ASPECTS OF MARKETING EFFECTIVENESS FOR
SELECTED FOOD CROPS IN KENYA:
PROPOSALS FOR FURTHER RESEARCH

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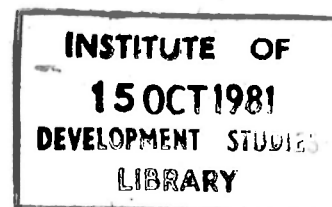
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ABSTRACT

The crucial role of agricultural marketing systems in the process
of economic development has often been overlooked in the past. This seems
to be true for Kenya, as well as for other developing countries, particularly
as far as food marketing systems are concerned.

With this background, a proposal is made for further studies on the
marketing of maize and beans, the two main staple food crops in Kenya. In the
respective marketing systems, the proposed research intends to analyse aspects
of marketing effectiveness with regard to the objectives of:-

- keeping marketing risks low, particularly
  for small-scale producers and urban low-
  income consumers,

- improving pricing or allocative efficiency
  (preventing excess profits and market distor-
  tions), and

- improving operational efficiency (lowering
  marketing costs).

This research should be seen in conjunction with the Marketing
Development Programme launched by the Government of Kenya with assistance of
UNDP/FAO. The researchers will try to contribute some of the necessary
information which will be required if feasible programmes are to be developed
to improve maize and bean marketing in Kenya.

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BACKGROUND

Beyond the well known and more or less passive role of marketing
systems which consists of the transfer of goods and services from the producer
to the ultimate consumer, thereby creating form, time, place and possession
utility a more active role is assigned to agricultural marketing systems in
the development process. As the agricultural and industrial sector develops
and the division of labour and urbanisation increase, the marketing system
has to provide the outlets for new and increased output, assure adequate food
supply for the growing urban population at reasonable prices and transfer
capital and other productive resources from the agricultural to the non-agri-
cultural sectors. Thus, there is not only a strong interrelationship between
the increasing productivity of the agricultural sector and the development of
an adequate marketing system, but also between the marketing system and the
productivity of the other sectors of the economy.

Unless there are adequate and secure outlets for the producers and
sufficient food for urban consumers at reasonable prices, the growth of the
agricultural, as well as the other sectors of the economy will be hampered.
Farmers will hesitate to incur additional costs and efforts if they lack
confidence in the marketing system. Moreover, the prices they receive from
selling their produce (marketable surplus) /influence their cash income and hence
their ability to buy products from other sectors, i.e. their demand for non-
agricultural products.

At the other end of the marketing channel urban consumers, their
disposable income and their demand for agricultural and non-agricultural products
will be affected in a similar way by the performance of the agricultural
marketing system. The prices they have to pay for food and other agricultural
products determine their cost of living and by this the level of demand for
agricultural and non-agricultural products. Furthermore agricultural prices,
by determining the level of household expenditures required for satisfying
basic needs, may influence the level of minimum wages in the modern sectors
and thereby contribute to higher production costs in those sectors.

Consequently, an efficient agricultural marketing system has a decisive
impact on the incomes and living standards of the entire population and thus

plays an important role in the development process. In addition, the provision
of an efficient organisational and institutional arrangement will encourage
the accumulation and transfer of capital to the modern sector and may contribute
to the development process by providing a source of entrepreneurial talent.[1]

The crucial role of agricultural marketing systems in the process of
socio-economic development, although it should hardly need stressing, has in
fact often been overlooked.[2] One of the main reasons for this has been that
the marketing system in the past has been seen as a self-adjusting mechanism
that alters in response to changes in surrounding conditions. This in turn has
often led to a neglect of the marketing system in research and planning, and in
consequence to reluctance of many governments of developing countries to initiate
marketing improvement programmes.[3] More attention has been paid to the production
process, to new technologies for seeds, fertilisers, irrigation, etc.[4]

In the past this general situation has been true for Kenya, as Wilson
pointed out:-

> It is not unreasonable to suggest - at least on Kenya experience -
> that it is the very significance of the technical improvements called
> for on the production side which has led to a neglect of the structure
> and organization of the system through which such crops are to be
> marketed. Thus, although it is not justified to refer to a 'production
> bias' - at the expense of marketing - there does appear in some cases
> to be an obvious imbalance in the allocation of research and advisory
> resources.[5]

