost of the system;
- low standard of storage hygiene and pest control, although losses on this account often appears to be exaggerated;
- lock of price stability from one year to another and thus a reluctance from farmers to use cash inputs;
- in efficient crop forecasting thus high risk and margin in seasonal storage.[118]

The declaration of economic policy and land reform further necessitated the establishment of parastatal grain marketing organization to stabilize the market and protect the interest of the masses. In order to overcome imperfections in the marketing system cited above in line with the government policy- the AMC was established by merging the farmer Ethiopian Grain Corporation, A Agricultural input and Marketing Service(AIMS) and the GERS Company, the later two being the subsidiaries of the AID Bank.

In the first three years of its existence, the organization was operating side by side with private

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[118] Ibid. p. 4.

merchants and could not exert any significant influence on the market. Mean while shortages and sharp increase in prices of food grain in major urban markets forced urban dwellers and government employees to send their respresentatives to grain surplus region to procuer grain. The year 1976-1978 was the break down of the national grain marketing system which was essentially due to the counter revolutionary wars which disrupted transport and dislocated many farm households. To this was added the poor harvest of 1977/78 due to drought. However many official reports attribute the shortage of food in urban areas to increased consumption of the rural farm population due to land reform.[117] There was no empirical evidence to suggest the validity of this view point except the one done in Arsi administrative region. In Arsi the study by Negussie Wolde Michael[120] indicate that consumption of wheat was 85 kgs and barley 145 kgs, after land reform while CSO's study in the same area reveal that it was 41 kgs for wheat and 98% for barley implying that consumption of peasants had been improved significantly due to land reform. The government response to the deteriorating food supply in the urban areas was to revitalize AMC organizationally to have proportionally higher share in the grain

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[119] See for example Government of Ethiopia/World Bank Mission, op.cit.; John Holmber, op.cit.

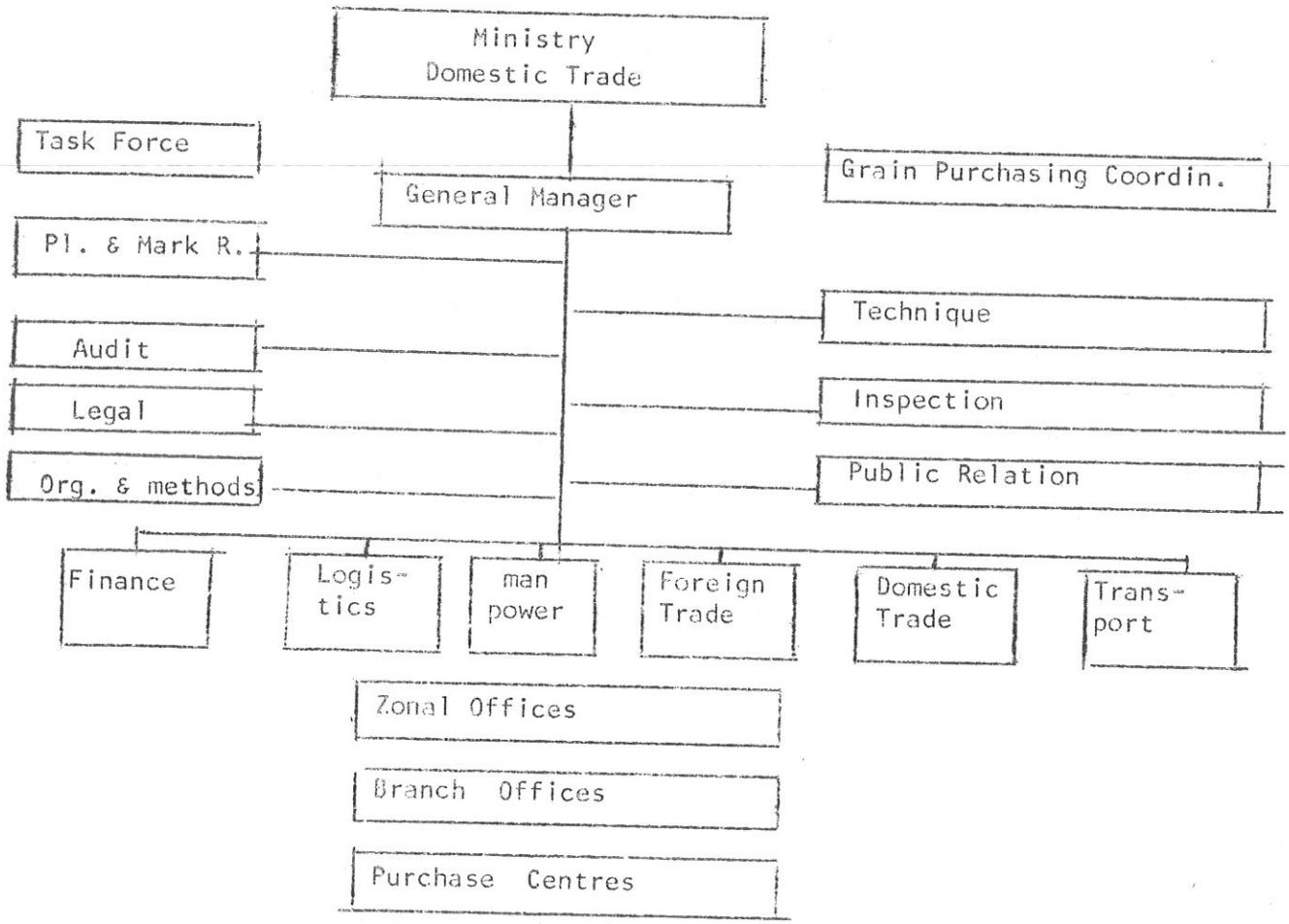
[120] Negussie Wolde Michael, Investigation on the Impact of Agrarian Reform on Peasant Income and Expenditure Patterns, Assela: CADU, Publication no.18, 1981.

market. Accordingly, AMC was organized and made responsible to Ministry of Domestic Trade since 1979. It was reorganized in to five zonal regions (North western zone, Central zone, South eastern zone. Northern zone and South western zone), 17 ordinary, 3 special branches (Dire Dawa, Mekele, and Asmara), 120 purchase centres.

The organizational structure of the corporation is as shown below

Fig. 6

Organizational Structure of AMC

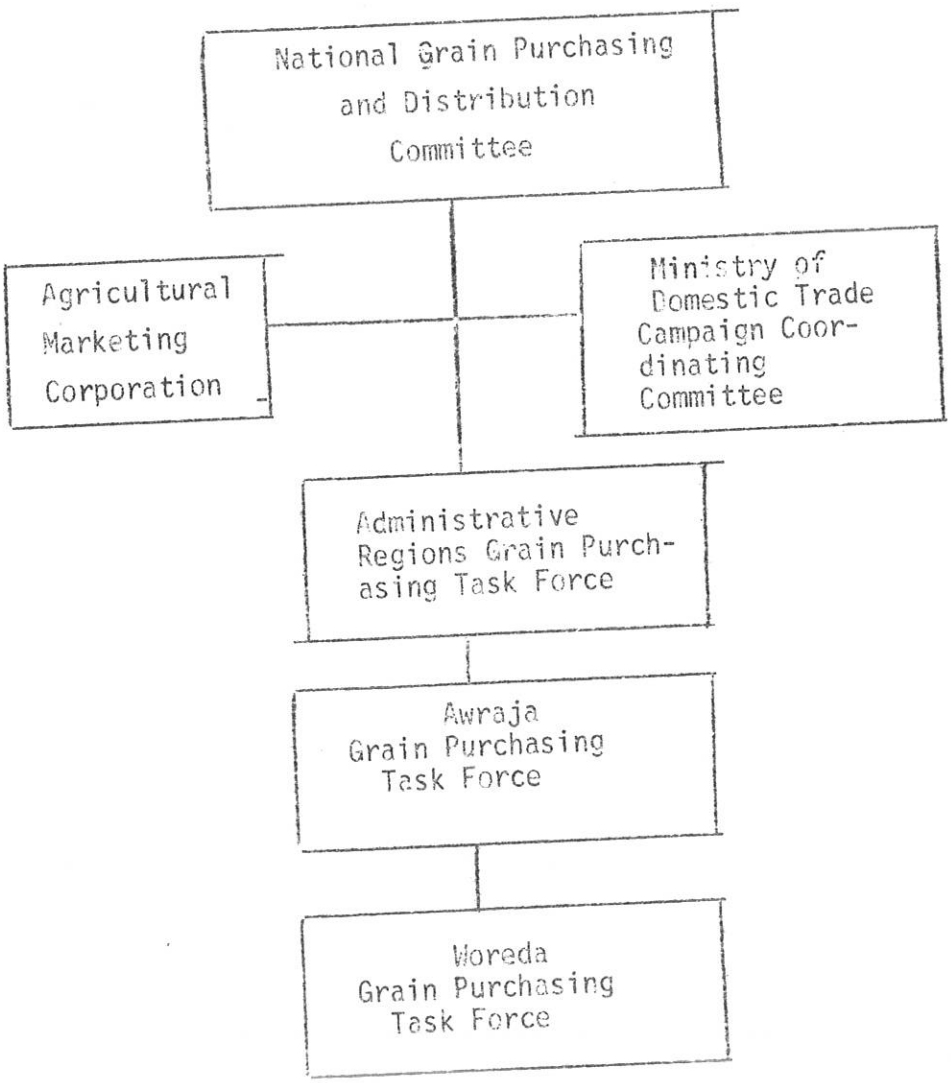


Revitalization was seen as introducing one more level (zonal offices) in the operational hierarchy without substantial differences in the function and duties and responsibilities with that of the branches. Additional purchase stations were also created and procurement points were expanded.

4.1.3. Organization and Operation of the Grain Pricing Task

Marked changes in grain marketing system did not came about only by reorganization of AMC but due to the introduction of the new element in the grain marketing system i.e., organizing grain purchasing task force from the centre to Woreda level on the basis of administrative hierarchy. The organizational structure of the grain purchasing task force is shown below:-

Fig. 7



The corporation prepares its procurement plan by region, source and type of grain and submit to the office of the National Committee for Central Planning (ONCCP) through the Ministry of Domestic Trade. The ONCCP after reviewing the proposed plan submit to the council of Ministries which upon approval pass it down in the form of instruction to the regional grain purchasing task forces headed by the regional administrators. The regional procurement quota is further sub divided and communicated to the lower level task forces with further instruction until it reaches the Woreda task force (small administrative unit in the hierarchy). The Woreda task force allocate the assigned quota to service cooperatives who in turn pass it down to peasant associations which further assign it to individual farm house holds.

Fulfilling the centrally allocated quota has been the responsibility of the task force and mass organization at all levels of the hierarchy. The task of AMC has become to collect, transport, store and finance the procurement operation.

The quota delivery system has serious implication on production and productivity of small holders. In the first place allocations of quota are not based on information on local capacity and possibility to meet them. It starts from the requirement of clients which is aggregated by AMC and become the basis for procurement plan. The aggregate is sub-divided in to region and by type of crop to become the amount of grain required from each region. At the peasant association level also quota delivery requirement is not based on individual possibilities to meet them but to share the total allocation equally among members for supply. The logic behind such decision has been that all peasants have equal access to land. However peasant households differ in their assets ownership which influence food production. Ownership of draught animals, labour, farm tool or even the type of land they hold differentiate small holders into poor, middle and rich peasants. Poor

peasants and in some cases even middle peasants fail to meet the allocated quota. Since the quota delivery is compulsory, peasants usually reduce their consumption or even drain their reserves for seed in fear of penalty. In both cases it affects small holders production and productivity.

Secondly what ever is procured is usually transported to Addis Ababa and major urban areas. More over AMC has no sales outlet in the procurement areas.

Thus, areas which supply grain at the time of harvest face shortages later in the seasons and which may lead to very high seasonal variation in prices. This again seriously affect poor producers and poor consumers.

4.2. AMC's Purchasing and Distribution Operations

4.2.1. Purchasing Operations

The activities of AMC have **quickly** been expanded since 1979/80 and increasing the volume of its purchases at any cost seems to have substituted all its initial objectives.

The pressure to increase the volume of its purchase emanated from increasing demand for food grain from its clients. Supplying six urban centres (Addis Ababa, Asmara, Dire Dawa, Mekele, Harar and Assab), government institutions like the Ministry of Defense, the food industries, hospitals and schools, with food grain has become the responsibility of AMC by default than by design. Thus AMC collects information on the demands of these clients and prepares its procurement plan for the following year.

The pattern of food demand and actual consumption rates by different segment of the population are largely unknown for the country. AMC also has no capacity to analyze grain market data as a basis of demand projection.

AMC lacks information not only on the size of demand

that it should satisfy but also knowledge of the level of supply. The country has no reliable system of crop forcast and whatever is available has not been put under the disposal of AMC when needed. More over the corporation has also no capacity of putting together the crop forecast and other market data for the planning its purchase.

In the absence of clear knowledge of the level of demand and supply AMC has no choice but to depend on the request of his clients to plan its purchase operation.

It procures grain from peasant associations service cooperatives and private merchants. The annual procurement from both sources since its establishment for the five cereals has been given below.

Table 7

Agricultural Marketing Corporation Actual Purchase of Food Grain From Farmers and Merchants 1976/77 - 1983/84

in '000 quintals

Year	Crop Teff	Wheat	Barley	Maize	Sorghum	Total
1976/77	94	444	109	311	68	1,026
1977/78	116	202	173	327	71	888
1978/79	113	869	109	208	72	1,371
1979/80	426	125	207	556	194	1,508
1980/81	843	1,969	241	272	112	3,437
1981/82	711	419	491	252	131	2,004
1982/83	856	1,859	472	913	324	4,424
1983/84	729	1,117	97	1,183	194	3,320
Total	3,887	7,004	1,899	4,022	1,166	17,978

Source: AMC Annual Reports 1979/80-1984/85.