However, this relative neglect has been realised recently. In view
of the rapid growth of the Kenyan economy, leading to all the effects outlined
above - increased marketed agricultural output, specialisation, urbanisation,
etc. - and with the intention of transferring production and distribution to
Kenyans, a Marketing Development Programme has been launched by the Government
of Kenya with the assistance of UNDP/FAO.[6] It was justified as follows:-

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1.   P. Moyer, Marketing in Economic Development, International Business
Occasional Paper No.1, Institute for International Business Management Studies,
Michigan State University, East Lansing, 1965, pp. 7-18.
2.   Cf. M. Kriesberg and H. Steele, Improving Marketing Systems in Development
Countries, USDA and USAID, Washington D.C., 1972, p. 25.
3.   Cf. F.A. Wilson, Some Economic Aspects of the Structure and Organization
of Small Scale Marketing Systems - Marketing of Fruit and Vegetables in Kenya,
Discussion Paper No. 176, Institute for Development Studies, University of Nairobi,
1973, p.2.
4.   Cf. Kriesberg, and Steele, p.25.
5.   Wilson, p.4. A similar conclusion was drawn by Hesselmark and Lorenzl in
the case of maize. "The importance of maize for Kenya's economy is well reflected in
an increasing number of studies and reports which, however, deal predominantly with
aspects of production of maize." O.Hesselmark and G. Lorenzl, Structure and Problems
of the Maize Marketing System in Kenya, Zeitschrift fur Auslaendische Landwirtschaft,
15 (2) 1976, p.1616
6.   Government of Kenya/UNDP, Marketing Development Programme,Ken/75/005/A/01/12.

These changes /Kenyanisation, shift from direct farm consumption
to marketed consumption/ have taken place without the marketing system
being able to adjust adequately, or at the same pace. As a consequence
there is strong evidence, though not easily quantified, that the
marketing efficiency of the nation has suffered, and this in its turn,
affects production (because of uncertainties about outlets) and leads
to low income consumers paying disproportionately for the necessities
of life.

At the same time the effective development of marketing is inhibited
by the general lack within the agricultural and food distribution sectors
of a wide range of valid statistics, in particular, statistics needed for
the essential correct diagnosis of the constraints in the marketing
system.[7]

This applies especially to the internal food marketing system in Kenya
as Judith Heyer has shown.[8] It seems therefore to be worthwhile to look into the
structure and performance of the marketing system of selected food crops,
particularly those which are of crucial importance to the majority of producers
and consumers in Kenya. Accordingly, from the major staple food crops in Kenya -
maize, beans, rice and Irish potatoes[9] - maize and beans have been singled out
for further research.

Maize, providing 50 to 70 per cent of the total calorie intake of the
rural as well as urban population, is the main staple food in Kenya. For the
majority of households, although not in all regions, beans are most probably
second to maize as a staple food,[10] if one considers that wheat, rice and
Irish potatoes are mainly consumed by higher income groups.

Most of the total output (more than 90 per cent) of both crops is
produced by smallholders, whereas wheat is almost wholly grown on a large scale.
Rice is cultivated on irrigation schemes, and thus constitute a special case
for production as well as marketing. Potatoes are grown by small-scale producers
in certain areas. The marketing of potatoes is the subject of a study now
being carried out by G. Duerr and G. Lorenzl.

OBJECTIVES

With the background outlined above, the overall objective of the
proposed study is to analyse the constraints and imperfections of the marketing

7.   Government of Kenya/UNDP, p.1.
8.   J. Heyer, "The Marketing System," in J. Heyer, J.K. Maitha and W.M. Senga,
eds., Agricultural Development in Kenya - An Economic Assessment, Nairobi, Oxford
University Press, 1976, p.322.
9.   V.A. Alvis with P.E.Temu, Marketing Selected Staple Foodstuffs in Kenya,
West Virginia University, Morgantown, 1968, p.46.
10.   Cf. Alvis and Temu, p.83
11.   G. Duerr and G. Lorenzl, Research Proposal on Production and Marketing of
Potatoes in Kenya, Nairobi, 1976.

system for maize and beans. This will contributed to delineating planning
and improvement programmes.

These programmes, if designed to increase production and raise the
living standard effectively will have to focus on:-
- improving the pricing or allocative efficiency,
- improving the operational or technical efficiency,
  and
- reducing the risks to producers, intermediaries and
  consumers.

The pricing efficiency of the marketing system is related to its
exchange functions - buying, selling and pricing. To achieve pricing efficiency,
these functions have to be performed in such a way that no excess profits are
earned by the middlemen and that regional and seasonal gaps between supply and
demand are equalised without distortions, so that in consequence an optimal
allocation of resources is achieved.

Operational or technical efficiency is achieved if the marketing
functions (transportation, storage, processing, etc.) are performed with the
minimum possible costs. Thus, improving the operational efficiency of marketing
systems focusses on reducing the costs of inputs in relation to the output of
goods and services.

The reduction of marketing risks for producers, intermediaries and
consumers is related to the uncertainties these people face in the marketing
process especially with regard to supply and demand conditions and prices. These
risks can lead to the discouragement of investments, misallocation of resources
and low consumer satisfaction.

These above mentioned conditions can be viewed as sub-goals or means
to achieve to the overall objectives of increasing production and raising the
living standard. Thus, the proposed study will concentrate on aspects of
pricing and operational efficiency and the uncertainties of the marketing
systems as experienced by the participants.

We shall briefly review the specific patterns and problems of the
maize and bean marketing systems in order to identify more specific areas of
study.

The Case of Maize

The basic structures and problems of the maize marketing system are relatively well known. As far as the structure is concerned, two main, strongly interrelated sub-systems can be distinguished.

On the one hand there is the so-called formal system which consists of the marketing channels controlled by the Maize and Produce Board (MPB) a parastatal marketing organisation, and on the other hand there is the informal free enterprise system which handles the maize which is not subject to MPB control.[12] Although theoretically all maize has to be marketed through the MPB, small quantities are exempted which are traded locally within the districts in the traditional rural markets. Thus, legally the informal system only covers the trade of maize within districts.

Surplus exceeding the local requirements has to be delivered to the Maize and Produce Board either directly to the nearest depot or, when it is in small amounts, through one of the Board's agents who have been appointed all over the country. Larger farmers normally deliver direct to the depots, whereas small farmers sell or are forced to sell their maize to the agents. To assure that all regional surplus is marketed through the Board, all intra- and inter-district movements beyond certain limits require "movement permits". By this system, the Board aims at having full control over all interregional flows.

From the depots the maize is sold to appointed traders, millers and stockfeed manufacturers or is exported if total production is estimated to exceed domestic demand.

In contrast to the informal system where prices and margins vary according to supply, demand and competition, prices and margins at all levels of the formal marketing system are fixed. The Ministry of Agriculture announces a basic purchase price for the MPB from which the producer price is derived by deducting several cost items (transport, bags etc.) and the commission for the agent. As transport costs in the past were pooled within a district, farmers in the district were supposed to receive uniform prices.[13]

The MPB ex depot wholesale price, ex mill price and the retail prices for whole maize and maize meal are fixed and announced by the Price Controller

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12. About 30-40 per cent is estimated to be traded in this informal subsystem. Cf. Hesselmark and Lorenzl, p. 165.
13. From 6th July 1976 on, the pooling of transport costs within districts was given up, which means that no fixed producer prices were announced at the farm gate level.

of the Ministry of Finance and Planning. For the ex depot price, eight
different areas are distinguished according to differences in the railway
distance from the main producing areas. As the announced retail prices (per
kg) are uniform for the whole country, nearly inverse differences in milling and
retail margins are fixed which can hardly be economically justified.[14] All prices
are usually fixed for one year and without seasonal differences.

The regulation and control of the maize market by the MPB was intended
to benefit producers and consumers by:-

- guaranteeing a market to producers in surplus
  areas,

- guaranteeing sufficient supply in deficit
  areas,

- stabilising producer and consumer prices,

- guaranteeing a regional price structure which does
  not distort the geographical pattern of production,

- guaranteeing prices so that neither consumers nor
  producers 'exploit' one another, and

- assuring that the marketing functions are performed
  at lowest possible costs.