The corporation has also been a market outlet for state farms, producers cooperatives and settlement farms.

The procurment level has shown a marked up ward trend since 1977/78 with a sharp decline in years 1981/82 and 1983/84 over the preceding years.

Besides rapid increase in the volume of procurment dramatic changes in the share of suppliers have also taken place. Private merchants have found their role limited and suddenly pushed out of grain trade. The following table shows the share of the participants in total supply to AMC.

Table 8

AMC's Purchase from Service Cooperatives and Private Merchants in '000 quintals 1978/79 - 1984/85

Year	Total Purchase of AMC	Share of Service Cooperatives in %	Share of Private Merchants in %
1978/79	1,023	5	95
1979/80	1,964	10	90
1980/81	2,570	24	76
1981/82	3,065	38	62
1982/83	3,844	71	29
1983/84	2,665	77	23
1984/85	2,312	94.7	5.3

Source: Ministry of Agriculture Evaluation of Agricultural Sector p. 34.

The share of service cooperative and the private sector in AMC's purchase has completely been reversed between 1978/79 and 1984/85 as shown in the table. The share of service cooperatives increased from 5 percent in 1978/79 to 94.7 percent in 1984/8 while that of the private sector decreased from 95 percent in 1978/79 to 5.3 percent in 1984/85. This however does not mean that the role of private sector in food grain marketing

has been minimized. The share of AMC in the total marketable surplus did not exceed 45 percent. In fact the private sector continued to operate in a parallel market with higher risk and larger profit. The effort to replace private grain merchants by service cooperatives has contributed to a serious logistical problems.

Service cooperatives and peasant associations generally procure and bulk grain for AMC at thier own stores. They have not started transporting their grain to the market or to the AMC store. The reason for not transporting grain is due to uniform price which does not take into account the transport cost. Thus AMC has been forced to increase its collection centres. The following table shows the increase in the number of branches and purchase performance.

Table 9

AMC's Procurement Points and Procurement Per Point

Items	1980/81	1981/82	1982/83
Procurement points	822	1,010	1,518
Purchase/point (MT)	313	300	253

Source: SWED FARM AB, Main Report Vol. I, p.69.

The table shows that the rapid expansion of procurement points has been accompained by reduction in the volume procured per point. This results in higher costs of collection, increasing food prices to consumers and depressed price to producers. Besides the procurement points are off all weather roads and in places where for merely grain used to be brought to the market by pack animals, the corporation began to use trucks which could be easily damaged and fuel which are expensive in terms of foreign exchange. The expansion of procurement points has greatly changed the factor mix in grain trade i.e., from labour intensive to capital intensive, from transport cost in kind and local currency to transport in cash and foreign currency.

Besides expansion of procurement points there are various problems which are associated with AMC's food grain purchase and sales operations. In the first place concentration of food grain production and market supply is a few months (January - May) and low holding cpacity of producer - due to immediate cash needs as well as to lack of proper storage facilities result in heavy market arrival in the immediate post harvest months. Since this period coincide with the harvest season of other agricultural products like coffee, it has resulted in heavy pressure on transport, storage and financing.

In the second place the quota delivery system has made it difficult to organize pruchase and arrange

transport. Cooperative societies sometimes request trucks before it amount to a lorry load or the procured grain may not also be weighed and bagged. Trucks may not also be available at the time of the request both resulting in high cost to service cooperative and AMC.

In the third place AMC could not be able to influence the quality and composition of grain it handles. It has been reported that 25% of the total deliveries (226, 552 qts.) from state farms in 1983 to AMC had over 13-50% impurity levels and with a moisture content of over 14%.[121] When the acceptable have been below 12% for impurities and less than 14% for moisture. Quality deterioration is hidden form of increase in price which cannot easily brought under control. It is a waste to a nation in terms of its transport requirement and cost to consumer because they pay price for what they don't use.

In addition to the three problems cited above which might have affected the pruchase and sale's operation of AMC, the few indicators below show the corporation's capacity in effectively employing the resources at its disposal.

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[121] SWED FARM (AB), op.cit., p.77.

Table 10

AMC's Resources use Capacity

All figures are for the year

1986

Storage Capacity	
Capacity in qts.	5,491,500
Total volume sold (in qts)	5,050,000
Rate of turn over	0.72
Desirable rate of turn over	1.5
Rate of capacity utilization	60%
Transport	
Number of trucks	139
kms covered	2,811,711
km covered per truck	20,200
Standard km coverage/truck	43,200
Rate of capacity utilization	47%
Manpower	
Mumber of administrative staff	487
Volume of purchase (in '000 qts)	6,400
Through put (000 qts)	13
Desirable through put ('000 qts)	50
Rate of capacity utilization	26%

Storage and transport cost alone account for about 75 percent of AMC's operating costs of which transport

cost account for 50 percent and storage and handling costs for the rest of 25 percent. Due to uncoordinated purchase and sales plan there has been hectic transfer of grain from procurement points to purchase centre, from purchase centres to branches stores and between branches. The study by SWED Farm indicated that in 1982/83 alone the corporations total amount of intake was 21,426,620 quintals with the total volume sold 5,058,000 quintals and total purchase of 6,397,000 including imports indicating that grain has passed 3.3 and 4.2 times AMC store on the average before deliver.[122] Under organized purchase and sales storage capacity utilization is measured in terms of the relation between purchase and delivery allowing for stocks. Considering the concentration of market supply in Ethiopia which is limited to a few months a turn over rate of 1.5 per year has been taken as a normal standard for storage performance in planning. In places where grain supply is evenly distributed over the year higher turnover to the tune of 3-4 is quite normal. Comparing AMC's performance with adopted standard, it has been found that it uses only 60 percent of its capacity. Under utilization of capacity on one hand and hectic movement of grain from one store to another has resulted in high storage and handling charges.

Rate of transport capacity utilization has been estimated on the basis of the corporation truck utilization plan. According to the corporation plan a

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[122] SWED FARM (AB), op.cit.,

driver works for 8hrs/day, 25 km/hr and 18 working days per month. Accordingly a truck can cover (8x25x18x12) 43,200 kms per year. This distance has been considered minimum when compared with National Transport Corporation Plan of 54,000 kms per year. Thus when the actual with planned utilization it has been found to be 47%. Low transport capacity utilization may be related to unorganized purchase and sale and this has resulted in higher marketing cost.

The other indicator of the corporations effectiveness is volume of purchase per administrative staff. In advanced countries grain procurement per administrative staff range from 200-250 thousand quintals. The Kenyan Farmers Association procurement employees turn over per year has been 50,000 quintals.[123]

This has been taken as a proxy for measuring the rate of manpower resource utilization which has been found to be only 26% of the total capacity.

4.2.2. Distribution and Sales Operations

AMC has faced problems not only in its purchase operation but also in its sales and distribution operation. It caters for urban dwellers in six major towns, government institutions industries and Export market. Lack of knowledge of the magnitude and composition of demand of its clients and weak position

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[123] SWED FARM (AB), op.cit.,

to influence the composition and quality of grain procured has resulted in unsatisfied demand of customers in some cereals while in others poor quality and lesser demanded cereals have been over stocked with increasing marketing costs. The following table shows the grin requirement of the clients AMC's supply for the past few years.

Table 11

Comparison of Estimates Required and Actual Distribution of Grain by AMC 1981/82 1982/83 Million Quintals

Year	Details	Urban House	Government Institut-ions	Indust-ries	Export	Total
	GGrain					
	Requirement	3.0	2.4	3.8	1.0	10.2
1981/82						
	Actual					
	Distr.	2.0	0.89	1.306	0.33	4.526
	Percentage					
	covered	67	37	34	33	44
	Grain					
	Requirement	3.0	2.4	3.8	1.0	10.2
1982/83						
	Actual					
	Distr.	1.9	1.2	1.7	0.2	5.0
	Percentage					
	covered	63	50	45	20	49

Source: 1981/82 Review of farmers incentives and Agricultural Marketing and Distribution efficiency, p.46. 1982/83 - Grain procurement Guideline of 1982/83 for requirement and AMC performance report 1984/85 for actual supply, percentage calculation mine.

AMC has improved its supply to government institutions and industries in 1982/83 over the previous years while the urban and export supply has declined. The requirement of the urban households seems to have been understated because had AMC satisfied 67 and 63 percent of their requirement the parallel market prices would have been stabilized in the two years (see annex II). While AMC has failed to meet even 50 percent of the requirement of its clients its accumulated stock proceed at a fast rate.

Table 12

AMC Stock as a Percentage of Purchase

Year	Stock at the end of the year in '000 qts	Domestic pruchase in the year '000 qts	Stock as percentage of purchase
1980/81		4,369	
1981/82	2,377	4,591	51
1982/83	3,777	5,738	66
1983/84	2,148	4,100	52

Source: AMC Performance Report 1984/85

The unsatisfied demand on one hand and huge stock on the other hand reflects the corporation in ability to match supply and demand by quality and quantity. This implies that the corporation has to pay a greater attention to the distribution problems. Organized purchase and sales with respect to crop and quality can better balance supply and demand and minimize undesirable stock.

4.3. Effectiveness of AMC in Meeting its Desired Objectives:-

One of the major objective of AMC at its establishment had been to closely relate the seasonal and geographical price variation and stabilize prices. Reducing seasonal variability in food grain prices is possible if the marketing system has the capacity to store products and ration out the supplies as evently as possible from one harvest to another. The seasonal price rise should ideally not exceed the storage and handling charges. The SRI suggested an increase of 20% while SWED FARM propose 14% from the lowest priced month to the highest priced month[124] as fairly corresponding to storage and handling charges. Any amount in excess of this has been regarded as imperfection in the system.

The following table may throw some light on seasonal price variability and AMC capacity to minimize the variance.

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[124] Ibid., pp. 110 - 166.

Table 13

Seasonal Price Variation

Crop	Difference between March and September prices 1962-1974	Largest difference over the calendar year 1980-83 average of yearly figure
White teff	3.44	42.25
Wheat	3.60(white)	17.50
Maize	2.32	18.00
Sorghum	3.21	30.75
Barley	2.91	26.00

Source: SWED FARM vol. II.

The table indicates that the high seasonal price rises correspond to the period of AMC's operational expansion. It is also worth to note that high variability in prices have been registered for the high valued food grain (white teff) and low valued food grain (sorghum). The high seasonal price variability in low valued grain seriously affect the consumption and income of poor consumers. This is indicative that AMC has failed to closely relate the seasonal price rise to costs and stabilize prices.

AMC is also expected to integrate the National food grain market by closely relating the geographical price variation. Surpluses must quickly move from the point

of production to meet the demand of deficit regions. Pairs of monthly prices for Addis Ababa and five regional markets have been related in the following table.

Table 14

Relationship of Addis Ababa Parallel Market Price to Regional Parallel Market Retail Price for White Teff 1978/83

	A.A./ Assela	A.A./ Bahrdar	A.A./ Dessie	A.A./ Gondar	A.A./ Shashemane
A.A. price for selected months	102.35	106.93	109.55	108.71	107.89
Corresponding regional prices	65.41	52.19	85.35	67.93	80.37
Difference to Addis Ababa	36.94	54.74	24.20	40.78	27.52
Correlation with Addis Ababa	0.1514	0.1684	0.4242	0.0009	0.2361
Implied distance from Addis Ababa at cents 1.25/qt.km.	2,995	4,379	1,936	3,262	2,262

Source: SWED FARM

The table reveals that fast expansion and consolidation of AMC in grain marketing has resulted in disintegration of the national grain marketing system. The disintegration of the marketing system has serious implication on production marketing costs and consumers. Thus the extent of AMC's contribution to interregional price dispersion through movement restriction on the part of the private operators can be tested with the specification of the following model.

$C_{vpt} = b_o + b_1 X_1 + b_2 X_2 + b_3 X_3$ where

C_{vpt} = is the coefficient of interregional variation of retail prices of the three food grain in year 't'.

X_1 = is a dummy variable having a value of zero in year of free movement and value of one in year of restriction.

X_2 = is a total supply of a given food grain.

X_3 = is an index of concentration of a given food grain.

b_o, b_1, b_2, b_3 are parameters to be estimated.

The model has been used to evaluate interregional dispersion in the teff, wheat and maize. The three crops have been selected on the basis of relative supply and availability data.

It has been assumed that the movement restriction imposed on private operators and AMC's under utilization of the available facilities have resulted in high price

variability between regions. The restriction policy has been accommodated by the dummy variable.

The following regression results have been obtained from the model.

Table 15

Regression Results of Coefficient of Interregional Price Variation (1976/77 - 1984/85

Crop	b_0	b_1	b_2	b_3	R^2	Restriction mean	
						Before	After
Teff	2.782	4.801	0.08	0.276	0.87	21.6	27.7
	(1.61)	(1.752)	(0.005)	(0.501)		(0.759)	(1.25)
Wheat	34.684	10.513	0.756	0.123	0.76	26.4	37.8
	(4.142)	(5.29)	(0.002)	(0.123)		(0.495)	(0.50)
Maize	34.478	15.584	0.802	0.396	0.85	19.1	35.4
	(4.623)	(3.064)	(0.005)	(0.28)		(1.512)	(3.124)

All coefficients have the expected sign and also significant at 95% level and R^2 is also high. Figures in the parethesis are standard errors.

The period from 1976/77 - 1980/81 was a period of relatively free movement while 1981/82 - 1984/85 was a period when strict movement control have been enforced. The mean before and after movement restriction have been estimated and the result confirm that retail price variability have been higher for the three cereals in the period of movement restriction than the period of free movement. With interregional movement restriction

surplus producers earn less and deficit area consumers pay more than they otherwise would, and both lose in bad crop years than in normal years because in normal years interregional movements is greater under the auspices of the state.