In other words, it was believed that the formal system as it was set up under
the prevailing socio-economic conditions could perform the marketing functions
best in terms of efficiency and security for producers and consumers.

In   practice, however, these objectives have not been fully
achieved, as documented by various case studies and a series of public enquiries
and commissions.[15] There has been evidence in many cases, for example, that
the buying agents of the MPB are not adequate outlets for small farmers,
especially in remote areas, that price stabilisation for producers as well as

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14.   For the retail margin this was only true if maize was sold per kg. If
sold per whole bag, the margins seem to be correlated to the ex depot price - in
1975/76 they varied between 2.05 and 2.67 per cent - and therefore do not have an
inverse tendency. Calculated according to Table 1 in Hesselmarkeand Lorenzl, p.167.

15.   The latest ones are Kenya, The Maize Commission of Inquiry, Nairobi, 1966;
Kenya, Final Report of the Working Party Studying the Maize and Produce Board in
Relation to the Expected Crop Production in the 1970's and 1980's, Nairobi, 1972;
Kenya, Report of the Selected Committee on the Maize Industry, Nairobi, 1973;
M. Hanrahan, Draft Final Report on an Experimental Maize Marketing Scheme at Luanda
Market, Kakamega District, Vihiga 1974; F.T. Kariungi, Structure, Conduct and Per-
formance of Kitui Local Maize Market, Kenya, M.Sc. Thesis, University of Nairobi, 1976;
and F.K. Ireri, Structure, Conduct and Performance of Kutus Maize Market, Kenya,
University of Nairobi, 1976 (forthcoming).

for consumers has not been achieved and that the movement restrictions have led to unnecessary regional price differentials, creating an extensive illegal trade[16] which enables intermediaries to earn considerable excess profits, while even so supplying consumers in deficit areas with maize at lower prices than the MPB.[17] Moreover, the regional price differentiation of the MPB seems to be insufficient to achieve an optimal spatial allocation of resources, and the absence of seasonal differentiation probably leads to higher costs than necessary.

As pointed out at the beginning, most problems of the maize marketing system are relatively well known. In addition, several proposals for improvement have been made, the most crucial among them to reduce the control exercised by the MPB and to give a larger role to the informal system, confining the role of the MPB to a buyer and seller of last resort.[18] Judging from the shortcomings of the present system outlined above, this would seem to be the first necessary step. However, to implement a new improved system more information on maize marketing as it functions at present has to be obtained.[19] What is actually still required is:-

- an analysis and systematic assessment of the informal system in different parts of the country and its actual and potential efficiency or effectiveness,

- an analysis of the relations between the formal and informal system, the interdependencies between the buying, selling and transfer activities of the MPB and the transactions and prices in the informal system. This has to include the decision making process within the MPB, and

- a comparison of the actual interregional flows with an optimal flow pattern and a comparison of an optimal flow pattern in the case where all transfers are carried out by the MPB (as it is supposed to do at present) with an optimal flow pattern where all transfers are carried out by the private enterprise system, the mimpact on transfer costs, regional price structure (optimal spatial allocation), and finally the effects on the economies of maize production in different production areas.

16. The extent of the illegal interregional trade on average is about 10 to 20 per cent of the marketed maize crop, and in some cases the share is even higher. Cf. Hesselmark and Lorenzl, pp.165.
17. Hesselmark and Lorenzl, p. 173.
18. See for example,/Final Report of the Working Party Studying the Maize and Produce Board in Relation to the Expected Crop Production in the 1970's and 1980's, pp.29-40, Hanrahan, pp. 14-16 and Hesselmark and Lorenzl, p.177.
19. Cf. Hesselmark and Lorenzl, p. 176.

With regard to these subsections of the proposed research, some
hyptheses which reflect the major areas of interest are listed below. They
are as follows:-

1. Actual farm gate prices for small scale producers are lower than MPB
   buying prices. The reasons for this may be limited buying capacity of
   the Board or its agents at harvest times, bureaucratic procurement
   procedures or inactivity of MPB agents, particularly in remote areas
   (unsecure outlets).