Though restriction of interregional movement has resulted in fast increase of AMC's procurement it may in all probability not increasing the sum of producers and consumers welfare as it is measured in welfare economics. It is also the objective of AMC to give good marketing service to farmers by ensuring timely supply of inputs and remove produce to avoid waste and congestion.

Fertilizer is a single most important and in relative sense, widely used cash input by small holders. The amount and distribution of improved seeds is limited. Until 1984/85 the procurement and distribution of fertilizer and other chemicals had been the sole responsibility of AMC. After 1984/85 a new agency, the Agricultural Inputs Marketing Corporation (AIMCO) has been established under the Ministry of Agriculture and taken over the responsibility of procurement and distribution of fertilizer.

Once again as in the case of food grain the general atmosphere under which AMC had been procuring and distributing fertilizer and chemicals was a complicated one which had a serious implication on its operation. The procedure for fertilizer procurement is too long. Since AMC has no capacity to estimate fertilizer

requirement for the country it depended on the information supplied by its clients. Fertilizer requirement is estimated by Ministry of Agriculture (MOA) extension staffs on the basis of requests from peasant association. On the basis of fertilizer demand forecast by the MOA, AMC prepares the required Band credit and subsidy, to finance fertilizer inputs and submit to the ONCCP which after reviewing further submit it to the council of Ministers for final approval. AMC procures fertilizer from abroad with funds provided by commercial Bank and distribute to 470 MOA input distribution centres from where it is collected by peasant associations and producers cooperatives. The MOA acts as an agent of Agricultural and Industrial Bank (AIDB) and deliver fertilizer on credit to farmers on 15% down payment. It sends the receipts of distributed credit to AIDB on the basis of which the Bank makes payment for. AMC for fertilizer distributed. The undistributed amount remains the debt of AMC which means high interest charges to the corporation until the next season.

There has been late decision on procurement and tight timing, leading to purchase when world fertilizer prices where high on several occasions and delays in procurement, transport and delivery to MOA distribution points.[125]

Therefore AMC had been unable to assure timely

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[125] See for example Joint Government of Ethiopia and World Bank Mission, op.cit.; Experts Committee, op.cit.

price. High price spread on the other hand is related to inefficiency and lower share of producer in final consumer price.

Table 16

The Share of Producer in the Final A.A. Consumer Price 1982/83

Type of grain	Producers price birr/qt	AMC Consumers price birr/qt	Share of producers price birr/qt.	Share of producers price in AMC in %	Share of producers in the final consumer price
Teff	45	67.55	80	66.6	56.30
Wheat	30	51.16	75	58.6	40.00
Barley	26	45.73	70	56.8	37.14
Maize	20	44.11	52	45.3	38.5
Sorghum	23	49.76	60	46.2	30.30

The producers' price, AMC's and consumers' prices have been fixed for the last five years. The price spread has been calculated for Addis Ababa the largest terminal market accounting for 30% of the urban consumers. The result from the table show that there is higher price spread and the share of producers price in the final consumer Birr has been low.

supply of inputs to farmers.

Discussion with the management of 10 service cooperatives in the three Woredas during field work by the researcher for this project, has brought to light that AMC has been unable to remove supplies in time. The mamagement of all co-operatives have shown the stores of their socieites which were fully of grain and mob of peasants appearing at cooperative store to deliver their quota. Particularly in Gojjam two societies Deje-Mariam and Tenguma Mariam have stopped to buy grain from members because they had no place to store the procured grain. The management of the society accused AMC staffs in the area for failing to remove the grain from store according to their requests. The failure of AMC to remove supplies has limited the capacity of the society to procure more grain and has antagonized its relation with members for failure to provide marketing service for their output. Since the farmers has no other outlet than the cooperative the failure of the society to provide efficient marketing service has its impact on food grain production.

The other objective of AMC has also been to decrease marketing margin between producers and wholesalers level to improve producers prices and incentives. The success of AMC along this line can be conveniently assessed by using the share of producers in the final consumers price. In the absence of subsidy low price spread implies the efficiency of the marketing system and higher share of producers in the final consumer

Further it can be observed from the table that the share of producers in low valued crops like Barley, Maize and Sorghum have been less than 40% while for high valued teff it is over 56%. In the controlled market, therefore there is a tendency to discourage the production of low valued crops at the point of producers and penalize poor consumer at the point of consumption.

Another interesting point would have been the share of producer in final consumers' price for the food grains bought from the parallel market. Although information on consumers price are available there are no data on prices at which the commodities have been purchased from producers. If it is assumed that private merchants buy at the same fixed price from producers the price spread will be too high, since the parallel market price is higher than the controlled market price. But there are no basis for assuming so because merchants cannot attract producer unless they offer better prices than fixed by the government. However it can be assumed that the share of producers cannot be so high due to the risk involved in the case of private trade and high marketing cost.

In general although AMC has been able to increase the volume of its procurement and increased its share in marketable surplus it has been unable to closely relate the seasonal and geographical variation in prices, it has failed to give good marketing service to producers by supplying inputs in time and removal of produce and it has not at all decreased the marketing margin between producers and consumers and improved producers

incentives.

Restriction and control derived the grain marekting system under ground, disintegrated the national grain marketing system, dispersed the quantity marketed into small lots and increased marketing costs with its implication on producers and consumers.

4.4. COOPERATIVE MARKETING

One of the recent reform in the national grain marketing system has been the establishment of service cooperatives and their active participation in grain marketing.

The number of service cooperatives by region and their level of development is given below:

Table 17

Service Cooperatives

Region	Registered	Unregistered	Total
Arsi	67	75	142
Bale	42	85	128
Eritera	-	13	13
Gamo Goffa	4	77	81
Gojjam	104	307	411
Gondar	38	200	238
Hararghe	34	225	259
Illubabour	51	125	184
Keffa	58	184	242
Shoa	120	935	1055
Sidamo	128	107	235
Tigray	-	56	56
Wellega	114	233	347
Wollo	57	201	258
Total	817	2834	3651

Source: Ministry of Agriculture.

In 1983 the cooperative societies had 16,000 peasant accociation members and 4.6 million households. Their

total capital by in may 1382 was 7[illegible] million Birr. The cooperatives large development potential and they have multipurpose activities i.e.

for the supply of consumer goods

for the marketing of farmers produce

for supply of farm imputs and credit and also

for social and production services to their farmer members.

They have shown a marked interest and performance in grain and as shown in table 8 their share in total supply to AMC grew from 5% in 1978/79 to 95% in 1984/85.

The society have been allowed a margin of 5 Birr/qt. in balking grain for AMC. Though operating of this margin will provide the society with ample profit, many of the cooperative have not started to benefit the member by providing credit which is highly demanded by farmers and also increase the members' interest to the cooperative.

The marketing costs of service cooperative for grain it shown below.

Table 18

AVERAGE MARKETING COSTS OF SERVICE COOPERATIVES

	Annual Cost Et.B.
Personnel	
Society Secretary (Birr 125) 1/2 time shop, 1/2 grain purchaser	825
Store keeper, grain	1320
2 Guards, 1/2 time (Birr 70)	325
Travelling expenses Br. 2x15 days	30
	3100
Store 250 tons x Birr 65/ton = 16,250	
Depreciation, 15 years	1100
Interest, 3.5%	770
Tools Birr 1,000: 5 years	200
Fumigation	200
Loading Birr 0.40/quintals	1000
Misc, 5%	320
	6700
Revenue	
Commission Birr 5.00 x 2,500	12500
Surplus (at 2,500 quintal)	+5000
Surplus (at 3,000 quintals)	+0050

Source: SWED FARM Annex 5, p.2.

Thus a cooperative can make a net profit of 5,800 Birr for annual purchase of 2,500 quintals. The higher the collection the higher the profit will be. However, the effectiveness of AMC has put a limit to the development of the service cooperative as discussed in section 4.3. The effect of AMC on the service cooperative marketing may have created adverse impact on production.

4.5 Private Sector

Data on the operation of the private sector is difficult to obtain. The system of licensing domestic trade has been delegated to grain purchasing task forces of various levels and there is no information on the number of grain merchants officially operating in the markets.

Their agency to AMC has quickly been replaced by service cooperative since their share has declined from 95% in 1978/79 to 5% in 1984/85. However they continue to operate in parallel market with higher risk and probably more profit. The source of supply in major urban markets including Addis Ababa for high valued food grain such as teff remained the private operator since the supply from kebelle societies has been insufficient or un available altogether.

Three cases of grain merchants operating costs have been estimated by SWED FARM.

Table 19

Three cases of merchant operating costs Grain merchant at Woretta buying on behalf of AMC.

	Birr/qt.
Loading, stitching and storing	0.80
Loading truck	0.60
Weight losses, 1% av. price 40	0.40
Taxes and license	0.60
Store depreciation	0.05
Total	2.45

Retailer Addis Ababa	Birr/qt.
Store rent/qt.	0.12
Bag	0.40
Unloading	0.50
Temporary staff	0.10
Losses 1.5% av. price 75	1.13
Taxes & license	0.40
Total	2.65

Merchant at Debre Zeit	Birr/qt.
Assembly cost in the country side:	
Use of vehicle	0.30
Fee for each quintal transport	0.50
Loading costs	0.25
Costs of sack	0.40
Unloading at store	0.25
Storage costs	0.16
Losses 1.5% average price 50	0.75
Taxes and license	0.53
Loading for Addis Ababa	0.25
Total Excluding to A.A.	3.47

Source: SWED FARM Annex 1, page 11.

The table shows that merchant assembling for AMC has less cost than the retailer in Addis Ababa and merchant

at Debre Zeit. There are no criteria of evaluating whether private merchants are cost effective or not, since there are no information on their purchase price at farm.

Although the two operate under entirely different condition cost comparison of AMC and private merchants has been presented in the following table.

Table 20

Synthetic Cost Build up of AMC and Private Merchants

Costs do not include the Costs of bagging the grain in and out of the stores us estimated (Birr/qt.)	Merchant Typical actual Cost	AMC Typical actual Cost
AMC collection of grain at the cooperative - actual costs (1)	(2.5 - 5.00)	3.30
Transport from rural store to Addis Ababa AMC 273 kms av. distance, weighted cost 1.68 cts/qt and km.		4.59
Merchants using 6 ton truck and an average distance of 125 km. (2)	2.66	
Storage costs, 4 months (3)	0.31	0.85
Interest on purchased products 4 months at 9.5% an price Br. 55/qt. (4)	1.74	
AMC B resp. 4 months at 9.5% an price Br. 37/qt. (5)		2.34
AMC over head		1.05
AMC profit & capital charge		1.94
Total	(7.20 - 9.70)	14.12

Source: SWED FARM (AB)

1) Merchants assumed to receive grain to their store in typical cases.

2) The km and quintal rate is for a 6 ton truck on bitumen road. 125 km is assumed overage haulage distance of merchants.

3) Compares AMC hollow block stores at Br. 150/MT stored and 25 years depreciation with local stores at Br. 65/MT, stored and 10 years depreciation storage time, 4 months, private trader, 8-6 months interests: 10 percent.

4) Assume average merchant purchase price.

5) AMC actual interest period estimated to 8 months.

The table shows that AMC operates at higher cost than private merchants. The highest difference has been observed for transport and interest on purchased products. The difference in interest charges is mainly due to the fact that AMC turn over is very low (0.92) compared to private operations. The difference in transport cost is that AMC is only competitive in markets far away from consumption centres while its share in the marketed quantity is quite small in areas near big consumer centres thus being forced to transport grain over a very long distance.

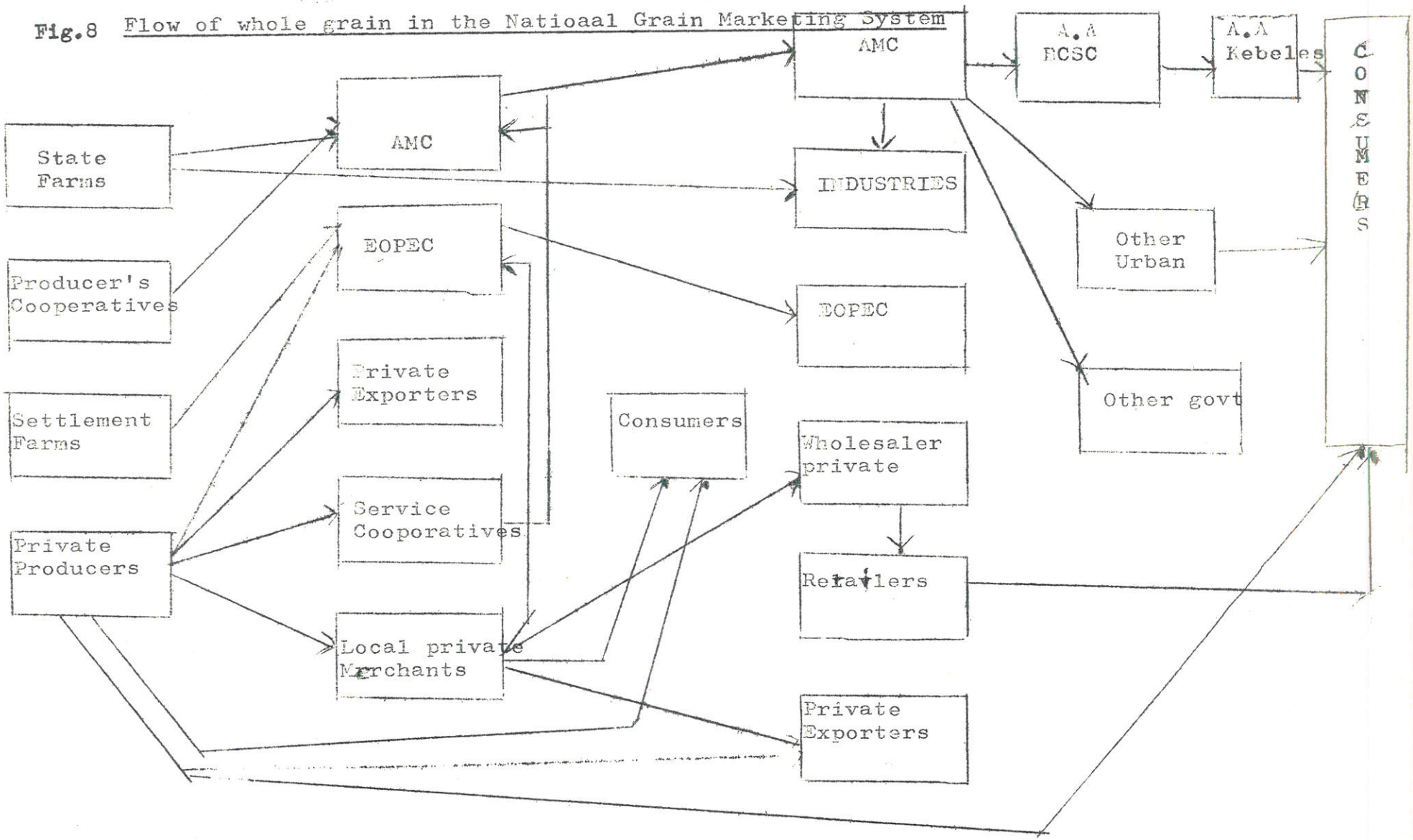
4.6 Principal Grain Flows, Functional Relationship and Structural Influences in the National Grain Marketing System After the Reform

Institutional reforms are expected to bring about change in functional relationship and structural influences. Without changes in structure influence seen in the pre-reform period it is hard to influence production and bring about desireable changes in marketable output. The following two figures therefore show the flows and structural influence.

Fig. 8 shows the flow of whole grain in the national grain marketing system. Processing has not been included since only a few part of food grain is presented in a processed form to consumers. Most consumers buy grain and process it at privately operated small mills on a fee basis. The hierarchial structure of the pre reform marketing system has been dismantled and replaced by a monopolistic parastatal organization, the AMC.

The institutional reforms in the marketing system however did not lead to changes in the power structure of the participants. The influence structure power relation in the present marketing is shown in figure 8. The figure indicates that while land reform and related institutional changes are necessary conditions for increase food production and market supply, they are not sufficient conditions. Due reconsideration of marketing and pricing policies are therefore necessary

Fig.8 Flow of whole grain in the Natioaal Grain Marketing System



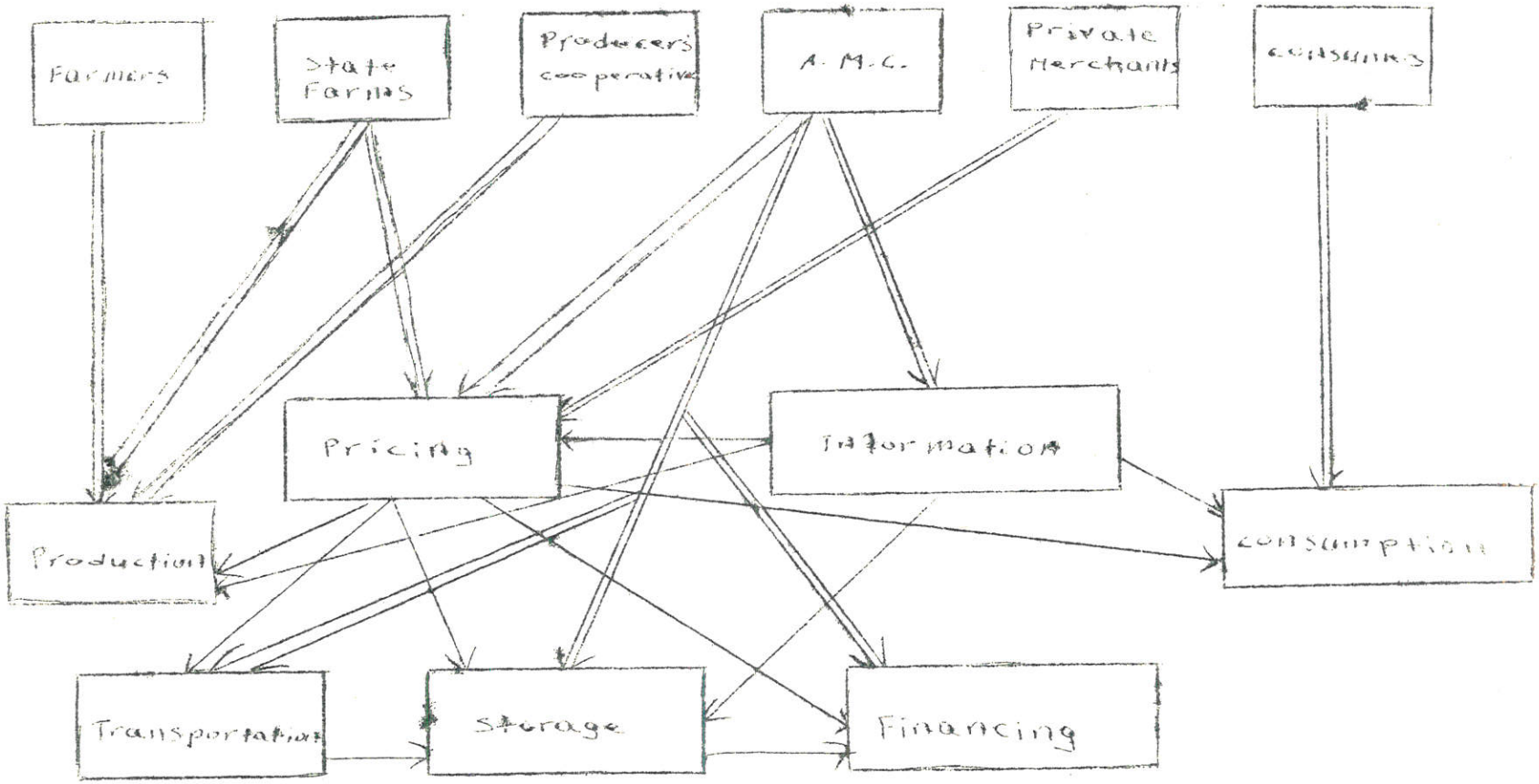
bwfore it neutralizes the gain in land and other related reforms to the producer.

Fig. 9 shows that small holder are still powerless in in influencing prices. State farms and producers cooperative have to an extent influence on prices. State farms are paid 15-20 Birr more per quintal for the same type and probably less quality grain while producers cooperatives get 5 birr/quintal more (see annex 11.1 and 2).

The neglect of small holders power in price formation may be a sound policy if they are in sensitive to price. Had found supply continued to increase while food prices were declining in relative terms, there wouldn't have been no need for evaluating the food grain marketing and price policy.

In the next chapter we shall examine the responsiveness of small producers to price changes.

Fig. 9. The influence structure in the Marketing System and the relationship between the System Function After Institutional change



KEY. ⟶ Functional Relation

⟹ Influence over Function

5. THE EFFECT OF GRAIN MARKETING AND PRICING POLICIES ON THE RESOURCE ALLOCATION OF SMALLHOLDERS

The prevailing evidence suggests that food grain pricing policy is based on the assumption that producers are not responsive to price incentives. There is also a tendency to attribute the decline in food production to the drought and external economic situations alone. It is true that drought and external economic situations have contributed to the decline in food production. However, the absence of material incentives have also their due share in aggravating the situation. There is a need, therefore, to review the assumption of producers irresponsiveness to positive iducements. Several reports on the grain marketing system by outside consultants and national experts have confuted the assumption of producers irresponsiveness and recommended price increase and rationalization in the marketing system to the favour of producers.[126] However, the reports do not contain sufficient information on the producers response to price and other incentives. They could not equip the government with an instrument with which it can influence production with a priori knowledge of the outcomes of such measures. The failure of most of the works in this area is that they are entirely based on impression rather than objective evaluation of the impact of the system on producers resource allocation decision.

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[126] Ibid.

The best and most reliable method of determining farmers response to changes in marketing system and prices would be to carry out sample surveys at farm level so as to elicit the farmers, own opinion on how and to what extent their production and marketing behaviour can be affected by prices and marketing arrangements. It is in this light that the sample survey in three woredas located in three administrative regions has been conducted.

5.1 THE FOCUS AND METHOD OF STUDY

The study concentrates on the three cereal grains (i.e., teff, wheat and barley) which are grown for food in highland Ethiopia. Sorghum and maize were excluded because they require slightly a different ecology from the three cereals and their production and marketing seasons do not exactly coincide with the cereals considered. The three creals considered are consumed both in urban and rural in various froms. The most common national staple is "injera" which can be made out of any of the three cereals of combination of them, the most common being that of teff.

Commercially, manufactured bread is usually prepared from wheat flour but recently it is being made out of barley and maize too. Wheat and barley are also used as "kolo" roasted grain and "nifro" a boild grain which are important at breakfast and between meals. Barley is usually used in preparation of alcoholic beverages. Most important is "tella" a traditionally

manufactured beer made from a mixture of germinated barley or wheat and green "gesho" leaves a substitute for hops. Thus, cereals are consumed in several forms both in urban and rural and also occupy a major share in cultivated land.[127]

5.1.1 DATA COLLECTION

The data on the market supply behaviour of small holders were obtained from the sample survey interviews conducted in three Woredas located in three different administrative regions. The sample questionnaires used for data collection is shown in annex III.

The survey was conducted from Dec. 16, 1985 - Jan. 8, 1986 in Degelu and Shenkora and from January 16, 1986 to January 25, 1986 in Enarj Enawga in Gojjam. All information for the study relate to 1984-85 crop year and the period of the survey correspond to the end of the crop year and beginning of the current harvest. As a result households were with fresh memory of the last seasons.

In order to elicit the confidence of peasants and obtain reliable information two methods were used.

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[127] Allan R. Thodey, op.cit., p. 32.

First, a general meeting of peasant household heads were called and detailed explanation of the objective of the study was made. The second method was to translate the questionnaire in to the local language, Oromigna in Degelu and Amharic in Shenkora and Enarg Enawga. Six enumerators who have completed twelvth grade education and who could speak the local language from each of the woredas were employed and thorough training was given before they met the informants. The interview was conducted at the informants convenience both at work place and at home stead. Strict supervision had been made by the researcher to make sure that the enumerators contacted the selected household heads and properly communicated the items of the questionnaire to the informants.

5.2 SAMPLE DESIGN DESCRIPITION OF THE SAMPLE AREA

The three woredas, (Degelu and Tijo Shenkora and Earj Enawga) were selected purposely in consultation with AMC and Ministry of Agriculture. The criteria for selection were the crop patterns, strength of service cooperatives, accessibility to alternative marketing outlet and similarity in infrastructural facilities.

Shenkora is 110 kms south of Addis Ababa in Yere and

Bbakora is 110 kms south of Addis Ababa in Yerer and Kereyou Awraja, Degelu and Tijo is 200 kms from Addis Ababa and 25 kms from Assela in Chilalo Awraja and Enarj Enawuga is 290 kms away from Addis Ababa in the north west in Bechena Awraja. The three areas are assumed to represent the staple cereals producing regions.

Based on the method of analysis, objectives of the study and cost considerations a simple random sample technique has been used in this study. Simple random sampling is appropriate for a small survey covering small population but it is costly for survey covering large population.

Since the aim of the paper is to look into the effect of marketing and pricing policies on producers allocative decision due care has been made in designing the sample according to the objective of the study. Factors such as availability of credit both for production and consumption, supply of consumer goods, effective market outlet for the output and remunerative product prices may influence the allocation decision of resources at the desposal of small producers. It is therefore important to identify whether these factors have strong influence on the behaviour of producers and the effects differ between regions.

Since the unit of analysis in this case is the household firm the sample size has to be determined on the basis of financial and time resources. The sample frame in the three woredas were limited to ten

kilometers radius around the Woreda town in the sample frame were obtained from Woreda administration and the sists containing the names of members of each association were obtained from the Woredas peasant association office in each case. 5% of the farm households were selected for the interview using simple random tables. Accordingly 85 households in Degelu and Tijo, 75 households in Shenkora and 83 households in Anarj Enawuga were selected and interviewed.

The three Woredas were named A,B,C for ease of reference. 'A' corresponds to Degelu, 'B' Shenkora and 'C' Enarj Enawuga.

Table 21 summerises the major characteristics of the study areas. The mean cultivated land per household is 2.632 in A, 1.164 in B and 1.681 in C. Holding size varies from 1 - 10 hectars in A, from 0.225 - 3.5 in B and from 0.5 - 5 hectars in C. 83.07% in A, 90.93% in B and 80.68% in C of the cultivated land were allocated to teff, wheat and barley in the three areas. A is predominantly wheat and barley growing while B and C produce teff but largely concentrate on wheat. Wheat alone occupies 51.3% in A. 50.13 in B and 46.23 in C.