2. Marketing margins within the informal system are lower than in the formal
   system. This might be due to lower overhead and transfer costs.

3. Excess profits are earned in illicit inter-regional trade. This means
   that marketing margins exceed transfer costs. Reasons may be low
   market transparency, lack of competition and additional costs and risks
   in illegal movements.

4. Erratic fluctuations in volumes and prices occur because spatially
   separated markets are not efficiently interlinked. This might be
   due to lack of information and infrastructure.

5. Since the storage function is mainly performed by the formal system
   (no seasonal price differentiation) and MPB is not reacting adequately
   to given demand and supply situations it contributes to seasonal price
   fluctuations. These fluctuations in the markets are high; they exceed
   storage costs.

6. The interregional shipments of the MPB do not follow optimal flow
   patterns. This might be explained by/information and limited transport
   facilities.

7. The regional price differentiation of the MPB is not commensurate with
   the objective of allocative efficiency.

8. Interregional exchange would be quicker and cheaper if carried out through
   the informal system, rather than the present formal system.

9. An optimal regional price differentiation will make maize production in
   the margional maize growing areas unprofitable at reasonable consumer
   prices. Consequently, the production policy has to be reconsidered.

An analysis of all those aspects of maize marketing reflected in
these hypotheses will narrow the information gap which still exists and help
identify feasible improvement programmes for the maize marketing system.
This analysis will show what measures have to be considered if the strict
control which is imposed at present on interregional movements of maize is
relaxed and it will provide guidance for formulating a production and pricing
policy.

The Case of Beans (dry)

Bean marketing, the second field of interest, has been the subject of
very little research in recent years.[20] Therefore very little is known about
recent developments in the structure and performance of the marketing system
for beans.

A wide variety of beans are grown and sold in Kenya, mainly in
certain districts of Central, Eastern, Western and Nyanza Provinces. Except
for Mexican 142 which is used by the canning industry, only a minor part of
the production above home consumption requirements is sold, usually in local
markets.

Officially, as with maize, two different sub-systems, informal (intra-
district) and formal (inter-district) can be distinguished. All marketed output
beyond district needs is supposed to be delivered to the MPB or their agents
at a fixed price and shipped across district boundaries under the control of
the Board. Intra-district trade is free. To enforce the regulations the same
movement restrictions are imposed on the inter-district flows as in case of
maize.

However as it can be seen from the MPB records, this control has not
been effective at all. Sales to the Board were negligible (except for Mexican 142).
In Eastern and Central Province where beans growing is most important, only 843
bags (other than Mexican 142) were delivered to the Board in 1973/74.[21] In con-
sequence it can be assumed that the legal inter-district trade broke down almost
completely, with similar effects as in the maize marketing system: illegal trade
excessive profits, large regional price differences,[22] etc. According to the

20.   The most recent research was done in 1966/67 by Alvis and Temu.
21.   Maize and Produce Board, Eigth Annual Report, 1973/74.
22.   For example, in June/July 1975 when the price per bag in Kitui was Kshs 185/-
in Nyeri it was Shs 370/-. See Schonherr and Mbugua, Bean Production in Kenya's
Central and Eastern Provinces, Occasional Paper No. 23, Institute for Development
Studies, University of Nairobi, 1976 (forthcoming).

latest figures of MPB the situation for 1976/77 may be different.

The minor role of the MPB in recent years can be explained to a large extent by the MPB purchase prices. Although they were raised several times and almost doubled in the period from 1970/71 to 1975/76, they always lagged behind the open market prices which reflected the changing demand and supply situation. During recent years there has been a sharp increase in the demand for beans which has not been met by a corresponding increase in production.[23]

There appear to be numerous similarities between the maize and bean marketing systems. Accordingly, after the analysis of the structural conditions quite a similar set of hypotheses can be formulated about bean marketing as about maize, including such aspects as:-

- security of outlets,
- profits in intra- and inter-district trade (pricing efficiency),
- interrelation between various markets,
- price fluctuations or price stability,
- marketing costs (operational efficiency), and
- degree of regional price differentiation, etc.