The average family size is 6.797 persons in A, 5.09 in B and 5.08 in C. Output per household is higher in A but with higher variance. B and C have closer output per household with C slightly higher but with a larger

TABLE 21

'MAIN CHARACTERISTICS OF THE SAMPLE AREAS'

NO	DESCRIPTION	SAMPLE AREAS A	B	C
1	Land under cultivation (ha) mean area per household	2.633 (1.555)	1.614 (0.689)	1.6 1 (0.792)
	Allocation % total	83.07	90.93	80.68
	Teff	0.71	28.34	23.46
	wheat	51.3	50.13	46.23
	barley	32.07	12.46	8.97
2	Mean output per household (in Qt.) TEFF	-	7.995	6.14
		-	(3.528)	(3.528)
	WHEAT	17.939 (11.359)	4.523 (2.800)	7.92 (6.184
	BARLEY	16.359 (1.999)	4.185 (1.88)	6.177 (2.65)
3	Average family size	6.797 (3.19)	5.09 (2.247)	5.08 (1.749)
4	Average consumption per household (qt)			
	TEFF	-	2.334 (2.048)	1.96 Nil
	WHEAT	9.171 (8.782)	2.704 (2.613)	2.435 (2.6)
	BARLEY	5.679 (7.58)	3.455 (2.314)	4.042 (5.53)
5	Average cash income from Alternative sources (Birr)	256.242 (262.993)	110.73 (175.38)	33.50 (46.5

variance.

Average consumption pre household is also is higher for A than B and C. Cash income from alternative sources per household is 256.24 Birr in A, 110.78 Birr in B and 33.50 Birr in C.

5.3 ANALYSIS OF FACTORS INFLUENCING PRODUCERS BEHAVIOUR

Several factors related to marketing such as transport, storage, packaging, payments for quality, selling habits, price of outputs, costs of input, access to credit and information in one way or another affect the producers resource allocation decision. The most important factors which may have affected production and marketability of food grains at the farm level have been summerised using ratios and percentages in annex I.

Ten percent of the households interviewed in A have reported that they have reduced the area allocated to have decreased the amount of land allocated to the three cereals. Only 5% of the households in B have reported such cases. The reason for decline in land allocation has been mainly low grain prices. 80% in C reported that the decline is due to low grain prices, in B it was 70% and in A 60% reported low grain prices.

The decline in land allocation was smalllin B compared to C and A. The researcher has been informed by the Woredas Ministry of Agriculture and AMC agents that peasants usually take grain to Mojo market 40 kms away from the woreda to benefit from higher prices. But due to strict control there is a high risk because if their caught while moving, their grain will be confiscated with out compensation

Shortage of land is usually due to redistribution and shortage of labout arises due to the fact that many young people are conscripted to serve in the militia of the national military service. Though this have also contributed to the decline in land area the basic factor remained to be prices paid for the output in all the three areas. 100% in A, 96% in B and 98% C of the households interviewed also reported that they will consider price paid for the output when allocating their land to the various types of crops. Almost all households give first priority to family food needs in land allocation. Crop rotation is also reported as a factor to be considered alsong with the market prices for the output. 76% in A, 68% in B and 78% in C of the households interviewed reported that they will to be informed about prices well before planting their crops. 87% in C, 54.4% in B and 30% in A of the households are reported detrioration in the standard of living since the last five years. 70% in A, 65% in B and 60% in C of the households attributed the caused to low crop prices.

Opportunities of access to productive resources differe in the three sample areas. A has got access to fertilizer, improved seeds and consumer goods credit, B and C have got access to fertilizer alone. 95%, 21% and 33% of the households in A are using fertilizer; improved seeds and consumer goods credit in order. 93.4% of the sample households in B are using fertilizer credit while only 50% of the sample households use fertilizer credit.

None of the sample households have quitted fertilizer credit in A while 30% in B and the same percentage sample households in C have reported to have stoped taking fertilizer credit since the last five years. The main reason reported by sample households who have quitted credit has been low product price in relation to input costs. Thus low output price has limited the capacity of producers to borrow and consequently has affected the lending capacity of the Banks. Failure by producers to use improved inputs also means low level of output, less marketed quantity and low level of consumption both on farm and outside with low standard of living.

A rationally organized marketing system can increase the type and amount of credit that can be provided to

producers. Producers need credit for consumption, working capital and investment. The credit, marketing and pricing policies can be easily be coordinated and used to stir production and consumption.

One of the problems which need much attention from the marketing system is a storage at the producers levels. It is often suggested that post harves losses in the country amounting to 30% of the total output can be reduced by improving the storage system at the farm level. If the estimated losses are correct, it may be easier for the country to increase food supply by minimizing losses than increasing production. The marketing system can influence the storage at the producers level through credit and price incentives. This will increase food supply and consumption both on farm and outside it. The commonest type of storage at the farm in the sample areas has been 'Gotera' a bin made of reed and straw roof and usually containing 10 - 20 quintals. A pit made of wall above the ground called 'Dibignit' is also in use. It is similar to 'gudguad' a pit dug under ground for storing grain. Serious damages occur to grain in 'gudguad' which may sometimes result in total loss. Water usually percolate through the walls damaging the whole pit. Weevels, rats and other insects eat up substantial proportion of the produce which could have been saved for human consumption under proper storage system.

The mode of transporting grain to the market in the sample areas are largely pack animals and humans. 94% in A, 66.7% in B and 91.66% in C transport their grain to the market by pack animals. In a situation where road network is under developed and production is at low level it may be a rational policy to encourage transporting grain by pack animals upto a designated reception points which must be located at a fairly accessible place by trucks. It is better to organize transport cooperatives to designated reception points on fee basis than sending costly trucks on improper road to bring grain the value of which may not cover the portion of the spare parts for the vehicle.

Packging materials of grain offered for sale is an important item which require improvement. In the sample areas sacks are the most common packing materials in use in A and B while 'silicha' a sack like package made of skin is in use in C. There are often losses due to poor packing materials when transporting grain to the market. Spillage losses is quite high from farm to market. The researcher has observed in Shenkora on a market day, a peasant while transporting grain to the market a full sack-load exploded and spilled on to grass. This can be improved by the marketing system through provision of cheap packing material and providing technical advice on handling grain.

The average distance from the major market is 5.25 kms in A, 5.82 kms in B and 8.3 kms in C. Farm households can also easily attain two or three market days per week if they so desired but the problem remained to be service of the marketing system. The selling practice of households in the sample area is a burden on the marketing system. 94% in A, 77.4% in B and 93% in C despose their grain during harvest season. This require large transport, storage and finance from the marketing system. The marketing system under rational organization can ease such constraint by using variable prices that encourage storage, and provide credit so that producers can postpone their sells to later times.

The marketing system also does not encourage quality at the farm level. It does not translate the demand of consumers to producers. In the sample areas 95% in A, 96% in B and 15% in C of the households have reported that consumers pay better prices for quality grain. Only a few households in A and B prefer to sell their grain to service cooperatives while 91% in and 80% in B of the sample households prefer to sell to consumers. 87.5% of the sample households in C prefer to sell their grain to private merchants. Households in C have no chance of selling to merchants because merchants have been prohibited from the business and the reports were on the basis of given the chance. They also do not

favour selling to consumers directly because consumers pay less price than is offered even at the cooperative market. This is because the supply exceeds the demand at the local market level.

Though most households do not prefer to sell their grain to service cooperatives 87% in A, 31% in B and 72% in C of the household sell their grain to service cooperatives. These percentages may refer to the share of the sample households marketed quantity desposed at the cooperative market rather than quality grain because the highest proportion in A and C where the outlet is limited to service cooperative have been sold to the cooperative market.

None of the ample households in A have reported refusal of service cooperative to buy their grain when offered while 5% in B and 29.2% in C have reported such cases. When the service cooperatives in the sample areas were approached and inquired, the reason for failure to buy food grains, they explained to the researcher that they usually stop buying from farmers when their store is full and AMC could not remove the accumulated stock. It was reported by the cooperative societies, that such had been a serious problem in times of good harvest. Besides refusals to buy grain, 8% of the sample households in A, 7% in B and 40.3% in C have reported failure of the cooperative society to pay the price of grain upon delivery. The researcher has observed peasants lining up to collect their pay for grain delivered fifteen day ago at three service

cooperatives in Gojjam. The societies explained the reasons to the researcher saying that AMC could have not supply them with the payment for delivered grain. Moreover, it was explained by the cooperative leaders that AMC always bring 100 >Birr notes which makes difficult for the society to pay individual peasants account with less than 100 Birr worth of grain supply promptly. It is often the case that peasants come up with small lotes worth 20 - 30 Birr and since there is no one Birr note the society fails to pay the price immediately. The societies informed the researcher that they have requested the AMC on several occasions to supply one Birr note and new once and also with lesser denominations, but AMC failed to meet their demands. The uncomfortable situation created by the marketing system at the lower level can have significant implication on food grain production. The problem of marketing and decline in area allocated to food grain in C have a perfect relationship which require serious attention of policy makers.

Sample households in A reported that they buy 50% of their demand for manufactured goods from service cooperatives while those in B and C get 30 and 25% respectively.

The following table show per caput supply of consumer goods by the three service cooperatives in the sample areas.

PER CAPUT SUPPLY OF CONSUMER GOODS TO MEMBERS BY THREE SERVICE COOPERATIVES

(in Birr)

Members	Year (E.C.)	Tenguma (Gojjam)	Sagure (Arsi)	Errannbuti (Shoa)
		12,110	10,9000	6705
	1971	3	43	5
	1972	1	35	5
	1973	4	30	6
	1974	5	33	2
	1976	4	25	6
	1977	1	22	6

It can be infered from the table that the two service cooperatives in the sample areas B and C are weak in supplying consumer goods to members. Similarly they are also weak in providing efficient sergice in grain procurment.

Opinion of households on having service cooperatives were also gathered and 91% in A, 96% in B and 55.6% in C have reported the usefulleness of having service cooperatives. 8.9% in A, 2.7% in B and 43.1% in C have reported that having service cooperative is of no use to them. 67.2%, 23.9% and 3% in A have liked to have service cooperative on the basis of supply of consumer goods, credit and marketing of products respectively.

84% of the sample of households in C have liked their cooperative for supply of consumer goods, 13.7%

for credit and 22.7% for marketing of their products. 54.2%, 4.2% and 11.2% of the sample households in C have liked their service cooperative for its supply of consumer goods credit and marketing of products of members.

44% in A, 40% in B and 50% in C of the sample households rejected having cooperatives for failures to supply consumer goods while 33.4% in A, 40% in B and 10% in C have accused it for buying their output at lower price than offered elsewhere. 40% of the sample households in C desliked having service cooperatives for they do not pay price immediately on receiving their grain.

In general 45% of the households in A, 64% in B and 73% in C of the sample households have explained their dissatisfaction with the present marketing and pricing arrangements, while 55% in A, 36% in B and 27%in C of the sample households have expressed their satisfaction.

It can be inferred from the above analysis that the sample area A with strong service cooperative have access to credit, fertilizer and better marketing service has not shown significant decline in area allocated to food grain. On the other hand, sample households in B and C have suffered from decline production and consumption and experienced low standard of living due to lack of efficient marketing arrangement.

5.4 OUTPUT ELASTICITY OF MARKET SUPPLY

Discussion on the effect of marketing and pricing policies on the producers' allocation decision in the preceding section has shown the deterrent effect of the system on production. This has brought to light the contribution of marketing and pricing policies on declining food production. It is also important to show the relationship between output and marketability. The relationship between output and marketability can explained by output elasticity of market supply.

The variables for determination of output elasticity of market supply are the level of output of teff, wheat, and barley, the amount of cash income from other sources (ie., from animals sales, handicrafts or labour service) and family size.

The following model has been fitted and results are obtained.

$MS = b_o + b_1 x_1 - b_3 x_3$ where,

MS = marketed quantity of teff,
wheat barley

X_1 = Output of teff, wheat and barley

X_2 = Income from other sources

X_3 = Family size

b_o, b_1, be and b_3 are parameters to be estimated..

These results are summarized in the following

table. The dependent variable is marketed quantity.

TABLE 23

COEFFICIENTS AND ELASTICITIES OF MARKET SUPPLY

	b_o	b_1	b_2	b_3	R^2	n	e=
TEFF							
B	-0.234***	0.614***	0.170***	-0.328***	0.65	75	1.101
	(0.057)	(0.11)	(0.02)	(0.053)			
C	0.321***	0.350***	-0.190	-0.163***	0.54	83	0.764
	(0.044)	(0.064)	(0.27)	(0.0327)			
WHEAT							
A	0.222***	0.691***	-0.24***	-0.749***	0.85	85	1.352
	(0.084)	(0.145)	(0.15)	(0.167)			
B	-0.667***	0.502***	-0.15*	-0.247***	0.63	75	1.404
	(0.063)	(0.0726)	(0.124)				
C	-0.471***	0.563***	-0.02	-0.419***	0.74	83	1.784
	(0.088)	(0.0767)	(0.21)	(0.188)			
BARLEY							
A	-0.246	0.362***	-0.099	-0.164***	0.74	85	1.043
	(1.618)	(0.0845)	-(0.21)	(0.08)			
B	0.52	0.650***	0.15	-0.17***	0.78	75	0.851
	(0.49)	(0.08)	(0.32)	(0.01)			
C	-1.469***	0.835***	-0.121	-0.356*	0.92	83	1.347
	(0.495)	(0.0494)	(0.408)	(-0.230)			

* = significant at 25% significance level

** = significant at 5% significance level

*** = significant at 1% significance level

- Figures in the parenthesis are standard errors of the estimates.

- e = is elasticity at arithmetic mean (dQ/dp.p/Q).

All coefficients have the expected sign and the coefficients of output is highly significant at 1% of significance for the three cereals in the three sample areas. Family size is also significant and negatively related to marketed supply. The higher the number of dependents the lower the output marketed. Income from other sources is also negatively related to marketed quantity and the higher the income from other sources the smaller the marketed supply of each crop. Income from alternative sources is not significantly different from zero in C and also in A and B for barley.

The elasticity at arithmetic mean have been calculated and only teff in C and barley in B have shown inelasticity to output. With respect to these crops higher change in output does not result to corresponding changes in marketed quantity. It may imply that in these areas the increase in production of the crops may contributed more to consumption of households than marketing. In the rest of the cases marketed quantity are elastic with respect to output. This indicates that if output increases marketed quantities increase by more than proportion.

5.5 PRICE ELASTICITY OF OUTPUT

So far we have calculated output elasticity of market supply. But what is important from the policy point of

view is not only output elasticity but price elasticity of market ouput. Unfortunately, estimation of price elasticity of marketed output require data on the quantity marketed at different prices which is difficult to obtain. Therefore, authors have developed indirect method of estimating price elasticity of marketed supply.

According to Krishina[128] price elasticity of market supply can be calculated by:

a) estimating output elasticity of marketed supply from cross section data (which we have attempted so far),

b) estimating price elasticity of output from time series data,

c) calculating the price elasticity of marketed supply as a product of the price elasticity of output and output elasticity of market supply, assuming that the cross section estimate of the latter approximate a time series estimate at least for years close to the cross section years.

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[128] Raj Krishana, op.cit., p. 86.

Thus,

$e = bE_{mm}$, where,

e is price elasticity of marketed output,

b is output elasticity of market supply and

E_{mm} is price elasticity of output.

Thus, price elasticity of output has been estimated using the Nerlovian adaptive expectation model.

The model,

$A_t = f\ (A_{t-1}, P_{t-1}, W_t)$ where,

A_t = total hectrage under each crop (teff, wheat, barley)

A_{t-1} = hectarage lagged by one year

P_{t-1} = deflated price index by one year

W_t = Rainfall in year t.

Data on area allocated to each of the three crops are obtained from CSO publication. The data covers 1966/67 - 1983/84 crop years. Wholesale prices of the three food grains for major towns are also available in CSO publication from 1966/67 - 1977/78. There after the national average open market grain wholesale price is obtained from statistical data on AMC operations. Wholesale prices of goods that farmers may buy (textile, salt, soap, kerosin, umbrella, nails, canvas shoes) were obtained from published and unpublished CSO sources.

The wholesale prices and the aggregated wholesale prices of goods that farmers may buy were indexed using 1970/71 as a base. The wholesale price index of the three cereals were deflated by the price index of

TABLE 24

SUMMARY OF COEFFICIENTS AND ELASTICITIES FROM REGRESSION

(log form)

	COEFFICIENTS		
	Teff	Wheat	Barley
Area lagged by one year (A_t - 1)	0.355	0.442***	0.224*
	(0.191)	(0.135)	(0.163)
Deflated price index (p_t -1)	0.391*	0.123*	0.498**
	(0.236)	(0.074)	(0.252)
Rain fall index W_t	0.719**	0.615*	0.614*
	(0.315	(0.265)	(0.339)
Institutional dummy Z	0.042	-0.048	0.189
	(0.079)	(0.621)	(0.287)
Constant	2.103*	2.965	3.104*
	(1.361)	(2.010)	(2.017)
Elasticity at the mean	0.391	0.123	0.498
R^2	0.7469	0.9622	0.8435

n = 18

*** Significant at 1% level of significance

** Significant at 5% level of significance

* Significant at 10% level of significance

manufactured consumer goods that farmers may buy. The deflated price has been lagged by one year.

Rainfall data has been obtained from National Meterological Service. Thirty one stations in thirty one surplus grain producing Awrajas with a long record have been selected and observation of each month has been considered. It has been assumed that the total area cultivated to the three cereals can by and large be influenced by the allocation of land to these grains in these Awrajas which in turn can be influenced by the amount and variation of rainfall. Thus, average records from June to October for the main season and from February to April for the Belg season were taken and the national rainfall index has been prepared.

Institutional factors has also been introduced in the form of dummy to take account of land reform. Thus, '0' has been considered if the period is before land reform and '1' for the period after land reform.

The results of the regression equation in log form has been summarized below:

All coefficients of the explanatory variable are highly significant except the institutional dummy in the case of wheat and barley. The dummy in the case of teff is significant and positive implying that institutional reform has a positive impact on area allocated to teff. This seems plausible for the area under teff has increased while the area under other crops show unstable trend.

The R^2 of regression equation is also quite high (but the R^2 from the model may not be reliable due to existence of serial correlation). Thus, by multiplying the output elasticities of market supply in table 23 of each crop by price elasticity of output in table 24 one can easily estimated price elasticity of marketed output.

5.6 THE IMPACT OF MARKETING AND PRICING POLICY ON PRODUCTION AND PRODUCERS' INCOME

Price elasticity of output has further advantages of enabling us to estimate the impact of government policy on the level of output and producers income.

The price elasticity of output can be combined with the Marshallian theory of economic surplus to evaluate the impact of the policy.

Thus the combination of the elasticity framework and Marshallian economic surplus yields the following model.

As show in figure 1, the effect of increase in price of a given grain, say, wheat by ΔP to Pm, this will increase domestic production by ΔQ to Q_2 and domestic demand will decrease by ΔD to D_2. The magnitude of effects on producers and consumers can be estimated by using the elasticity framework.

Therefore if we denote the elasticities of supply and demand by e= and e_d respectively, we have on the production side:

$Q = (\Delta P/P) \cdot e= \cdot Q_1$ and on the demand side,

$\pm D = (\Delta P/P) \cdot e_d \cdot D_1$ hence the knowledge of the elasticities will enable us to exactly estimate how much each of the three parties will gain or lose.

The effect of the policy on production, producers income, consumers and government have been estimated by using the above model. The results have been summarized in table 25.

The country's estimated quantity of food grain supply, averaged for the last five years was 1,760,000 MTs. The average estimated demand per year for the last five years has been 2,240,000 MTs. Therefore import requirement has been:

Import $M = D - Q$

where, D is domestic demand

Q is domestic production

accordingly;

$M = 2,240,000 = 480,000$ MTs

of which 200,000 is in form of commercial imports, while 270,000 is in the form of food aid.

It has been assumed that all imported grain is wheat. The government pays, 488.6 Birr/ton for imported wheat at border price. It pays 350 Birr/ton for domestic producer, of course for small holders. It also pays 470 Birr/ton for state farms. Thus, the import price per ton of wheat and that of state farms have difference of only 18.6 Birr while that of small holder and import is 138.6 Birr/ton. The price elasticity of output has been estimated at 0.123. The domestic demand elasticity for wheat as calculated by ptofessor Grien is 0.794.[128]

The Ethiopian birr against US dollar estimated to have been over valued by 50% according to the World Bank report of 1983. Thus, the shadow exchange rate is 1.5. Using the above basic data the effect of price policy on production, consumption and government revenue has been estimated in table 25.

Therefore, if the government raises the price of wheat to the level of import parity prices the gain and losses are as follows. Domestic production increases by 85,726 MTS and domestic demand decreases by 790,036 MTS.

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[128] J.Grien, "Food Situation Projection for Ethiopia", Addis Ababa, May 1984, Technical paper (Memeographed), p. 4.

TABLE 25

THE IMPACT OF DISTORTIONDURING IMPORT SUBSTITUTION PHASE

(Demand, Supply, Import prices are averages of 1979/80-983/84)

BASIC DATA:

-Import price P_m 488.6/ton Domestic prod. 1760 (000MTS)

Domestic price

P(fixed purchase)

price + margine) 350/ton Domestic demand 2240(000MTS)

Price difference Δ P=138.6/ton Import M = D-Q = 480 (000MTS)

Elasticity of

domestic

supply.....e= = +0.123 Value of domestic production

V_p = 616 million Birr

Elasticity of domestic

demand ... e_d = -0.794 Value of domestic deamd

V_d = 784 million Birr

Shadow foreign rate 1.5

Percentage price change:

Δ P/P = 138.6/350 = 39.6%

Quantity effects of change in price from 350/ton - 488.6

Domestic production increases =

$Q = \Delta P/P.e=$, Q = (39.6%) (0.123) (1716) =+85.726 '000MTS

Domestic demand decrease:

$D = \Delta P/P. e_d$. D = (39.6%) (-0.794) (2240) = - (704.3097) '000MTS

(Table 25 cont'd)

change in 1000 tons	At price P	Change	At P_m
Domestic production	1,760	+85.726	1845.726
Domestic demand	2,240	-704.3097	1535.69
Difference (Imports) =	- 480	+790.036	310.036

Resulting Gain and Loss

		Million	% V_p	% V_d
Production Gain:				
138.6 (1.760 + 85.726/2)	=	249.87	41	32
Consumer Losses:				
138.6 (2240 - 704.3097/2)	=	-261.95	-43	35
Government Gain				
138.6 (480)	=	+66.53	11.0	8
Sub total		54.06	9	5
Foreign Exchange Gain:				
488.6 x 0.5 x 790.36		193.085	31	25
Total		247.145	41	30

of which:

Production Gain: 138.6 (85.726) + (488.6 x 0.5 x 85.726)
= + 26.883 4 3

Consumption Gain: 138.6 (704.309/2) + (488.6 x 0.5 x
= 220.872 36 28

40 31

Producers gain 249.48 million Birr;
Consumers lose 261.95 million Birr;
Government Gain 66.53 million Birr;
and the net national gain is 54.06 million Birr. It has additional implication on foreign exchange gain and conserving the public financial resource by avoiding subsidy which at present stand at 60 million birr for AMC alone.

The price policy which account for 35% (790.036/2240) of the short fall in demand at present cannot only overcome the food shortage in the short run but also save financial resources which could be channeled to agriculture through extension and infrastructure which will have a snowball effect on agriculture.

6. CONCLUSION AND RECOMMENDATIONS

Analysis of the grain marketing system in the pre-revolution period has revealed that the assumption that it approaches perfect competition was false. Attempt has been made to evaluate the system on the basis of the function performed in the marketing system and available evidence indicate that the big merchants higher up in the marketing hierarchy more or less play a monopolistic role in the system. They had information, finance, storage facilities and the power of fixing prices. The producers at the lower end of the system were powerless and they lacked all the facilities to have equal negotiating power with buyers. It has been shown in the influence structure of the marketing system that farmers had no influence on prices. The most powerful and beneficiaries of the system on the other hand and been the middlemen. The system did not motilivate producers to increase output and marketability. Instead it supplemented the archaic tenure system in extracting more surplus from the rural poor, thus, aggravating poverty.

The institutional reforms made in the post revolutionary period both in the marketing system and outside have not changed the power structure in the marketing system.

While the reform in the marketing system may fulfil necessary conditions for the rationalization of the system it clearly does not create sufficient condition

for its expansion and development so that it will have a positive effect on production and consumption.

The system also does not provide sufficient productive inputs and consumer goods to the producer to motivate production.

Undue emphasis to increase procurement of food grain banning of interregional movement, restricting or prohibiting private merchants from engaging in grain trade and fixing pan territorial prices which is seasonally invariant at levels that does not correspond to supply and demand, have had significant effect on production and productivity of the agricultural sector. This has been reflected in the disintegration of the national grain marketing system that reduced the income of producers in surplus producing regions and higher prices to consumers in deficits regions. The policy has derived the marketing underground which has in turn increased marketing costs and mis-allocation of resources.

The trust of the prevailing marketing and pricing policy rests on the assumption that producers are not sensitive to prices. This assumption would have been reasonable if output and consequently marketed quantity have not been declining over the past few years.

In order to test the validity of the assumption of irresponsiveness of producers to prices and marketing environment a cawe study has been made in three different administrative regions in three woredas. The influence of pricing and marketing on producers

allocation decision have been assessed and it has been found out that producers are sensitive to pricing and marketing arrangement. They have the capacity to withdraw (including their own labour) from or inject resources into productive venture on the basis of the incentive environment.

Once the responsiveness of producers have been established it has provided the basis for estimating the effect of government policy on production and producers income. Combining the elasticity framework with the Marshallian Partial Equilibrium analysis the welfare effects has been estimated.

q It has been found out that 35% of the present food shortage in the country can be accounted for by the government food grain marketing and pricing policy. If the government review its price policy of low invariable price and substitute it by import party, production will increase by 85,726 tons which is almost 1(% the present level of supply. Producers income will increase by 249.48 million Birr and the government will gain 66.53 million Birr. Consumers lose 2961.9 million Birr and the net national gain will be 54.06 million Birr. Poor consumer will be compensated by designing appropriate food policy which protect the poor.

Although in this study the operational results of the parastatal institution (AMC) has been found inadequate, there is no evidence to suggest that the state should roll back it frontiers from grain trade. What has been evidenced from this study is that most of

the decision affecting the parastatal have been made outside it with heavy implication on its operation. The external influence on the organization has weakened its internal dynamics and incapacitated it leading to failure to achieve the desired objective.

The problem in food grain marketing system seems to have emanated primarily from failure to look at facts cooley and basing decision on thorough under standing of the prevailing operation of the system. Hasty decisions which extend the service by government beyond a certain level change the capital mix in trade.

Thus, any change in the marketing system with the aim of affecting production must aim at changing the power relation in the system. The power relation can be changed through a thorough under standing of the functions performed in the marketing system and assessing the possibility of transfer of functions from one group to another. The assumption that grain marketing is a simple task and radical reforms could be brought sbout in the system has already shown its damaging consequences. It is therefore time to look for a more rational organization of food grain marketing including the whole internal marketing sub sector so that it will have positive impact on food production and consumption.

Rational organization of the system calls for review of the functions of the present participants in grain trade in terms of allocation efficiency, capacity to provide adequate marketing service for both urban and

rural population and potential for rapid accumulation of capital and growht.