From the preceding pages it can be seen that an extensive research project has to be carried out to provide the information required for the improvement of the maize and bean marketing systems. We cannot tell as yet whether we shall be able to cover all aspects within the available time. However, those areas of research listed above can be viewed as a guide for the steps to be taken in the next future.

METHODOLOGY

Theoretical Framework

The areas of research listed above refer mainly to the previously mentioned aspects of marketing effectiveness, namely:-

- uncertainties within the marketing process,
- pricing (allocative) efficiency, and
- operational (technical) efficiency.

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23. Schönherr and Mbugua.

Factors such as security of outlets and the degree of price stability
are related to the degree of certainty or risk involved in the marketing process.
Evaluation criteria which are frequently used in this connection are as follows:-

- frequency and regularity of marketing opportunities,

- capacity of marketing outlets, and

- extent, frequency and amplitude of erratic price
fluctuations.

The evaluation is usually done only in qualitative terms because no
objective critical
/values can be given which tell when risks are too high or sufficiently low. The
assessment in most cases is based on comparisons between the performance of the
marketing system being studied and the performance of similar systems within
or outside the country or the performance which is thought to be possible under
different conditions.[24]

In evaluating pricing or allocative efficiency, a comparison of price
differences at different places and times with transfer and storage costs is
usually made, as reflected in some of the hypotheses. In making these comparisons,
actual performance is measured against the performance of a system operating
under the conditions of perfect competition. Assuming perfect competition,
price differences between spatially separated markets would be equal to transfer
costs, and prices at different times would be determined by storage costs.
Moreover, price changes in one market would be followed by corresponding changes
in other markets, i.e. they would be perfectly correlated ($r = 1$). Thus,
interrelation of markets, or market integration, another important indicator
of pricing efficiency, can be measured by correlation analysis. With coefficients
of r greater than or equal to 0.7, the degree of market integration is considered
sufficient.[25]

In addition to the criteria above, each of them related to specific
aspects of pricing efficiency, the efficiency of pricing between various marketing
stages is tested by means of regression analysis. This specific test was developed
by Ruttan[26] and adds to the assumption of perfect competition that of absolute

24.   Cf. M. Kriesberg and H. Steele, Improving Marketing Systems in Developing
Countries, USDA and USAID, Washington D.C., 1972, pp.52-3; and G. Lorenzl and L. Tui,
The Price Information System for the Horticultural Industry in Kenya, FAO Technical
Report, Nairobi, 1974, Ken 528/71, p.44.

25.   Cf. W.O. Jones, Marketing Staple Food Crops in Tropical Africa, Ithaca
and London, Cornell University Press, 1972, pp. 139 - 151.

26.   See V.W. Ruttan, Notes on Agricultural Product and Factor Markets in East
Asia, in K.G. Anschel, R.H. Brannon and E.D. Smith, eds. Agricultural Cooperatives
and Markets in Developing Countries, New York, Praeger, 1968, pp. 79 - 106.

constant margins in the short run, i.e. margins independent of short-term
fluctuations. Under these conditions a linear relationship between prices
at two consecutive stages is hypothesised and can serve as an indicator of
whether price changes at one stage are reflected in similar price changes at
the other stage.

The questions of optimal regional price differentiation, optimal
flow patterns and transport costs within the whole marketing system are inter-
related, including aspects of pricing and operational efficiency. In analysing
these questions spatial equilibrium models have proved to be very useful.[27]

The solutions obtained from these models provide a standard against
which existing regional price differences, trading patterns and the related
transport costs can be compared. These solutions can be used to determine the
geographical structure of prices which would lead to an optimal allocation
of resources.

For these models, computational procedures have been developed. The
first algorithm entitled "reactive programming" was developed by T.E. Tramel and
A.D. Seale, Jr.[28] Since then an improved version has been developed by R.A.
King and Foo-Shiung Ho which is intended to be used in testing the hypotheses
we have listed in relation to interregional marketing problems.[29]

27.   Cf. W.G. Tomek and K.L. Robinson, Agricultural Product Prices, Ithaca
and London, Cornell University Press, 1972, p. 152.