According to the above criteria the three participants in grain trade have been ranked:

	Private Merchants	Service Cooperatives	AMC
1. Capital intensity of operation	1	2	3
2. Rate of profit on capital	1	2	3
3. Operating Margin	2	1	3
4. Potential for accumulation	2	1	3
5. Efficient service for producers	2	1	3

1 = High 2 = Medium 3 = Low

According to the above criteria service cooperative can be point of departure in organizing food grain marketing. Service cooperative have all the necessary potential for rapid development provided enough support is extended to them. Service cooperatives should

reflect the interest of their members and they should be able to meet the needs of members in terms of credit, fertilizer consumer goods or even in sharing the profit from grain trade.

Thus, it is recommended that the strategy of food grain marketing should concentrate on service cooperative and support must be given to that they can develop to secondary and higher cooperative unions. The role of AMC should be largely to concentrate on interregional grain movement and supplying government institutions.

It is further recommended that the present quota delivery should be replaced by contractual sales and purchase.

Prices should be informed to producer well ahead of planting. It must be territorially and seasonally variable to reflect cost of transport and storage. It must be used to influence crop mix and quality of grain offered for sale.

ANNEX II

SUMMARY OF MARKETINGE ELEMENTS THAT INFLUENCE FOOD GRAIN PRODUCTION AT THE FARM LEVEL

DESCRIPTION			
1. Influence of price on family resource allocation decision and level of living			
- percentage of peasant reporting decline in land allocated to cereals	10.0	5.0	73.0
reasons reported			
.shortage of land	19.5	10.0	15.0
.shortage of labor	20.5	20.0	5.0
.low grain prices	60.0	70.0	30.0
- percentage of households who reported prices as a factor to be considered in the family resource allocation	100.0	96.0	98.0
- households who would like to be informed about prices before planting their crops	76.0	68.0	78.0
- households who have reported deterioration in standard of living since the last five years	30.0	54.4	87.0
- reason for decline in standard of living			
- shortage of land	20.0	15.0	25.0
- crop damage	10.0	15.0	5.0
- low crop prices	70.0	65.0	60.0
- poor health	-	5.0	10.0
- tax and other levies	-	-	-
2. Access to credit			
- available type of credit			
- fertilizer	x	x	x
- improved seeds	x	-	-
- consumer goods	x	-	-
- cash credit	-	-	-
percentage of peasants households using the available credit			
- fertilizer	95.0	93.4	50.0
- improved seeds	21.0	-	-
- consumer goods	3.0	-	-

households who have quited taking fertilizer credit			
reason for quiting			
.failure to pay revious loan	-	30.0	30.0
.high price of fertilizer in relation to output prices	-	60.0	70.0
.failure of other member of the association to pay 95% of the previous loan		10.0	-

3. Storage

percentage of households using			
.Gotera	49.25	90.7	77.8
.Debignit	10.40	2.7	6.9
.Sacks	7.40	30.7	6.9
.Gudgad	-	6.7	5.5

4. Marketing

a. Transport

percentage of households using			
.pack animals	94.00	66.7	91.66
.human loan	4.50	49.4	33.30
to transport grain to the market			

b. Packing Materials

percentage of households using			
.Joniya (sacks)	94.00	66.7	3.00
.Keretit	-	49.4	18.00
.Silicha	4.50	21.4	71.00
to transport grain to the market			

c. Average distance of market place from the household (in km.)

.major market	5.25	5.82	8.30
.minor market	3.70	5.10	5.30
.cooperative market	4.56	3.20	4.38

d. selling practices
percentage of households disposing their grain during peak harvest season — 94.00 | 77.40 | 93.0

e. quality and grades
households reporting rewards for quality
.at cooperative market — 95.00 | 96.00 | 15.0

5. Cooperative marketing			
location of service cooperative vis a vis village market			
.coincide	91.10	45.40	18.0
.not coincide	4.50	54.70	76.0
percentage of households prefering to sell their grain to:			
.service cooperative	1.50	-	2.0
.direct consumers	91.00	80.00	11.0
.to merchants	7.50	20.00	87.0
percentage of households selling quality grain to			
.service cooperative	87.00	31.00	92.0
.local consumers	10.00	43.00	7.0
.merchants	3.00	26.00	1.0
households reporting failure of cooperative to buy their grain when offered	-	5.00	29.2
households reporting reporting of cooperative to pay the price upon receiving grain	8.00	7.00	40.3
share of manufactured goods purchased from cooperative shop in total household purchase (as reported by households)	50.00	30.00	25.0
6. Opinion of households about the cooperative marketing system usefulness	3.00	22.7	11.2
reason given by those who have reported that the service cooperatives are useless			
.they buy grain at low prices than offered by the market	33.40	40.00	10.0
.they do not supply enough consumer goods	44.00	40.00	50.0
.they do not immediately pay price for the grain they buy	11.20	20.00	40.0

ANNEX 11

AA GRAIN PRICE DEVELOPMENT

	1979 6 months	1980	1981	1982	1983
White Teff: AMC selling price	56	72	69.90	65.79	67.55
Free market retail price	98.83	97.42	105.09	116.33	106.33
Free market wholesale price	90.17	91.42	97.82	103.33	99.17
Diff. retail-wholesale pr.	8.76	6.00	7.27	13.00	7.16
Max. seasonal diff. retail	9	30	27	28	17
Max. seasonal diff. wholes.	10	26	81	44	18
Mixed wheat: AMC selling price	39	46	57.60	51.80	51.18
Free market retail price	73.60	71.60	71.27	80.58	63.25
Free market wholesale price	62.33	63.50	65.82	73.50	58.58
Diff. retail-wholesale pr.	11.27	8.10	5.45	7.08	4.67
Max. seasonal diff. retail	9	16	25	12	18
Max. seasonal diff.wholes.	9	14	26	10	20
Mixed Barley: AMC selling price	32	43	52	46.33	45.73
Free market retail price	56.83	53.80	60.27	76.33	56.25
Free market wholesale price	48.00	48.83	56.64	67.11	49.82
Diff. retail-wholesale pr.	8.83	4.87	3.63	9.22	6.43
Max. seasonal diff. retail	17	18	29	15	52
Max. seasonal diff. wholes.	15	15	27	18	43
Mixed Sorghum: AMC selling price	33	39	46.50	42.86	49.76
Free market retail price	66	56.59	64.45	71.73	54.55
Free market wholesale price	56.33	49.83	57.00	63.40	49.91
Diff. retail-wholesale pr.	9.67	6.76	7.45	8.99	4.64
Max. seasonal diff. retail	28	24	36	18	43
Max. seasonal diff. wholes.	17	20	36	24	43
Maize: AMC selling price	28	32	53.70	43.76	44.11
Free market retail price	40.83	41.18	58.73	64.25	45.50
Free market wholesale price	32.50	36.00	52.63	56.60	41.58
Diff. retail-wholesale pr.	8.33	5.18	6.10	7.65	3.92
Max. seasonal diff. retail	12	15	23	14	22
Max. seasonal diff. wholes.	13	15	24	9	24
Horse beans: AMC selling price	47.50	38	52.00	46.33	45.73
Free market retail price	40.83	48.64	56.55	65.18	50.00
Free market wholesale price	6.67	41.91	50.17	56.27	45.92
Diff. retail-wholesale pr.	25	6.73	6.38	8.91	4.08
Max. seasonal diff. retail	18	24	24	10	18
Max. seasonal diff. wholes.		17	23	10	18

Source:- SWED FARM

Annex 11.1

Agricultural Marketing Corporation (AMC)

Grain purchase price, cost and selling price Buildup

From Farmers Service and Producers Co'ops and settlement Farms

Birr/Quintal

Serial No.	Description	TEFF			WHEAT			Barley		Sorgum	
		White	Mixed	Red	White	Mixed	Red	White	Mixed	White	Mixed
	Whole sale purchase price										
	A,M.C's Expenses										
1	Municipal Tax	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
2	Transport expenses	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55
3	Loading & unloading	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
4	Storage expenses	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
5	Sack Replacement cost	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
6	Fummigation expenses	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
7	Stock insurance 0/2%	0.09	0.08	0.07	0.08	0.07	0.07	0.06	0.06	0.05	0.05
8	Spillage allowance 1% of purchase price	0.46	0.40	0.37	0.39	0.35	0.34	0.32	0.30	0.27	0.25
9	Allowance for weigh loss 2%	0.92	0.80	0.74	0.78	0.70	0.68	0.64	0.60	0.54	0.50
10	AMC's Total Expenses	59.41	53.32	50.12	52.19	48.06	47.03	44.96	42.90	39.80	37.74
11	Interest Expense for 4 months @ 9.5%	1.88	1.69	1.59	1.65	1.52	1.49	1.42	1.36	1.26	1.20
12	Overhead expenses	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
13.	AMC's Margin & Allowance 5%	3.16	2.85	2.69	2.79	2.58	2.53	2.42	2.31	2.15	2.05
	AMC's selling price per quintal	66.45	59.76	56.40	58.63	54.16	53.05	50.80	48.57	45.21	42.99

Annex 11.2

Agricultural Marketing Corporation
Purchase Price, Cost and Selling Price Build up of Wheat From State Farms

Serial No	Description	Birr/Quintal		
		Wheat	Sorgum	Maize
	Whole Sale Purchase Price	47.00	40.00	31.00
1	Muncipal Tax	0.09	0.09	0.09
2	Transport Expense/Quintal	7.82	7.82	7.82
3	Loading and Unloading	0.56	0.56	0.56
4	Strage expense	0.11	0.11	00.11
5	Fummigation expense	0.05	0.05	0.05
6	Stock insurance	0.09	0.09	0.09
7	Sack Replacement cost	0.98	0.98	0.98
8	Spillage Allowance (1% of Purchase Price)	0.47	0.40	0.31
9	Weight loss Allowance (2% of " ")	0.94	0.80	0.62
10	Overhead expenses	2.01	2.01	2.01
11	Interest expense For 4 months @9.5 %	1.90	1.68	1.38
12	Allowance 1%	0.62	0.55	0.45
13	Total AMC's Expenses	62.64	55.14	45.47
14	AMC's Profit Margin	3.13	2.76	2.27
15	Selling Price excluding T.O.V.	65.77	57.90	47.74
16	T.O.V (2%)	1.32	1.16	0.95
17	AMC's Selling Price	67.09	59.06	48.69

Annex 1.3

Agricultutal Marketing Corporation
Purchase Price, Cost and Selling Price Build up
For imported Wheat

Serial No	Description	Birr/Quintal Imported Wheat in 1977 E.C.
1	C&F Price at assab	31.77
2	Importers (MTIMEX) Margin	3.71
3	Stevedoring	3.00
4	Service Charge - MTSC	3.35
5	Transport expense	11.03
6	Service Charge Port (0.25% of = 1)	0.09
7	Transport expense For empty sack(Addis-Assab)	0.10
8	Sack Replacement allowance	0.91
9	Loading and Unloading	0.25
10	Weight loss (1% of = 1)	0.35
11	Sub-Total	55.56
12	Interest ecpense For 2 months on item = 10 @9.5%	0.86
13	Sub-Total	55.42
14	Allowance (1% of = 12)	0.55
15	Sub-Total	55.97
16	AMC's Profit Margin (1.5% of = 14)	0.84
17	AMC's Selling Price excluding T.O.T.	56.81
18	T.O.T. (2% of = 16)	1.14
19	AMC's Selling Price including T.O.T.	57.95

Socio-economic Questionnaire Designed to examine Private farmer's Response to the existing Marketing and pricing arrangements

A. Location

1. Administrative Region _____
2. Awaraja _____
3. Woreda _____
4. Peasant Association _____
5. Respondent _____ Age _____
6. Interviewer _____ Date _____

B. Family Characterstics and sideline activity

Members of the family*	Age	sex M=1 F=2	Literacy status Literate=1 Illiterate=2	If literate** indicate his/her level of education	Side line or other activity*** outside farming
Head					

* Include guests who stayed with the family over six Months, Shepherds and housemaids

**Level of education say 1st, 2nd 3rd, ...etc. grades

***Sideline activity say, Handicraft, millwork, Trade, Garding, beverages, regular student etc.

8. Number of students studying at awaraja or kefle hagar who depend on the family's income. _____.
9. Number of family member who cannot do any job because of old age or illness. _____.

Occupational characteristics

C.1 Crop Production

10. How much land did you cultivate in 1976/77 and 1977/78?

1976/77 _____ in local units ( ) _____ in hectars.

1977/78 _____ in local units ( ) _____ in hectars.

11. The amount of land you cultivate in the last five years is:-

Increasing _____ ☐ Decreasing ☐ Constant ☐

12. If the size of land you cultivate is increasing it is because

. You have got additional land ☐

. You feel that the crop prices are attractive ☐

. You bought additional oxen ☐

. Your family labour force increased ☐

. Others specify _____ _____

13. If the size of land you cultivate is decreasing the reasons are

. Shortage of labour ☐

. Shortage of land ☐

. Lack of incentive due to low grain prices ☐

. Lack of market due to movement restriction on grain ☐

. lack of oxen ☐

. Poor health ☐

. Others specify _____ _____

14. If the amount of land you cultivate is decreasing indicate as of when. Since _____

15. Which of these crops are very important to you? Rank them in priority of production.

Crop	Rank
1. Teff	_____
2. Wheat	_____
3. Barley	_____
4. Sorghum	_____
5. Maize	_____

16. Indicate the amount of land you have allocated to each of these crops and the yield per hectar in 1976/77 and 1977/78 crop years:-

Crop	1976/77				1977/78			
	Cultivated Land		Yield		Cultivated Land		Yeild	
	Local Units	Hectars	Local Units	qt/ha	Local Units	Hars	Local Unit	qt/ha
Teff								
Wheat								
Barley								
Sorghum								
Maize								

17. amount of seed used in kgs

1976/77		1977/78	
Teff	_____ kg	_____	kg
Wheat	_____ "	_____	"
Barley	_____ "	_____	"
Sorghum	_____ "	_____	"
Maize	_____ "	_____	"

18. What factors do you take into account when you plan to prepare your land for each type of grain?

. Family needs ☐ Market prices ☐

. Crop rotation ☐ Others specify _____ _____

19. If you consider all of the above items or most tof them, rank inorder of priority.

1. _____ 3. _____

2. _____ 4. _____

20. Do you like to be informed about the grain prices before you plant your crops:

Yes ☐ No ☐

C.2 Access to productive Resources and utilization

21. Is there any credit program in your village?

Yes ☐ No ☐

22. Indicate the available crddit,

Fertilizer ☐ improved seed ☐ Pesticide ☐

herbicides ☐ cash ☐ consumer goods ☐

tractor rents ☐ others specify _____ _____

23. Indicate the source of credit

Service Cooperatives ☐ Ministry of Agriculture ☐

Agro- Industrial Bank ☐ State farms ☐

Others _____ _____

24. Do you participate in the credit program?

Yes ☐ No ☐

25. If yes which type of credit do you usually take?

Fertilizer ☐ Improved seed ☐ Pesticides and

Herbicides ☐ consumer goods ☐ cash ☐

others _____ _____

26. when did you strat participating in the credit program?

Since 19 _____

27. If you are participating in fertilizer credit program, are there years in which you quited the credit?

Yes ☐ No ☐

28. If yes which years? _____ _____ _____

29. If you have quited taking fertilizer credit the reasons are:-

Fertilizer was not available when demanded

Your association did not pay 95% of the previous loan

- You did not pay your previous debt on the input ☐
- You did not see any benefit in using fertilizer because its price is too high while the output price are too low ☐
- Others specify _____ _____ _____

30. When you take fertilizer credit how much do you usually take?

50 kg ☐ 100kgs ☐ 150 kgs ☐

More than 150 kgs ☐

31. For which crops do you usually use fertilizer, or fertilizer and improved seeds?

Teff ☐ Wheat ☐ Barley ☐

Sorghum ☐ Maize ☐ Others specify ☐

32. Indicate in what proportions* you apply the above inputs to the crops.

Crop	improved seeds +	Fertilizer only	improved seeds only	Other inputs**
Teff				
Wheat				
Barley				
Sorghum				
Maize				

*For proportions say $\frac{1}{4}, \frac{1}{8}, \frac{1}{2}, \frac{3}{4}$, etc

**Others refer to herbicides pectecids

33. What is the incremental out-put due to the use of fertilizer and improved seeds?

Crop	With fertilizer and improved seed		With fertilizer alone	
	in local unit	qt/ha	local unit	qt/ha
Teff				
Wheat				
barley				
Sorghum				
Maize				

34. What was the price of fertilizer and improved seeds in your village in 1976/77 and 1977/78 E.C.

input	1976/77E.C. Br/qt	1977/78E.C. Br/qt
Fertilizer		
Improved Seed		

35. Have you ever suffered from crop damage in the last five years?

Yes ☐ No ☐

36. If yes which years? 197__ 197____ 197____ 197__ 197__

37. Which crop was seriously affectd? Teff_____ Wheat_____

38. Do you store grain? Yes ☐ No ☐

39. If yes, Which ones do you usually store?

Teff ☐ Wheat ☐ Barley ☐ Sorghum ☐

Maize ☐

40. Type of storage facility-Gotera ☐ Gudguad ☐

Sacks

Dibignit ☐ Sacks ☐ Other specify_____

41. For how long do you keep your grain in storage?

Until prices are high ☐

Until the next harvest ___

Only for consumption purposes ___

Others specify _____ _____

C.3 Live stock ownership

42. How many

Oxen_____ Sheep _____ Donkeys _____

Cows_____ Camel_____ Mules_____

Goats_____ Hourses_____ Chicken_____

Do you own?

43. If you have only an ox/or dont' have any how do you prepare your land?

- By joining with a nieghbour who has got one. ☐
- By working for people who have oxen and ask them for oxen service in return ☐
- By renting oxen ☐
- Others specify _____ _____

44. Have you ever suffered from livestock mortality?

Yes ☐ No ☐

45. If yes, which years? 197_____ 197_____

46. The most affected animals were _____ _____

D. Marketing

47. Markets and frequency of visit :-

Nos.	Market days	Importance		Distance from the informants home		Person who Usually visits
		major	Minor	time in hrs	kms	

48. Reasons for attending markets? To sell goods ☐ To buy consumer items ☐ To see friends ☐ Others_____

49. Is there service cooperative shop in your village?

Yes ☐ No ☐

50. Does the location of the service cooperative coincide with the local market? Yes ☐ No ☐

51. Distance of service cooperative from your home in km_____

52. How often the service cooperative open?

Once a week — All days except sundays and holidays

Twice a week — Others _____ _____

53. How often do you buy goods from the service cooperative shop?

Usually ☐ Sometimes ☐ Not at all ☐

54. If you buy some items from the cooperative shop list the major item:-

1. _____ 3. _____ 5. _____

2. _____ 4. _____ 6. _____

55. Approximately what proportion of your demand does the purchase from service cooperative satisfy?

_____.

56. If you don't buy from the service cooperative shop it is because.

- Goods you need are not available in the service cooperative shops. but are available in the private shops. ☐
- The cooperative shop is not open when you need the goods ☐
- The cooperative shop charges higher price than private merchants. ☐
- The cooperative shop is far from your home. ☐
- you are not a member of the cooperative society ☐
- Others _____ _____

D.1 Selling Practices

57. Do you sell grain? Yes ☐ No ☐

58. If yes when do you usually sell?

During peak harvest season ☐ During Kiremt ☐

Others _____ _____

59. If you are selling at the peak harvest season is it all of your crop or only some of it?

All ___ Some ___

60. If you sell some of the crops during peak harvest season, which crops are they? 1_____ 2_____ 3._____ 4. _____

61. You sell these crops during the peak harvest season because:-

- You immediately need cash to meet Your obligations ☐
- You have no storage facility ☐
- You want to avoid risk of spoilage ☐
- The price of grain is the same throughout the year and there is no need to store ☐

62. To whom do you prefer to sell your grain?

- To service cooperatives ☐ Directly to consumers ☐
- To private merchants ☐

63. Give reasons for preferring any one of them:

_____

_____

64. Are there cases when you took your grain to service cooperati and could not find anyone who buys it? Yes ☐ No ☐

65. Are there cases when the cooperative society receive your grain and did not pay you the money immediately? Yes ☐

No ☐

D.2 Transport

66. What means do you usually use to transport your grain to the market?

Pack animals ☐ By own load ☐

By my wife and other family members load ☐

Others specify: _____

_____

D.3 Packaging

67. What packing material do you usually use to transport your grain to the market?

Joniya ☐ Keretit ☐ Silicha ☐ Other

D.4 Unit of Measure

68. What unit do you use to market your grain?

_____ _____ _____

69. Do you have any idea of a Kg. equivallent of the units ?

Yes ☐ No ☐

70. Are there cases when you felt that you are cheated by under Weighing your grain? Yes ☐ No ☐

D.5 Quality

71. Have you ever been told by extension agents to improve the quality of your grain? Yes ☐ No ☐

72. Are there cases when service cooperatives or merchants reduced the price of your grain due to quality problems?

Yes ☐ No ☐

73. Have you ever been told that good quality grain would fetch you good price? Yes ☐ No ☐

74. If yes, have you ever tried to improve the quality of your grain?

Yes ☐ No ☐

75. If No, Why?

. I can't improve t e quality ☐

. I don't see any benefit from improving the quality ☐

. Otheres _____

76. To whom do you usually sell best quality grain:

. to service cooperative ☐ to consumers ☐

. to merchants ☐

77. The reason for selling different quality grain to different customers are: _____

_____

78. D.6 Quota Delivery

Have you ever been required to deliver a fixed amount of grain to cooperative society or Agricultural Marketing Corporation?

Yes ☐ No ☐

79. If yes, when did this delivery system started in your village?

_____

80. Amount of grain you delivered on quota basis since its beginning:

In kgs or quintals

Grain	Teff		Wheat		Barley		Sorghum		Maize	
Year	Req. Quo.	Act. Del.	Req. Quo.	Act. Del.	Req. Quo.	Act. Del.	Req. Quo.	Act. Del.	Req. Quo.	Act Del.

E. Household consumption

81. Do you change your pattern of consumption according to the dominant crop in different seasons of the year?

Yes ___ No ___

82. If yes, indicate the seasons and particular type of food usually consumed in each season.

Season	No	Items usually consumed in the household	Unit of Measure	Amount for single meal for the family	Value in Birr
From___ro___					
From___to___					
From____to___					
From____to___					
From____to____					
From____to____					
From____to___					

83. Indicate your family consumption expenditure for the last 15 days for the following items:-

Items consumed	Produced on Farm			Bought		
	Amount		Value	Amount		Value in Birr
	Local unit	kgs	Birr	Local unit	kgs	
1. Sende Gebse Teff Bekolo Mashilla						
2. Other Cereals . Zengads . Dagussa . Ajja . Others						
3. Pulses Ater Bakella Aenguare Mesir						
4. Dairy products Honey Milk Ayeb Butter Meat Other						
5. Spicies & herbs Berbere Erde Salt Others						
6. Beverage & tobacco . Tella . Tej . Katikalla Others						
7. Light & fuel Matches candle kerosin others.						

84. Expenditure in the last 12 months

Particulars	Unit	amount in Birr	
8. Expenditure on clothing and foot-wear Items .Clothes for grown up people .clothes for children .Blanket .soap .shoes			
9. Other services Type of service . Transport . Medical . Milling . Marriage			
10. Personal care and effects Type . Hair crame and perfume . Beads/ornaments . Others			

85. House hold and Farm investment expenditure in the last12 months

Items	Unit	Amount of expenditure	
Investment in house hold furniture and equipment . Table . Chair . Bed . Dist . mesob others			
Investment in construction .wooden door . " window			
Investment in farm tolls . plough . hoe . jonija, carts			

86. Investment on livestock in tethe last 12 months

Investment in livestock	Unit Measure	Number	Amount in Birr	Plan to buy
Type bought				
Ox				
cow				
calve				
sheep				
others				

87. Expenditure on the farm operation in the last season(1977/78)

Items	Savings	Bought	amount in Birr
seed			
fertilizer			
Tractor rent			
Others			

88. Institutional expenditure

Institutional fees	Amount in* cash(br)	Frequency	Remark
Mahber Ekub Edir church Others			Indicate how umuch and how often the pays

*such as income tax drought rehabilitation sur tax are also included.

89. Transfer income

Amount of money sent to relatives living outside the farm in the last 6 months _____ Birr

C. Opinion of the informant on various issues

90. What do you think of your present standard of living compared to five years ago?

Improved ☐ Static ☐ Deteriorated ☐

91. If your standard of living is declining the reasons are:-

shortage of land
Crop damage
Low crop prices
Poor health
Due to tax and other levies
Others specify _____

92. If you are given the opportunity do you abondon crop cultivation and live stock raising, and concentrate on the side line activities or migrate to towns.

Yes ☐ No ☐

93. If yes the reasons are:-

- Corp cultivation is not paying due to low prices ☐
- There is no possibility of increasing the land size due to shortage of land ☐
- Crop production is undependable because of weather condition and poor soil ☐
- Others specify _____

94. Give your opinion on having service cooperative

Useful ☐ Useless ☐

95. If you think that the service cooperatives are useful give reasons

- They supply basic manufactures to members at low prices than available in the market ☐
- They extend credit to members ☐
- They facilitate the marketing of the products of their members ☐
- Others specify _____ _____

96. If you think they are useless, the reasons are

- They buy grain at low prices than the private merchants ☐
- They don't supply enough consumer goods ☐
- They don't immediately pay for the grain they buy ☐
- Others specify _____ _____

97. Do you think that the present grain marketing arrangment is satisfactory? Yes ☐ No ☐

98. If your answer is no, give your opinion of what should be done about the marketing system

_____ _____ _____

99. Do you feel that the price paid by the service cooperative for your grain since 1973 E.C. is sufficient?

Yes ☐ No ☐

100. If no, how much do you expect for each grain?

Teff _____Br/qt
Wheat_____Br/qt
Barley _____Br/qt
Sorghum _____Br/qt
Maize _____Br/qt

F. Revenue (Income)

101. Revenue from grain sales since 1975

Grain Year	Teff		Wheat		Barley		Sorghum		Maize	
	Amt. Qt.	Value Birr	Amt. Qt.	Value Birr	Amt. Qt.	Value Birr	Amt. Qt.	Value Birr	Amt. Qt.	Value Birr
1975										
1976										
1977*										
1978										

* Estimate Sales.

102. Income from sales of other crops
1977 _____ Birr 1978 _____Birr

103. Income from animal sales:
1977 _____Birr 1978 _____Birr

104. Sales of animal products June 1977-1978

Milk_____Birr
Butter_____ "
Eggs _____ "
Honey _____ "

105. Sales of Hides and skins June 1977 _____ , 1978 _____

106. Amount of income earned from sideline activity June 1977 - 1978 _____Birr

107. Do you get money from relatives working in other areas?

Yes ___ No ___
___

108. If yes, the amount in Birr:

Year	Amont in Birr
1975	_____
1976	_____
1977	_____
1978	_____

109. Amount of income earned by working for others:
June 1977 - 1978
In kind _____
In cash _____

110. Have you borrowed money since June 1977?

Yes ☐ No ☐

111. If yes, from whom? From private Merchants
From cooperative society ☐ Others ☐
☐

112. when did did you borrow the money? _____

_____

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