28.   T.E. Tramel and A.D. Seale, "Reactive Programming of Supply and Demand
Relations - Application to Fresh Vegetables", American Journal of Farm Economics,
41 1959, pp. 1012-1022, quoted by R.A. King and Foo- Shiung Ho in Reactive
Programming: A Market Simulating Spatial Equilibrium Algorithm, Economics Research
Report, North Carolina State University, Raleigh, 1972.

29.   King and Foo- Shiung Ho. The basic procedure is described as follows:
An initial set of supply and demand quantities is selected and a linear programming
subroutine is used to allocate supplies among markets. A market price is calculated
from the demand function for each of the consuming areas. By subtracting trans-
portation costs from these market prices net shipping point prices are obtained
for the shipments in the initial allocation. A new level of output for the first
shipping area is selected consistent with the average net revenue received. This
new quantity is then allocated among markets in such a way as to maximize net
returns, given the market prices and previous shipping patterns of all other
shippers. This same process is repeated for the second shipping area, given the
behaviour of all other shipping areas. The iterative routine continues until it
is not profitable for any shipping area either to change the level of output or
to reallocate supplies. ... Several variations of the basic program are available
Supplies may be teated as fixed or entered in functional forms. pp. 1-2.

As can be seen from the preceding presentation, the various aspects of pricing efficiency are usually considered with regard to the 'ideal market' model. This, however, does not necessarily mean that the solution to marketing problems is simply viewed as the establishment of or a return to a system of free and perfect competition, or that the conditions of perfect competition could be achieved in practice or are even to be desired. It only provides a framework for the analysis and for judging the existing systems by a standard of socially desirable results.[30]

Taking aspects of operational efficiency into account, factors such as economies of scale have to be considered. Thus, a limited number of enterprises may lead to considerable cost advantages (increased operational efficiency) but at the same time may lead to a reduction of pricing efficiency. In such cases the net result has to be assessed in terms of overall economic efficiency. Where large-scale organisations (low-cost monopolies) seem to be necessary, for example for technological reasons, and in consequence a reasonable level of pricing efficiency cannot be achieved through a private competitive system, the question of public control arises if such a system would be beneficial for the whole society. This, however, does not affect the usefulness of the 'ideal market' model as a means of measuring the performance of existing marketing systems. Together with the calculations and comparisons of marketing costs, it provides a valuable analytical tool for evaluating marketing efficiency.

Sources of Data

Two types of primary data will be collected as part of the proposed study, in addition to the available secondary sources of information:-

1. A survey of the formal system which will consist of gathering the information available through the Maize and Produce Board, and

2. Surveys on the informal system carried out under the Marketing Development Programme (MDP) by the Central Bureau of Statistics (CBS).

The Agricultural Marketing Survey of the MDP is linked with the Integrated Rural Surveys (IRS 1 and IRS 2) of the smallholder sector. Two main

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30.　　Cf. R.G. Bressler and R.A. King, Markets. Prices and Interregional Trade, New York, John Wiley and Sons, 1970, pp. 415 - 6.

time periods are distinguished. During the first period (April 1976 - July 1977) surveys on consumption patterns in the rural areas (household surveys) and on the working and performance of the rural informal marketing systems (trader and market surveys) are added to the farm household and production surveys of IRS 1. This¹rural survey period' will be supplemented by urban household, trader and commodity and food industry surveys at a later stage (January 1977 - July 1978).

For the IRS farm household survey, a stratified random sample - 1,656 households in 138 sub-locations (clusters) covering 12 cropping zones - has been drawn which will provide representative figures at the provincial level. The market surveys will be carried out in about 100 'representative' markets, representative in the sense that they are viewed as important within certain areas by local authorities who are familiar with the scene and thus will give a fairly good picture of informal marketing activities.

Each survey will cover a period of twelve months in order to fully reflect the seasonality of production, consumption and marketing. The farmers are visited on a monthly cycle, and the market surveys are carried out on a weekly basis. Together, all surveys should provide the necessary data for the evaluation and improvement of the agricultural marketing systems.